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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-3292
Plant ID No.:	061-00206
Applicant:	M3 Appalachia Gathering, LLC (M3)
Facility Name:	Hamilton Compressor Station
Location:	Fairview, Monongalia County
NAICS Code:	211111 (Natural Gas Extraction)
Application Type:	Construction
Received Date:	January 12, 2016
Engineer Assigned:	Jerry Williams, P.E.
Fee Amount:	$4,500.00
Date Received:	$3,500 (January 12, 2016), $1,000 (January 26, 2016)
Complete Date:	February 25, 2016
Due Date:	May 25, 2016
Applicant Ad Date	January 11, 2016
Newspaper:	*The Dominion Post*
UTM's:	Easting: 568.164 km Northing: 4,388.042 km Zone: 17
Latitude:	39.64194
Longitude:	-80.205278
Description:	Construction and operation of a natural gas compressor station.

DESCRIPTION OF PROCESS

The following process description was taken from Permit Application R13-3292:

The Hamilton Compressor Station will compress lean wet natural gas (approximately 95-98% methane) that originates from 3rd party producers and compress the gas to pressures necessary to deliver into M3's Appalachia Gathering System (AGS) 24 inch pipeline. Between 75 million standard cubic feet per day (MMSCFD) and 100 MMSCFD of wet natural gas at approximately 300-450 psig first enters the compressor station via pipeline into a 60 inch

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diameter by 10 foot inlet separator. The gas then travels through a suction control valve and into the main suction header which feeds into three (3) natural gas driven CAT G3606 engine/compressor units. The gas is compressed to 900-1125 psig and travels to the existing Hamilton Dehydration Station, for ultimate delivery into the AGS gathering system.

Other major equipment on site will include one (1) 30 barrel waste oil tank, three (3) 500 gallon engine lube oil make-up tanks, three (3) 500 gallon compressor lube oil tanks, two (2) 30 barrel engine coolant tanks, and a 335 gallon methanol storage/containment tank.

Wet compressed gas from the Hamilton compressors will enter the existing Hamilton dehydration equipment. The wet gas is passed through an Exterran 60-inch by 10-foot inlet separator. It is then passed through an Exterran 75 MMSCFD Dehydration Skid (Dehy), followed by an Exterran 60-inch by 10-foot Dehy After Scrubber. Once the gas passes through the Dehy After Scrubber, it proceeds to a 24-inch pipeline at 900 to 1125 psig, at a rate of 50-75 MMSCFD. The dehydrated gas is also used for fuel gas for the Compressor engines. Water rich triethylene glycol (TEG) enters a reboiler rated at 1.5 million British Thermal Units per hour (MMBTU/hr) where water evaporation occurs. After evaporation occurs in the reboiler, water lean TEG re-enters the Dehy with fresh make-up TEG from the glycol storage tank. Water not evaporated in the reboiler is separated from the gas at two different locations, the inlet separator and the Dehy. Wet gas entering the facility passes through the inlet separator and water droplets present in the influent stream separate from the gas. This water is stored in a 12-foot diameter by 20-foot high (400 barrel) API12F Produced Water Tank (PWT). Most water, which is not absorbed by TEG, separates from the product gas in the Dehy and is stored in the PWT. A 500 gallon TEG make up tank is also present. In addition to the Dehy equipment, an 85 HP generator provides power to instrumentation and electrical equipment.

SITE INSPECTION

A site inspection was conducted on March 1, 2016 by Karl Dettinger of the DAQ Enforcement Section. According to Mr. Dettinger, the site is appropriate for the facility.

Directions as given in the permit application are as follows:

