



**Permit / Application Information Sheet**  
**Division of Environmental Protection**  
**West Virginia Office of Air Quality**

<b>Company:</b>	EQT Gathering, LLC	<b>Facility:</b>	Janus Station
<b>Region:</b>	8	<b>Plant ID:</b>	017-00158
<b>Engineer:</b>	Kessler, Joe	<b>Application #:</b>	13-3269
<b>Physical Address:</b>	Off Left Fork Run Rd West Union WV	<b>Category:</b>	SIC: [1311] OIL AND GAS EXTRACTION - CRUDE PETROLEUM & NATURAL GAS NAICS: [211111] Crude Petroleum and Natural Gas Extraction
<b>County:</b>	Doddridge		
<b>Other Parties:</b>	ENV_CONT - Bosiljevac, Alex 412-395-3699 VICE PRES - Charletta, Diana 304-348-7661		

Information Needed for Database and AIRS
1. Need valid physical West Virginia address with zip
2. Air Program
3. Inspection result
4. Pollutant and class

Regulated Pollutants		
CO	Carbon Monoxide	59.030 TPY
PM10	Particulate Matter < 10 um	8.940 TPY
SO2	Sulfur Dioxide	0.680 TPY
VOC	Volatile Organic Compounds (Reactive organic gases)	95.710 TPY
PM2.5	Particulate Matter < 2.5 um	8.940 TPY
PT	Total Particulate Matter	8.940 TPY
VHAP	VOLATILE ORGANIC HAZARDOUS AIR POLLUTANT	23.960 TPY
NOX	Nitrogen Oxides (including NO, NO2, NO3, N2O3, N2O4, and N2O5)	127.100 TPY

Summary from this Permit 13-3269		
<b>Air Programs</b>	<b>Applicable Regulations</b>	
MACT		
NSPS		
TITLE V		
Title V/Major		
<b>Fee Program</b>	<b>Fee</b>	<b>Application Type</b>
8D	\$0.00	CONSTRUCTION
<b>Activity Dates</b>		
APPLICATION RECEIVED	08/28/2015	
ASSIGNED DATE	09/02/2015	
APPLICANT PUBLISHED LEGAL AD	09/08/2015	
APPLICATION DEEMED COMPLETE	09/24/2015	

**Notes from Database**  
 Permit Note: EQT Gathering, LLC (EQT) is proposing to construct a natural gas compressor station to be located approximately 3.1 miles south-southwest of West Union, WV east of County Route (CR) 11 (Arnold's Creek Road). The proposed Janus Compressor Station will consist of four (4) Caterpillar G3616 4-Stroke Lean Burn (4SLB) 5,350 horsepower (hp) compressor engines, five (5) Capstone C200 NG 200kWc Microturbines, two (2) Exterran 125 mmscf/day triethylene glycol (TEG) dehydration units (GDUs), two (2) fuel gas heaters (1.15 and 0.77 mmBtu/hr), and two (2) 8,820 gallon produced liquid storage tanks.

**3269**  
**SANDB**  
**NOTICE**

**NON-CONFIDENTIAL**

Please note, this information sheet is not a substitute for file research and is limited to data entered into the AIRTRAX database.

Company ID: 017-00158  
 Company: EQT Gathering, LLC  
 Printed: 01/04/2016  
 Engineer: Kessler, Joe

# IPR FILE INDEX

**Applicant :** EQT Gathering, LLC  
**Facility :** Janus Compressor Station

**Plant ID No.:** 017-00158  
R13-3269

## Chronological Order - Add Index Pages As Necessary

Date	To	From	Subject	# of pages
9/02/15	EQT	Sandie Adkins	48-Hour Letter	
9/21/15	Joe Kessler	EQT	Affidavit of Publication	
9/24/15	EQT	Joe Kessler	Completeness Determination	
1/07/16	File	Joe Kessler	DAQ/EQT E-mails	
1/07/16	File	Joe Kessler	Draft Permit R13-3269, Tracking Manifest	
	File	Joe Kessler	Public Notice Documents	

JRK  
1/07/2016

# AIR QUALITY PERMIT NOTICE

## Notice of Intent to Approve

On August 28, 2015, EQT Gathering, LLC applied to the WV Department of Environmental Protection, Division of Air Quality (DAQ) for a permit to construct the Janus Compressor Station located approximately 3.1 miles south-southwest of West Union, WV east of County Route (CR) 11 (Arnold's Creek Road), Doddridge County, WV at latitude 39.25777 and longitude -80.80566. A preliminary evaluation has determined that all State and Federal air quality requirements will be met by the proposed facility. The DAQ is providing notice to the public of its preliminary determination to issue the permit as R13-3269.

The following potential emissions will be authorized by this permit action: Particulate Matter less than 2.5 microns, 8.94 tons per year (TPY); Particulate Matter less than 10 microns, 8.94 TPY; Particulate Matter, 8.94 TPY; Sulfur Dioxide, 0.68 TPY; Oxides of Nitrogen, 127.10 TPY; Carbon Monoxide, 59.03 TPY; Volatile Organic Compounds, 95.71 TPY; Hazardous Air Pollutants, 23.96 TPY.

Written comments or requests for a public meeting must be received by the DAQ before 5:00 p.m. on **XXXXXX**. A public meeting may be held if the Director of the DAQ determines that significant public interest has been expressed, in writing, or when the Director deems it appropriate.

The purpose of the DAQ's permitting process is to make a preliminary determination if the proposed construction will meet all State and Federal air quality requirements. The purpose of the public review process is to accept public comments on air quality issues relevant to this determination. Only written comments received at the address noted below within the specified time frame, or comments presented orally at a scheduled public meeting, will be considered prior to final action on the permit. All such comments will become part of the public record.

Joe Kessler, PE  
WV Department of Environmental Protection  
Division of Air Quality  
601 57th Street, SE  
Charleston, WV 25304  
Telephone: 304/926-0499, ext. 1219  
FAX: 304/926-0478

*Entire Document*  
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Additional information, including copies of the draft permit, application and all other supporting materials relevant to the permit decision may be obtained by contacting the engineer listed above. The draft permit and engineering evaluation can be downloaded at:

[www.dep.wv.gov/daq/Pages/NSRPermitsforReview.aspx](http://www.dep.wv.gov/daq/Pages/NSRPermitsforReview.aspx)

I.D. No. 017-00158 Reg. 3269

Company EQT GATHERING

Facility JANUS Region \_\_\_\_\_

Initials JK

**Kessler, Joseph R**

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**From:** Adkins, Sandra K  
**Sent:** Monday, January 11, 2016 10:32 AM  
**To:** wentworth.paul@epa.gov; bradley.megan@epa.gov; 'abosiljevac@eqt.com'  
**Cc:** Durham, William F; McKeone, Beverly D; McCumbers, Carrie; Hammonds, Stephanie E; Rice, Jennifer L; Kessler, Joseph R; Taylor, Danielle R  
**Subject:** WV Draft Permit R13-3269 for EQT Gathering; Janus Station  
**Attachments:** 3269.pdf; Eval3269.pdf; AttachmentA.pdf; notice.pdf

Please find attached the Draft Permit R13-3269, Engineering Evaluation, Attachment A, and Public Notice for EQT Gathering, LLC's Janus Compressor Station located in Doddridge County.

The notice will be published in *The Herald Record* on Tuesday, January 12, 2016, and the thirty day public comment period will end on Thursday, February 11, 2016.

Should you have any questions or comments, please contact the permit writer, Joe Kessler, at 304 926-0499 x1219.

**Kessler, Joseph R**

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**From:** Adkins, Sandra K  
**Sent:** Monday, January 11, 2016 10:28 AM  
**To:** Wheeler, Cathy L  
**Cc:** Kessler, Joseph R  
**Subject:** DAQ Public Notice

Please see below the Public Notice for Draft Permit R13-3269 for EQT Gathering, LLC's Janus Compressor Station located in Doddridge County.

The notice will be published in *The Herald Record* on Tuesday, January 12, 2016, and the thirty day public comment period will end on Thursday, February 11, 2016.

**AIR QUALITY PERMIT NOTICE**

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**west virginia department of environmental protection**

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Division of Air Quality  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304  
Phone: (304) 926-0475 • Fax: (304) 926-0479

Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

## **ENGINEERING EVALUATION / FACT SHEET**

### **BACKGROUND INFORMATION**

Application No.: R13-3269  
Plant ID No.: 017-00158  
Applicant: EQT Gathering, LLC  
Facility Name: Janus Compressor Station  
Location: Near West Union, Doddridge County  
SIC/NAICS Code: 1311/211111  
Application Type: Construction  
Received Date: August 28, 2015  
Engineer Assigned: Joe Kessler  
Fee Amount: \$4,500  
Date Received: September 9, 2015  
Complete Date: September 24, 2015  
Due Date: December 23, 2015  
Applicant's Ad Date: September 8, 2015  
Newspaper: *The Herald Record*  
UTM's: 516.767 km Easting • 4,345.400 km Northing • Zone 17  
Latitude/Longitude: 39.25777/-80.80566  
Description: Construction of a natural gas compressor station.

*Entire Document*  
**NON-CONFIDENTIAL**

### **DESCRIPTION OF PROCESS**

EQT Gathering, LLC (EQT) is proposing to construct a natural gas compressor station to be located approximately 3.1 miles south-southwest of West Union, WV east of County Route (CR) 11 (Arnold's Creek Road). The proposed Janus Compressor Station will consist of four (4) Caterpillar G3616 4-Stroke Lean Burn (4SLB) 5,350 horsepower (hp) compressor engines, five (5) Capstone C200 NG 200kWe Microturbines, two (2) Exterran 125 mmscf/day triethylene glycol (TEG) dehydration units (GDUs), two (2) fuel gas heaters (1.15 and 0.77 mmBtu/hr), and two (2) 8,820 gallon produced liquid storage tanks.

Natural gas produced in area wells will enter into the facility and will be compressed by the engines (ENG-001 through ENG-004). The compressed gas is sent and through the GDUs (DEHY-

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001 and DEHY-002) where it is dehydrated to the desired level. The compressor engines are each controlled (CO, VOCs, and formaldehyde) by an EMIT Technologies EBX-9000-3036F-8C4E-48C oxidation catalyst (C1 through C4).

yo Glycol dehydration is a liquid desiccant system used for the removal of water from natural gas. In each GDU, lean, water-free glycol is fed to the top of an absorber (known as a "contactor") where it is contacted with the wet natural gas stream. The glycol removes water from the natural gas by physical absorption and is carried out the bottom of the column. The dry natural gas leaves the top of the absorption column and is fed into a pipeline for transportation. The dehydrator still vent gases are each sent an associated enclosed flare (FLARE-001 and FLARE-002) for destruction. Additionally, each GDU contains several TEG storage tanks. However, the storage tanks are defined as *de minimis* sources under Table 45-13B of 45CSR13 as they are each less than 10,000 gallons and TEG has an extremely low vapor pressure (<0.01 mm Hg).

After leaving the absorber, each glycol stream - now referred to as "rich" glycol - is fed to a flash vessel where flashed hydrocarbon vapors are either sent to the reboiler as fuel or, if the reboiler is not in operation, sent to the associated enclosed flare. Any liquid hydrocarbons removed in the flash tank are sent to one of the 8,820 gallon produced liquid storage tanks (T-001 and T-002). Vapors from the produced liquids storage tanks (working/breathing/flashing) are sent to an associated enclosed flare (FLARE-003).

After leaving the flash vessel, in each unit, the rich glycol is fed to a Glycol Regenerator Column. Each Regenerator Column consists of a column, an overhead condenser, and the reboiler. The glycol is thermally regenerated to remove excess water and regain high purity. The heat for the regeneration is provided by two (2) 2.31 mmBtu/hr natural gas-fired reboilers (RB-001 and RB-002). The hot, lean glycol is cooled by a heat-exchanger and is then fed to a pump where it is sent to the glycol absorber for reuse. Liquids produced in the regeneration process are sent to one of the facility storage tanks.

A portion of the gas is withdrawn after dehydration but before the station outlet metering and sent to the fuel gas system. The fuel gas is directed through a fuel gas scrubber and metering before being directed to the compressor engines and other gas-powered equipment. Two (2) fuel gas heaters (HTR-1 and HTR-2) will be used in the fuel gas system to prevent the formation of hydrates and to minimize condensate dropout from the pressure reduction.

There are many other small storage tanks proposed for the facility (T-003 through T-024) used for bulk storage (lube oil storage, compressor oil storage, TEG storage, etc.). Any emissions from the miscellaneous tanks are, based on the vapor pressures of the materials stored, considered insignificant. Additionally, the proposed facility will utilize an uncontrolled truck loadout (L1) to remove condensate and produced water from the site (estimated to be a maximum of 210,000 gallons/year). Five (5) 200 kWe uncontrolled Microturbines (EG-001 through EG-005) will be used to produce primary power for the facility.

## SITE INSPECTION

On November 18, 2015, the writer conducted an inspection of the proposed location of the Janus Compressor Station. The proposed Janus site is located in a rural area of Doddridge County

approximately 3.1 miles south-southwest of West Union, WV east of County Route (CR) 11 (Arnold's Creek Road). The writer was accompanied on the inspection by Mr. Alex Bosiljevac, Environmental Coordinator with EQT. Observations from the inspection include:

- The proposed facility will lie atop a hill approximately 3.1 miles south-southwest of West Union, WV east of County Route (CR) 11 (Arnold's Creek Road). The area is rural in nature with scattered homes and farms within several miles of the proposed location. Much natural gas construction activity (pipelines, well-heads, etc.) is located in the County;
- At the time of the inspection, EQT was in the process of improving an access road to the top of the hill where the compressor station will sit and doing extensive landscaping work at the proposed site. No emission units were seen on the property; and
- The occupied dwelling located nearest to the proposed site is approximately 0.50 miles northwest of the proposed site on a hillside near CR 11/4 (Left Fork Run Road). A previously occupied home near the beginning of the access road to the site was in the process of being demolished.

The following is a picture of the proposed site of the Janus Compressor Station taken on the day of the inspection:



*Directions:* [Latitude: 39.25777, Longitude: -80.80566] From the intersection of United States (US) Route 50 and CR 11 (Arnold's Creek Road), travel south on CR 11 for approximately 0.7 miles and then turn left onto CR 11/4 (Left Fork Run Road) - this road was unmarked at the time of inspection. Follow the CR 11/4 for approximately 1.1 miles to the facility access road on the right. The compressor station is located at the end of the access road atop the hill.

## AIR EMISSIONS AND CALCULATION METHODOLOGIES

EQT included in Attachment N of the permit application air emissions calculations for the equipment and processes at the Janus Compressor Station. The following will summarize the calculation methodologies used by EQT to calculate the potential-to-emit (PTE) of the proposed facility.

### *Compressor Engines*

Potential emissions from each of the four (4) Caterpillar G3616 4SLB 5,350 hp compressor engines (ENG-001 through ENG-004) were based on post-control emission factors provided by the oxidation catalyst vendor, the engine vendor, and as given in AP-42, Section 3.2 (AP-42 is a database of emission factors maintained by USEPA). Hourly emissions were based on the (as calculated using a fuel heat rating of 7,338 Btu/hp-hr) maximum design heat input (MDHI) of the engines of 39.43 mmBtu/hr and the maximum hp rating. Annual emissions were based on 8,760 hours of operation per year. The following table details the PTE of each compressor engine:

**Table 1: Per-Compressor Engine PTE**

Pollutant	Emission Factor	Source	Hourly (lb/hr)	Annual (ton/yr)
CO <sup>(1)</sup>	0.1729 g/hp-hr (controlled)	Catalyst Vendor	2.04	8.93
NO <sub>x</sub>	0.50 g/hp-hr	Engine Vendor	5.90	25.83
PM <sub>2.5</sub> /PM <sub>10</sub> /PM <sup>(2)</sup>	9.91 x 10 <sup>-3</sup> lb/mmBtu	AP-42, Table 3.2-2	0.39	1.71
SO <sub>2</sub>	5.88 x 10 <sup>-4</sup> lb/mmBtu	AP-42, Table 3.2-2	0.02	0.10
VOCs <sup>(1)</sup>	0.3335 g/hp-hr (controlled)	Catalyst Vendor	3.93	17.23
Total HAPs	Various	AP-42, Table 3.2-2	1.00	4.38
Formaldehyde <sup>(1)</sup>	0.02 g/hp-hr (controlled)	Catalyst Vendor	0.24	1.03

(1) Based on post-control emission factor provided by the catalytic converter vendor.

(2) Includes condensables.

### *Microturbines*

Emissions from the five (5) 2.28 mmBtu/hr Capstone C200 NG 200kWe Microturbines (EG-001 and EG-005) were based on the emission factors provided by the vendor and taken from AP-42, Section 3.1. Hourly emissions were based on the maximum electrical output and the MDHI of the units. Annual emissions were based on an annual operation of 8,760 hours. All emissions were increased by 20% to account for the possibility of "richer gas." The PTE generated by each microturbine and the emission factor/emission factor source are given in the following table:

**Table 2: Per-Microturbine PTE<sup>(1)</sup>**

Pollutant	Emission Factor	Source	Hourly (lb/hr)	Annual (ton/yr)
NO <sub>x</sub>	0.40 lb/MWe-hr	Vendor Information	0.08	0.35
CO	1.10 lb/MWe-hr	Vendor Information	0.22	0.96
PM <sub>2.5</sub> /PM <sub>10</sub> /PM <sup>(2)</sup>	6.6 x 10 <sup>-3</sup> lb/mmBtu	AP-42, Table 3.1-2a	0.02	0.07
SO <sub>2</sub>	3.4 x 10 <sup>-4</sup> lb/mmBtu	AP-42, Table 3.1-2a	0.01	0.03
VOC	0.10 lb/MWe-hr	Vendor Information	0.02	0.11
Total HAPs	Various	AP-42, Table 3.1-3	~0.00	~0.00

(1) Final emissions increase by 20% to account for potentially richer gas burned.

