west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-1975I	After-the-Fact	
Plant ID No.:	039-00023		
Applicant:	Jacks Branch Coal Company		
Facility Name:	Mammoth Preparation Plant		
Location:	Montgomery, Kanawha County, WV		
SIC Codes:	1221 (Bituminous Coal & Lignite - Surface)		
NAICS Codes:	212111 (Bituminous Coal and Lignite Surface Mining)		
Application Type:	Modification		
Received Date:	March 28, 2017		
Engineer Assigned:	Dan Roberts		
Fee Amount:	$2,000		
Date Received:	January 16, 2015 (carried over from Application R3-1975G which was withdrawn)		
Applicant's Ad Date:	March 31, 2017		
Newspaper:	*Charleston Gazette Mail*		
Complete Date:	January 31, 2018		
UTM Coordinates:	Easting: 470.03 km	Northing: 4,226.123 km	NAD83 Zone 17N
Lat/Lon Coordinates:	Latitude: 38.182532	Longitude: -81.342204	NAD83

Description: After-the-Fact modification to do the following: update the potential to emit; adjust yearly throughputs on clean coal and refuse; include as-built equipment (screen SC1/FE , crusher CR5/FE, No. 104 Belt BC4A/FE, crusher CR6/FE, belt RBC5/PE, crusher CR4/FE, No. 119 Belt BC5A/PE, four [4] coal sample systems, and two (2) diesel generator sets Gen Set 1 and Gen Set 2); after-the-fact replacement of crusher CR1/FE, belt feeders DC1/PE and DC2/PE, and crusher CR3/FE with a feeder-breaker (keeps the CR3 ID number); after-the-fact replacement of No. 2 Refuse Belt BC8/PE; after-the-fact replacement of No. 3 Refuse Belt BC9/PE and No. 4 Refuse Belt BC10/PE with No. 3-4 Combined Belt BC9A/PE; after-the-fact addition of refuse conveyors BC10A/PE, BC10B/PE; addition of twelve (12) refuse conveyors including MC20/PE, BC10A/PE, BC10B/PE, BC25/PE, BC26/PE, BC27/PE, BC28/PE, BC29/PE, BC30/PE and conveyors G1 (BC31/N), G2 (BC32/N), G3 (BC33/N), G4 (BC34/N), and G Stacker (BC35/N)

collectively called the Gizmo; propose a reconfiguration of the refuse system; remove permitted equipment which has been removed or will not be constructed (see Attachments F, I, and L); and remove the entire Magnetite Plant and synfuel from the permit.

BACKGROUND

On January 15, 2015, Jacks Branch Coal Company submitted After-the-Fact modification application R13-1975G to "consolidate the full facility into one application, to recalculate the facility potential to emit, and to incorporate as-built changes and replaced equipment into the permit." On March 12, 2015, Jacks Branch Coal Company submitted Class II administrative update application R13-1975I to add a 50 tons capacity lime silo LS1 and screw conveyor LSC to receive, store and then add the lime onto existing refuse conveyor BC8.

On June 25, 2015, application R13-1975G was deemed incomplete and additional information and numerous corrections were requested as well as an updated facility-wide emissions estimate. Application R13-1975I was placed on hold while the company decided how to proceed and pending the receipt of the corrections and updated facility-wide emissions for application R13-1975G. On June 7, 2016, the DAQ received a letter requesting the withdrawal of application R13-1975G. On June 8, 2016, the DAQ acknowledged the withdrawal of application R13-1975G.

On January 20, 2017, I called Patrick Ward of Potesta & Associates and he said the company had just gotten back to him recently with how they wanted to handle the revised application for R13-1975G and that they wanted to proceed with application R13-1975H, which was a Class II Administrative Update to add a 50 tons capacity lime silo LS1 and screw conveyor LSC to receive, store and then add the lime onto existing refuse conveyor BC8. Permit R13-1975H was approved on January 27, 2017.

DESCRIPTION OF PROCESS (taken directly from the application)

Jacks Branch Coal Company operates the Mammoth Preparation Plant (Mammoth) located on U.S. Route 60 near Montgomery, Kanawha County, West Virginia.

The facility is a typical coal preparation plant that receives raw coal from a deep mine via conveyor and raw and direct ship coal from offsite trucks. The facility ships cleaned and direct ship coal by truck, rail, and barge.

The facility also has a magnetite processing plant that dries and sizes magnetite received by barge.

The purpose for this application is to update the potential to emit, adjust yearly throughputs on clean coal and refuse, include as-built equipment (screen SC1/FE , crusher CR5/FE, No. 104 Belt BC4A/FE, crusher CR6/FE, belt RBC5/PE, crusher CR4/FE, No. 119 Belt BC5A/PE, four [4] coal

sample systems, and two (2) emergency diesel generator sets), after-the-fact replacement of crusher CR1/FE, belt feeders DC1/PE and DC2/PE, and crusher CR3/FE with a feeder-breaker (keeps the CR3 ID number), after-the-fact replacement of No. 2 Refuse Belt BC8/PE, after-the-fact replacement of No. 3 Refuse Belt BC9/PE and No. 4 Refuse Belt BC10/PE with No. 3-4 Combined Belt BC9A/PE, addition of twelve (12) refuse conveyors BC10A/PE, BC10B/PE, BC25/PE, BC26/PE, BC27/PE, BC28/PE, BC29/PE, BC30/PE and conveyors G1 (BC31/N), G2 (BC32/N), G3 (BC33/N), G4 (BC34/N), and G Stacker (BC35/N) collectively called the Gizmo, propose a reconfiguration of the refuse system, remove permitted equipment which has been removed or will not be constructed (see Attachments F, I, and L), and remove the Magnetite Plant and synfuel from the permit.

