

Connecticut Department of

**ENERGY &
ENVIRONMENTAL
PROTECTION**

**BUREAU OF AIR MANAGEMENT
NEW SOURCE REVIEW PERMIT
TO CONSTRUCT AND OPERATE A STATIONARY SOURCE**

Issued pursuant to Title 22a of the Connecticut General Statutes (CGS) and Section 22a-174-3a of the Regulations of Connecticut State Agencies (RCSA).

Owner/Operator	Quantum Biopower Southington, LLC
Address	49 DePaolo Drive, Southington, CT 06489
Equipment Location	49 DePaolo Drive, Southington, CT 06489
Equipment Description	Anaerobic Digestion Facility
Town-Permit Numbers	168-0060
Premises Number	243
Stack Numbers	1 - 3
Permit Issue Date	
Expiration Date	None

Michael Sullivan
Deputy Commissioner

Date

This permit specifies necessary terms and conditions for the operation of this equipment to comply with state and federal air quality standards. The Permittee shall at all times comply with the terms and conditions stated herein.

PART I. FACILITY DESCRIPTION

A. Premises

The anaerobic digestion facility will be located at 49 DePaolo Drive in Southington on a portion of the 56.57 acres premises. The 56.57 acres are comprised of 37.24 acres of land owned by B&R Corporation and 19.33 acres of land leased from the Town of Southington. The anaerobic digestion facility will be located in the B&R Corporation portion of the land. The remainder of the overall parcel will be occupied by clean wood processing and leaf composting facilities operated by Supreme Forest Products, Inc. The anaerobic digestion, clean wood processing and leaf composting facilities will collectively be called Supreme Energy and Recycling.

B. Anaerobic Digestion Facility Description

The anaerobic digestion facility will be comprised of the following components:

1. Receiving Operation (U1a):

Solid and liquid Source Separated Organic Materials (SSOM) will be accepted including food scraps, liquid beverages and fat/oil/grease. Receiving operations will be performed within an enclosed site building. The SSOM will be shredded and mixed via rotating mixers and recirculation pumps, diluted as needed, and then pumped to the separation system via large volume transfer pumps. The pulp/slurred organic material will be then pumped into a Reception Tank.

2. Anaerobic Digestion System (U1b):

The anaerobic digestion system will consist of the Reception Tank, the Thermophilic Acidification Reactor (TAR), the Anaerobic Mixed Thermophilic Digester (AMTD) and Digestate and Biogas Tanks. The biogas generated in the TAR and the AMTD will be equalized and stored in a dual membrane gas holder installed on top of the Digestate Holding Tank. The solids from the digestate will be collected and recovered as an organic fertilizer additive. The liquids will be sent to the waste water treatment system for discharge to the Town of Southington waste water collection system.

