



west virginia department of environmental protection

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Jim Justice, Governor
Austin Caperton, Cabinet Secretary
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Evaluation Memo

Application Number: R13-2914E
Facility ID Number: 017-00034
Name of Applicant: MarkWest Liberty Midstream & Resources, LLC
Name of Facility: Sherwood Gas Plant
Latitude/Longitude: 39.27146/-80.68710
Application Type: Class II Administrative Update
Submission Date: February 16, 2017
Applicant Ad Date: February 13, 2017
Applicant Ad Newspaper: *The Herald Record*
Complete Date: February 16, 2017
Due Date: **April 17, 2017**
Engineer: Joe Kessler

Description of Proposed Changes

On February 16, 2016, MarkWest Liberty Midstream & Resources L.L.C. (MarkWest) submitted a request to administratively update Permit R13-2914D to increase the natural gas-fired Hot Oil Heater's (H-8712) maximum design heat input (MDHI) from 6.60 to 7.20 mmBtu/hr. No other physical or operation changes to the facility was proposed as part of this permitting action.

Estimate of Emissions

The increase in the facility-wide potential-to-emit (PTE) as a result of the change proposed above (an increase in MDHI of H-8712 from 6.60 to 7.20 mm Btu/hr) is given in the following table (a summary of the facility-wide post-modification PTE is given in Attachment N of the permit application):

Table 1: Change in Facility-Wide PTE

Pollutant	Emission Factor (lb/mmBtu)	Pre-Modification		Post-Modification		Change	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
CO	0.04	0.26	1.16	0.29	1.26	0.02	0.11
NOx	0.04	0.26	1.16	0.29	1.26	0.02	0.11
PM _{2.5} /PM ₁₀ /PM ⁽¹⁾	0.013	0.09	0.38	0.09	0.41	0.01	0.03
SO ₂	0.0006	0.004	0.017	0.004	0.019	0.000	0.002
VOC	0.019	0.13	0.55	0.14	0.60	0.01	0.05

(1) Includes condensables.

The emission factors given in the above table, with the exception of SO₂, were provided by the heater vendor. The SO₂ emission factor was obtained from AP-42, Section 1.4 (AP-42 is a database of emission factors maintained by EPA). Annual emissions are based on the unit operating 8,760 hours/year.

Regulatory Applicability

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

The Hot Oil Heater (H-8712) has been determined to meet the definition of a “fuel burning unit” under 45CSR2 and is, therefore, subject to the applicable requirements therein. However, pursuant to the exemption given under §45-2-11, as the MDHI of Hot Oil Heater is less than 10 mmBtu/hr, the unit is 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 Hot Oil Heater is subject to an opacity limit of 10%. Proper maintenance and operation of the unit (and the use of natural gas as fuel) should keep the opacity of the unit well below 10% during normal operations.

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 changes to the Sherwood Gas Plant will increase the PTE of a regulated pollutant (see Table 1 above). However, the increase in PTE is below six (6) lbs/hour and ten (10) TPY of any regulated pollutant that would, pursuant to §45-13-2.17, define the change as a “modification” under 45CSR13. Therefore, pursuant to §45-13-4.2(b)(1), MarkWest is requesting a Class II Administrative Update to make a “[c]hange in a permit condition as necessary to allow changes in operating parameters, emission points, control equipment or any other aspect of a source which results in an increase . . . of any existing regulated air pollutant . . . “

As required under §45-13-8.3 (“Notice Level A”), MarkWest placed a Class I legal advertisement in a “newspaper of *general circulation* in the area where the source is . . . located.” The ad ran on February 13, 2017 in the *Herald Record* and the publication for this legal advertisement was verified on March 15, 2017.


Changes to Permit R13-2914D

Substantive changes to permit R13-2914C are limited to the following:

- Increasing the MDHI of the Hot Oil Heater in Emission Units Table 1.0.;
- Increasing the MDHI and the annual heat input limit of the Hot Oil Heater in Table 6.1.1.; and
- Increasing the emission limits under 6.1.3. to account for the larger Hot Oil Heater.

Recommendation

The information provided in the permit application indicates that compliance with all applicable state and federal air quality regulations will continue to be achieved. Therefore, I recommend the issuance of the Class II Administrative Update R13-2914E to MarkWest Liberty Midstream & Resources, LLC for the changes outlined above.



Joe Kessler, PE
Engineer

3/16/17

Date