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west virginia department of environmental protection

G35-C GENERAL PERMIT ENGINEERING EVALUATION

PREVENTION AND CONTROL OF AIR POLLUTION IN REGARD TO THE CONSTRUCTION, MODIFICATION,
RELOCATION, ADMINISTRATIVE UPDATE AND OPERATION OF
NATURAL GAS COMPRESSOR AND/OR DEHYDRATION FACILITIES

APPLICATION NO.: G35-C019B

FACILITY ID: 001-00119

- CONSTRUCTION
 MODIFICATION
 RELOCATION

- CLASS I ADMINISTRATIVE UPDATE
 CLASS II ADMINISTRATIVE UPDATE

BACKGROUND INFORMATION

Name of Applicant (as registered with the WV Secretary of State's Office): Diversified Oil & Gas, LLC

Federal Employer ID No. (FEIN): 45-4551458

Applicant's Mailing Address: PO Box 381087

City: Birmingham

State: AL

ZIP Code: 35238

Facility Name: Antonelli Compressor Station

Operating Site Physical Address: County Road 93

If none available, list road, city or town and zip of facility.

City: Moatsville

Zip Code: 26405

County: Barbour

Latitude & Longitude Coordinates (NAD83, Decimal Degrees to 5 digits):

Latitude: 39.21933

Longitude: -79.88191

SIC Code: 1311

NAICS Code: 211111

Date Application Received:

July 19, 2016

Fee Amount: \$300.00

Date Fee Received: July 19, 2016

Applicant Ad Date: June 25, 2016

Newspaper: *The Inter-Mountain*

Date Application Complete: August 9, 2016

Due Date of Final Action: September 23, 2016

Engineer Assigned: Jerry Williams, P.E.

Description of Permitting Action: Replacement of a natural gas compressor engine.

PROCESS DESCRIPTION

The following process description was taken from Registration Application G35-C019B:

Diversified is proposing to remove the permitted Caterpillar G3516LE compressor driver engine and replace it with a smaller Ajax 2802LE compressor driver engine. The replacement engine (Ajax 2802LE) is considered a "new" engine and located at an area source of HAP emissions which makes it subject to subpart ZZZZ (40 CFR part 63). For this type of engine, there are no specific requirements the engine must meet unless the engine is already subject to subpart JJJJ (40 CFR part 60). Since the replacement engine was manufactured prior to the applicable date in 60.4230(a)(4), it is not subject to the requirements in subpart JJJJ. In summary, there are no requirements that apply to this engine. There are no other proposed changes to the facility. This will not result in any increases in emissions from this facility.

Natural gas flows from contiguous well pads to the Facility. The gas is compressed by the compressor driver engine. Then, the raw natural gas flows to the existing NATCO glycol dehydrator to dehydrate the gas and inject into a gathering line owned and operated by others. The NATCO glycol dehydrator generates emissions from the still vent and re-boiler. There is no flash tank. Vapors from the still vent are comprised of water and various low molecular weight hydrocarbons. This vapor stream is used as fuel for the reboiler. Excess still vent vapors are routed to the reboiler vent where they are ignited by a glow plug and combusted. Although needs are anticipated to be minimal, supplemental re-boiler fuel is available from the dehydrated gas stream prior to injection into the sales line.

SITE INSPECTION

Site Inspection Date: May 13, 2015

Site Inspection Conducted By: John Money penny

Results of Site Inspection: In Compliance

Did Applicant meet Siting Requirements? Yes

If applicable, was siting criteria waiver submitted? NA

Directions to Facility: From Charleston, follow I-79N to Exit 115, WV-20 S. Continue on WV-20 to WV-57 E. In approximately 12 miles, turn left onto US-119 N. Follow for 2 miles then turn right onto Blue and Gray Expy. Then, turn right onto Main St and continue onto US-250 S for 2 miles. Turn left onto WV-38 E / WV-92 N. After approximately 4.5 miles, sharp right onto Campbell Dairy. Site will be approximately 0.8 miles on the right.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

The following table indicates which methodology was used in the emissions determination:

Emission Unit ID#	Process Equipment	Calculation Methodology (e.g. ProMax, GlyCalc, mfg. data, AP-42, etc.)
CE-2	Ajax 2802LE Compressor Engine	Mfg. Data, AP-42

The total facility PTE for the facility (including fugitive emissions) is shown in the following table:

Pollutant	G35A-019A PTE (tons/year)	G35C-019B PTE (tons/year)	PTE Change for Modification (tons/year)
Nitrogen Oxides	19.61	7.93	-11.68
Carbon Monoxide	24.50	4.73	-19.77
Volatile Organic Compounds	9.67	8.75	-0.92
Formaldehyde	3.23	1.16	-2.07