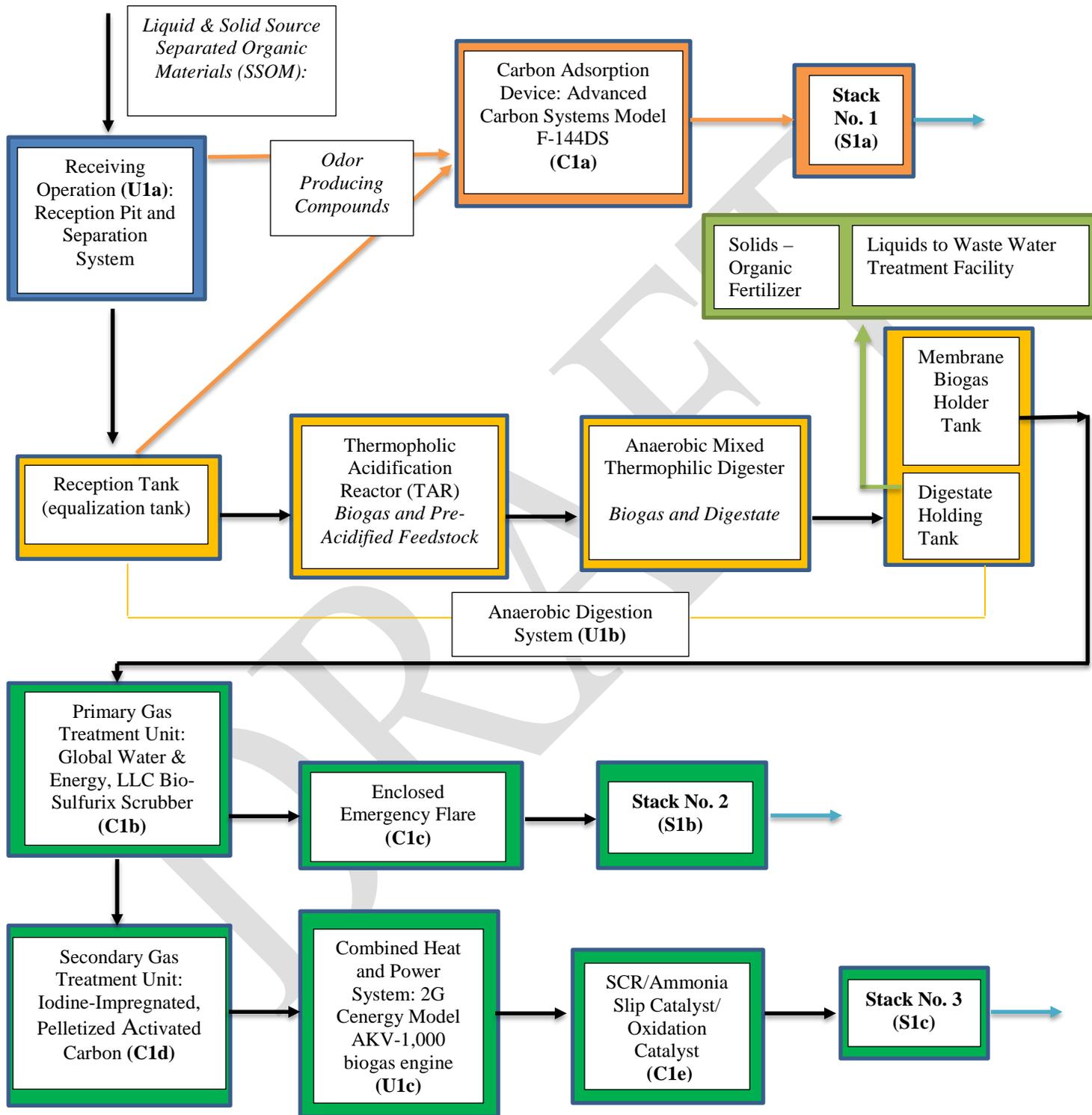
3. Combined Heat and Power System (U1c):

The biogas produced by the anaerobic digestion process will be utilized to generate heat and electricity through the operation of a 9.62 MMBtu/hr 2G Cenergy biogas engine (Combined Heat and Power System). NO_x emissions will be controlled by a Selective Catalytic Reactor (SCR) and an ammonia slip catalyst (ASC) will be installed to reduced emissions of ammonia generated by the SCR. Emissions of CO, VOC and Formaldehyde will be controlled by an oxidation catalyst. An enclosed emergency flare will be employed for the disposal of biogas as allowed in Part III.A.4 of this permit. The biogas engine and the enclosed emergency flare will only operate concurrently as allowed by Part III.A.4.g of this permit.

Prior to utilization by the Combined Heat and Power System (CHP System) or the enclosed emergency flare, the biogas will be conditioned by a bio- scrubber to decrease the concentration of hydrogen sulfide (Primary Gas Treatment Unit). To minimize damage to the CHP System, the biogas will receive additional treatment by an Iodine-Impregnated, Pelletized Activated Carbon (Secondary Gas Treatment Unit) to further decrease the concentration of hydrogen sulfide.

PART I. FACILITY DESCRIPTION, continued

C. Flow Diagram



PART II. DESIGN SPECIFICATIONS

A. Equipment Design Specifications

1. Receiving Operation (U1a)

Receiving and processing of Source Separated Organic Materials (SSOM)⁽¹⁾ in an enclosed building.

a. Reception Pit:

- i. **Liquid SSOM** will be received in tanker trucks and directed to two exterior 12,000 gallon underground liquid concrete receiving tanks via hose connections and gravity drain.
- ii. **Solid SSOM** will be dependent on the expected level of non-organic present in the material, such as packaging, plastic and glass.
 - (A) **Clean solid SSOM** that is void of appreciable detectable contaminants will be dumped into an exterior covered receiving pit containing a below grade hopper, grinder, pump and macerator where the material will be processed into a pumpable state and transferred to the Anaerobic Digestion System (U1b).
 - (B) **Solid SSOM with non-organic contamination and package solid SSOM** will be received within the process building and processed into a pumpable state using a separation mill and pumped into the Anaerobic Digestion System.