### ***Glycol Regenerator Column/GDU Flash Tank Emissions***

Uncontrolled VOC and Hazardous Air Pollutant (HAP) emissions from the glycol regenerator and GDU flash tank are based on the emissions calculation program GRI-GLYCalc Version 4.0. GRI-GLYCalc is a well-known program for estimating air emissions from glycol units using TEG. Included in the application is a copy of the appropriate GLY-Calc analysis sheets. A representative gas analysis taken on October 10, 2012 was used to provide inputs to GLY-Calc and was included in the permit application. Controlled emissions were based on a 98% destruction and removal efficiency (DRE) of hydrocarbons of the associated enclosed flares.

### ***Flare Combustion Exhaust Emissions***

Emissions created from the combustion of the hydrocarbons (coming from the GDU Still Vents/Flash Tanks and the storage tanks) at the enclosed flares (FLARE-001 through FLARE-003) were based on emission factors provided for natural gas combustion as given in AP-42 Section 1.4. While Section 1.4 of AP-42 is primarily intended for estimating emissions from boilers combusting natural gas, in the absence of other factors, it can be used to conservatively estimate the nominal amounts of expected combustion emissions from various pollutants from enclosed flares. Hourly emissions were based on the capacity of the units (in mmBtu/hr) and annual emissions were based on an annual operation of 8,760 hours. A waste gas heat content value of 1,226 Btu/ft<sup>3</sup> was used in the calculations.

### ***Reboiler/Fuel Heaters Combustion Exhaust Emissions***

Combustion emissions from the reboilers (RB-001 and RB-002) and Fuel Gas Heaters (HTR-1 and HTR-2) were based on the emission factors provided for natural gas combustion as given in AP-42 Section 1.4. Hourly emissions were based on the MDHI of the units and annual emissions were based on an annual operation of 8,760 hours. A fuel/waste gas heat content value of 1,226 Btu/ft<sup>3</sup> was used in the calculations.

## ***Storage Tanks***

EQT provided an estimate of the uncontrolled emissions produced from the two (2) produced liquids storage tanks (T-001 and T-002) using the TANKS 4.09d program (working/breathing losses) as provided under AP-42, Section 7 and using E&P TANKS (flashing losses). E&P TANKS is a computer-based software designed to use site-specific information to predict emissions from petroleum production storage tanks. As stated above, the uncontrolled emissions are captured and sent, via a closed vent system, to an enclosed flare (FLARE-003) for destruction. The controlled emissions from the noted storage tanks are, therefore, based on a minimum DRE of 95% (EQT conservatively used a lower DRE for FLARE-003 to account for the lower volume of hydrocarbons emitted at the storage tanks).

## ***Truck Loadouts***

Air emissions from produced liquid loading operations (L1) occur as fugitive emissions generated by displacement of vapors when loading trucks. The emission factor used to generate the VOC emissions is based on Equation (1) of AP-42 Section 5.2-4. In this equation, EQT used variables specific to the liquids loaded and to the method of loading - in this case "splash loading." Additionally, worst-case annual emissions were based on a maximum loading rate of 210,000 gal/year of liquids. As no maximum hourly pumping rate was provided, hourly emissions were based on a maximum loading rate of 1,000 gal/hour.

## ***Fugitives***

### **Equipment Leaks**

EQT based their VOC fugitive equipment leak calculations on emission factors taken from the document EPA-453/R-95-017 - "Protocol for Equipment Leak Emission Estimates" Table 2-4 (VOCs) with a 20% safety factor added on. No control efficiencies, as based on a Leak Detection and Repair (LDAR) protocol, were applied. Component counts were given and shall be limited in the draft permit. VOC by-weight percentages (15%) of the natural gas was also used in the calculations and is based on a site-specific gas analysis taken on October 10, 2012.

### **Maintenance and Emergency Events**

EQT also included in their fugitive emission estimate a certain number of scenarios where natural gas is released for emergency or maintenance purposes. Those included were filter maintenance (2 events/year), compressor blowdown/startup events (24 events/year), station emergency shutdowns (1 event/year), and "pigging" events (3 events/year). Emissions were calculated in accordance with Equations W-35 and W-36 in Subpart W of 40 CFR 98. VOC by-weight percentages (15%) of the natural gas was also used in the calculations and is based on a site-specific gas analysis taken on October 10, 2012.

***Emissions Summary***

Based on the above estimation methodology as submitted in Attachment N of the permit application, the post-modification facility-wide PTE of the proposed Janus Compressor Station is given in Attachment A.

**REGULATORY APPLICABILITY**

The proposed Janus Compressor Station is subject to the following substantive state and federal air quality rules and regulations: 45CSR2, 45CSR6, 45CSR13, 40 CFR 60 Subpart JJJJ, and 40 CFR 63, Subparts HH and ZZZZ. Each applicable rule (and those that have questionable non-applicability) and EQT's compliance therewith will be discussed in detail below.

***45CSR2: To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers***

Pursuant to the definition of "fuel burning unit" under 45CSR2 ("producing heat or power by indirect heat transfer"), 45CSR2 does not apply to the compressor engines or microturbines.

The GDU Reboilers and Fuel Gas Heaters have been determined to each meet the definition of a "fuel burning unit" under 45CSR2 and are, therefore, subject to the applicable requirements therein. However, pursuant to the exemption given under §45-2-11, as the MDHI of the GDU Reboilers and Fuel Gas Heaters are less than 10 mmBtu/hr, the units are not subject to sections 4, 5, 6, 8 and 9 of 45CSR2. The only remaining substantive requirement is under Section 3.1 - Visible Emissions Standards.

Pursuant to 45CSR2, Section 3.1, the reboilers and heaters are subject to an opacity limit of 10%. Proper maintenance and operation of the units (and the use of flash gas or natural gas as fuel) should keep the opacity of the units well below 10% during normal operations.

***45CSR6: To Prevent and Control Particulate Air Pollution from Combustion of Refuse***

EQT has proposed enclosed flaring for control of the waste gas produced from GDU and produced liquid storage tanks. Each enclosed flare meets the definition of an "incinerator" under 45CSR6 and is, therefore, subject to the requirements therein. The substantive requirements applicable to the enclosed flare are discussed below.

**45CSR6 Emission Standards for Incinerators - Section 4.1**

Section 4.1 limits PM emissions from incinerators to a value determined by the following formula:

$$\text{Emissions (lb/hr)} = F \times \text{Incinerator Capacity (tons/hr)}$$

Where, the factor, F, is as indicated in Table I below:

**Table I:** Factor, F, for Determining Maximum Allowable Particulate Emissions

<u>Incinerator Capacity</u>	<u>Factor F</u>
A. Less than 15,000 lbs/hr	5.43
B. 15,000 lbs/hr or greater	2.72

For the enclosed flares (FLARE-001 and FLARE-002) servicing the GDUs, based on information included in the application, the maximum vapor mass sent to each flare will be 270 lb/hr (0.14 tons/hour). Based on the above equation, the particulate matter limit of each flare is 0.76 lbs/hr. Conservatively using AP-42 Section 1.4 natural gas emission factors (see above), total PM from each enclosed flare was estimated to be 0.04 lbs/hr, which is in compliance with the 45CSR6 limit.

Based on the maximum capacity of the storage tank enclosed flare of 20,280 scf/hr, and using the density of methane (0.0422 lb/scf) as a reasonable surrogate, the capacity of FLARE-003 in lbs/hr would be approximately 855 lbs/hour (0.43 tons/hr). Using this value in the above equation produces a PM emission limit of 2.33 lb/hr. Conservatively using AP-42 Section 1.4 natural gas emission factors (see above), total PM from the enclosed flare was estimated to be 0.25 lbs/hr, which is in compliance with the 45CSR6 limit.

#### 45CSR6 Opacity Limits for - Section 4.3, 4.4

Pursuant to Section 4.3, and subject to the exemptions under 4.4, each enclosed flare has a 20% limit on opacity during operation. Proper design and operation of the enclosed flares should prevent any substantive opacity from the units.

#### ***45CSR10: To Prevent and Control Air Pollution from the Emission of Sulfur Oxides (NON APPLICABILITY)***

Pursuant to the definition of “fuel burning unit” under 45CSR10 (“producing heat or power by indirect heat transfer”), the limitations on fuel burning units under 45CSR10 do not apply to the compressor engines or microturbines.

45CSR10 has requirements limiting SO<sub>2</sub> emissions from “fuel burning units,” limiting in-stack SO<sub>2</sub> concentrations of “manufacturing processes,” and limiting H<sub>2</sub>S concentrations in process gas streams. The only potential applicability of 45CSR10 to the Janus Compressor Station is the limitations on fuel burning units. The GDU Reboilers and Fuel Gas Heaters have each been determined to meet the definition of a “fuel burning unit” under 45CSR10. However, pursuant to the exemption given under §45-10-10.1, as the MDHI of the GDU Reboilers and Fuel Gas Heaters are less than 10 mmBtu/hr, the units are not subject to the limitations on fuel burning units under 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***

The proposed construction of the Janus Compressor Station has a potential to emit in excess of six (6) lbs/hour and ten (10) TPY of a regulated pollutant (see Attachment A) and, therefore, pursuant to §45-13-2.24, the construction is defined as a “stationary source” under 45CSR13. Pursuant to §45-13-5.1, “[n]o person shall cause, suffer, allow or permit the construction . . . and

operation of any stationary source to be commenced without . . . obtaining a permit to construct.” Therefore, EQT is required to obtain a permit under 45CSR13 for the construction and operation of the facility.

As required under §45-13-8.3 (“Notice Level A”), EQT placed a Class I legal advertisement in a “newspaper of *general circulation* in the area where the source is . . . located.” The ad ran on September 8, 2015 in *The Herald Record* and the affidavit of publication for this legal advertisement was submitted on September 21, 2015.

***45CSR14: Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration - (NON APPLICABILITY)***

The Janus Compressor Station is proposed to be located in Doddridge County, WV. Doddridge County is classified as "in attainment" with all National Ambient Air Quality Standards. Therefore, as the facility is not a "listed source" under §45-14-2.43, the individual major source applicability threshold for all pollutants is 250 TPY. As given in Attachment A, the facility-wide PTE of the proposed Janus Compressor Station is less than 250 TPY for all criteria pollutants. Therefore, the facility is not defined as a "major stationary source" under either 45CSR14 and the rule does not apply.

***45CSR27: To Prevent and Control the Emissions of Toxic Air Pollutants - (NON APPLICABILITY)***

Pursuant to §45-27-3.1, the “owner or operator of a plant that discharges or may discharge a toxic air pollutant into the open air in excess of the amount shown in the Table A [of 45CSR27] shall employ [Best Available Technology] at all chemical processing units emitting the toxic air pollutant.” As calculated from Table 1 above, the aggregate PTE of formaldehyde generated by the compressor engines is greater than 0.5 TPY - greater than the 1,000 pound per year threshold given in Table A of 45CSR27. However, internal combustion engines do not meet the definition of “chemical processing units” under §45-27-2.4 and, therefore, they are not subject to BAT under 45CSR27.

***45CSR30: Requirements for Operating Permits***

45CSR30 provides for the establishment of a comprehensive air quality permitting system consistent with the requirements of Title V of the Clean Air Act. The proposed Janus Compressor Station will meet the definition of a “major source under §112 of the Clean Air Act” as outlined under §45-30-2.26 and clarified (fugitive policy) under 45CSR30b. The proposed facility-wide PTE (see Attachment A) of a regulated pollutant does not exceed 100 TPY. Therefore, as a result of this permit, the source is a major source subject to 45CSR30. The Title V (45CSR30) application will be due within twelve (12) months after the commencement date of any operation authorized by this permit.

**Subpart Kb—Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 - (NON APPLICABILITY)**

Pursuant to §60.110b, 40 CFR 60, Subpart Kb applies to “each storage vessel with a capacity greater than or equal to 75 cubic meters (m<sup>3</sup>) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984.” The largest storage tanks proposed for the Janus Compressor Station are each 8,820 gallons, or 33 m<sup>3</sup>. Therefore, Subpart Kb does not apply to any storage tanks at the proposed facility.

**40 CFR 60 Subpart KKKK: Standards of Performance for Stationary Combustion Turbines - (NON APPLICABILITY)**

Pursuant to §60.4305(a), 40 CFR 60, Subpart KKKK applies if “you are the owner or operator of a stationary combustion turbine with a heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBtu) per hour, based on the higher heating value of the fuel, which commenced construction, modification, or reconstruction after February 18, 2005.” The microturbines proposed for the Janus Compressor Station are each rated at 2.28 mmBtu/hr and are not, therefore, subject to Subpart KKKK. Further it is important to note that, pursuant to §60.4305(b), stationary combustion turbines regulated under Subpart KKKK are exempt from the requirements of 40 CFR 60, Subpart GG.

**40 CFR 60 Subpart JJJJ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.**

EQT’s four (4) Caterpillar G3616 4SLB 5,350 hp compressor engines proposed for the Sherwood Compressor Station are defined under 40 CFR 60, Subpart JJJJ as stationary spark-ignition internal combustion engines (SI ICE) and are each, pursuant to §60.4230(a)(4)(i), subject to the applicable provisions of the rule. Pursuant to §60.4233(e): “Owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) must comply with the emission standards in Table 1 to this subpart for their stationary SI ICE.” Therefore, as the proposed EQT’s compressor engines are greater than 100 hp, each engine must comply with the emission standards under Table 1 for “Non-Emergency SI ICE ≥ 500 hp manufactured after July 1, 2010:” NO<sub>x</sub> - 1.0 g/HP-hr, CO - 2.0 g/HP-hr, and VOC - 0.7 g/HP-hr. The emission standards and the proposed compliance therewith of the engines are given in the following table:

**Table 3: Caterpillar G3616 Subpart JJJJ Compliance**

Pollutant	Standard (g/HP-hr)	Uncontrolled Emissions (g/bhp) <sup>(1)</sup>	Control Percentage	Controlled Emissions (g/bhp) <sup>(1)</sup>	JJJJ Compliant?
NO <sub>x</sub>	1.0	0.50	0.00%	0.50	Yes
CO	2.0	2.47	93.00%	0.17	Yes
VOC	0.7	0.75	55.53%	0.33	Yes

(1) Based on the EMIT Technologies, Inc. Model EBX-9000-3036F-8C4E-48C oxidation catalyst specification sheet included in the permit application. VOC emissions based on NMNEHC + CH<sub>2</sub>O emission factors.

The Caterpillar G3616 is not a “certified” engine under Subpart JJJJ so EQT will have to show compliance with the emission standards pursuant to §60.4243(b)(2)(ii): conducting an initial performance test and thereafter conducting subsequent performance testing every 8,760 hours or 3 years, whichever comes first, to demonstrate compliance. Performance testing requirements are given under §60.4244 of Subpart JJJJ. EQT will additionally have to meet all applicable monitoring, recording, and record-keeping requirements under Subpart JJJJ.

***40 CFR 60, Subpart OOOO: Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution***

On April 27, 2012, the USEPA issued a final rule (with amendments finalized on August 16, 2012) that consists of federal air standards for natural gas wells that are hydraulically fractured, along with requirements for several other sources of pollution in the oil and gas industry that currently are not regulated at the federal level. Each potentially applicable section of Subpart OOOO is discussed below.

Compressor Engines

Pursuant to §60.5365(c), “[e]ach 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” that is constructed after August 23, 2011 is subject to the applicable provisions of Subpart OOOO. As the Janus Compressor Station is located before the point of custody transfer, the compressor engines are applicable to Subpart OOOO. The substantive requirements for the engines are given under §60.5385(a): the engines’ “rod packing” must be replaced according to the given schedule and the engine must meet applicable MRR given under §60.5410(c), §60.5415(c), and §60.5420(b)(1).

Pneumatic Controllers - (NON APPLICABILITY)

Pursuant to §60.5365(d)(2), “[f]or the natural gas production segment (between the wellhead and the point of custody transfer to the natural gas transmission and storage segment and not including natural gas processing plants), 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” that is constructed after August 23, 2011 is subject to the applicable provisions of Subpart OOOO. As the Janus Compressor Station is located before the point of custody transfer, any pneumatic controllers that meet the above definition will be required to meet the substantive requirement for pneumatic controllers as given under §60.5390. However, in the permit application, EQT stated that “no pneumatic controllers installed will meet the definition of a pneumatic controller affected facility [under Subpart OOOO].”

Storage Tanks - (NON APPLICABILITY)

Pursuant to §60.5365(e), for “[e]ach 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” that is constructed after August 23, 2011 and,

pursuant to §60.5395 has “VOC emissions equal to or greater than 6 tpy” must meet the control requirements under §60.5395 as of October 15, 2013. The substantive requirement is to “reduce VOC emissions by 95.0 percent or greater.” The controlled PTE of each storage tank proposed for the Janus Compressor Station is less than 6 TPY. Therefore, the storage tanks are not subject to the requirements of Subpart OOOO.

