



west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: R13-3210
Plant ID No.: 051-00166
Applicant: Williams Ohio Valley Midstream LLC (Williams)
Facility Name: Snyder Compressor Station
Location: Moundsville, Marshall County
SIC Code: 1389
NAICS Code: 213112
Application Type: Construction
Received Date: September 11, 2014
Engineer Assigned: Jerry Williams, P.E.
Fee Amount: \$3,500.00
Date Received: September 15, 2014
Complete Date: October 27, 2014
Due Date: January 25, 2015
Applicant Ad Date: September 11, 2014
Newspaper: *Moundsville Daily Echo*
UTM's: Easting: 531.70 km Northing: 4,421.38 km Zone: 17S
Description: Installation and operation of a natural gas compressor station.

PROJECT OVERVIEW

Williams currently operates the existing Snyder Compressor Station located off of Markey Lane, which is approximately 5.4 miles from Moundsville. Williams proposes to install an additional compressor and engine. This additional equipment will result in an increase in the facility wide potential to emit (PTE) above 45CSR13 permitting thresholds. The following equipment will be present at the facility:

- 68 horsepower (hp) Arrow VRG-330-A-54 compressor engine (CE-01)
- 225 hp Cummins GTA-855 compressor engine (CE-02)
- 5.0 million standard cubic feet per day (mmscfd) Glycol Dehydration Flash Tank (DFT-01)
- 5.0 mmscfd Glycol Dehydration Unit Regenerator/Still Vent (DSV-01)
- 0.22 million British Thermal Units per hour (mmBTU/hr) Reboiler Vent (RBV-01)
- 210 barrel (bbl) Produced Water Storage Tank (TK-01)
- 2,520 bbl/yr Produced Water Truck Loadout (TLO)
- Fugitive emissions (FUG) from process piping and equipment
- Rod Packing/Crankcase Leaks (RPC)
- Startup/Shutdown/Maintenance (SSM) emissions

DESCRIPTION OF PROCESS

The following process description was taken from Permit Application R13-3210:

Compressor Engines (CE-01, CE-02)

One (1) existing 68 hp Arrow VRG-330-A-54 natural gas fired compressor engine and one (1) new 225 hp Cummins GTA-855 natural gas fired compressor engine will be utilized at the facility.

Triethylene Glycol (TEG) Dehydration Unit (DFT-01, DSV-01)

One (1) TEG Dehydrator is utilized at the facility. The dehydrator is comprised of a Contactor/Absorber Tower (no vented emissions), Flash Tank (DFT-01), and Regenerator/Still Vent (DSV-01). The TEG dehydrator is used to remove water vapor from the inlet wet gas stream to meet pipeline specifications. In the dehydration process, the wet inlet gas stream flows through a contactor tower where the gas is contacted with lean glycol. The lean glycol absorbs the water in the gas stream and becomes rich glycol laden with water and trace amounts of hydrocarbons. The rich glycol is then routed to a flash tank where the glycol pressure is reduced to liberate the lighter end hydrocarbons. Whenever practical, the lighter end hydrocarbons are routed from the flash tank to the reboiler for use as fuel; otherwise these off-gases are vented to the atmosphere. The rich glycol is then sent from the flash tank to the regenerator where the TEG is heated to drive off the water vapor and any remaining hydrocarbons. Once boiled, the glycol is returned to a lean state and used again in the process.

Reboiler (RBV-01)

One (1) 0.22 MMBTU/hr reboiler is utilized to supply heat for the TEG Regenerator/Still Vent (DSV-01).

Produced Water Storage Tank (TK-01)

One (1) 210 bbl produced water tank (TK-01) receives liquids from the inlet filter. The inlet separator removes entrained fluids (primarily water) and these liquids are also sent to the atmospheric storage tank. A natural gas blanket will be used on the produced water tank to prevent air from entering the tank.

Produced Water Truck Loadout (TLO)

Loading of produced water into tanker trucks will occur at the facility.