REGULATORY APPLICABILITY

45CSR13 (Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, and Procedures for Evaluation)

45CSR13 applies to this source due to the fact that the applicant is defined as a “stationary source” under 45CSR13 Section 2.24.b. *Stationary source* means, for the purpose of this rule, any building, structure, facility, installation, or emission unit or combination thereof, excluding any emission unit which meets or falls below the criteria delineated in Table 45-13B which: (a) is subject to any substantive requirement of an emission control rule promulgated by the Secretary; (b) discharges or has the potential to discharge more than six (6) pounds per hour and ten (10) tons per year, or has the potential to discharge more than 144 pounds per calendar day, of any regulated air pollutant; (c) discharges or has the potential to discharge more than two (2) pounds per hour or five (5) tons per year of hazardous air pollutants considered on an aggregated basis; (d) discharges or has the potential to discharge any air pollutant(s) listed in Table 45-13A in the amounts shown in Table 45-13A or greater; or, (e) an owner or operator voluntarily chooses to be subject to a construction or modification permit pursuant to this rule, even though not otherwise required to do so. 45CSR13 has an original effective date of June 1, 1974.

The applicant meets the definition of a stationary source because (check all that apply):

- Subject to a substantive requirement of an emission control rule promulgated by the Secretary.
- Discharges or has the potential to discharge more than six (6) pounds per hour and ten (10) tons per year, or has the potential to discharge more than 144 pounds per calendar day, of any regulated air pollutant.
- Discharges or has the potential to discharge more than two (2) pounds per hour or five (5) tons per year of hazardous air pollutants considered on an aggregated basis.
- Discharges or has the potential to discharge any air pollutant(s) listed in Table 45-13A in the amounts shown in Table 45-13A or greater.
- Voluntarily chooses to be subject to a construction or modification permit pursuant to this rule, even though not otherwise required to do so.

General Permit G35-C Registration satisfies the construction, modification, relocation and operating permit requirements of 45CSR13. General Permit G35-C sets forth reasonable conditions that enable eligible registrants to establish enforceable permit limits.

Section 5 of 45CSR13 provides the permit application and reporting requirements for construction of and modifications to stationary sources. No person shall cause, suffer, allow or permit the construction, modification, relocation and operation of any stationary source to be commenced without notifying the Secretary of such intent and obtaining a permit to construct, modify, relocate and operate the stationary source as required in the rule or any other applicable rule promulgated by the Secretary.

If applicable, the applicant meets the following (check all that apply):

- Relocation
- Modification
- Class I Administrative Update (45CSR13 Section 4.2.a)
- Class II Administrative Update (45CSR13 Section 4.2.b)

45CSR22 (Air Quality Management Fee Program)

45CSR22 is the program to collect fees for certificates to operate and for permits to construct or modify sources of air pollution. 45CSR22 applies to all registrants. The general permit fee of \$500 is defined in 45CSR13. In addition to the application fee, all applicants subject to NSPS requirements or NESHAP requirements shall pay additional fees of \$1,000 and \$2,500, respectively.

Registrants are also required to obtain and have in effect a valid certificate to operate in accordance with 45CSR22 §4.1. The fee group for General Permit G35-C is Group 8D (natural gas compressor stations greater than 1,000 HP) with an annual operating fee of \$500 or 9M (all other sources) with an annual operating fee of \$200.

The applicant is in the following fee group:

- 8D (Natural Gas Compressor Stations Greater than 1,000 HP)
 9M (All Other Sources)

40CFR60 Subpart JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines)

Subpart JJJJ sets forth nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compound (VOC) emission limits, fuel requirements, installation requirements, and monitoring requirements based on the year of installation of the subject internal combustion engine. The provisions for stationary spark ignition (SI) internal combustion engines for owners or operators of this Subpart have been included in General Permit G35-C, Section 13.

The proposed engine falls within a window where it is not subject to 40CFR60 Subpart JJJJ and 40CFR63 Subpart ZZZZ. Melanie King from USEPA wrote a memo that states there are some engines that fall into a window where they would not have any requirements under either subpart ZZZZ or subpart JJJJ. Those engines that are "new" under subpart ZZZZ (meaning constructed after June 12, 2006) and are either ≤500 HP located at a major source, or any HP located at an area source, but that don't meet the applicability criteria for subpart JJJJ (they were ordered/manufactured before the applicable dates in 60.4230(a)(4)), don't have to meet any requirements in either rule.