⁽¹⁾ SSOM: as defined in Connecticut General Status (CGS) §22a-207(29) means organic materials, including but not limited to, food scraps, food processing residue and soiled or unrecyclable paper that has been separated at the point or source generation from nonorganic materials. For the purposes of this Permit, SSOM includes fats, oils and grease.

b. Separation System: vertical hammermill with a screen

2. Anaerobic Digestion System (U1b)

- a. Reception Tank (equalization tank): 76,726 gallon insulated, bolted steel tank with a gas tight roof
- b. Thermophilic Acidification Reactor (TAR): 97,107 gallons bolted steel tank with completely insulated walls and a self-supporting steel insulated roof
- c. Anaerobic Mixed Thermophilic Digester (AMTD): 948,309 gallons insulated, epoxy coated bolted steel tank with a fixed roof
- d. Digestate⁽²⁾ and Biogas⁽³⁾ Holding Tank: 76,726 gallon insulated, bolted steel tank with a flexible membrane roof

⁽²⁾ Digestate: digested feedstock

⁽³⁾ Biogas: CH₄, CO₂, N₂, and Trace Gases

3. Combined Heat and Power System (U1c)

- a. Make and Model: 2G Cenergy/MWM Model TCG202V12 biogas engine
- b. Fuel Type: Biogas
- c. Maximum Electrical Output: 1.2 MW

PART II. DESIGN SPECIFICATIONS, continued

B. Control Equipment Design Specifications

1. Carbon Adsorption Device (**C1a**)
 - a. Make and Model: Advanced Carbon Systems Model F-144DS
 - b. Adsorbent: Granulated – Activated charcoal
 - c. Number of Beds: 2 (in series)
 - d. Inlet Gas Temperature Range: 50 – 95°F
 - e. Design Pressure Drop Range Across Unit: 8 – 12 inches H₂O
 - f. Type of Regeneration: Replacement
 - g. Operation Time Before Regeneration: Estimated 5 years
 - h. Pollutants Controlled: Hydrogen Sulfide, Organic Odors
 - i. Collection Efficiency: 100%
 - j. Overall Control Efficiency: 99.5%
2. Primary Gas Treatment Unit (**C1b**) – Scrubber
 - a. Make and Model: Global Water & Energy, LLC Bio-Sulfurix System Model BS20.10
 - b. Type of Scrubber: Plug Flow
 - c. Design Pressure Drop Range Across Unit: 3.21 inches of H₂O
 - d. Minimum Gas Flow Rate: 88.3 scfm
 - e. Pollutant Controlled: Hydrogen Sulfide
 - f. Collection Efficiency: 100%
 - g. Overall Control Efficiency: 89%
3. Secondary Gas Treatment Unit (**C1d**) – Iodine Impregnated, Pelletized Activated Carbon
 - a. Make and Model: 2G Cenergy Model AKV-1000
 - b. Adsorbent: Iodine-Impregnated, Pelletized Activated Carbon
 - c. Number of Beds: 2
 - d. Inlet Gas Temperature Range: 41 – 113°F
 - e. Design Pressure Drop Range Across Unit: 4 - 8 inches of H₂O

PART II. DESIGN SPECIFICATIONS, continued

- f. Type of Regeneration: Replacement
 - g. Operation Time Before Regeneration: Estimated 3 months
 - h. Pollutant Controlled: Hydrogen Sulfide
 - i. Collection Efficiency: 100%
 - j. Overall Control Efficiency: 99%
4. Selective Catalytic Reactor (SCR)/Ammonia Slip Catalyst/Oxidation Catalyst (**C1e**)
- a. Make and Model: Johnson Matthey
 - b. Pollutants Controlled: NO_x, CO, VOC, Formaldehyde, Ammonia
 - c. Collection Efficiency: 100%
 - d. Overall Control Efficiency: 90.9% (NO_x), 98.2% (CO), 85% (VOC), 95.5% (Formaldehyde)
5. Enclosed Emergency Flare (**C1c**)
- a. Make and Model: Global Water & Energy, LLC\DWS Model H101
 - b. Fuel Type: Biogas
 - c. Pollutant Controlled: Biogas (Methane, Hydrogen Sulfide)
 - d. Collection Efficiency: 100%
 - e. Overall Control Efficiency: 99%

C. Stack Parameters

Stack No.	Minimum Stack Height (ft)	Minimum Gas Flow Rate (acfm)	Minimum Stack Exit Temperature (°F)	Minimum Distance to Property Line (ft)
S1a Receiving	20	3,000	50	154
S1b Enclosed Emergency Flare	26.24	3,000	400	178
S1c CHP System	32.8	4,364	365	240