Rod Packing and Crankcase Leaks (RPC)

The compressor rod packing and engine crankcase generate emissions from mechanical joints, seals, and rotating surfaces.

Startup, Shutdown and Maintenance (SSM)

During routine operation of the facility, the compressor engine will undergo periods of startup and shutdown. Often when the engine is shutdown, the natural gas contained within the compressor and associated piping is vented to the atmosphere. Additionally, there will be other infrequent emissions from various maintenance activities at the facility that are not necessarily associated with compressor blowdowns. These emissions are associated with SSM.

Fugitive Emissions

During routine operation of the facility there are occasional leaks from process piping components such as valves, flanges, connectors, etc. Leaks from the process piping components results in VOC and HAP emissions to the atmosphere.

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.

Latitude: 39.94195
Longitude: -80.62894



ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions associated with this construction application consist of the combustion emissions from two (2) natural gas fired compressor engines (1E, 2E), rod packing/crankcase leaks (3E), SSM emissions (4E), one (1) TEG dehydrator flash tank (5E), one (1) TEG dehydrator regenerator/still vent (6E), one (1) reboiler (7E), one (1) produced water storage tank (8E), and one (1) produced water truck loadout (9E). Fugitive emissions for the facility are based on calculation methodologies presented in EPA Protocol for Equipment Leak Emission Estimates. The following table indicates which methodology was used in the emissions determination:

| Emission Point ID# | Process Equipment | Calculation Methodology |
|---------------------------|--|--|
| 1E | 68 hp Arrow VRG-330-A-54 Reciprocating Internal Combustion Engine (RICE) | Manufacturer's Data, EPA AP-42 Emission Factors |
| 2E | 225 hp Cummins GTA-855 RICE | Manufacturer's Data, EPA AP-42 Emission Factors |
| 3E | Rod Packing/Crankcase Leaks | Manufacturer's Data, Emission Factors |
| 4E | SSM Emissions | Engineering Estimate |
| 5E | 5.0 mmscfd TEG Dehydrator Flash Tank | GRI-GlyCalc 4.0 |
| 6E | 5.0 mmscfd TEG Dehydrator Still Vent | GRI-GlyCalc 4.0 |
| 7E | 0.22 MMBTU/hr Reboiler | EPA AP-42 Emission Factors |
| 8E | 210 bbl Produced Water Storage Tank | HYSYS Emission Estimation |
| 9E | Produced Water Truck Loadout | EPA AP-42 Emission Factors |
| FUG | Process Piping Fugitive Emissions | EPA Protocol for Equipment Leak Emission Estimates |

The total facility PTE for the Snyder Compressor Station, is shown in the following table:

| Pollutant | Facility Wide PTE (tons/year) |
|----------------------------|--------------------------------------|
| Nitrogen Oxides | 42.99 |
| Carbon Monoxide | 20.48 |
| Volatile Organic Compounds | 34.36 |
| Particulate Matter-10 | 0.25 |
| Sulfur Dioxide | 0.01 |
| Formaldehyde | 0.27 |
| Total HAPs | 5.97 |
| Carbon Dioxide Equivalent | 3,974 |

Maximum detailed controlled point source emissions were calculated by Williams and checked for accuracy by the writer and are summarized in the table on the next page.

Williams Ohio Valley Midstream, LLC – Snyder Compressor Station (R13-3210)

