AMERESCO
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111 Speen St, Ste 410
Framingham, MA 01701
P: (508) 661-2200
ameresco.com

August 22, 2023

Mr. Zachary Bittner, P.E.
Environmental Engineer Supervisor
Combustion Section
Division for Air Quality
300 Sower Blvd
Frankfort, KY 40601

RE: Title V Air Permit – Form 7007AI
Ameresco Benson Valley RNG LLC – Frankfort, Kentucky
Air Quality Permit ID No. F-21-028
Agency Interest #: 167923
Activity ID: APE20210002
Source ID: 21-073-00112

Dear Mr. Bittner:

Ameresco Benson Valley RNG LLC (Ameresco) is submitting to the Kentucky Department of Environmental Protection (KDEP) completed form 7007AI in order for KDEP to issue a Title V Air Operating Permit for the Ameresco facility located in Frankfort. Ameresco understands that Ameresco will be issued an individual Title V permit separate from the Benson Valley Landfill, and that the Ameresco facility will maintain minor source status. Ameresco understands that Ameresco will not be responsible for any compliance obligations in the Benson Valley's Landfill's separate Title V permit, and that Ameresco and the Landfill will have no shared compliance requirements or limitations. Ameresco understands that no further submittal beyond this form is necessary to process and issue the Title V permit for the Ameresco facility.

Thank you for your time and attention to this matter. Should you have any questions or desire additional information, please contact Stevia Smith at (704) 989-2023 or smiths@ameresco.com.

Respectfully submitted,

Mr. Nathan Hall, Sr. Vice President – Asset Operations
Authorized Representative
Ameresco Benson Valley RNG LLC

cc: Ms. Stacie Daniels – KYDEP
Ms. Stephanie Burberry – KYDEP
Mr. William Slack – Ameresco
Ms. Stevia Smith – Ameresco

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

DEP7007AI

Administrative Information

___ Section AI.1: Source Information

___ Section AI.2: Applicant Information

___ Section AI.3: Owner Information

___ Section AI.4: Type of Application

___ Section AI.5: Other Required Information

___ Section AI.6: Signature Block

___ Section AI.7: Notes, Comments, and Explanations

Additional Documentation

___ Additional Documentation attached

Source Name: **Ameresco Benson Valley RNG LLC**

KY EIS (AFS) #: **21- 073-00112**

Permit #: **F-21-028**

Agency Interest (AI) ID: **167923**

Date: **9/22/2023**

Section AI.1: Source Information

Physical Location Address:	**Street:**	2157 Highway 151				
	City:	Frankfort	**County:**	Franklin	**Zip Code:**	40601
Mailing Address:	**Street or P.O. Box:**	111 Speen Street, Suite 410				
	City:	Framingham	**State:**	MA	**Zip Code:**	01701

Standard Coordinates for Source Physical Location

Longitude: -84.986345 (decimal degrees) **Latitude:** 38.135686 (decimal degrees)

Primary (NAICS) Category: Natural Gas Distribution **Primary NAICS #:** 221210

Classification (SIC) Category: Mixed, Manufactured, or Liquefied Petroleum Gas Production **Primary SIC #:** 4925

Briefly discuss the type of business conducted at this site: Convert landfill gas into renewable natural gas (RNG) for sale and injection into gas pipeline.

Description of Area Surrounding Source: ☑ Rural Area ☐ Industrial Park ☑ Residential Area ☐ Urban Area ☐ Industrial Area ☐ Commercial Area

Is any part of the source located on federal land? ☐ Yes ☑ No

Number of Employees: 4

Approximate distance to nearest residence or commercial property: 400

Property Area: 1.65 acres

Is this source portable? ☐ Yes ☑ No

What other environmental permits or registrations does this source currently hold or need to obtain in Kentucky?

NPDES/KPDES:	☐ Currently Hold	☐ Need	☑ N/A
Solid Waste:	☐ Currently Hold	☐ Need	☑ N/A
RCRA:	☐ Currently Hold	☐ Need	☑ N/A
UST:	☐ Currently Hold	☐ Need	☑ N/A

Type of Regulated Waste Activity: ☐ Mixed Waste Generator ☐ Generator ☐ Recycler ☐ Other: _____ ☐ U.S. Importer of Hazardous Waste ☐ Transporter ☐ Treatment/Storage/Disposal Facility ☑ N/A

Section AI.2: Applicant Information

Applicant Name: Ameresco Benson Valley RNG LLC

Title: (if individual)

Mailing Address: **Street or P.O. Box:** 111 Speen St., Suite 410

City: Framingham **State:** MA **Zip Code:** 01701

Email: (if individual)

Phone: 508-598-4386

Technical Contact

Name: Stevia Smith

Title: Manager - RNG Compliance

Mailing Address: **Street or P.O. Box:** 111 Speen Street, Suite 410

City: Framingham **State:** MA **Zip Code:** 01701

Email: smiths@ameresco.com

Phone: 508-598-4386

Air Permit Contact for Source

Name: Stevia Smith

Title: Manager - RNG Compliance

Mailing Address: **Street or P.O. Box:** 111 Speen Street, Suite 410

City: Framingham **State:** MA **Zip Code:** 01701

Email: smiths@ameresco.com

Phone: 508-598-4386

Section AI.3: Owner Information

☑ **Owner same as applicant**

Name: Ameresco Benson Valley RNG LLC

Title:

Mailing Address: **Street or P.O. Box:** 111 Speen Street, Suite 410

City: Framingham **State:** MA **Zip Code:** 01701

Email: smiths@ameresco.com

Phone: 508-598-4386

List names of owners and officers of the company who have an interest in the company of 5% or more.

Name	Position
George Sakellaris	Chairman, President, and Chief Executive Officer

Section AI.4: Type of Application

Current Status: ☐ Title V ☑ Conditional Major ☐ State-Origin ☐ General Permit ☐ Registration ☐ None

Requested Action: *(check all that apply)*

☐ Name Change	☐ Initial Registration	☐ Significant Revision	☐ Administrative Permit Amendment
☐ Renewal Permit	☐ Revised Registration	☐ Minor Revision	☑ Initial Source-wide OperatingPermit
☐ 502(b)(10)Change	☐ Extension Request	☐ Addition of New Facility	☐ Portable Plant Relocation Notice
☐ Revision	☐ Off Permit Change	☐ Landfill Alternate Compliance Submittal	☐ Modification of Existing Facilities
☐ Ownership Change	☐ Closure		

Requested Status: ☑ Title V ☐ Conditional Major ☐ State-Origin ☐ PSD ☐ NSR ☐ Other: _____

Is the source requesting a limitation of potential emissions? ☑ Yes ☐ No

Pollutant:	Requested Limit:	Pollutant:	Requested Limit:
☑ Particulate Matter	<100 tons/12 months	☑ Single HAP	<10 tons/12 months
☑ Volatile Organic Compounds (VOC)	90 tons/12-months	☑ Combined HAPs	22.5 tons/12 months
☑ Carbon Monoxide	<100 tons/12-months	☐ Air Toxics (40 CFR 68, Subpart F)	
☑ Nitrogen Oxides	<100 tons/12 months	☐ Carbon Dioxide	
☑ Sulfur Dioxide	<100 tons/12 months	☐ Greenhouse Gases (GHG)	
☐ Lead		☐ Other	

For New Construction:

Proposed Start Date of Construction: *(MM YYYY)* 07/2022 **Proposed Operation Start-Up Date:** *(MM YYYY)* 08/2023

For Modifications:

Proposed Start Date of Modification: *(MM YYYY)* _____ **Proposed Operation Start-Up Date:** *(MM YYYY)* _____

Applicant is seeking coverage under a permit shield. ☐ Yes ☑ No **Identify any non-applicable requirements for which permit shield is sought on a separate attachment to the application.**

Section AI.5 Other Required Information

Indicate the documents attached as part of this application:

☐ DEP7007A Indirect Heat Exchangers and Turbines	☐ DEP7007CC Compliance Certification
☐ DEP7007B Manufacturing or Processing Operations	☐ DEP7007DD Insignificant Activities
☐ DEP7007C Incinerators and Waste Burners	☐ DEP7007EE Internal Combustion Engines
☐ DEP7007F Episode Standby Plan	☐ DEP7007FF Secondary Aluminum Processing
☐ DEP7007J Volatile Liquid Storage	☐ DEP7007GG Control Equipment
☐ DEP7007K Surface Coating or Printing Operations	☐ DEP7007HH Haul Roads
☐ DEP7007L Mineral Processes	☐ Confidentiality Claim
☐ DEP7007M Metal Cleaning Degreasers	☐ Ownership Change Form
☐ DEP7007N Source Emissions Profile	☐ Secretary of State Certificate
☐ DEP7007P Perchloroethylene Dry Cleaning Systems	☐ Flowcharts or diagrams depicting process
☐ DEP7007R Emission Offset Credit	☐ Digital Line Graphs (DLG) files of buildings, roads, etc.
☐ DEP7007S Service Stations	☐ Site Map
☐ DEP7007T Metal Plating and Surface Treatment Operations	☐ Map or drawing depicting location of facility
☐ DEP7007V Applicable Requirements and Compliance Activities	☐ Safety Data Sheet (SDS)
☐ DEP7007Y Good Engineering Practice and Stack Height Determination	☐ Emergency Response Plan
☐ DEP7007AA Compliance Schedule for Non-complying Emission Units	☐ Other: _____
☐ DEP7007BB Certified Progress Report	

Section AI.6: Signature Block

I, the undersigned, hereby certify under penalty of law, that I am a responsible official*, and that I have personally examined, and am familiar with, the information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the information is on knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false or incomplete information, including the possibility of fine or imprisonment.

Authorized Signature — Date: 9/22/2023

Nathan Hall — Type or Printed Name of Signatory

Senior Vice President - Asset Operations — Title of Signatory

*Responsible official as defined by 401 KAR 52:001.

Section AI.7: Notes, Comments, and Explanations
Per KDEP instruction, Ameresco is submitting this form in order for KDEP to issue a Title V Air Operating Permit for Ameresco Benson Valley RNG LLC. Ameresco understands that Ameresco Benson Valley RNG LLC will be issued an individual Title V permit separate from the Benson Valley Landfill, and that the Ameresco facility will maintain minor source status. Ameresco understands that Ameresco will
not be responsible for any compliance obligations in the Benson Valley's Landfill's separate Title V permit, and that Ameresco and the Landfill will have no shared compliance requirements or limitations. Ameresco understands that no further submittal beyond this form is necessary to process and issue the Title V permit for the Ameresco facility.

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Framingham, MA 01701
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April 25, 2023

Mr. Zachary Bittner, P.E.
Environmental Engineer Supervisor
Combustion Section
Division for Air Quality
300 Sower Blvd
Frankfort, KY 40601

RE: Air Quality Permit Modification Application – Emergency Diesel Generator
Ameresco Benson Valley RNG LLC – Frankfort, Kentucky
Air Quality Permit ID No. F-21-028
Off-Permit Change Approved 8/10/2022
Agency Interest #: 167923
Activity ID: APE20210002
Source ID: 21-073-00112

Dear Mr. Bittner:

Ameresco Benson Valley RNG LLC (Ameresco) is submitting to the Kentucky Department of Environmental Protection (KDEP) this Air Quality Permit Modification Application (Application) for the Ameresco facility which holds Air Quality Permit ID F-21-028 issued November 7, 2021. Ameresco's air permit grants permission to construct and operate a renewable natural gas (RNG) facility which processes and treats landfill gas to meet pipeline-quality gas standards for injection into a natural gas transmission pipeline. The RNG plant includes a thermal oxidizer and an open flare. This Application seeks to add an emergency diesel engine generator to the Ameresco Air Permit.

As detailed in the attached Application, Ameresco understands that the generator addition constitutes a minor change and that there will be no alteration to the permitted emissions limitations contained in Ameresco's existing Air Permit ID F-21-028. The project potential emissions are still within the Conditional Major / Synthetic Minor limits of the air permit. This addition does trigger applicability of some additional regulations applicable to the generator, therefore revision to the permit is needed.

This Application also seeks to incorporate the Off-Permit Change approved for the Ameresco Air Permit on August 10, 2022. Thank you for your time and attention in processing this Application. Ameresco requests that you please issue a written completeness determination for this Application. Should you have any questions or desire additional information, please contact Stevia Smith at (704) 989-2023 or smiths@ameresco.com.

Respectfully submitted,

Mr. Nathan Hall
Sr. Vice President – Asset Operations
Ameresco, Inc.

cc: Ms. Stacie Daniels – KYDEP
Ms. Stephanie Burberry – KYDEP
Mr. William Slack – Ameresco
Ms. Stevia Smith – Ameresco

AIR QUALITY PERMIT MODIFICATION APPLICATION

AMERESCO BENSON VALLEY RNG LLC
2157 HIGHWAY 151
FRANKFORT, KENTUCKY 40601

Prepared by:

Ameresco Benson Valley RNG LLC
111 Speen Street, Suite 410
Framingham, Massachusetts 01701

Submitted to:

Kentucky Department of Environmental Protection
Division for Air Quality
300 Sower Boulevard
Frankfort, Kentucky 40601

April 25, 2023

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1.0 EXECUTIVE SUMMARY

1.1 BACKGROUND AND APPLICATION PURPOSE

Ameresco Benson Valley RNG LLC (Ameresco) is in the process of installing a renewable natural gas (RNG) processing facility which will receive landfill gas from the Benson Valley Landfill and process it into renewable natural gas (RNG) which will be piped to a metering station and injected into a natural gas pipeline. The RNG will be distributed and consumed as a useful fuel source, thereby reducing use of fossil-based natural gas.

Operation of the Ameresco facility will result in significantly less landfill gas burned in the Landfill flare(s), and will therefore reduce pollutant emissions to the atmosphere. As a result, the project will provide significant public benefits that are consistent with the goals, directives, and policies of the KDEP. The environmental benefits of this type of RNG project have been proven by operation of several existing Ameresco RNG facilities the United States, and will be further demonstrated and broadened with operation of this new facility.

Waste gases from the Ameresco gas treatment process will be combusted in a thermal oxidizer and open flare. The new Ameresco facility will operate continuously with occasional downtime for maintenance. Ameresco Benson Valley RNG LLC is the legal owner, operator and permittee for the new facility. Ameresco, Inc. is the parent company of Ameresco Benson Valley RNG LLC.

This Application is being submitted to add a backup emergency diesel generator to the Ameresco existing Air Quality Permit ID F-21-028. Ameresco understands that the generator addition constitutes a minor change and that there will be no alteration to the permitted emissions limitations contained in Ameresco's Air Permit. The project potential emissions are still within the Conditional Major / Synthetic Minor limits of the air permit. While the potential emissions from the engine generator are insignificant, this addition triggers applicability of Federal NSPS and NESHAP regulations applicable to the generator, therefore revision to the permit is needed.

This Application also seeks to incorporate the Air Permit Off-Permit Change which Ameresco applied for on July 12, 2022 and which was approved on August 10, 2022 (see approval included in Section 8.0).

1.2 GAS TREATMENT PROCESS

1.2.1 LFG Conditioning and Pre-Processing

The RNG feed blowers will take suction from the existing LFG blowers at approximately 1 psig and raise the pressure to approximately 10 psig. From the existing feed blowers, the LFG will be dehydrated and filtered before entering a fixed bed hydrogen sulfide (H2S) scrubber unit utilizing activated carbon media. H2S levels in the gas will decrease to a maximum of 20 ppm (average of 4 ppm). From the H2S scrubber the gas will be further dehydrated to approximately 50-degree dew point. This partially processed renewable natural gas (PPRNG) will then either be sent to the feed compressors or used as supplemental fuel in the thermal oxidizer or as continuous pilot fuel in the thermal oxidizer.

This process will provide the required treatment of the collected landfill gas sent to the RNG plant to meet the requirements of 40 CFR 60.752(b)(2)(iii)(C) including compression, dewatering, and filtration. All gas delivered to the plant combustion devices will be NSPS post-treated landfill gas (either PPRNG, off-spec RNG, or treatment off-gas) that has already met the NSPS requirements for the treatment of landfill gas. No untreated gas will be combusted in the proposed Ameresco TOX or Open Flare.

1.2.2 Feed Compression & Dehydration

The feed compressors will increase the LFG pressure to approximately 250 psig using oil flooded screw compressors. The compressed gas will then be cooled to approximately 80-degree Fahrenheit prior to it being sent to the gas separation equipment.

1.2.3 Gas Separation Process

Volatile organic compounds (VOC), non-methane organic compounds (NMOCs) and siloxane compounds will be removed from the gas stream using a VOC removal system using pressure swing adsorption technology (PSA). The conditioned gas will then be sent to a carbon dioxide (CO2) separation system (PSA system) to remove CO2 from the gas. From the CO2 separation system, the gas is sent to a PSA nitrogen (N2) rejection unit (NRU) to remove N2 and some amounts of oxygen (O2) remaining in the gas. The gas will be further conditioned to remove the remaining O2 by using a catalytic oxidation process in a Deoxo system. Gas leaving the Deoxo system will be dehydrated utilizing a TSA system. The TSA will have closed-loop regeneration and therefore will not be required to vent off-gases.

1.2.4 Product Compression

After impurities are removed, the gas is sent to a product compressor where it is pressurized to meet pipeline pressure requirements, filtered, and cooled before delivery to a utility gas transmission line. At the utility metering station, the gas will be metered and analyzed prior to entry into the utility gas line. The gas leaving the product compressor will be odorized before being sent to the pipeline.

Section 5.0 contains a process flow diagram depicting the new facility operating process.

1.3 THERMAL OXIDIZER

Waste gas (tail gas or off gas) from the process will be sent to a Thermal Oxidizer (TOX) for destruction. The waste gas streams come from the following process equipment: VOC removal system, CO2 separation system, and NRU. From the VOC separation system, siloxanes and hydrocarbon compounds present in the PPRNG are removed from the process during regeneration of the adsorption vessels and are sent to the TOX for destruction. From the CO2 removal system, waste gases containing primarily CO2 and small amounts of methane (CH4), O2 and N2 are sent to the TOX for destruction. From the NRU, waste gas containing N2, and small amounts of CH4 and O2, are sent to the TOX for destruction.

1.4 OPEN FLARE

A candlestick flare will be used for destruction of waste gases generated during start-up, process upset conditions and for purging of gas from process equipment and pipelines. The five (5) possible flare streams are summarized below.

Waste (Off-spec) Gas Stream 1 is generated during periods of startup and shutdown when the product pipeline purge and depress operations are initiated.

Waste (Off-spec) Gas Stream 2 results from intermittent upset conditions which may occur during the polymeric membrane gas separation process, which removes O2 and CO2 from the biogas stream.

Waste (Off-spec) Gas Stream 3 is generated during the startup of the N2 rejection unit.

Waste (Off-spec) Gas Stream 4 results from intermittent upset conditions which may occur during the product pipeline purge process.

Waste Gas Stream 5 is excess PPRNG, which has been subject to the primary treatment phase, making it "partially processed".

1.5 CONDENSATE TANK

LFG supplied to the blower feed station will be saturated with water and any cooling below the water dew point will result in condensate forming. Condensate will be collected from the various points in the process and sent to a condensate tank. Condensate traps, condensate seal tanks or loop seals will be used to prevent LFG from entering the condensate system. The collected condensate from the RNG plant is then pumped to the Landfill's condensate system for disposal.

1.6 BACKUP / EMERGENCY DIESEL GENERATOR

Ameresco intends to install a 250-kW diesel-fueled Caterpillar Model D250GC engine generator to be used for backup and emergency purposes at the facility. The potential emissions from the engine generator will be insignificant, as shown in Section 4.0. The stationary compression ignition internal combustion engine is subject to Federal NSPS 40 CFR 60 Subpart IIII as well as NESHAP 40 CFR 63 Subpart ZZZZ, therefore the requirements of these regulations must be incorporated into the facility's air permit.

1.7 FACILITY CONTACTS

The facility contacts relevant to this application are as follows:

Responsible Official:
Mr. Harold Stewart
Director – Plant Operations
111 Speen Street, Suite 410
Framingham, MA 01701
(847) 463-0628

Application and Compliance Contacts:
Mr. Richard Peary
Compliance Director
111 Speen Street, Suite 410
Framingham, MA 01701
(508) 598-3076

Ms. Stevia Smith
Manager – RNG Compliance
111 Speen Street, Suite 410
Framingham, MA 01701
(508) 598-4386

1.4 POTENTIAL EMISSIONS SUMMARY

As presented in Section 4.0 of this application, Ameresco has calculated the potential emissions from the new Ameresco facility as follows:

Table. 1.4.1 Ameresco Facility Potential Emissions

Pollutant	lb/hr	lb/day	lb/yr	ton/yr
NOx	5.81	139.41	32,586.83	16.29
CO	16.38	393.21	139,559.51	69.78
VOC	3.70	88.88	31,450.66	15.73
PM/PM10/PM2.5	2.05	49.29	17,057.00	8.53
SOx	1.90	45.68	16,674.91	8.34
HAPs	0.97	23.23	8,477.42	4.24

2.0 REGULATORY REVIEW

2.1 NSPS AND NESHAP APPLICABILITY

The Benson Valley Landfill is subject to regulatory requirements of federal New Source Performance Standards for Municipal Solid Waste Landfills (40 CFR Part 60 subpart WWW) and National Emissions Standards for Hazardous Air Pollutants (40 CFR 63 subpart AAAA). Based on previous determinations issued by EPA, equipment that uses or combusts the treated gas is not subject to 40 CFR Part 60 subpart WWW. The RNG plant gas treatment equipment will function to treat the gas (on the behalf of Benson Valley) for subsequent sale or use in accordance with 40 CFR 60.752(b)(2)(iii)(c) and 40 CFR 63.1959(b)(2)(iii)(C). Combustion of treated gas, including waste gas in the TOX and flaring of off-spec gas by Ameresco, are exempt from NSPS Subpart WWW and NESHAP Subpart AAAA as this occurs after treatment of the LFG.

The emergency stationary compression ignition internal combustion engine generator being applied for is subject to Federal NSPS 40 CFR 60 Subpart IIII as well as NESHAP 40 CFR 63 Subpart ZZZZ. The generator manufacturer specifications are included in Section 7.0.

2.1 TITLE V

Title V is a Federal program designed to standardize air quality permits and the permitting process for major sources of emissions. The name "Title V" comes from Title V of the 1990 federal Clean Air Act Amendments which required that the U.S. Environmental Protection Agency (EPA) establish a national operating permit program. Accordingly, EPA adopted regulations [Title 40 of the Code of Federal Regulations, Chapter 1, Part 70 (Part 70)], which required states and local permitting authorities to develop and submit a federally enforceable operating permit programs for EPA approval. Maximum potential emissions from the Ameresco facility are below Title V permit limits. Potential emissions from the Ameresco facility have been calculated assuming unrestricted operating hours (8,760/yr) and the maximum potential gas inlet flow to the plant.

2.2 PREVENTION OF SIGNIFICANT DETERIORATION (PSD)

The Prevention of Significant Deterioration (PSD) air quality regulations apply to construction of a new major stationary source or a project at an existing major stationary source. The planned Ameresco facility is not a major stationary source as it does not have the potential to emit 250 tons per year or more of a regulated new source review pollutant. Therefore, the PSD requirements do not apply to the planned project.

3.0 KDEP FORMS

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

DEP7007AI

Administrative Information

___ Section AI.1: Source Information

___ Section AI.2: Applicant Information

___ Section AI.3: Owner Information

___ Section AI.4: Type of Application

___ Section AI.5: Other Required Information

___ Section AI.6: Signature Block

___ Section AI.7: Notes, Comments, and Explanations

Additional Documentation

___ Additional Documentation attached

Source Name: **Ameresco Benson Valley RNG LLC**

KY EIS (AFS) #: **21- 073-00112**

Permit #: **F-21-028**

Agency Interest (AI) ID: **167923**

Date: **4/25/2023**

Section AI.1: Source Information

Physical Location Address:	**Street:**	2157 Highway 151				
	City:	Frankfort	**County:**	Franklin	**Zip Code:**	40601
Mailing Address:	**Street or P.O. Box:**	111 Speen Street, Suite 410				
	City:	Framingham	**State:**	MA	**Zip Code:**	01701

Standard Coordinates for Source Physical Location

Longitude: -84.986345 (decimal degrees) **Latitude:** 38.135686 (decimal degrees)

Primary (NAICS) Category: Natural Gas Distribution **Primary NAICS #:** 221210

Classification (SIC) Category: Mixed, Manufactured, or Liquefied Petroleum Gas Production **Primary SIC #:** 4925

Briefly discuss the type of business conducted at this site: Convert landfill gas into renewable natural gas (RNG) for sale and injection into gas pipeline.

