

**STATEMENT OF BASIS
FREEBIRD GAS STORAGE, LLC
EAST DETROIT STORAGE FACILITY
LAMAR COUNTY
FACILITY/PERMIT NO. 408-0009**

This proposed Title V Major Source Operating Permit (MSOP) renewal has been developed in accordance with the provisions of ADEM Admin. Code chap. 335-3-16. The above-named applicant has requested authorization to perform the work or operate the facility shown on the application and drawings, plans, and other documents attached hereto or on file with the Air Division of the Alabama Department of Environmental Management, in accordance with the terms and conditions of this permit.

The facility was originally constructed/began operations in 2000. The initial application for this renewal was received July 26, 2024, and the application was deemed complete on March 10, 2025. The initial MSOP was issued on February 1, 2010, and this is the third renewal. The current MSOP was issued on January 10, 2020, became effective on February 1, 2020, and is scheduled to expire on January 31, 2024.

The facility is located in Lamar County, which is currently listed attainment/unclassifiable with all National Ambient Air Quality Standards (NAAQS).

There are no current or ongoing enforcement actions against Freebird Gas Storage (Freebird) necessitating additional requirements to achieve compliance with the proposed permit conditions. The enforcement and compliance history for the facility can be found at <https://echo.epa.gov/> (Search using Facility ID AL0000000107500009).

Facility Operations

Freebird Gas Storage, L.L.C. (Freebird) is a depleted reservoir natural gas storage facility which operates compressor engines to move gas from the reservoir, process the gas to remove entrained water, and reintroduce the gas into the natural gas transmission pipeline. The significant sources of air pollutants at this facility are three 1,340 hp Caterpillar G3516, 4-stroke, lean-burn (4SLB) natural gas-fired reciprocating internal combustion engines (RICE) (Emission Unit Nos. 001 - 003); three 2,370 hp Caterpillar G3608 4SLB, natural gas-fired RICE with oxidation catalysts (Emission Unit Nos. 004 - 006); one 468 hp Generac 13.3 GTA 4-stroke, rich-burn (4SRB) natural gas-fired RICE equipped with a non-selective catalytic reduction unit (NSCR) powering an emergency generator (Emission Unit No. 010); and one 1.0 MMBtu/hr ETI dehydrator/heater equipped with a condenser/thermal oxidizer (Emission Unit No. 009). Insignificant emission sources at this station include four lube oil storage tanks (<1,000 gallons each), one glycol storage tank (<1,000 gallons), one used oil storage tank (<1,000 gallons), one coolant storage tank (<1,000 gallons), one crankcase oil storage tank (1,000 gallons), and one process liquid “slop” tank (<1,000 gallons).

Proposed Changes

There have been no modifications to or additions of significant emission sources at this facility since the issuance of the third renewal MSOP.

Permit History

The following is a history of previously issued permits for this facility:

Issuance No./Permit No.	Limit(s) Established	Issuance Date	Effective Date	Expiration Date
Unpermitted: (3) 1,340 hp RICE and (1) 0.375 MMBtu/hr and (1) 0.5 MMBtu/hr Glycol Dehydrators	--	2000	--	--
SMOP X001-X003: (3) 1,340 hp RICE AP X004-X006: (3) 2,730 hp RICE	Hourly operating limitations established as SMS limits	June 2, 2006	--	--
Initial Title V MSOP	--	February 1, 2010	February 1, 2010	January 31, 2015
AP X007: 468 hp Emergency RICE w/CC	2.0 g/hp-hr for NO _x 4.0 g/hp-hr for CO 1.0 g/hp-hr for VOC	August 31, 2011	--	--
Title V Initial MSOP Significant Modification: Added X007 - 468 hp Emergency RICE w/CC	--	November 19, 2013	November 19, 2013	January 31, 2015
MSOP 1st Renewal: Removed EU No. 008 – 0.5 MMBtu/hr Glycol Dehydrator and added a 1.0 MMBtu/hr Glycol Dehydrator/Heater w/Condenser & Thermal Oxidizer	--	February 12, 2016	February 12, 2016	January 31, 2020
MSOP 2nd Renewal	--	January 10, 2020	February 1, 2020	January 31, 2025

