



**west virginia department of environmental protection**

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**ENGINEERING EVALUATION / FACT SHEET**

**BACKGROUND INFORMATION**

Application No.: R13-2929B  
Plant ID No.: 017-00035  
Applicant: Mountaineer Midstream Company, LLC  
Facility Name: Midpoint Compressor Station  
Location: New Milton, Doddridge County  
SIC Code: 211111  
Application Type: Class II Administrative Update  
Received Date: May 20, 2014  
Engineer Assigned: Laura Jennings  
Fee Amount: \$1,300.00  
Date Received: May 21, 2014  
Complete Date: July 11, 2014  
Due Date: September 9, 2014  
Applicant Ad Date: May 27, 2014  
Newspaper: *The Herald Record*  
UTM's: Easting: 527.416 km      Northing: 4339.327 km      Zone: 17S  
Description: Installation and operation of a 775 hp Caterpillar C15 diesel fired generator engine used in emergency capacity.

**DESCRIPTION OF PROCESS**

This facility was originally permitted by MarkWest Liberty Midstream & Resources, LLC (MarkWest) in August 2012. Summit Midstream purchased the Midpoint Compressor Station on June 4, 2013, and the permit transfer forms were submitted to WVDEP on July 30, 2013.

The current environmental team has been reviewing the historic permitting files for the WV assets. After reviewing permit R13-2929A, Summit Midstream discovered several discrepancies and respectfully requests that several items be reviewed and corrected.

The emergency generator engine [G-1001] that is currently permitted is not the emergency generator engine that is currently on site. The emergency generator engine on site is a 775 horsepower (hp) Caterpillar C15 diesel fueled engine [G-1002].

The changes listed below are requested by the applicant. DAQ's comments have been added.

- Request: Section 1.0 - Change the emergency generator engine description to a Caterpillar C15 Emergency Generator, the hp to 775, and the control device to "none".
- *DAQ Response: Emergency Generator G-1001 was removed from the emissions table. Emergency generator engine G-1002 (Caterpillar C15) was added to the emissions table in Section 1.0. The 500 kW engine is 670.5 hp and not 775 hp as originally requested.*
- Section 5.1.6: Increase the allowable operating hours for the emergency generator engine from 500 to 4,000 hours per year.
- *DAQ Response: DAQ limits emergency engines to 500 non-emergency hours per year and will not increase the limit to 4,000 hours as requested. Emergency generator engine must meet the definition of an emergency engine per NSPS, Subpart IIII.*
- Sections 5.1.6, 5.1.7, and 5.1.8: All references to the 276 hp John Deere 6068HF285 [G-1001] engine should be changed to reflect the 775 hp Caterpillar C15 engine [G-1002].
- *DAQ Response: DAQ will revise requirements 5.1.6, 5.1.7 and 5.1.8 to reflect the Caterpillar C15 engine and will also revise 5.2.1 to reflect the G-1002 engine.*
- Section 1.0 lists several de minimis source tanks (T06 through T10). These tanks meet the definition of 45CSR13 Table B, item 58 as having less than 10,567 gallons capacity containing petroleum or organic liquids with a vapor pressure of 1.5 psi or less at storage temperature. In aggregate, the tanks emit less than 2 tpy of HAPs and VOCs. Since these tanks meet the definition of de minimis, it is requested that they be removed from Section 1.0.
- *DAQ Response: Equipment listed in Section 1.0 will only be removed if the equipment itself is removed. De minimis sources may not trigger permitting thresholds by themselves, but all emissions units at a stationary source may be listed in the Emission Units Table (Section 1.0) of a permit.*
- Section 5.1.11(b) requires that no petroleum liquid storage tanks shall exceed 39,889 gallons and the maximum true vapor pressure shall not exceed 2.17 psi for petroleum liquid storage tanks greater than 19,812 gallons capacity. The language in Section 5.1.11(b) pertains to 40 CFR 60, Subpart Kb which does not apply to tanks T06 to T12. Further, the condensate/water tanks (T01 to T05) are exempt from NSPS Subpart Kb due to the fact that they are condensate tanks prior to custody transfer and less than 420,000 gallons in capacity [40 CFR 60.110b(d)(4)]. We respectfully request Section 5.1.11(b) be removed from the permit.
- *DAQ Response: DAQ will remove condition 5.1.11(b) for the reasons requested and will renumber existing requirement 5.1.11(c).*

