

Fact Sheet



For Final Minor Modification Permitting Action Under 45CSR30 and Title V of the Clean Air Act

This Fact Sheet serves to address the changes specific to this Minor Modification, and shall be considered a supplement to the Fact Sheet corresponding with the Title V operating permit issued on July 16, 2018.

Permit Number: **R30-01700034-2018**

Application Received: **July 10, 2018**

Plant Identification Number: **017-00034**

Permittee: **MarkWest Liberty Midstream & Resources, L.L.C.**

Facility Name: **Sherwood Gas Plant**

Mailing Address: **1515 Arapahoe Street, Tower 1, Suite 1600; Denver, CO 80202-2137**

Permit Action Number: *MM01* Revised: *May 7, 2019*

Physical Location:	West Union, Doddridge County, West Virginia
UTM Coordinates:	526.921 km Easting • 4,346.885 km Northing • Zone 17
Directions:	From Smithburg take US-50 east and go 2.8 miles, turn right at Co. Route 50/35 and go 0.1 miles, take the first right onto Blacklick Rd/Co Route 15/Sherwood-Greenbriar Rd and continue 0.4 miles. The site will be 0.5 miles west of Co Route 15.

Facility Description

The Sherwood Gas Plant (SIC Code: 1311) is a processing plant and compressor station for gas wells throughout West Virginia. The natural gas inlet stream from surrounding area wells enters the facility through an inlet separator prior to passing through the tri-ethylene glycol (TEG) dehydration unit, which is designed to remove unwanted liquids from the gas stream. The rich TEG is routed to the reboiler where water and organic impurities are driven from the TEG as the reboiler is heated. After passing through the TEG dehydration unit, the dry natural gas is cooled through a cryogenic plant with mechanical refrigeration, which serves to remove propane and heavier hydrocarbons in the gas stream. At this point the gas is ready for compression and passes through one of the natural gas fired compressor engines prior to entering the downstream pipeline to a distribution or processing company. Liquids are transported via pipeline to another facility. Liquid storage tanks at the gas plant are pressurized with no emissions to the atmosphere under normal conditions. Storage tanks at the compressor station are atmospheric tanks with

emissions controlled with a vapor recovery unit (VRU) rated at 98% recovery efficiency. Under normal operating conditions electric pumps are utilized to transfer the removed saltwater and hydrocarbons to another site for further processing. In emergency conditions truck loading may occur; however, the loading is done in a closed loop system into pressurized vehicles so any emissions would be de minimis. An emergency flare burns vapors released from the reboiler, pressure relief valves in the demethanizer, and refrigeration plant in the event of an emergency.

The purpose of this modification is to add four heaters, remove a generator, add component counts to fugitive emissions, update flare throughput, and to change truck loading scenarios. These changes were approved under R13-2914H.

Emissions Summary

Change in Plantwide Emissions Summary [Tons per Year]	
Regulated Pollutants	Change in Potential Emissions
Carbon Monoxide (CO)	23.34
Nitrogen Oxides (NO _x)	17.35
Particulate Matter (PM _{2.5})	3.02
Particulate Matter (PM ₁₀)	3.02
Total Particulate Matter (TSP)	3.02
Sulfur Dioxide (SO ₂)	0.16
Volatile Organic Compounds (VOC)	-7.02
<i>PM₁₀ is a component of TSP.</i>	
Hazardous Air Pollutants	Change in Potential Emissions
Total HAPs	0.01

Title V Program Applicability Basis

With the proposed changes associated with this modification, this facility maintains the potential to emit 161.44 TPY of CO and 151.24 TPY of NO_x. Due to this facility's potential to emit over 100 tons per year of criteria pollutant, MarkWest Liberty Midstream & Resources, L.L.C. is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

The modification to this facility has been found to be subject to the following applicable rules:

Federal and State:	45CSR13	NSR Permits.
	45CSR16	Standards of Performance for New Stationary Sources Pursuant to 40 CFR Part 60.
	45CSR30	Operating permit requirement.

40 C.F.R. Part 60, Subpart OOOOa Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution (After 9/18/2015).

Each State and Federally-enforceable condition of the Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR34 and 45CSR30.

Active Permits/Consent Orders

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit (if any)
R13-2914H	February 21, 2019	

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table," which may be downloaded from DAQ's website.

Determinations and Justifications

Equipment Changes

The following equipment was removed.

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
G-1	G-1	Generac MMG80 Emergency Generator: CI	2012	102 hp	None

The following equipment was added.

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
Sherwood XII Extraction Train					
H-12711	H-12711	Mole Sieve Regeneration Heater	2019	10.62 MMBTU/hr	None
Sherwood XIII Extraction Train					
H-13711	H-13711	Mole Sieve Regeneration Heater	2019	10.62 MMBTU/hr	None
DeEthanizer III Unit					
H-768	H-768	DeEthanizer III HMO Heater	2019	65.4 MMBTU/hr	None

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
H-775	H-775	DeEthanizer III Regeneration Heater	2019	5.94 MMBTU/hr	None

Additional Permit Changes

The following additional changes were made to this permit with this modification:

- The installation date for the Fugitive Leaks in the Emission Units table was updated.
- The citation in condition 3.1.9., which addresses operation and maintenance of air pollution control equipment, was changed from “45CSR§13-5.11” to “45CSR§13-5.10”.
- The address for submission of reports to EPA Region III in condition 3.5.3. has been updated.
- H-12711 and H-13711 were added to the non-applicability determination for 40 C.F.R. 60, Subpart Dc in condition 3.7.2.
- Conditions 5.1.1.c. and d. were revised to match current language in R13-2914H. These changes included removing old language and adding mention of the plant flare.
- The new heaters were added to the table in condition 6.1.1., and the Total Maximum Design Heat Input was updated.
- The NO_x, CO, and VOC emission limits for the heaters in condition 6.1.3. was updated to account for the new heaters.
- Condition 7.1.2. was revised to include references to the plant flare.
- Conditions 8.1.1.a., 8.1.4., 8.1.5., 8.1.6., and 8.5.2. were updated to list the new Extraction Trains and DeEthanizer Unit.
- Condition 8.1.1.c. was revised to mention using an “OGI” instead of an “OGII”.
- The maximum flow rate to the flare system in condition 8.1.3.g. was updated.
- The total emissions for the flare in condition 8.1.3.h. was updated.
- Condition 8.5.4. was removed since this condition is no longer in R13-2914H.
- Condition 9.1.1., which listed Emission limits for Generator G-1 was removed.
- Conditions 9.1.3. and 9.4.1. was revised to remove references of Generator G-1.
- The TCEQ 28VHP Program Requirements in Appendix A were revised. Cumulative daily emissions calculations/estimates were removed from section I. Sections K (alternative monitoring frequency schedules) and L (compliance with other standards) were removed.

Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following:

None

Request for Variances or Alternatives

None.

Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period

Beginning Date: N/A
 Ending Date: N/A

Point of Contact

All written comments should be addressed to the following individual and office:

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West Virginia Department of Environmental Protection
Division of Air Quality
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Charleston, WV 25304
Phone: 304/926-0499 ext. 1209 • Fax: 304/926-0478
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Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Response to Comments (Statement of Basis)

Not applicable.