| Emission Unit ID# | Source | NO _x | | CO | | VOC | | PM-10/2.5 | | SO ₂ | | Formaldehyde | | Total HAPs | | CO ₂ e |
|---------------------------|--------------------------|-----------------|--------------|-------------|--------------|-------------|--------------|-------------|-------------|-----------------|-------------|--------------|-------------|-------------|-------------|-------------------|
| | | lb/hr | ton/year | lb/hr | ton/year | lb/hr | ton/year | lb/hr | ton/year | lb/hr | ton/year | lb/hr | ton/year | lb/hr | ton/year | ton/year |
| CE-01 | Arrow VRG-330-A-54 E | 2.59 | 11.35 | 2.93 | 12.84 | 0.02 | 0.10 | 0.01 | 0.06 | <0.01 | <0.01 | 0.02 | 0.07 | 0.02 | 0.10 | 538 |
| CE-02 | Cummins GTA-855 Engi | 7.20 | 31.55 | 1.73 | 7.56 | 0.17 | 0.73 | 0.04 | 0.18 | <0.01 | 0.01 | 0.04 | 0.19 | 0.07 | 0.30 | 1420 |
| RPC | Rod Packing/Crankcase | - | - | - | - | 1.30 | 5.68 | - | - | - | - | - | - | 0.02 | 0.11 | 510 |
| SSM | Startup, Shutdown, Main | - | - | - | - | NA | 4.19 | - | - | - | - | - | - | NA | 0.08 | 354 |
| DFT-01 | TEG Flash Tank | - | - | - | - | 2.93 | 12.83 | - | - | - | - | - | - | 0.11 | 0.46 | 646 |
| DSV-01 | TEG Still Vent | - | - | - | - | 1.59 | 6.97 | - | - | - | - | - | - | 1.09 | 4.78 | 7 |
| RBV-01 | Reboiler | 0.02 | 0.10 | 0.02 | 0.08 | <0.01 | 0.01 | <0.01 | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 114 |
| TK-01 | Produced Water Tank | - | - | - | - | 0.04 | 0.13 | - | - | - | - | - | - | <0.01 | 0.01 | - |
| TLO | Truck Loadout | - | - | - | - | NA | 0.26 | - | - | - | - | - | - | - | 0.06 | - |
| Total Point Source | Snyder | 9.81 | 42.99 | 4.68 | 20.48 | 6.02 | 30.89 | 0.06 | 0.25 | <0.01 | 0.01 | 0.06 | 0.27 | 1.33 | 5.91 | 3589 |
| Fugitive | Process Piping Fugitives | - | - | - | - | 0.79 | 3.47 | - | - | - | - | - | - | 0.02 | 0.06 | 385 |
| Total Fugitive | Snyder | - | - | - | - | 0.79 | 3.47 | - | - | - | - | - | - | 0.02 | 0.06 | 385 |
| Total Sitewide | Snyder | 9.81 | 42.99 | 4.68 | 20.48 | 6.81 | 34.36 | 0.06 | 0.25 | <0.01 | 0.01 | 0.06 | 0.27 | 1.35 | 5.97 | 3974 |

REGULATORY APPLICABILITY

The following rules apply to the facility:

45CSR2 (Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers)

The purpose of 45CSR2 is to establish emission limitations for smoke and particulate matter which are discharged from fuel burning units. 45CSR2 states that any fuel burning unit that has a heat input under ten (10) million B.T.U.'s per hour is exempt from sections 4 (weight emission standard), 5 (control of fugitive particulate matter), 6 (registration), 8 (testing, monitoring, recordkeeping, reporting) and 9 (startups, shutdowns, malfunctions). However, failure to attain acceptable air quality in parts of some urban areas may require the mandatory control of these sources at a later date.

The individual heat input of the proposed reboiler (RBV-1) is below 10 MMBTU/hr. Therefore, this unit is exempt from the aforementioned sections of 45CSR2.

Williams is subject to the opacity requirements in 45CSR2, which is 10% opacity based on a six minute block average.

45CSR10 (To Prevent and Control Air Pollution from the Emissions of Sulfur Oxides)

The purpose of 45CSR10 is to establish emission limitations for sulfur dioxide which are discharged from fuel burning units. 45CSR10 states that any fuel burning unit that has a heat input under ten (10) million B.T.U.'s per hour is exempt from sections 3 (weight emission standard), 6 (registration), 7 (permits), and 8 (testing, monitoring, recordkeeping, reporting). However, failure to attain acceptable air quality in parts of some urban areas may require the mandatory control of these sources at a later date.