***40 CFR 63 Subpart HH: National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities***

On June 1, 2013 the DAQ took delegation of the area source provisions of 40 CFR 63, Subpart HH. Pursuant to §63.760(a)(3), as the Janus Compressor Station - an area source of HAPs (see Attachment A) - “process[es], upgrade[s], or store[s] natural gas prior to the point at which natural gas enters the natural gas transmission and storage source category or is delivered to a final end user,” it is defined as an area source subject to the applicable provisions under Subpart HH.

Pursuant to §63.760(b)(2), each TEG GDU located at an area source that meets the requirements under §63.760(a)(3) is defined as an affected facility under Subpart HH. The requirements for affected sources at area sources are given under §63.764(d). However, for a GDU, exemptions to these requirements are given under §63.764(e): if (1) “actual annual average flowrate of natural gas to the glycol dehydration unit is less than 85 thousand standard cubic meters [3 mmscf/day] per day” or (2) “actual average emissions of benzene from the glycol dehydration unit process vent to the atmosphere are less than 0.90 megagram [1 TPY] per year.”

Information in the permit application indicates the the maximum aggregate PTE of benzene emissions from each GDU is less than 1 TPY. Therefore, the GDUs are exempt from the Subpart HH requirements given under §63.764(d).

***40 CFR 63 Subpart ZZZZ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines***

On June 1, 2013 the DAQ took delegation of the area source provisions of 40 CFR 63, Subpart ZZZZ. As the Janus Compressor Station is defined as an area source of HAPs (see Attachment A), the facility is subject to applicable requirements of Subpart ZZZZ. Pursuant to §63.6590(c):

An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part.

§63.6590(c)(1) specifies that “[a] new or reconstructed stationary RICE located at an area source” is defined as a RICE that shows compliance with the requirements of Subpart ZZZZ by “meeting the requirements of . . . 40 CFR part 60 subpart JJJJ, for spark ignition engines.” Pursuant to §63.6590(a)(2)(iii), a “stationary RICE located at an area source of HAP emissions is new if [the applicant] commenced construction of the stationary RICE on or after June 12, 2006.” The engines proposed for the Janus Compressor Station are each defined as a new stationary RICE (application states manufacture date of engines is July 2013) and, therefore, will show compliance with Subpart

ZZZZ by meeting the requirements of 40 CFR 60, Subpart JJJJ. Compliance with Subpart JJJJ is discussed above.

### TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

This section provides an analysis for those regulated pollutants that may be emitted from the proposed Janus Compressor Station and that are not classified as “criteria pollutants.” Criteria pollutants are defined as Carbon Monoxide (CO), Lead (Pb), Oxides of Nitrogen (NO<sub>x</sub>), Ozone, Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>), and Sulfur Dioxide (SO<sub>2</sub>). These pollutants have National Ambient Air Quality Standards (NAAQS) set for each that are designed to protect the public health and welfare. Other pollutants of concern, although designated as non-criteria and without national concentration standards, are regulated through various federal and programs designed to limit their emissions and public exposure. These programs include federal source-specific Hazardous Air Pollutants (HAPs) limits promulgated under 40 CFR 61 (NESHAPS) and 40 CFR 63 (MACT). Any potential applicability to these programs were discussed above under REGULATORY APPLICABILITY.

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 table lists each HAP with a facility-wide PTE above 0.05 TPY and the associated carcinogenic risk (as based on analysis provided in the Integrated Risk Information System (IRIS)):

**Table 4: Potential HAPs - Carcinogenic Risk**

HAPs	Type	Known/Suspected Carcinogen	Classification
Acetaldehyde	VOC	Yes	B2 - Probable Human Carcinogen
Acrolein	VOC	No	Inadequate Data
Formaldehyde	VOC	Yes	B1 - Probable Human Carcinogen
Methanol	VOC	No	No Assessment Available
Biphenyl	VOC	Yes	Suggestive Evidence of Carcinogenic Potential
1,3-Butadiene	VOC	Yes	B2 - Probable Human Carcinogen
Naphthalene	VOC	Yes	C - Possible Human Carcinogen
n-Hexane	VOC	No	Inadequate Data
Benzene	VOC	Yes	Category A - Known Human Carcinogen
Toluene	VOC	No	Inadequate Data
Ethylbenzene	VOC	No	Category D - Not Classifiable
Xylenes	VOC	No	Inadequate Data
2,2,4-Trimethylpentane	VOC	No	Inadequate Data

All HAPs have other non-carcinogenic chronic and acute effects. These adverse health affects 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](http://www.epa.gov/iris).

### **AIR QUALITY IMPACT ANALYSIS**

The estimated maximum emissions of the proposed facility are less than applicability thresholds that would define the proposed facility as “major” under 45CSR14 and, therefore, no air quality impacts modeling analysis was required. Additionally, based on the nature and location of the proposed source, an air quality impacts modeling analysis was not required under §45-13-7.

### **MONITORING, COMPLIANCE DEMONSTRATIONS, REPORTING, AND RECORDING OF OPERATIONS**

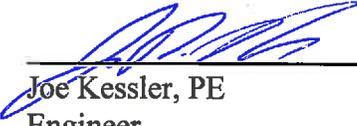
The draft permit contains extensive and detailed monitoring, compliance demonstration, and record-keeping requirements (MRR) on all emission units primarily based on the applicable requirements contained in the recently issued G35-C General Permit. The requirements are given under Section 4.2 (and some additional record-keeping and reporting requirements under Section 4.3 and 4.4, respectively) of the draft permit and may be reviewed at that location.

### **PERFORMANCE TESTING OF OPERATIONS**

The draft permit contains performance testing requirements primarily based on the applicable requirements contained in the recently issued G35-C General Permit. The requirements are given under Section 4.3 of the draft permit and may be reviewed at that location.

### **RECOMMENDATION TO DIRECTOR**

The information provided in the permit application indicates that compliance with all applicable state and federal air quality regulations will be achieved. Therefore, I recommend to the Director the issuance of a Permit Number R13-3269 to EQT Gathering, LLC for the proposed construction and operation of the Janus Compressor Station located near West Union, Doddridge County, WV.

  
\_\_\_\_\_  
Joe Kessler, PE  
Engineer

1/04/15  
\_\_\_\_\_  
Date

Fact Sheet R13-3269  
EQT Gathering, LLC  
Janus Compressor Station

**Attachment A: Facility-Wide PTE**  
**EQT Gathering, LLC; Janus Compressor Station**  
**Permit Number R13-3269; Facility ID 017-00158**

Emission Unit	EP ID	CO		NO <sub>x</sub>		PM <sup>(1)</sup>		SO <sub>x</sub>		VOC		Acetaldehyde		HAPs	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Compressor Engine	ENG-001	2.04	8.93	5.90	25.83	0.39	1.71	0.02	0.10	3.93	17.23	0.33	1.44	1.00	4.38
Compressor Engine	ENG-002	2.04	8.93	5.90	25.83	0.39	1.71	0.02	0.10	3.93	17.23	0.33	1.44	1.00	4.38
Compressor Engine	ENG-003	2.04	8.93	5.90	25.83	0.39	1.71	0.02	0.10	3.93	17.23	0.33	1.44	1.00	4.38
Compressor Engine	ENG-004	2.04	8.93	5.90	25.83	0.39	1.71	0.02	0.10	3.93	17.23	0.33	1.44	1.00	4.38
Microturbines	EG-001	0.22	0.96	0.08	0.35	0.02	0.07	0.01	0.03	0.02	0.11	~0.00	~0.00	~0.00	~0.00
Microturbines	EG-002	0.22	0.96	0.08	0.35	0.02	0.07	0.01	0.03	0.02	0.11	~0.00	~0.00	~0.00	~0.00
Microturbines	EG-003	0.22	0.96	0.08	0.35	0.02	0.07	0.01	0.03	0.02	0.11	~0.00	~0.00	~0.00	~0.00
Microturbines	EG-004	0.22	0.96	0.08	0.35	0.02	0.07	0.01	0.03	0.02	0.11	~0.00	~0.00	~0.00	~0.00
Microturbines	EG-005	0.22	0.96	0.08	0.35	0.02	0.07	0.01	0.03	0.02	0.11	~0.00	~0.00	~0.00	~0.00
Dehy #1 Vent/Flash Tank <sup>(2)</sup>	DEHY-001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.55	6.80	0.00	0.00	0.68	2.96
Dehy #1 Reboiler <sup>(3)</sup>	RB-001	0.16	0.69	0.19	0.83	0.01	0.06	~0.00	~0.00	0.01	0.05	~0.00	~0.00	~0.00	~0.00
Dehy #2 Vent/Flash Tank <sup>(2)</sup>	DEHY-002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.55	6.80	0.00	0.00	0.68	2.96
Dehy #2 Reboiler <sup>(3)</sup>	RB-002	0.16	0.69	0.19	0.83	0.01	0.06	~0.00	~0.00	0.01	0.05	~0.00	~0.00	~0.00	~0.00
Fuel Gas Heater #1	HTR-1	0.08	0.35	0.09	0.41	0.01	0.03	~0.00	~0.00	0.01	0.02	~0.00	~0.00	~0.00	~0.00
Fuel Gas Heater #2	HTR-2	0.05	0.23	0.06	0.28	~0.00	~0.00	~0.00	~0.00	0.01	0.02	~0.00	~0.00	~0.00	~0.00
Dehy Enclosed Flares Combustion <sup>(4)</sup>	FLARE-001, FLARE-002	0.96	4.20	1.14	5.00	0.08	0.48	0.01	0.04	0.00	0.00	0.00	0.00	0.00	0.00
Tank Enclosed Flare Combustion <sup>(4)</sup>	FLARE-003	2.82	12.34	3.35	14.69	0.25	1.11	0.02	0.09	0.00	0.00	0.00	0.00	0.00	0.00
Storage Tanks	T-01, T-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.42	0.00	0.00	<0.01	<0.01
Truck Loadout	L1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.09	0.00	0.00	0.00	0.00
Fugitive Emissions	n/a	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.74	12.01	~0.00	~0.00	1.16	0.51
<b>Facility-Wide Total<sup>(4)</sup> →</b>		<b>13.49</b>	<b>59.03</b>	<b>29.02</b>	<b>127.10</b>	<b>2.03</b>	<b>8.94</b>	<b>0.16</b>	<b>0.68</b>	<b>22.61</b>	<b>95.71</b>	<b>1.32</b>	<b>5.76</b>	<b>6.52</b>	<b>23.96</b>

(1) All particulate matter emissions are assumed to be 2.5 microns or less.  
(2) As emitted at the associated enclosed flare after 2% pass-through (5% for storage tank enclosed flare).  
(3) Combustion exhaust only. Aggregate of both flares.  
(4) No individual HAP has a PTE over 10 TPY. As the PTE of all individual HAPs are less than 10 TPY (acetaldehyde is the highest emitted individual HAP) and the PTE of total HAPs is less than 25 TPY, the Janus Compressor Station is defined as a minor (area) source of HAPs for purposes of 40 CFR 61, 40CFR63, and Title V.

*West Virginia Department of Environmental Protection*

*Division of Air Quality*

*Earl Ray Tomblin  
Governor*

*Randy C. Huffman  
Cabinet Secretary*

# Permit to Construct



*Entire Document*  
**NON-CONFIDENTIAL** R13-3269

*This permit is issued in accordance with the West Virginia Air Pollution Control Act (West Virginia Code §§ 22-5-1 et seq.) and 45 C.S.R. 13 — Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation. The permittee identified at the facility listed below is authorized to construct the stationary sources of air pollutants identified herein in accordance with all terms and conditions of this permit.*

Issued to:  
**EQT Gathering, LLC**  
**Janus Compressor Station**  
**017-00158**

**DRAFT**

---

*William F. Durham  
Director*

Issued: **DRAFT**

Facility Location: Near West Union, Doddridge County, West Virginia  
Mailing Address: 625 Liberty Avenue, Suite 1700, Pittsburgh, PA 15222  
Facility Description: Compressor Station  
NAICS Codes: 211111  
UTM Coordinates: 516.767 km Easting • 4,345.400 km Northing • Zone 17  
Latitude/Longitude: 39.25777/-80.80566  
Permit Type: Construction  
Desc. of Change: Construction of a natural gas compressor station with a glycol dehydration.

*Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [ §§ 22B-1-1 et seq. ], Chapter 22B of the Code of West Virginia. West Virginia Code §22-5-14.*

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*As a result of this permit, the source is a major source subject to 45CSR30. The Title V (45CSR30) application will be due within twelve (12) months after the commencement date of any operation authorized by this permit.*

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**1.0 Emission Units**

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device <sup>(1)</sup>
ENG-001	ENG-001	Caterpillar G3616 4-Stroke Lean Burn (4SLB) Compressor Engine	2016	5,350 hp	OxCat (C1)
ENG-002	ENG-002	Caterpillar G3616 4SLB Compressor Engine	2016	5,350 hp	OxCat (C2)
ENG-003	ENG-003	Caterpillar G3616 4SLB Compressor Engine	2016	5,350 hp	OxCat (C3)
ENG-004	ENG-004	Caterpillar G3616 4SLB Compressor Engine	2016	5,350 hp	OxCat (C4)
EG-001	EG-001	Capstone C200 Microturbine	2016	200kWe	None
EG-002	EG-002	Capstone C200 Microturbine	2016	200kWe	None
EG-003	EG-003	Capstone C200 Microturbine	2016	200kWe	None
EG-004	EG-004	Capstone C200 Microturbine	2016	200kWe	None
EG-005	EG-005	Capstone C200 Microturbine	2016	200kWe	None
DEHY-001	n/a	Glycol Dehydration Unit Flash Tank <sup>(2)</sup>	2016	125 mmscf/day	Flare (FLARE-001)
	FLARE-001	Glycol Dehydration Unit Still Column			
RB-001	RB-001	Glycol Dehydration Unit Reboiler	2016	2.31 mmBtu/hr	None
DEHY-002	n/a	Glycol Dehydration Unit Flash Tank <sup>(2)</sup>	2016	125 mmscf/day	Flare (FLARE-002)
	FLARE-002	Glycol Dehydration Unit Still Column			
RB-002	RB-002	Glycol Dehydration Unit Reboiler	2016	2.31 mmBtu/hr	None
HTR-1	HTR-1	Fuel Gas Heater	2016	1.15 mmBtu/hr	None
HTR-2	HTR-2	Fuel Gas Heater	2016	0.77 mmBtu/hr	None
T-001	FLARE-003	Produced Liquids Storage Tank	2016	8,820 gallons	Flare (FLARE-003)
T-002	FLARE-003	Produced Liquids Storage Tank	2016	8,820 gallons	Flare (FLARE-003)
T-003	T-003	Engine Lube Oil Storage Tank	2016	2,000 gallons	None
T-004	T-004	Compressor Oil Storage Tank	2016	2,000 gallons	None
T-005	T-005	New MEG Storage Tank	2016	2,000 gallons	None
T-006	T-006	Used MEG Storage Tank	2016	2,000 gallons	None

**1.0 Emission Units**

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device <sup>(1)</sup>
T-007	T-007	Used Oil Storage Tank	2016	4,200 gallons	None
T-008	T-008	Ice-Chek Storage Tank	2016	4,000 gallons	None
T-009	T-009	Engine Oil Storage Tank	2016	300 gallons	None
T-010	T-010	Engine Oil Storage Tank	2016	300 gallons	None
T-011	T-011	Engine Oil Storage Tank	2016	300 gallons	None
T-012	T-012	Engine Oil Storage Tank	2016	300 gallons	None
T-013	T-013	Compressor Oil Storage Tank	2016	300 gallons	None
T-014	T-014	Compressor Oil Storage Tank	2016	300 gallons	None
T-015	T-015	Compressor Oil Storage Tank	2016	300 gallons	None
T-016	T-016	Compressor Oil Storage Tank	2016	300 gallons	None
T-017	T-017	Ice-Chek Oil Storage Tank	2016	550 gallons	None
T-018	T-018	Ice-Chek Oil Storage Tank	2016	550 gallons	None
T-019	T-019	Ice-Chek Oil Storage Tank	2016	550 gallons	None
T-020	T-020	Ice-Chek Oil Storage Tank	2016	550 gallons	None
T-021	T-021	Ice-Chek Oil Storage Tank	2016	550 gallons	None
T-022	T-022	Ice-Chek Oil Storage Tank	2016	550 gallons	None
T-023	T-023	New TEG Storage Tank	2016	2,000 gallons	None
T-024	T-024	Used TEG Storage Tank	2016	2,000 gallons	None
FLARE-001	FLARE-001	Glycol Dehydration Unit #1 Enclosed Flare	2016	7.0 mmBtu/hr	n/a
FLARE-002	FLARE-002	Glycol Dehydration Unit #2 Enclosed Flare	2016	7.0 mmBtu/hr	n/a
FLARE-003	FLARE-003	Storage Tank Enclosed Flare	2016	41.0 mmBtu/hr	n/a
L1	L1	Liquids Loading	2016	210,000 gal/yr	None

(1) OxCat = Oxidation Catalyst

(2) The Glycol Dehydration Unit flash tanks are not specifically identified in the application as Emission Units but are here for consistency with other fully controlled units.

## 2.0. General Conditions

### 2.1. Definitions

- 2.1.1. All references to the "West Virginia Air Pollution Control Act" or the "Air Pollution Control Act" mean those provisions contained in W.Va. Code §§ 22-5-1 to 22-5-18.
- 2.1.2. The "Clean Air Act" means those provisions contained in 42 U.S.C. §§ 7401 to 7671q, and regulations promulgated thereunder.
- 2.1.3. "Secretary" means the Secretary of the Department of Environmental Protection or such other person to whom the Secretary has delegated authority or duties pursuant to W.Va. Code §§ 22-1-6 or 22-1-8 (45 CSR § 30-2.12.). The Director of the Division of Air Quality is the Secretary's designated representative for the purposes of this permit.