Description of Area Surrounding Source: ☑ Rural Area ☐ Industrial Park ☑ Residential Area ☐ Urban Area ☐ Industrial Area ☐ Commercial Area

Is any part of the source located on federal land? ☐ Yes ☑ No

Number of Employees: 4

Approximate distance to nearest residence or commercial property: 400

Property Area: 1.65 acres

Is this source portable? ☐ Yes ☑ No

What other environmental permits or registrations does this source currently hold or need to obtain in Kentucky?

NPDES/KPDES:	☐ Currently Hold	☐ Need	☑ N/A
Solid Waste:	☐ Currently Hold	☐ Need	☑ N/A
RCRA:	☐ Currently Hold	☐ Need	☑ N/A
UST:	☐ Currently Hold	☐ Need	☑ N/A

Type of Regulated Waste Activity: ☐ Mixed Waste Generator ☐ Generator ☐ Recycler ☐ Other: _____ ☐ U.S. Importer of Hazardous Waste ☐ Transporter ☐ Treatment/Storage/Disposal Facility ☑ N/A

Section AI.2: Applicant Information

Applicant Name: Ameresco Benson Valley RNG LLC

Title: (if individual)

Mailing Address: **Street or P.O. Box:** 111 Speen St., Suite 410

City: Framingham **State:** MA **Zip Code:** 01701

Email: (if individual)

Phone: 508-598-4386

Technical Contact

Name: Stevia Smith

Title: Manager - RNG Compliance

Mailing Address: **Street or P.O. Box:** 111 Speen Street, Suite 410

City: Framingham **State:** MA **Zip Code:** 01701

Email: smiths@ameresco.com

Phone: 508-598-4386

Air Permit Contact for Source

Name: Stevia Smith

Title: Manager - RNG Compliance

Mailing Address: **Street or P.O. Box:** 111 Speen Street, Suite 410

City: Framingham **State:** MA **Zip Code:** 01701

Email: smiths@ameresco.com

Phone: 508-598-4386

Section AI.3: Owner Information

☑ **Owner same as applicant**

Name: Ameresco Benson Valley RNG LLC

Title:

Mailing Address: **Street or P.O. Box:** 111 Speen Street, Suite 410

City: Framingham **State:** MA **Zip Code:** 01701

Email: smiths@ameresco.com

Phone: 508-598-4386

List names of owners and officers of the company who have an interest in the company of 5% or more.

Name	Position
George Sakellaris	Chairman, President, and Chief Executive Officer

Section AI.4: Type of Application

Current Status: ☐ Title V ☑ Conditional Major ☐ State-Origin ☐ General Permit ☐ Registration ☐ None

Requested Action: *(check all that apply)*

☐ Name Change	☐ Initial Registration	☐ Significant Revision	☐ Administrative Permit Amendment
☐ Renewal Permit	☐ Revised Registration	☑ Minor Revision	☐ Initial Source-wide OperatingPermit
☐ 502(b)(10)Change	☐ Extension Request	☐ Addition of New Facility	☐ Portable Plant Relocation Notice
☐ Revision	☐ Off Permit Change	☐ Landfill Alternate Compliance Submittal	☐ Modification of Existing Facilities
☐ Ownership Change	☐ Closure		

Requested Status: ☐ Title V ☑ Conditional Major ☐ State-Origin ☐ PSD ☐ NSR ☐ Other: _____

Is the source requesting a limitation of potential emissions? ☑ Yes ☐ No

Pollutant:	Requested Limit:	Pollutant:	Requested Limit:
☑ Particulate Matter	<100 tons/12 months	☑ Single HAP	<10 tons/12 months
☑ Volatile Organic Compounds (VOC)	90 tons/12-months	☑ Combined HAPs	22.5 tons/12 months
☑ Carbon Monoxide	<100 tons/12-months	☐ Air Toxics (40 CFR 68, Subpart F)	
☑ Nitrogen Oxides	<100 tons/12 months	☐ Carbon Dioxide	
☑ Sulfur Dioxide	<100 tons/12 months	☐ Greenhouse Gases (GHG)	
☐ Lead		☐ Other	

For New Construction:

Proposed Start Date of Construction: *(MM/YYYY)* 07/2022 **Proposed Operation Start-Up Date:** *(MM/YYYY)* 05/2023

For Modifications:

Proposed Start Date of Modification: *(MM/YYYY)* _____ **Proposed Operation Start-Up Date:** *(MM/YYYY)* _____

Applicant is seeking coverage under a permit shield. ☐ Yes ☑ No **Identify any non-applicable requirements for which permit shield is sought on a separate attachment to the application.**

Section AI.5 Other Required Information

Indicate the documents attached as part of this application:

☐ DEP7007A Indirect Heat Exchangers and Turbines	☐ DEP7007CC Compliance Certification
☑ DEP7007B Manufacturing or Processing Operations	☑ DEP7007DD Insignificant Activities
☐ DEP7007C Incinerators and Waste Burners	☐ DEP7007EE Internal Combustion Engines
☐ DEP7007F Episode Standby Plan	☐ DEP7007FF Secondary Aluminum Processing
☐ DEP7007J Volatile Liquid Storage	☑ DEP7007GG Control Equipment
☐ DEP7007K Surface Coating or Printing Operations	☐ DEP7007HH Haul Roads
☐ DEP7007L Mineral Processes	☐ Confidentiality Claim
☐ DEP7007M Metal Cleaning Degreasers	☐ Ownership Change Form
☑ DEP7007N Source Emissions Profile	☐ Secretary of State Certificate
☐ DEP7007P Perchloroethylene Dry Cleaning Systems	☑ Flowcharts or diagrams depicting process
☐ DEP7007R Emission Offset Credit	☐ Digital Line Graphs (DLG) files of buldings, roads, etc.
☐ DEP7007S Service Stations	☑ Site Map
☐ DEP7007T Metal Plating and Surface Treatment Operations	☑ Map or drawing depicting location of facility
☑ DEP7007V Applicable Requirements and Compliance Activities	☐ Safety Data Sheet (SDS)
☐ DEP7007Y Good Engineering Practice and Stack Height Determination	☐ Emergency Response Plan
☐ DEP7007AA Compliance Schedule for Non-complying Emission Units	☐ Other: _____
☐ DEP7007BB Certified Progress Report	

Section AI.6: Signature Block

I, the undersigned, hereby certify under penalty of law, that I am a responsible official*, and that I have personally examined, and am familiar with, the information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the information is on knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false or incomplete information, including the possibility of fine or imprisonment.

Authorized Signature

4/26/2023
Date

Nathan Hall
Type or Printed Name of Signatory

Senior Vice President - Asset Operations
Title of Signatory

*Responsible official as defined by 401 KAR 52:001.

Section AI.7: Notes, Comments, and Explanations
This Application is being submitted to add a backup emergency diesel generator to the existing Ameresco Benson Valley RNG LLC Air Quality Permit ID F-21-028. Ameresco understands that the generator addition constitutes a minor change and that there will be no alteration to the permitted emissions limitations contained in Ameresco's Air Permit. The project potential emissions are still within the
Conditional Major / Synthetic Minor limits of the air permit. While the potential emissions from the engine generator are insignificant, this addition triggers applicability of Federal NSPS and NESHAP regulations applicable to the generator, therefore revision to the permit is needed.

Division for Air Quality

300 Sower Boulevard
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(502) 564-3999

DEP7007B

Manufacturing or Processing Operations

___ Section B.1: Process Information
___ Section B.2: Materials and Fuel Information
___ Section B.3: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG.
___ Attach a flow diagram
___ Attach SDS

Source Name: Ameresco Benson Valley RNG LLC
KY EIS (AFS) #: 21- 073-00112
Permit #: F-21-028
Agency Interest (AI) ID: 167923
Date: 4/25/2023

Section B.1: Process Information

Emission Unit #	Emission Unit Name	Describe Emission Unit	Process ID	Process Name	Manufacturer	Model No.	Proposed/Actual Date of Construction Commencement *(MM/YYYY)*	Is the Process Continuous or Batch?	Number of Batches per 24 Hours *(if applicable)*	Hours per Batch *(if applicable)*
EU 01	Thermal Oxidizer	Combustion of process waste gas, supplemental fuel and burner/pilot fuel	EP 01	TOX1	Perennial (or equivalent)	FL-72X58-45-TP	01/2023	Continuous	N/A	N/A
EU 02	Open Flare	Combustion of process waste gas, off-spec gas, purge and depress gas, excess PPRNG, pilot gas	EP 02	FLR1	Perennial (or equivalent)	FL-10-C	12/2022	Continuous	N/A	N/A
TBD	Emergency Diesel Generator	Combustion of diesel fuel to produce electricity, to be used for emergency/backup purposes	TBD	TBD	Caterpillar	D250GC	04/2023	Continuous	N/A	N/A

Section B.2: Materials and Fuel Information

**Maximum yearly fuel usage rate only applies if applicant request operating restrictions through federally enforceable limitations.*

Emission Unit #	Emission Unit Name	Name of Raw Materials Input	Maximum Quantity of Each Raw Material Input		Total Process Weight Rate for Emission Unit *(tons/hr)*	Name of Finished Materials	Maximum Quantity of Each Finished Material Output		Fuel Type	Maximum Hourly Fuel Usage Rate		Maximum Yearly Fuel Usage Rate		Sulfur Content *(%)*	Ash Content *(%)*
				(Specify Units/hr)				*(Specify Units/hr)*			*(Specify Units)*		*(Specify Units)*		
N/A															

Section B.3: Notes, Comments, and Explanations

None

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(502) 564-3999

DEP7007DD

Insignificant Activities

___ Section DD.1: Table of Insignificant Activities
___ Section DD.2: Signature Block
___ Section DD.3: Notes, Comments, and Explanations

Source Name: Ameresco Benson Valley RNG LLC
KY EIS (AFS) #: 21- 073-00112
Permit #: F-21-028
Agency Interest (AI) ID: 167923
Date: 4/25/2023

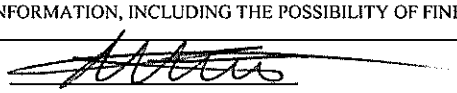
Section DD.1: Table of Insignificant Activities

*Identify each activity with a unique Insignificant Activity number (IA #); for example: 1, 2, 3... etc.

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
IA-01	Equipment Leaks	N/A	401 KAR 63:010	de minimis

Section DD.2: Signature Block

I, THE UNDERSIGNED, HEREBY CERTIFY UNDER PENALTY OF LAW, THAT I AM A RESPONSIBLE OFFICIAL, AND THAT I HAVE PERSONALLY EXAMINED, AND AM FAMILIAR WITH, THE INFORMATION SUBMITTED IN THIS DOCUMENT AND ALL ITS ATTACHMENTS. BASED ON MY INQUIRY OF THOSE INDIVIDUALS WITH PRIMARY RESPONSIBILITY FOR OBTAINING THE INFORMATION, I CERTIFY THAT THE INFORMATION IS ON KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE OR INCOMPLETE INFORMATION, INCLUDING THE POSSIBILITY OF FINE OR IMPRISONMENT.



Authorized Signature

4/26/2023
Date

By:

Nathan Hall
Type/Print Name of Signatory

Senior VP - Asset Operations
Title of Signatory

Section DD.3: Notes, Comments, and Explanations

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DEP7007GG

Control Equipment

Additional Documentation

___ Complete Sections GG.1 through GG.12, as applicable

___ Attach manufacturer's specifications for each control device

___ Complete DEP7007AI

Source Name: Ameresco Benson Valley RNG LLC

KY EIS (AFS) #: 21- 073-00112

Permit #: F-21-028

Agency Interest (AI) ID: 167923

Date: 4/25/2023

Section GG.1: General Information - Control Equipment

Control Device ID #	Control Device Name	Cost	Manufacturer	Model Name/ Serial #	Date Installed	Inlet Gas Stream Data For All Control Devices					Inlet Gas Stream Data For Condensers, Adsorbers, Afterburners, Incinerators, Oxidizers Only			Equipment Operational Data For All Control Devices		
						Temperature (°F)	Flowrate (scfm @ 68°F)	Average Particle Diameter (μm)	Particle Density (lb/ft^3) or Specific Gravity	Gas Density (lb/ft^3)	Gas Moisture Content (%)	Gas Composition	Fan Type	Pressure Drop Range (in. H_2O)	Pollutants Collected/ Controlled	Pollutant Removal (%)
CD 01	Thermal Oxidizer	$317k	Perennial	FL-72X58-45-TP	1/24/2023	200 (max)	0-2,000	<2.5	varies	varies	varies	varies	Forced draft centrifugal blower	varies	VOC, NMOC	98
CD 02	Open Flare	$148k	Perennial	FL-10-C	12/13/2022	200 (max)	0-2,000	<2.5	varies	varies	varies	varies	None	varies	VOC, NMOC	98

Section GG.2: Flare Source Information

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Flare	Type of Flare (e.g. steam-assisted, air-assisted, nonassisted)	Process Gas Flowrate *(acfm)*	Net Heating Value of Stream(s) (Btu/scf)	Removal Efficiency *(%)*	Flare Rated Capacity *(MMBtu/hr)*
CD 02	Pre-processed RNG (PPRNG) , CO2 Removal Off-Spec Gas, O2/N2 Off-Spec Gas, System Purge Gas, Natural Gas Pilot	Open-Nonassisted	0-1,500	992 (max)	98	34.0

Section GG.7: Afterburner/Incinerator/Oxidizer

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Afterburner/Incinerator/ Oxidizer	Identify Type: Afterburner, Incinerator, Oxidizer, or Other (specify)	Number of Burners	Burner Rating *(BTU/hr)*	Dimensions of Combustion Chamber *(specify units)*	Residence Time *(sec)*	Combustion Chamber Temperature *(° F)*	Type of Catalyst (if applicable)	Type of Heat Exchanger (if applicable)	Auxiliary Fuel							Composition and Quantities of Combusted Waste
										Identify Fuel Type	Higher Heating Value *(MMBtu/scf)*	Hourly Fuel Usage *(scf/hr)*	% Sulfur (Maximum)	% Sulfur (Average)	% Ash (Maximum)	% Ash (Average)	
CD 01	PPRNG for pilot/supplemental fuel, Off-Gas from CO2 Menbrane, Off-Gas from O2/N2 Removal Unit	Thermal Oxidizer	1	6,000,000	TBD	1 (min)	1400-1800	None	None	PPRNG (50% CH4)	0.0005	10,000 (max)	46.9 ppm	4 ppm	0	0	N/A

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DEP7007N

Source Emissions Profile

__ Section N.1: Emission Summary
__ Section N.2: Stack Information
__ Section N.3: Fugitive Information
__ Section N.4: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI

Source Name: Ameresco Benson Valley RNG LLC
KY EIS (AFS) #: 21- 073-00112
Permit #: F-21-028
Agency Interest (AI) ID: 167923
Date: 4/25/2023

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity *(SCC Units/hour)*	Pollutant	Uncontrolled Emission Factor *(lb/SCC Units)*	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency *(%)*	Control Efficiency *(%)*	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential *(lb/hr)*	Controlled Potential *(lb/hr)*	Uncontrolled Potential *(tons/yr)*	Controlled Potential *(tons/yr)*
EU 01	Thermal Oxidizer	EP 01	TOX1	Thermal Oxidizer	CD 01	ST 01	0.068 lb/mmbtu	NOx	0.068 lb/mmbtu	Manufacturer, AP-42 2.4	0.00%	98.00%	1.18	1.18	5.15	5.15
EU 01	Thermal Oxidizer	EP 01	TOX1	Thermal Oxidizer	CD 01	ST 01	0.31 lb/mmbtu	CO	0.31 lb/mmbtu	Manufacturer, AP-42 2.4	0.00%	98.00%	5.36	5.36	23.5	23.5
EU 01	Thermal Oxidizer	EP 01	TOX1	Thermal Oxidizer	CD 01	ST 01	see attached calculations	VOC	see attached calculations	Manufacturer, AP-42 2.4	0.00%	98.00%	2.58	2.58	11.30	11.30
EU 01	Thermal Oxidizer	EP 01	TOX1	Thermal Oxidizer	CD 01	ST 01	17 lb/mmscf CH4	PM	17 lb/mmscf CH4	AP-42 2.4	0.00%	N/A	1.17	1.17	5.14	5.14
EU 01	Thermal Oxidizer	EP 01	TOX1	Thermal Oxidizer	CD 01	ST 01	46.9 ppm	SOx	46.9 ppm	AP-42 2.4	0.00%	N/A	1.17	1.17	5.12	5.12
EU 01	Thermal Oxidizer	EP 01	TOX1	Thermal Oxidizer	CD 01	ST 01	0.08 lb/hr	HAP	0.08 lb/hr	AP-42 2.4	0.00%	98.00%	0.08	0.08	0.37	0.37
EU 02	Open Flare	EP 02	FLR1	Open Flare	CD 02	ST 02	0.068 lb/mmbtu	NOx	0.068 lb/mmbtu	Manufacturer, AP-42 2.4	0.00%	98.00%	2.31	2.31	10.12	10.12
EU 02	Open Flare	EP 02	FLR1	Open Flare	CD 02	ST 02	0.31 lb/mmbtu	CO	0.31 lb/mmbtu	Manufacturer, AP-42 2.4	0.00%	98.00%	10.52	10.52	46.06	46.06
EU 02	Open Flare	EP 02	FLR1	Open Flare	CD 02	ST 02	see attached calculations	VOC	see attached calculations	Manufacturer, AP-42 2.4	0.00%	98.00%	1.00	1.00	4.37	4.37
EU 02	Open Flare	EP 02	FLR1	Open Flare	CD 02	ST 02	17 lb/mmscf CH4	PM	17 lb/mmscf CH4	AP-42 2.4	0.00%	N/A	0.76	0.76	3.34	3.34
EU 02	Open Flare	EP 02	FLR1	Open Flare	CD 02	ST 02	46.9 ppm	SOx	46.9 ppm	AP-42 2.4	0.00%	N/A	0.73	0.73	3.22	3.22
EU 02	Open Flare	EP 02	FLR1	Open Flare	CD 02	ST 02	0.06 lb/hr	HAP	0.06 lb/hr	AP-42 2.4	0.00%	98.00%	0.06	0.06	0.24	0.24
TBD	Emergency Diesel Generator	TBD	TBD	Emergency Diesel Generator	TBD	TBD	250 kW	NOx	3.14 g/hp-hr	Manufacturer	0.00%	N/A	2.32	2.32	1.02	1.02
TBD	Emergency Diesel Generator	TBD	TBD	Emergency Diesel Generator	TBD	TBD	250 kW	CO	0.68 g/hp-hr	Manufacturer	0.00%	N/A	0.50	0.50	0.22	0.22
TBD	Emergency Diesel Generator	TBD	TBD	Emergency Diesel Generator	TBD	TBD	250 kW	VOC	0.17 g/hp-hr	Manufacturer	0.00%	N/A	0.13	0.13	0.06	0.06
TBD	Emergency Diesel Generator	TBD	TBD	Emergency Diesel Generator	TBD	TBD	250 kW	PM	0.16 g/hp-hr	Manufacturer	0.00%	N/A	0.12	0.12	0.05	0.05

Section N.2: Stack Information

UTM Zone:

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter *(ft)*	Height *(ft)*	Base Elevation *(ft)*	Northing *(m)*	Easting *(m)*	Flowrate *(acfm)*	Temperature *(° F)*	Exit Velocity *(ft/sec)*
ST 01	Thermal Oxidizer	4.16' ID	45'	810	4222817	676470	0-1600	1400-1800	<60
ST 02	Open Flare	0.868'	40'	810	4222817	676470	0-1500	1400-1800	<60
TBD	Emergency Diesel Generator	0.417'	7.81'	810	4222817	676470	0-2246	700-900	unknown

Section N.3: Fugitive Information

UTM Zone:

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side *(ft)*	Length of the Y Side *(ft)*	Northing *(m)*	Easting *(m)*	Release Temperature *(°F)*	Release Height *(ft)*
N/A								

Section N.4: Notes, Comments, and Explanations
SCC for Emission Points = Thermal Oxidizer: 31000209, Flare: 31000205
UTM Zone = 16S. Elevation and UTM Coordinates are Estimated.