From Morgantown, WV, drive on US-19 N/WV-7 W/ Monongahela Boulevard. Make a slight right onto US-19 N/ WV-7 W and drive for approximately 1.6 miles. Turn left onto WV-7 W (Mason Dixon Hwy) and drive for approximately 5.2 miles. Turn left onto Pedlar Run Road and drive for approximately 0.6-mile. Turn right onto Co Rd 37/1/Jessel Tennant Hill Road/Henderson Ridge Road and drive for approximately 2.1 miles. Continue onto Long Drain Road for approximately 0.1-mile. Turn left onto Mooresville Road and drive for approximately 0.3-mile. Turn left onto Jakes Run Road and drive for approximately 2.8 miles. Turn right onto Statler Run Road and drive for approximately 3.7 miles. Continue onto WV-218N/Guston Run Road/Daybrook Road and drive for 0.8-mile until arriving to access road at 3030 Daybrook Road.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions associated with this facility consist of the equipment listed in the following table and fugitive emissions. 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 Unit ID#	Process Equipment	Calculation Methodology
CE-1 CE-2 CE-3	1,775 hp Caterpillar G3616 Reciprocating Internal Combustion Engines (RICE) w/ Oxidation Catalysts (Ox Cat)	Manufacturer's Data, EPA AP-42 Emission Factors
GE-1	126 hp Gillette Natural Gas Generator	Manufacturer's Data, EPA AP-42 Emission Factors
GE-2	85 hp Natural Gas Generator	Manufacturer's Data, EPA AP-42 Emission Factors
T01	30 bbl (1,260 gal) Waste Lube Oil Tank (T-450)	Negligible
T02	335 gal Methanol Tank	Negligible
T03	30 bbl (1,260 gal) Coolant Make Up Tank	Negligible
T04	30 bbl (1,260 gal) Coolant Drain Tank	Negligible
T05	500 gal Engine Lube Oil Tank for CE-1	Negligible
T06	500 gal Compressor Lube Oil for CE-1	Negligible
T07	500 gal Engine Lube Oil Tank for CE-2	Negligible
T08	500 gal Compressor Lube Oil for CE-2	Negligible
T09	500 gal Engine Lube Oil Tank for CE-3	Negligible
T10	500 gal Compressor Lube Oil for CE-3	Negligible
T11	400 bbl (16,800 gal) Produced Water Tank (T-421)	HYSYS
T12	500 gal TEG Storage Tank	Negligible
TEG-1	75 mmscfd TEG Dehydrator Still Vent w/ BTEX Condenser/Burner/Glow Plug	GRI-GlyCalc 4.0
REB-1	1.5 MMBTU/hr Reboiler Unit (TEG-302)	EPA AP-42 Emission Factors
L01	76,143 gal/yr Produced Water Truck Loadout	EPA AP-42 Emission Factors
L02	3,685 gal/yr Methanol Unloading	EPA AP-42 Emission Factors

The following table indicates the control device efficiencies that are required for this facility:

Emission Unit	Pollutant	Control Device	Control Efficiency
1,775 hp Caterpillar G3616 RICE w/ Ox Cat (CE-1, CE-2, CE-3)	Carbon Monoxide	Oxidation Catalyst	94 %
	Volatile Organic Compounds		73 %
	Formaldehyde		77 %
75 mmscfd TEG Dehydrator Still Vent (TEG-1)	Volatile Organic Compounds	BTEX Condenser/ Burner/Glow Plug	98 %
	Hazardous Air Pollutants		98 %

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

Pollutant	R13-3292 PTE (tons/year)
Nitrogen Oxides	28.41
Carbon Monoxide	12.82
Volatile Organic Compounds	16.27
Particulate Matter-10	0.07
Sulfur Dioxide	0.10
Formaldehyde	3.56
Total HAPs	7.42
Carbon Dioxide Equivalent	24,880

Maximum detailed controlled point source emissions were calculated by M3 and checked for accuracy by the writer and are summarized in the table on the next page.

M3 Appalachia Gathering, LLC – Hamilton Compressor Station (R13-3292)

Emission Point ID#	Source	NO_x		CO		VOC		PM-10		SO_2		Formaldehyde		Total HAPs		CO2e
		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-1	CAT G3616 Compressor Engine	1.96	8.57	0.63	2.74	1.01	4.43	<0.01	<0.01	0.01	0.04	0.24	1.03	0.49	2.12	7559
CE-2	CAT G3616 Compressor Engine	1.96	8.57	0.63	2.74	1.01	4.43	<0.01	<0.01	0.01	0.04	0.24	1.03	0.49	2.12	7559
CE-3	CAT G3616 Compressor Engine	1.96	8.57	0.63	2.74	1.01	4.43	<0.01	<0.01	0.01	0.04	0.24	1.03	0.49	2.12	7559
GE-1	Natural Gas Generator	0.28	1.22	0.56	2.43	0.27	1.20	<0.01	<0.01	<0.01	<0.01	0.07	0.30	0.09	0.41	537
GE-2	Natural Gas Generator	0.19	0.82	0.37	1.64	0.18	0.77	<0.01	<0.01	<0.01	<0.01	0.04	0.17	0.05	0.23	362
TEG-1	Dehy w BTEX condenser/burner	0.00	0.00	0.00	0.00	0.11	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.05	135
REB-1	Dehy Reboiler	0.15	0.64	0.12	0.54	0.01	0.04	0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	854
L01	Produced Water Loadout	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
L02	Methanol Loadout	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0
T11	Produced Water Storage Tank	0.00	0.00	0.00	0.00	<0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	<0.01	0.02	<0.01
Total Point Source		**6.50**	**28.41**	**2.95**	**12.82**	**3.63**	**15.87**	**0.01**	**0.07**	**0.02**	**0.10**	**0.83**	**3.56**	**1.62**	**7.11**	**24565**
Fugitive	Component Leaks	0.00	0.00	0.00	0.00	0.09	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.29	233
Fugitive	Pigging	0.00	0.00	0.00	0.00	NA	<0.01	0.00	0.00	0.00	0.00	0.00	0.00	<0.01	<0.01	18
Fugitive	Blowdowns	0.00	0.00	0.00	0.00	NA	0.01	0.00	0.00	0.00	0.00	0.00	0.00	<0.01	<0.01	63
Total Fugitive		**0.00**	**0.00**	**0.00**	**0.00**	**0.09**	**0.40**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.07**	**0.31**	**314**
Total Sitewide		**6.50**	**28.41**	**2.95**	**12.82**	**3.72**	**16.27**	**0.01**	**0.07**	**0.02**	**0.10**	**0.83**	**3.56**	**1.69**	**7.42**	**24880**