40CFR60, Subpart OOOO (Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution for which Construction, Modification or Reconstruction Commenced after August 23, 2011, and on or before September 18, 2015)

EPA published its New Source Performance Standards (NSPS) and air toxics rules for the oil and gas sector on August 16, 2012. EPA published amendments to the Subpart on September 23, 2013 and June 3, 2016.

40CFR60 Subpart OOOO establishes emission standards and compliance schedules for the control of volatile organic compounds (VOC) and sulfur dioxide (SO₂) emissions from affected facilities that commence construction, modification or reconstruction after August 23, 2011 and on or before September 18, 2015. The affected sources which commence construction, modification or reconstruction after August 23, 2011 and on or before September 18, 2015 are subject to the applicable provisions of this Subpart as described below:

Reciprocating compressor affected facilities are included in General Permit G35-C, Section 11.0.

Are there any applicable reciprocating compressor affected facilities not located at the facility?

- Yes No

40CFR60, Subpart OOOOa (Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution for which Construction, Modification or Reconstruction Commenced after September 18, 2015)

EPA published its New Source Performance Standards (NSPS) and air toxics rules for the oil and gas sector on August 16, 2012. EPA published amendments to the Subpart on September 23, 2013 and June 3, 2016.

40CFR60 Subpart OOOOa establishes emission standards and compliance schedules for the control of the pollutant greenhouse gases (GHG). The greenhouse gas standard in this subpart is in the form of a limitation on emissions of methane from affected facilities in the crude oil and natural gas source category that commence construction, modification or reconstruction after September 18, 2015. This subpart also establishes emission standards and compliance schedules for the control of volatile organic compounds (VOC) and sulfur dioxide (SO₂) emissions from affected facilities that commence construction, modification or reconstruction after September 18, 2015. The effective date of this rule is August 2, 2016.

For each compressor station, the registrant must reduce GHG (in the form of a limitation on emissions of methane) and VOC emissions by complying with fugitive emissions monitoring as required in §60.5397a and the alternative means of emission limitations in §60.5398a.

This subpart has not been added to General Permit G35-C to date. However, facilities are still required to meet all applicable standards. The Ajax 2802LE compressor engine (CE-2) is subject to the reciprocating compressor affected facility requirements, and must replace the rod packing as required in §60.5385a. The registrant is not subject to the fugitive emission requirements (LDAR) of §60.5397a. §60.5365a states that for the purposes of the fugitive emission requirements at a compressor station, a “modification” occurs when one or more compressors at a compressor station is replaced by one or more compressors of greater total horsepower than the compressor(s) being replaced. A decrease in horsepower is occurring, therefore, for the purposes of §60.5397a, no “modification” has occurred.

40CFR63 Subpart HH (National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities)

This Subpart applies to owners and operators of each triethylene glycol (TEG) dehydration unit that are located at oil and natural gas production facilities. Only area source requirements are included in General Permit G35-C, as defined in §63.761.

For area source applicability, the affected source includes each triethylene glycol (TEG) dehydration unit located at a facility that meets the criteria specified in §63.760(a).

Glycol dehydration unit(s) are included in General Permit G35-C, Section 14.0.

Are there any TEG dehydration unit(s) at this facility? Yes No

Are the glycol dehydration unit(s) exempt from 40CFR63 Section 764(d)? Yes No

If Yes, answer the following questions:

The actual annual average flowrate of natural gas to the glycol dehydration unit(s) is less than 85 thousand standard cubic meters per day, as determined by the procedures specified in §63.772(b)(1) of this Subpart. Yes No

The actual average emissions of benzene from the glycol dehydration unit process vent(s) to the atmosphere are less than 0.90 megagram per year (1 ton per year), as determined by the procedures specified in §63.772(b)(2) of this Subpart. Yes No

SOURCE AGGREGATION DETERMINATION

“Building, structure, facility, or installation” is defined as all the pollutant emitting activities which belong to the same industrial grouping, are located on one or more contiguous and adjacent properties, and are under the control of the same person.

Is there equipment and/or activities used for onshore oil and natural gas production that are located on the same site, or on sites that share equipment and are within ¼ mile of each other?

Yes No

Is this equipment and/or activities under “common control”?

Yes No

Final Source Aggregation Decision.

Source not aggregated with any other source.

Source aggregated with another source. List Company/Facility Name:

RECOMMENDATION TO DIRECTOR

The information provided in the permit application, including all supplemental information received, indicates the applicant meets all the requirements of applicable regulations and the applicant has shown they meet the eligibility requirements of General Permit G35-C. Therefore, impact on the surrounding area should be minimized and it is recommended that the facility should be granted registration under General Permit G35-C.

Permit Engineer Signature: _____

Name and Title: Jerry Williams, P.E.

Date: 8/19/2016