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DEP7007V

Applicable Requirements and Compliance Activities

___ Section V.1: Emission and Operating Limitation(s)

___ Section V.2: Monitoring Requirements

___ Section V.3: Recordkeeping Requirements

___ Section V.4: Reporting Requirements

___ Section V.5: Testing Requirements

___ Section V.6: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI

Source Name: **Ameresco Benson Valley RNG LLC**

KY EIS (AFS) #: **21- 073-00112**

Permit #: **F-21-028**

Agency Interest (AI) ID: **167923**

Date: **4/25/2023**

Section V.1: Emission and Operating Limitation(s)

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
EU 01	Thermal Oxidizer	401 KAR 63:020	VOC, HAP				Recordkeeping
EU 02	Open Flare	401 KAR 63:020	VOC, HAP				Recordkeeping
TBD	Emergency/Backup Diesel Generator	40 CFR 60 Subpart IIII	NOx	4 g/kW-hr			Recordkeeping
TBD	Emergency/Backup Diesel Generator	40 CFR 60 Subpart IIII	CO	3.5 g/kW-hr			Recordkeeping
TBD	Emergency/Backup Diesel Generator	40 CFR 60 Subpart IIII	PM	0.2 g/kW-hr			Recordkeeping

Emission Unit #	**Emission Unit Description**	**Applicable Regulation or Requirement**	**Pollutant**	**Emission Limit** (if applicable)	**Voluntary Emission Limit or Exemption** (if applicable)	**Operating Requirement or Limitation** (if applicable)	**Method of Determining Compliance with the Emission and Operating Requirement(s)**
TBD	Emergency/Backup Diesel Generator	40 CFR 63 Subpart ZZZZ	NOx, CO, PM				Recordkeeping

Section V.2: Monitoring Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Monitored	Description of Monitoring
EU 01	Thermal Oxidizer	VOC, HAP	401 KAR 63:020	Flow/Temperature	
EU 02	Open Flare	VOC, HAP	401 KAR 63:020	Flow/Temperature	
TBD	Emergency/Backup Diesel Generator	NOx, CO, PM	40 CFR 60 Subpart IIII	Fuel usage	
TBD	Emergency/Backup Diesel Generator	NOx, CO, PM	40 CFR 63 Subpart ZZZZ	Fuel usage	

Section V.3: Recordkeeping Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Recorded	Description of Recordkeeping
EU 01	Themal Oxidizer	VOC, HAP	401 KAR 63:020	Flow/Temperature	
EU 02	Open Flare	VOC, HAP	401 KAR 63:020	Flow/Temperature	
TBD	Emergency/Backup Diesel Generator	NOx, CO, PM	40 CFR 60 Subpart IIII	Fuel usage	
TBD	Emergency/Backup Diesel Generator	NOx, CO, PM	40 CFR 63 Subpart ZZZZ	Fuel usage	

Section V.4: Reporting Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Reported	Description of Reporting
EU 01	Themal Oxidizer	VOC, HAP	401 KAR 63:020	Flow/Temperature	Semi-Annual
EU 02	Open Flare	VOC, HAP	401 KAR 63:020	Flow/Temperature	Semi-Annual
TBD	Emergency/Backup Diesel Generator	NOx, CO, PM	40 CFR 60 Subpart IIII	Fuel usage	Semi-Annual
TBD	Emergency/Backup Diesel Generator	NOx, CO, PM	40 CFR 63 Subpart ZZZZ	Fuel usage	Semi-Annual

Section V.5: Testing Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Tested	Description of Testing
EU 01	Themal Oxidizer	VOC, HAP	401 KAR 63:020	VOC/HAP	Initial Performance Test, if required.
EU 02	Open Flare	VOC, HAP	401 KAR 63:020	None	
TBD	Emergency/Backup Diesel Generator	NOx, CO, PM	40 CFR 60 Subpart IIII	None	
TBD	Emergency/Backup Diesel Generator	NOx, CO, PM	40 CFR 63 Subpart ZZZZ	None	

Section V.6: Notes, Comments, and Explanations

4.0 EMISSIONS CACLULATIONS

POTENTIAL AIR EMISSIONS CALCULATIONS
PROJECT PROFILE

PLANT NAME:	Ameresco Benson Valley RNG LLC
PLANT LOCATION:	Frankfort, KY
PROJECT:	Air Quality Permit Modification Application
DATE:	4/25/2023

	Value	Unit	Source
Methane heat content:	1,012	Btu/scf	EPA AP-42 Section 1.4
	0.00101	MMBtu/scf	
Raw gas methane content:	50%	%	Engineering estimate
Raw gas VOC content:	3,780	ppm as hexane	Lab analytical testing on 2/17/2020 with 4x factor added
Raw gas sulfur content:	46.9	ppm as hexane	AP-42 Section 2.4
Ameresco gas processing equipment inlet gas capacity:	2,300	scf/minute	Engineering estimate
	1,208,880,000	scf/year	
	70	MMBtu/hr	
	1,676	MMBtu/day	
	611,693	MMBtu/year	

POTENTIAL AIR EMISSIONS CALCULATIONS

PLANT NAME:	Ameresco Benson Valley RNG LLC
PLANT LOCATION:	Frankfort, KY
PROJECT:	Air Quality Permit Modification Application
DATE:	4/25/2023

FACILITY TOTAL EMISSIONS:	**Facility Total**

Pollutant	lb/hr	lb/day	lb/yr	ton/yr
NOx	5.81	139.41	32,586.83	16.29
CO	16.38	393.21	139,559.51	69.78
VOC	3.70	88.88	31,450.66	15.73
PM	2.05	49.29	17,057.00	8.53
SOx	1.90	45.68	16,674.91	8.34
HAPs	0.97	23.23	8,477.42	4.24

POTENTIAL AIR EMISSIONS CALCULATIONS

PLANT NAME:	Ameresco Benson Valley RNG LLC
PLANT LOCATION:	Frankfort, KY
PROJECT:	Air Quality Permit Modification Application
DATE:	4/25/2023

DEVICE NAME:	Thermal Oxidizer
DEVICE ID:	EU 01

	Value	Unit	Source
Methane heat content:	1,012	Btu/scf	EPA AP-42 Section 1.4
	0.00101	MMBtu/scf	
VOC destruction efficiency:	98%	%	Manufacturer

GAS TYPE:	**Waste Gas**

	Value	Unit	Source
Methane content:	13%	%	Engineering estimate
Inlet gas capacity:	1,400	scf/minute	Engineering estimate
	735,840,000	scf/year	
	11.3	MMBtu/hr	
	271	MMBtu/day	
	2,376,987	MMBtu/year	
Operating hours:	8,760	hours/year	Maximum unrestricted

Pollutant	Emission Factor	Unit	EF Source	Notes	lb/hr	lb/day	lb/yr	ton/yr
NOx	0.068	lb/MMBtu	EPA AP-42 Section 13.5 - Industrial Flare		0.77	18.45	6,735	3.37
CO	0.31	lb/MMBtu	EPA AP-42 Section 13.5 - Industrial Flare		3.50	84.12	30,703	15.35
VOC	6,210	ppm as hexane	Lab analytical results dated 2/19/2020 with 4x factor applied. EPA AP-42 Section 2.4 - Equations 3 & 4	Calculation assumes that all VOCs entering the gas processing equipment are emitted through this device. Raw gas VOC content concentrated up based on flow ratio between gas entering the gas processing equipment and gas entering this device.	2.38	57.01	20,807	10.40
PM	17	lb PM/mmscf CH4	EPA AP-42 Section 2.4 - LFG Flare	Calculation assumes that all PM entering the gas processing equipment are emitted through this device. PM emissions calculated using inlet flow to gas processing equipment.	1.17	28.15	10,275	5.14
SOx	46.9	ppm TRS	EPA AP-42 Section 2.4 - Equations 3 & 4	Calculation assumes that all TRS entering the gas processing equipment are emitted through this device. SOx emissions calculated using inlet flow to gas processing equipment.	1.17	28.06	10,242	5.12

GAS TYPE:	**Supplemental PPRNG**

	Value	Unit	Source
Methane content:	50%	%	Engineering estimate
Inlet gas capacity:	198	scf/minute	Engineering estimate
	103,858,560	scf/year	
	6.0	MMBtu/hr	
	144	MMBtu/day	
	1,261,258	MMBtu/year	
Operating hours:	8,760	hours/year	Maximum unrestricted

Pollutant	Emission Factor	Unit	EF Source	Notes	lb/hr	lb/day	lb/yr	ton/yr
NOx	0.068	lb/MMBtu	EPA AP-42 Section 13.5 - Industrial Flare		0.41	9.79	3,574	1.79
CO	0.31	lb/MMBtu	EPA AP-42 Section 13.5 - Industrial Flare		1.86	44.63	16,291	8.15
VOC	3,780	ppm as hexane	Lab analytical results dated 2/19/2020 with 4x factor applied.		0.20	4.90	1,788	0.89

Total Potential Emissions:	**Thermal Oxidizer**

Pollutant	lb/hr	lb/day	lb/yr	ton/yr
NOx	1.18	28.24	10,308	5.15
CO	5.36	128.75	46,994	23.50
VOC	2.58	61.90	22,595	11.30
PM	1.17	28.15	10,275	5.14
SOx	1.17	28.06	10,242	5.12

POTENTIAL AIR EMISSIONS CALCULATIONS

PLANT NAME:	Ameresco Benson Valley RNG LLC
PLANT LOCATION:	Frankfort, KY
PROJECT:	Air Quality Permit Modification Application
DATE:	4/25/2023

DEVICE NAME:	Open Flare
DEVICE ID:	EU 02

	Value	Unit	Source
Methane heat content:	1,012	Btu/scf	EPA AP-42 Section 1.4
	0.00101	MMBtu/scf	
VOC destruction efficiency:	98%	%	Manufacturer

GAS TYPE:	**VARIOUS**

	Value	Unit	Source
Methane content:	50%	%	Engineering estimate
Inlet gas capacity:	1,500	scf/minute	Engineering estimate
	788,400,000	scf/year	
	33.9	MMBtu/hr	
	814	MMBtu/day	
	7,130,920	MMBtu/year	
Operating hours:	8,760	hours/year	Maximum unrestricted

Pollutant	Emission Factor	Unit	EF Source	Notes	lb/hr	lb/day	lb/yr	ton/yr
NOx	0.068	lb/MMBtu	EPA AP-42 Section 13.5 - Industrial Flare		2.31	55.35	20,204	10.10
CO	0.31	lb/MMBtu	EPA AP-42 Section 13.5 - Industrial Flare		10.51	252.3	92,108	46.05
VOC	3,780	ppm as hexane	Lab analytical results dated 2/19/2020 with 4x factor applied. EPA AP-42 Section 2.4 - Equations 3 & 4		1.00	23.95	8,743	4.37
PM	17	lb PM/mmscf CH4	EPA AP-42 Section 2.4 - LFG Flare		0.76	18.29	6,675	3.34
SOx	46.9	ppm TRS	EPA AP-42 Section 2.4 - Equations 3 & 4		0.73	17.62	6,433	3.22

GAS TYPE:	**Natural Gas**

	Value	Unit	Source
Methane content:	98%	%	Industry-standard estimate
Inlet gas capacity:	0.83	scf/minute	Site-specific estimate
	438,000	scf/year	
	0.05	MMBtu/hr	
	1.19	MMBtu/day	
	10,425	MMBtu/year	
Operating hours:	8,760	hours/year	Site-specific estimate

Pollutant	Emission Factor	Unit	EF Source	Notes	lb/hr	lb/day	lb/yr	ton/yr
NOx	94	lb/MMscf	EPA AP-42 Section 1.4 - NG Combustion		0.005	0.113	41.17	0.02
CO	40	lb/MMscf	EPA AP-42 Section 1.4 - NG Combustion		0.002	0.048	17.52	0.01
VOC	5.50	lb/MMscf	EPA AP-42 Section 1.4 - NG Combustion		0.000	0.007	2.41	0.001
PM	7.60	lb/MMscf	EPA AP-42 Section 1.4 - NG Combustion		0.000	0.009	3.33	0.002
SOx	0.60	lb/MMscf	EPA AP-42 Section 1.4 - NG Combustion		0.000	0.001	0.26	0.0001

Total Potential Emissions:	**Open Flare**

Pollutant	lb/hr	lb/day	lb/yr	ton/yr
NOx	2.31	55.47	20,245	10.12
CO	10.52	252.4	92,125	46.06
VOC	1.00	23.96	8,746	4.37
PM	0.76	18.30	6,678	3.34
SOx	0.73	17.63	6,433	3.22

POTENTIAL AIR EMISSIONS CALCULATIONS

PLANT NAME:	Ameresco Benson Valley RNG LLC
PLANT LOCATION:	Frankfort, KY
PROJECT:	Air Quality Permit Modification Application
DATE:	4/25/2023

DEVICE:	**Thermal Oxidizer (EU 01)**
GAS TYPE:	**Waste Gas and PPRNG**

	Value	Unit	Source
Methane heat content:	1,020	Btu/scf	EPA AP-42 Section 1.4
	0.00102	MMBtu/scf	
HAP destruction efficiency:	98.0%	%	Manufacturer
Gas exhaust temperature	25	degC	Engineering estimate

	Value	Unit	Source
Inlet gas capacity:	2,300	scf/minute	Plant inlet flow rate utilized as conservative estimate to account for all HAPS entering facility.
	1,208,880,000	scf/year	
Operating hours:	8,760	hours/year	Maximum unrestricted

Pollutant		Molecular Weight (g/mol)	Concentration (ppmv)	Concentration Source	lb/hr	lb/day	lb/yr	ton/yr
1,1,1-Trichloroethane (methyl chloroform)		133.41	0.48	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	4.51E-04	1.08E-02	3.95E+00	1.98E-03
1,1,2,2-Tetrachloroethane		167.85	0.07	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	8.28E-05	1.99E-03	7.25E-01	3.63E-04
1,1-Dichloroethane (ethylidene dichloride)		98.97	0.741	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	5.17E-04	1.24E-02	4.53E+00	2.26E-03
1,1-Dichloroethene (vinylidene chloride)		96.94	0.092	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	6.28E-05	1.51E-03	5.51E-01	2.75E-04
1,2-Dichloroethane (ethylene dichloride)		98.96	0.12	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	8.37E-05	2.01E-03	7.33E-01	3.67E-04
1,2-Dichloropropane (propylene dichloride)		112.99	0.023	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.83E-05	4.40E-04	1.60E-01	8.02E-05
Acrylonitrile*		53.06	0.036	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.35E-05	3.23E-04	1.18E-01	5.90E-05
Benzene*		78.11	0.97	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	5.35E-04	1.28E-02	4.69E+00	2.34E-03
Carbon disulfide*		76.13	0.32	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.72E-04	4.12E-03	1.50E+00	7.52E-04
Carbon tetrachloride		153.84	0.007	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	7.59E-06	1.82E-04	6.65E-02	3.32E-05
Carbonyl sulfide*		60.07	0.183	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	7.75E-05	1.86E-03	6.79E-01	3.39E-04
Chlorobenzene		112.56	0.227	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.80E-04	4.32E-03	1.58E+00	7.89E-04
Chloroethane (ethyl chloride)		64.52	0.448	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	2.04E-04	4.89E-03	1.78E+00	8.92E-04
Chloroform		119.39	0.021	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.77E-05	4.24E-04	1.55E-01	7.74E-05
Chloromethane (methyl chloride)		50.49	0.249	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	8.86E-05	2.13E-03	7.76E-01	3.88E-04
1,2-Dichlorobenzene		147.00	0.21	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	2.18E-04	5.22E-03	1.91E+00	9.53E-04
Dichlorodifluoromethane		120.91	1.751	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.49E-03	3.58E-02	1.31E+01	6.53E-03
Dichlorofluoromethane		102.92	2.62	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.90E-03	4.56E-02	1.66E+01	8.32E-03
Dichloromethane (methylene chloride)		84.94	3.395	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2000	2.03E-03	4.88E-02	1.78E+01	8.90E-03
Ethyl mercaptan*		62.13	1.356	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	5.94E-04	1.42E-02	5.20E+00	2.60E-03
Ethylene dibromide (1,2-Dibromoethane)		187.88	0.001	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	1.32E-06	3.18E-05	1.16E-02	5.80E-06
Ethylbenzene*		106.16	4.61	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	3.45E-03	8.28E-02	3.02E+01	1.51E-02
Hexane*		86.18	2.324	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.41E-03	3.39E-02	1.24E+01	6.18E-03
Hydrochloric Acid (hydrogen chloride)		36.46	42.0	USEPA AP-42 Section 2.4 (Nov. 1998)	5.40E-01	1.29E+01	4.73E+03	2.36E+00
Mercury (total)*		200.61	0.00029	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	4.13E-07	9.91E-06	3.62E-03	1.81E-06
Methyl ethyl ketone*		72.11	7.09	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	3.60E-03	8.65E-02	3.16E+01	1.58E-02
Methyl isobutyl ketone*		100.16	0.75	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	5.29E-04	1.27E-02	4.64E+00	2.32E-03
Methyl mercaptan*		48.11	1.292	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	4.38E-04	1.05E-02	3.84E+00	1.92E-03
Perchloroethylene (tetrachloroethylene)		165.83	1.193	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.39E-03	3.35E-02	1.22E+01	6.11E-03
Toluene*		92.13	25.405	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.65E-02	3.96E-01	1.44E+02	7.22E-02
Trichloroethylene (trichloroethene)		131.40	0.681	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	6.31E-04	1.51E-02	5.52E+00	2.76E-03
Vinyl chloride		62.50	1.077	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	4.74E-04	1.14E-02	4.16E+00	2.08E-03
Xylenes*		106.16	12.10	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	9.05E-03	2.17E-01	7.93E+01	3.96E-02
Total HAPs:					**0.59**	**14.06**	**5,131**	**2.57**
Single Highest HAP:					0.54	12.95	4,726	2.36

POTENTIAL AIR EMISSIONS CALCULATIONS

PLANT NAME:	Ameresco Benson Valley RNG LLC
PLANT LOCATION:	Frankfort, KY
PROJECT:	Air Quality Permit Modification Application
DATE:	4/25/2023

DEVICE:	**Open Flare (EU 02)**
GAS TYPE:	**Various**

	Value	Unit	Source
Methane heat content:	1,020	Btu/scf	EPA AP-42 Section 1.4
	0.00102	MMBtu/scf	
HAP destruction efficiency:	98.0%	%	Manufacturer
Gas exhaust temperature	25	degC	Engineering estimate

	Value	Unit	Source
Inlet gas capacity:	1,500	scf/minute	Engineering estimate
	788,400,000	scf/year	Engineering estimate
Operating hours:	8,760	hours/year	Maximum unrestricted

Pollutant		Molecular Weight (g/mol)	Concentration (ppmv)	Concentration Source	lb/hr	lb/day	lb/yr	ton/yr
1,1,1-Trichloroethane (methyl chloroform)		133.41	0.48	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	2.94E-04	7.06E-03	2.58E+00	1.29E-03
1,1,2,2-Tetrachloroethane		167.85	0.07	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	5.40E-05	1.30E-03	4.73E-01	2.37E-04
1,1-Dichloroethane (ethylidene dichloride)		98.97	0.741	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	3.37E-04	8.09E-03	2.95E+00	1.48E-03
1,1-Dichloroethene (vinylidene chloride)		96.94	0.092	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	4.10E-05	9.84E-04	3.59E-01	1.80E-04
1,2-Dichloroethane (ethylene dichloride)		98.96	0.12	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	5.46E-05	1.31E-03	4.78E-01	2.39E-04
1,2-Dichloropropane (propylene dichloride)		112.99	0.023	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.19E-05	2.87E-04	1.05E-01	5.23E-05
Acrylonitrile*		53.06	0.036	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	8.78E-06	2.11E-04	7.69E-02	3.85E-05
Benzene*		78.11	0.97	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	3.49E-04	8.37E-03	3.06E+00	1.53E-03
Carbon disulfide*		76.13	0.32	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.12E-04	2.69E-03	9.81E-01	4.90E-04
Carbon tetrachloride		153.84	0.007	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	4.95E-06	1.19E-04	4.34E-02	2.17E-05
Carbonyl sulfide*		60.07	0.183	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	5.05E-05	1.21E-03	4.43E-01	2.21E-04
Chlorobenzene		112.56	0.227	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.17E-04	2.82E-03	1.03E+00	5.14E-04
Chloroethane (ethyl chloride)		64.52	0.448	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.33E-04	3.19E-03	1.16E+00	5.82E-04
Chloroform		119.39	0.021	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.15E-05	2.77E-04	1.01E-01	5.05E-05
Chloromethane (methyl chloride)		50.49	0.249	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	5.78E-05	1.39E-03	5.06E-01	2.53E-04
1,2-Dichlorobenzene		147.00	0.21	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	1.42E-04	3.40E-03	1.24E+00	6.21E-04
Dichlorodifluoromethane		120.91	1.751	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	9.73E-04	2.34E-02	8.52E+00	4.26E-03
Dichlorofluoromethane		102.92	2.62	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.24E-03	2.97E-02	1.09E+01	5.43E-03
Dichloromethane (methylene chloride)		84.94	3.395	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2000	1.33E-03	3.18E-02	1.16E+01	5.80E-03
Ethyl mercaptan*		62.13	1.356	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	3.87E-04	9.29E-03	3.39E+00	1.70E-03
Ethylene dibromide (1,2-Dibromoethane)		187.88	0.001	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	8.63E-07	2.07E-05	7.56E-03	3.78E-06
Ethylbenzene*		106.16	4.61	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	2.25E-03	5.40E-02	1.97E+01	9.85E-03
Hexane*		86.18	2.324	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	9.20E-04	2.21E-02	8.06E+00	4.03E-03
Hydrochloric Acid (hydrogen chloride)		36.46	42.0	USEPA AP-42 Section 2.4 (Nov. 1998)	3.52E-01	8.44E+00	3.08E+03	1.54E+00
Mercury (total)*		200.61	0.00029	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	2.69E-07	6.46E-06	2.36E-03	1.18E-06
Methyl ethyl ketone*		72.11	7.09	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	2.35E-03	5.64E-02	2.06E+01	1.03E-02
Methyl isobutyl ketone*		100.16	0.75	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	3.45E-04	8.29E-03	3.02E+00	1.51E-03
Methyl mercaptan*		48.11	1.292	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	2.86E-04	6.86E-03	2.50E+00	1.25E-03
Perchloroethylene (tetrachloroethylene)		165.83	1.193	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	9.09E-04	2.18E-02	7.96E+00	3.98E-03
Toluene*		92.13	25.405	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.08E-02	2.58E-01	9.42E+01	4.71E-02
Trichloroethylene (trichloroethene)		131.40	0.681	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	4.11E-04	9.87E-03	3.60E+00	1.80E-03
Vinyl chloride		62.50	1.077	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	3.09E-04	7.42E-03	2.71E+00	1.35E-03
Xylenes*		106.16	12.10	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	5.90E-03	1.42E-01	5.17E+01	2.59E-02
Total HAPs:					**0.38**	**9.17**	**3,346**	**1.67**
Single Highest HAP:					0.35	8.44	3,082	1.54

AIR EMISSIONS CALCULATIONS

PLANT NAME:	Ameresco Benson Valey RNG LLC
PLANT LOCATION:	Frankfort, Kentucky
PROJECT:	Air Quality Permit Modification Application
DATE:	4/25/2023

DEVICE NAME:	Backup / Emergency Diesel Generator
DEVICE ID:	TBD

FUEL TYPE:	**DIESEL**

	Value	Unit	Source
Capacity:	335	HP	Manufacturer
Max fuel consumption:	19.4	gal/hr	Manufacturer
Fuel weight:	7.001	lb/gal	Manufacturer
Fuel heat input:	18,390	Btu/lb	Manufacturer
	128,748	Btu/gal	
	2.50	MMBtu/hr	
Operating hours:	876	hours/year	Engineering estimate

Pollutant	Emission Factor	Unit	EF Source	lb/hr	lb/day	lb/yr	ton/yr
NOx	3.14	g/hp-hr	Manufacturer	2.32	55.70	2,033	1.02
CO	0.68	g/hp-hr	Manufacturer	0.50	12.06	440	0.22
VOC	0.17	g/hp-hr	Manufacturer	0.13	3.02	110	0.06
PM/PM10/PM2.5	0.16	g/hp-hr	Manufacturer	0.12	2.84	104	0.05