PART III. OPERATIONAL CONDITIONS

A. Equipment

1. Receiving Operation (**U1a**)
 - a. Reception Pit
 - i. Allowable Wastes: organic materials, including but not limited to, food scraps, food processing residue and soiled or unrecyclable paper that has been separated at the point or source of generation from nonorganic materials and fat/oil/grease (FOG)
 - ii. Maximum daily SSOM: 144 tons
 - iii. Maximum yearly SSOM: 52,704 tons
2. Anaerobic Digestion System (**U1b**)
 - a. Reception Tank (equalization tank)
 - i. Maximum Hourly Quantity Output of Feedstock: 4.6 tons
 - ii. Maximum Hourly Biogas Production: 19,862 sft³
 - iii. Maximum Annual Biogas Production: 153.3 MMft³
 - b. Thermophilic Acidification Reactor
 - i. Maximum temperature: 131°F
 - c. Anaerobic Mixed Thermophilic Digester:
 - i. Maximum Temperature: 127°F
 - d. Digestate and Biogas Holding Tank
 - i. Maximum Hourly Biogas Production: 19,862 ft³
 - ii. Maximum Annual Biogas Production: 153.3 MMft³
3. Combined Heat and Power System (**U1c**)
 - a. Allowable Fuel Type: Biogas
 - b. Minimum Sulfur Content: 5 ppm (by volume)
 - c. Minimum Methane Content of the Biogas: 50% (by volume)
 - d. Maximum Fuel Firing Rate: 15,398 ft³/hour
 - e. Maximum Heat Input: 9.62 MMBtu/hr
 - f. Maximum Annual Fuel Usage: 153.3 ft³ (HHV: 625 Btu/ft³)

PART III. OPERATIONAL CONDITIONS, continued

- g. Prior to utilization by the biogas engine, the biogas shall be conditioned as follows:
 - i. Step 1: By Primary Gas Treatment Unit (Scrubber – C1b) to decrease the concentration of hydrogen sulfide to at least 200 ppm (by volume)
 - ii. Step 2: By the Secondary Gas Treatment Unit (2G Cenergy – C1d) to further decreased the concentration of hydrogen sulfide to at least 5 ppm (by volume)
- 4. Enclosed Emergency Flare (**C1c**)
 - a. Minimum Operating Temperature of Combustion Chamber: 1,200°F
 - b. Maximum Fuel Firing Rate: 19,862 sft³/hr
 - c. Maximum Hours of Operation: 600 hrs/yr
 - d. Prior to utilization by the enclosed emergency flare, the biogas shall be conditioned by the Primary Gas Treatment Unit (Scrubber - C1b) to decrease the concentration of hydrogen sulfide to at least 200 ppm (by volume).
 - f. The Permittee may operate the enclosed emergency flare only under the following conditions:
 - i. During startup of the anaerobic digestion system until a sufficient supply of biogas is generated to support the operation of the CHP system.
 - ii. During shutdown of the anaerobic digestion system to prevent the release of biogas into the atmosphere.
 - iii. The CHP system is not operating due to maintenance or other causes such as a major disruption to the anaerobic digestion system resulting in an insufficient supply of biogas to support the operation of the CHP system.
 - g. The CHP system and the enclosed emergency flare may be operated concurrently for a period of time not to exceed 30 minutes.
- 5. The Permittee shall operate and maintain equipment/control equipment as recommended by the manufacturer to ensure that the equipment/control equipment works as designed at all times.
- 6. The Permittee shall institute shutdown of the equipment in the event of a malfunction causing either an emission exceedance or a parameter monitored out of recommended range is not corrected within 60 minutes.
- 7. The Permittee shall not allow at any time the release of biogas into the atmosphere.

PART IV. ALLOWABLE EMISSION LIMITS

The Permittee shall not cause or allow this equipment to exceed the emission limits stated herein at any time.

A. Combined Heat and Power System

1. Criteria Pollutants

Pollutant	lb/hr	TPY
PM	0.10	0.42
PM ₁₀	0.04	0.16
PM _{2.5}	0.04	0.16
SO ₂	0.01	0.06
NO _x	0.37	1.61
VOC	0.22	0.96
CO	0.15	0.64

2. Non-Criteria Pollutant

Pollutant	ppmvd@15% O ₂
Ammonia	5.0

3. Green House Gases (GHG)

Pollutant	lb/hr	TPY
GHG		9,189
CH ₄	7.09	31.0

4. Startup and Shutdown

Pollutant	Startup (lb/hr)	Shutdown (lb/hr)
NO _x	4.04	4.04
CO	8.08	8.08

5. The Permittee is not required to demonstrate compliance with short term emission limits stated herein during the initial shakedown period.
6. **Emissions during the initial shakedown period shall be counted towards the annual emission limits stated above.**
7. The shakedown period shall not be extended beyond the required date for initial performance tests.
8. The Permittee shall minimize emissions during periods of startup and shutdown by the following work practices and time constraints:
 - a. The oxidation catalyst shall not be bypassed during startup or shutdown.
 - b. Startup shall be defined as the period between initial firing of gas in the biogas engine

PART IV. ALLOWABLE EMISSION LIMITS, continued

and the time when the minimum oxidation catalyst temperature is reached.