The individual heat input of the proposed reboiler (RBV-1) is below 10 MMBTU/hr. Therefore, this unit is exempt from the aforementioned sections of 45CSR10.

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 Williams exceeds the regulatory emission threshold for criteria pollutants of 6 lb/hr and 10 ton/year, and they are also subject to a substantive requirement of an emission control rule promulgated by the Secretary (40CFR63 Subparts HH and ZZZZ).

Williams paid the appropriate application fee and published the required legal advertisement for a construction permit application.

45CSR22 (Air Quality Management Fee Program)

Williams is not subject to 45CSR30. Williams is required to pay the appropriate annual fees and keep their Certificate to Operate current.

40CFR60 Subpart OOOO (Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution)

EPA published in the Federal Register new source performance standards (NSPS) and air toxics rules for the oil and gas sector on August 16, 2012. 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. The following affected sources which commence construction, modification or reconstruction after August 23, 2011 are subject to the applicable provisions of this subpart:

- a. Each gas well affected facility, which is a single natural gas well.

There are no gas wells at this facility. Therefore, all requirements regarding gas well affected facilities under 40 CFR 60 Subpart OOOO would not apply.

- b. Each centrifugal compressor affected facility, which is a single centrifugal compressor using wet seals that is located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment. For the purposes of this subpart, your centrifugal compressor is considered to have commenced construction on the date the compressor is installed (excluding relocation) at the facility. A centrifugal compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.

There are no centrifugal compressors at the Snyder Compressor Station. Therefore, all requirements regarding centrifugal compressors under 40 CFR 60 Subpart OOOO would not apply.

- c. Each reciprocating compressor affected facility, which is a single reciprocating compressor located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment. For the purposes of this subpart, your reciprocating compressor is considered to have commenced construction on the date the compressor is installed (excluding relocation) at the facility. A reciprocating compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.

There are two (2) reciprocating internal combustion compressor located at the Snyder Compressor Station. However, the compressors were installed elsewhere prior to August 23, 2011. According to USEPA's 40CFR60 Subpart OOOO Response to Public Comments, the NSPS does not apply to relocated compressors. As provided in the General Provisions at 40 CFR 60.14(e)(6),

relocation of an existing facility is not a modification. Williams has provided information from USA Compression that substantiates this. Therefore, the requirements regarding reciprocating compressors under 40 CFR 60 Subpart OOOO would not apply.

d. Pneumatic Controllers

- Each pneumatic controller affected facility, which is a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 scfh which commenced construction after August 23, 2011, and is located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment and not located at a natural gas processing plant.
- Each pneumatic controller affected facility, which is a single continuous bleed natural gas-driven pneumatic controller which commenced construction after August 23, 2011, and is located at a natural gas processing plant.

All pneumatic controllers have natural gas bleed rates less than 6 scfh.

e. Each storage vessel affected facility, which is a single storage vessel, located in the oil and natural gas production segment, natural gas processing segment or natural gas transmission and storage segment.

40CFR60 Subpart OOOO defines a storage vessel as a unit that is constructed primarily of nonearthen materials (such as wood, concrete, steel, fiberglass, or plastic) which provides structural support and is designed to contain an accumulation of liquids or other materials. The following are not considered storage vessels:

- Vessels that are skid-mounted or permanently attached to something that is mobile (such as trucks, railcars, barges or ships), and are intended to be located at a site for less than 180 consecutive days. If the source does not keep or are not able to produce records, as required by §60.5420(c)(5)(iv), showing that the vessel has been located at a site for less than 180 consecutive days, the vessel described herein is considered to be a storage vessel since the original vessel was first located at the site.
- Process vessels such as surge control vessels, bottoms receivers or knockout vessels.
- Pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere.

