



State of Utah

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Department of
Environmental Quality

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DIVISION OF AIR QUALITY
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Director

DAQE-IN162310001-24

November 27, 2024

Casey Murakami
GGUSA Hyrum LLC
4287 Spruill Avenue, Suite 202
North Charleston, SC 29405
casey.murakami@greencngusa.com

Dear Casey Murakami:

Re: Intent to Approve: New Hyrum Renewable Natural Gas Facility
Project Number: N162310001

The attached document is the Intent to Approve (ITA) for the above-referenced project. The ITA is subject to public review. Any comments received shall be considered before an Approval Order (AO) is issued. The Division of Air Quality is authorized to charge a fee for reimbursement of the actual costs incurred in the issuance of an AO. An invoice will follow upon issuance of the final AO.

Future correspondence on this ITA should include the engineer's name, **Christine Bodell**, as well as the DAQE number as shown on the upper right-hand corner of this letter. Christine Bodell, can be reached at (385) 290-2690 or cbodell@utah.gov, if you have any questions.

Sincerely,

Alan D. Humpherys, Manager
New Source Review Section

ADH:CB:jg

cc: Bear River Health Department

STATE OF UTAH
Department of Environmental Quality
Division of Air Quality

INTENT TO APPROVE
DAQE-IN162310001-24
New Hyrum Renewable Natural Gas (RNG) Facility

Prepared By
Christine Bodell, Engineer
(385) 290-2690
cbodell@utah.gov

Issued to
GGUSA Hyrum LLC - Renewable Natural Gas Facility

Issued On
November 27, 2024



New Source Review Section Manager
Alan D. Humpherys

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GENERAL INFORMATION

CONTACT/LOCATION INFORMATION

Owner Name

GGUSA Hyrum LLC

Source Name

GGUSA Hyrum LLC - Renewable Natural Gas Facility

Mailing Address

4287 Spruill Avenue, Suite 202
North Charleston, SC 29405

Physical Address

410 North 200 West
Hyrum, UT 84319

Source Contact

Name: Casey Murakami
Phone: (843) 696-4923
Email: casey.murakami@greencngusa.com

UTM Coordinates

428,370 m Easting
4,610,901 m Northing
Datum NAD83
UTM Zone 12

SIC code 1311 (Crude Petroleum & Natural Gas)

SOURCE INFORMATION

General Description

GGUSA Hyrum LLC (GGUSA) has requested to construct a Renewable Natural Gas (RNG) Facility which will treat the biogas (raw gas) from anaerobic digestors and deliver the treated gas to a natural gas pipeline distribution system in Hyrum, Cache County. The feed stream for the digester will be waste from the adjacent Swift Beef Company, Incorporated (Swift Beef) beef processing plant.

The raw gas from the anaerobic digestors will be sent to a Vacuum Adsorption Vessel (VAV), which houses iron substrate that is used to control hydrogen sulfide (H₂S) content. The gas stream is then sent through a molecular gate (Molegate) pressure swing adsorption (PSA) skid to remove CO₂, H₂S, and H₂O in a single step. Methane, N₂, and O₂ pass through the molecular gate as "product gas" and is injected into the pipeline. The removed contaminants (CO₂, H₂S, and H₂O), known as PSA "tail gas" or "waste gas," will either be sent to the flare stack for release to ambient air without combustion or combusted for odor control. The flare will utilize natural gas for a pilot flame and additional natural gas as enrichment gas to ensure combustion.

NSR Classification

New Minor Source

Source Classification

Located in Attainment Area
Cache County
Airs Source Size: B

Applicable Federal Standards

None

Project Description

GGUSA has requested to construct a RNG facility that will treat the biogas (raw gas) from anaerobic digestors and deliver the treated gas to a natural gas pipeline distribution system in Hyrum, Cache County. The feed stream for the anaerobic digester will be waste from the adjacent Swift Beef processing plant.

Under normal operations, the raw gas from the digester is treated with an H₂S VAV and a PSA skid. The H₂S VAV will reduce H₂S in the gas stream to no more than 50 ppm, and the PSA skid will filter out the remaining H₂S, as well as CO₂ and H₂O. The H₂S, CO₂, and H₂O waste stream is then directed to the flare stack, where it may or may not be combusted. The flare is utilized as a control device for odor control. During non-normal operating scenarios, such as emergency or maintenance operations, the RNG plant will not operate.

SUMMARY OF EMISSIONS

The emissions listed below are an estimate of the total potential emissions from the source. Some rounding of emissions is possible.