Plant-Wide Potential to Emit (PTE)

Pollutant	Potential Emissions (TPY)
PM	3.62
SO ₂	0.21
NO _x	107.60
CO	86.91
VOC	44.45
CO ₂ e	43,494.00
Formaldehyde (50-00-0)	17.62
Total HAPs	22.57

Applicability: Federal Regulations

Title V

This facility is a major source under Title V regulations because the potential emissions for nitrogen oxides (NO_x) exceed the 100 TPY major source threshold. It is also a major source of Hazardous Air Pollutants (HAP) because individual HAP potential emissions are greater than 10 TPY (17.60 TPY for Formaldehyde CAS No. 50-00-0) and the total HAP potential emissions are greater than 25 TPY (22.57 TPY).

Prevention of Significant Deterioration (PSD)

This facility is located in an attainment area for all criteria pollutants and the facility operations are not one of the listed major source categories. Therefore, the applicable major source threshold is 250 TPY. It is not a major source for PSD because the facility-wide potential emissions of criteria pollutants do not exceed 250 TPY.

New Source Performance Standards (NSPS)

40 CFR Part 60, Subpart JJJJ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (Subpart JJJJ)

The reciprocating engines (Emission Unit Nos. 001 – 006) are not subject to 40 CFR Part 60, Subpart JJJJ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines [Adopted by reference in ADEM Admin. Code r. 335-3-10-.02(88)] based on the date these engines were manufactured.

Emission Unit No. 010 is subject to Subpart JJJJ because the unit was ordered in April 2011, and was manufactured in August 2011, after the applicability date for this Subpart. Emission Unit No. 010 is a 468 hp Generac 13.3 GTA 4-stroke, rich-burn (4SRB) natural gas-fired ICE equipped with a non-selective catalytic reduction unit (NSCR). The applicable requirements are as follows:

Emission Limitations

In accordance with 40 CFR §60.4233(e) and Table 1 to Subpart JJJJ, the emergency engine is subject to a NO_x emission standard of 2.0 g/hp-hr (or 160 ppmvd at 15% O₂), a CO emission standard of 4.0 g/hp-hr (or 540 ppmvd at 15% O₂), and a VOC emission standard of 1.0 g/hp-hr (or 86 ppmvd at 15% O₂). According to 40 CFR §60.4234, Freebird must operate and maintain the emergency engine in a manner that meets these emission standards over the entire life of the engine.

Compliance Requirements

40 CFR §60.4243(d) requires the emergency engine to be operated according to the requirements in 40 CFR §§60.4243(d)(1) through (3). To be considered an emergency stationary ICE, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations (not to exceed 50 hours per year), is prohibited. If the engine is not operated according to the requirements in 40 CFR §§60.4243(d)(1) through (3), the engine will not be considered an emergency engine and must meet all requirements for non-emergency engines. The emergency engine (Emission Unit No. 10) is equipped with an NSCR unit. 40 CFR §60.4243(g) requires 4SRB engines using an NSCR to operate the air-to-fuel

controller appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times. 40 CFR §60.4237(a) requires the installation of a non-resettable hour meter on the emergency engine because it does not meet the standards applicable to non-emergency engines of the same size and model year. Emission Unit No. 010 is a certified engine. 40 CFR §60.4243(b)(1) requires certified engines to be operated according to the manufacturer's emission related written instructions and records of all maintenance must be maintained along with documentation from the manufacturer that the engine is certified to demonstrate compliance with the emission standard.

Testing Requirements

The emergency engine is a certified engine; therefore, it would not have to undergo an initial compliance test or subsequent tests as long as Freebird operates the engine and the control device according to the manufacturer's emission-related written instructions. However, if Freebird does not operate and maintain the engine and the control device according to the manufacturer's emission-related written instructions, Freebird would be required to demonstrate compliance by performing an initial performance test.