This rule requires that the permittee determine the VOC emission rate for each storage vessel affected facility utilizing a generally accepted model or calculation methodology within 30 days of startup, and minimize emissions to the extent

practicable during the 30 day period using good engineering practices. For each storage vessel affected facility that emits more than 6 tpy of VOC, the permittee must reduce VOC emissions by 95% or greater within 60 days of startup. The compliance date for applicable storage vessels is October 15, 2013.

The storage vessels located at the Snyder Compressor Station have a potential to emit of less than 6 tpy of VOC. Therefore, Williams is not required by this section to reduce VOC emissions by 95%.

- f. The group of all equipment, except compressors, within a process unit is an affected facility.
- Addition or replacement of equipment for the purpose of process improvement that is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.
 - Equipment associated with a compressor station, dehydration unit, sweetening unit, underground storage vessel, field gas gathering system, or liquefied natural gas unit is covered by §§60.5400, 60.5401, 60.5402, 60.5421 and 60.5422 of this subpart if it is located at an onshore natural gas processing plant. Equipment not located at the onshore natural gas processing plant site is exempt from the provisions of §§60.5400, 60.5401, 60.5402, 60.5421 and 60.5422 of this subpart.
 - The equipment within a process unit of an affected facility located at onshore natural gas processing plants and described in paragraph (f) of this section are exempt from this subpart if they are subject to and controlled according to subparts VVa, GGG or GGGa of this part.

The Snyder Compressor Station is not a natural gas processing plant. Therefore, Leak Detection and Repair (LDAR) requirements for onshore natural gas processing plants would not apply.

- g. Sweetening units located at onshore natural gas processing plants that process natural gas produced from either onshore or offshore wells.
- Each sweetening unit that processes natural gas is an affected facility; and
 - Each sweetening unit that processes natural gas followed by a sulfur recovery unit is an affected facility.
 - Facilities that have a design capacity less than 2 long tons per day (LT/D) of hydrogen sulfide (H₂S) in the acid gas (expressed as sulfur) are required to comply with recordkeeping and reporting requirements specified in §60.5423(c) but are not required to comply with §§60.5405 through 60.5407 and paragraphs 60.5410(g) and 60.5415(g) of this subpart.

- Sweetening facilities producing acid gas that is completely reinjected into oil-or-gas-bearing geologic strata or that is otherwise not released to the atmosphere are not subject to §§60.5405 through 60.5407, 60.5410(g), 60.5415(g), and 60.5423 of this subpart.

There are no sweetening units at the Snyder Compressor Station. Therefore, all requirements regarding sweetening units under 40 CFR 60 Subpart OOOO would not apply.

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

Subpart HH establishes national emission limitations and operating limitations for HAPs emitted from oil and natural gas production facilities located at major and area sources of HAP emissions. The glycol dehydration unit at the Snyder Compressor Station is subject to the area source requirements for glycol dehydration units. However, because the facility is an area source of HAP emissions and the actual average benzene emissions from the glycol dehydration unit is below 0.90 megagram per year (1.0 tons/year) it is exempt from all requirements of Subpart HH except to maintain records of actual average flowrate of natural gas to demonstrate a continuous exemption status.

The following rules do not apply to the facility:

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

The proposed engines were manufactured prior to the applicability dates in the rule. Therefore, Williams would not be subject to this rule.

40CFR60 Subpart Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units)

This rule applies to steam generating units with a heat input capacity of 100 MMBTU/hr or less, but greater than or equal to 10 MMBTU/hr for which construction commenced after June 9, 1989. Williams does not have an applicable unit, therefore, Williams would not be subject to this rule.

40CFR60 Subpart Kb (Standards of Performance for Volatile Organic Liquid Storage Vessels)

40CFR60 Subpart Kb does not apply to storage vessels with a capacity less than 75 cubic meters. The largest tank that Williams has proposed to install is 33.39 cubic meters each. Therefore, Williams would not be subject to this rule.

