



west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: G10-D157
Plant ID No.: 039-00055
Applicant: Jacks Branch Coal Company
Facility Name: Marmet Dock Facility
Location: Marmet, Kanawha County, WV
SIC Codes: 1221 (Bituminous Coal & Lignite - Surface)
NAICS Codes: 212111 (Bituminous Coal and Lignite Surface Mining)
Application Type: Modification
Received Date: October 22, 2014
Engineer Assigned: Dan Roberts
Fee Amount: \$1,500
Date Received: October 23, 2014
Complete Date: January 29, 2015
Applicant's Ad Date: October 30, 2014
Newspaper: *The Daily Mail*
UTM Coordinates: Easting: 451.5 km Northing: 4232.1 km Zone: 17
Lat/Lon Coordinates: Latitude: 38.235592 Longitude: -81.554183 NAD83
Description: Modification to do the following: convert from a Rule 13 individual permit to a G10-D General Permit; add bin BS-05, crusher CR-04 and belt conveyor BC-07 on the river side of the facility; delete various pieces of equipment including the two synfuel plants and their associated equipment and tanks; and eliminate the PM₁₀ monitoring requirements.

BACKGROUND

Jacks Branch Coal Company is a subsidiary of Alpha Natural Resources. Jacks Branch Coal Company owns and operates the existing Marmet Dock Facility under current permits R13-1655D and R13-2469C. Permit R13-1655D was approved on March 4, 2003 and permitted the operation

of the coal processing and barge loadout facility and synfuel plant. Permit R13-2469C was approved on November 24, 2004 and permitted the operation of a second synfuel plant.

From the application, "With this application, Jacks Branch Coal Company is requesting relief from the PM₁₀ monitoring requirement specified in permit R13-1655D. The previously permitted barge off-load facility has not been constructed, synfuel production has ceased, and the downturn in the coal market has reduced the amount of coal received and shipped at the facility. Based on sampling data on file at the Division of Air Quality, the facility has never violated the NAAQS standards and has established sufficient evidence to show that the dock emissions are classified as insignificant. With relief from the PM₁₀ monitoring requirement, the facility is eligible for the General Permit Program."

In 2006, the EPA established the current 24-hour PM₁₀ NAAQS 150 µg/m³. The writer reviewed the PM₁₀ monitoring reports submitted by the company all the way back through 2008. However, the information for three months of October, November and December of 2010 were not found in the files. Therefore, the total number of monthly reports reviewed was 81, with five 24-hour readings taken each month, for a total of 405 readings. The highest reading in this 6 ½ year period was 79.2463 µg/m³. There were only five individual readings that exceed 70.0 µg/m³ during this time. The average annual PM₁₀ weight for each calendar year were as follows: thru June of 2014 - 23.2551 µg/m³, 2013 - 23.0028 µg/m³, 2012 - 26.7780 µg/m³, 2011 - 25.7408 µg/m³, thru September of 2010 - 27.2867 µg/m³, 2009 - 23.0024 µg/m³ and 2008 - 30.1407 µg/m³.

The company is also eliminating various pieces of equipment including the two synfuel plants and their associated equipment and tanks and a barge off loading facility that was previously permitted, but never constructed. On November 5, 2014, all of this information was discussed with Bev McKeone, NSR Permitting Manager, and it was agreed that the company could be relieved of the previous PM₁₀ monitoring requirements at this time, thus making the facility eligible for a G10-D General Permit.

DESCRIPTION OF PROCESS

The Marmet Dock Facility is located on Route 61 just outside of Marmet, WV. There are no residents, public parks, schools or senior citizen centers located within 300 feet of the facility.

Clean coal is delivered by truck to BS-01(PW) @ TP-02(LO-PW) or stockpile OS-01(SW-WS) located on the interstate side of the facility @ TP-01(UL-MDH); transferred by front-end loader to bin BS-01(PW) @ TP-02(LO-PW); reclaims under bin to belt BC-01(PE) @ TP-03(FE); to screen SS-01(PW) @ TP-04(TC-PW).

The river side of the facility has a series of bins and belts that transfer coal to the screen/crusher building. Clean coal is delivered by truck to stockpile OS-02(SW-WS) @ TP-05(UL-MDH); transferred by front-end loader to BS-02(PW) @ TP-06(LO-PW); reclaims to belt BC-02(PE) @ TP-07(TC-FE); transfers to belt BC-04(PE) @ TP-08(TC-FE). Coal is also transferred by front-end loader to BS-03(PW) @ TP-09(LO-PW); reclaims to belt BC-03(PE) @ TP-10(TC-FE);

and transfers to belt BC-04(PE) @ TP-11(TC-FE). Belt BC-04 transfers to screen SS-01 @ TP-12(TC-PW).