Notification, Reports, and Records

40 CFR §60.4245(a) requires that owners and operators of all stationary SI ICE that are subject to Subpart JJJJ keep records of: (1) all notifications submitted along with supporting documentation, (2) all maintenance conducted on the engine, and (3) documentation from the manufacturer that the engine is certified to meet the emission standards. In addition, 40 CFR §60.4245(b) requires Freebird to maintain records of the hours of operation for the emergency engine that are recorded through the non-resettable hour meter. All records required under this Subpart must be retained for at least five years from the date of generation and made available for inspection upon request.

40 CFR Part 60, Subpart OOOO, Standards of Performance for Crude Oil and Natural Gas Facilities for Which Construction, Modification, or Reconstruction Commenced After August 23, 2011, and on or Before September 18, 2015 (Subpart OOOO) [Adopted by reference in ADEM Admin. Code r. 335-3-10-.02(91)]

The compressors associated with Emission Unit Nos. 001 - 006 were each installed prior to the August 23, 2011, applicability date of Subpart OOOO; therefore, this facility is not subject to this Subpart.

40 CFR Part 60, Subpart OOOOa, Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification, or Reconstruction Commenced After September 18, 2015 and On or Before December 6, 2022 (Subpart OOOOa) [Adopted by reference in ADEM Admin. Code r. 335-3-10-.02(91)(a)]

The East Detroit Storage Facility is considered a natural gas compressor and storage facility and is potentially subject to 40 CFR Part 60, Subpart OOOOa. However, all equipment and processes potentially subject to this regulation were installed and/or modified prior to the applicability date, therefore, this facility is not subject to this Subpart.

40 CFR Part 60, Subpart OOOOb, Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification, or Reconstruction Commenced After December

6, 2022 (Subpart OOOOb)

The East Detroit Storage Facility is considered a natural gas compressor facility and is subject to 40 CFR Part 60, Subpart OOOOb. However, all equipment and processes potentially subject to this regulation were installed and/or modified prior to the applicability date, therefore, this facility is not subject to this Subpart.

National Emission Standards for Hazardous Air Pollutants (NESHAP/MACT)

40 CFR Part 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (Subpart ZZZZ) [Adopted by reference in ADEM Admin. Code r. 335-3-11-.06(103)]

Emission Unit Nos. 001 - 003 are each considered an existing affected source under Subpart ZZZZ. Emission Unit Nos. 001 - 003 are each a 21,340 hp Caterpillar G3516, Spark Ignition, 4-stroke, lean-burn (4SLB), natural gas-fired RICE located at a major source of HAP. In accordance with 40 CFR §63.6590(b)(3)(ii), existing spark ignition 4SLB RICE greater than 500 hp located at a major source of HAP do not have to meet the requirements of Subpart ZZZZ and Subpart A. An initial notification is also not required for these engines. Therefore, although these engines are not excluded from the applicability of Subpart ZZZZ, there are no applicable requirements.

As mentioned previously, Emission Unit No. 010 is an affected source under Subpart ZZZZ; however, because this engine is a new affected source constructed after the June 12, 2006, applicability date, Freebird must meet the requirements of Subpart ZZZZ for this engine by meeting the requirements of 40 CFR Part 60, Subpart JJJJ. No further requirements apply to the emergency engine under Subpart ZZZZ.

Emission Unit Nos. 004 - 006 are each considered a new affected sources under Subpart ZZZZ. Emission Unit Nos. 004 - 006 are each a 2,370 hp Caterpillar G3608 4SLB, natural gas-fired RICE with oxidation catalyst located at a major source of HAP. The applicable requirements include, but may not be limited to, the following:

Emission Limitations

In accordance with 40 CFR §63.6600(b) and Table 2a to Subpart ZZZZ, Freebird is required to either reduce CO emissions by 93% or more or limit the formaldehyde exhaust concentration to 14 ppmvd or less at 15% O₂ for each engine. The standard must be achieved at 100% load (± 10%). Freebird has chosen to demonstrate compliance by reducing the CO emissions by utilizing an oxidation catalyst for each engine instead of limiting the formaldehyde exhaust concentration.