40CFR60 Subpart KKK (Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants)

40CFR60 Subpart KKK applies to onshore natural gas processing plants that commenced construction after January 20, 1984, and on or before August 23, 2011. The Snyder Compressor Station is not a natural gas processing facility, therefore, Williams is not subject to this rule.

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

Subpart ZZZZ establishes national emission limitations and operating limitations for HAPs emitted from stationary 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 engine (1E) at the Snyder Compressor Station is subject to the area source requirements for non-emergency spark ignition engines.

For the 'existing' 68 hp Arrow VRG-330-A-54 4SRB compressor engine (CE-01) manufactured on January 3, 2003, Williams is required to minimize idle time during startup (startup not to exceed 30 minutes) and change oil and filter, inspect spark plugs, and inspect/replace as necessary all hoses and belts every 4,320 hours or annually (whichever comes first)

The 'new' 225 hp 4SRB Cummins GTA-855 compressor engine (CE-02) manufactured on December 1, 2007, falls into a 'window' where the engine is not subject to 40CFR60

Subpart JJJJ or 40CFR63 Subpart ZZZZ. This engine is considered ‘new’ under 40CFR63 Subpart ZZZZ and was manufactured before the applicability dates of 40CFR60 Subpart JJJJ. Therefore, this engine is not required to meet any requirements of either rule. This is per an EPA memo dated October 19, 2010 by Melanie King, Energy Strategies Group, Sector Policies and Programs Division, Office of Air Quality Planning and Standards.

45CSR14 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollutants)

45CSR19 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution which Cause or Contribute to Nonattainment)

On September 30, 2013, EPA approved a redesignation request and State Implementation Plan (SIP) revision submitted by the State of West Virginia. The West Virginia Department of Environmental Protection (WVDEP) requested that the West Virginia portion of the Wheeling, WV–OH fine particulate matter (PM_{2.5}) nonattainment area (“Wheeling Area” or “Area”) be redesignated as attainment for the 1997 annual PM_{2.5} national ambient air quality standard (NAAQS).

The Snyder Compressor Station is located in Marshall County, which is located in this metropolitan statistical area and is an attainment county for all pollutants. Therefore the Snyder Compressor Station is not subject to 45CSR19.

As shown in the following table, Williams is not subject to 45CSR14 or 45CSR19 review. According to 45CSR14 Section 2.43.e, fugitive emissions are not included in the major source determination because it is not listed as one of the source categories in Table 1. Therefore, the fugitive emissions are not included in the PTE below.

| Pollutant | PSD (45CSR14) Threshold (tpy) | NANSR (45CSR19) Threshold (tpy) | Snyder PTE (tpy) | 45CSR14 or 45CSR19 Review Required? |
|-----------------------|--|--|-----------------------------|--|
| Carbon Monoxide | 250 | NA | 20.48 | No |
| Nitrogen Oxides | 250 | NA | 42.99 | No |
| Sulfur Dioxide | 250 | NA | 0.01 | No |
| Particulate Matter 10 | 250 | NA | 0.25 | No |
| Ozone (VOC) | 250 | NA | 30.89 | No |

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

The majority of non-criteria regulated pollutants fall under the definition of HAPs which, with some revision since, were 188 compounds identified under Section 112(b) of the Clean Air Act (CAA) as pollutants or groups of pollutants that EPA knows or suspects may cause cancer or other serious human health effects. The following HAPs are routinely emitted from glycol dehydration units: Benzene, Ethylbenzene, Formaldehyde, Toluene, and Xylene. The following table lists each HAP's carcinogenic risk (as based on analysis provided in the Integrated Risk Information System [IRIS]):

| HAPs | Type | Known/Suspected Carcinogen | Classification |
|--------------|------|----------------------------|---|
| Formaldehyde | VOC | Yes | Category B1 - Probable Human Carcinogen |
| Benzene | VOC | Yes | Category A - Known Human Carcinogen |
| Ethylbenzene | VOC | No | Inadequate Data |
| Toluene | VOC | No | Inadequate Data |
| Xylenes | VOC | No | Inadequate Data |

All HAPs have other non-carcinogenic chronic and acute effects. These adverse health effects may be associated with a wide range of ambient concentrations and exposure times and are influenced by source-specific characteristics such as emission rates and local meteorological conditions. Health impacts are also dependent on multiple factors that affect variability in humans such as genetics, age, health status (e.g., the presence of pre-existing disease) and lifestyle. As stated previously, *there are no federal or state ambient air quality standards for these specific chemicals*. For a complete discussion of the known health effects of each compound refer to the IRIS database located at www.epa.gov/iris.