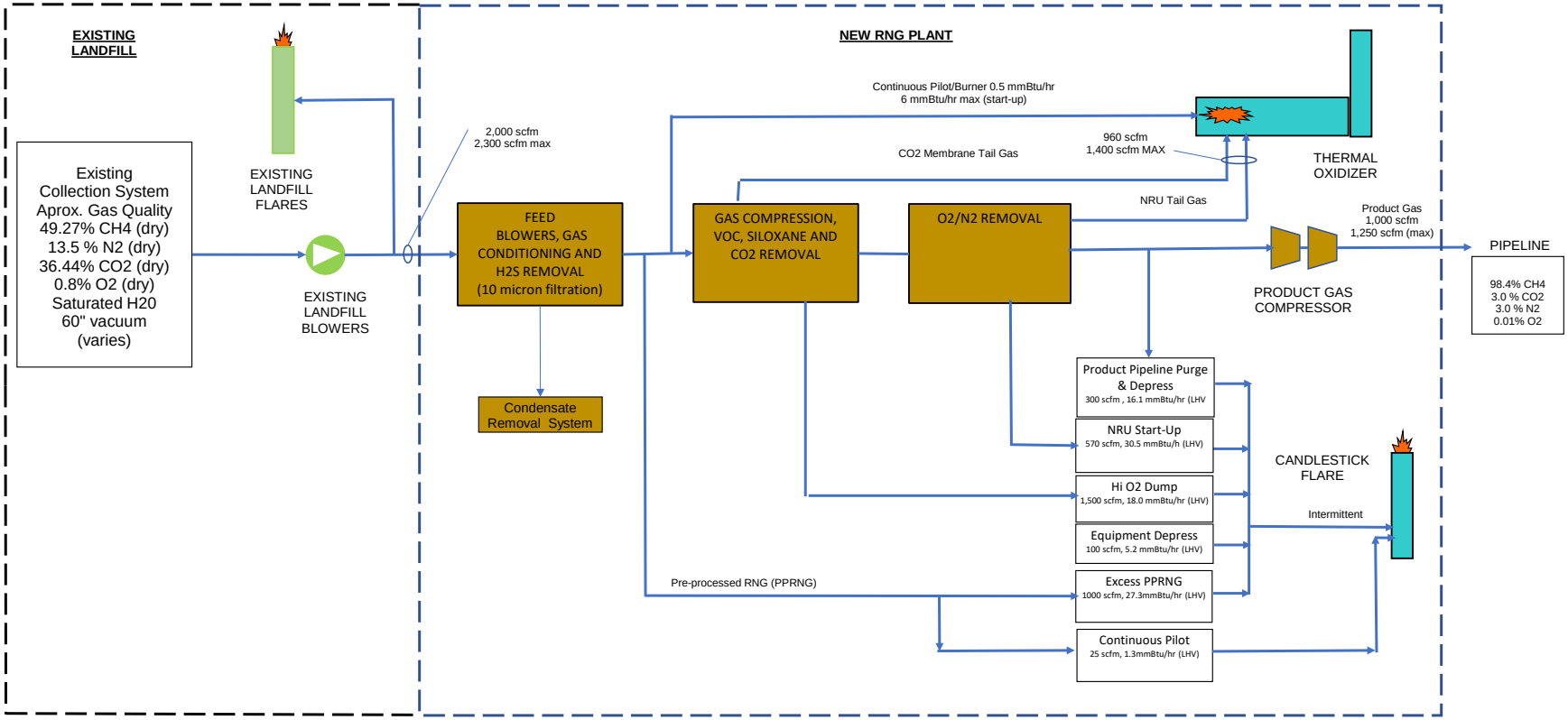
5.0 PROCESS FLOW DIAGRAM

FIGURE 2

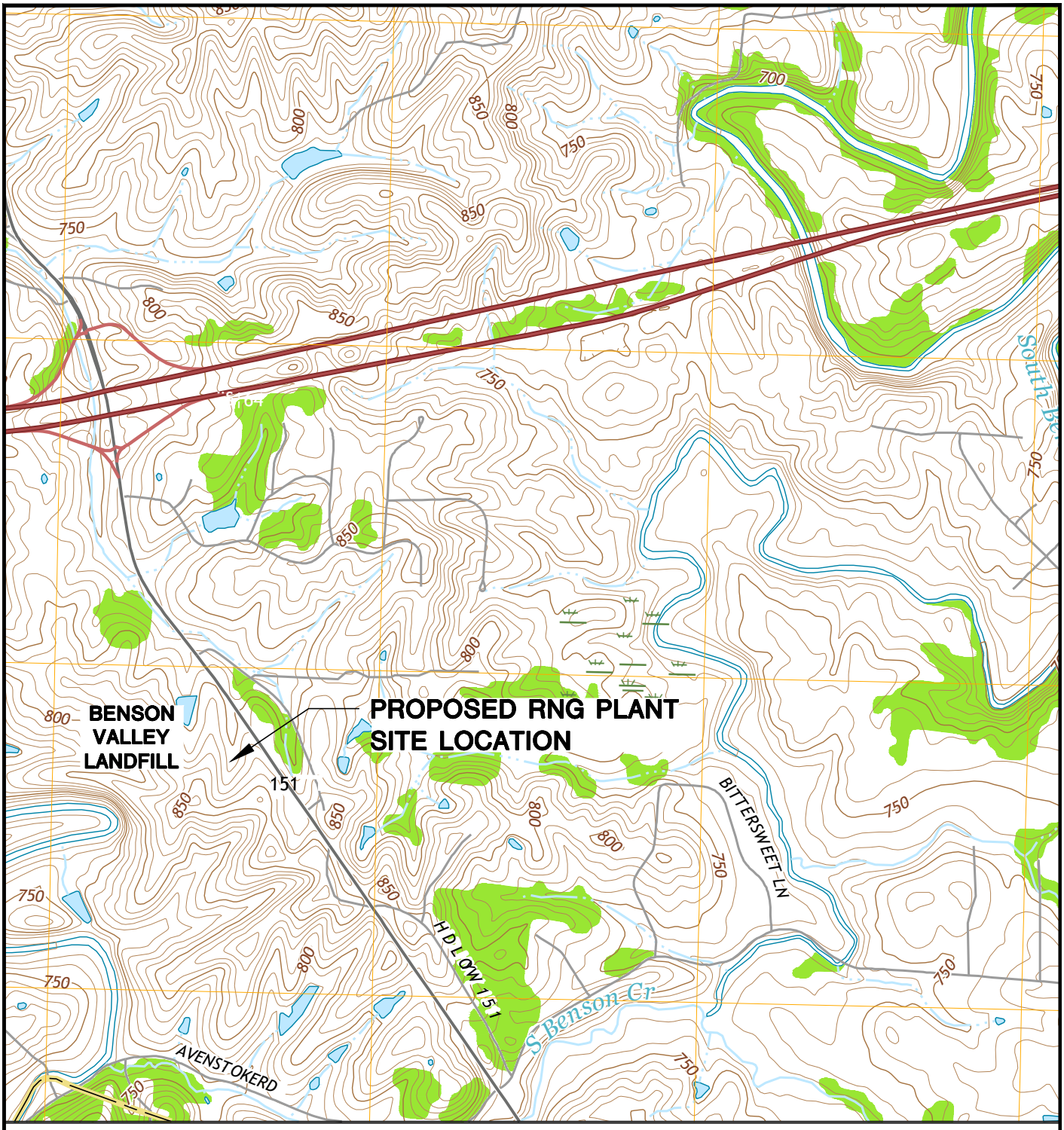
Rev. 1 11/12/2020

BENSON VALLEY RNG FACILITY

SIMPLIFIED PROCESS FLOW DIAGRAM



6.0 SITE LOCATION MAP AND SITE PLAN



N

FRANKFORT WEST QUADRANGLE
KENTUCKY
7.5 MINUTE SERIES (TOPOGRAPHIC)
2018
SCALE: 1" = 2,000'

CLIENT	AMERESCO 30 DANFORTH ST., SUITE 108 PORTLAND, ME 04101	SITE	AMERESCO BENSON VALLEY LANDFILL 2157 KY-151, FRANKFORT, KY 40601

SITE LOCATION MAP

PROJECT NO.	27220252.00	DRAWN BY:	ZB
DRAWN:	11/05/2020	CHECKED BY:	GS
REVISED:		APPROVED BY:	

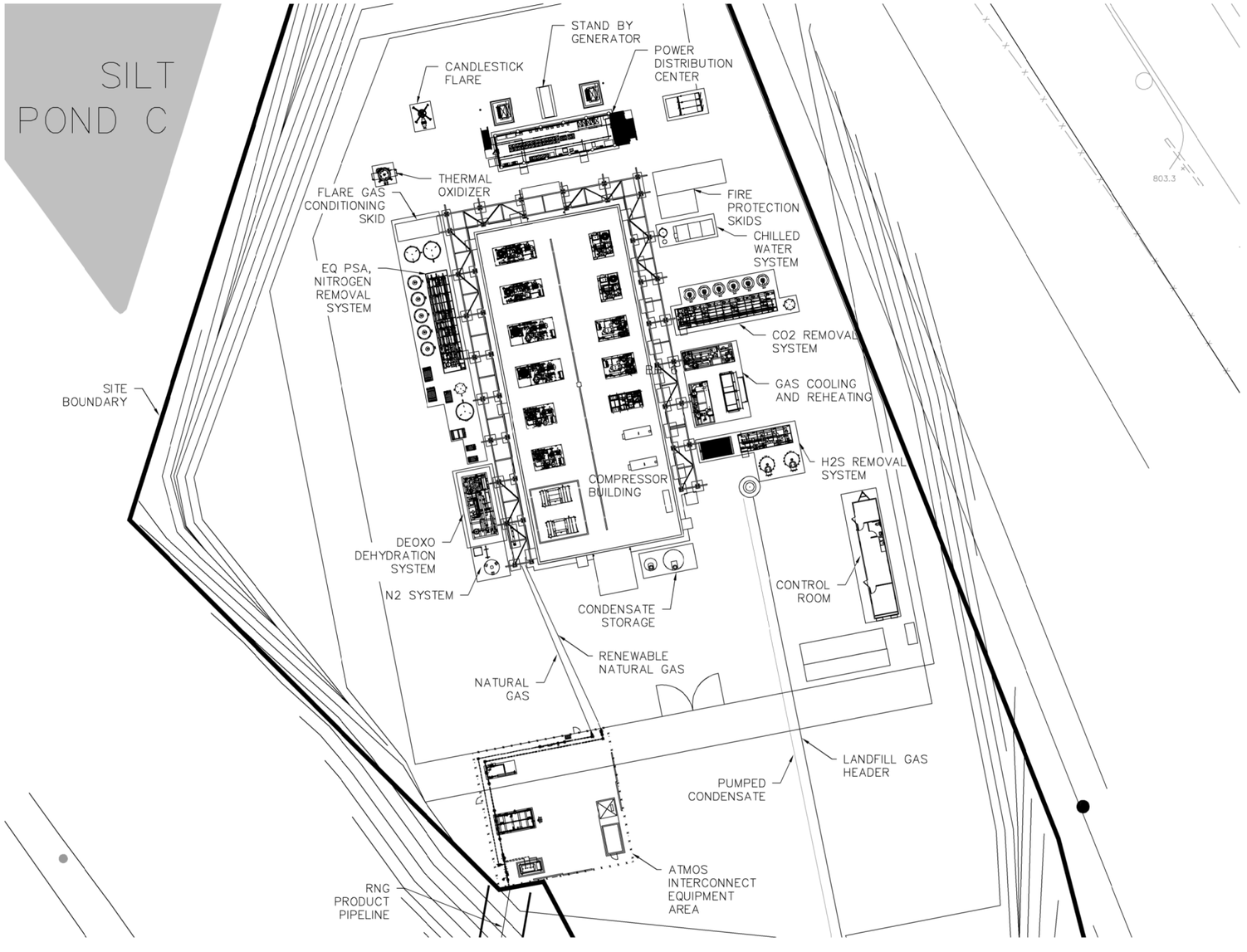
ENGINEER

SCS ENGINEERS
2060 READING ROAD CINCINNATI, OH 45202
PHONE: (513) 421-5353

FIGURE
1

C:\Users\4833zvb\Desktop\Site Location\Site Location - Benson Valley LF ZVB V0.0.dwg, 11/5/2020 4:48:17 PM

NORTH



SITE ARRANGEMENT PLAN
SCALE: 1"=40'

PRELIMINARY NOT FOR CONSTRUCTION

AMERESCO
Green • Clean • Sustainable

NO.	DATE	REVISION DESCRIPTION	BY	CHKD.	APPD.
A	04/24/23	ISSUED FOR INFORMATION			

DESIGNED BY
CHECKED BY
APPROVED BY
CLIENT APPR.

SHEET TITLE
SITE ARRANGEMENT PLAN

AMERESCO BENSON VALLEY RNG. LLC.
BENSON VALLEY RNG. FACILITY
2157 KY-151
FRANKFORT, KY 40601

JOB NO	DATE 04/24/23
FILENAME	REV. A
SCALE AS NOTED	DWG. NO.

7.0 EMERGENCY DIESEL GENERATOR SPECIFICATIONS

Cat® D250 GC DIESEL GENERATOR SETS

Standby: 60 Hz, 208V, 480V & 600V

Image shown might not reflect actual configuration

Engine Model	Cat® C9 In-line 6, 4-cycle diesel
Bore x Stroke	112mm x 149mm (4.4in x 5.9in)
Displacement	8.8 L (538 in³)
Compression Ratio	16.3:1
Aspiration	Turbocharged Air-to-Air Aftercooled
Fuel Injection System	HEUI
Governor	Electronic ADEM™ A4

Standby	Performance Strategy
250 ekW, 312.5kVA	**EPA Certified for Stationary Emergency Application**

PACKAGE PERFORMANCE

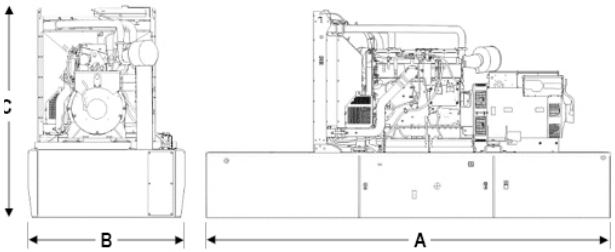
Performance	Standby	
Frequency	60 Hz	
Genset Power Rating	312.5 kVA	
Gen set power rating with fan @ 0.8 power factor	250 ekW	
Emissions	EPA TIER 3	
Performance Number	DM8501	
Fuel Consumption		
100% load with fan	73.3 L/hr	19.4 gal/hr
75% load with fan	58.8 L/hr	15.5 gal/hr
50% load with fan	43.8 L/hr	11.6 gal/hr
25% load with fan	27.4 L/hr	7.3 gal/hr
Cooling System[1]		
Radiator air flow restriction (system)	0.12 kPa	0.48 in. Water
Radiator air flow	497 m³/min	17551 cfm
Engine coolant capacity	14 L	3.69 gal
Radiator coolant capacity	25 L	6.6 gal
Total coolant capacity	45 L	11.88 gal
Inlet Air		
Combustion air inlet flow rate	23.83 m³/min	841.5 cfm
Max. Allowable Combustion Air Inlet Temp	49 °C	120°F
Exhaust System		
Exhaust stack gas temperature	460 °C	860°F
Exhaust gas flow rate	63.6 m³/min	2246 cfm
Exhaust system backpressure (maximum allowable)	10.0 kPa	40.0 in. water
Heat Rejection		
Heat rejection to jacket water	104 kW	5928 Btu/min
Heat rejection to exhaust (total)	277 kW	15772 Btu/min
Heat rejection to aftercooler	82 kW	4686 Btu/min
Heat rejection to atmosphere from engine	18 kW	1004 Btu/min
Heat rejection from alternator	20 kW	1120 Btu/min

Cat® D250 GC DIESEL GENERATOR SETS

Emissions (Nominal)[2]	Standby	
NOx	1637.5 mg/Nm³	3.14 g/hp-hr
CO	323.2 mg/Nm³	0.68 g/hp-hr
HC	71.2 mg/Nm³	0.17 g/hp-hr
PM	63.7 mg/Nm³	0.16 g/hp-hr

Alternator[3]			
Voltages	**480V**	**208**	**600V**
Motor Starting Capability @ 30% Voltage Dip	567	544	1006
Current	375.9	867.4	300.7
Frame Size	M2754L4	M2774L4	M2754L4
Excitation	S.E	S.E	AREP
Temperature Rise	105°C	105°C	105°C

WEIGHTS & DIMENSIONS – OPEN SET



Base	Dim "A" mm (in)	Dim "B" mm (in)	Dim "C" mm (in)	Generator Set Weight kg (lb)
Skid (Wide Base)	3950 (155.5)	1440 (56.7)	1706 (67.2)	2415 (5324.2)
Integral Tank Base	3950 (155.5)	1430 (56.3)	2202 (86.7)	3055 (6735.1)

FUEL TANK CAPACITY

Tank Design	Total Capacity		Useable Capacity	
	Litre	Gallon	Litre	Gallon
Integral	2270	600	2059	544

DEFINITIONS AND CONDITIONS

[1] For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.

[2] Emissions data measurement procedures are consistent with those described in EPA CFR 40 Part 89, Subpart D & E and ISO8178-1 for measuring HC, CO, PM, NOx. Data shown is based on steady state operating conditions of 77° F, 28.42 in HG and number 2 diesel fuel with 35° API and LHV of 18,390 BTU/lb. The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% load and thus cannot be used to compare to EPA regulations which use values based on a weighted cycle.

[3] UL 2200 Listed packages may have oversized generators with a different temperature rise and motor starting characteristics. Generator temperature rise is based on a 40° C ambient per NEMA MG1-32.

APPLICABLE CODES AND STANDARDS:

AS1359, CSA C22.2 No100-04, UL142, UL489, UL869, UL2200, NFPA37, NFPA70, NFPA99, NFPA110, IBC, IEC60034-1, ISO3046, ISO8528, NEMA MG1-22, NEMA MG1-33, 2006/95/EC, 2006/42/EC, 2004/108/EC.

Note: Codes may not be available in all model configurations. Please consult your local Cat Dealer representative for availability.

STANDBY: Output available with varying load for the duration of the interruption of the normal source power. Average power output is 70% of the standby power rating. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

RATINGS: Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046 standard conditions.

Fuel Rates are based on fuel oil of 35° API [16° C (60° F)] gravity having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29° C (85° F) and weighing 838.9 g/litre (7.001 lbs/U.S. gal.). Additional ratings may be available for specific customer requirements, contact your Caterpillar representative for details. For information regarding Low Sulfur fuel and Biodiesel capability, please consult your Cat dealer.

LEHE2023-02 (05-20)

www.Cat.com/electricpower

8.0 OFF-PERMIT CHANGE APPROVAL – AUG 8, 2022

Andy Beshear
GOVERNOR

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
300 Sower Boulevard
Frankfort, Kentucky 40601
Phone: (502) 564-2150
Fax: 502-564-4245

Rebecca Goodman
SECRETARY

Anthony R. Hatton
COMMISSIONER

August 10, 2022

Nathan Hall, Senior Vice President – Asset Operations
Ameresco Benson Valley RNG LLC
111 Speen St.
Framingham, MA 01701

Re: Vendor Changes at a Mixed, Manufactured, or Liquefied Petroleum Gas Production and/or Distribution Facility

Permittee Name:	Ameresco Benson Valley RNG LLC
Source ID:	21-073-00112
Agency Interest:	167923
Activity:	APE20220002
Permit:	F-21-028

Dear Nathan Hall:

The Division received the Ameresco Benson Valley RNG LLC application for the following changes on July 18, 2022:

- Emission Unit 01 (EU 01) vendor information with a name and description change from "Recuperative Thermal Oxidizer" to "Thermal Oxidizer".
- Emission Unit 02 (EU 02) vendor will no longer be John Zink
- EU 01 NO_x emission factor from 0.056 lb/MMBtu to 0.068 lb/MMBtu
- EU 01 VOC control efficiency from 99% to 98%
- Increase Landfill Gas VOC concentration from 945 ppm to 3,780 ppm (945 x 4) to account for any future fluctuations in VOC content which would result in increased VOC content
- Stack dimensions for EU 01 and EU 02

The Division has determined that these changes can be covered per 401 KAR 52:030, Section 17, *Off-permit and Section 502(b)(10) Changes*. Therefore, no permit revision is required at this time and you may proceed with the project as described by your permit application. All of the conditions regarding EU 01 and EU 02 will remain the same. The changes will be incorporated into the permit

at the next revision or renewal, whichever comes first, and if applicable, the Division will perform an air toxics evaluation at that time.

This letter does not exempt your source from the regulatory requirements of any other federal, state, or local agency which may have regulations that apply. You are reminded that if you intend to construct, reconstruct, or modify an air contaminant source in the future, you are required by regulation to apply for and, if required, be issued a permit, in accordance with 401 KAR 52:030 prior to the commencement of any construction.

Maintain a copy of this letter on file with your current permit. If you have any questions regarding this matter, you may contact Zachary Bittner at 502-782-6555.

Sincerely,

Zachary Bittner, P.E.
Combustion Section Supervisor
Signed By: Zachary Bittner
Permit Review Branch
Division for Air Quality

Enclosure


* I M A G E *


* 1 6 7 9 2 3 *


* 0 1 *


* A R N A P R *


* 2 1 9 *


* 2 *

AMERESCO
Green • Clean • Sustainable

111 Speen St, Ste 410
Framingham, MA 01701
P: (508) 661-2200
ameresco.com

RECEIVED
FEB 09 2024
Permit Review Branch
Division for Air Quality

February 6, 2024

Mr. Zachary Bittner, P.E.
Environmental Engineer Supervisor
Combustion Section
Division for Air Quality
300 Sower Blvd
Frankfort, KY 40601

RE: Section 502(b)(10) Permit Change Air Permit Application
Ameresco Benson Valley RNG LLC – Frankfort, Kentucky
Air Quality Permit ID No. F-21-028
Off-Permit Change Approvals Dated 8/10/2022 & 9/18/2023
Agency Interest #: 167923
Activity ID: APE20210002
Source ID: 21-073-00112

Dear Mr. Bittner:

Ameresco Benson Valley RNG LLC (Ameresco) is submitting to the Kentucky Department of Environmental Protection (KDEP) this Section 502(b)(10) Permit Change Application for Air Quality Permit ID F-21-028 dated November 7, 2021, Off-Permit Changes approved August 10, 2022 and September 18, 2023, and the pending Title V Air Operating Permit (not yet issued) for the Ameresco facility. Ameresco's renewable natural gas (RNG) facility processes and treats landfill gas to meet pipeline-quality gas standards for injection into a natural gas transmission pipeline. The RNG plant includes a thermal oxidizer and an open flare. With this submittal, Ameresco seeks to make the following change which we understand qualifies as a Section 502(b)(10) change under 401 KAR 52:020, Section 18:

1. Permit ID No. F-21-028 Section B – Emission Unit 02 Open Flare – Description

Ameresco's Off-Permit Change dated September 18, 2023 approved modification of this permit condition as follows:

Fuel Heat Input: 50 scf/hr
Fuel: Natural Gas

Ameresco has determined that greater than 50 scf/hour of natural gas is necessary to allow desired operation of the open flare. Natural gas is occasionally used as a supplemental fuel in the open flare in addition to pilot fuel to sustain proper combustion of the process gases delivered to the flare. Ameresco estimates that up to approximately 150 scf/hour natural gas is needed. Ameresco understands that this increased natural gas usage constitutes a minor change and that there would be no resulting alteration to the permitted emissions limitations contained in Ameresco's existing air permit. The additional natural gas use very slightly increases the potential emissions calculations for the open flare. The project potential emissions would still be within the Conditional Major / Synthetic Minor limits of the air permit. The changes do not trigger applicability of any additional Federal or State regulations beyond what the facility is already subject to. The potential emissions increase from this change are as follows, and the facility emissions calculations are attached to this submittal for your reference:

Pollutant	PTE Increase (ton/yr)
NOx	0.04
CO	0.02
VOC	0.002
PM	0.003
SOx	0.0003

This increased limit for open flare natural gas use causes no change to the existing permit conditions and requirements, except for the following:

Section B - Emission Unit 02 Open Flare – Description:
Fuel Heat Input: 150 scf/hr, averaged over 24-hr period
Fuel: Natural Gas

Alternately, the above two descriptive lines could simply be stricken from the permit if you prefer.

Ameresco understands that this requested modification qualifies as a Section 502(b)(10) change and Ameresco must submit KDEP Forms DEP7007AI, DEP7007B, DEP7007N, DEP7007V and DEP7007GG, which are attached. Ameresco understands that there is no fee due for this action and that KDEP will issue a letter confirming that this request is approved and will be incorporated in the next permit revision or renewal. Thank you for your time and attention to this matter. Should you have any questions or desire additional information, please contact Stevia Smith at (704) 989-2023 or smiths@ameresco.com.

Respectfully submitted,

Mr. Nathan Hall, Sr. Vice President – Asset Operations
Authorized Representative
Ameresco Benson Valley RNG LLC

cc: Ms. Stacie Daniels – KDEP
Ms. Stephanie Burberry – KDEP
Mr. William Slack – Ameresco
Ms. Stevia Smith – Ameresco

ATTACHMENT A

KDEP FORMS

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

DEP7007AI

Administrative Information

___ Section AI.1: Source Information

___ Section AI.2: Applicant Information

___ Section AI.3: Owner Information

___ Section AI.4: Type of Application

___ Section AI.5: Other Required Information

___ Section AI.6: Signature Block

___ Section AI.7: Notes, Comments, and Explanations

Additional Documentation

___ Additional Documentation attached

Source Name: Ameresco Benson Valley RNG LLC

KY EIS (AFS) #: 21- 073-00112

Permit #: F-21-028

Agency Interest (AI) ID: 167923

Date: 2/6/2024

Section AI.1: Source Information

Physical Location Address:	**Street:**	2157 Highway 151				
	City:	Frankfort	**County:**	Franklin	**Zip Code:**	40601
Mailing Address:	**Street or P.O. Box:**	111 Speen Street, Suite 410				
	City:	Framingham	**State:**	MA	**Zip Code:**	01701

Standard Coordinates for Source Physical Location

Longitude: -84.986345 (decimal degrees) **Latitude:** 38.135686 (decimal degrees)

Primary (NAICS) Category: Natural Gas Distribution **Primary NAICS #:** 221210

Classification (SIC) Category: Mixed, Manufactured, or Liquefied Petroleum Gas Production **Primary SIC #:** 4925

Briefly discuss the type of business conducted at this site: Convert landfill gas into renewable natural gas (RNG) for sale and injection into gas pipeline.