Operating Limitations

The applicable operating limitations are found in 40 CFR §63.6600(b) and Table 2b to Subpart ZZZZ. Freebird has elected to utilize an oxidation catalyst with each engine to comply with the applicable CO emissions standard of Table 2a to Subpart ZZZZ; therefore, each catalyst must be maintained such that the pressure drop across the catalyst does not change by more than 2 inches of water at 100% load (± 10%) from the pressure drop that was measured during the initial performance test. In addition, the temperature of each engine's exhaust must be maintained such that the catalyst inlet temperature is ≥ 450 °F and ≤ 1350 °F.

Performance Testing Requirements

In accordance with 40 CFR §63.6610 and Table 4 to Subpart ZZZZ, Freebird is required to conduct CO emissions testing on each engine to determine if the required 93% reduction emission limitation is being achieved. To comply with Subpart ZZZZ, an initial performance test was required within 180 days of startup of each engine. Freebird conducted the initial compliance test and demonstrated compliance for these units on August 22-23, 2007. In accordance with 40 CFR §63.6615 and Table 3 to Subpart ZZZZ, Freebird is also required to perform subsequent semiannual performance tests on each engine to demonstrate compliance with the applicable CO emission limitation. Freebird has demonstrated compliance for two consecutive semiannual performance tests; therefore, the frequency of subsequent performance tests has been reduced to annually. However, if a performance test in the future indicates that an engine is not in compliance with the applicable CO emission limitation, or the engine has deviated from any operational limitation, Freebird would be required to resume semiannual performance testing.

Continuous Compliance Requirements

In accordance with 40 CFR §63.6640, Freebird has proposed to meet the CO reduction requirements by utilizing an oxidation catalyst and implements a continuous parameter monitoring system (CPMS). In accordance with Table 6 to Subpart ZZZZ, Freebird is required to collect catalyst inlet temperature data (record a reading every 15 minutes) in accordance with the monitoring requirements of 40 CFR §63.6625(b) and reduce the data to 4-hour rolling averages. The 4-hour rolling averages must be maintained within the operating limitations for each catalyst inlet temperature. In addition, Freebird is required to measure the pressure drop across each catalyst once per month to demonstrate each catalyst is within the operating limitation established during the performance test.

Notification Requirements

In accordance with 40 CFR §63.6645(g), Freebird is required to submit a Notification of Intent at least 60 days prior to conducting each performance test. In accordance with 40 CFR §63.6645(h), following each performance test, Freebird is required to submit a Notification of Compliance Status, including the performance test results, within 60 days of completing each performance test.

Reporting Requirements

The reporting requirements are found in 40 CFR §63.6650 and Table 7 to Subpart ZZZZ. Freebird is required to submit a semiannual compliance report based on calendar year periods January – June and July – December. In accordance with 40 CFR §63.6650(f), Freebird is required to submit the semiannual compliance report as part of their Semiannual Monitoring Report as required by General Permit Proviso No. 21. The compliance report must contain the information outlined in 40 CFR §63.6650(c) and (e).

Recordkeeping Requirements

The recordkeeping requirements are found in 40 CFR §63.6655. Freebird is required to maintain on-site records of all performance tests and evaluations, all notifications required by the Subpart, start-up, shutdown, and malfunction reports, and all oxidation catalyst measurements required to demonstrate compliance, which include the pressure drop across the catalyst, catalyst inlet temperature, and records of each period the CPMS malfunctions or is inoperative, including out-

of-control periods. They must be maintained for a period of 5 years from the date of each record or report. They must be maintained on-site for at least 2 years and may be kept off-site for the remaining 3 years.

General Provisions (40 CFR Part 63, Subpart A)

Freebird is required to comply with all applicable general provisions of 40 CFR Part 63, Subpart A, except the provisions related to opacity or visible emission standards and COMS since Subpart ZZZZ does not contain these standards or requirements. Table 8 to Subpart ZZZZ also specifies what sections of the subpart have additional or more stringent requirements than the general provisions.