Coal from OS-02 is transferred by front-end loader to bin BS-04(PW) @ TP-13(LO-PW); reclaims to belt BC-05(PE) @ TP-14(TC-FE) and transfers to belt BC-06 @ TP-15(TC-FE).

Coal from OS-02 is transferred by front-end loader to proposed bin BS-05(PW) @ TP-16(LO-PW); to proposed breaker CR-04(FW) @ TP-17(TC-FE); to belt BC-07(PE) @ TP-18(TC-FW); to belt BC-06(PE) @ TP-19(TC-FE). Belt BC-06 transfers to screen SS-01 @ TP-20(TC-PW).

Screen SS-01 can transfer directly to the loadout belt BC-08(PE) @ TP-21(TC-FW) or it can transfer material to crusher CR-01(FW) @ TP-22(TC-FW) which also transfers to the loadout belt BC-08 @ TP-23(TC-FW). Belt BC-08 transfers to barge at TP-24(LO-TC).

A front end-loader can transfer a maximum of 500,000 tons of clean coal from stockpile OS-01 to trucks @ TP-27 (LO-MDH) for shipment from the facility.

SAMPLERS

Trucks are sampled by auger at the truck scales and deposited into crusher CR-02(FE), where the coal sample is sent to the analyzer and waste is deposited on the ground and cleaned up as maintenance.

The belt sampler is located on belt BC-08 - material is transferred to crusher CR-03(FE), where the coal sample is sent to the analyzer and the remainder is transferred back to belt BC-08 @ TP-25(TC-FE) and TP-26 (TC-FW).

The samplers are not depicted on the Material Flow Diagram or Site Plan.

The facility shall be modified and operated in accordance with the following equipment and control device information taken from registration application G10-D157 and any amendments thereto:

Equipment ID No.	Date of Construction, Reconstruction or Modification ¹	G10-D Applicable Sections ²	Description	Maximum Capacity		Control Equipment ³	Associated Transfer Points		
				TPH	TPY		Location: B -Before A -After	ID. No.	Control Equipment ³
Interstate Side - Clean Coal Circuit									
OS-01	M 2014 2003	5 and 8	Clean Coal Stockpile - maximum 350,000 tons capacity, 688,869 ft ² base area and 60' height - receives clean coal from trucks, stores it and then a front end-loader transfers it into BS-01	1,000	8,760,000	WS	B A	TP-01 TP-02	UL-MDH LO-PW
BS-01	M 2014 2003	5 and 8	Clean Coal Dump Bin - 400 tons capacity - receives clean coal from trucks and OS-01 via a front end-loader and feeds it onto BC-01	1,800	8,760,000	PW	B A	TP-02 TP-03	UL-PW TC-FE
BC-01	M 2014 2003	5 and 8	Belt Conveyor - receives clean coal from BS-01 and transfers it to SS-01 (see Screening and Crushing Building below)	1,800	8,760,000	PE	B A	TP-03 TP-04	TC-FE TC-PW