Criteria Pollutant	Change (TPY)	Total (TPY)
CO ₂ Equivalent		15961.00
Carbon Monoxide		12.15
Nitrogen Oxides		5.41
Particulate Matter - PM ₁₀		0.29
Particulate Matter - PM _{2.5}		0.29
Sulfur Dioxide		1.76
Volatile Organic Compounds		25.87

Hazardous Air Pollutant	Change (lbs/yr)	Total (lbs/yr)
Generic HAPs (CAS #GHAPS)		140
	Change (TPY)	Total (TPY)
Total HAPs		0.07

PUBLIC NOTICE STATEMENT

The NOI for the above-referenced project has been evaluated and has been found to be consistent with the requirements of UAC R307. Air pollution producing sources and/or their air control facilities may not be constructed, installed, established, or modified prior to the issuance of an AO by the Director.

A 30-day public comment period will be held in accordance with UAC R307-401-7. A notification of the intent to approve will be published in The Herald Journal on November 30, 2024. During the public comment period the proposal and the evaluation of its impact on air quality will be available for the public to review and provide comment. If anyone so requests a public hearing within 15 days of publication, it will be held in accordance with UAC R307-401-7. The hearing will be held as close as practicable to the location of the source. Any comments received during the public comment period and the hearing will be evaluated. The proposed conditions of the AO may be changed as a result of the comments received.

SECTION I: GENERAL PROVISIONS

The intent is to issue an air quality AO authorizing the project with the following recommended conditions and that failure to comply with any of the conditions may constitute a violation of the AO.

I.1	All definitions, terms, abbreviations, and references used in this AO conform to those used in the UAC R307 and 40 CFR. Unless noted otherwise, references cited in these AO conditions refer to those rules. [R307-101]
I.2	The limits set forth in this AO shall not be exceeded without prior approval. [R307-401]
I.3	Modifications to the equipment or processes approved by this AO that could affect the emissions covered by this AO must be reviewed and approved. [R307-401-1]
I.4	All records referenced in this AO or in other applicable rules, which are required to be kept by the owner/operator, shall be made available to the Director or Director's representative upon request, and the records shall include the two-year period prior to the date of the request. Unless otherwise specified in this AO or in other applicable state and federal rules, records shall be kept for a minimum of two (2) years. [R307-401-8]
I.5	At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any equipment approved under this AO, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Director which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. All maintenance performed on equipment authorized by this AO shall be recorded. [R307-401-4]
I.6	The owner/operator shall comply with UAC R307-107. General Requirements: Breakdowns. [R307-107]
I.7	The owner/operator shall comply with UAC R307-150 Series. Emission Inventories. [R307-150]
I.8	The owner/operator shall submit documentation of the status of construction or modification to the Director within 18 months from the date of this AO. This AO may become invalid if construction is not commenced within 18 months from the date of this AO or if construction is discontinued for 18 months or more. To ensure proper credit when notifying the Director, send the documentation to the Director, attn.: NSR Section. [R307-401-18]

SECTION II: PERMITTED EQUIPMENT

The intent is to issue an air quality AO authorizing the project with the following recommended conditions and that failure to comply with any of the conditions may constitute a violation of the AO.

II.A THE APPROVED EQUIPMENT

II.A.1	Hyrum RNG Facility
II.A.2	One (1) Anaerobic Digester
II.A.3	Two (2) H₂S Vacuum Adsorption Vessels Arranged in series for operational flexibility
II.A.4	One (1) Molecular Gate (Molegate) PSA Skid Pressure Swing Adsorption
II.A.5	One (1) Flare Burner Rating: 40 MMBtu/hr Maximum Inlet Heat Rating: 35.0 MMBtu/hr Burner Fuel: Natural Gas Minimum H ₂ S Destruction Efficiency: 98%

SECTION II: SPECIAL PROVISIONS

The intent is to issue an air quality AO authorizing the project with the following recommended conditions and that failure to comply with any of the conditions may constitute a violation of the AO.

II.B REQUIREMENTS AND LIMITATIONS

II.B.1	Site-wide Requirements
II.B.1.a	Unless otherwise specified in this AO, the owner/operator shall not allow visible emissions from any source on site to exceed 10% opacity. [R307-401-8]
II.B.1.a.1	Unless otherwise specified in this AO, opacity observations of emissions from stationary sources shall be conducted according to 40 CFR 60, Appendix A, Method 9. [R307-401-8]
II.B.1.b	Unless otherwise specified in this AO, the following terms apply to the operations at the Hyrum RNG Facility: "Normal operations" means that the raw gas from the anaerobic digester is treated by an H ₂ S VAV and Molecular Gate PSA skid prior to entering the pipeline. All waste/tail gas from the PSA skid is routed to the flare stack and may or may not be combusted. "Emergency and/or maintenance operations" means periods of breakdown or maintenance of the VAVs or PSA skid, or periods of over-production of the anaerobic digester, where the raw gas from the anaerobic digester may not be treated by the H ₂ S VAV and/or Molecular Gate PSA skid prior to entering the pipeline. [R307-401-8]