Description of Area Surrounding Source: ☑ Rural Area ☐ Industrial Park ☑ Residential Area ☐ Urban Area ☐ Industrial Area ☐ Commercial Area

Is any part of the source located on federal land? ☐ Yes ☑ No

Number of Employees: 4

Approximate distance to nearest residence or commercial property: 400

Property Area: 1.65 acres

Is this source portable? ☐ Yes ☑ No

What other environmental permits or registrations does this source currently hold or need to obtain in Kentucky?

NPDES/KPDES:	☐ Currently Hold	☐ Need	☑ N/A
Solid Waste:	☐ Currently Hold	☐ Need	☑ N/A
RCRA:	☐ Currently Hold	☐ Need	☑ N/A
UST:	☐ Currently Hold	☐ Need	☑ N/A

Type of Regulated Waste Activity: ☐ Mixed Waste Generator ☐ Generator ☐ Recycler ☐ Other

☐ U.S. Importer of Hazardous Waste ☐ Transporter ☐ Treatment/Storage/Disposal Facility ☑ N/A

Section A1.2: Applicant Information

Applicant Name: Ameresco Benson Valley RNG LLC

Title: (if individual)

Mailing Address: **Street or P.O. Box:** 111 Speen St., Suite 410
City: Framingham **State:** MA **Zip Code:** 01701

Email: (if individual)

Phone: 508-598-4386

Technical Contact

Name: Stevia Smith

Title: Manager - RNG Compliance

Mailing Address: **Street or P.O. Box:** 111 Speen Street, Suite 410
City: Framingham **State:** MA **Zip Code:** 01701

Email: smiths@ameresco.com

Phone: 508-598-4386

Air Permit Contact for Source

Name: Stevia Smith

Title: Manager - RNG Compliance

Mailing Address: **Street or P.O. Box:** 111 Speen Street, Suite 410
City: Framingham **State:** MA **Zip Code:** 01701

Email: smiths@ameresco.com

Phone: 508-598-4386

Section A1.3: Owner Information

☑ Owner same as applicant

Name: Ameresco Benson Valley RNG LLC

Title:

Mailing Address: **Street or P.O. Box:** 111 Speen Street, Suite 410
City: Framingham **State:** MA **Zip Code:** 01701

Email: smiths@ameresco.com

Phone: 508-598-4386

List names of owners and officers of the company who have an interest in the company of 5% or more.

Name	Position
George Sakellaris	Chairman, President, and Chief Executive Officer

Section AI.4: Type of Application

Current Status: ☐ Title V ☑ Conditional Major ☐ State-Origin ☐ General Permit ☐ Registration ☐ None

Requested Action: *(check all that apply)*

☐ Name Change	☐ Initial Registration	☐ Significant Revision	☐ Administrative Permit Amendment
☐ Renewal Permit	☐ Revised Registration	☑ Minor Revision	☐ Initial Source-wide OperatingPermit
☑ 502(b)(10)Change	☐ Extension Request	☐ Addition of New Facility	☐ Portable Plant Relocation Notice
☐ Revision	☐ Off Permit Change	☐ Landfill Alternate Compliance Submittal	☐ Modification of Existing Facilities
☐ Ownership Change	☐ Closure		

Requested Status: ☐ Title V ☑ Conditional Major ☐ State-Origin ☐ PSD ☐ NSR ☐ Other: _____

Is the source requesting a limitation of potential emissions? ☑ Yes ☐ No

Pollutant:	Requested Limit:	Pollutant:	Requested Limit:
☑ Particulate Matter	<100 tons/12 months	☑ Single HAP	<10 tons/12 months
☑ Volatile Organic Compounds (VOC)	90 tons/12-months	☑ Combined HAPs	22.5 tons/12 months
☑ Carbon Monoxide	<100 tons/12-months	☐ Air Toxics (40 CFR 68, Subpart F)	
☑ Nitrogen Oxides	<100 tons/12 months	☐ Carbon Dioxide	
☑ Sulfur Dioxide	<100 tons/12 months	☐ Greenhouse Gases (GHG)	
☐ Lead		☐ Other	

For New Construction:

Proposed Start Date of Construction: *(MM YYYY)* 07/2022 **Proposed Operation Start-Up Date:** *(MM YYYY)* 08/2023

For Modifications:

Proposed Start Date of Modification: *(MM YYYY)* _____ **Proposed Operation Start-Up Date:** *(MM YYYY)* _____

Applicant is seeking coverage under a permit shield. ☐ Yes ☑ No

Identify any non-applicable requirements for which permit shield is sought on a separate attachment to the application.

Section AI.5 Other Required Information

Indicate the documents attached as part of this application:

- ☐ DEP7007A Indirect Heat Exchangers and Turbines
- ☑ DEP7007B Manufacturing or Processing Operations
- ☐ DEP7007C Incinerators and Waste Burners
- ☐ DEP7007F Episode Standby Plan
- ☐ DEP7007J Volatile Liquid Storage
- ☐ DEP7007K Surface Coating or Printing Operations
- ☐ DEP7007L Mineral Processes
- ☐ DEP7007M Metal Cleaning Degreasers
- ☑ DEP7007N Source Emissions Profile
- ☐ DEP7007P Perchloroethylene Dry Cleaning Systems
- ☐ DEP7007R Emission Offset Credit
- ☐ DEP7007S Service Stations
- ☐ DEP7007T Metal Plating and Surface Treatment Operations
- ☑ DEP7007V Applicable Requirements and Compliance Activities
- ☐ DEP7007Y Good Engineering Practice and Stack Height Determination
- ☐ DEP7007AA Compliance Schedule for Non-complying Emission Units
- ☐ DEP7007BB Certified Progress Report
- ☐ DEP7007CC Compliance Certification
- ☑ DEP7007DD Insignificant Activities
- ☐ DEP7007EE Internal Combustion Engines
- ☐ DEP7007FF Secondary Aluminum Processing
- ☑ DEP7007GG Control Equipment
- ☐ DEP7007HH Haul Roads
- ☐ Confidentiality Claim
- ☐ Ownership Change Form
- ☐ Secretary of State Certificate
- ☑ Flowcharts or diagrams depicting process
- ☐ Digital Line Graphs (DLG) files of buldings, roads, etc.
- ☑ Site Map
- ☑ Map or drawing depicting location of facility
- ☐ Safety Data Sheet (SDS)
- ☐ Emergency Response Plan
- ☐ Other: _____

Section AI.6: Signature Block

I, the undersigned, hereby certify under penalty of law, that I am a responsible official*, and that I have personally examined, and am familiar with, the information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the information is on knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false or incomplete information, including the possibility of fine or imprisonment.

Authorized Signature — Date: 2/6/2024

Nathan Hall — Type or Printed Name of Signatory

Senior Vice President - Asset Operations — Title of Signatory

*Responsible official as defined by 401 KAR 52:001.

Section AI.7: Notes, Comments, and Explanations
This Application is being submitted for a modification to the existing Ameresco Benson Valley RNG LLC Air Quality Permit ID F-21-028, as detailed in Ameresco's attached cover letter dated 2/1/2024. Ameresco understands that the change described in our letter constitutes a minor change and that there will be no alteration to the permitted emissions limitations contained in Ameresco's existing Air Permit.
The changes do not trigger applicability of any additional Federal or State air regulations.

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007B

Manufacturing or Processing Operations

___ Section B 1: Process Information
___ Section B 2: Materials and Fuel Information
___ Section B 3: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG
___ Attach a flow diagram
___ Attach SDS

Source Name: Ameresco Benson Valley RNG LLC
KY EIS (AFS) #: 21- 073-00112
Permit #: F-21-028
Agency Interest (AI) ID: 167923
Date: 2/6/2024

Section B.1: Process Information

Emission Unit #	Emission Unit Name	Describe Emission Unit	Process ID	Process Name	Manufacturer	Model No.	Proposed/Actual Date of Construction Commencement (MM YYYY)	Is the Process Continuous or Batch?	Number of Batches per 24 Hours (if applicable)	Hours per Batch (if applicable)
EU 01	Thermal Oxidizer	Combustion of process waste gas, supplemental fuel and burner/pilot fuel	EP 01	TOX1	Perennial (or equivalent)	FL-72X58-45-TP	01/2023	Continuous	N/A	N/A
EU 02	Open Flare	Combustion of process waste gas, off-spec gas, purge and depress gas, excess PPRNG, pilot gas	EP 02	FLR1	Perennial (or equivalent)	FL-10-C	12/2022	Continuous	N/A	N/A
TBD	Emergency Diesel Generator	Combustion of diesel fuel to produce electricity, to be used for emergency/backup purposes	TBD	TBD	Caterpillar	D250GC	04/2023	Continuous	N/A	N/A

Section B.2: Materials and Fuel Information

**Maximum yearly fuel usage rate only applies if applicant request operating restrictions through federally enforceable limitations.*

Emission Unit #	Emission Unit Name	Name of Raw Materials Input	Maximum Quantity of Each Raw Material Input	(Specify Units/hr)	Total Process Weight Rate for Emission Unit (tons/hr)	Name of Finished Materials	Maximum Quantity of Each Finished Material Output	(Specify Units/hr)	Fuel Type	Maximum Hourly Fuel Usage Rate	(Specify Units)	Maximum Yearly Fuel Usage Rate	(Specify Units)	Sulfur Content %	Ash Content %
N/A															

Section B.3: Notes, Comments, and Explanations

None

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

DEP7007GG

Control Equipment

Additional Documentation

___ Complete Sections GG.1 through GG.12, as applicable

___ Attach manufacturer's specifications for each control device

___ Complete DEP7007AI

Source Name: Ameresco Benson Valley RNG LLC

KY EIS (AFS) #: 21- 073-00112

Permit #: F-21-028

Agency Interest (AI) ID: 167923

Date: 2/6/2024

Section GG.1: General Information - Control Equipment

Control Device ID #	Control Device Name	Cost	Manufacturer	Model Name/ Serial #	Date Installed	Inlet Gas Stream Data For All Control Devices					Inlet Gas Stream Data For Condensers, Adsorbers, Afterburners, Incinerators, Oxidizers Only			Equipment Operational Data For All Control Devices		
						Temperature (°F)	Flowrate (acfm @ 68°F)	Average Particle Diameter (µm)	Particle Density (lb/ft³) or Specific Gravity	Gas Density (lb/ft³)	Gas Moisture Content (%)	Gas Composition	Fan Type	Pressure Drop Range (in. H2O)	Pollutants Collected/ Controlled	Pollutant Removal (%)
CD 01	Thermal Oxidizer	$317k	Perennual	FL-72X58-45-TP	1/24/2023	200 (max)	0-2,000	<2.5	varies	varies	varies	varies	Forced draft centrifugal blower	varies	VOC NMOC	98
CD 02	Open Flare	$148k	Perennual	FL-10-C	12/13/2022	200 (max)	0-2,000	<2.5	varies	varies	varies	varies	None	varies	VOC NMOC	98

Section GG.2: Flare Source Information

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Flare	Type of Flare (e.g. steam-assisted, air-assisted, nonassisted)	Process Gas Flowrate (acfm)	Net Heating Value of Stream(s) (Btu/scf)	Removal Efficiency (%)	Flare Rated Capacity (MMBtu/hr)
CD 02	Pre-processed RNG (PPRNG), CO2 Removal Off-Spec Gas, O2/N2 Off-Spec Gas, System Purge Gas, Natural Gas Pilot	Open-Nonassisted	0-1,500	992 (max)	98	34.0

Section GG.7: Afterburner/Incinerator/Oxidizer

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Afterburner/Incinerator/ Oxidizer	Identify Type: (Afterburner, Incinerator, Oxidizer, or other specify)	Number of Burners	Burner Rating	Dimensions of Combustion Chamber	Residence Time	Combustion Chamber Temperature	Type of Catalyst	Type of Heat Exchanger	Auxiliary Fuel							Composition and Quantities of Combusted Waste
										Identify Fuel Type	Higher Heating Value (MMBtu/scf)	Hourly Fuel Usage (scf/hr)	% Sulfur (Maximum)	% Sulfur (Average)	% Ash (Maximum)	% Ash (Average)	
CD01	PPRNG for pilot/supplemental fuel, Off-Gas from CO2 Membrane, Off-Gas from O2/N2 Removal Unit	Thermal Oxidizer	1		17x30	1 sec	1,400-1800	None	None	PPRNG (50% CH4)	0.0005	10,000 (max)		4 ppm	0	0	N/A

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007N

Source Emissions Profile

__ Section N.1: Emission Summary
__ Section N.2: Stack Information
__ Section N.3: Fugitive Information
__ Section N.4: Notes, Comments, and Explanations

Additional Documentation

__ Complete DEP7007AI

Source Name: Ameresco Benson Valley RNG LLC
KY EIS (AFS) #: 21- 073-00112
Permit #: F-21-028
Agency Interest (AI) ID: 167923
Date: 2/6/2024

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU 01	Thermal Oxidizer	EP 01	TOX1	Thermal Oxidizer	CD 01	ST 01	0.068 lb/mmbtu	NOx	0.068 lb/mmbtu	Manufacturer, AP-42 2.4	0.00%	98.00%	1.18	1.18	5.15	5.15
EU 01	Thermal Oxidizer	EP 01	TOX1	Thermal Oxidizer	CD 01	ST 01	0.31 lb/mmbtu	CO	0.31 lb/mmbtu	Manufacturer, AP-42 2.4	0.00%	98.00%	5.36	5.36	23.5	23.5
EU 01	Thermal Oxidizer	EP 01	TOX1	Thermal Oxidizer	CD 01	ST 01	see attached calculations	VOC	see attached calculations	Manufacturer, AP-42 2.4	0.00%	98.00%	2.58	2.58	11.30	11.30
EU 01	Thermal Oxidizer	EP 01	TOX1	Thermal Oxidizer	CD 01	ST 01	17 lb/mmscf CH4	PM	17 lb/mmscf CH4	AP-42 2.4	0.00%	N/A	1.17	1.17	5.14	5.14
EU 01	Thermal Oxidizer	EP 01	TOX1	Thermal Oxidizer	CD 01	ST 01	46.9 ppm	SOx	46.9 ppm	AP-42 2.4	0.00%	N/A	1.17	1.17	5.12	5.12
EU 01	Thermal Oxidizer	EP 01	TOX1	Thermal Oxidizer	CD 01	ST 01	0.08 lb/hr	HAP	0.08 lb/hr	AP-42 2.4	0.00%	98.00%	0.08	0.08	0.37	0.37
EU 02	Open Flare	EP 02	FLR1	Open Flare	CD 02	ST 02	0.068 lb/mmbtu	NOx	0.068 lb/mmbtu	Manufacturer, AP-42 2.4	0.00%	98.00%	2.32	2.32	10.16	10.16
EU 02	Open Flare	EP 02	FLR1	Open Flare	CD 02	ST 02	0.31 lb/mmbtu	CO	0.31 lb/mmbtu	Manufacturer, AP-42 2.4	0.00%	98.00%	10.52	10.52	46.08	46.08
EU 02	Open Flare	EP 02	FLR1	Open Flare	CD 02	ST 02	see attached calculations	VOC	see attached calculations	Manufacturer, AP-42 2.4	0.00%	98.00%	1.00	1.00	4.38	4.38
EU 02	Open Flare	EP 02	FLR1	Open Flare	CD 02	ST 02	17 lb/mmscf CH4	PM	17 lb/mmscf CH4	AP-42 2.4	0.00%	N/A	0.76	0.76	3.34	3.34
EU 02	Open Flare	EP 02	FLR1	Open Flare	CD 02	ST 02	46.9 ppm	SOx	46.9 ppm	AP-42 2.4	0.00%	N/A	0.73	0.73	3.22	3.22
EU 02	Open Flare	EP 02	FLR1	Open Flare	CD 02	ST 02	0.06 lb/hr	HAP	0.06 lb/hr	AP-42 2.4	0.00%	98.00%	0.06	0.06	0.24	0.24
TBD	Emergency Diesel Generator	TBD	TBD	Emergency Diesel Generator	TBD	TBD	250 kW	NOx	3.14 g/hp-hr	Manufacturer	0.00%	N/A	2.32	2.32	1.02	1.02
TBD	Emergency Diesel Generator	TBD	TBD	Emergency Diesel Generator	TBD	TBD	250 kW	CO	0.68 g/hp-hr	Manufacturer	0.00%	N/A	0.50	0.50	0.22	0.22
TBD	Emergency Diesel Generator	TBD	TBD	Emergency Diesel Generator	TBD	TBD	250 kW	VOC	0.17 g/hp-hr	Manufacturer	0.00%	N/A	0.13	0.13	0.06	0.06
TBD	Emergency Diesel Generator	TBD	TBD	Emergency Diesel Generator	TBD	TBD	250 kW	PM	0.16 g/hp-hr	Manufacturer	0.00%	N/A	0.12	0.12	0.05	0.05

Section N.2: Stack Information

UTM Zone:

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (°F)	Exit Velocity (ft/sec)
ST 01	Thermal Oxidizer	4.16' ID	45'	810	4222817	676470	0-1600	1400-1800	<60
ST 02	Open Flare	0.868'	40'	810	4222817	676470	0-1500	1400-1800	<60
TBD	Emergency Diesel Generator	0.417'	7.81'	810	4222817	676470	0-2246	700-900	unknown

Section N.3: Fugitive Information

UTM Zone:

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side *(ft)*	Length of the Y Side *(ft)*	Northing *(m)*	Easting *(m)*	Release Temperature *(°F)*	Release Height *(ft)*
N/A								

Section N.4: Notes, Comments, and Explanations
SCC for Emission Points = Thermal Oxidizer: 31000209, Flare: 31000205
UTM Zone = 16S. Elevation and UTM Coordinates are Estimated.

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

DEP7007V

Applicable Requirements and Compliance Activities

___ Section V.1: Emission and Operating Limitation(s)

___ Section V.2: Monitoring Requirements

___ Section V.3: Recordkeeping Requirements

___ Section V.4: Reporting Requirements

___ Section V.5: Testing Requirements

___ Section V.6: Notes, Comments, and Explanations

Additional Documentation
___ Complete DEP7007AI

Source Name: Ameresco Benson Valley RNG LLC

KY EIS (AFS) #: 21- 073-00112

Permit #: F-21-028

Agency Interest (AI) ID: 167923

Date: 2/6/2024

Section V.1: Emission and Operating Limitation(s)

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
EU 01	Thermal Oxidizer	401 KAR 63:020	VOC, HAP				Recordkeeping
EU 02	Open Flare	401 KAR 63:020	VOC, HAP				Recordkeeping
TBD	Emergency/Backup Diesel Generator	40 CFR 60 Subpart IIII	NOx	4 g/kW-hr			Recordkeeping
TBD	Emergency/Backup Diesel Generator	40 CFR 60 Subpart IIII	CO	3.5 g/kW-hr			Recordkeeping
TBD	Emergency/Backup Diesel Generator	40 CFR 60 Subpart IIII	PM	0.2 g/kW-hr			Recordkeeping

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
EU3	Emergency/Backup Diesel Generator	40 CFR 63 Subpart ZZZZ	NOx, CO, PM				Recordkeeping

Section V.2: Monitoring Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Monitored	Description of Monitoring
EU 01	Thermal Oxidizer	VOC, HAP	401 KAR 63:020	Flow/Temperature	
EU 02	Open Flare	VOC, HAP	401 KAR 63:020	Flow/Temperature	
TBD	Emergency/Backup Diesel Generator	NOx, CO, PM	40 CFR 60 Subpart IIII	Fuel usage	
TBD	Emergency/Backup Diesel Generator	NOx, CO, PM	40 CFR 63 Subpart ZZZZ	Fuel usage	

Section V.3: Recordkeeping Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Recorded	Description of Recordkeeping
EU 01	Themal Oxidizer	VOC, HAP	401 KAR 63:020	Flow/Temperature	
EU 02	Open Flare	VOC, HAP	401 KAR 63:020	Flow/Temperature	
TBD	Emergency/Backup Diesel Generator	NOx, CO, PM	40 CFR 60 Subpart IIII	Fuel usage	
TBD	Emergency/Backup Diesel Generator	NOx, CO, PM	40 CFR 63 Subpart ZZZZ	Fuel usage	

Section V.4: Reporting Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Reported	Description of Reporting
EU 01	Themal Oxidizer	VOC, HAP	401 KAR 63:020	Flow/Temperature	Semi-Annual
EU 02	Open Flare	VOC, HAP	401 KAR 63:020	Flow/Temperature	Semi-Annual
TBD	Emergency/Backup Diesel Generator	NOx, CO, PM	40 CFR 60 Subpart IIII	Fuel usage	Semi-Annual
TBD	Emergency/Backup Diesel Generator	NOx, CO, PM	40 CFR 63 Subpart ZZZZ	Fuel usage	Semi-Annual

Section V.5: Testing Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Tested	Description of Testing
EU 01	Thermal Oxidizer	VOC, HAP	401 KAR 63:020	VOC/HAP	Initial Performance Test, if required.
EU 02	Open Flare	VOC, HAP	401 KAR 63:020	None	
TBD	Emergency/Backup Diesel Generator	NOx, CO, PM	40 CFR 60 Subpart IIII	None	
TBD	Emergency/Backup Diesel Generator	NOx, CO, PM	40 CFR 63 Subpart ZZZZ	None	

Section V.6: Notes, Comments, and Explanations

ATTACHMENT B

EMISSIONS CALCULATIONS

POTENTIAL AIR EMISSIONS CALCULATIONS

PLANT NAME:	Ameresco Benson Valley RNG LLC
PLANT LOCATION:	Frankfort, KY
PROJECT:	Air Quality Permit Modification Application
DATE:	2/1/2024

FACILITY TOTAL EMISSIONS:	**Facility Total**

Pollutant	lb/hr	lb/day	lb/yr	ton/yr
NOx	5.82	139.63	32,669.18	16.33
CO	16.39	393.31	139,594.55	69.80
VOC	3.70	88.89	31,455.47	15.73
PM	2.05	49.30	17,063.65	8.53
SOx	1.90	45.69	16,675.44	8.34

POTENTIAL AIR EMISSIONS CALCULATIONS

PLANT NAME:	Ameresco Benson Valley RNG LLC
PLANT LOCATION:	Frankfort, KY
PROJECT:	Air Quality Permit Modification Application
DATE:	2/1/2024

DEVICE NAME:	Open Flare
DEVICE ID:	EU 02

	Value	Unit	Source
Methane heat content:	1,012	Btu/scf	EPA AP-42 Section 1.4
	0.00101	MMBtu/scf	
VOC destruction efficiency:	98%	%	Manufacturer
Gas exhaust temperature	15	degC	Site-specific estimate

GAS TYPE:	Various

	Value	Unit	Source
Methane content:	50%	%	Engineering estimate
Inlet gas capacity:	1,500	scf/minute	Engineering estimate
	788,400,000	scf/year	
	33.9	MMBtu/hr	
	814	MMBtu/day	
	7,130,920	MMBtu/year	
Operating hours:	8,760	hours/year	Maximum unrestricted

Pollutant	Emission Factor	Unit	EF Source	Notes	lb/hr	lb/day	lb/yr	ton/yr
NOx	0.068	lb/MMBtu	EPA AP-42 Section 13.5 - Industrial Flare		2.31	55.35	20,204	10.10
CO	0.31	lb/MMBtu	EPA AP-42 Section 13.5 - Industrial Flare		10.51	252.3	92,108	46.05
VOC	3,780	ppm as hexane	Lab analytical results dated 2/19/2020 with 4x factor applied. EPA AP-42 Section 2.4 - Equations 3 & 4		1.00	23.95	8,743	4.37
PM	17	lb PM/mmscf CH4	EPA AP-42 Section 2.4 - LFG Flare		0.76	18.29	6,675	3.34
SOx	46.9	ppm TRS	EPA AP-42 Section 2.4 - Equations 3 & 4		0.73	17.62	6,433	3.22

GAS TYPE:	Natural Gas

	Value	Unit	Source
Methane content:	98%	%	Industry-standard estimate
Inlet gas capacity:	2.50	scf/minute	Site-specific estimate
	1,314,000	scf/year	
	0.15	MMBtu/hr	
	3.57	MMBtu/day	
	31,276	MMBtu/year	
Operating hours:	8,760	hours/year	Site-specific estimate

Pollutant	Emission Factor	Unit	EF Source	Notes	lb/hr	lb/day	lb/yr	ton/yr
NOx	94	lb/MMscf	EPA AP-42 Section 1.4 - NG Combustion		0.014	0.338	123.52	0.06
CO	40	lb/MMscf	EPA AP-42 Section 1.4 - NG Combustion		0.006	0.144	52.56	0.03
VOC	5.50	lb/MMscf	EPA AP-42 Section 1.4 - NG Combustion		0.001	0.020	7.23	0.004
PM	7.60	lb/MMscf	EPA AP-42 Section 1.4 - NG Combustion		0.001	0.027	9.99	0.005
SOx	0.60	lb/MMscf	EPA AP-42 Section 1.4 - NG Combustion		0.000	0.002	0.79	0.0004

Total Potential Emissions:	Open Flare

Pollutant	lb/hr	lb/day	lb/yr	ton/yr
NOx	2.32	55.69	20,328	10.16
CO	10.52	252.5	92,160	46.08
VOC	1.00	23.97	8,750	4.38
PM	0.76	18.31	6,685	3.34
SOx	0.73	17.63	6,434	3.22

111 Speen St, Ste 410
Framingham, MA 01701
P: (508) 661-2200
ameresco.com

April 2, 2024

Attn: Samantha Hoffman
Kentucky Department for Environmental Protection, Division for Air Quality
300 Sower Boulevard, 2nd Floor
Frankfort, KY 40601

RE: Responsible Official (RO) Contact Information Update
Ameresco Benson Valley RNG LLC, Permit #F-21-028, Agency Interest #167923

Dear Ms. Hoffman,

Ameresco Benson Valley RNG LLC (Ameresco) is submitting this letter inform Kentucky Department for Environmental Protection (KYDEP) that our facility Responsible Official (RO) has changed from Nathan Hall to Harold Stewart, effective April 1, 2024. In addition, the Air Permit Contact should be updated from Nathan Hall to Rebecca Sherwood. Ameresco kindly requests that KYDEP update its database to reflect these changes. Mr. Stewart's and Ms. Sherwood's contact information is below:

Full Name:	Harold Stewart
Title:	Director of Operations
Address:	111 Speen Street, Suite 410, Framingham MA 01701
Phone (work):	(847) 463-0628
Phone (cell):	(847) 463-0628
Email:	hstewart@ameresco.com

Full Name:	Rebecca Sherwood
Title:	Environmental Compliance Engineer
Address:	111 Speen Street, Suite 410, Framingham MA 01701
Phone (work):	(508) 598-3049
Phone (cell):	(215) 586-1197
Email:	rsherwood@ameresco.com

If you have any questions or comments on this report, please contact Rebecca Sherwood at (508) 598-3049 or rsherwood@ameresco.com.