- Summit Midstream would also like to request a determination of the applicability of the testing requirements in Section 10.2 and recordkeeping requirements in Section 10.3. These testing and recordkeeping requirements are for equipment leaks of VOC in the synthetic organic chemicals manufacturing industry which began construction, reconstruction, or modification after January 5, 1981, and on or before November 7, 2006 (40 CFR60 Subpart VV), and for equipment leaks of VOC from onshore natural gas processing plants for which construction, reconstruction, or modification commenced after January 20, 1984 and on or before August 23, 2011 (40 CFR 60, Subpart KKK). This facility is a natural gas compressor station and does not meet the affected facility definition of NSPS VV or NSPS KKK. Summit Midstream believe these requirements have been inappropriately applied to this facility and should be removed from the permit.
- DAQ Response: DAQ will revise the existing leak detection language in 10.2 and 10.3 that references NSPS language and replace it with the current standard VRU closed vent system being used by DAQ in the natural gas industry. Closed vent language is included for all current permits being issued by DAQ for Vapor Recovery Units. The requirement in 10.1.1 is to guarantee a control efficiency of 98% for the VRU system. Because the VRU system is already operational, the existing language for the initial requirements will remain in the permit because those requirements should already have been met and the corresponding recordkeeping for the initial requirements would have been kept in accordance with those requirements. The continuous compliance requirements will be revised.*
- Lastly, Summit Midstream requests that the company name on the permit be changed to "Mountaineer Midstream Company, LLC" from Summit Midstream. Mountaineer Midstream is a subsidiary of Summit Midstream and is the owner and operator of this facility. It is requested that the permit be re-issued under Mountaineer Midstream Company, LLC.
- DAQ Response: The name on the permit will be changed to "Mountaineer Midstream Company, LLC" from Summit Midstream. The name change was previously made in DAQ's database and it matches the certificate issued by the Secretary of State's Office.*

The emissions table below identifies the changes made to the emissions units associated with the permit application.

Emission Units Table:

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type and Date of Change	Control Device
G-1001	G-1001	Caterpillar G3406 Emergency Generator (John Deere 6068HF285)	2012	276 hp	Removal 1/2013	Oxid. Cat.
G-1002	G-1002	Caterpillar C15 Emergency Generator	2013	670.5 hp (500 kW)	New 1/2013	None

SITE INSPECTION

This permit application is not for a new facility and is known to the DAQ. The site was inspected by Doug Hammell of the Compliance and Enforcement Group on January 16, 2014 and they were found to be in compliance at the time of the inspection. There is no site inspection planned as part of this permitting action.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions for the Caterpillar C15 emergency generator (G-1002) were calculated based on 500 non-emergency operating hours per year. Manufacturer's emission factors were used for NO<sub>x</sub>, CO, VOC, and PM. AP-42 factors were used for SO<sub>2</sub>, CO<sub>2</sub>, and Formaldehyde. Emission calculations were reviewed and verified by the writer. The fuel is ultra low sulfur diesel.

Emissions Summary Table:

Emission Point ID	Control Device	Regulated Pollutant	Maximum Potential Emissions	
			lb/hr	tpy
G-1002	None	NO <sub>x</sub>	3.84	0.96
		CO	0.16	0.04
		VOC	0.04	0.01
		PM <sub>10</sub>	0.11	0.03
		PM <sub>Total</sub>	0.11	0.03
		SO <sub>2</sub>	1.37	0.34
		CO <sub>2e</sub>	771	193
		Formaldehyde	<0.01	<0.01

The new facility PTE is provided in the table below and includes the existing six Caterpillar G3608LE compressor engines [CM1001-1006], the Caterpillar G3516LE [GE-1] generator engine, the Caterpillar C15 emergency generator engine [G-1002], the dehydration unit [DH-001], the flare [FL-991], the dehydration unit reboiler [RB-001], and the storage tank emissions [T01-T05].

The new facility PTE was calculated by the writer using the PTE that was provided in the engineering evaluation for permit R13-2929, adding the emissions from the generator [GE-1] from R13-2929A, and incorporated the changes in this application.

