



west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: R13-2828C
Plant ID No.: 003-00137
Applicant: Allmine Paving, LLC (Allmine)
Facility Name: Inwood Facility
Location: Inwood, Berkeley County
NAICS Code: 324122
Application Type: Modification
Received Date: October 20, 2011
Engineer Assigned: Jerry Williams II, P.E.
Fee Amount: \$1,000.00
Date Received: October 20, 2011
Complete Date: November 16, 2011
Due Date: February 14, 2012
Applicant Ad Date: October 6, 2011
Newspaper: *The Journal* (Martinsburg)
UTM's: Easting: 757.59 km Northing: 4365.70 km Zone: 17
Description: Installation and operation of a 21 MMBTU/hr natural gas fired boiler (14S). The existing boiler (7S) will be used for supplementary and backup purposes.

DESCRIPTION OF PROCESS

The changes requested in Permit Application R13-2828C include the installation of a new 21 MMBTU/hr natural gas fired boiler (Boiler No. 2). Operation of Boiler No. 1 (7S), when Boiler No. 2 (14S) is also operating, will be limited to 1,750 hours per year for monthly start-up checks, testing, and supplementary periods of co-operation. There will be no hourly limit for the operation of Boiler No. 1 (7S) when it is operating as the sole replacement back-up to Boiler No. 2 (14S). The boilers will be used to provide process steam to unload railcars, heat asphalt transfer lines, and used in the fire suppression system at the facility.

In addition, Allmine has proposed that Emission Unit 10S (storage tanks) be used to also store Raw Material Asphalt Flux in addition to used motor oil. The Raw Material Asphalt Flux is the same material that is stored in Emission Unit 1S. Emission Unit 1S is regulated as an

asphalt tank under 40CFR60 Subpart UU (Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture). The current permit addresses these requirements. Emission Unit 10S would also be subject to these requirements when asphalt is stored.

SITE INSPECTION

A site inspection was conducted on October 26, 2011 by Joseph Kreger of the EPRO. The facility was found to be operating in compliance at that time.

Directions as given in the permit application are as follows:

Proceed east on Tabler Station Road (County Road 32) at intersection with Route 81. The facility is located at the northeast corner of Development Drive and Tabler Station Road (County Road 32).

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions associated with this modification application consist of the combustion emissions from the two (2) natural gas fired boilers (Emission Point ID# 4E, 7E). Emissions were estimated using industry emission factors and natural gas usage. In regards to the emissions associated with Allmine's request to store Raw Material Asphalt Flux in addition to used motor oil in Emission Unit 10S (storage tank), there will be no emissions increase. This is because when raw material asphalt flux will be stored, it will be regulated as an asphalt tank under 40CFR60 Subpart UU (Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture) and its emissions will be controlled through the Direct Fired Thermal Oxidizers (DFTOs).

Allmine's Inwood Facility modified emission units are summarized in the following table:

Emission Unit ID	Emission Point ID	Emission Unit Description	Design Capacity	Control Device
7S	4E	Natural Gas Fired Boiler No. 1	10.5 MMBTU/hr	Low NO _x technology
14S	7E	Natural Gas Fired Boiler No. 2	21 MMBTU/hr	Low NO _x technology

Maximum controlled point source emissions from the revised changes were calculated by Allmine and checked for accuracy by the writer and only the changes associated with this modification application are summarized in the table below.