- c. The duration of startups and shutdowns shall not exceed 60 minutes.

B. Enclosed Emergency Flare

1. Criteria Pollutants

Pollutant	lb/hr	TPY
PM	0.25	0.07
PM ₁₀	0.25	0.07
PM _{2.5}	0.25	0.07
SO ₂	0.65	0.20
NO _x	1.08	0.32
VOC	0.29	0.09
CO	2.71	0.81

2. Green House Gases (GHG)

Pollutant	lb/hr	TPY
GHG		718.4
CH ₄	5.38	1.61

- 3. The Permittee is not required to demonstrate compliance with short term emission limits stated herein during the initial shakedown period.
- 4. **Emissions during the initial shakedown period shall be counted towards the annual emission limits stated above.**
- 5. The shakedown period shall not be extended beyond the required date for initial performance tests.

C. Total Emissions

Pollutant	TPY
PM	0.49
PM ₁₀	0.24
PM _{2.5}	0.24
SO ₂	0.25
NO _x	1.93
VOC	1.05
CO	1.46
GHG	9,907
CH ₄	32.65

D. Hazardous Air Pollutants [STATE ONLY REQUIREMENT]

This equipment shall not cause an exceedance of the applicable Maximum Allowable Stack Concentration (MASC) for any Hazardous Air Pollutant (HAP) emitted and listed in RCSA Section 22a-174-29.

PART IV. ALLOWABLE EMISSION LIMITS, continued

E. Demonstration of compliance with the above emission limits shall be met by calculating the emission rates using the most recent approved stack test results for that pollutant, or if unavailable, emission factors from the following sources:

1. Combined Heat and Power System

PM	9.91 E-03 lb/MMBtu - AP42, Table 3.2-2 Uncontrolled Emission Factors for 4-stroke Lean Burn-Engines, August 2000	
PM ₁₀ /PM _{2.5}	0.01 g/bhp-hr – Manufacturer’s Information	
NO _x	0.9 g/bhp-hr – Manufacturer’s Information	
CO	2.2 g/bhp-hr – Manufacturer’s Information	
VOC	0.4 g/bhp-hr – Manufacturer’s Information	
SO _x	0.83 lb/MMcf - calculated assuming that 100% of H ₂ S in the biogas is converted to SO ₂	
Methane	270.73 lb/MMcf – calculated assuming that 1% of the methane in the biogas pass through the engine uncombusted.	
GHG	CO ₂	1.14 E05 lb/MMcf – calculated adding the CO ₂ in the biogas and the CO ₂ from the combustion of 99% of CH ₄ .
	CH ₄	270.73 lb/MMcf – calculated based on the 99% destruction of CH ₄ in the biogas
	N ₂ O	6.3E-04 kg/MMBtu – 40 CFR Part 98 Subpart C – Table C-2 default emission factor
	CO _{2e}	Emissions assume the following global warming potential from 40 CFR Part 98 Subpart C Table A-1: CO ₂ : 1, CH ₄ : 25, N ₂ O: 298

2. Enclosed Emergency Flare

NO _x	0.08 lbs/MMBtu – San Diego Air Pollution Control District Emission Factors for Digester Gas Fired Enclosed Flares	
CO	0.003 lbs/MMBtu – San Diego Air Pollution Control District Emission Factors for Digester Gas Fired Enclosed Flares	
VOC	15.13 lbs/MMBtu – San Diego Air Pollution Control District Emission Factors for Digester Gas Fired Enclosed Flares	
SO _x	33 lb/MMcf - calculated assuming that 99% of H ₂ S in the biogas is converted to SO ₂	
PM/PM ₁₀ /PM _{2.5}	0.020 lbs/MMBtu- San Diego Air Pollution Control District Emission Factors for Digester Gas Fired Enclosed Flares	
Methane	270.73 lb/MMcf – calculated assuming that 1% of the methane in the biogas pass through the engine uncombusted.	
GHG	CO ₂	1.14 E05 lb/MMcf – calculated adding the CO ₂ in the biogas and the CO ₂ from the combustion of 99% of CH ₄
	CH ₄	270.73 lb/MMcf – calculated based on the 99% destruction of CH ₄ in the biogas
	N ₂ O	6.3E-04 kg/MMBtu – 40 CFR Part 98 Subpart C – Table C-2 default emission factor
	CO _{2e}	Emissions assume the following global warming potential from 40 CFR Part 98 Subpart C Table A-1: CO ₂ : 1, CH ₄ : 25, N ₂ O: 298