### 2.2. Acronyms

<b>CAAA</b>	Clean Air Act Amendments	<b>NO<sub>x</sub></b>	Nitrogen Oxides
<b>CBI</b>	Confidential Business Information	<b>NSPS</b>	New Source Performance Standards
<b>CEM</b>	Continuous Emission Monitor	<b>PM</b>	Particulate Matter
<b>CES</b>	Certified Emission Statement	<b>PM<sub>2.5</sub></b>	Particulate Matter less than 2.5µm in diameter
<b>C.F.R. or CFR</b>	Code of Federal Regulations	<b>PM<sub>10</sub></b>	Particulate Matter less than 10µm in diameter
<b>CO</b>	Carbon Monoxide	<b>Ppb</b>	Pounds per Batch
<b>C.S.R. or CSR</b>	Codes of State Rules	<b>pph</b>	Pounds per Hour
<b>DAQ</b>	Division of Air Quality	<b>ppm</b>	Parts per Million
<b>DEP</b>	Department of Environmental Protection	<b>Ppmv or ppmv</b>	Parts per million by volume
<b>dscm</b>	Dry Standard Cubic Meter	<b>PSD</b>	Prevention of Significant Deterioration
<b>FOIA</b>	Freedom of Information Act	<b>psi</b>	Pounds per Square Inch
<b>HAP</b>	Hazardous Air Pollutant	<b>SIC</b>	Standard Industrial Classification
<b>HON</b>	Hazardous Organic NESHAP	<b>SIP</b>	State Implementation Plan
<b>HP</b>	Horsepower	<b>SO<sub>2</sub></b>	Sulfur Dioxide
<b>lbs/hr</b>	Pounds per Hour	<b>TAP</b>	Toxic Air Pollutant
<b>LDAR</b>	Leak Detection and Repair	<b>TPY</b>	Tons per Year
<b>M</b>	Thousand	<b>TRS</b>	Total Reduced Sulfur
<b>MACT</b>	Maximum Achievable Control Technology	<b>TSP</b>	Total Suspended Particulate
<b>MDHI</b>	Maximum Design Heat Input	<b>USEPA</b>	United States Environmental Protection Agency
<b>MM</b>	Million	<b>UTM</b>	Universal Transverse Mercator
<b>MMBtu/hr or mmbtu/hr</b>	Million British Thermal Units per Hour	<b>VEE</b>	Visual Emissions Evaluation
<b>MMCF/hr or mmcf/hr</b>	Million Cubic Feet per Hour	<b>VOC</b>	Volatile Organic Compounds
<b>NA</b>	Not Applicable	<b>VOL</b>	Volatile Organic Liquids
<b>NAAQS</b>	National Ambient Air Quality Standards		
<b>NESHAPS</b>	National Emissions Standards for Hazardous Air Pollutants		

### **2.3. Authority**

This permit is issued in accordance with West Virginia Air Pollution Control Law W.Va. Code §§22-5-1 et seq. and the following Legislative Rules promulgated thereunder:

- 2.3.1. 45CSR13 – *Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation.*

### **2.4. Term and Renewal**

- 2.4.1. This permit shall remain valid, continuous and in effect unless it is revised, suspended, revoked or otherwise changed under an applicable provision of 45CSR13 or any applicable legislative rule.

### **2.5. Duty to Comply**

- 2.5.1. The permitted facility shall be constructed and operated in accordance with the plans and specifications filed in Permit Applications R13-3269 and any modifications, administrative updates, or amendments thereto. The Secretary may suspend or revoke a permit if the plans and specifications upon which the approval was based are not adhered to;  
[45CSR§§13-5.11 and 13-10.3]
- 2.5.2. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the West Virginia Code and the Clean Air Act and is grounds for enforcement action by the Secretary or USEPA;
- 2.5.3. Violations of any of the conditions contained in this permit, or incorporated herein by reference, may subject the permittee to civil and/or criminal penalties for each violation and further action or remedies as provided by West Virginia Code 22-5-6 and 22-5-7;
- 2.5.4. Approval of this permit does not relieve the permittee herein of the responsibility to apply for and obtain all other permits, licenses and/or approvals from other agencies; i.e., local, state and federal, which may have jurisdiction over the construction and/or operation of the source(s) and/or facility herein permitted.

### **2.6. Duty to Provide Information**

The permittee shall furnish to the Secretary within a reasonable time any information the Secretary may request in writing to determine whether cause exists for administratively updating, modifying, revoking or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Secretary copies of records to be kept by the permittee. For information claimed to be confidential, the permittee shall furnish such records to the Secretary along with a claim of confidentiality in accordance with 45CSR31. If confidential information is to be sent to USEPA, the permittee shall directly provide such information to USEPA along with a claim of confidentiality in accordance with 40 C.F.R. Part 2.

## **2.7. Duty to Supplement and Correct Information**

Upon becoming aware of a failure to submit any relevant facts or a submittal of incorrect information in any permit application, the permittee shall promptly submit to the Secretary such supplemental facts or corrected information.

## **2.8. Administrative Update**

The permittee may request an administrative update to this permit as defined in and according to the procedures specified in 45CSR13.

[45CSR§13-4]

## **2.9. Permit Modification**

The permittee may request a minor modification to this permit as defined in and according to the procedures specified in 45CSR13.

[45CSR§13-5.4.]

## **2.10. Major Permit Modification**

The permittee may request a major modification as defined in and according to the procedures specified in 45CSR14 or 45CSR19, as appropriate.

[45CSR§13-5.1]

## **2.11. Inspection and Entry**

The permittee shall allow any authorized representative of the Secretary, upon the presentation of credentials and other documents as may be required by law, to perform the following:

- a. At all reasonable times (including all times in which the facility is in operation) enter upon the permittee's premises where a source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times (including all times in which the facility is in operation) any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;
- d. Sample or monitor at reasonable times substances or parameters to determine compliance with the permit or applicable requirements or ascertain the amounts and types of air pollutants discharged.

## **2.12. Emergency**

- 2.12.1. An "emergency" means any situation arising from sudden and reasonable unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission

limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

- 2.12.2. Effect of any emergency. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions of Section 2.12.3 are not met.
- 2.12.3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:
  - a. An emergency occurred and that the permittee can identify the cause(s) of the emergency;
  - b. The permitted facility was at the time being properly operated;
  - c. During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and,
  - d. The permittee submitted notice of the emergency to the Secretary within one (1) working day of the time when emission limitations were exceeded due to the emergency and made a request for variance, and as applicable rules provide. This notice must contain a detailed description of the emergency, any steps taken to mitigate emission, and corrective actions taken.
- 2.12.4. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.
- 2.12.5. The provisions of this section are in addition to any emergency or upset provision contained in any applicable requirement.

### **2.13. Need to Halt or Reduce Activity Not a Defense**

It shall not be a defense for a permittee in an enforcement action that it should have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. However, nothing in this paragraph shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in determining penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continued operations.

### **2.14. Suspension of Activities**

In the event the permittee should deem it necessary to suspend, for a period in excess of sixty (60) consecutive calendar days, the operations authorized by this permit, the permittee shall notify the Secretary, in writing, within two (2) calendar weeks of the passing of the sixtieth (60) day of the suspension period.

### **2.15. Property Rights**

This permit does not convey any property rights of any sort or any exclusive privilege.

**2.16. Severability**

The provisions of this permit are severable and should any provision(s) be declared by a court of competent jurisdiction to be invalid or unenforceable, all other provisions shall remain in full force and effect.

**2.17. Transferability**

This permit is transferable in accordance with the requirements outlined in Section 10.1 of 45CSR13. [45CSR§13-10.1]

**2.18. Notification Requirements**

The permittee shall notify the Secretary, in writing, no later than thirty (30) calendar days after the actual startup of the operations authorized under this permit.

**2.19. Credible Evidence**

Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defense otherwise available to the permittee including, but not limited to, any challenge to the credible evidence rule in the context of any future proceeding.

### 3.0. Facility-Wide Requirements

#### 3.1. Limitations and Standards

- 3.1.1. **Open burning.** The open burning of refuse by any person, firm, corporation, association or public agency is prohibited except as noted in 45CSR§6-3.1.  
[45CSR§6-3.1.]
- 3.1.2. **Open burning exemptions.** The exemptions listed in 45CSR§6-3.1 are subject to the following stipulation: Upon notification by the Secretary, no person shall cause, suffer, allow or permit any form of open burning during existing or predicted periods of atmospheric stagnation. Notification shall be made by such means as the Secretary may deem necessary and feasible.  
[45CSR§6-3.2.]
- 3.1.3. **Asbestos.** The permittee is responsible for thoroughly inspecting the facility, or part of the facility, prior to commencement of demolition or renovation for the presence of asbestos and complying with 40 C.F.R. § 61.145, 40 C.F.R. § 61.148, and 40 C.F.R. § 61.150. The permittee, owner, or operator must notify the Secretary at least ten (10) working days prior to the commencement of any asbestos removal on the forms prescribed by the Secretary if the permittee is subject to the notification requirements of 40 C.F.R. § 61.145(b)(3)(i). The USEPA, the Division of Waste Management and the Bureau for Public Health - Environmental Health require a copy of this notice to be sent to them.  
[40CFR§61.145(b) and 45CSR§34]
- 3.1.4. **Odor.** No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public.  
[45CSR§4-3.1 State-Enforceable only.]
- 3.1.5. **Permanent shutdown.** A source which has not operated at least 500 hours in one 12-month period within the previous five (5) year time period may be considered permanently shutdown, unless such source can provide to the Secretary, with reasonable specificity, information to the contrary. All permits may be modified or revoked and/or reapplication or application for new permits may be required for any source determined to be permanently shutdown.  
[45CSR§13-10.5.]
- 3.1.6. **Standby plan for reducing emissions.** When requested by the Secretary, the permittee shall prepare standby plans for reducing the emissions of air pollutants in accordance with the objectives set forth in Tables I, II, and III of 45 C.S.R. 11.  
[45CSR§11-5.2.]

#### 3.2. Monitoring Requirements

- 3.2.1. **Emission Limit Averaging Time.** Unless otherwise specified, compliance with all annual limits shall be based on a rolling twelve month total. A rolling twelve month total shall be the sum of the measured parameter of the previous twelve calendar months. Compliance with all hourly emission limits shall be based on the applicable NAAQS averaging times or, where applicable, as given in any approved performance test method.

### 3.3. Testing Requirements

- 3.3.1. **Stack testing.** As per provisions set forth in this permit or as otherwise required by the Secretary, in accordance with the West Virginia Code, underlying regulations, permits and orders, the permittee shall conduct test(s) to determine compliance with the emission limitations set forth in this permit and/or established or set forth in underlying documents. The Secretary, or his duly authorized representative, may at his option witness or conduct such test(s). Should the Secretary exercise his option to conduct such test(s), the operator shall provide all necessary sampling connections and sampling ports to be located in such manner as the Secretary may require, power for test equipment and the required safety equipment, such as scaffolding, railings and ladders, to comply with generally accepted good safety practices. Such tests shall be conducted in accordance with the methods and procedures set forth in this permit or as otherwise approved or specified by the Secretary in accordance with the following:
- a. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with 40 C.F.R. Parts 60, 61, and 63 in accordance with the Secretary's delegated authority and any established equivalency determination methods which are applicable. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4 or 45CSR§13-5.4 as applicable.
  - b. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with applicable requirements which do not involve federal delegation. In specifying or approving such alternative testing to the test methods, the Secretary, to the extent possible, shall utilize the same equivalency criteria as would be used in approving such changes under Section 3.3.1.a. of this permit. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4 or 45CSR§13-5.4 as applicable.
  - c. All periodic tests to determine mass emission limits from or air pollutant concentrations in discharge stacks and such other tests as specified in this permit shall be conducted in accordance with an approved test protocol. Unless previously approved, such protocols shall be submitted to the Secretary in writing at least thirty (30) days prior to any testing and shall contain the information set forth by the Secretary. In addition, the permittee shall notify the Secretary at least fifteen (15) days prior to any testing so the Secretary may have the opportunity to observe such tests. This notification shall include the actual date and time during which the test will be conducted and, if appropriate, verification that the tests will fully conform to a referenced protocol previously approved by the Secretary.
  - d. The permittee shall submit a report of the results of the stack test within sixty (60) days of completion of the test. The test report shall provide the information necessary to document the objectives of the test and to determine whether proper procedures were used to accomplish these objectives. The report shall include the following: the certification described in paragraph 3.5.1.; a statement of compliance status, also signed by a responsible official; and, a summary of conditions which form the basis for the compliance status evaluation. The summary of conditions shall include the following:

1. The permit or rule evaluated, with the citation number and language;
2. The result of the test for each permit or rule condition; and,
3. A statement of compliance or noncompliance with each permit or rule condition.

[WV Code § 22-5-4(a)(14-15) and 45CSR13]

### 3.4. Recordkeeping Requirements

- 3.4.1. **Retention of records.** The permittee shall maintain records of all information (including monitoring data, support information, reports and notifications) required by this permit recorded in a form suitable and readily available for expeditious inspection and review. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation. The files shall be maintained for at least five (5) years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent two (2) years of data shall be maintained on site. The remaining three (3) years of data may be maintained off site, but must remain accessible within a reasonable time. Where appropriate, the permittee may maintain records electronically (on a computer, on computer floppy disks, CDs, DVDs, or magnetic tape disks), on microfilm, or on microfiche.
- 3.4.2. **Odors.** For the purposes of 45CSR4, the permittee shall maintain a record of all odor complaints received, any investigation performed in response to such a complaint, and any responsive action(s) taken.  
[45CSR§4. *State-Enforceable only.*]

### 3.5. Reporting Requirements

- 3.5.1. **Responsible official.** Any application form, report, or compliance certification required by this permit to be submitted to the DAQ and/or USEPA shall contain a certification by the responsible official that states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.
- 3.5.2. **Confidential information.** A permittee may request confidential treatment for the submission of reporting required by this permit pursuant to the limitations and procedures of W.Va. Code § 22-5-10 and 45CSR31.
- 3.5.3. **Correspondence.** All notices, requests, demands, submissions and other communications required or permitted to be made to the Secretary of DEP and/or USEPA shall be made in writing and shall be deemed to have been duly given when delivered by hand, or mailed first class with postage prepaid to the address(es) set forth below or to such other person or address as the Secretary of the Department of Environmental Protection may designate:

**If to the DAQ:**

Director  
WVDEP  
Division of Air Quality  
601 57th Street, SE  
Charleston, WV 25304-2345

**If to the USEPA:**

Associate Director  
Office of Air Enforcement and Compliance  
Assistance Review (3AP20)  
U. S. Environmental Protection Agency  
Region III  
1650 Arch Street  
Philadelphia, PA 19103-2029

**3.5.4. Operating Fee.**

- 3.5.4.1. In accordance with 45CSR30 – Operating Permit Program, the permittee shall submit a Certified Emissions Statement (CES) and pay fees on an annual basis in accordance with the submittal requirements of the Division of Air Quality. A receipt for the appropriate fee shall be maintained on the premises for which the receipt has been issued, and shall be made immediately available for inspection by the Secretary or his/her duly authorized representative.
- 3.5.4.2. In accordance with 45CSR30 – Operating Permit Program, enclosed with this permit is a Certified Emissions Statement (CES) Invoice, from the date of initial startup through the following June 30. Said invoice and the appropriate fee shall be submitted to this office no later than 30 days prior to the date of initial startup. For any startup date other than July 1, the permittee shall pay a fee or prorated fee in accordance with the Section 4.5 of 45CSR22. A copy of this schedule may be found attached to the Certified Emissions Statement (CES) Invoice.
- 3.5.5. **Emission inventory.** At such time(s) as the Secretary may designate, the permittee herein shall prepare and submit an emission inventory for the previous year, addressing the emissions from the facility and/or process(es) authorized herein, in accordance with the emission inventory submittal requirements of the Division of Air Quality. After the initial submittal, the Secretary may, based upon the type and quantity of the pollutants emitted, establish a frequency other than on an annual basis.

#### 4.0. Source-Specific Requirements

##### 4.1. Limitations and Standards

4.1.1. Only those emission units/sources as identified in Table 1.0, with the exception of any *de minimis* sources as identified under Table 45-13B of 45CSR13, are authorized at the permitted facility by this permit. In accordance with the information filed in Permit Application R13-3269, the emission units/sources identified under Table 1.0 of this permit shall be installed, maintained, and operated so as to minimize any fugitive escape of pollutants, shall not exceed the listed maximum design capacities, shall use the specified control devices, and comply with any other information provided under Table 1.0.

##### 4.1.2. Compressor Engines

The compressor engines, identified as ENG-001 through ENG-004, shall meet the following requirements:

- a. Each unit shall be a Caterpillar, G3616 4SLB 5,350 hp compressor engine and shall only be fired by pipeline-quality natural gas;
- b. At all times each engine is in operation, an EMIT Technologies, Inc. Model EBX-9000-3036F-8C4E-48C oxidation catalyst shall be used for emissions control;
- c. The maximum emissions from each engine, as controlled by the oxidation catalyst specified under 4.1.2(b), shall not exceed the limits given in the following table:

**Table 4.1.2(c): Per-Compressor Engine Emission Limits**

Pollutant	PPH <sup>(1)</sup>	TPY
CO	2.04	8.93
NO <sub>x</sub>	5.90	25.83
PM <sub>2.5</sub> /PM <sub>10</sub> /PM <sup>(2)</sup>	0.39	1.73
VOC	3.93	17.23
Formaldehyde	0.24	1.03

(1) PPH emissions based on specific model of engine, engine size, and control technology.