40 CFR Part 63, Subpart HHH, National Emissions Standards for Hazardous Air Pollutants from Natural Gas Transmission and Storage Facilities (Subpart HHH)

Emission Unit No. 009 is an affected source under 40 CFR Part 63, Subpart HHH [Adopted by reference in ADEM Admin. Code r. 335-3-11-.06(59)] and is considered a small glycol dehydration unit as defined in 40 CFR §63.1271. 40 CFR §63.1271 defines a control device as any equipment used for recovering or oxidizing HAP or volatile organic compound (VOC) vapors. Such equipment includes, but is not limited to, absorbers, carbon absorbers, condensers, incinerators, flares, boilers, and process heaters. For the purposes of this Subpart, if gas or vapor from regulated equipment is used, reused (i.e., injected into the flame zone of an enclosed combustion device), returned back to the process, or sold, then the recovery system used, including piping, connections, and flow inducing devices, is not considered to be a control device or a closed-vent system. Freebird plans to continue using the condenser and sell the condensate produced by the condenser. Therefore, the condenser does not meet the definition of a control device. However, if Freebird does not sell the condensate or discontinues selling the condensate, the condenser would be considered a control device and subject to the requirements for control devices in accordance with 40 CFR §63.1283(d)(5)(ii).

This unit meets the definition of an existing small glycol dehydration unit according to 40 CFR §63.1271, because the unit was constructed prior to the August 23, 2022 applicability date for existing units, is located at a major source of HAP, and the facility's actual average benzene emissions are less than 0.90 Mg/yr, as determined according to 40 CFR §63.1282(a). The applicable requirements include, but may not be limited to, the following:

Emission Limitations

Freebird is required to limit the BTEX (benzene, toluene, ethyl benzene, and xylene) emissions below the calculated allowable emissions rate using Equation 1 found in 40 CFR §63.1275(b)(1)(iii) for existing small glycol dehydrators.

$$EL_{\text{BTEX}} = 3.10 \times 10^{-4} \times \text{Throughput} \times C_{i,\text{BTEX}} \times 365 \text{ days/yr} \times 1 \text{Mg}/1 \times 10^6 \text{ gr}$$

Where:

EL_{BTEX} = unit-specific BTEX emission limit (megagrams/yr)

3.10×10^{-4} = BTEX emission limit (grams BTEX/scm-ppmv)

Throughput = annual average daily natural gas throughput (scm/day)

C_{BTEX} = annual average BTEX concentration of the natural gas at the inlet to the glycol dehydration unit (ppmv)

Freebird has chosen to meet this requirement by installing a thermal oxidizer (flare) to control this small glycol dehydration unit in accordance with 40 CFR §63.1281(f)(1)(i).

Performance Testing Requirements

To demonstrate the thermal oxidizer achieves the reduction in BTEX emissions required by 40 CFR §63.1275(b)(1)(iii). As required by 40 CFR §63.1282(d)(2), Freebird shall design and operate each flare, as defined in 40 CFR §63.1271, in accordance with the requirements specified in 40 CFR §63.11(b) and the compliance determination shall be conducted using Method 22 of 40 CFR part 60, appendix A, to determine visible emissions. The determination of actual average benzene or BTEX emissions from a glycol dehydration unit shall be made using the procedures of either 40 CFR §63.1282(a)(2)(i) by determining actual average benzene or BTEX emissions using the model GRI-GLYCalc™, Version 3.0 or higher, and the procedures presented in the associated GRI-GLYCalc™ Technical Reference Manual or by 40 CFR §63.1282(a)(2)(ii) by determining an average mass rate of benzene or BTEX emissions in kilograms per hour through direct measurement by performing three runs of Method 18 in 40 CFR part 60, appendix A; or ASTM D6420-99. Freebird is required to perform subsequent performance tests no more than 60 months after the previous test in accordance with 40 CFR §63.1282(d)(3)(vi)(B). Freebird's most recent test was performed on February 5, 2025.

This unit is required to operate with a thermal oxidation system (flare as defined in 40 CFR §63.1271). The thermal oxidizer (flare) using an open flame shall rout all gases, vapors, and fumes to the control device in accordance with 40 CFR §63.1281(f)(2). Freebird is required to demonstrate this in accordance with 40 CFR §63.1282(a)(2)(i) or (ii). The thermal oxidizer (flare) is required to be designed and operated in accordance with the requirements of 40 CFR §63.11(b).