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 reboiler (REB-1) is below 10 MMBTU/hr. Therefore, this unit is exempt from the aforementioned sections of 45CSR2.

M3 would also be 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 reboiler (REB-1) is below 10 MMBTU/hr. Therefore, this unit is exempt from the aforementioned sections of 45CSR2.

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)

A 45CSR13 construction permit applies to this source due to the fact that M3 exceeds the regulatory emission threshold for uncontrolled criteria pollutants of 6 lb/hr and 10 ton/year of nitrogen oxides, carbon monoxide, volatile organic compounds and formaldehyde.

M3 paid the appropriate application fee and published the required legal advertisement for a construction permit application.

45CSR16 (Standards of Performance for New Stationary Sources Pursuant to 40 CFR Part 60)

45CSR16 applies to this source by reference of 40CFR60, Subparts JJJJ and OOOO. These requirements are discussed under that rule below.

45CSR22 (Air Quality Management Fee Program)

M3 is not subject to 45CSR30. The Hamilton Compressor Station is subject to 40CFR60 Subparts JJJJ and OOOO, however they are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided they are not required to obtain a permit for a reason other than their status as an area source.

M3 is required to pay the appropriate annual fees and keep their Certificate to Operate current.

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

40CFR60 Subpart JJJJ establishes emission standards for applicable SI ICE.

The 1,775 hp Caterpillar G3616 RICEs (CE-1, CE-2, CE-3) were manufactured after the July 1, 2007 date for engines with a maximum rated power capacity greater than or equal to 500 hp.

The 1,775 hp Caterpillar G3616 RICEs (CE-1, CE-2, CE-3) will be subject to the following emission limits: NO_x – 1.0 g/hp-hr (3.92 lb/hr); CO – 2.0 g/hp-hr (7.83 lb/hr); and VOC – 0.7 g/hp-hr (2.74 lb/hr). Based on the manufacturer's specifications for these engines, the emission standards will be met.

The 1,775 hp Caterpillar G3616 RICEs (CE-1, CE-2, CE-3) are not certified by the manufacturer to meet the emission standards listed in 40CFR60 Subpart JJJJ. Therefore, M3 will be required to conduct an initial performance test and conduct subsequent performance testing every 8,760 hours or three (3) years, whichever comes first, to demonstrate compliance.

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 (SO_2) 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:
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.

a. 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 Hamilton Compressor Station. Therefore, all requirements regarding centrifugal compressors under 40 CFR 60 Subpart OOOO would not apply.

b. 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 reciprocating internal combustion engines located at the Hamilton Compressor Station that were constructed after August 23, 2011. Therefore, the requirements regarding reciprocating compressors under 40 CFR 60 Subpart OOOO will apply. M3 will be required to perform the following:

- Replace the reciprocating compressor rod packing at least every 26,000 hours of operation or 36 months or installation of a rod packing emissions collection system.
- Demonstrate initial compliance by continuously monitoring the number of hours of operation or track the number of months since the last rod packing replacement.
- Submit the appropriate start up notifications.
- Submit the initial annual report for the reciprocating compressors.
- Maintain records of hours of operation since last rod packing replacement, records of the date and time of each rod packing replacement, and records of deviations in cases where the reciprocating compressor was not operated in compliance.

c. 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.