(2) Includes condensables.

- d. As the annual emissions are based on 8,760 hours of operation, there is no annual limit on hours of operation or natural gas combusted on an annual basis;
- e. The emission limitations specified in Table 4.1.2(c) shall apply at all times except during periods of start-up and shut-down provided that the duration of these periods does not exceed 30 minutes per occurrence. The permittee shall operate the engine in a manner consistent with good air pollution control practices for minimizing emissions at all times, including periods of start-up and shut-down. The emissions from start-up and shut-down shall be included in the twelve (12) month rolling total of emissions. The permittee shall comply with all applicable start-up and shut-down requirements in accordance with 40 CFR Part 60, Subparts JJJJ and 40 CFR Part 63, Subpart ZZZZ.

f. **40 CFR 60, Subpart JJJJ**

Owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) must comply with the emission standards in Table 1 to this subpart for their stationary SI ICE.

[40 CFR §60.4233(e)]

g. **40 CFR 60, Subpart OOOO**

You must comply with the standards in paragraphs (a) through (d) of this section for each reciprocating compressor affected facility.

(1) You must replace the reciprocating compressor rod packing according to either paragraph (a)(1) or (2) of this section.

(i) Before the compressor has operated for 26,000 hours. The number of hours of operation must be continuously monitored beginning upon initial startup of your reciprocating compressor affected facility, or October 15, 2012, or the date of the most recent reciprocating compressor rod packing replacement, whichever is later.

[40 CFR §60.5385(a)(1)]

(ii) Prior to 36 months from the date of the most recent rod packing replacement, or 36 months from the date of startup for a new reciprocating compressor for which the rod packing has not yet been replaced.

[40 CFR §60.5385(a)(2)]

h. **40 CFR 63, Subpart ZZZZ**

An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part.

[40 CFR §63.6590(c)]

(1) A new or reconstructed stationary RICE located at an area source;

[40 CFR §63.6590(c)(1)]

4.1.3. **Oxidation Catalysts**

Use of oxidation catalysts shall be in accordance with the following:

- a. Lean-burn natural gas compressor engine(s) equipped with oxidation catalyst air pollution control devices shall be fitted with a closed-loop automatic air/fuel ratio feedback controller to ensure emissions of regulated pollutants do not exceed the emission limits listed under Table 4.1.2(c) for any engine/oxidation catalyst combination under varying load. The closed-loop, automatic air/fuel ratio controller shall control a fuel metering valve to ensure a lean-rich mixture;
- b. For natural gas compressor engine(s), the permittee shall monitor the temperature to the inlet of the catalyst and in accordance with manufacturer's specifications; a high temperature alarm shall shut off the engine before thermal deactivation of the catalyst occurs. If the engine shuts off due to high temperature, the permittee shall also check for thermal deactivation of the catalyst before normal operations are resumed; and
- c. The permittee shall follow a written operation and maintenance plan that provides the periodic and annual maintenance requirements of the oxidation catalyst.

4.1.4. **Microturbines**

The Microturbines, identified as EG-001 through EG-005, shall meet the following requirements:

- a. Each individual unit shall be a Capstone C200 NG 200kWe (output) Microturbine, shall not exceed a rated MDHI of 2.28 mmBtu/hr (based on a HHV of 1,226 Btu/scf), and shall only be fired by natural gas;
- b. The maximum emissions from each individual Microturbine shall not exceed the limits given in the following table:

**Table 4.1.3(b): Per-Microturbine Emission Limits**

Pollutant	PPH <sup>(1)</sup>	TPY
CO	0.22	0.96
NO <sub>x</sub>	0.08	0.35

(1) PPH emissions based on specific model of Microturbine.

- c. As the annual emissions are based on 8,760 hours of operation, there are no annual limits on hours of operation or natural gas combusted on an annual basis.

4.1.5. **Glycol Dehydration Units**

The Glycol Dehydration Units, identified as DEHY-001 and DEHY-002, shall meet the following requirements:

- a. The maximum dry natural gas throughput to each Glycol Dehydration Unit identified as DEHY-001 and DEHY-002 shall not exceed 125 mmscf/day or 1,095,000 mmscf/year.
- b. The maximum glycol recirculation rate in each unit shall not exceed 9.10 gallons per minute;
- c. The maximum aggregate emissions from each unit (both Glycol Dehydrator Regeneration Still Vent and Flash Tank), as emitted after combustion at the associated flare (FLARE-001 or FLARE-002), shall not exceed the limits given in the following table:

**Table 4.1.5(c): Per-Glycol Dehydrator Regeneration Still Vent/Flash Tank Controlled Emission Limits<sup>(1)</sup>**

Pollutant	PPH	TPY
VOC	1.55	6.80
<i>n-Hexane</i>	0.04	0.18
<i>Benzene</i>	0.08	0.36
<i>Toluene</i>	0.22	0.97
<i>Ethylbenzene</i>	0.04	0.17
<i>Xylene</i>	0.27	1.17
<i>2,2,4-Trimethylpentane</i>	0.03	0.11
<b>Total HAPs</b>	<b>0.69</b>	<b>2.96</b>

(1) Emissions based on GLYCalc Version 4.0 using wet gas throughputs as limited under 4.1.5(a) and glycol recirculation rate as limited under 4.1.5(b).

- d. Vapors from each Glycol Dehydrator Flash Tank shall be captured and sent either sent to the flame zone of the reboiler as fuel or to the associated enclosed flare for destruction using a closed vent system. The closed vent system shall meet the requirements given under 4.1.10; and
- e. **40 CFR 63, Subpart HH: Applicability and Designation of Affected Source**  
Any source that has actual emissions of 5 tons per year or more of a single HAP, or 12.5 tons per year or more of a combination of HAP (i.e., 50 percent of the major source thresholds), shall update its major source determination within 1 year of the prior determination or October 15, 2012, whichever is later, and each year thereafter, using gas composition data measured during the preceding 12 months.  
[40CFR§63.760(c)]
- f. **40 CFR 63, Subpart HH**  
Exemptions. The owner or operator of an area source is exempt from the requirements of paragraph (d) of this section if the criteria listed in paragraph (e)(1)(i) or (ii) of this section are met, except that the records of the determination of these criteria must be maintained as required in § 63.774(d)(1).  
[40 CFR §63.764(e)(1)]
  - (1) The actual average emissions of benzene from the glycol dehydration unit process vent to the atmosphere are less than 0.90 megagram per year, as determined by the procedures specified in § 63.772(b)(2) of this subpart.  
[40 CFR §63.764(e)(1)(ii)]
- g. For the purposes of determining actual average benzene emissions, the methods specified in § 63.772(b) of 40 CFR 63, Subpart HH shall be used if the permittee is exempt from § 63.764(d).

4.1.6. **Glycol Dehydration Reboilers**

The Glycol Dehydration Unit Reboilers, identified as RB-001 and RB-002, shall meet the following requirements:

- a. The MDHI of each unit shall not exceed 2.31 mmBtu/hr and the units shall only be fired by natural gas or captured flash gas;
- b. The maximum emissions from each Reboiler's combustion exhaust shall not exceed the limits given in the following table;

**Table 4.1.6(b): Reboiler Emission Limits**

Pollutant	PPH <sup>(1)</sup>	TPY
CO	0.12	0.50
NO <sub>x</sub>	0.14	0.60

(1) PPH emissions based on MDHI of Reboilers and emission factors from AP-42, Section 1.4.

- c. As the annual emissions are based on 8,760 hours of operation, there is no annual limit on hours of operation or natural gas/flash gas combusted on an annual basis for either Reboiler; and
- d. **45CSR2**  
No person shall cause, suffer, allow or permit emission of smoke and/or particulate matter into the open air from any fuel burning unit which is greater than ten (10) percent opacity based on a six minute block average. [40CSR§2-3.1]

4.1.7. **Fuel Gas Heaters**

The Fuel Gas Heater, identified as HTR-1 and HTR-2, shall meet the following requirements:

- a. The MDHI of the HTR-1 and HTR-2 shall not exceed 1.15 mmBtu/hr and 0.77 mmBtu/hr, respectively and the units shall only be fired by natural gas;
- b. The maximum emissions from the Fuel Gas Heaters combustion exhaust shall not exceed the limits given in the following table;

**Table 4.1.7(b): Fuel Gas Heaters Emission Limits**

HTR-1		
Pollutant	PPH	TPY
CO	0.08	0.35
NO <sub>x</sub>	0.09	0.41
HTR-2		
Pollutant	PPH	TPY
CO	0.05	0.28
NO <sub>x</sub>	0.06	0.28

- c. As the annual emissions are based on 8,760 hours of operation, there is no annual limit on hours of operation or natural gas combusted on an annual basis for either Fuel Gas Heater.

4.1.8. **Storage Tanks**

Use of the produced liquids storage tanks, identified as T0-1 and T0-2, shall be in accordance with the following:

- a. Tank size and material stored shall be limited as specified under Table 1.0 of this permit.
- b. The aggregate storage tank throughput shall not exceed a limit of 210,000 gallons/year of produced liquids. The permittee shall not exceed the above throughput without first obtaining a modification or administrative update to this permit;
- c. The permittee shall route all VOC and HAP emissions (working/breathing/flashing) from the storage tanks to an enclosed flare (FLARE-003). The vapors shall be routed to the control device using a closed vent system according to the requirements of 4.1.11; and

d. **Cover Requirements**

The permittee shall comply with the following storage tank cover requirements:

- (1) The cover and all openings on the cover (e.g., access hatches, sampling ports, pressure relief valves and gauge wells) shall form a continuous impermeable barrier over the entire surface area of the liquid in the storage vessel.
- (2) Each cover opening shall be secured in a closed, sealed position (e.g., covered by a gasketed lid or cap) whenever material is in the unit on which the cover is installed except during those times when it is necessary to use an opening as follows:

- (i) To add material to, or remove material from the unit (this includes openings necessary to equalize or balance the internal pressure of the unit following changes in the level of the material in the unit);
  - (ii) To inspect or sample the material in the unit;
  - (iii) To inspect, maintain, repair, or replace equipment located inside the unit; or
  - (iv) To vent liquids, gases, or fumes from the unit through a closed-vent system designed and operated in accordance with the requirements of this permit to a control device or to a process.
- (3) Each storage vessel thief hatch shall be weighted and properly seated. The permittee shall select gasket material for the hatch based on composition of the fluid in the storage vessel and weather conditions.

4.1.9. **Truck Loadout**

The Truck Loading operations, identified as L1, shall be in accordance with the following requirements:

- a. All trucks shall be loaded using the submerged-fill method. The “submerged-fill method” shall, for the purposes of this permit, mean either bottom-filling or filling by extending the pipe to near the bottom of the tank, and as soon as is practicable, below the level of liquid; and
- b. The maximum loadout of produced liquids from the storage tanks shall not exceed 210,000 gallons per year.

4.1.10. **Enclosed Flares**

The Enclosed Flares, identified as FLARE-001 through FLARE-003, shall operate according to the following requirements:

- a. Each enclosed flare shall be non-assisted and the maximum capacity of the flare shall not exceed heat input as given under Emissions Table 1.0;
- b. Each enclosed flare shall be designed, operated, and maintained according to good engineering practices or manufacturing recommendations so as to achieve, at a minimum, a hydrocarbon combustion rate of 98.0%;
- c. Each enclosed flare shall be operated with a flame present at all times, as determined by the methods specified in 4.2.6(a);
- d. Each enclosed flare shall be designed for and operated with no visible emissions as determined by the methods specified in 4.3.4(a) except for either (1) or (2):
  - (1) periods not to exceed a total of one minute during any 15 minute period, determined on a monthly basis; or
  - (2) periods not to exceed a total of two (2) minutes during any hour, determined on a quarterly basis if the enclosed combustion device installed was a model tested under §60.5413(d) which meets the criteria in §60.5413(d)(11).
- e. Each enclosed flare shall be operated at all times when emissions are vented to them;

- f. To ensure compliance with 4.1.10(e) above, the permittee shall monitor in accordance with 4.2.6(d).
- g. The permittee shall operate and maintain the enclosed combustion device according to the manufacturer's specifications for operating and maintenance requirements to maintain the guaranteed control efficiency listed under 4.1.10(b).

h. **45CSR6**

The Enclosed flares are subject to 45CSR6. The requirements of 45CSR6 include but are not limited to the following:

- (1) The permittee shall not cause, suffer, allow or permit particulate matter to be discharged from the flares into the open air in excess of the quantity determined by use of the following formula:

$$\text{Emissions (lb/hr)} = F \times \text{Incinerator Capacity (tons/hr)}$$

Where, the factor, F, is as indicated in Table I below:

**Table I: Factor, F, for Determining Maximum Allowable Particulate Emissions**

<u>Incinerator Capacity</u>	<u>Factor F</u>
A. Less than 15,000 lbs/hr	5.43
B. 15,000 lbs/hr or greater	2.72

[45CSR§6-4.1]

- (2) No person shall cause, suffer, allow or permit emission of smoke into the atmosphere from any incinerator which is twenty (20%) percent opacity or greater.  
[45CSR6 §4.3]
- (3) The provisions of paragraph (i) shall not apply to smoke which is less than forty (40%) percent opacity, for a period or periods aggregating no more than eight (8) minutes per start-up.  
[45CSR6 §4.4]
- (4) No person shall cause or allow the emission of particles of unburned or partially burned refuse or ash from any incinerator which are large enough to be individually distinguished in the open air.  
[45CSR6 §4.5]
- (5) Incinerators, including all associated equipment and grounds, shall be designed, operated and maintained so as to prevent the emission of objectionable odors.  
[45CSR6 §4.6]
- (6) Due to unavoidable malfunction of equipment, emissions exceeding those provided for in this rule may be permitted by the Director for periods not to exceed five (5) days upon specific application to the Director. Such application shall be made within twenty-four (24) hours of the malfunction. In cases of major equipment failure, additional time periods may be granted by the Director provided a corrective program has been submitted by the owner or operator and approved by the Director.  
[45CSR6 §8.2]

**4.1.11. Closed Vent Requirements**

The permittee shall meet the following requirements for the closed vent system delivering vapors from the storage tanks to the enclosed flare (FLARE-003):

- a. The permittee shall design the closed vent system to route all gases, vapors, and fumes emitted from the material in the storage tanks (T-01 and T-02) to the enclosed flare (FLARE-003). The permittee shall perform an initial LDAR evaluation within thirty (30) days of start-up and follow the procedures in 4.1.10(b) for ongoing compliance.
- b. The permittee shall design and operate a closed vent system with no detectable emissions, as determined using audio-visual-olfactory (AVO) inspections, USEPA 40CFR60 Method 21, USEPA alternative work practice to detect leaks from equipment using optical gas imaging (OGI) camera (e.g. FLIR camera), or some combination thereof. AVO inspections shall include, but not limited to, defects as visible cracks, holes, or gaps in piping; loose connections; liquid leaks; or broken or missing caps or other closure devices. If the permittee uses USEPA Method 21, then no detectable emissions is defined as less than 500 ppm in accordance with Method 21. If the permittee uses an OGI camera, then no detectable emissions is defined as no visible leaks detected in accordance with USEPA alternative OGI work practices.

If any leak is detected, the permittee shall repair the leak as soon as possible. The first attempt at repair must be made within five (5) calendar days of discovering the leak, and the final repair must be made within fifteen (15) calendar days of discovering the leak. The permittee shall record each leak detected and the associated repair. The leak will not be considered repaired until the same monitoring method or a more detailed instrument determines the leak is repaired.

- c. The permittee shall meet the requirements specified in (1) and (2) of this section if the closed vent system contains one or more bypass devices that could be used to divert all or a portion of the gases, vapors, or fumes from entering the control device or to a process.
  - (1) Except as provided in paragraph (2) of this section, you must comply with either paragraph (i) or (ii) of this section for each bypass device.
    - (i) You must properly install, calibrate, maintain, and operate a flow indicator at the inlet to the bypass device that could divert the stream away from the control device or process to the atmosphere that sounds an alarm, or initiates notification via remote alarm to the nearest field office, when the bypass device is open such that the stream is being, or could be, diverted away from the control device or process to the atmosphere.
    - (ii) You must secure the bypass device valve installed at the inlet to the bypass device in the non-diverting position using a car-seal or a lock-and-key type configuration.
  - (2) Low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and safety devices are not subject to the requirements of paragraph (i) of this section.