Emission Point ID	Emission Unit ID	Description	Pollutant	Maximum Controlled Emission Rate	
				Hourly (lb/hr)	Annual (ton/year)
4E	7S	Natural Gas Fired Boiler No. 1	Particulate Matter-10	0.08	0.35
			Sulfur Dioxide	0.01	0.01
			Carbon Monoxide	0.86	3.77
			Nitrogen Oxides	0.51	2.30
			Volatile Organic Compounds	0.06	0.27
			Total HAPs	0.02	0.09
7E	14S	Natural Gas Fired Boiler No. 2	Particulate Matter-10	0.16	0.69
			Sulfur Dioxide	0.01	0.05
			Carbon Monoxide	1.73	7.60
			Nitrogen Oxides	1.03	4.50
			Volatile Organic Compounds	0.11	0.50
			Total HAPs	0.04	0.17

The following table represents the total facility emission increase:

Pollutant	Maximum Annual Facility Wide Emissions Before R13-2828C (tons/year)	Maximum Annual Facility Wide Emissions After R13-2828C (tons/year)	Net Change (tons/year)
Nitrogen Oxides	11.21	13.91	2.70
Carbon Monoxide	92.84	97.38	4.54
Volatile Organic Compounds	10.22	10.52	0.30
Particulate Matter	55.70	56.11	0.41
Sulfur Dioxide	99.07	99.10	0.03
Total HAPs	1.89	1.99	0.10

Annual emissions were represented using a worst case scenario when both boilers (Emission Point ID# 4E, 7E) are operating simultaneously (Boiler 1 - 1,750 hours per year, and Boiler 2 – 8,760 hours per year).

REGULATORY APPLICABILITY

Unless otherwise stated WVDEP DAQ did not determine whether the permittee is subject to an area source air toxics standard requiring Generally Achievable Control Technology (GACT) promulgated after January 1, 2007 pursuant to 40 CFR 63, including the area source air toxics provisions of 40 CFR 63, Subpart ZZZZ, and 40 CFR 63 Subpart AAAAAA.

The following rules apply to the changes requested in this modification application:

45CSR2 (Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers)

Allmine would be subject to the opacity requirements in 45CSR2, which is 10% opacity based on a six minute block average. Allmine would also be subject to the weight emission standard for particulate matter under 45CSR2. According to 45CSR2 Section 4.1.b, for Type 'b' fuel burning units, the product of 0.09 and the total design heat inputs for such units in million B.T.U.'s per hour. Therefore, for the 10.5 MMBTU/hr natural gas fired boiler (7S), it could not exceed 0.94 lb/hr of particulate matter. For the 21 MMBTU/hr natural gas fired boiler (14S), it could not exceed 1.89 lb/hr of particulate matter. Each unit would meet this limit. Allmine shall monitor compliance with the opacity limit as set forth in an approved monitoring plan for each emission unit. Such monitoring plan(s) shall include, but not be limited to, one or more of the following: continuous measurement of emissions, monitoring of emission control equipment, periodic parametric monitoring, or such other monitoring as approved by the Director.

45CSR4 (To Prevent and Control the Discharge of Air Pollutants into the Open Air which Causes or Contributes to an Objectionable Odor or Odors)

45CSR4 states that an objectionable odor is an odor that is deemed objectionable when in the opinion of a duly authorized representative of the Air Pollution Control Commission (Division of Air Quality), based upon their investigations and complaints, such odor is objectionable.

45CSR10 (To Prevent and Control Air Pollution from the Emission of Sulfur Oxides)

Allmine will meet the weight emission standard for sulfur dioxide set forth in 45CSR10 which is 3.1 lb/MMBtu. For the 10.5 MMBTU/hr natural gas fired boiler (7S), the weight emission standard for a Type 'b' fuel burning unit would be 32.55 lb/hr for the natural gas fired boiler. The hourly sulfur dioxide rate set forth in Permit Application R13-2828B is 0.01 lb/hr for the natural gas fired boiler. For the 21 MMBTU/hr natural gas fired boiler (14S), the weight emission standard for a Type 'b' fuel burning unit would be 65.1 lb/hr for the natural gas fired boiler. The hourly sulfur dioxide rate set forth in Permit Application R13-2828C is 0.01 lb/hr for the natural gas fired boiler. Allmine will demonstrate compliance with this requirement by monitoring the amount of natural gas consumed by the boilers.