II.B.1.c	The owner/operator shall not produce more than 171.2 million standard cubic feet (MMscf) of waste (tail) gas per rolling 12-month period during normal operations. [R307-401-8]
II.B.1.c.1	The owner/operator shall: <ul style="list-style-type: none"> A. Determine production with flow meters B. Record production on a daily basis C. Use the production data to calculate a new rolling 12-month total by the 20th day of each month using data from the previous 12 months D. Keep the production records for all periods the plant is in operation. [R307-401-8]
II.B.1.d	The owner/operator shall not operate the Hyrum RNG Facility during emergency and/or maintenance operations. [R307-401-8]
II.B.2	H₂S VAV Requirements
II.B.2.a	During normal operations, the owner/operator shall route all raw gas streams from the anaerobic digester through an H ₂ S VAV prior to entering the Molegate PSA skid. [R307-401-8]
II.B.2.b	The owner/operator shall install two (2) H ₂ S VAVs that are each certified to meet a H ₂ S emission concentration of 50 ppm or less. [R307-401-8]
II.B.2.b.1	To demonstrate compliance with the above condition, the owner/operator shall maintain records of the manufacturer's emissions guarantee for the installed H ₂ S VAVs. [R307-401-8]
II.B.3	Flare Requirements
II.B.3.a	The owner/operator shall install a flare that is certified to meet a VOC and H ₂ S destruction efficiency of no less than 98%, each. [R307-401-8]
II.B.3.a.1	To demonstrate compliance with the above condition, the owner/operator shall maintain records of the manufacturer's emissions guarantee for the installed flare. [R307-401-8]
II.B.3.b	The owner/operator shall operate the flare according to the manufacturer's recommendations. [R307-401-8]
II.B.3.c	The flare shall be equipped with an auto igniter. [R307-401-8]
II.B.3.c.1	The owner or operator shall maintain records demonstrating the date of installation and manufacturer specifications for the auto-igniter required under R307-503-4. [R307-503-4]
II.B.3.d	The flare shall operate with no visible emissions. [R307-401-8]
II.B.3.d.1	Opacity observations of emissions from the flare shall be conducted according to 40 CFR 60, Appendix A, Method 22. [R307-401-8]

PERMIT HISTORY

This Approval Order shall supersede (if a modification) or will be based on the following documents:

Is Derived From
Incorporates
Incorporates
Incorporates
Incorporates

NOI dated August 14, 2024
Additional Information dated August 28, 2024
Additional Information dated October 3, 2024
DAQE-MN162310001-24 dated October 9, 2024
Additional Information dated October 15, 2024

ACRONYMS

The following lists commonly used acronyms and associated translations as they apply to this document:

40 CFR	Title 40 of the Code of Federal Regulations
AO	Approval Order
BACT	Best Available Control Technology
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CDS	Classification Data System (used by Environmental Protection Agency to classify sources by size/type)
CEM	Continuous emissions monitor
CEMS	Continuous emissions monitoring system
CFR	Code of Federal Regulations
CMS	Continuous monitoring system
CO	Carbon monoxide
CO ₂	Carbon Dioxide
CO _{2e}	Carbon Dioxide Equivalent - Title 40 of the Code of Federal Regulations Part 98, Subpart A, Table A-1
COM	Continuous opacity monitor
DAQ/UDAQ	Division of Air Quality
DAQE	This is a document tracking code for internal Division of Air Quality use
EPA	Environmental Protection Agency
FDCP	Fugitive dust control plan
GHG	Greenhouse Gas(es) - Title 40 of the Code of Federal Regulations 52.21 (b)(49)(i)
GWP	Global Warming Potential - Title 40 of the Code of Federal Regulations Part 86.1818-12(a)
HAP or HAPs	Hazardous air pollutant(s)
ITA	Intent to Approve
LB/YR	Pounds per year
MACT	Maximum Achievable Control Technology
MMBTU	Million British Thermal Units
NAA	Nonattainment Area
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
NOI	Notice of Intent
NO _x	Oxides of nitrogen
NSPS	New Source Performance Standard
NSR	New Source Review
PM ₁₀	Particulate matter less than 10 microns in size
PM _{2.5}	Particulate matter less than 2.5 microns in size
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
R307	Rules Series 307
R307-401	Rules Series 307 - Section 401
SO ₂	Sulfur dioxide
Title IV	Title IV of the Clean Air Act
Title V	Title V of the Clean Air Act
TPY	Tons per year
UAC	Utah Administrative Code
VOC	Volatile organic compounds