**4.1.12. Fugitive Emissions**

The permittee shall mitigate the release of fugitive emissions according to the following requirements:

- a. The permittee shall, within 180 days of facility startup, submit a modification or Class II Administrative Update, as applicable pursuant 45CSR13, to revise the number and type of components (valves, pump seals, connectors, etc.) in gas/vapor or light liquid (as applicable) listed in Attachment N of Permit Application R13-3269 or any amendments or revisions

submitted thereto if the as-built number of components results in calculated VOC or HAP emissions in excess of those given under Attachment N;

- b. The permittee shall install, maintain, and operate all above-ground piping, valves, pumps, etc. that service lines in the transport of potential sources of regulated air pollutants to prevent any substantive fugitive escape of regulated air pollutants. Any above-ground piping, valves, pumps, etc. that shows signs of excess wear and that have a reasonable potential for substantive fugitive emissions of regulated air pollutants shall be replaced;
  - c. The number of compressor blowdowns, station shutdown vents, filter maintenance releases, and pigging events at the facility shall not exceed 24, 1, 2, and 3, respectively. Compliance with this annual limitation shall be determined using a twelve (12) month rolling total. A twelve (12) month rolling total shall mean the sum of the events from the previous twelve (12) consecutive calendar months. However, in lieu of the event limits given in this section, if the permittee can accurately determine the quantity of gas released during each event, the permittee may show compliance with 4.1.10(c) by limiting total annual gas released to less than 1,402 mscf; and
  - d. The permittee shall develop a plan to limit the duration of any unforeseen release of natural gas by responding to the event in a reasonable time frame. This plan will include the placement of visible contact information at the facility for public reporting such an event. This plan shall be submitted to the DAQ prior to startup of the facility.
- 4.1.13. The permittee shall meet all applicable requirements, including those not specified above, as given under 45CSR2, 45CSR6, 40 CFR 60, Subpart JJJJ, and Subpart OOOO, and 40 CFR 63, Subpart HH and Subpart ZZZZ. Any final revisions made to the above rules will, where applicable, supercede those specifically cited in this section.
- 4.1.14. **Operation and Maintenance of Air Pollution Control Equipment.** The permittee shall, to the extent practicable, install, maintain, and operate all pollution control equipment listed in Section 1.0 and associated monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions, or comply with any more stringent limits set forth in this permit or as set forth by any State rule, Federal regulation, or alternative control plan approved by the Secretary.  
[45CSR§13-5.11.]

## 4.2. Monitoring, Compliance Demonstration, Recording and Reporting Requirements

### 4.2.1. Oxidation Catalysts

The permittee shall meet the following Monitoring, Compliance Demonstration, Recording and Reporting Requirements for the oxidation catalysts:

- a. The permittee shall regularly inspect, properly maintain and/or replace catalytic reduction devices and auxiliary air pollution control devices to ensure functional and effective operation of each compressor engine's physical and operational design. The permittee shall ensure proper operation, maintenance and performance of catalytic reduction devices and auxiliary air pollution control devices by:
  - (1) Maintaining proper operation of the automatic air/fuel ratio controller or automatic feedback controller.
  - (2) Following the catalyst manufacturer emissions related operating and maintenance recommendations, or develop, implement, or follow a site-specific maintenance plan.

- b. To demonstrate compliance with section 4.1.3, the permittee shall maintain records of the maintenance performed on each RICE and/or generator; and
- c. To demonstrate compliance with section 4.1.3(c), the permittee shall maintain a copy of the site specific maintenance plan or manufacturer maintenance plan.

**4.2.2. Glycol Dehydration Units**

The permittee shall meet the following Monitoring, Compliance Demonstration, Recording and Reporting Requirements for the glycol dehydration units:

- a. For the purposes of demonstrating compliance with the maximum dry gas throughput limit set forth in 4.1.5(a), the permittee shall monitor and maintain monthly and rolling twelve month records of the dry gas throughput of the Glycol Dehydration Unit;
- b. Representative gas sample collection and emissions analysis frequency for the dehydration units shall be upon request by the Secretary. If requested, the permittee shall submit the wet gas analysis report required by section this section within 60 days of conducting the sampling of the wet gas stream as required. This report shall include a potential to emit (PTE) estimate using GRI-GlyCalc Version 3.0 or higher, incorporating the specific parameters measured, as well as a copy of the laboratory analysis. If the results of the compliance determination conducted as required in this section predict the emissions to be at or above 95% of HAPs major source levels or 0.95 tons per year of benzene, the permittee shall submit such determination and all supporting documentation to the Secretary within 15 days after making such determination.
- c. Compliance with the Maximum Glycol Recirculation Limitation set forth in 4.1.5(b) shall be determined using an average of a minimum of quarterly readings of the actual glycol pump(s) rate. If more than one pump is operating simultaneously then the rate of each operating pump shall be recorded and totaled for compliance purposes.
- d. To demonstrate compliance with the benzene exemption in 4.1.5(f), the following parameters shall be measured at a minimum frequency of once per quarter, with the exception of natural gas flowrate annual daily average, natural gas flowrate maximum design capacity and wet gas composition, in order to define annual average values or, if monitoring is not practical, some parameters may be assigned default values as listed below.
  - Natural Gas Flowrate
    - Operating hours per quarter
    - Quarterly throughput (MMscf/quarter)
    - Annual daily average (MMscf/day), and
    - Maximum design capacity (MMscf/day)
  - Absorber temperature and pressure
  - Lean glycol circulation rate
  - Glycol pump type and maximum design capacity (gpm)
  - Flash tank temperature and pressure, if applicable
  - Stripping Gas flow rate, if applicable
  - Wet gas composition (upstream of the absorber – dehydration column) sampled in accordance with GPA method 2166 and analyzed consistent with GPA extended method 2286 as well as the procedures presented in the GRI-GLYCalc™ Technical Reference User Manual and Handbook V4
  - Wet gas water content (lbs H<sub>2</sub>O/MMscf)

- Dry gas water content (lbs H<sub>2</sub>O/MMscf) at a point directly after exiting the dehydration column and before any additional separation points

The following operating parameter(s) may be assigned default values when using GRI-GLYCalc:

- Dry gas water content can be assumed to be equivalent to pipeline quality at 7 lb H<sub>2</sub>O / MMscf
- Wet gas water content can be assumed to be saturated
- Lean glycol water content if not directly measured may use the default value of 1.5 % water as established by GRI
- Lean glycol circulation rate may be estimated using the TEG recirculation ratio of 3 gal TEG / lb H<sub>2</sub>O removed.

Note: If you are measuring and using actual wet or dry gas water content, then you should also measure the glycol circulation rate rather than using the default TEG recirculation ratio.

- e. The permittee shall maintain records of the quarterly dry natural gas throughput through the glycol dehydration unit(s), all monitoring data, wet gas sampling, and GRI-GLYCalc™ emission estimates.

#### 4.2.3. **Glycol Dehydration Reboilers**

Upon request by the Secretary, compliance with the visible emission requirements of 4.1.6(d) shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 9 or by using measurements from continuous opacity monitoring systems approved by the Secretary. The Secretary may require the installation, calibration, maintenance and operation of continuous opacity monitoring systems and may establish policies for the evaluation of continuous opacity monitoring results and the determination of compliance with the visible emission requirements of 4.1.6(d). Continuous opacity monitors shall not be required on fuel burning units which employ wet scrubbing systems for emission control.

[40CSR§2-3.2]

#### 4.2.4. **Storage Tanks**

For the purposes of demonstrating compliance with the storage tank throughput limits set forth in 4.1.8(b), the permittee shall monitor and maintain monthly and rolling twelve month records of the aggregate throughput of the storage tanks. Alternatively, recording the monthly and rolling twelve (12) month total of produced liquids loaded into tanker trucks from the storage vessels according to 4.2.5. can be used to demonstrate compliance.

#### 4.2.5. **Truck Loadout**

For the purposes of demonstrating compliance with the truck loadout limits set forth in 4.1.8, the permittee shall monitor and maintain monthly and rolling twelve month records of the amount of produced liquids loaded into tanker trucks.

#### 4.2.6. **Enclosed Flares**

The permittee shall meet the following Monitoring, Compliance Demonstration, Recording and Reporting Requirements for the enclosed flares:

- a. To demonstrate compliance with the pilot flame requirements of 4.1.10(c), the presence of a pilot flame shall be continuously monitored using a thermocouple or any other equivalent device to detect the presence of a flame when emissions are vented to it. The pilot shall be equipped such

that it sounds an alarm, or initiates notification via remote alarm to the nearest field office, when the pilot light is out;

- b. For any absence of pilot flame, or other indication of smoking or improper equipment operation, you must ensure the equipment is returned to proper operation as soon as practicable after the event occurs. At a minimum, you must: (1) Check the air vent for obstruction. If an obstruction is observed, you must clear the obstruction as soon as practicable. (2) Check for liquid reaching the combustor;
- c. The permittee is exempt from the pilot flame requirements of permit condition 4.2.6(b) of this section if the permittee installed an enclosed combustion device model that was tested under § 60.5413(d) which meets the criteria in § 60.5413(d)(11);
- d. For the purpose of demonstrating compliance with the continuous pilot flame requirements in 4.1.10(c), the permittee shall maintain records of the times and duration of all periods when the pilot flame was not present and vapors were vented to the device:
  - (1) If the permittee is demonstrating compliance to 4.2.6(b) with visual inspections, the permittee shall maintain records of the inspections; and
  - (2) If the permittee is demonstrating compliance to 4.2.6(c) with an enclosed combustion device model that was tested under the conditions of § 60.5413(d), a record shall be maintained of the performance test results.
- e. To demonstrate compliance with 4.1.10(d), the permittee shall maintain records of the manufacturer's specifications for operating and maintenance requirements to maintain the control efficiency;
- f. Any bypass event of an enclosed flare must be reported in writing to the Director of the DAQ as soon as practicable, but within ten (10) calendar days, of the occurrence and shall include, at a minimum, the following information: the date of the bypass, the estimate of VOC emissions released to the atmosphere as a result of the bypass, the cause or suspected cause of the bypass, and any corrective measures taken or planned; and
- g. Any time the enclosed flare is not operating when emissions are vented to it, shall be reported in writing to the Director of the DAQ as soon as practicable, but within ten (10) calendar days of the discovery.

#### 4.2.7. Closed Vent Requirements

To demonstrate compliance with the closed vent system requirements of 4.1.11, the permittee shall:

- a. **Initial requirements.** Conduct an initial AVO inspection for defects that could result in air emissions within thirty (30) days of start-up. Defects include, but are not limited to, visible cracks, holes, or gaps in piping; loose connections; liquid leaks; or broken or missing caps or other closure devices.
  - (1) The initial inspection shall include the bypass inspection, conducted according to paragraph (c) of this section.
  - (2) In the event that a leak or defect is detected, you must repair the leak or defect as soon as practicable. Grease or another applicable substance must be applied to deteriorating or cracked gaskets to improve the seal while awaiting repair.

(3) Delay of repair of a closed vent system for which leaks or defects have been detected is allowed if the repair is technically infeasible without a shutdown, or if you determine that emissions resulting from immediate repair would be greater than the fugitive emission likely to result from delay of repair. You must complete repair of such equipment by the end of the next shutdown.

- b. **Continuous requirements.** The permittee shall monitor and maintain quarterly records for each component that was inspected for fugitive escape of regulated air pollutants. Each component shall operate with no detectable emissions, as determined using AVO inspections, USEPA 40CFR60 Method 21, USEPA alternative work practice to detect leaks from equipment using optical gas imaging (OGI) camera (ex. FLIR camera), or some combination thereof. AVO inspections shall include, but not limited to, defects as visible cracks, holes, or gaps in piping; loose connections; liquid leaks; or broken or missing caps or other closure devices. If permittee uses USEPA Method 21, then no detectable emissions is defined as less than 500 ppm in accordance with Method 21. If permittee uses an OGI camera, then no detectable emissions is defined as no visible leaks detected in accordance with USEPA alternative OGI work practices.

If any leak is detected, the permittee shall repair the leak as soon as possible. The first attempt at repair must be made within five (5) days of discovering the leak, and the final repair must be made within fifteen (15) days of discovering the leak. The permittee shall record each leak detected and the associated repair. The leak will not be considered repaired until the same monitoring method that detected the leak determines the leak is repaired.

The permittee shall maintain records of all quarterly monitoring for fugitive escape of regulated air pollutants.

- c. **Bypass inspection.** Visually inspect the bypass valve during the initial inspection for the presence of the car seal or lock-and-key type configuration to verify that the valve is maintained in the non-diverting position to ensure that the vent stream is not diverted through the bypass device. If an alternative method is used, conduct the inspection of the bypass as described in the operating procedures.
- d. **Unsafe to inspect requirements.** You may designate any parts of the closed vent system as unsafe to inspect if the requirements in paragraphs (1) and (2) of this section are met. Unsafe to inspect parts are exempt from the inspection requirements of paragraphs (a) and (b) of this section.
- (1) You determine that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with the requirements.
- (2) You have a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.
- e. To demonstrate compliance with the closed vent monitoring requirements given under paragraphs (a) through (d) above, the following records shall be maintained:
- (1) The initial compliance requirements;
- (2) Each AVO inspection, Method 21, infrared camera or some combination thereof conducted to demonstrate continuous compliance, including records of any repairs that were made as a result of the inspection;

(3) If you are subject to the bypass requirements, the following records shall also be maintained:

- (i) Each inspection or each time the key is checked out or a record each time the alarm is sounded;
- (ii) Each occurrence that the control device was bypassed. If the device was bypassed, the records shall include the date, time, and duration of the event and shall provide the reason that the event occurred. The record shall also include the estimate of emissions that were released to the environment as a result of the bypass.

(4) Any part of the system that has been designated as "unsafe to inspect" in accordance with 4.2.7(d).

**4.2.8. 40 CFR 60, Subpart JJJJ**

The permittee shall comply with all applicable monitoring, compliance demonstration and record-keeping requirements as given under 40 CFR 60, Subpart JJJJ including the following:

If you are an owner or operator of a stationary SI internal combustion engine and must comply with the emission standards specified in §60.4233(d) or (e), you must demonstrate compliance according to one of the methods specified in paragraphs (b)(1) and (2) of this section.

**[40 CFR §60.4243(b)]**

- a. Purchasing a non-certified engine and demonstrating compliance with the emission standards specified in §60.4233(d) or (e) and according to the requirements specified in §60.4244, as applicable, and according to paragraphs (b)(2)(i) and (ii) of this section.

**[40 CFR §60.4243(b)(2)]**

- (1) If you are an owner or operator of a stationary SI internal combustion engine greater than 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance.

**[40 CFR §60.4243(b)(2)(ii)]**

**4.2.9 Fugitive Emissions**

The permittee shall meet the following Monitoring, Compliance Demonstration, Recording and Reporting Requirements for the fugitive emissions:

- a. For the purposes of determining compliance with 4.1.12(c), the permittee shall monitor and record the monthly and rolling twelve month records of the number of compressor blowdowns, station shutdown vents, filter maintenance releases, and pigging events at the facility. The information will further include the duration, estimated volume of gas vented, and reason for event; and
- b. The permittee shall monitor and record other events (not listed under 4.1.12(c)) where a substantive amount of gas is released (i.e., pressure relief trips). The information will further include the duration, estimated volume of gas vented, reason for event, and corrective actions taken.
- c. The permittee shall report all events recorded under 4.2.9(b) to the DAQ in writing as soon as practicable but no later than fifteen (15) days after the event.

**4.2.10. 40 CFR 63, Subpart HH**

The permittee shall comply with all applicable monitoring, compliance demonstration and record-keeping requirements as given under 40 CFR 63, Subpart HH including the following:

*Determination of glycol dehydration unit flowrate, benzene emissions, or BTEX emissions.* The procedures of this paragraph shall be used by an owner or operator to determine glycol dehydration unit natural gas flowrate, benzene emissions, or BTEX emissions.

**[40 CFR §63.772(b)]**

- a. The determination of actual average benzene or BTEX emissions from a glycol dehydration unit shall be made using the procedures of either paragraph (b)(2)(i) or (ii) of this section. Emissions shall be determined either uncontrolled, or with federally enforceable controls in place. **[40 CFR §63.772(b)(2)]**

- (1) The owner or operator shall determine 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. Inputs to the model shall be representative of actual operating conditions of the glycol dehydration unit and may be determined using the procedures documented in the Gas Research Institute (GRI) report entitled “Atmospheric Rich/Lean Method for Determining Glycol Dehydrator Emissions” (GRI-95/0368.1); or **[40 CFR §63.772(b)(2)(i)]**

- (2) The owner or operator shall determine an average mass rate of benzene or BTEX emissions in kilograms per hour through direct measurement using the methods in § 63.772(a)(1)(i) or (ii), or an alternative method according to § 63.7(f). Annual emissions in kilograms per year shall be determined by multiplying the mass rate by the number of hours the unit is operated per year. This result shall be converted to megagrams per year. **[40 CFR §63.772(b)(2)(ii)]**

4.2.11. The permittee shall meet all applicable Monitoring, Compliance Demonstration and Source-Specific Recordkeeping and Reporting Requirements as given under 45CSR2, 45CSR6, 40 CFR 60, Subpart JJJJ, and Subpart OOOO, and 40 CFR 63, Subpart HH and Subpart ZZZZ. Any final revisions made to 40 CFR Subpart JJJJ and 40 CFR 63, Subpart HH will, where applicable, supercede those specifically cited in this section.

**4.3. Performance Testing Requirements**

4.3.1. At such reasonable time(s) as the Secretary may designate, in accordance with the provisions of 3.3 of this permit, the permittee shall conduct or have conducted test(s) to determine compliance with the emission limitations established in this permit and/or applicable regulations.

**4.3.2. Compressor Engines**

The permittee shall, pursuant to the timing and other requirements of 40 CFR 60, Subpart JJJJ, conduct, or have conducted, performance testing on the compressor engines to determine the emission rates of CO, NO<sub>x</sub>, and VOCs. The testing shall, in addition to meeting all applicable requirements under 40 CFR 60, Subpart JJJJ, be in accordance with 3.3.1. Results of the this performance testing shall, unless granted in writing a waiver by the Director, be used to determine compliance with the CO, NO<sub>x</sub>, and VOC emission limits given under 4.1.2(c).