Fact Sheet G10-D157
Jacks Branch Coal Company
Marmet Dock Facility

Equipment ID No.	Date of Construction, Reconstruction or Modification ¹	G10-D Applicable Sections ²	Description	Maximum Capacity		Control Equipment ³	Associated Transfer Points		
				TPH	TPY		Location: B -Before A -After	ID. No.	Control Equipment ³
River Side - Clean Coal Circuits									
CR-02	M 2014 C 2001	5 and 8	Belt Sampler Crusher - receives clean coal from auger that pulls it directly from the trucks while on the truck scales, crushes and analyzes it and then drops it onto the ground where it is cleaned up as maintenance	50	438,000	FE	B A	NA NA	NA NA
OS-02	M 2014 2003	5 and 8	Clean Coal Stockpile - maximum 150,000 tons capacity, 388,869 ft ² base area and 60' height - receives clean coal from from trucks, stores it and then a front end-loader transfers it into BS-02, BS-03, BS-04 or BS-05	1,000	8,760,000	WS	B A A A	TP-05 TP-06 TP-09 TP-13 TP-17	UL-MDH LO-PW LO-PW LO-PW LO-PW
BS-02	M 2014 2003	5 and 8	Clean Coal Dump Bin - 100 tons capacity - receives clean coal from OS-02 via a front end-loader and feeds it onto BC-02	1,000	8,760,000	PW	B A	TP-06 TP-07	LO-PW TC-FE
BC-02	M 2014 2003	5 and 8	Belt Conveyor - receives clean coal from BS-02 and transfers it to BC-04 (see below)	1,000	8,760,000	PE	B A	TP-07 TP-08	TC-FE TC-FE
BS-03	M 2014 2003	5 and 8	Clean Coal Dump Bin - 44 tons capacity - receives clean coal from OS-02 via a front end-loader and feeds it onto BC-03	1,000	8,760,000	FE	B A	TP-09 TP-10	LO-PW TC-FE
BC-03	M 2014 2003	5 and 8	Belt Conveyor - receives clean coal from BS-03 and transfers it to BC-04	1,000	8,760,000	PE	B A	TP-10 TP-11	TC-FE TC-FE
BC-04	M 2014 2003	5 and 8	Belt Conveyor - receives clean coal from BC-02 and BC-03 and transfers it to SS-01 (see Screening and Crushing Building below)	1,000	8,760,000	PE	B B A	TP-08 TP-11 TP-12	TC-FE TC-FE TC-PW
BS-04	M 2014 2003	5 and 8	Clean Coal Dump Bin - 50 tons capacity - receives clean coal from OS-02 via a front end-loader and feeds it onto BC-05	1,000	8,760,000	FE	B A	TP-13 TP-14	LO-PW TC-FE
BC-05	M 2014 2003	5 and 8	Belt Conveyor - receives clean coal from BS-04 and transfers it to BC-06 (see below)	1,000	8,760,000	PE	B A	TP-14 TP-15	TC-FE TC-FE
BS-05	C 2015	5 and 8	Clean Coal Dump Bin - 50 tons capacity - receives clean coal from OS-02 via a front end-loader and feeds it into CR-04	1,000	8,760,000	FE	B A	TP-16 TP-17	LO-PW TC-FE
CR-04	C 2015	5 and 8	Sizer - receives sized raw coal from SS-01, crushes it to 6"x0 and then drops it onto BC-07	1,000	8,760,000	FW	B A	TP-17 TP-18	TC-FE TC-FW
BC-07	C 2015	5 and 8	Belt Conveyor - receives clean crushed coal from CR-04 and transfers it to BC-06	1,000	8,760,000	PE	B A	TP-18 TP-19	TC-FW TC-FE
BC-06	M 2014 2003	5 and 8	Belt Conveyor - receives clean coal from BC-05 and BC-07 and transfers it to SS-01 (see Screening and Crushing Building below)	1,000	8,760,000	PE	B A	TP-15 TP-19 TP-20	TC-FE TC-FE TC-PW
Screening and Crushing Building and Barge Loadout									
SS-01	M 2014 2001	5 and 8	Flextooth 56 Double Deck 8'x16' Vibrating Screen - receives clean coal from BC-01, BC-04 and BC-06 sizes it to 6"x4"x2" and drops the oversize clean coal to CR-01 and the undersize to BC-08	1,800	8,760,000	FW	B B B A A	TP-04 TP-12 TP-20 TP-22 TP-21	TC-PW TC-PW TC-PW TC-FW TC-FW
CR-01	M 2014 2001	5 and 8	Double Roll Crusher - receives oversize clean coal from SS-01, crushes it to 4"x2"x0 and then drops it onto BC-08	800	7,008,000	FW	B A	TP-22 TP-23	TC-FW TC-FW
BC-08	M 2014 2003	5 and 8	Belt Conveyor - receives sized clean coal from SS-01 and CR-01 and transfers it to the barge loadout. Clean coal is also diverted to CR-03, processed and then deposited back onto BC-08.	1,800	8,760,000	WS	B A A A	TP-21 TP-23 TP-24 TP-26	TC-FW TC-FW LO-TC TC-FW

Equipment ID No.	Date of Construction, Reconstruction or Modification ¹	G10-D Applicable Sections ²	Description	Maximum Capacity		Control Equipment ³	Associated Transfer Points		
				TPH	TPY		Location: B -Before A -After	ID. No.	Control Equipment ³
CR-03	M 2014 C 2001	5 and 8	Belt Sampler Crusher - receives clean coal from BC-08, crushes and analyzes it and then drops it back onto BC-08	90	788,400	FE	B A	TP-26 TP-27	TC-FW LO-MDH

- ¹ In accordance with 40 CFR 60 Subpart Y, coal processing and conveying equipment, coal storage systems, and coal transfer and loading systems constructed, reconstructed, or modified after April 28, 2008 shall not discharge gases which exhibit 10 percent opacity or greater. For open storage piles constructed, reconstructed, or modified after May 27, 2009, the permittee shall prepare and operate in accordance with a fugitive coal dust emissions control plan that is appropriate for site conditions.
- ² All registered affected facilities under Class II General Permit G10-D are subject to Sections 1.0, 1.1, 2.0, 3.0 and 4.0.
- ³ Control Device Abbreviations: FE - Full Enclosure; FW - Full Enclosure with Water Sprays; PE - Partial Enclosure; PW - Partial Enclosure with Water Sprays; WS - Water Sprays; TC - Telescopic Chute; UC - Under-pile Conveyor (full enclosure); MDH - Minimize Drop Height; N - No Control; and NA - Not Applicable.