Ameresco Benson Valley RNG LLC

Rebecca Sherwood,
Environmental Compliance Engineer

Harold Stewart
Director of Operations

ltr Benson RO Change 20240402

Final Audit Report 2024-04-02

Created:	2024-04-02
By:	Rebecca Sherwood (rsherwood@ameresco.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAAWpFjE5M4CpczquNpJHeYYNAhRYZVdl7U

"ltr Benson RO Change 20240402" History

Document created by Rebecca Sherwood (rsherwood@ameresco.com)
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Document emailed to Harold Stewart (hstewart@ameresco.com) for signature
2024-04-02 - 2:10:44 PM GMT

Email viewed by Harold Stewart (hstewart@ameresco.com)
2024-04-02 - 5:56:06 PM GMT- IP address: 104.47.73.254

Document e-signed by Harold Stewart (hstewart@ameresco.com)
Signature Date: 2024-04-02 - 5:56:37 PM GMT - Time Source: server- IP address: 149.75.228.4

Agreement completed.
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AMERESCO
Green • Clean • Sustainable

111 Speen St, Ste 410
Framingham, MA 01701
P: (508) 661-2200
ameresco.com

March 15, 2025

Mr. Zachary Bittner, P.E.
Environmental Engineer Supervisor
Combustion Section
Kentucky Department of Environmental Protection
Division for Air Quality
300 Sower Blvd
Frankfort, KY 40601

RE: Off-Permit Change Application
Ameresco Benson Valley RNG LLC – Frankfort, Kentucky
Air Quality Permit ID No. F-21-028
Agency Interest #: 167923
Activity ID: APE20210002
Source ID: 21-073-00112

Dear Mr. Bittner:

Ameresco Benson Valley RNG LLC (Ameresco) is submitting to the Kentucky Department of Environmental Protection (KDEP) this Off-Permit Change Application for Air Quality Permit ID F-21-028 dated November 7, 2021. The facility was previously issued Off-Permit changes on August 10, 2022 and September 18, 2023 and a Section 502(b)(1) change on March 1, 2024, and a Title V Air Operating Permit is currently pending for the facility. Ameresco's renewable natural gas (RNG) facility processes landfill gas into pipeline-quality gas which is injected into a natural gas pipeline. The RNG plant includes a thermal oxidizer and an open flare. With this submittal, Ameresco seeks to make the following changes which we understand qualify as an Off-Permit change under 401 KAR 52:020, Section 17:

REQUESTED MODIFICATIONS

Ameresco has identified the need for an increased heat input limit for the open flare (EU02) in order to accommodate operational needs at the facility. The estimations made for the open flare maximum operating rates in the initial air permit application submitted in February 2021 have recently been determined to be insufficient for optimal operation of the facility. The requested increased open flare heat input will allow Ameresco to minimize the startup duration of the facility and maximize the amount of landfill gas processed into renewable natural gas. The requested increase will allow Ameresco to fully maximize the environmental benefits of the facility, which is consistent with the goals, directives, and policies of KDEP.

Ameresco's initial air permit application indicated the following maximum operating rates for the open flare:

Initial Air Plan Approval application – open flare:

Maximum heat input:	33.9 MMBtu/hour
	297,122 MMBtu/12-months
Maximum inlet gas flow rate:	90,000 scf/hour
	788,400,000 scf/12-months

Ameresco has clarified that the maximum potential heat input from all the gases which may be delivered to the open flare may total up to the following:

Requested revised limits – open flare:

Maximum heat input:	70 MMBtu/hour
	311,500 MMBtu/12-months
Maximum inlet gas flow rate:	138,000 scf/hour
	614,100,000 scf/12-months

With these revised values, the maximum potential emissions from the open flare will increase, with the hourly rate increase being more significant than the annual rate increase, which is slight (or zero for some pollutants). Ameresco is requesting no changes to the existing heat input, flow or emissions limits for the thermal oxidizer or emergency diesel generator. Ameresco has calculated the revised potential emissions from the open flare as follows.

Table 1. Open Flare Revised Potential Emissions

Pollutant	lb/hr	ton/yr
NOx	4.76	10.59
CO	21.70	48.28
VOC	2.38	5.28
PM/PM10/PM2.5	1.17	2.61
SOx	1.17	2.59
HAPs	0.61	2.65

Table 2. Open Flare Increase in Potential Emissions

Pollutant	lb/hr	ton/yr
NOx	2.44	0.00
CO	11.18	2.10
VOC	1.39	0.93
PM/PM10/PM2.5	0.42	0.00
SOx	0.43	0.00

Table 3. Facility Total Revised Potential Emissions

Pollutant	lb/hr	ton/yr
NOx	8.26	16.32
CO	27.57	71.90
VOC	5.09	16.66
PM/PM10/PM2.5	2.47	7.81
SOx	2.33	7.70
HAPs	0.61	2.65

Ameresco's detailed facility emissions calculations are attached.

AIR PERMIT TYPE

Ameresco currently holds a Conditional Major / Synthetic Minor air permit issued from KDEP. With the modifications requested in this application, the Ameresco facility will remain qualified for this existing permit. The modifications requested above do not alter the requirements of the existing permit, and do not trigger additional regulatory requirements. Given that no permit conditions are affected, there is no need to revise and reissue the permit, and the modification may be approved by an Off-Permit Change action. This approach was discussed with Ms. Stacie Daniels of KDEP by email on March 17, 2025, who advised that this modification may be approved by an Off-Permit change. KDEP has advised that this modification (along with the previous off-permit change and 502(b)(10) changes) will be incorporated into the forthcoming Title V air operating permit for the Ameresco facility.

KDEP FORMS

Ameresco understands that the following forms are required for this Off-Permit change request, which are attached: DEP7007AI, DEP7007B, DEP7007N, DEP7007V, DEP7007DD and DEP7007GG. Ameresco understands that there is no fee due for this action and that KDEP will issue a letter confirming that this modification is approved. Thank you for your time and attention to this matter. Should you have any questions or desire additional information, please contact Stevia Smith at (704) 989-2023 or smiths@ameresco.com.

Respectfully submitted,

Harold Stewart

Mr. Harold Stewart, Director – Operations
Authorized Representative
Ameresco Benson Valley RNG LLC

cc: Ms. Stacie Daniels – KDEP
Ms. Stephanie Burberry – KDEP
Mr. Scott Hill – Ameresco
Ms. Stevia Smith – Ameresco

ATTACHMENT A

KDEP FORMS

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

DEP7007AI

Administrative Information

___ Section AI.1: Source Information

___ Section AI.2: Applicant Information

___ Section AI.3: Owner Information

___ Section AI.4: Type of Application

___ Section AI.5: Other Required Information

___ Section AI.6: Signature Block

___ Section AI.7: Notes, Comments, and Explanations

Additional Documentation

___ Additional Documentation attached

Source Name: **Ameresco Benson Valley RNG LLC**

KY EIS (AFS) #: **21- 073-00112**

Permit #: **F-21-028**

Agency Interest (AI) ID: **167923**

Date: **4/15/2025**

Section AI.1: Source Information

Physical Location Address:	**Street:**	2157 Highway 151				
	City:	Frankfort	**County:**	Franklin	**Zip Code:**	40601
Mailing Address:	**Street or P.O. Box:**	111 Speen Street, Suite 410				
	City:	Framingham	**State:**	MA	**Zip Code:**	01701

Standard Coordinates for Source Physical Location

Longitude: -84.986345 (decimal degrees) **Latitude:** 38.135686 (decimal degrees)

Primary (NAICS) Category: Natural Gas Distribution **Primary NAICS #:** 221210

Classification (SIC) Category: Mixed, Manufactured, or Liquefied Petroleum Gas Production **Primary SIC #:** 4925

Briefly discuss the type of business conducted at this site: Convert landfill gas into renewable natural gas (RNG) for sale and injection into gas pipeline.

Description of Area Surrounding Source: ☑ Rural Area ☐ Industrial Park ☑ Residential Area ☐ Urban Area ☐ Industrial Area ☐ Commercial Area

Is any part of the source located on federal land? ☐ Yes ☑ No

Number of Employees: 4

Approximate distance to nearest residence or commercial property: 400

Property Area: 1.65 acres

Is this source portable? ☐ Yes ☑ No

What other environmental permits or registrations does this source currently hold or need to obtain in Kentucky?

NPDES/KPDES:	☐ Currently Hold	☐ Need	☑ N/A
Solid Waste:	☐ Currently Hold	☐ Need	☑ N/A
RCRA:	☐ Currently Hold	☐ Need	☑ N/A
UST:	☐ Currently Hold	☐ Need	☑ N/A

Type of Regulated Waste Activity: ☐ Mixed Waste Generator ☐ Generator ☐ Recycler ☐ Other: _____ ☐ U.S. Importer of Hazardous Waste ☐ Transporter ☐ Treatment/Storage/Disposal Facility ☑ N/A

Section AI.2: Applicant Information

Applicant Name: Ameresco Benson Valley RNG LLC

Title: (if individual)

Mailing Address: **Street or P.O. Box:** 111 Speen St., Suite 410

City: Framingham **State:** MA **Zip Code:** 01701

Email: (if individual)

Phone: 508-598-4386

Technical Contact

Name: Stevia Smith

Title: Manager - RNG Compliance

Mailing Address: **Street or P.O. Box:** 111 Speen Street, Suite 410

City: Framingham **State:** MA **Zip Code:** 01701

Email: smiths@ameresco.com

Phone: 508-598-4386

Air Permit Contact for Source

Name: Stevia Smith

Title: Manager - RNG Compliance

Mailing Address: **Street or P.O. Box:** 111 Speen Street, Suite 410

City: Framingham **State:** MA **Zip Code:** 01701

Email: smiths@ameresco.com

Phone: 508-598-4386

Section AI.3: Owner Information

☑ **Owner same as applicant**

Name: Ameresco Benson Valley RNG LLC

Title:

Mailing Address: **Street or P.O. Box:** 111 Speen Street, Suite 410

City: Framingham **State:** MA **Zip Code:** 01701

Email: smiths@ameresco.com

Phone: 508-598-4386

List names of owners and officers of the company who have an interest in the company of 5% or more.

Name	Position
George Sakellaris	Chairman, President, and Chief Executive Officer

Section AI.4: Type of Application

Current Status: ☐ Title V ☑ Conditional Major ☐ State-Origin ☐ General Permit ☐ Registration ☐ None

Requested Action: *(check all that apply)*

☐ Name Change	☐ Initial Registration	☐ Significant Revision	☐ Administrative Permit Amendment
☐ Renewal Permit	☐ Revised Registration	☑ Minor Revision	☐ Initial Source-wide OperatingPermit
☐ 502(b)(10)Change	☐ Extension Request	☐ Addition of New Facility	☐ Portable Plant Relocation Notice
☐ Revision	☑ Off Permit Change	☐ Landfill Alternate Compliance Submittal	☐ Modification of Existing Facilities
☐ Ownership Change	☐ Closure		

Requested Status: ☐ Title V ☑ Conditional Major ☐ State-Origin ☐ PSD ☐ NSR ☐ Other: _____

Is the source requesting a limitation of potential emissions? ☑ Yes ☐ No

Pollutant:	Requested Limit:	Pollutant:	Requested Limit:
☑ Particulate Matter	<100 tons/12 months	☑ Single HAP	<10 tons/12 months
☑ Volatile Organic Compounds (VOC)	90 tons/12-months	☑ Combined HAPs	22.5 tons/12 months
☑ Carbon Monoxide	<100 tons/12-months	☐ Air Toxics (40 CFR 68, Subpart F)	
☑ Nitrogen Oxides	<100 tons/12 months	☐ Carbon Dioxide	
☑ Sulfur Dioxide	<100 tons/12 months	☐ Greenhouse Gases (GHG)	
☐ Lead		☐ Other	

For New Construction:

Proposed Start Date of Construction: *(MM YYYY)* _____ **Proposed Operation Start-Up Date:** *(MM YYYY)* _____

For Modifications:

Proposed Start Date of Modification: *(MM YYYY)* _____ **Proposed Operation Start-Up Date:** *(MM YYYY)* _____

Applicant is seeking coverage under a permit shield. ☐ Yes ☑ No **Identify any non-applicable requirements for which permit shield is sought on a separate attachment to the application.**

Section AI.5 Other Required Information

Indicate the documents attached as part of this application:

☐ DEP7007A Indirect Heat Exchangers and Turbines	☐ DEP7007CC Compliance Certification
☑ DEP7007B Manufacturing or Processing Operations	☑ DEP7007DD Insignificant Activities
☐ DEP7007C Incinerators and Waste Burners	☐ DEP7007EE Internal Combustion Engines
☐ DEP7007F Episode Standby Plan	☐ DEP7007FF Secondary Aluminum Processing
☐ DEP7007J Volatile Liquid Storage	☑ DEP7007GG Control Equipment
☐ DEP7007K Surface Coating or Printing Operations	☐ DEP7007HH Haul Roads
☐ DEP7007L Mineral Processes	☐ Confidentiality Claim
☐ DEP7007M Metal Cleaning Degreasers	☐ Ownership Change Form
☐ DEP7007N Source Emissions Profile	☐ Secretary of State Certificate
☐ DEP7007P Perchloroethylene Dry Cleaning Systems	☐ Flowcharts or diagrams depicting process
☐ DEP7007R Emission Offset Credit	☐ Digital Line Graphs (DLG) files of buildings, roads, etc.
☐ DEP7007S Service Stations	☐ Site Map
☐ DEP7007T Metal Plating and Surface Treatment Operations	☐ Map or drawing depicting location of facility
☐ DEP7007V Applicable Requirements and Compliance Activities	☐ Safety Data Sheet (SDS)
☐ DEP7007Y Good Engineering Practice and Stack Height Determination	☐ Emergency Response Plan
☐ DEP7007AA Compliance Schedule for Non-complying Emission Units	☐ Other: _____
☐ DEP7007BB Certified Progress Report	

Section AI.6: Signature Block

I, the undersigned, hereby certify under penalty of law, that I am a responsible official*, and that I have personally examined, and am familiar with, the information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the information is on knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false or incomplete information, including the possibility of fine or imprisonment.

Harold Stewart — **Authorized Signature**

04/15/2025 — **Date**

Harold Stewart — **Type or Printed Name of Signatory**

Director - Plant Operations — **Title of Signatory**

*Responsible official as defined by 401 KAR 52:001.

Section AI.7: Notes, Comments, and Explanations

This application is being submitted for a modification to the existing Ameresco Benson Valley RNG LLC Air Quality Permit ID F-21-028, as detailed in Ameresco's attached cover letter. Ameresco understands that the change described in our letter constitutes an Off-Permit change. Ameresco has identified the need for an increased heat input limit for the open flare (EU02) in order to accommodate operational needs at the facility. The estimations made for the open flare maximum operating rates in the initial air permit application submitted in February 2021 have recently been determined to be insufficient for optimal operation of the facility. The requested increased open flare heat input will allow Ameresco to minimize the startup duration of the facility and maximize the amount of landfill gas [illegible] facility, which is consistent with the goals, directives, and policies of KDEP. With these revised values, the maximum potential emissions from the open flare will increase, with the hourly rate increase being more significant than the annual rate increase, which is slight (or zero for some pollutants). Ameresco is requesting no changes to the existing heat input, flow or emissions limits for the thermal oxidizer or emergency diesel generator. The modifications requested above do not alter the requirements of the existing permit, and do not trigger additional regulatory requirements. Given that no permit conditions are affected, there is no need to revise and reissue the permit, and the modification may be approved by an Off-Permit Change action. This approach was discussed with Ms. Stacie Daniels of KDEP by email on March 17, 2025, who advised that this modification may be approved by an Off-Permit change.

Division for Air Quality

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DEP7007B

Manufacturing or Processing Operations

___ Section B.1: Process Information
___ Section B.2: Materials and Fuel Information
___ Section B.3: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG.
___ Attach a flow diagram
___ Attach SDS

Source Name: Ameresco Benson Valley RNG LLC
KY EIS (AFS) #: 21- 073-00112
Permit #: F-21-028
Agency Interest (AI) ID: 167923
Date: 4/15/2025

Section B.1: Process Information

Emission Unit #	Emission Unit Name	Describe Emission Unit	Process ID	Process Name	Manufacturer	Model No.	Proposed/Actual Date of Construction Commencement *(MM/YYYY)*	Is the Process Continuous or Batch?	Number of Batches per 24 Hours *(if applicable)*	Hours per Batch *(if applicable)*
EU 01	Thermal Oxidizer	Combustion of process waste gas, supplemental fuel and burner/pilot fuel	EP 01	TOX1	Perennial	FL-72X58-45-TP	01/2023	Continuous	N/A	N/A
EU 02	Open Flare	Combustion of process waste gas, off-spec gas, purge and depress gas, excess PPRNG, pilot gas	EP 02	FLR1	Perennial	FL-10-C	12/2022	Continuous	N/A	N/A
TBD	Emergency Diesel Generator	Combustion of diesel fuel to produce electricity, to be used for emergency/backup purposes	TBD	TBD	Caterpillar	D250GC	04/2023	Continuous	N/A	N/A

Section B.2: Materials and Fuel Information

**Maximum yearly fuel usage rate only applies if applicant request operating restrictions through federally enforceable limitations.*

Emission Unit #	Emission Unit Name	Name of Raw Materials Input	Maximum Quantity of Each Raw Material Input		Total Process Weight Rate for Emission Unit (tons/hr)	Name of Finished Materials	Maximum Quantity of Each Finished Material Output		Fuel Type	Maximum Hourly Fuel Usage Rate		Maximum Yearly Fuel Usage Rate		Sulfur Content (%)	Ash Content (%)
				(Specify Units/hr)				(Specify Units/hr)			(Specify Units)		(Specify Units)		
N/A															

Section B.3: Notes, Comments, and Explanations

None

Division for Air Quality
300 Sower Boulevard
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DEP7007DD

Insignificant Activities

___ Section DD.1: Table of Insignificant Activities
___ Section DD.2: Signature Block
___ Section DD.3: Notes, Comments, and Explanations

Source Name: Ameresco Benson Valley RNG LLC
KY EIS (AFS) #: 21- 073-00112
Permit #: F-21-028
Agency Interest (AI) ID: 167923
Date: 4/15/2025

Section DD.1: Table of Insignificant Activities

*Identify each activity with a unique Insignificant Activity number (IA #); for example: 1, 2, 3... etc.

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
IA-01	Equipment Leaks	N/A	401 KAR 63:010	de minimis

Section DD.2: Signature Block

I, THE UNDERSIGNED, HEREBY CERTIFY UNDER PENALTY OF LAW, THAT I AM A RESPONSIBLE OFFICIAL, AND THAT I HAVE PERSONALLY EXAMINED, AND AM FAMILIAR WITH, THE INFORMATION SUBMITTED IN THIS DOCUMENT AND ALL ITS ATTACHMENTS. BASED ON MY INQUIRY OF THOSE INDIVIDUALS WITH PRIMARY RESPONSIBILITY FOR OBTAINING THE INFORMATION, I CERTIFY THAT THE INFORMATION IS ON KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE OR INCOMPLETE INFORMATION, INCLUDING THE POSSIBILITY OF FINE OR IMPRISONMENT.