The commissioner may require other means (e.g. stack testing) to demonstrate compliance with the above emission limits, as allowed by state or federal statute, law or regulation.

F. Opacity

The CHP system or the enclosed emergency flare shall not exceed 10% opacity during any six minute block average as measured by 40 CFR Part 60, Appendix A, Reference Method 9.

PART V. MONITORING, RECORD KEEPING AND REPORTING REQUIREMENTS

A. Monitoring

1. Anaerobic Digestion System (U1b)

- a. The Permittee shall continuously monitor the production of biogas from the Anaerobic Digestion System.

2. Combined Heat and Power System (U1c)

- a. The Permittee shall use an individual non-resettable totalizing fuel meter devices to monitor biogas fuel fed to the CHP system and the enclosed emergency flare.
- b. The Permittee shall continuously monitor the methane content (in percentage of biogas by volume) of the biogas going to CHP system and the enclosed emergency flare.
- c. The Permittee shall continuously monitor the oxidation catalyst inlet temperature (°F) and pressure drop (inches of water) across the catalyst bed. The Permittee shall maintain these parameters within the range recommended by the manufacturer to achieve compliance with the emission limits in this permit.
- d. The Permittee shall continuously monitor the combustion chamber temperature of the enclosed emergency flare when in operation. The Permittee shall maintain this parameter within the range recommended by the manufacturer to achieve compliance with the emission limits in this permit.

B. Record Keeping

1. Receiving Operation (U1a)

- a. The Permittee shall make and keep daily and annual records of the type and quantity of waste brought to the Receiving Operation (U1a).
- b. The Permittee shall make and keep records of the feedstock output from the Receiving Operation (U1a) that goes into the Reception Tank from the Anaerobic Digestion System (U1b).

2. Anaerobic Digestion System (U1b)

- a. The Permittee shall make and keep daily records of the following parameters from the Anaerobic Digestion System (U1b):
 - i. Feedstock output from the Reception Tank into the TAR;
 - ii. Digestate output from the AMTD into the Digestate Holding Tank;
 - iii. Biogas produced in the TAR and AMTD, as measured by changes in the volume of biogas stored in the Biogas Holding Tank;
 - iv. Biogas stored in the Biogas Holding Tank;
 - v. Solids recovered as an organic fertilizer;
 - vi. Liquids sent to the waste water system before discharge to the Town of Southington Waste Water Collection System.
- b. The Permittee shall continuously make and keep records of the biogas fed to the Primary Gas Treatment Unit (C1b) – Scrubber.

PART V. MONITORING, RECORD KEEPING AND REPORTING REQUIREMENTS, continued

- c. The Permittee shall make and keep records of all written recommendations and specifications from the manufacturer for proper operation of the equipment.

3. Enclosed Emergency Flare (C1c)

- a. The Permittee shall calculate and record the monthly and consecutive 12 month PM, PM₁₀, PM_{2.5}, SO₂, NO_x, VOC, CO, methane and GHG emissions in units of tons. The consecutive 12 month emissions shall be determined by adding (for each pollutant) the current month's emissions to that of the previous 11 months. Such records shall include a sample calculation for each pollutant. The Permittee shall make these calculations within 30 days of the end of the previous month.
- b. The Permittee shall continuously record the methane content (in percentage of biogas by volume) of the biogas going to the enclosed emergency flare.
- c. The Permittee shall make and keep records of the inspection of the Primary Gas Treatment Unit and enclosed emergency flare:
 - i. The name of the person conducting the inspection;
 - ii. The date of the inspection;
 - iii. The results, recommendations and actions taken during the inspection; and
 - iv. The date the adsorbent for the scrubber and biofilter system are replaced (if applicable).
- d. The Permittee shall make and keep records of the dates, times and an explanation of the circumstances that triggered the operation of the enclosed emergency flare.
- e. The Permittee shall continuously make and keep records of the temperature of the combustion chamber when the emergency flare is in operation. The Permittee shall maintain this parameter within the range recommended by the manufacturer to achieve compliance with the emission limits in this permit.
- f. The Permittee shall make and keep records of all written recommendations and specifications from the manufacturer for proper operation of the equipment.