DESCRIPTION OF FUGITIVE EMISSIONS (taken directly from the application)

Potential sources of fugitive particulate emissions for this facility include emissions, which are not captured by pollution control equipment and emissions from open stockpiles and vehicular traffic on paved haulroads and work areas. The haulroads and work areas will be controlled by water truck in accordance with section E.6.c.i. of the General Permit.

The water truck is equipped with pumps sufficient to maintain haulroads and work areas. The water truck will be operated three times daily, and more as needed in dry periods.

Rainbirds are in place and operational to be used as needed for stockpile dust control.

An additive to prevent freezing will be utilized in the winter months when freezing conditions are present.

SITE INSPECTION

Fred Teel of the DAQ's Compliance and Enforcement Section performed a scheduled full on-site targeted inspection on June 14, 2012. At the time of the inspection, the facility was found to be in compliance and was given a status code of 30 - In Compliance.

Directions from Charleston, WV are to take I-64 East, take Exit 89 for Route 61/Marmet/Chesapeake, turn left at the bottom of the exit ramp and proceed to Route 61, turn right at the red light onto Route 61 East and travel approximately 0.5 miles to the facility entrance on the right.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Fugitive emission calculations for continuous and batch drop operations, transfer points,

crushing and screening, storage piles, and paved and unpaved haulroads are based on AP-42 Fifth Edition "Compilation of Air Pollution Emission Factors", Volume 1. Control efficiencies were applied based on "Calculation of Particulate Matter Emission - Coal Preparation Plants and Material Handling Operations." The emission factors for crushing/breaking and screening operations were obtained from the Air Pollution Engineering Manual - Air & Waste Management Association - June 1992. The new facility-wide emissions calculations were performed by the applicant's consultant using the DAQ's G10-C Excel Emission Calculation Spreadsheet and were checked for accuracy and completeness by the writer. The writer did not calculate the increase in emissions due to the complex issues involved because the last calculations performed with applications R13-1655D and R13-2469 used a much older version of the G10 Excel Emission Calculations Spreadsheet and was prepared by a different consultant, a lot of equipment is being removed, all of the remaining existing equipment has had an increase in throughput and some of the control devices on the remaining existing equipment has been updated, etc.

The proposed modification will result in a new potential to discharge controlled particulate matter emissions of 39.99 PPH and 128.62 TPY of particulate matter (PM), of which 16.23 PPH and 49.18 TPY will be particulate matter less than 10 microns in diameter (PM₁₀). Refer to the following table for a complete summary of the facility's proposed potential to discharge:

- New Emissions Total - Jacks Branch Coal Company Marmet Dock Facility - G10-D157	Controlled PM Emissions		Controlled PM₁₀ Emissions	
	lb/hour	TPY	lb/hour	TPY
Fugitive Emissions				
Open Storage Pile Emissions	1.03	4.53	0.49	2.13
Unpaved Haulroad Emissions	0.00	0.00	0.00	0.00
Paved Haulroad Emissions	9.37	41.04	1.82	7.96
<i>Fugitive Emissions Total</i>	<i>10.40</i>	<i>45.57</i>	<i>2.30</i>	<i>10.09</i>
Point Source Emissions				
Equipment Emissions	24.16	62.02	11.36	29.15
Transfer Point Emissions	5.43	21.03	2.57	9.94
<i>Point Source Emissions Total (PTE)</i>	<i>29.59</i>	<i>83.05</i>	<i>13.92</i>	<i>39.09</i>
FACILITY EMISSIONS TOTAL	39.99	128.62	16.23	49.18

REGULATORY APPLICABILITY

NESHAPS and PSD have no applicability to the modified facility. The proposed modification of Jacks Branch Coal Company's existing coal preparation plant and barge loadout facility is subject to the following state and federal rules:

45CSR5 *To Prevent and Control Air Pollution from the Operation of Coal Preparation Plants, Coal Handling Operations and Coal Refuse Disposal Areas*

The facility is subject to the requirements of 45CSR5 because it meets the definition of "Coal Preparation Plant" found in subsection 45CSR5.2.4. The facility should be in compliance with Section 3 (less than 20% opacity) and Section 6 (fugitive dust control system and dust control of the premises and access roads) when the particulate matter control methods and devices proposed are in operation.