Continuous Compliance/Operating Limitations

In accordance with 40 CFR §63.1283(d)(1), Freebird is required to monitor the thermal oxidizer with the CPMS. In accordance with 40 CFR §63.1283(d)(1) Freebird would not be required to establish specific site minimum or maximum parameter values for the thermal oxidizer as specified in 40 CFR §63.1283(d)(5)(i)(A) during subsequent performance tests. For a thermal oxidizer (flare), a heat sensing monitoring device equipped with a continuous recorder that indicates the continuous ignition of the pilot flame would be required. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame in accordance with 40 CFR §63.11(b)(5). In accordance with 40 CFR §63.11(b)(4), flares shall be designed for and operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. Test Method 22 in appendix A shall be used to determine the compliance of flares with the visible emission provisions of this part. The observation period is 2 hours and shall be used according to Method 22.

Notification Requirements

Freebird is required to submit a Notification of Intent at least 60 days prior to conducting each performance test as required by 40 CFR §63.1285(b)(3). Following each test, Freebird is required

to submit a Notification of Compliance Status, including the performance test results, within 60 days of completing each performance test as required by 40 CFR §63.1285(d) and 40 CFR §63.1285(g).

Reporting Requirements

In accordance with 40 CFR §63.1285(e)(1), Freebird is required to submit Periodic Reports containing the applicable information in 40 CFR §63.1285(e)(2)(i) through (xiii), semiannually based on the calendar year periods of January – June and July – December. In accordance with 40 CFR §63.1285(b)(6), if a malfunction during the reporting period occurs, the Periodic Report shall include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded and include a description of actions taken.

Recordkeeping Requirements

In accordance with 40 CFR §63.1284(b), all notifications and reports (and supporting documentation) as well as records pertaining to initial and continuous compliance must be maintained for a period of at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report or period. The most recent 12 months of records shall be retained on site or shall be accessible from a central location by hardcopy, computer or other means. The following 4 years of records may be retained offsite. All applicable records shall be maintained in such a manner that they can be readily accessed.

As a control device, the condenser would have to meet the following requirements:

Freebird is required to notify the Air Division within 30 days if Freebird discontinues selling the condensate from the condenser. Within 180 days of Freebird discontinuing selling the condensate, Freebird would be required to establish a performance curve for the condenser showing the relationship between the condenser outlet temperature and condenser control efficiency. 40 CFR §63.1283(d)(5)(ii) gives Freebird the option to either:

- (i) Conduct a performance test to establish the performance curve based on the values measured during the test;
- (ii) Use a control device design analysis in accordance with the requirements of 40 CFR §63.1282(d)(4)(i) to demonstrate that the condenser achieves the applicable performance requirements and then base the condenser performance curve on the design analysis; or,
- (iii) As an alternative to using a control device design analysis, Freebird may elect to use the procedures documented in the GRI report entitled “Atmospheric Rich/Lean Method for Determining Glycol Dehydrator Emissions” as inputs for the model GRI-GLYCalc, Version 3.0 or higher, to generate a condenser performance curve.

Freebird has the option to determine compliance by either the method specified in 40 CFR §63.1282(e) or 40 CFR §63.1282(f). Freebird may switch between the two options only after at least one year of operation in compliance with the selected approach.

- (i) 40 CFR §63.1282(e) requires Freebird to demonstrate compliance by using data collected by the CPMS during the establishment of the site specific performance curve

and calculate a daily average for each monitored operating parameter for each operating day to ensure that the unit is in compliance as specified in 40 CFR §63.1283(d)(4). Compliance would be achieved when the daily average of the monitoring value is either equal to or greater than the minimum value or equal to or less than the maximum value; or

- (ii) 40 CFR §63.1282(f) requires Freebird to use the site specific performance curve to identify the minimum percent reduction necessary to meet the BTEX limit. Freebird would calculate the daily average condenser outlet temperature and determine the condenser efficiency for the current operating day using the daily average condenser outlet temperature and the condenser performance curve. At the end of each operating day, Freebird would calculate the 30-day average BTEX emission reduction from the condenser efficiency for the preceding 30 operating days.