4. Combined Heat and Power System (U1c)

- a. The Permittee shall continuously make and keep records of the biogas fed to the Secondary Gas Treatment Unit (C1d) – Iodine-Impregnated, Pelletized Activated Carbon Unit.
- b. The Permittee shall keep records for the CHP system and enclosed emergency flare of monthly and consecutive 12 month biogas consumption. The consecutive 12 month biogas consumption shall be determined by adding the current month's biogas consumption to that of the previous 11 months. The Permittee shall make these calculations within 30 days of the end of the previous month.

PART V. MONITORING, RECORD KEEPING AND REPORTING REQUIREMENTS, continued

- c. The Permittee shall calculate and record the monthly and consecutive 12 month PM, PM₁₀, PM_{2.5}, SO₂, NO_x, VOC, CO, methane and GHG emissions in units of tons. The consecutive 12 month emissions shall be determined by adding (for each pollutant) the current month's emissions to that of the previous 11 months. Such records shall include a sample calculation for each pollutant. The Permittee shall make these calculations within 30 days of the end of the previous month.
 - d. The Permittee shall make and keep records of the inspection of the Secondary Gas Treatment Units, CHP system, SCR/Ammonia Slip Catalyst and oxidation catalyst. The records shall include:
 - i. The name of the person conducting the inspection;
 - ii. The date of the inspection; and
 - iii. The results, recommendations and actions taken during the inspection
 - e. The Permittee shall continuously record the methane content (in percentage of biogas by volume) of the biogas going to the CHP system.
5. The Permittee shall make and keep records of all written recommendations and specifications from the manufacturer for proper operation of the equipment.
 6. The Permittee shall make and keep records of emission stack test results, date testing was performed and Department approval/review.
 7. The Permittee shall make and keep records of the occurrence and duration of any startup, shutdown or malfunction of the equipment/air pollution control equipment. Such records shall contain the following information:
 - a. Type of event (startup, shutdown or malfunction)
 - b. Equipment affected;
 - c. Date of event;
 - d. Duration of event (minutes); and
 - e. Total emissions of NO_x and CO emitted (lb/time) during the event.
 8. The Permittee shall keep all records required by this permit for a period of no less than five years and shall submit such records to the commissioner upon request.

C. Reporting

1. The Permittee shall submit a copy of the extension of the lease with the Town of Southington for the 19.33 acres of land which are included as part of this premises a year before the expiration of such lease or an application to modify this permit without such lease showing compliance with the regulations applicable at that time. The current lease expires on June 12, 2033.
2. The Permittee shall notify the commissioner in writing of any exceedance of an operating parameter, and shall identify the cause or likely cause of such exceedance, all corrective actions and preventive measures taken with respect thereto, and the dates of such actions and measures as follows:
 - a. For any hazardous air pollutant, no later than 24 hours after such exceedance commenced; and

PART V. MONITORING, RECORD KEEPING AND REPORTING REQUIREMENTS, continued

- b. For any other regulated air pollutant or operating parameter, no later than ten days after such exceedance commenced.
3. The Permittee shall notify the commissioner, in writing, of the dates of commencement of construction and the date of initial startup of this equipment. Such written notifications shall be submitted no later than 30 days after the subject event.
4. The Permittee shall submit the above notifications to the Supervisor of the Compliance Analysis & Coordination Unit, Enforcement Section, Bureau of Air Management; Department of Energy and Environmental Protection; 79 Elm Street, 5th Floor; Hartford, Connecticut 06106-5127.

PART VI. STACK EMISSION TEST REQUIREMENTS

Stack emission testing shall be performed in accordance with the [Emission Test Guidelines](#) available on the DEEP website.

A. CHP system

Initial stack testing shall be required for the following pollutant(s):

PM PM₁₀ PM_{2.5} SO₂ NO_x CO Methane
 HAPs: Hydrogen Sulfide, Formaldehyde and Acrolein

1. The Permittee shall conduct initial stack testing within 60 days of achieving the maximum production rate, but not later than 180 days after initial startup. The Permittee shall submit test results within 60 days after completion of testing.
2. The Permittee shall conduct the initial stack testing at not less than 90% of the nameplate electrical output of the biogas engine.
3. During the initial performance test, the Permittee shall verify the startup and shutdown emission limits for NO_x and CO, along with durations of startups and shutdowns.
4. The Permittee shall conduct recurrent stack testing for NO_x, CO, Hydrogen Sulfide, Formaldehyde and Acrolein within five years from the date of the previous stack test.