4.3.3. **Glycol Dehydration Units**

If requested under 4.2.2(b), the permittee shall sample wet natural gas in accordance with the Gas Processor Association (GPA) Method 2166 and analyze the samples in accordance with GPA Method 2286. The permittee may utilize other equivalent methods provided they are approved in advance by DAQ as part of a testing protocol. If alternative methods are proposed, a test protocol shall be submitted for approval no later than 60 days before the scheduled test date.

Note: The DAQ defines a representative wet gas sample to be one that is characteristic of the average gas composition dehydrated throughout a calendar year. If an isolated sample is not indicative of the annual average composition, then a company may opt to produce a weighted average based on throughput between multiple sampling events, which can be used to define a more representative average annual gas composition profile.

4.3.4. **Enclosed Flares**

The permittee shall meet the following Performance Testing Requirements for the enclosed flares:

a. To demonstrate compliance with the visible emissions requirements of 4.1.10(d), the permittee shall conduct visible emission checks and/or opacity monitoring and recordkeeping for each enclosed flare.

(1) The visible emission check shall determine the presence or absence of visible emissions. The observations shall be conducted according to Section 11 of EPA Method 22. At a minimum, the observer must be trained and knowledgeable regarding the effects of background contrast, ambient lighting, observer position relative to lighting, wind, and the presence of uncombined water (condensing water vapor) on the visibility of emissions. This training may be obtained from written materials found in the References 1 and 2 from 40CFR Part 60, Appendix A, Method 22 or from the lecture portion of the 40CFR Part 60, Appendix A, Method 9 certification course. The observation period shall be:

- (i) *[Reserved]*;
- (ii) a minimum of 15 minutes if demonstrating compliance with 4.1.10(d)(1); or
- (iii) a minimum of 1 hour if demonstrating compliance with 4.1.10(d)(2).

(2) The visible emission check shall be conducted initially within 180 days of start-up to demonstrate compliance while vapors are being sent to the control device.

b. At such reasonable times as the Secretary may designate, the operator of any incinerator shall be required to conduct or have conducted stack tests to determine the particulate matter loading, by using 40 CFR Part 60, Appendix A, Method 5, and volatile organic compound loading, by using Methods 18 and 25A of 40 CFR Part 60, Appendix A, Method 320 of 40 CFR Part 63, Appendix A, or ASTM D 6348-03 or other equivalent U.S. EPA approved method approved by the Secretary, in exhaust gases. Such tests shall be conducted in such manner as the Secretary may specify and be filed on forms and in a manner acceptable to the Secretary. The Secretary may, at the Secretary's option, witness or conduct such stack tests. Should the Secretary exercise his or her option to conduct such tests, the operator will provide all the necessary sampling connections and sampling ports to be located in such manner as the Secretary may require, power for test equipment and the required safety equipment such as scaffolding, railings and ladders to comply with generally accepted good safety practices. The Secretary may conduct such other tests as the Secretary may deem necessary to evaluate air pollution emissions other than those noted above. **[45CSR§6-7.1 and 7.2]**

- 4.3.5. The permittee shall meet all applicable Performance Testing Requirements as given under 45CSR2, 45CSR6, 40 CFR 60, Subpart JJJJ, and Subpart OOOO, and 40 CFR 63, Subpart HH and Subpart ZZZZ.

#### 4.4. Additional Recordkeeping Requirements

- 4.4.1. **Record of Monitoring.** The permittee shall keep records of monitoring information that include the following:
- a. The date, place as defined in this permit and time of sampling or measurements;
  - b. The date(s) analyses were performed;
  - c. The company or entity that performed the analyses;
  - d. The analytical techniques or methods used;
  - e. The results of the analyses; and
  - f. The operating conditions existing at the time of sampling or measurement.
- 4.4.2. **Record of Maintenance of Air Pollution Control Equipment.** For all pollution control equipment listed in Section 1.0, the permittee shall maintain accurate records of all required pollution control equipment inspection and/or preventative maintenance procedures.
- 4.4.3. **Record of Malfunctions of Air Pollution Control Equipment.** For all air pollution control equipment listed in Section 1.0, the permittee shall maintain records of the occurrence and duration of any malfunction or operational shutdown of the air pollution control equipment during which excess emissions occur. For each such case, the following information shall be recorded:
- a. The equipment involved.
  - b. Steps taken to minimize emissions during the event.
  - c. The duration of the event.
  - d. The estimated increase in emissions during the event.

For each such case associated with an equipment malfunction, the additional information shall also be recorded:

- e. The cause of the malfunction.
  - f. Steps taken to correct the malfunction.
  - g. Any changes or modifications to equipment or procedures that would help prevent future recurrences of the malfunction.
- 4.4.4. For the purpose of demonstrating compliance with the visible emissions and opacity requirements, the permittee shall maintain records of the visible emission opacity tests and checks. The permittee shall maintain records of all monitoring data required by 4.3.4(a) documenting the date and time of each visible emission check, the emission point or equipment/ source identification number, the name or

means of identification of the observer, the results of the check(s), whether the visible emissions are normal for the process, and, if applicable, all corrective measures taken or planned. The permittee shall also record the general weather conditions (i.e. sunny, approximately 80°F, 6-10 mph NE wind) during the visual emission check(s). Should a visible emission observation be required to be performed per the requirements specified in Method 9, the data records of each observation shall be maintained per the requirements of Method 9. For an emission unit out of service during the evaluation, the record of observation may note "out of service" (O/S) or equivalent.

#### **4.5. Additional Reporting Requirements**

- 4.5.1. Any deviation of the allowable visible emission requirement for any emission source discovered during observation using 40CFR Part 60, Appendix A, Method 9 per 4.3.4(a)(3) must be reported in writing to the Director of the DAQ as soon as practicable, but within ten (10) calendar days, of the occurrence and shall include, at a minimum, the following information: the results of the visible determination of opacity of emissions, the cause or suspected cause of the violation(s), and any corrective measures taken or planned.

### CERTIFICATION OF DATA ACCURACY

I, the undersigned, hereby certify that, based on information and belief formed after reasonable inquiry, all information contained in the attached \_\_\_\_\_, representing the period beginning \_\_\_\_\_ and ending \_\_\_\_\_, and any supporting documents appended hereto, is true, accurate, and complete.

Signature<sup>1</sup> \_\_\_\_\_ Date \_\_\_\_\_  
(please use blue ink) Responsible Official or Authorized Representative

Name and Title \_\_\_\_\_ Title \_\_\_\_\_  
(please print or type) Name

Telephone No. \_\_\_\_\_ Fax No. \_\_\_\_\_

<sup>1</sup> This form shall be signed by a "Responsible Official." "Responsible Official" means one of the following:

- a. For a corporation: The president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:
  - (I) the facilities employ more than 250 persons or have a gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars), or
  - (ii) the delegation of authority to such representative is approved in advance by the Director;
- b. For a partnership or sole proprietorship: a general partner or the proprietor, respectively;
- c. For a municipality, State, Federal, or other public entity: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of USEPA); or
- d. The designated representative delegated with such authority and approved in advance by the Director.

**Kessler, Joseph R**

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**From:** Bosiljevac, Alex <ABosiljevac@eqt.com>  
**Sent:** Tuesday, September 08, 2015 12:56 PM  
**To:** Kessler, Joseph R  
**Subject:** RE: WV DAQ Permit Application Status for EQT Gathering, LLC; Janus Station  
**Attachments:** 2015\_09\_08\_11\_59\_22.pdf

Joe,

Here is the receipt for Janus permit application for your records. When we receive the legal affidavit we will send it to you asap.

Thanks,

Alex Bosiljevac  
EQT Plaza  
625 Liberty Avenue  
Pittsburgh, PA 15222  
T: 412-395-3699  
C: 412-439-3131

*Entire Document*  
**NON-CONFIDENTIAL**

**I.D. No.** 017-00158 **Reg.** 3269  
**Company** EQT GATHERING  
**Facility** JANUS **Region** \_\_\_\_\_  
**Initials** JM

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**From:** Adkins, Sandra K [mailto:Sandra.K.Adkins@wv.gov]  
**Sent:** Wednesday, September 02, 2015 11:30 AM  
**To:** Charletta, Diana; Bosiljevac, Alex  
**Cc:** McKeone, Beverly D; Kessler, Joseph R  
**Subject:** WV DAQ Permit Application Status for EQT Gathering, LLC; Janus Station

**RE: Application Status**  
**EQT Gathering, LLC**  
**Janus Station**  
**Plant ID No. 017-00158**  
**Application No. R13-3269**

Ms. Charletta,

Your application for a construction permit for the Janus Station was received by this Division on August 28, 2015, and was assigned to Joe Kessler. The following items were not included in the initial application submittal:

**Original affidavit for Class I legal advertisement not submitted.**  
*\*Please note to use the new phone extension 1250 for future legal ads*

**Application fee AND/OR additional application fees not included:**  
**\*\$1,000 Construction, Modification, Relocation or Temporary Permit**  
**\*\$1,000 NSPS**

**\*\$2,500 NESHAP**

*These items are necessary for the assigned permit writer to continue the 30-day completeness review.*

Within 30 days, you should receive a letter from Joe stating the status of the permit application and, if complete, given an estimated time frame for the agency's final action on the permit.

Any determination of completeness shall not relieve the permit applicant of the requirement to subsequently submit, in a timely manner, any additional or corrected information deemed necessary for a final permit decision.

For future reference, electronic applications must include signatures.

Should you have any questions, please contact the assigned engineer, Joe Kessler, at 304-926-0499, extension 1219.

## Kessler, Joseph R

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**From:** Bosiljevac, Alex <ABosiljevac@eqt.com>  
**Sent:** Thursday, November 12, 2015 9:35 AM  
**To:** Kessler, Joseph R  
**Subject:** Re: Janus Station Site Visit

I'll have one for you. Thanks for the heads up.

Sent from my iPhone

On Nov 12, 2015, at 9:25 AM, "Kessler, Joseph R" <Joseph.R.Kessler@wv.gov<mailto:Joseph.R.Kessler@wv.gov>> wrote:

Alex, FYI, I do not have a reflective vest.

**From:** Bosiljevac, Alex [mailto:ABosiljevac@eqt.com]  
**Sent:** Tuesday, November 10, 2015 3:59 PM  
**To:** Kessler, Joseph R  
**Subject:** RE: Janus Station Site Visit

Joe,

I talked to the construction manager and it looks like that would be a good place to meet. We will potentially be doing some tree clearing that day, so bring your hardhat, safety glasses, steel toes and a reflective vest. Let me know if anything changes.

Thanks,

Alex Bosiljevac  
T: 412-395-3699  
C: 412-439-3131

**From:** Kessler, Joseph R [mailto:Joseph.R.Kessler@wv.gov]  
**Sent:** Tuesday, November 10, 2015 9:10 AM  
**To:** Bosiljevac, Alex  
**Subject:** RE: Janus Station Site Visit

Alex, I am planning on being at the US 50/Right Fork Run Rd. (Country Route 1/1) junction at about 10:00 on Wednesday, November 18. I believe that is where we will be heading off of US 50. Can we meet there and I can just follow you from that point?

Thanks,

Joe

**From:** Bosiljevac, Alex [mailto:ABosiljevac@eqt.com]  
**Sent:** Thursday, November 05, 2015 9:31 AM  
**To:** Kessler, Joseph R  
**Subject:** RE: Janus Station Site Visit

Thanks Joe. We can meet you at the entrance. Let me know if your schedule changes.

I know this is early, but do you have any idea when the draft permit is expected? Our planning group was asking me today.

Alex Bosiljevac  
T: 412-395-3699  
C: 412-439-3131

From: Kessler, Joseph R [mailto:Joseph.R.Kessler@wv.gov]  
Sent: Wednesday, November 04, 2015 3:43 PM  
To: Bosiljevac, Alex  
Subject: RE: Janus Station Site Visit

OK, thanks, tentatively thinking that I will try to get out there on Wednesday 11/18. I will confirm at some point.

Joe Kessler

From: Bosiljevac, Alex [mailto:ABosiljevac@eqt.com]  
Sent: Wednesday, November 04, 2015 3:33 PM  
To: Kessler, Joseph R  
Subject: EQT: Janus Station Site Visit

Joe,

I talked to some of our construction guys and it looks like the Janus Station site should be dry next week. I just wanted to give you a heads up if you wanted to schedule it in for a visit.

Thanks,

Alex Bosiljevac  
EQT Plaza  
625 Liberty Avenue  
Pittsburgh, PA 15222  
T: 412-395-3699  
C: 412-439-3131

<image001.jpg>

www.eqt.com<<http://www.eqt.com>>

v1.e

## Kessler, Joseph R

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**From:** Bosiljevac, Alex <ABosiljevac@eqt.com>  
**Sent:** Wednesday, November 18, 2015 9:11 AM  
**To:** Kessler, Joseph R  
**Subject:** EQT Janus Site Visit

Hey Joe,

I will be at the US50 exit to the site right around 10, but Matt who we are also meeting will be there around 10:30. I'd like to wait on Matt if possible as he knows the location. Sorry if this screws up your schedule.

Alex

Sent from my iPhone  
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[www.eqt.com](http://www.eqt.com)

## Kessler, Joseph R

---

**From:** Bosiljevac, Alex <ABosiljevac@eqt.com>  
**Sent:** Thursday, December 10, 2015 9:01 AM  
**To:** Kessler, Joseph R  
**Subject:** Fwd: BIG Run Dehy Update  
**Attachments:** imageb3a384.jpg@a83a9d4e.d448486e

Joe,

...So I think we found the issue with the legal ad in the wetzel chron. Their email system isn't letting our emails through. I think we've resolved the situation. See below for more explanation.

I will be mailing a copy of the ad request for this newspaper going forward.

Alex

Sent from my iPhone

Begin forwarded message:

From: "Hodge, Michael" <MHodge@eqt.com<mailto:MHodge@eqt.com>>  
Date: December 10, 2015 at 8:47:34 AM EST  
To: "Bosiljevac, Alex" <ABosiljevac@eqt.com<mailto:ABosiljevac@eqt.com>>, "Springer, Robert" <RSpringer@eqt.com<mailto:RSpringer@eqt.com>>, "Straley, Matthew V." <MStraley@eqt.com<mailto:MStraley@eqt.com>>, "Sothen, William" <WSothen@eqt.com<mailto:WSothen@eqt.com>>  
Subject: BIG Run Dehy Update

I wish I had better news, but the Legal Notice did not run in the Wetzel Chronicle yesterday. I spoke with them and we think we found the problem. It appears that their email is not letting EQT emails into their system. I emailed them while on the phone and they did not receive it.

We were able to send the notice to Diann's personal email. The notice will now run on 12/16. She is to send me a proof of the legal notice later today.

Michael Hodge  
EQT Production  
Compliance  
539 US Highway 33E  
Weston, WV 26452  
304-848-0722 (office)  
606-371-0141 (cell)

[cid:imageb3a384.jpg@a83a9d4e.d448486e]

www.eqt.com

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## Kessler, Joseph R

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**From:** Bosiljevac, Alex <ABosiljevac@eqt.com>  
**Sent:** Monday, December 14, 2015 5:03 PM  
**To:** Kessler, Joseph R  
**Subject:** RE: Janus Information  
**Attachments:** Janus Station - Dehy Units.pdf

Hi Joe,

I asked our engineers your questions and filled out the forms. The recirculation rate should be the pump rate of 18.8 gpm.

- Do we know the Make & Model of the dehy units? – **Exterran reboiler, and Exterran 48" I.D. structured packing contactor tower.**
- Will the dehy flash gas be used to fire the reboiler? – **Yes. The reboiler and flare use the flash gas first for fuel. If there is not enough flash gas to satisfy the required fuel flow, then station fuel gas is used as a supplement.**

Happy Holidays,

Alex Bosiljevac  
T: 412-395-3699  
C: 412-439-3131

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**From:** Kessler, Joseph R [<mailto:Joseph.R.Kessler@wv.gov>]  
**Sent:** Thursday, December 10, 2015 1:41 PM  
**To:** Bosiljevac, Alex  
**Subject:** Janus Information

Alex, I'm starting to work on Janus. Would you please fill out (only need one, if they are the same) the Dehydration Unit Data Sheet (Pages 26 and 27 of the attached document) for the proposed Janus units and e-mail it back to me? If you don't have all the information, that's ok, but mainly I need the glycol recirculation rate and the Make and Model if you know it yet.

Also, is the dehydration flash gas used to fire the reboiler or all sent to the flare?

Thanks

Joe Kessler, PE  
Engineer  
West Virginia Division of Air Quality  
601-57th St., SE  
Charleston, WV 25304  
Phone: (304) 926-0499 x1219  
Fax: (304) 926-0478  
[Joseph.r.kessler@wv.gov](mailto:Joseph.r.kessler@wv.gov)



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## ATTACHMENT P – GLYCOL DEHYDRATION UNIT DATA SHEET

Complete this data sheet for each Glycol Dehydration Unit, Reboiler, Flash Tank and/or Regenerator at the facility. Include gas sample analysis and GRI- GLYCalc™ input and aggregate report. Use extra pages if necessary.