AIR QUALITY IMPACT ANALYSIS

Modeling was not required 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) or 45CSR19 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution which Cause or Contribute to Nonattainment) as seen in the table listed in the Regulatory Discussion section under 45CSR14/45CSR19.

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.

- The Snyder Compressor Station will operate under SIC code 1389 (Oil and Gas Field Services, Not Classified Elsewhere). The upstream gas production wells will operate under SIC code 1311 (Crude Petroleum and Natural Gas). Therefore, both share the same two-digit major SIC code of 13. Therefore, the two (2) entities do belong to the same industrial grouping.
- Williams operates under their parent company, The Williams Companies, Inc. and is the sole operator of the Snyder Compressor Station. The production wells that send natural gas to the Snyder Compressor Station are not owned or operated by Williams. Williams has no ownership stake in any production well that may send natural gas to the Snyder Compressor Station. According to Williams, they have no operational control over any equipment owned or operated by any natural gas producer upstream of the Snyder Compressor Station. All employees at the Snyder Compressor Station are under the exclusive direction of Williams and have no reporting authority to any other entity. In addition, no work forces are shared between the Snyder Compressor Station and the production wells. Contracts are in place for the Snyder Compressor Station to handle gas from the aforementioned wells. Futuristically, Williams will not have ownership or control of future wellhead activities. The producers are and will be responsible for any decisions to produce or shut-in wellhead facilities and no control over the equipment installed, owned, and operated by Williams. Therefore, these facilities are not under common control.
- There are no other Williams facilities located on contiguous or adjacent properties with the Snyder Compressor Station. There is a Chevron property that is co-located with this facility, however, they are not under common control.

The Snyder Compressor Station and production wells share the same industrial grouping. However, the two (2) facilities are not under common control and the facilities are not contiguous or adjacent. Therefore, the emissions from these two (2) facilities should not be aggregated in determining major source or PSD status.

MONITORING OF OPERATIONS

Williams will be required to perform the following monitoring:

- Monitor and record quantity of natural gas consumed for all engines and combustion sources.
- Monitor all applicable requirements of 40CFR60 Subparts JJJJ and OOOO, and 40CFR63 Subpart HH.
- Monitor and record quantity of natural gas treated in the glycol dehydration units.

Williams will be required to perform the following recordkeeping:

- Maintain records of the amount of natural gas consumed and hours of operation for all engines and combustion sources.
- Maintain records of the amount of natural gas treated in the glycol dehydration units.
- Maintain records of testing conducted in accordance with the permit. Said records shall be maintained on-site or in a readily accessible off-site location
- Maintain the corresponding records specified by the on-going monitoring requirements of and testing requirements of the permit.
- Maintain records of the visible emission opacity tests conducted per the permit.
- Maintain a record of all potential to emit (PTE) HAP calculations for the entire facility. These records shall include the natural gas compressor engines and ancillary equipment.
- Maintain records of all applicable requirements of 40CFR60 Subparts JJJJ and OOOO, and 40CFR63 Subpart HH.
- The records shall be maintained on site or in a readily available off-site location maintained by Williams for a period of five (5) years.

RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates that Williams meets all the requirements of applicable regulations. Therefore, impact on the surrounding area should be minimized and it is recommended that the Snyder Compressor Station should be granted a 45CSR13 construction permit for their facility.

Jerry Williams, P.E.
Engineer

Date