40 CFR Part 63, Subpart DDDDD, National Emissions Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters (Subpart DDDDD)

40 CFR §63.7491(h) states that any boiler or process heater that is part of the affected source subject to another Subpart of Part 63, are not subject to this subpart. Therefore, The 1.0 MMBtu/hr ETI natural gas-fired glycol dehydrator/heater w/condenser and thermal oxidizer is not an affected source under Subpart DDDDD.

Mandatory Greenhouse Gas Reporting

40 CFR Part 98, Subpart A General Provision

This facility is one of the source categories listed in Table A-4 as defined in 40 CFR §98.230(a)(5), it is subject to this rule in accordance with 40 CFR §98.2(a)(3) because the aggregate maximum rated heat input capacity of the stationary fuel combustion units at the facility is 30 MMBtu/hr or greater and the facility has the potential to emit 25,000 metric tons (27,558 TPY) of CO₂e or more per year from all stationary fuel combustion sources combined. Freebird must calculate greenhouse gas quantities according to the methodologies described in 40 CFR §98.2(c). In accordance with 40 CFR §98.3(g), Freebird is required to maintain records of actual CO₂, CH₄, and N₂O emissions to determine the actual CO₂e emissions. If such emissions exceed the 25,000 metric tons per year threshold, then an annual report must be submitted no later than March 31 of each calendar year thereafter per 40 CFR §98.3(b). In accordance with 40 CFR §98.5, the annual report must be submitted electronically in accordance with the requirements of 40 CFR §98.4 (via EPA's Central Data Exchange). While this facility is required to report greenhouse gas emissions to EPA per 40 CFR Part 98, these requirements do not meet the definition of “applicable requirements” under 40 CFR 70.2 and ADEM Admin. Code r. 335-3-16-.01(1)(e). Therefore, the requirements of 40 CFR Part 98 are not required to be included in the Title V permit.

Applicability: State Regulations

ADEM Admin. Code r. 335-3-4-.01, “Control of Particulate Emissions: Visible Emissions”

Each of the emission sources at this facility are subject to the State visible emissions standards of ADEM Admin. Code r. 335-3-4-.01(1), which states that no air emission source may emit particulate of an opacity greater than 20% (as measured by a six-minute average) more than once

during any 60 minute period and at no time shall emit particulate of an opacity greater than 40% (as measured by a six-minute average).

ADEM Admin. Code r. 335-3-4-.02, “Fugitive Dust and Fugitive Emissions”

This rule is applicable. However, all plant roads are paved or graveled. There are no raw materials, storage piles, products, etc. capable of generating fugitive dust at this facility. Therefore, additional specific requirements for fugitive dust are not necessary for this facility.

ADEM Admin. Code r. 335-3-4-.03, “Control of Particulate Emissions: Fuel Burning Equipment”

Although the engines and emergency engine are fuel combustion sources, they are not subject to any particulate matter (as TSP) emission limitation of ADEM Admin. Code Chap. 335-3-4 because they do not meet the definition of fuel burning equipment and the facility is not considered one of the process industries, general or specific. The glycol dehydrator process is considered fuel-burning equipment and is subject to the State particulate matter emission standard in ADEM Admin. Code r. 335-3-4-.03(1). The glycol dehydrator process is fired with natural gas; therefore, it would be expected to be able to comply with this standard.

ADEM Admin. Code r. 335-3-5-.01, “Control of Sulfur Compound Emissions: Fuel Combustion”

Although the engines and emergency engine are fuel combustion sources, they are not subject to any sulfur dioxide (SO₂) emission limitation of ADEM Admin. Code Chap. 335-3-5 because they do not meet the definition of fuel burning equipment nor is this facility considered one of the process industries, general or specific. The glycol dehydrator process would be considered fuel-burning equipment and would be subject to the State particulate matter emission standard in ADEM Admin. Code r. 335-3-5. The glycol dehydrator process is fired with natural gas; therefore, it would be expected to be able to comply with this standard.

Emission Testing and Monitoring

No emission testing is required for Engine Nos. 489, 490, and 491 (Emission Unit Nos. 001-003).

Freebird is required to test CO emissions for Engine Nos. 492, 493, and 494 (Emission Unit Nos. 004-006) to determine if the required 93% reduction emission limitation is being achieved in accordance with 40 CFR §63.6600(b) and Table 2a to Subpart ZZZZ.