M3 is required to meet all requirements for pneumatic controllers.

d. 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 non-earthen 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 produced water storage vessel located at the Hamilton Compressor Station has a potential to emit to less than 6 tpy of VOC. Therefore, M3 is not required by this section to further reduce VOC emissions by 95%.

e. 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 Hamilton 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.

f. 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 (H_2S) 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 Hamilton 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 units at the Hamilton Compressor Station are 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.

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 engines (CE-1, CE-2, CE-3, GE-1, GE-2) at the Hamilton Compressor Station are subject to the area source requirements for non-emergency spark ignition engines.

The applicability requirements for new stationary RICEs located at an area source of HAPs, is the requirement to meet the standards of 40CFR60 Subpart JJJJ. These requirements were outlined above. The proposed engine meets these standards.

Because these engines are not certified by the manufacturer, M3 will be required to perform an initial performance test within 180 days from startup, and subsequent testing every 8,760 hours or 3 years, whichever comes first.

The following rules do not apply to the facility:

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)

The Hamilton Compressor Station is located in Monongalia County, which is an attainment county for all criteria pollutants, therefore the Hamilton Compressor Station is not applicable to 45CSR19.

As shown in the following table, M3 is not a major source 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)	Hamilton PTE (tpy)	45CSR14 or 45CSR19 Review Required?
Carbon Monoxide	250	NA	12.82	No
Nitrogen Oxides	250	NA	28.41	No
Sulfur Dioxide	250	NA	0.10	No
Particulate Matter 2.5	250	NA	0.07	No
Ozone (VOC)	250	NA	15.87	No

45CSR30 (Requirements for Operating Permits)

M3 is not subject to 45CSR30. The Hamilton Compressor Station is subject to 40CFR60 Subparts JJJJ and OOOO, however they are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided they are not required to obtain a permit for a reason other than their status as an area source.

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

40CFR60 Subpart Kb does not apply to storage vessels with a capacity less than 75 cubic meters. The largest tanks that M3 has proposed to install are 63.60 cubic meters each. Therefore, M3 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 Hamilton Compressor Station is not a natural gas processing facility, therefore, M3 is not subject to this rule.

40CFR60 Subpart KKKK (Standards of Performance for Stationary Combustion Turbines)

40CFR60 Subpart KKKK does not apply because there are no stationary combustion turbines at the facility with a heat input at peak load equal to or greater than 10 MMBTU/hr, based on the higher heating value of the fuel (§60.4305).

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 common to this industry. 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

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) as seen in the table listed in the Regulatory Discussion Section.

SOURCE AGGREGATION

"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 Hamilton Compressor Station is located in Monongalia County and will be operated by M3.

1. The Hamilton Compressor Station will operate under SIC code 1311 (Natural Gas Extraction). There are other compressor stations operated by M3 that share the same two-digit major SIC code of 13 for natural gas extraction. Therefore, the Hamilton Compressor Station does share the same SIC code as other M3 compressor stations.

2. "Contiguous or Adjacent" determinations are made on a case by case basis. These determinations are proximity based, and it is important to focus on this and whether or not it meets the common sense notion of a plant. The terms "contiguous" or "adjacent" are not defined by USEPA. Contiguous has a dictionary definition of being in actual contact; touching along a boundary or at a point. Adjacent has a dictionary definition of not distant; nearby; having a common endpoint or border.

   The existing Hamilton Dehydration Station is considered to be on contiguous or adjacent property with the Hamilton Compressor Station.

3. Common control. The Hamilton Dehydration Station and Hamilton Compressor Station are under common control.

Because the Hamilton Compressor Station and Hamilton Dehydration Station meet all three (3) prongs in determining a 'source', the emissions from the Hamilton Compressor Station and Hamilton Dehydration Station will be aggregated in determining major source or PSD status.

MONITORING OF OPERATIONS

M3 will be required to perform the following monitoring:

- Monitor and record quantity of natural gas consumed for all combustion devices.
- Monitor and record quantity of wet gas throughput for the glycol dehydration unit.
- Monitor and record quantity of condensate loaded into storage tanks and loadouts.
- 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 Subparts HH and ZZZZ.
- Maintain records of the flare design evaluation.
- The records shall be maintained on site or in a readily available off-site location maintained by M3 for a period of five (5) years.

RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates that M3 meets all the requirements of applicable regulations. Therefore, impact on the surrounding area should be minimized and it is recommended that the Hamilton Compressor Station should be granted a 45CSR13 construction permit for their facility.

Jerry Williams, P.E.
Engineer

MAR 07, 2016
Date