The facility PTE is shown in the following table.

Facility PTE:

Regulated Pollutant	Maximum Potential Emissions	
	lb/hr	tpy
NO <sub>x</sub>	22.66	83.38
CO	8.17	35.12
VOC	17.04	67.65
SO <sub>2</sub>	1.44	0.64
PM <sub>10</sub>	1.23	4.95
Formaldehyde	1.38	6.05
Benzene	.08	.36
Ethylbenzene	0.01	0.02
Toluene	.17	.74
Xylenes	0.09	0.39
n-Hexane	0.48	1.77
CO <sub>2</sub> e	n/a	51,330
Total HAPs	3.63	15.61

REGULATORY APPLICABILITY

The regulations were reviewed only for the changes requested in the permit application.

*Applicable State Regulations:*

45CSR13 (PERMITS FOR CONSTRUCTION, MODIFICATION, RELOCATION AND OPERATION OF STATIONARY SOURCES OF AIR POLLUTANTS, NOTIFICATION REQUIREMENTS, ADMINISTRATIVE UPDATES, TEMPORARY PERMITS, GENERAL PERMITS, PERMISSION TO COMMENCE CONSTRUCTION, AND PROCEDURES FOR EVALUATION)

The application meets the definition of a Class II Administrative update because they are below the modification thresholds. The applicant has demonstrated compliance by submitting a complete permit application, submitted the Class II administrative update fee, and has published a Class I legal advertisement in *The Herald Record*.

45CSR16 (STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES PURSUANT TO 40 CFR PART 60)

The facility is subject to 45CSR16 because they are subject to NSPS, Subpart IIII.

#### 45CSR22 (AIR QUALITY MANAGEMENT FEE PROGRAM)

The applicant has paid the \$1,000 NSPS fee as required by section 3.4.b of this rule because they are subject to NSPS requirements as described in this regulatory review section. The applicant is required to keep current their Certificate to Operate.

#### 45CSR34 (EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS)

The facility is subject to 45CSR34 because they are subject to 40 CFR 63, Subpart ZZZZ.

#### *Applicable Federal Regulations:*

#### NSPS, Subpart III (STANDARDS OF PERFORMANCE FOR STATIONARY COMPRESSION IGNITION INTERNAL COMBUSTION ENGINES)

The emergency generator engine [G-1002] is a stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is 2007 or later and construction was commenced after July 11, 2005 and was manufactured after April 1, 2006. It is therefore subject to this subpart.

*The emergency generator engine meets the definition of an emergency engine as defined in §60.4219 and provided below for reference.*

*Emergency stationary internal combustion engine* means any stationary reciprocating internal combustion engine that meets all of the criteria in paragraphs (1) through (3) of this definition. All emergency stationary ICE must comply with the requirements specified in §60.4211(f) in order to be considered emergency stationary ICE. If the engine does not comply with the requirements specified in §60.4211(f), then it is not considered to be an emergency stationary ICE under this subpart.

(1) The stationary ICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, etc.

(2) The stationary ICE is operated under limited circumstances for situations not included in paragraph (1) of this definition, as specified in §60.4211(f).

(3) The stationary ICE operates as part of a financial arrangement with another entity in situations not included in paragraph (1) of this definition only as allowed in §60.4211(f)(2)(ii) or (iii) and §60.4211(f)(3)(I).

Requirements for 2007 model year and later emergency engines with <30 l/cyl, constructed after July 11, 2005 and manufactured after April 1, 2006:

*Emission Standards: 60.4205(b), 60.4202:*

60.4205(b) Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in §60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE.

60.4202(c) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder that are not fire pump engines to the certification emission standards for new marine CI engines in 40 CFR 94.8, as applicable, for all pollutants, for the same displacement and maximum engine power.

*Fuel Requirements: 60.4207(a), (b), (e):*

60.4207(a) Beginning October 1, 2007, owners and operators of stationary CI ICE subject to this subpart that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(a).

(b) Beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must purchase diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel.

(e) Stationary CI ICE that have a national security exemption under §60.4200(d) are also exempt from the fuel requirements in this section.