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

The proposed modification is subject to the requirements of 45CSR13 because it will involve the construction of one dump bin, one crusher and one belt conveyor and the modification of various pieces of existing equipment and open storage piles, which are defined as affected facilities in 40 CFR 60 Subpart Y. The applicant has submitted an application for a registration to modify. The applicant published a Class I legal advertisement in *The Daily Mail* on October 30, 2014 and submitted the \$500 application fee and \$1,000 application fee.

45CSR16 Standards of Performance for New Stationary Sources
40 CFR 60 Subpart Y: Standards of Performance for Coal Preparation and Processing Plants

This facility is subject to 40 CFR 60 Subpart Y because it was constructed and modified after October 24, 1974 and processes more than 200 tons of coal per day. The proposed modification includes the construction of one dump bin, one crusher and one belt conveyor and the modification of various pieces of existing equipment and open storage piles, which are defined as affected facilities in 40 CFR 60 Subpart Y. Therefore, the proposed modification is subject to 45CSR16, which incorporates by reference 40 CFR 60 Subpart Y - Standards of Performance for Coal Preparation Plants. The facility should be in compliance with Section 254(b) (less than 10% opacity for coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal which was constructed, re-constructed or modified after April 28, 2008) when the particulate matter control methods and devices proposed are in operation.

The owner or operator of an open storage pile, which includes the equipment used in the loading, unloading, and conveying operations of the affected facility, constructed, reconstructed, or modified after May 27, 2009, must prepare and operate in accordance with a submitted fugitive coal dust emissions control plan that is appropriate for the site conditions. The fugitive coal dust emissions control plan must identify and describe the control measures the owner or operator will use to minimize fugitive coal dust emissions from each open storage pile. The plan must be submitted to the Director prior to startup of the new, reconstructed or modified open storage pile.

45CSR30 Requirements for Operating Permits

In accordance with 45CSR30 Major Source Determination, the facility is *not* listed in 45CSR30 subsection 2.26.b as one of the categories of stationary sources which must include fugitive emissions (open storage piles constructed or modified on or before May 27, 2009 and

AIR QUALITY IMPACT ANALYSIS

Air dispersion modeling was not performed due to the size and location of this facility and the extent of the proposed modification. This facility is located in Kanawha County, WV, which is currently designated a PM_{2.5} nonattainment area (for both the annual and the 2006 24-hr standards), but is in attainment for all other regulated pollutants. This modified facility will remain a minor source as defined by 45CSR14 and 45CSR19, therefore, an air quality impact analysis is not required.

GENERAL PERMIT ELIGIBILITY

The proposed modification of this facility meets the applicability criteria (Section 2.3), siting criteria (Section 3.1) and limitations and standards (Section 5.1) as specified in General Permit G10-D.

All registered facilities under Class II General Permit G10-D are subject to Sections 1.0, 1.1, 2.0, 3.0 and 4.0.

MONITORING OF OPERATIONS

The coal processing and conveying equipment and storage areas should be observed to make sure that the facility is meeting the applicable visible emission standards of 40 CFR 60, Subpart Y. Visible emissions from any coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal constructed, re-constructed or modified after April 28, 2008 shall not exceed 10 percent (10%) opacity as stated in 40 CFR 60.254(b). Equipment used in the loading, unloading, and conveying operations of open storage piles are not subject to the maximum 10% opacity limitation.

The owner or operator of an open storage pile, which includes the equipment used in the loading, unloading, and conveying operations of the affected facility, constructed, reconstructed, or modified after May 27, 2009, must prepare and operate in accordance with a submitted fugitive coal dust emissions control plan that is appropriate for the site conditions. The fugitive coal dust emissions control plan must identify and describe the control measures the owner or operator will use to minimize fugitive coal dust emissions from each open storage pile. The plan must be submitted to the Director prior to startup of the new, reconstructed or modified open storage pile.

RECOMMENDATION TO DIRECTOR

The information contained in this modification application indicates that compliance with all applicable regulations should be achieved when all of the proposed particulate matter control methods are in operation. Due to the location, nature of the process, and control methods proposed, adverse impacts on the surrounding area should be minimized. No comments were received during the comment period. Therefore, the granting of a General Permit G10-D registration to Jacks Branch Coal Company for the modification of their existing coal preparation plant and barge loadout facility located near Marmet, Kanawha County, WV is hereby recommended.



Daniel P. Roberts, Engineer Trainee
NSR Permitting Section

January 30, 2015

Date