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)

45CSR13 applies to this source due to the fact that Allmine is seeking synthetic minor limitations to remain below major stationary source thresholds for sulfur dioxide emissions. Allmine has published the required Class I legal advertisement notifying the public of their permit application, and paid the appropriate application fee (modification). Allmine will be required to go through Notice Level C procedures which include publishing a commercial display advertisement and installing a sign at their facility entrance notifying the public of this permit application.

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

45CSR16 applies to this source by reference of 40CFR60, Subpart Dc, 40CFR60, Subpart Kb, 40CFR60, Subpart UU, and 40CFR60, Subpart JJJJ. Allmine is subject to the recordkeeping, monitoring, and testing required by 40CFR60, Subpart Dc, 40CFR60 Subpart Kb, 40CFR60 Subpart UU, and 40CFR60 Subpart JJJJ.

45CSR30 (Requirements for Operating Permits)

This permit does not affect 45CSR30 applicability. The source remains a synthetic minor and is classified as a deferred source from 45CSR30 permitting requirements.

40CFR60 Subpart Dc (Standards of Performance for Small Industrial/Commercial/Institutional Steam Generating Units)

Allmine is subject to all applicable notifications, recordkeeping, and reporting requirements present in 40CFR60 Subpart Dc. 40CFR60 Subpart Dc applies to this source due to the maximum heat input of Boiler 7S (10.5 MMBTU/hr) and Boiler 14S (21 MMBTU/hr). In accordance with 40CFR60 Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, the applicant shall conduct compliance testing of Boiler 14S within 180 days after initial startup.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

There will be small amounts of various non-criteria regulated pollutants emitted from the facility. However, due to the concentrations emitted, detailed toxicological information is not included in this evaluation.

AIR QUALITY IMPACT ANALYSIS

Modeling was not required of this source due to the fact that the facility is not subject to 45CSR14 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollutants) as seen in the following table:

Pollutant	PSD (45CSR14) Threshold (tpy)	NANSR (45CSR19) Threshold (tpy)	Inwood PTE (tpy)	45CSR14 or 45CSR19 Review Required?
Carbon Monoxide	250	NA	97.38	No
Nitrogen Oxides	250	100	13.91	No
Sulfur Dioxide	250	100	99.1	No
Particulate Matter 10	250	NA	56.11	No
Ozone (VOC)	250	NA	10.52	No

MONITORING OF OPERATIONS

Allmine will be required to perform the following monitoring, recordkeeping, reporting, and testing (MRRT) associated with this modification application:

1. Perform all applicable MRRT for Boiler 7S and Boiler 14S subject to 40CFR60 Subpart Dc.
2. Maintain records of the amount of natural gas consumed in the two (2) boilers (7S, 14S).
3. Maintain the corresponding records specified by the on-going monitoring requirements of and testing requirements of the permit.
4. Maintain records of the visible emission opacity tests conducted per the permit.
5. The records shall be maintained on site by Allmine for a period of five (5) years.

CHANGES TO PERMIT R13-2828B

Allmine made several proposed changes in Permit Application R13-2828C. The following is a summary of the changes to the current permit:

1. Installation of one (1) additional 21 MMBTU/hr natural gas fired boiler (14S) and all applicable MRRT. These changes can be found in Section 8 of the permit.
2. Addition of a maximum annual hourly operation limitation for when both boilers (7S, 14S) will operate simultaneously. The existing boiler (7S) will be used for supplementary and backup purposes. This change is represented in Section 8.1.7 of the permit.
3. The Emission Unit data table will be modified to allow Emission Unit 10S to store raw material asphalt flux as well as used motor oil. This change can be found in Section 1 of the permit.

RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates Allmine's Inwood Facility meets all the requirements of applicable regulations. Therefore, impact on the surrounding area should be minimized and it is recommended that the Berkeley County location should be granted a 45CSR13 modification permit for their facility.

Jerry Williams, P.E.
Engineer

Date