The applicant has demonstrated compliance with these requirements by stating in the application that the engine is certified according to 40CFR60, Subpart IIII and the fuel type is Ultra Low Sulfur Diesel. The manufacturer data provided in the application further states that the engine is an EPA approved Tier 4 Cat C15 heavy duty diesel engine. Other requirements will be demonstrated by demonstrating compliance with the permit requirements.

#### 40 CFR63, Subpart ZZZZ (NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES)

The emergency generator engine [G-1002] is classified as new RICE at an area source because it was constructed after June 12, 2006, as that term is defined in MACT, Subpart ZZZZ and thus is subject to this subpart. According to § 63.6590(c)(1), new spark ignited RICE must meet the requirements of this rule by complying with NSPS, Subpart IIII.

*Non-applicability determinations:*

45CSR30 (REQUIREMENTS FOR OPERATING PERMITS)

The facility does not meet the definition of a major source per § 2.26 because it does not have the potential to emit in the aggregate, 10 tpy or more of any hazardous air pollutant or more than 25 tpy of any combination of hazardous air pollutants, or 100 tpy or more of any air pollutant subject to regulation.

Although the facility is subject to NSPS, Subpart IIII and NESHAP, Subpart ZZZZ, they are exempt from the obligation to obtain a permit because they are not otherwise required to do so.

NSPS, Subpart OOOO (STANDARDS OF PERFORMANCE FOR CRUDE OIL AND NATURAL GAS PRODUCTION, TRANSMISSION AND DISTRIBUTION)

EPA published its new source performance standards (NSPS) and air toxic rules for the oil and gas sector on August 16, 2012 and published their amendments on September 23, 2013.

40CFR60, Subpart OOOO establishes emission standards and compliance schedules for the control of volatile organic compounds (VOC) and sulfur dioxide (SO<sub>2</sub>) emissions from affected facilities that commence construction, modification, or reconstruction after August 23, 2011. The affected sources which commence construction, modification or reconstruction after August 23, 2011 are subject to the applicable provisions of this subpart as described below:

- c. Each reciprocating compressor affected facility, which is a single reciprocating compressor located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment. A reciprocating compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.

The emergency generator engine [G-1001] is not a reciprocating compressor engine and therefore, is not an affected facility under this subpart.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

There are no new hazardous air pollutants associated with this application.

AIR QUALITY IMPACT ANALYSIS

The proposed changes in this permit application do not meet the definition of a major modification according to the definitions in 45CSR14 and 45CSR19; therefore, modeling

is not required for this permit application.

### MONITORING OF OPERATIONS

The following monitoring, recordkeeping, and reporting requirements are associated with this Class II Administrative Update Permit Application.

- Removed the existing leak detection requirements for the VRU system as requested in the application and revised the requirements to be consistent with existing DAQ closed vent system requirements within the natural gas industry in West Virginia.
- Added the NSPS, Subpart IIII monitoring, recordkeeping, and notification requirements for emergency engines that apply to the emergency generator engine [G-1002].

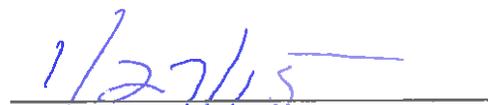
### CHANGES TO PERMIT R13-2929A

- General changes to permit to reflect current revision, etc.
- 3.5.3 - updated the correspondence address to the US EPA.
- Changes requested & discussed in the process description of this evaluation.
- 5.1.1. - added "spark ignition" to the requirement for RICE to burn only natural gas.
- Closed Vent System Requirements for the VRU System as discussed in the process description section of this evaluation - added 10.1.3; changed title of 10.2 from Testing to Monitoring Requirements; deleted existing 10.2.2; added 10.2.2 and 10.2.3; revised 10.3.1; and revised 10.4.1.
- Added section 11.0 for the NSPS, IIII requirements.

### RECOMMENDATION TO DIRECTOR

It is recommended that Class II Administrative Update Permit R13-2929B be granted to Mountaineer Midstream Company, LLC for the Midpoint Compressor Station located in New Milton, Doddridge County, WV. Based on the information provided in the permit application including all supplemental information received, the company should be in compliance with applicable state and federal regulations.

  
\_\_\_\_\_  
Laura M. Jennings  
Permit Engineer

  
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Date

Fact Sheet R13-2929B  
Mountaineer Midstream Company, LLC  
Midpoint Compressor Station