B. Enclosed Emergency Flare

1. The Permittee shall conduct stack testing within 60 days of the initial startup of the enclosed emergency flare, but no later than 180 days after initial startup of the CHP system.
2. The Permittee shall conduct initial stack testing to determine compliance with the minimum destruction efficiency of 99% for Methane.

C. Stack test results shall be reported as follows: all pollutants in units of lb/hr, HAPs in units of µg/m³, efficiencies in percent.

D. Recurrent testing shall be representative of typical maximum historical electrical load for the biogas engine, digester gas for the flare and operating history of the units since the last performance test.

PART VII. OPERATION AND MAINTENANCE REQUIREMENTS

- A.** The Permittee shall operate and maintain this equipment in accordance with the manufacturer's specifications and written recommendations.
- B.** The Permittee shall properly operate the control equipment at all times that this equipment is in operation and emitting air pollutants.

PART VIII. SPECIAL REQUIREMENTS

- A.** The Permittee shall comply with all applicable sections of the following New Source Performance Standard(s) at all times.

Title 40 CFR Part 60, Subpart A and JJJJ – Standards for Performance for Stationary Spark Ignition Internal Combustion Engines

Copies of the Code of Federal Regulations (CFR) are available online at the U.S. Government Printing Office website.

- B.** The Permittee shall not cause or permit the emission of any substance or combination of substances which creates or contributes to an odor beyond the property boundary of the premises that constitutes a nuisance as set forth in RCSA Section 22a-174-23. [STATE ONLY REQUIREMENT]
- C.** The Permittee shall operate this facility at all times in a manner so as not to violate or contribute significantly to the violation of any applicable state noise control regulations, as set forth in RCSA Sections 22a-69-1 through 22a-69-7.4. [STATE ONLY REQUIREMENT]

PART IX. ADDITIONAL TERMS AND CONDITIONS

- A.** This permit does not relieve the Permittee of the responsibility to conduct, maintain and operate the regulated activity in compliance with all applicable requirements of any federal, municipal or other state agency. Nothing in this permit shall relieve the Permittee of other obligations under applicable federal, state and local law.
- B.** Any representative of the DEEP may enter the Permittee's site in accordance with constitutional limitations at all reasonable times without prior notice, for the purposes of inspecting, monitoring and enforcing the terms and conditions of this permit and applicable state law.
- C.** This permit may be revoked, suspended, modified or transferred in accordance with applicable law.
- D.** This permit is subject to and in no way derogates from any present or future property rights or other rights or powers of the State of Connecticut and conveys no property rights in real estate or material, nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the facility or regulated activity affected thereby. This permit shall neither create nor affect any rights of persons of municipalities who are not parties to this permit.

PART IX. ADDITIONAL TERMS AND CONDITIONS, continued

- E.** Any document, including any notice, which is required to be submitted to the commissioner under this permit shall be signed by a duly authorized representative of the Permittee and by the person who is responsible for actually preparing such document, each of whom shall certify in writing as follows: "I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that any false statement made in the submitted information may be punishable as a criminal offense under Section 22a-175 of the Connecticut General Statutes, under Section 53a-157b of the Connecticut General Statutes, and in accordance with any applicable statute."
- F.** Nothing in this permit shall affect the commissioner's authority to institute any proceeding or take any other action to prevent or abate violations of law, prevent or abate pollution, recover costs and natural resource damages, and to impose penalties for violations of law, including but not limited to violations of this or any other permit issued to the Permittee by the commissioner.
- G.** Within 15 days of the date the Permittee becomes aware of a change in any information submitted to the commissioner under this permit, or that any such information was inaccurate or misleading or that any relevant information was omitted, the Permittee shall submit the correct or omitted information to the commissioner.
- H.** The date of submission to the commissioner of any document required by this permit shall be the date such document is received by the commissioner. The date of any notice by the commissioner under this permit, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three days after it is mailed by the commissioner, whichever is earlier. Except as otherwise specified in this permit, the word "day" means calendar day.
Any document or action which is required by this permit to be submitted or performed by a date which falls on a Saturday, Sunday or legal holiday shall be submitted or performed by the next business day thereafter.
- I.** Any document required to be submitted to the commissioner under this permit shall, unless otherwise specified in writing by the commissioner, be directed to: Office of Director; Engineering & Enforcement Division; Bureau of Air Management; Department of Energy and Environmental Protection; 79 Elm Street, 5th Floor; Hartford, Connecticut 06106-5127.