By:

Harold Stewart — Authorized Signature

04/15/2025 — Date

Harold Stewart — Type/Print Name of Siguatory

Director - Plant Operations — Title of Siguatory

Section DD.3: Notes, Comments, and Explanations

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DEP7007GG

Control Equipment

Additional Documentation

___ Complete Sections GG.1 through GG.12, as applicable

___ Attach manufacturer's specifications for each control device

___ Complete DEP7007AI

Source Name: **Ameresco Benson Valley RNG LLC**

KY EIS (AFS) #: **21-** **073-00112**

Permit #: **F-21-028**

Agency Interest (AI) ID: **167923**

Date: **4/15/2025**

Section GG.1: General Information - Control Equipment

Control Device ID #	Control Device Name	Cost	Manufacturer	Model Name/ Serial #	Date Installed	Inlet Gas Stream Data For All Control Devices					Inlet Gas Stream Data For Condensers, Adsorbers, Afterburners, Incinerators, Oxidizers Only			Equipment Operational Data For All Control Devices		
						Temperature (°F)	Flowrate (scfm @ 68°F)	Average Particle Diameter (μm)	Particle Density (lb/ft^3) or Specific Gravity	Gas Density (lb/ft^3)	Gas Moisture Content (%)	Gas Composition	Fan Type	Pressure Drop Range ($in. H_2O$)	Pollutants Collected/ Controlled	Pollutant Removal (%)
CD 01	Thermal Oxidizer	$317k	Perennial	FL-72X58-45-TP	1/24/2023	200 (max)	0-2,000	<2.5	varies	varies	varies	varies	Forced draft centrifugal blower	varies	VOC, NMOC	98
CD 02	Open Flare	$148k	Perennial	FL-10-C	12/13/2022	200 (max)	0-2,000	<2.5	varies	varies	varies	varies	None	varies	VOC, NMOC	98

Section GG.2: Flare Source Information

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Flare	Type of Flare (e.g. steam-assisted, air-assisted, nonassisted)	Process Gas Flowrate *(acfm)*	Net Heating Value of Stream(s) (Btu/scf)	Removal Efficiency *(%)*	Flare Rated Capacity *(MMBtu/hr)*
CD 02	Pre-processed RNG (PPRNG) , waste gases, off-spec gases, depress and purge gases, natural gas, RNG, propane	Open-Nonassisted	0-2,300	992 (max)	98	70.0

Section GG.7: Afterburner/Incinerator/Oxidizer

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Afterburner/Incinerator/ Oxidizer	Identify Type: Afterburner, Incinerator, Oxidizer, or Other (specify)	Number of Burners	Burner Rating *(BTU/hr)*	Dimensions of Combustion Chamber *(specify units)*	Residence Time *(sec)*	Combustion Chamber Temperature *(° F)*	Type of Catalyst (if applicable)	Type of Heat Exchanger (if applicable)	Auxiliary Fuel							Composition and Quantities of Combusted Waste
										Identify Fuel Type	Higher Heating Value *(MMBtu/scf)*	Hourly Fuel Usage *(scf/hr)*	% Sulfur (Maximum)	% Sulfur (Average)	% Ash (Maximum)	% Ash (Average)	
CD 01	PPRNG, waste gases, natural gas, RNG	Thermal Oxidizer	1	6,000,000	TBD	1 (min)	1400-1800	None	None	PPRNG (50% CH4)	0.0005	10,000 (max)	46.9 ppm	4 ppm	0	0	N/A

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DEP7007N

Source Emissions Profile

__ Section N.1: Emission Summary
__ Section N.2: Stack Information
__ Section N.3: Fugitive Information
__ Section N.4: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI

Source Name: **Ameresco Benson Valley RNG LLC**
KY EIS (AFS) #: **21- 073-00112**
Permit #: **F-21-028**
Agency Interest (AI) ID: **167923**
Date: **4/15/2025**

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity *(SCC Units/hour)*	Pollutant	Uncontrolled Emission Factor *(lb/SCC Units)*	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency *(%)*	Control Efficiency *(%)*	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential *(lb/hr)*	Controlled Potential *(lb/hr)*	Uncontrolled Potential *(tons/yr)*	Controlled Potential *(tons/yr)*
EU 01	Thermal Oxidizer	EP 01	TOX1	Thermal Oxidizer	CD 01	ST 01	0.068 lb/mmbtu	NOx	0.068 lb/mmbtu	Manufacturer, AP-42 2.4	0.00%	N/A	1.18	1.18	5.15	5.15
EU 01	Thermal Oxidizer	EP 01	TOX1	Thermal Oxidizer	CD 01	ST 01	0.31 lb/mmbtu	CO	0.31 lb/mmbtu	Manufacturer, AP-42 2.4	0.00%	N/A	5.36	5.36	23.49	23.49
EU 01	Thermal Oxidizer	EP 01	TOX1	Thermal Oxidizer	CD 01	ST 01	see attached calculations	VOC	5,900 ppm, 98% DE	Manufacturer, AP-42 2.4	0.00%	98.00%	2.58	2.58	11.30	11.30
EU 01	Thermal Oxidizer	EP 01	TOX1	Thermal Oxidizer	CD 01	ST 01	17 lb/mmscf CH4	PM	17 lb/mmscf CH4	AP-42 2.4	0.00%	N/A	1.18	1.18	5.17	5.17
EU 01	Thermal Oxidizer	EP 01	TOX1	Thermal Oxidizer	CD 01	ST 01	46.9 ppm	SOx	46.9 ppm	AP-42 2.4	0.00%	N/A	1.17	1.17	5.10	5.10
EU 01	Thermal Oxidizer	EP 01	TOX1	Thermal Oxidizer	CD 01	ST 01	0.08 lb/hr	HAP	0.61 lb/hr	AP-42 2.4	0.00%	98.00%	0.61	0.61	2.65	2.65
EU 02	Open Flare	EP 02	FLR1	Open Flare	CD 02	ST 02	0.068 lb/mmbtu	NOx	0.068 lb/mmbtu	Manufacturer, AP-42 2.4	0.00%	N/A	4.76	4.76	10.59	10.59
EU 02	Open Flare	EP 02	FLR1	Open Flare	CD 02	ST 02	0.31 lb/mmbtu	CO	0.31 lb/mmbtu	Manufacturer, AP-42 2.4	0.00%	N/A	21.70	21.70	48.28	48.28
EU 02	Open Flare	EP 02	FLR1	Open Flare	CD 02	ST 02	see attached calculations	VOC	3,780 ppm, 98% DE	Manufacturer, AP-42 2.4	0.00%	98.00%	2.38	2.38	5.28	5.28
EU 02	Open Flare	EP 02	FLR1	Open Flare	CD 02	ST 02	17 lb/mmscf CH4	PM	17 lb/mmscf CH4	AP-42 2.4	0.00%	N/A	1.17	1.17	2.61	2.61
EU 02	Open Flare	EP 02	FLR1	Open Flare	CD 02	ST 02	46.9 ppm	SOx	46.9 ppm	AP-42 2.4	0.00%	N/A	1.17	1.17	2.59	2.59
EU 02	Open Flare	EP 02	FLR1	Open Flare	CD 02	ST 02	0.06 lb/hr	HAP	0.61 lb/hr	AP-42 2.4	0.00%	98.00%	0.61	0.61	2.65	2.65
TBD	Emergency Diesel Generator	TBD	TBD	Emergency Diesel Generator	TBD	TBD	250 kW	NOx	3.14 g/hp-hr	Manufacturer	0.00%	N/A	2.32	2.32	0.58	0.58
TBD	Emergency Diesel Generator	TBD	TBD	Emergency Diesel Generator	TBD	TBD	250 kW	CO	0.68 g/hp-hr	Manufacturer	0.00%	N/A	0.50	0.50	0.13	0.13
TBD	Emergency Diesel Generator	TBD	TBD	Emergency Diesel Generator	TBD	TBD	250 kW	VOC	0.17 g/hp-hr	Manufacturer	0.00%	N/A	0.13	0.13	0.03	0.03
TBD	Emergency Diesel Generator	TBD	TBD	Emergency Diesel Generator	TBD	TBD	250 kW	PM	0.16 g/hp-hr	Manufacturer	0.00%	N/A	0.12	0.12	0.03	0.03
TBD	Emergency Diesel Generator	TBD	TBD	Emergency Diesel Generator	TBD	TBD	251 kW	SOx	0.00205 g/hp-hr	AP-42 Section 3.3	0.00%	N/A	0.0015	0.0015	0.0004	0.0004

Section N.2: Stack Information

UTM Zone:

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter *(ft)*	Height *(ft)*	Base Elevation *(ft)*	Northing *(m)*	Easting *(m)*	Flowrate *(acfm)*	Temperature *(°F)*	Exit Velocity *(ft/sec)*
ST 01	Thermal Oxidizer	4.16' ID	45'	810	4222817	676470	0-1600	1400-1800	<60
ST 02	Open Flare	0.868'	40'	810	4222817	676470	0-1500	1400-1800	<60
TBD	Emergency Diesel Generator	0.417'	7.81'	810	4222817	676470	0-2246	700-900	unknown

Section N.3: Fugitive Information

UTM Zone:

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side *(ft)*	Length of the Y Side *(ft)*	Northing *(m)*	Easting *(m)*	Release Temperature *(°F)*	Release Height *(ft)*
N/A								

Section N.4: Notes, Comments, and Explanations
SCC for Emission Points = Thermal Oxidizer: 31000209, Flare: 31000205
UTM Zone = 16S. Elevation and UTM Coordinates are Estimated.

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DEP7007V

Applicable Requirements and Compliance Activities

___ Section V.1: Emission and Operating Limitation(s)

___ Section V.2: Monitoring Requirements

___ Section V.3: Recordkeeping Requirements

___ Section V.4: Reporting Requirements

___ Section V.5: Testing Requirements

___ Section V.6: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI

Source Name: **Ameresco Benson Valley RNG LLC**

KY EIS (AFS) #: **21- 073-00112**

Permit #: **F-21-028**

Agency Interest (AI) ID: **167923**

Date: **4/15/2025**

Section V.1: Emission and Operating Limitation(s)

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
EU 01	Thermal Oxidizer	401 KAR 63:020	VOC, HAP	98% DE, see calcs attached		98% DE	Recordkeeping
EU 02	Open Flare	401 KAR 63:020	VOC, HAP	98% DE, see calcs attached		98% DE	Recordkeeping
TBD	Emergency/Backup Diesel Generator	40 CFR 60 Subpart IIII	NOx	2.32 lb/hr		500 hrs/year	Recordkeeping
TBD	Emergency/Backup Diesel Generator	40 CFR 60 Subpart IIII	CO	0.50 lb/hr		500 hrs/year	Recordkeeping
TBD	Emergency/Backup Diesel Generator	40 CFR 60 Subpart IIII	PM	0.12 lb/hr		500 hrs/year	Recordkeeping
TBD	Emergency/Backup Diesel Generator	40 CFR 63 Subpart ZZZZ	NOx, CO, PM	see above		500 hrs/year	Recordkeeping

Section V.2: Monitoring Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Monitored	Description of Monitoring
EU 01	Thermal Oxidizer	VOC, HAP	401 KAR 63:020	Flow/Temperature	Flow meter(s), thermocouple(s)
EU 02	Open Flare	VOC, HAP	401 KAR 63:020	Flow/Temperature	Flow meter(s), thermocouple(s)
TBD	Emergency/Backup Diesel Generator	NOx, CO, PM	40 CFR 60 Subpart IIII	Fuel usage	Volume of fuel
TBD	Emergency/Backup Diesel Generator	NOx, CO, PM	40 CFR 63 Subpart ZZZZ	Fuel usage	Volume of fuel

Section V.3: Recordkeeping Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Recorded	Description of Recordkeeping
EU 01	Themal Oxidizer	VOC, HAP	401 KAR 63:020	Flow/Temperature	Electronic data / historian
EU 02	Open Flare	VOC, HAP	401 KAR 63:020	Flow/Temperature	Electronic data / historian
TBD	Emergency/Backup Diesel Generator	NOx, CO, PM	40 CFR 60 Subpart IIII	Fuel usage	Volume of fuel
TBD	Emergency/Backup Diesel Generator	NOx, CO, PM	40 CFR 63 Subpart ZZZZ	Fuel usage	Volume of fuel

Section V.4: Reporting Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Reported	Description of Reporting
EU 01	Themal Oxidizer	VOC, HAP	401 KAR 63:020	Flow/Temperature	Semi-Annual
EU 02	Open Flare	VOC, HAP	401 KAR 63:020	Flow/Temperature	Semi-Annual
TBD	Emergency/Backup Diesel Generator	NOx, CO, PM	40 CFR 60 Subpart IIII	Fuel usage	Semi-Annual
TBD	Emergency/Backup Diesel Generator	NOx, CO, PM	40 CFR 63 Subpart ZZZZ	Fuel usage	Semi-Annual

Section V.5: Testing Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Tested	Description of Testing
EU 01	Themal Oxidizer	VOC, HAP	401 KAR 63:020	VOC/HAP	Initial Performance Test, if required.
EU 02	Open Flare	VOC, HAP	401 KAR 63:020	Inlet gas heat content, flame present	Initial Performance Test, if required.
TBD	Emergency/Backup Diesel Generator	NOx, CO, PM	40 CFR 60 Subpart IIII	None	
TBD	Emergency/Backup Diesel Generator	NOx, CO, PM	40 CFR 63 Subpart ZZZZ	None	

Section V.6: Notes, Comments, and Explanations

ATTACHMENT B

POTENTIAL EMISSIONS CALCULATIONS

POTENTIAL AIR EMISSIONS CALCULATIONS

PLANT NAME:	Ameresco Benson Valley RNG LLC
PLANT LOCATION:	Frankfort, Kentucky
PROJECT:	Off-Permit Change Application
DATE:	4/15/2025

PROJECT ASSUMPTIONS:

	Value	Unit	Source
Methane heat content:	1,012	Btu/scf	Engineering estimate
	0.00101	MMBtu/scf	
Raw gas methane content:	50%	%	Engineering estimate
Raw gas VOC content:	3,780	ppm as hexane	Lab analytical testing on 2/17/2020 with 4x factor added
Post-treat gas TRS content:	46.9	ppm	US EPA AP-42 Section 2.4
Ameresco plant inlet gas capacity:	2,300	scf/min	Engineering estimate
	138,000	scf/hour	
	3,312,000	scf/day	
	102,672,000	scf/mo	
	1,208,880,000	scf/year	

POTENTIAL AIR EMISSIONS CALCULATIONS

PLANT NAME:	Ameresco Benson Valley RNG LLC
PLANT LOCATION:	Frankfort, Kentucky
PROJECT:	Off-Permit Change Application
DATE:	4/15/2025

FACILITY MAXIMUM POTENTIAL EMISSIONS

DEVICE ID:	**Thermal Oxidizer (EU01)**				
Pollutant	**lb/hr**	**lb/day**	**lb/mo**	**lb/yr**	**ton/yr**
NOx	1.18	28.23	875.24	10,305.26	5.15
CO	5.36	128.71	3,990.07	46,979.88	23.49
VOC	2.58	61.90	1,918.84	22,592.83	11.30
PM/PM10/PM2.5	1.18	28.35	878.78	10,346.96	5.17
SOx	1.17	27.96	866.83	10,206.22	5.10
HAPs	0.61	14.55	450.92	5,309.23	2.65

DEVICE ID:	**Open Flare (EU02)**				
Pollutant	**lb/hr**	**lb/day**	**lb/mo**	**lb/yr**	**ton/yr**
NOx	4.76	114.24	3,541.44	21,182.00	10.59
CO	21.70	520.80	16,144.80	96,565.00	48.28
VOC	2.38	57.01	1,767.21	10,569.98	5.28
PM/PM10/PM2.5	1.17	28.15	872.71	5,219.85	2.61
SOx	1.17	27.96	866.83	5,184.67	2.59
HAPs	0.61	14.55	450.92	5,309.23	2.65

DEVICE ID:	**Equipment Fugitives**				
Pollutant	**lb/hr**	**lb/day**	**lb/mo**	**lb/yr**	**ton/yr**
VOC	0.010	0.243	7.548	88.875	0.044

DEVICE ID:	**Backup / Emergency Generator**				
Pollutant	**lb/hr**	**lb/day**	**lb/mo**	**lb/yr**	**ton/yr**
NOx	2.32	55.70	1,160.40	1,160.40	0.58
CO	0.50	12.06	251.30	251.30	0.13
VOC	0.13	3.02	62.82	62.82	0.03
PM/PM10/PM2.5	0.12	2.84	59.13	59.13	0.03
SOx	0.002	0.04	0.76	0.76	0.0004

DEVICE ID:	**Facility Total Maximum Potential**				
Pollutant	**lb/hr**	**lb/day**	**lb/mo**	**lb/yr**	**ton/yr**
NOx	8.26	198.17	5,577.08	32,647.67	16.32
CO	27.57	661.57	20,386.17	143,796.18	71.90
VOC	5.09	122.16	3,756.42	33,314.51	16.66
PM/PM10/PM2.5	2.47	59.34	1,810.62	15,625.94	7.81
SOx	2.33	55.96	1,734.42	15,391.65	7.70
HAPs	0.61	14.55	450.92	5,309.23	2.65

POTENTIAL AIR EMISSIONS CALCULATIONS

PLANT NAME:	Ameresco Benson Valley RNG LLC
PLANT LOCATION:	Frankfort, Kentucky
PROJECT:	Off-Permit Change Application
DATE:	4/15/2025

DEVICE:	Thermal Oxidizer (EU01)

	Value	Unit	Source
Methane heat content:	1,012	Btu/scf	Engineering estimate
	0.00101	MMBtu/scf	
VOC destruction efficiency:	98%	%	Manufacturer
Gas exhaust temperature	15	degC	Engineering estimate
Sulfur molar mass	34	grams-per-mole	
Operating hours:	24	hours/day	Maximum unrestricted
	744	hours/month	
	8,760	hours/year	
Inlet gas capacity:	17.3	MMBtu/hour	Engineering estimate
	415	MMBtu/day	
	12,871	MMBtu/month	
	151,548	MMBtu/year	
	1,600	scf/min	Engineering estimate
	96,000	scf/hour	
	2,304,000	scf/day	
	71,424,000	scf/month	
	840,960,000	scf/year	

Pollutant	Emission Factor	Unit	EF Source	lb/hr	lb/day	lb/mo	lb/yr	ton/yr
NOx	0.068	lb/MMBtu	Manufacturer	1.18	28.23	875.24	10,305.26	5.15
CO	0.31	lb/MMBtu	Manufacturer	5.36	128.71	3,990.07	46,979.88	23.49
VOC	5,900	ppm as hexane inlet	Engineering estimate EPA AP-42 Section 2.4, VOC is assumed 100% equal to NMOC, Equations 3 & 4.	2.58	61.90	1,918.84	22,592.83	11.30
PM/PM10/PM2.5	17	lb PM/mmscf CH4 inlet	EPA AP-42 Section 2.4 - LFG Flare - Table 2.4-4 Assumes that all PM entering plant is delivered to this device. Calculated based on plant inlet flow rate and 50% methane.	1.18	28.35	878.78	10,346.96	5.17
SOx	46.9	ppm TRS inlet	EPA AP-42 Section 2.4 - Equations 3, 4 & 7 Assumes all TRS entering the plant is emitted through this device. Calculated using plant inlet flow rate.	1.17	27.96	866.83	10,206.22	5.10

POTENTIAL AIR EMISSIONS CALCULATIONS

PLANT NAME:	Ameresco Benson Valley RNG LLC
PLANT LOCATION:	Frankfort, Kentucky
PROJECT:	Off-Permit Change Application
DATE:	4/15/2025

DEVICE:	Open Flare (EU02)

	Value	Unit	Source
Methane heat content:	1,012	Btu/scf	Engineering estimate
	0.00101	MMBtu/scf	
VOC destruction efficiency:	98%	%	Manufacturer
Gas exhaust temperature:	15	degC	Engineering estimate
Sulfur molar mass	34	grams-per-mole	
Operating hours:	24	hours/day	Maximum unrestricted
	744	hours/month	Maximum unrestricted
	4,450	hours/year	Engineering estimate
Inlet gas capacity:	70.0	MMBtu/hour	Engineering estimate
	1,680	MMBtu/day	
	52,080	MMBtu/month	
	311,500	MMBtu/year	
	2,300	scf/min	Engineering estimate
	138,000	scf/hour	
	3,312,000	scf/day	
	102,672,000	scf/month	
	614,100,000	scf/year	

Pollutant	Emission Factor	Unit	EF Source	lb/hr	lb/day	lb/mo	lb/yr	ton/yr
NOx	0.068	lb/MMBtu	Manufacturer, EPA AP-42 Section 13.5 - Industrial Flares - Table 13.5-1	4.76	114.24	3,541.44	21,182	10.59
CO	0.31	lb/MMBtu	Manufacturer, EPA AP-42 Section 13.5 - Industrial Flares - Table 13.5-2	21.70	520.80	16,144.80	96,565	48.28
VOC	3,780	ppm as hexane inlet	EPA AP-42 Section 2.4, VOC is assumed 100% equal to NMOC, Equations 3 & 4.	2.38	57.01	1,767.21	10,570	5.28
PM/PM10/PM2.5	17	lb PM/mmscf CH4 inlet	EPA AP-42 Section 2.4 - LFG Flare - Table 2.4-4, calculated based on 50% CH4.	1.17	28.15	872.71	5,220	2.61
SOx	46.9	ppm TRS inlet	EPA AP-42 Section 2.4 - Equations 3, 4 & 7	1.17	27.96	866.83	5,185	2.59

POTENTIAL AIR EMISSIONS CALCULATIONS

PLANT NAME:	Ameresco Benson Valley RNG LLC
PLANT LOCATION:	Frankfort, Kentucky
PROJECT:	Off-Permit Change Application
DATE:	4/15/2025

DEVICE ID:	Thermal Oxidizer (EU01)

	Value	Unit	Source
Methane heat content:	1,012	Btu/scf	Engineering estimate
	0.00101	MMBtu/scf	
HAP destruction efficiency:	98.0%	%	Manufacturer
Gas exhaust temperature	15	degC	Engineering estimate
Inlet gas capacity:	2,300	scf/min	Assumes all HAPs entering Ameresco facility are delivered to this device.
	138,000	scf/hour	
	3,312,000	scf/day	
	102,672,000	scf/mo	
	1,208,880,000	scf/year	

Pollutant	CAS No.	Molecular Weight (g/mol)	Concentration (ppmv)	Concentration Source	lb/hr	lb/day	lb/mo	lb/yr	ton/yr
1,1,1-Trichloroethane (methyl chloroform)	71556	133.41	0.48	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	4.67E-04	1.12E-02	3.47E-01	4.09E+00	2.05E-03
1,1,2,2-Tetrachloroethane	79345	167.85	0.07	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	8.57E-05	2.06E-03	6.37E-02	7.50E-01	3.75E-04
1,1-Dichloroethane (ethylidene dichloride)	75343	98.97	0.741	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	5.35E-04	1.28E-02	3.98E-01	4.68E+00	2.34E-03
1,1-Dichloroethene (vinylidene chloride)	75354	96.94	0.092	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	6.50E-05	1.56E-03	4.84E-02	5.70E-01	2.85E-04
1,2-Dichloroethane (ethylene dichloride)	107062	98.96	0.12	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	8.66E-05	2.08E-03	6.44E-02	7.59E-01	3.79E-04
1,2-Dichloropropane (propylene dichloride)	78875	112.99	0.023	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.89E-05	4.55E-04	1.41E-02	1.66E-01	8.30E-05
Acrylonitrile*	107131	53.06	0.036	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.39E-05	3.34E-04	1.04E-02	1.22E-01	6.10E-05
Benzene*	71432	78.11	0.97	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	5.54E-04	1.33E-02	4.12E-01	4.85E+00	2.42E-03
Carbon disulfide*	75150	76.13	0.32	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.78E-04	4.26E-03	1.32E-01	1.56E+00	7.78E-04
Carbon tetrachloride	56235	153.84	0.007	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	7.85E-06	1.88E-04	5.84E-03	6.88E-02	3.44E-05
Carbonyl sulfide*	463581	60.07	0.183	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	8.02E-05	1.92E-03	5.96E-02	7.02E-01	3.51E-04
Chlorobenzene	108907	112.56	0.227	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.86E-04	4.47E-03	1.39E-01	1.63E+00	8.16E-04
Chloroethane (ethyl chloride)	75003	64.52	0.448	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	2.11E-04	5.06E-03	1.57E-01	1.85E+00	9.23E-04
Chloroform	67663	119.39	0.021	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.83E-05	4.39E-04	1.36E-02	1.60E-01	8.01E-05
Chloromethane (methyl chloride)	74873	50.49	0.249	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	9.17E-05	2.20E-03	6.82E-02	8.03E-01	4.02E-04
1,2-Dichlorobenzene	95501	147.00	0.21	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	2.25E-04	5.40E-03	1.67E-01	1.97E+00	9.86E-04
Dichlorodifluoromethane	75718	120.91	1.751	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.54E-03	3.70E-02	1.15E+00	1.35E+01	6.76E-03
Dichlorofluoromethane	75434	102.92	2.62	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.97E-03	4.72E-02	1.46E+00	1.72E+01	8.61E-03
Dichloromethane (methylene chloride)	75092	84.94	3.395	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2000	2.10E-03	5.05E-02	1.56E+00	1.84E+01	9.21E-03
Ethyl mercaptan*	75081	62.13	1.356	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	6.14E-04	1.47E-02	4.57E-01	5.38E+00	2.69E-03
Ethylene dibromide (1,2-Dibromoethane)	106934	187.88	0.001	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	1.37E-06	3.29E-05	1.02E-03	1.20E-02	6.00E-06
Ethylbenzene*	100414	106.16	4.61	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	3.57E-03	8.56E-02	2.65E+00	3.13E+01	1.56E-02
Hexane*	110543	86.18	2.324	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.46E-03	3.50E-02	1.09E+00	1.28E+01	6.40E-03
Hydrochloric Acid (hydrogen chloride)	7647010	36.46	42.0	USEPA AP-42 Section 2.4 (Nov. 1998)	0.56	13.40	415.34	4890.26	2.45
Mercury (total)*	7439976	200.61	0.00029	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	4.27E-07	1.03E-05	3.18E-04	3.74E-03	1.87E-06
Methyl ethyl ketone*	78933	72.11	7.09	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	3.73E-03	8.95E-02	2.77E+00	3.27E+01	1.63E-02
Methyl isobutyl ketone*	108101	100.16	0.75	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	5.48E-04	1.31E-02	4.08E-01	4.80E+00	2.40E-03
Methyl mercaptan*	74931	48.11	1.292	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	4.53E-04	1.09E-02	3.37E-01	3.97E+00	1.99E-03
Perchloroethylene (tetrachloroethylene)	127184	165.83	1.193	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.44E-03	3.46E-02	1.07E+00	1.26E+01	6.32E-03
Toluene*	108883	92.13	25.405	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.71E-02	4.10E-01	1.27E+01	1.49E+02	7.47E-02
Trichloroethylene (trichloroethene)	79016	131.40	0.681	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	6.52E-04	1.57E-02	4.85E-01	5.72E+00	2.86E-03
Vinyl chloride	75014	62.50	1.077	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	4.91E-04	1.18E-02	3.65E-01	4.30E+00	2.15E-03
Xylenes*	1330207	106.16	12.10	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	9.37E-03	2.25E-01	6.97E+00	8.20E+01	4.10E-02
Total HAPs:					**0.61**	**14.55**	**450.92**	**5,309.23**	**2.65**
Single Highest HAP:					0.56	13.40	415.34	4,890.26	2.45

