west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-3210A
Plant ID No.:	051-00166
Applicant:	Williams Ohio Valley Midstream LLC (Williams)
Facility Name:	Snyder Compressor Station
Location:	McCreary's Ridge Rd, Marshall County, West Virginia
NAICS Code:	213112
Application Type:	Modification
Received Date:	May 29, 2015
Engineer Assigned:	David Keatley
Fee Amount:	$2,000
Date Received:	June 5, 2015
Complete Date:	June 26, 2015
Due Date:	September 17, 2015
Applicant Ad Date:	May 26, 2015
Newspaper:	*Moundsville Daily Echo*
UTM's:	Easting: 531.70 km Northing: 4,421.38 km Zone: 17
Description:	The reason for this permitting action is a different engine manufacture date for engine CE-2. Install and operate one (1) 225-bhp compressor engine subject to subpart JJJJ. Remove one (1) 225 bhp compressor engine. Additional fugitive emissions were also included.

DESCRIPTION OF PROCESS

Natural gas will enter the facility via pipeline. The natural gas will first enter inlet scrubbers to knock out some liquids. The natural gas stream is then compressed to a higher pressure. The compressors are powered by two (2) engines. One (1) existing compressor engine (CE-01) is a four-stroke rich-burn 68 bhp Arrow VRG-330-A054 natural gas fired compressor engine. The other engine (CE-02) is a proposed four-stroke rich-burn Cummins GTA855 natural gas fired engine equipped with a NSCR catalyst.

After compression the natural gas stream at a maximum rate of 5 mmscfd is dehydrated to reduce the water content of the natural gas stream. The natural gas flows countercurrent to circulating triethylene glycol (TEG) in a contactor where the TEG absorbs the water. The compressed dehydrated natural gas steam exits the facility via pipeline. The rich TEG is sent first to a flash tank (DFT-01) to reduce the volatile organics. The rich TEG then goes to a regenerator to remove the water from the TEG. The regenerator is heated by a 0.22 mmBtu/hr reboiler (RBV-01). The vapors from the regenerator exit the still vent (DSV-01). The flash tank vapors will be used for fuel when the reboiler is operating.

Liquids from the facility are sent to one (1) 210-bbl produced liquid tank (TK-01). A natural gas blanket will be used to help prevent oxygen from enter the tank. The produced liquids will exit the facility via truck at a maximum rate of 2,520 bbl/year.

SITE INSPECTION

A site inspection was conducted in October 2014 by Jamie Jarrett of the DAQ Enforcement Section. According to Mr. Jarrett, the site location is appropriate for the proposed facility.

From the intersection of SR 2 and US 250 near Moundsville. Travel east on US 250 for approximately 6.2 miles. Turn left onto McCreary's Ridge Road and travel for approximately 1.3 miles. Turn left onto the access road and travel approximately 0.4 miles. The facility is on the left.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions from engine 2E were estimated with manufacturer's emission factors for: NOx, CO, HCHO, and CO_2e. The other pollutants were estimated with AP-42 emission factors.

Table 1: New Estimated Maximum Controlled PTE

Point ID	Unit ID	Emission Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tpy)
2E	CE-01	Compressor Engine Cummins GTA855 225 bhp	Nitrogen Oxides	0.50	2.17
			Carbon Monoxide	0.99	4.35
			Volatile Organic Compounds	0.17	0.73
			PM_{10}	0.04	0.18
			Formaldehyde	0.04	0.19
			CO_2e	85	1,420

Table 2: Proposed Estimated Maximum Controlled Facility Wide Emissions

Pollutant	Maximum Annual Facility Wide Emissions (tons/year)
Nitrogen Oxides	13.61
Carbon Monoxide	17.27
Volatile Organic Compounds	30.89
Total Particulate Matter	0.25
PM_{10}	0.25
Sulfur Dioxide	0.01
Formaldehyde	0.27
n-Hexane	0.43
Benzene	0.32
Ethylbenzene	0.07
Toluene	1.12
Xylenes	3.58
Total HAPs	5.91
CO_2e	2,022

REGULATORY APPLICABILITY

The following rules and regulations apply to the facilities changes:

45CSR4 (To Prevent and Control the Discharge of Air Pollutants into the Open Air which Causes or Contributes to an Objectionable Odor or Odors)

This facility shall not cause the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public. 45CSR4 states that an objectionable odor is an odor that is deemed objectionable when in the opinion of a duly authorized representative of the Air Pollution Control Commission (Division of Air Quality), based upon their investigations and complaints, such odor is objectionable.

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)

This facility is subject to a substantive requirements 40CFR60 subpart JJJJ and is requires a modification.

45CSR16 (*Standards of Performance for New Stationary Sources Pursuant to 40CFR60)*

45CSR16 incorporates by reference the standards of performance for new stationary sources (40CFR60). This facility is subject to 40CFR60 subpart JJJJ and therefore this facility is subject to 45CSR16.

45CSR22 (Air Quality Management Fee Program)

This facility is a minor source as can be seen in Table 2 and not subject to 45CSR30 since this facility is exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71. This facility has maximum horsepower capacity less than 1,000 hp (facility wide 293 hp) and is a 9M source and is required to pay the $200 annual fee. Williams is required to keep their Certificate to Operate current.

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

Engine CE-2 is subject to 40CFR60 Subpart JJJJ because construction was after June 12, 2006. Engine CE-2 was manufactured after January 1, 2011 (non-emergency SI natural gas $100 \leq HP < 500$).

[40CFR60.4230(4)]

40CFR60.4248 Table 1 provides the allowable emission standards for stationary spark ignition internal combustion engines. The allowable emission standards for engine CE-2 in g/hp-hr are: NO_x, 1.0; CO, 2.0; and VOC, 0.7. The estimated emissions were estimated in g/hp-hr with: NO_x, 0.97; CO, 2.0; and VOC, 0.13, which are below the allowable standards. The engines will also have operating limits, performance tests, notification requirements, and recordkeeping requirements.

40CFR63 Subpart ZZZZ (National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines)

Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations.

The facility is a minor source of hazardous air pollutants (HAPS < 10 tpy of an individual HAP and < 25 tpy of aggregate HAPs) as can be seen in Table 2. The facility is therefore considered an area source (§63.6585(c)). The engine is considered new stationary RICE

(§63.6590(a)(2)(iii)) due to the installation dates of the engines (GE-1 and GE-2) being after June 12, 2006.

Stationary RICE subject to Regulations under 40 CFR Part 60 must meet the requirements of those subparts that apply (40 CFR 60 Subpart JJJJ, for spark ignition engines) if the engine is a new stationary RICE located at an area source (§63.6590(c)(1)). No additional requirements apply for these engines under this subpart.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

This application estimates no increase in HAPs for this facility.

AIR QUALITY IMPACT ANALYSIS

Modeling was not performed of this source due to the fact that the facility is not subject to 45CSR14 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollutants) as can be seen in Table 2.

RECOMMENDATION TO DIRECTOR

The information provided in this facility's permit application indicates that compliance with all state and federal air quality requirements should be achieved . It is recommended that Williams should be granted a 45CSR13 Modification permit for Snyder.

David Keatley
Permit Writer - NSR Permitting

July 1, 2015

Date