Manufacturer: Exterran	Model: 48" I.D. Structured Packing Contactor Tower
Max. Dry Gas Flow Rate: 125 mmscf/day	Reboiler Design Heat Input: 2.31 MMBTU/hr
Design Type: <input checked="" type="checkbox"/> TEG <input type="checkbox"/> DEG <input type="checkbox"/> EG	Source Status <sup>1</sup> : NS
Date Installed/Modified/Removed <sup>2</sup> : 2016	Regenerator Still Vent APCD/ERD <sup>3</sup> : FLARE-001
Control Device/ERD ID# <sup>3</sup> : FLARE-001	Fuel HV (BTU/scf): 1,226
H <sub>2</sub> S Content (gr/100 scf): neg	Operation (hours/year): 8760
Pump Rate (gpm): 18.8	

Water Content (wt %) in: Wet Gas: sat'd                      Dry Gas: 7 lb/MMscf

Is the glycol dehydration unit exempt from 40CFR63 Section 764(d)?  Yes     No: If Yes, answer the following:

The actual annual average flowrate of natural gas to the glycol dehydration unit 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 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

Is the glycol dehydration unit located within an Urbanized Area (UA) or Urban Cluster (UC)?  Yes     No

Is a lean glycol pump optimization plan being utilized?  Yes     No

Recycling the glycol dehydration unit back to the flame zone of the reboiler.  
 Yes     No

Recycling the glycol dehydration unit back to the flame zone of the reboiler and mixed with fuel.  
 Yes     No

What happens when temperature controller shuts off fuel to the reboiler?

- Still vent emissions to the atmosphere. – Routed to control device  
 Still vent emissions stopped with valve.  
 Still vent emissions to glow plug.

Please indicate if the following equipment is present.

- Flash Tank  
 Burner management system that continuously burns condenser or flash tank vapors

### Control Device Technical Data

Pollutants Controlled	Manufacturer's Guaranteed Control Efficiency (%)
THC	98
VOC	98
HAP	98

### Emissions Data

Emission Unit ID / Emission Point ID <sup>4</sup>	Description	Calculation Methodology <sup>5</sup>	PTE <sup>6</sup>	Controlled Maximum Hourly Emissions (lb/hr)	Controlled Maximum Annual Emissions (tpy)
RB-001	Reboiler Vent	AP-42	NO <sub>x</sub>	0.19	0.83
		AP-42	CO	0.16	0.69
		AP-42	VOC	0.01	0.05
		AP-42	SO <sub>2</sub>	< 0.01	< 0.01
		AP-42	PM <sub>10</sub>	0.01	0.06
		AP-42	GHG (CO <sub>2</sub> e)	271	1,185
FLARE-001		GRI-GlyCalc™	VOC	1.00	4.36

	Glycol Regenerator Still Vent	GRI-GlyCalc™	Benzene	0.08	0.35
		GRI-GlyCalc™	Toluene	0.22	0.95
		GRI-GlyCalc™	Ethylbenzene	0.04	0.17
		GRI-GlyCalc™	Xylenes	0.27	1.17
		GRI-GlyCalc™	n-Hexane	0.02	0.10
FLARE-001	Glycol Flash Tank	GRI-GlyCalc™	VOC	0.56	2.44
		GRI-GlyCalc™	Benzene	< 0.01	0.01
		GRI-GlyCalc™	Toluene	< 0.01	0.02
		GRI-GlyCalc™	Ethylbenzene	< 0.01	< 0.01
		GRI-GlyCalc™	Xylenes	< 0.01	0.01
		GRI-GlyCalc™	n-Hexane	0.02	0.08

## ATTACHMENT P – GLYCOL DEHYDRATION UNIT DATA SHEET

Complete this data sheet for each Glycol Dehydration Unit, Reboiler, Flash Tank and/or Regenerator at the facility. Include gas sample analysis and GRI- GLYCalc™ input and aggregate report. Use extra pages if necessary.

Manufacturer: Exterran		Model: 48" I.D. Structured Packing Contactor Tower			
Max. Dry Gas Flow Rate: 125 mmscf/day		Reboiler Design Heat Input: 2.31 MMBTU/hr			
Design Type: <input checked="" type="checkbox"/> TEG <input type="checkbox"/> DEG <input type="checkbox"/> EG		Source Status <sup>1</sup> : NS			
Date Installed/Modified/Removed <sup>2</sup> : 2016		Regenerator Still Vent APCD/ERD <sup>3</sup> : FLARE-002			
Control Device/ERD ID# <sup>3</sup> : FLARE-002		Fuel HV (BTU/scf): 1,226			
H <sub>2</sub> S Content (gr/100 scf): neg		Operation (hours/year): 8760			
Pump Rate (gpm): 18.8					
Water Content (wt %) in:    Wet Gas: sat'd                      Dry Gas: 7 lb/MMscf					
Is the glycol dehydration unit exempt from 40CFR63 Section 764(d)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No: If Yes, answer the following:					
The actual annual average flowrate of natural gas to the glycol dehydration unit is less than 85 thousand standard cubic meters per day, as determined by the procedures specified in §63.772(b)(1) of this subpart. <input type="checkbox"/> Yes <input type="checkbox"/> No					
The actual average emissions of benzene from the glycol dehydration unit process vent 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. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
Is the glycol dehydration unit located within an Urbanized Area (UA) or Urban Cluster (UC)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
Is a lean glycol pump optimization plan being utilized? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
Recycling the glycol dehydration unit back to the flame zone of the reboiler. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
Recycling the glycol dehydration unit back to the flame zone of the reboiler and mixed with fuel. <input type="checkbox"/> Yes <input type="checkbox"/> No					
What happens when temperature controller shuts off fuel to the reboiler? <input type="checkbox"/> Still vent emissions to the atmosphere. – Routed to control device <input type="checkbox"/> Still vent emissions stopped with valve. <input type="checkbox"/> Still vent emissions to glow plug.					
Please indicate if the following equipment is present. <input checked="" type="checkbox"/> Flash Tank <input type="checkbox"/> Burner management system that continuously burns condenser or flash tank vapors					
Control Device Technical Data					
Pollutants Controlled		Manufacturer's Guaranteed Control Efficiency (%)			
THC		98			
VOC		98			
HAP		98			
Emissions Data					
Emission Unit ID / Emission Point ID <sup>4</sup>	Description	Calculation Methodology <sup>5</sup>	PTE <sup>6</sup>	Controlled Maximum Hourly Emissions (lb/hr)	Controlled Maximum Annual Emissions (tpy)
RB-002	Reboiler Vent	AP-42	NO <sub>x</sub>	0.19	0.83
		AP-42	CO	0.16	0.69
		AP-42	VOC	0.01	0.05
		AP-42	SO <sub>2</sub>	< 0.01	< 0.01
		AP-42	PM <sub>10</sub>	0.01	0.06
		AP-42	GHG (CO <sub>2</sub> e)	271	1,185

FLARE-002	Glycol Regenerator Still Vent	GRI-GlyCalc™	VOC	1.00	4.36
		GRI-GlyCalc™	Benzene	0.08	0.35
		GRI-GlyCalc™	Toluene	0.22	0.95
		GRI-GlyCalc™	Ethylbenzene	0.04	0.17
		GRI-GlyCalc™	Xylenes	0.27	1.17
		GRI-GlyCalc™	n-Hexane	0.02	0.10
FLARE-002	Glycol Flash Tank	GRI-GlyCalc™	VOC	0.56	2.44
		GRI-GlyCalc™	Benzene	< 0.01	0.01
		GRI-GlyCalc™	Toluene	< 0.01	0.02
		GRI-GlyCalc™	Ethylbenzene	< 0.01	< 0.01
		GRI-GlyCalc™	Xylenes	< 0.01	0.01
		GRI-GlyCalc™	n-Hexane	0.02	0.08

- 1 Enter the Source Status using the following codes:  
NS Construction of New Source ES Existing Source  
MS Modification of Existing Source
- 2 Enter the date (or anticipated date) of the glycol dehydration unit's installation (construction of source), modification or removal.
- 3 Enter the Air Pollution Control Device (APCD)/Emission Reduction Device (ERD) type designation using the following codes and the device ID number:  
NA None CD Condenser FL Flare  
CC Condenser/Combustion Combination TO Thermal Oxidizer O Other (please list)
- 4 Enter the appropriate Emission Unit ID Numbers and Emission Point ID Numbers for the glycol dehydration unit reboiler vent and glycol regenerator still vent. The glycol dehydration unit reboiler vent and glycol regenerator still vent should be designated RBV-1 and RSV-1, respectively. If the compressor station incorporates multiple glycol dehydration units, a Glycol Dehydration Emission Unit Data Sheet shall be completed for each, using Source Identification RBV-2 and RSV-2, RBV-3 and RSV-3, etc.
- 5 Enter the Potential Emissions Data Reference designation using the following codes:  
MD Manufacturer's Data AP AP-42  
GR GRI-GLYCalc™ OT Other (please list)
- 6 Enter the Reboiler Vent and Glycol Regenerator Still Vent Potential to Emit (PTE) for the listed regulated pollutants in lbs per hour and tons per year. The Glycol Regenerator Still Vent potential emissions may be determined using the most recent version of the thermodynamic software model GRI-GLYCalc™ (Radian International LLC & Gas Research Institute). **Attach all referenced Potential Emissions Data (or calculations) and the GRI-GLYCalc™ Aggregate Calculations Report (shall include emissions reports, equipment reports, and stream reports) to this Glycol Dehydration Emission Unit Data Sheet(s). Backup pumps do not have to be considered for purposes of PTE.** This PTE data shall be incorporated in the Emissions Summary Sheet.

# INTERNAL PERMITTING DOCUMENT TRACKING MANIFEST

Company Name EQT GATHERING, LLC

Permitting Action Number RB-3269 Total Days 129 DAQ Days 102

**Permitting Action:**

- |   |   |                                      |
|---|---|--------------------------------------|
| <input type="radio"/> Permit Determination  | <input type="radio"/> Temporary               | <input type="radio"/> Modification   |
| <input type="radio"/> General Permit        | <input type="radio"/> Relocation              | <input type="radio"/> PSD (Rule 14)  |
| <input type="radio"/> Administrative Update | <input checked="" type="radio"/> Construction | <input type="radio"/> NNSR (Rule 19) |

**Documents Attached:**

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Engineering Evaluation/Memo   | <input checked="" type="checkbox"/> Completed Database Sheet |
| <input checked="" type="checkbox"/> Draft Permit                  | <input type="checkbox"/> Withdrawal                          |
| <input checked="" type="checkbox"/> Notice                        | <input type="checkbox"/> Letter                              |
| <input type="checkbox"/> Denial                                   | <input type="checkbox"/> Other (specify) _____               |
| <input type="checkbox"/> Final Permit/General Permit Registration | _____  |

Date	From	To	Action Requested
1/04/15	Joe Kessler	Bev McKeone	NOTICE APPROVAL
1/7	Bev	Joe	Cons to Notice

NOTE: Retain a copy of this manifest for your records when transmitting your document(s).

**Kessler, Joseph R**

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**From:** Kessler, Joseph R  
**Sent:** Thursday, September 24, 2015 11:23 AM  
**To:** 'dcharletta@eqt.com'  
**Cc:** Bosiljevac, Alex (abosiljevac@cecinc.com)  
**Subject:** WV DAQ NSR Permit Application Complete for EQT Gathering, LLC: Janus Station

**RE: Application Status: Complete  
EQT Gathering, LLC  
Janus Station  
Permit Application: R13-3269  
Plant ID No.: 017-00158**

Ms. Charletta,

Your application for a construction permit was received by the Division of Air Quality (DAQ) on August 28, 2015 and assigned to the writer for review. Upon an initial review, the application has been deemed complete as of the date of this e-mail. The ninety (90) day statutory time frame began on that day.

This determination of completeness shall not relieve the permit applicant of the requirement to subsequently submit, in a timely manner, any additional or corrected information deemed necessary for a final permit determination.

Should you have any questions, please contact me at (304) 926-0499 ext. 1219 or reply to this email.

Thank You,

Joe Kessler, PE  
Engineer  
West Virginia Division of Air Quality  
601-57th St., SE  
Charleston, WV 25304  
Phone: (304) 926-0499 x1219  
Fax: (304) 926-0478  
[Joseph.r.kessler@wv.gov](mailto:Joseph.r.kessler@wv.gov)

*Entire Document*  
**NON-CONFIDENTIAL**

**Kessler, Joseph R**

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**From:** Null, Gregory L  
**Sent:** Thursday, September 10, 2015 9:35 AM  
**To:** Kessler, Joseph R  
**Subject:** EQT Gathering LLC (Janus Station)/Permit Application Fee

This is the receipt for payment received from:

EQT Gathering LLC, credit card payment, September 8, 2015, \$4,500  
Janus Station, R13-3269, id no 017-00158

OASIS Deposit CR 1600026894, September 9, 2015

## UC Defaulted Accounts Search Results

Sorry, no records matching your criteria were found.

---

FEIN:

Business name: EQT GATHERING, LLC

Doing business as/Trading

as:

---

Please use your browsers back button to try again.

<a href="#">WorkforceWV</a>	<a href="#">Unemployment Compensation</a>	<a href="#">Offices of the Insurance Commissioner</a>
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# UC Defaulted Accounts Search Results

Sorry, no records matching your criteria were found.

---

FEIN: 202752042

Business name:

Doing business as/Trading as:

---

Please use your browsers back button to try again.

<a href="#"><u>WorkforceWV</u></a>	<a href="#"><u>Unemployment Compensation</u></a>	<a href="#"><u>Offices of the Insurance Commissioner</u></a>
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STATE OF WEST VIRGINIA,  
COUNTY OF DODDRIDGE, TO WIT

I, Virginia Nicholson, Editor of THE  
HERALD RECORD, a weekly newspaper  
published regularly, in Doddridge County,  
West Virginia, Do Hereby Certify  
That the Accompanying Legal Notice  
Entitled:

*Air Quality Permit  
Janus Station  
Left Fork Rd*

was published in said paper for 1

successive weeks beginning with the issue  
of September 8th 2015 and

ending with the issue of  
8 2015 and

that said notice contains 336  
WORD SPACE at 115 cents a word

amounts to the sum of \$ 38.64

FOR FIRST PUBLICATION, SECOND  
PUBLICATION IS 75% OF THE FIRST  
PUBLICATION

\$ 0  
and each publication thereafter  
\$ 38.64 TOTAL

EDITOR  
*Virginia Nicholson*

SWORN TO AND SUBSCRIBED  
BEFORE ME THIS THE 11th DAY  
OF September 2015

NOTARY PUBLIC  
*Pamela R. Stinespring*

**THE HERALD RECORD**  
**Legal Advertisement**

**AIR QUALITY PERMIT NOTICE**  
Notice of Application

Notice is given that EQT Gathering, LLC has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a construction permit (R-13) to construct a new natural gas compressor station (the Janus Station) located off Left Fork Run Road in Doddridge County, West Virginia. The site latitude and longitude coordinates are: 39.25777 N, - 80.80566 W.

The applicant estimates that the potential increase in the following Regulated Air Pollutants associated with the project after the installation of the proposed equipment:  
 Particulate Matter (PM) = 9.1 tpy  
 Sulfur Dioxide (SO2) = 0.7 tpy  
 Volatile Organic Compounds (VOC) = 95.6 tpy  
 Carbon Monoxide (CO) = 59.1 tpy  
 Nitrogen Oxides (NOx) = 127.2 tpy  
 Hazardous Air Pollutants (HAPs) = 24.1 tpy  
 Carbon Dioxide Equivalents (CO2e) = 146,419 tpy

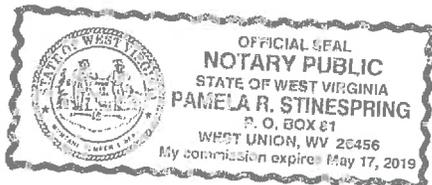
Startup of operation will begin on or about March of 2016. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1250, during normal business hours.

Dated on August 24, 2015.

By: EQT Gathering, LLC  
 Diana Charletta, Senior Vice President -  
 Midstream Operations  
 625 Liberty Avenue Suite 1700  
 Pittsburgh, PA 15222  
 9-8-1xb

Entire Document  
**NON-CONFIDENTIAL**



I.D. No. 017-00158 Reg. 3269  
Company EQT GATHERING  
Facility JANUS Region \_\_\_\_\_  
Initials JM

**Kessler, Joseph R**

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**From:** Adkins, Sandra K  
**Sent:** Wednesday, September 02, 2015 11:30 AM  
**To:** dcharletta@eqt.com; 'abosiljevac@eqt.com'  
**Cc:** McKeone, Beverly D; Kessler, Joseph R  
**Subject:** WV DAQ Permit Application Status for EQT Gathering, LLC; Janus Station

**RE: Application Status  
EQT Gathering, LLC  
Janus Station  
Plant ID No. 017-00158  
Application No. R13-3269**

*Entire Document*  
**NON-CONFIDENTIAL**

Ms. Charletta,

Your application for a construction permit for the Janus Station was received by this Division on August 28, 2015, and was assigned to Joe Kessler. The following items were not included in the initial application submittal:

**Original affidavit for Class I legal advertisement not submitted.**

*\*Please note to use the new phone extension 1250 for future legal ads*

**Application fee AND/OR additional application fees not included:**

*\*\$1,000 Construction, Modification, Relocation or Temporary Permit*

*\*\$1,000 NSPS*

*\*\$2,500 NESHAP*

*These items are necessary for the assigned permit writer to continue the 30-day completeness review.*

Within 30 days, you should receive a letter from Joe stating the status of the permit application and, if complete, given an estimated time frame for the agency's final action on the permit.

Any determination of completeness shall not relieve the permit applicant of the requirement to subsequently submit, in a timely manner, any additional or corrected information deemed necessary for a final permit decision.

For future reference, electronic applications must include signatures.

Should you have any questions, please contact the assigned engineer, Joe Kessler, at 304-926-0499, extension 1219.