POTENTIAL AIR EMISSIONS CALCULATIONS

PLANT NAME:	Ameresco Benson Valley RNG LLC
PLANT LOCATION:	Frankfort, Kentucky
PROJECT:	Off-Permit Change Application
DATE:	4/15/2025

DEVICE ID:	Open Flare (EU02)

	Value	Unit	Source
Methane heat content:	1,012	Btu/scf	Engineering estimate
	0.00101	MMBtu/scf	
HAP destruction efficiency:	98.0%	%	Manufacturer
Gas exhaust temperature	15	degC	Engineering estimate
Inlet gas capacity:	2,300	scf/min	Assumes all HAPs entering Ameresco facility are delivered to this device.
	138,000	scf/hour	
	3,312,000	scf/day	
	102,672,000	scf/mo	
	1,208,880,000	scf/year	

Pollutant	CAS No.	Molecular Weight (g/mol)	Concentration (ppmv)	Concentration Source	lb/hr	lb/day	lb/mo	lb/yr	ton/yr
1,1,1-Trichloroethane (methyl chloroform)	71556	133.41	0.48	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	4.67E-04	1.12E-02	3.47E-01	4.09E+00	2.05E-03
1,1,2,2-Tetrachloroethane	79345	167.85	0.07	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	8.57E-05	2.06E-03	6.37E-02	7.50E-01	3.75E-04
1,1-Dichloroethane (ethylidene dichloride)	75343	98.97	0.741	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	5.35E-04	1.28E-02	3.98E-01	4.68E+00	2.34E-03
1,1-Dichloroethene (vinylidene chloride)	75354	96.94	0.092	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	6.50E-05	1.56E-03	4.84E-02	5.70E-01	2.85E-04
1,2-Dichloroethane (ethylene dichloride)	107062	98.96	0.12	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	8.66E-05	2.08E-03	6.44E-02	7.59E-01	3.79E-04
1,2-Dichloropropane (propylene dichloride)	78875	112.99	0.023	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.89E-05	4.55E-04	1.41E-02	1.66E-01	8.30E-05
Acrylonitrile*	107131	53.06	0.036	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.39E-05	3.34E-04	1.04E-02	1.22E-01	6.10E-05
Benzene*	71432	78.11	0.97	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	5.54E-04	1.33E-02	4.12E-01	4.85E+00	2.42E-03
Carbon disulfide*	75150	76.13	0.32	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.78E-04	4.26E-03	1.32E-01	1.56E+00	7.78E-04
Carbon tetrachloride	56235	153.84	0.007	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	7.85E-06	1.88E-04	5.84E-03	6.88E-02	3.44E-05
Carbonyl sulfide*	463581	60.07	0.183	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	8.02E-05	1.92E-03	5.96E-02	7.02E-01	3.51E-04
Chlorobenzene	108907	112.56	0.227	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.86E-04	4.47E-03	1.39E-01	1.63E+00	8.16E-04
Chloroethane (ethyl chloride)	75003	64.52	0.448	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	2.11E-04	5.06E-03	1.57E-01	1.85E+00	9.23E-04
Chloroform	67663	119.39	0.021	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.83E-05	4.39E-04	1.36E-02	1.60E-01	8.01E-05
Chloromethane (methyl chloride)	74873	50.49	0.249	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	9.17E-05	2.20E-03	6.82E-02	8.03E-01	4.02E-04
1,2-Dichlorobenzene	95501	147.00	0.21	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	2.25E-04	5.40E-03	1.67E-01	1.97E+00	9.86E-04
Dichlorodifluoromethane	75718	120.91	1.751	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.54E-03	3.70E-02	1.15E+00	1.35E+01	6.76E-03
Dichlorofluoromethane	75434	102.92	2.62	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.97E-03	4.72E-02	1.46E+00	1.72E+01	8.61E-03
Dichloromethane (methylene chloride)	75092	84.94	3.395	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2000	2.10E-03	5.05E-02	1.56E+00	1.84E+01	9.21E-03
Ethyl mercaptan*	75081	62.13	1.356	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	6.14E-04	1.47E-02	4.57E-01	5.38E+00	2.69E-03
Ethylene dibromide (1,2-Dibromoethane)	106934	187.88	0.001	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	1.37E-06	3.29E-05	1.02E-03	1.20E-02	6.00E-06
Ethylbenzene*	100414	106.16	4.61	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	3.57E-03	8.56E-02	2.65E+00	3.13E+01	1.56E-02
Hexane*	110543	86.18	2.324	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.46E-03	3.50E-02	1.09E+00	1.28E+01	6.40E-03
Hydrochloric Acid (hydrogen chloride)	7647010	36.46	42.0	USEPA AP-42 Section 2.4 (Nov. 1998)	0.56	13.40	415.34	4890.26	2.45
Mercury (total)*	7439976	200.61	0.00029	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	4.27E-07	1.03E-05	3.18E-04	3.74E-03	1.87E-06
Methyl ethyl ketone*	78933	72.11	7.09	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	3.73E-03	8.95E-02	2.77E+00	3.27E+01	1.63E-02
Methyl isobutyl ketone*	108101	100.16	0.75	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	5.48E-04	1.31E-02	4.08E-01	4.80E+00	2.40E-03
Methyl mercaptan*	74931	48.11	1.292	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	4.53E-04	1.09E-02	3.37E-01	3.97E+00	1.99E-03
Perchloroethylene (tetrachloroethylene)	127184	165.83	1.193	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.44E-03	3.46E-02	1.07E+00	1.26E+01	6.32E-03
Toluene*	108883	92.13	25.405	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	1.71E-02	4.10E-01	1.27E+01	1.49E+02	7.47E-02
Trichloroethylene (trichloroethene)	79016	131.40	0.681	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	6.52E-04	1.57E-02	4.85E-01	5.72E+00	2.86E-03
Vinyl chloride	75014	62.50	1.077	Waste Industry Air Coalition (WAIC) Comparison of Recent Landfill Gas Analyses, Jan 2001	4.91E-04	1.18E-02	3.65E-01	4.30E+00	2.15E-03
Xylenes*	1330207	106.16	12.10	USEPA AP-42 Section 2.4, Tables 2.4-1 and 2.4.2 (Nov. 1998) and CAA Section 112	9.37E-03	2.25E-01	6.97E+00	8.20E+01	4.10E-02
Total HAPs:					**0.61**	**14.55**	**450.92**	**5,309.23**	**2.65**
Single Highest HAP:					0.56	13.40	415.34	4,890.26	2.45

POTENTIAL AIR EMISSIONS CALCULATIONS

PLANT NAME:	Ameresco Benson Valley RNG LLC
PLANT LOCATION:	Frankfort, Kentucky
PROJECT:	Off-Permit Change Application
DATE:	4/15/2025

DEVICE ID:	Fugitive Emissions

Gas VOC Conentration (ppm):	595	*Source: AP-42 Section 2.4, VOCs conservatively estimated equal to 100% of NMOCs*
Gas VOC Conentration (%):	0.0595%	

Equipment	Emission Factor	Unit	EF Source	Estimated Count	lb/hr	lb/day	lb/mo	lb/yr	ton/yr
Valves	0.0099	lb/hr	USEPA Protocol for Equipment Leak Emissions Estimates, 435/R-93-026, Nov 1995, Table 2-4	1,510	0.0089	0.2139	6.6315	78.0808	0.0390
Flanges	0.0009	lb/hr		1,720	0.0009	0.0211	0.6547	7.7081	0.0039
Compressors/Treatment Skids/Other	0.019	lb/hr		17	0.0002	0.0047	0.1460	1.7190	0.0009
Open End Lines	0.005	lb/hr		0	0.0000	0.0000	0.0000	0.0000	0.0000
Connectors	0.00044	lb/hr		595	0.0002	0.0037	0.1161	1.3674	0.0007
Total:					**0.01**	**0.24**	**7.55**	**88.88**	**0.04**

PLANT NAME:	Ameresco Benson Valley RNG LLC
PLANT LOCATION:	Frankfort, Kentucky
PROJECT:	Off-Permit Change Application
DATE:	4/15/2025

DEVICE ID:	Emergency/Backup Diesel Engine Generator

	Value	Unit	Source
Inlet gas capacity:	335	HP	Manufacturer
Max fuel consumption:	19.4	gal/hr	Manufacturer
	9,700	gal/yr	Manufacturer
Fuel weight:	7.001	lb/gal	Manufacturer
Fuel heat input:	18,390	Btu/lb	Manufacturer
	128,748	Btu/gal	
	2.50	MMBtu/hr	
Operating hours:	500	hours/year	Engineering estimate

Pollutant	Emission Factor	Unit	EF Source	lb/hr	lb/day	lb/mo	lb/yr	ton/yr
NOx	3.14	g/hp-hr	Manufacturer	2.32	55.70	1,160.40	1,160.40	0.58
CO	0.68	g/hp-hr	Manufacturer	0.50	12.06	251.30	251.30	0.13
VOC	0.17	g/hp-hr	Manufacturer	0.13	3.02	62.82	62.82	0.03
PM/PM10/PM2.5	0.16	g/hp-hr	Manufacturer	0.12	2.84	59.13	59.13	0.03
SOx	0.00205	g/hp-hr	EPA AP-42 Section 3.3 Oct 1996, Table 3.3-1-Diesel	0.0015	0.04	0.76	0.76	0.0004

Outlook

RE: AFS 21-073-00112, Ameresco Benson Valley Landfill

From Smith, Stevia <smiths@ameresco.com>
Date Thu 6/5/2025 2:01 PM
To Daniels, Stacie (EEC) <stacie.daniels@ky.gov>
Cc Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>

Stacie, Amy,

Thank you for the call yesterday. As discussed, Ameresco is proposing no annual hours restriction for the open flare (EU02), but instead either an annual mmbtu limit (preferred) or an annual inlet gas flow limit. The limit, either mmbtu/year (first choice) or scf/year, would be as follows, in accordance with our application submitted 4/15/2025:

Open Flare Heat Input Limit: 311,500 MMBtu/year

Open Flare Inlet Gas Flow Limit: 614,100,000 scf/year

Please let me know if you need anything further. Thank you.

Stevia Smith
Manager - RNG Compliance
704-989-2023
smiths@ameresco.com

30 Danforth Street, Suite 108
Portland, ME 04101
ameresco.com
AMERESCO

From: Smith, Stevia <smiths@ameresco.com>
Sent: Wednesday, May 28, 2025 3:56 PM
To: Daniels, Stacie (EEC) <stacie.daniels@ky.gov>
Cc: Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>
Subject: RE: AFS 21-073-00112, Ameresco Benson Valley Landfill

Yes I am available between 1-2:30 any day next week except Thursday.

Thanks

Stevia Smith

Manager - RNG Compliance
704-989-2023
smiths@ameresco.com

30 Danforth Street, Suite 108
Portland, ME 04101
ameresco.com

From: Daniels, Stacie (EEC) <stacie.daniels@ky.gov>
Sent: Wednesday, May 28, 2025 3:30 PM
To: Smith, Stevia <smiths@ameresco.com>
Cc: Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>
Subject: RE: AFS 21-073-00112, Ameresco Benson Valley Landfill

Caution - External Email

Hey Stevia,

Are you available between 1 and 3 any day next week?

Thanks,

Stacie

From: Smith, Stevia <smiths@ameresco.com>
Sent: Wednesday, May 28, 2025 3:13 PM
To: Daniels, Stacie (EEC) <stacie.daniels@ky.gov>
Cc: Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>
Subject: RE: AFS 21-073-00112, Ameresco Benson Valley Landfill

Stacie,

Checking back on this. Please let me know when you would like to meet to discuss the calculations and our comments on the draft Title V permit.

Thank you

Stevia Smith
Manager - RNG Compliance
704-989-2023
smiths@ameresco.com

30 Danforth Street, Suite 108
Portland, ME 04101
ameresco.com

From: Smith, Stevia
Sent: Thursday, May 22, 2025 2:07 PM

To: Daniels, Stacie (EEC) <stacie.daniels@ky.gov>
Subject: RE: AFS 21-073-00112, Ameresco Benson Valley Landfill

Stacie,

Checking back on this. Please let me know when you would like to meet to discuss the calculations.

Thank you

Stevia Smith
Manager - RNG Compliance
704-989-2023
smiths@ameresco.com

30 Danforth Street, Suite 108
Portland, ME 04101
ameresco.com

From: Smith, Stevia <smiths@ameresco.com>
Sent: Friday, May 16, 2025 1:13 PM
To: Daniels, Stacie (EEC) <stacie.daniels@ky.gov>
Subject: RE: AFS 21-073-00112, Ameresco Benson Valley Landfill

Stacie,

Please let me know when you would like to discuss the calculations. I am available this afternoon and Monday.

Thanks

Stevia Smith
Manager - RNG Compliance
704-989-2023
smiths@ameresco.com

30 Danforth Street, Suite 108
Portland, ME 04101
ameresco.com

From: Daniels, Stacie (EEC) <stacie.daniels@ky.gov>
Sent: Wednesday, May 14, 2025 3:33 PM
To: Smith, Stevia <smiths@ameresco.com>
Subject: RE: AFS 21-073-00112, Ameresco Benson Valley Landfill

Caution - External Email

Hey Stevia,

I need to talk to you about the calculations. I'll try to give you a call tomorrow.

Thanks,

Stacie

From: Smith, Stevia <smiths@ameresco.com>
Sent: Wednesday, May 14, 2025 8:25 AM
To: Daniels, Stacie (EEC) <stacie.daniels@ky.gov>
Subject: RE: AFS 21-073-00112, Ameresco Benson Valley Landfill

Great, thank you Stacie. Also, I just wanted to check in on the Off-Permit Change application we submitted on April 15, 2025 for the facility. Has that application been accepted / approved by KDEP? If so, would you be able to send me a letter or email for our records confirming such?

Thank you

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C:+1 704 989 2023
smiths@ameresco.com
30 Danforth St., Suite 108
Portland, ME 04101
http://www.ameresco.com


From: Daniels, Stacie (EEC) <stacie.daniels@ky.gov>
Sent: Wednesday, May 14, 2025 8:21 AM
To: Smith, Stevia <smiths@ameresco.com>
Subject: RE: AFS 21-073-00112, Ameresco Benson Valley Landfill

Hey Stevia,

Amy was out last week, and we have training this week, so Amy and I are meeting next week to have an internal discussion prior to a call with you all.

Thank you for your patience,

Stacie

From: Smith, Stevia <smiths@ameresco.com>
Sent: Wednesday, May 14, 2025 8:17 AM
To: Daniels, Stacie (EEC) <stacie.daniels@ky.gov>
Subject: RE: AFS 21-073-00112, Ameresco Benson Valley Landfill

Good morning Stacie,

Just wanted to check in with you regarding scheduling a call to discuss our comments on the draft Title V permit.

Thank you

Stevia Smith
Manager – RNG Compliance
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smiths@ameresco.com
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Portland, ME 04101
http://www.ameresco.com
Please print only if necessary.

From: Daniels, Stacie (EEC) <stacie.daniels@ky.gov>
Sent: Friday, May 2, 2025 10:30 AM
To: Smith, Stevia <smiths@ameresco.com>; Patil, Durga D (EEC) <Durga.Patil@ky.gov>; Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>; Bittner, Zachary P (EEC) <Zachary.Bittner@ky.gov>
Cc: Peary, Richard <rpeary@ameresco.com>; Sherwood, Rebecca <rsherwood@ameresco.com>; McClelland, Andrew <amcclelland@ameresco.com>
Subject: RE: AFS 21-073-00112, Ameresco Benson Valley Landfill

Caution - External Email

Good morning,

We have received and are reviewing the comments to your draft Title V permit. I will reach out toward the end of the month to schedule a call with you all.

Thanks,

Stacie Daniels, P.E.
Environmental Engineer I
Combustion Section
Permit Review Branch
(502) 782-1121

Division for Air Quality
300 Sower Blvd
Frankfort, KY 40601

From: Smith, Stevia <smiths@ameresco.com>
Sent: Wednesday, April 30, 2025 4:56 PM
To: Daniels, Stacie (EEC) <stacie.daniels@ky.gov>; Patil, Durga D (EEC) <Durga.Patil@ky.gov>; Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>; Bittner, Zachary P (EEC) <Zachary.Bittner@ky.gov>
Cc: Peary, Richard <rpeary@ameresco.com>; Sherwood, Rebecca <rsherwood@ameresco.com>; McClelland, Andrew <amcclelland@ameresco.com>
Subject: RE: AFS 21-073-00112, Ameresco Benson Valley Landfill

---

Mr. Bittner, Ms. Daniels,

Please see the attached letter response with comments on the draft Title V permit for Ameresco Benson Valley RNG LLC and the draft permit with suggested revisions shown with tracked changes. Thank you for your evaluation of these comments and please let me know if you have any questions or would like to discuss these comments. I would be glad to arrange a call if useful.

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Manager – RNG Compliance
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smiths@ameresco.com
30 Danforth St., Suite 108
Portland, ME 04101
http://www.ameresco.com
Please print only if necessary.

From: Daniels, Stacie (EEC) <stacie.daniels@ky.gov>
Sent: Monday, April 21, 2025 11:20 AM
To: Smith, Stevia <smiths@ameresco.com>; Patil, Durga D (EEC) <Durga.Patil@ky.gov>; Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>; Bittner, Zachary P (EEC) <Zachary.Bittner@ky.gov>
Subject: RE: AFS 21-073-00112, Ameresco Benson Valley Landfill

Caution - External Email

Stevia,

Extension granted. I have also attached a Word version of the draft permit.

Sorry for the delay. I was out last week.

Kind Regards,
Stacie

Stacie Daniels, P.E.
Environmental Engineer I
Combustion Section
Permit Review Branch
(502) 782-1121

Division for Air Quality
300 Sower Blvd
Frankfort, KY 40601

From: Smith, Stevia <smiths@ameresco.com>
Sent: Monday, April 21, 2025 11:16 AM
To: Patil, Durga D (EEC) <Durga.Patil@ky.gov>; Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>; Bittner, Zachary P (EEC) <Zachary.Bittner@ky.gov>; Daniels, Stacie (EEC) <stacie.daniels@ky.gov>
Subject: RE: AFS 21-073-00112, Ameresco Benson Valley Landfill

Zachary, Stacie,

I just wanted to check back on this extension request (the due date is today).

Thank you

Stevia Smith
Manager – RNG Compliance
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Portland, ME 04101
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Please print only if necessary.

From: Smith, Stevia <smiths@ameresco.com>
Sent: Friday, April 18, 2025 11:49 AM
To: Patil, Durga D (EEC) <Durga.Patil@ky.gov>; Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>; Bittner, Zachary P (EEC) <Zachary.Bittner@ky.gov>; Daniels, Stacie (EEC) <stacie.daniels@ky.gov>
Subject: RE: AFS 21-073-00112, Ameresco Benson Valley Landfill

All,

In order to complete a sufficient review of the draft permit with my colleagues, I would like to please request an extension to submit comments to KY DEP on the draft Title V permit for Ameresco Benson Valley RNG LLC until April 30. Please let me know if this is acceptable.

Thank you

Stevia Smith
Manager – RNG Compliance
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C:+1 704 989 2023
smiths@ameresco.com
30 Danforth St., Suite 108
Portland, ME 04101
http://www.ameresco.com
Please print only if necessary.

From: Patil, Durga D (EEC) <Durga.Patil@ky.gov>
Sent: Friday, April 18, 2025 9:17 AM
To: Smith, Stevia <smiths@ameresco.com>; Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>
Cc: Daniels, Stacie (EEC) <stacie.daniels@ky.gov>; Bittner, Zachary P (EEC) <Zachary.Bittner@ky.gov>
Subject: RE: AFS 21-073-00112, Ameresco Benson Valley Landfill

Caution - External Email

Good morning:

Attached is the last saved word copy of the document in our files.
If you need additional time to provide feedback on the courtesy predraft, please send an email with the request for a time extension.

Thanks for your patience,
Durga Patil

From: Smith, Stevia <smiths@ameresco.com>
Sent: Friday, April 18, 2025 9:05 AM
To: Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>; Patil, Durga D (EEC) <Durga.Patil@ky.gov>
Subject: RE: AFS 21-073-00112, Ameresco Benson Valley Landfill
Importance: High

Amy, Durga,

I have not heard back from Stacie or Zachary regarding getting this draft permit in Word to facilitate review/edits. Are you able to send it to me? This is urgent as comments are due back early next week.

Thank you

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Portland, ME 04101
http://www.ameresco.com

From: Smith, Stevia <smiths@ameresco.com>
Sent: Wednesday, April 16, 2025 3:36 PM
To: Daniels, Stacie (EEC) <stacie.daniels@ky.gov>
Cc: Bittner, Zachary P (EEC) <Zachary.Bittner@ky.gov>; Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>; Patil, Durga D (EEC) <Durga.Patil@ky.gov>
Subject: RE: AFS 21-073-00112, Ameresco Benson Valley Landfill

Thank you Stacie. Would you be able to please send me the draft permit in Word so that I can more easily indicate requested revisions with tracked changes?

Thanks

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C:+1 704 989 2023
smiths@ameresco.com
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Portland, ME 04101
http://www.ameresco.com

From: Daniels, Stacie (EEC) <stacie.daniels@ky.gov>
Sent: Friday, April 11, 2025 11:07 AM
To: Smith, Stevia <smiths@ameresco.com>; Sherwood, Rebecca <rsherwood@ameresco.com>; Stewart, Harold <hstewart@ameresco.com>
Cc: Bittner, Zachary P (EEC) <Zachary.Bittner@ky.gov>; Tempus-Doom, Amy K (EEC) <Amy.Tempus-Doom@ky.gov>;

Patil, Durga D (EEC) <Durga.Patil@ky.gov>
Subject: AFS 21-073-00112, Ameresco Benson Valley Landfill

Caution - External Email

All:

Attached is a courtesy copy of the initial Title V permit for Ameresco Benson Valley Landfill. Please confirm the maximum gas flow rate and submit any written questions or comments no later than April 21, 2025 so the Division may continue processing the permitting action. Any submitted questions and comments will be part of the public permitting record and considered disclosable under the Kentucky Open Records Act. Be advised that the draft permit may differ from the attached even if there are no questions or comments, as the permit package will undergo additional internal reviews and approvals.

Kind Regards,
Stacie

Stacie Daniels, P.E.
Environmental Engineer I
Combustion Section
Permit Review Branch
(502) 782-1121

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Frankfort, KY 40601