Freebird is required to perform subsequent performance tests no more than 60 months after the previous test on the 1.0 MMBtu/hr ETI natural gas-fired glycol dehydrator/heater w/condenser and thermal oxidizer (Emission Unit No. 009) in accordance with 40 CFR §63.1282(d)(3)(vi)(B).

Emergency Generator Engine No. 2 (Emission Unit No. 010) is a certified engine, therefore, it does not have to undergo an initial compliance test or subsequent tests as long as Freebird operates the engine and control device according to the manufacturer’s emission-related written instructions.

In addition to the testing required to comply with 40 CFR Part 63, Subpart ZZZZ for Emission Unit Nos. 004 – 006, Freebird is required to certify on a semiannual basis that only natural gas was burned in the six reciprocating engines and the emergency engine as a method for monitoring

compliance with the visible emission requirements of ADEM Admin. Code r. 335-3-4-.01(1). In addition, as a method for monitoring compliance with the visible emission requirements of ADEM Admin. Code r. 335 3 4 .01(1), Freebird is required to certify on a semiannual basis that only natural gas was fired in the glycol dehydrator/heater and that natural gas was fired in the thermal oxidizer with the exception of the waste gases generated by the glycol dehydration/heater unit operations that are combusted and destroyed by the thermal oxidizer.

Compliance Assurance Monitoring (CAM)

Compliance Assurance Monitoring (CAM), 40 CFR Part 64, applies to any pollutant-specific emission unit at a major source that is required to obtain an operating permit, in accordance with 40 CFR §64.5, if it meets all of the following criteria:

- It is subject to an emission limit or standard for an applicable regulated air pollutant.
- It uses a control device to achieve compliance with the applicable emission limit or standard.
- It has potential emissions, prior to the control device, of the applicable regulated air pollutant of 100 TPY of a criteria pollutant, 10 TPY of an individual HAP, or 25 TPY of total HAP.

Although Emission Unit Nos. 004 - 006 and 010 utilize an active control device to meet an emission standard, these units are not subject to CAM because 40 CFR §64.2(b)(i) exempts units subject to an emission standard proposed after November 15, 1990, pursuant to section 111 or 112 of the Clean Air Act. These units are subject to Subpart ZZZZ, which is a standard that meets this exemption.

Recordkeeping and Reporting Requirements

For Emergency Generator Engine No. 2 (Emission Unit No. 010), Freebird is required to keep records of: (1) all notifications submitted along with supporting documentation, (2) all maintenance conducted on the engine, and (3) documentation from the manufacturer that the engine is certified to meet the emission standards. In addition, Freebird is required to keep records of the hours of operation for the emergency engine that are recorded through the non-resettable hour meter.

For the three 2,370 hp RICE equipped with oxidation catalysts (Emission Unit Nos. 004 - 006), Freebird is required to collect and record the catalyst inlet temperature data through a continuous parameter monitoring system (CPMS) in accordance with 40 CFR §63.6655(b).

For the glycol dehydration process (Emission Unit No. 009), Freebird is required to maintain all notifications and reports (and supporting documentation) as well as records pertaining to initial and continuous compliance for a period of at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report or period in accordance with Subpart HHH.

In addition to the applicable recordkeeping and reporting requirements under 40 CFR Part 60, Subpart JJJJ for Emission Unit No. 010; 40 CFR Part 63, Subpart HHH for Emission Unit No. 009; and 40 CFR Part 63, Subpart ZZZZ for Emission Unit Nos. 004 – 006, Freebird is required

to submit a certification semiannually that only natural gas was fired in the engines, the emergency engine, and the glycol dehydrator.

Public Participation

The renewal of this Title V MSOP would require a 30-day public comment period and a 45-day EPA review period.

Recommendation

Based on the above analysis, I recommend that Southern Natural Gas Company, LLC's Title V Major Source Operating Permit (408-0009) be renewed with the requirements noted above, pending the resolution of any comments received during a 30-day public comment period and 45-day EPA review.



Brandon R. Cranford
Chemical Branch
Air Division

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Date

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