The plant proposes to process up to 6,800,000 (2 North plus Bin 7) tons per year (tpy) of raw coal. Clean coal is requested to increase from the existing 3,200,000 tpy to 4,000,000 tpy (CR-6 throughput). Due to the variability of clean coal recovery, the refuse system needs to be able to convey up to 4,380,000 tpy (based on 500 ton per hour belt transfer capacity times 8,760 hours per year). We have calculated a 'worst case' emissions estimate for the clean side of the plant, which requests a limit of 4,000,000 tpy of clean coal (CR-6 throughput) but only shows 2,420,000 tpy (2 North plus Bin 7 plant feed minus Refuse feed) of "worst case" transfers in the calculations. Added to the 4,380,000 tpy of refuse, the maximum coal processed of 6,800,000 tpy is covered through the "worst case" transfers.

Raw Coal (Figure 1)

2 North Area

Raw coal leaves the underground mine on the No. 7 Belt (MC4A/PE) and is transferred (TP35A/FE) to conveyor No. 6 Cross Hollow Belt (MC4/PE) and then (TP35B/PE) to stockpile SP1/N or to No. 5 Overland Belt (MC9/PE). Coal is reclaimed from SP1/N (TP38/FE) by conveyor MC7/PE and transferred (TP39/PE) to conveyor MC8A/PE and then back to (TP41/PE) to No. 6 Belt. Raw coal may also be trucked to SP1/N (TP35C).

Overland Conveyor System

Receives raw coal from 2 North on No. 5 Overland Belt (Belt MC9/PE) and transfers (TP42/FE) to No. 4 Overland Belt (MC10A/PE), then to No. 3 Overland Belt (MC10B/PE) (TP43/PE), then No. 2 Overland Belt (MC11A) (TP44/PE), then No. 1 Overland Belt (MC11B) (TP45/PE), to silo MS1/FE (TP48/FE). Coal from MS1 transfers (TP50/FE) to Reclaim Belt (BC1/PE) of the plant feed system. There are four (4) endloader feed points in the system: TP61/PE, TP62/PE, TP63/PE, and TP64/PE. The following equipment of the overland system will not be constructed and is requested to be removed from the permit: Conveyor MC13/PE, silo MS2/FE, conveyor MC14A/PE, conveyor MC14B/PE, conveyor MC14C/PE, conveyor MC16A/PE, conveyor MC16B/PE, conveyor MC16C/PE, conveyor MC12A/PE, conveyor MC12B/PE MC15/PE and silo MS3/FE.

Marsan System

Raw coal is dumped by truck (TP5A/MD) to stockpile OS5/N. Endloaders load raw coal (TP5B/MD) to bin B5/PE which is transferred (TP5/FE) to No. 123 Belt (BC5/PE), then to screen SD1/PE+WS (TP6/PE+WS). Oversize material from SD1 goes to crusher CR4/FE (TP6B/PE) then to No. 119 Belt (BC5A/PE) (TP6C/FE). Pass-through material goes to No. 119 Belt (BC5A/PE) (TP6A/FE). From No. 119 Belt, coal is transferred (TP6D/FE) to No. 106 Belt (BC3/PE) of the Plant Feed System. Conveyor BC6/PE of the Marsan System will not be constructed and is requested to be removed from the permit.

Plant Feed System

The Reclaim Belt (BC1/PE) receives coal from MS1 of the Overland Conveyor System and transfers (TP1/FE) to Decline Belt (BC2/PE), then to silos BS1/FE and BS2/FE (TP2/FE). The silos are reclaimed (TP3/FE) by No. 106 Belt (BC3/PE) (which also receives coal from No. 119 Belt of the Marsan System), transferred (TP4/FE) to No. 105 Belt (BC4/FE) then to screen SC1/FE (TP4A/FE). Oversize from the screen is sent to crusher CR5/FE (TP4B/FE). Crushed material from CR5 and pass through from SC1 transfer to No. 104 Belt (BC4A/FE) (TP4D/FE, TP4C/FE) and then enters the wet circuit (TP4E/FE). Note there is a manually operated sweep arm sampler (SAS) on the No. 104 Belt. Since there are no additional emissions from the operation of the sampler it is not included in the emissions estimate.

Trucks dump (TP15A/MD) raw coal to Bin 7/PE+WS where it is transferred (TP15/FE) to feeder breaker CR3/FE, then to No. 510 Belt (BC13/PE) (TP16/FE) to stockpile OS1/N (TP17/WS). Coal from OS1 is reclaimed (TP18/FE) by No. 530 Belt BC14/PE to Screen SC1 and enters the wet circuit as described above.

Clean Coal/Direct Ship Loadout System (Figure 2)

Clean coal exits the wet process (TP19A/FE) to crusher CR6/FE) to No. 1 Clean Coal Belt (BC15/PE) (TP19B/FE) and transfers (TP19/FE) to No. 2 Clean Coal Belt (BC16/PE). Coal is then tripped (TP20/PE) to No. 1 Stacking Tube of stockpile OS2 or continues on No. 2 Clean Coal Belt to No. 2 Stacking Tube (TP1R/FE) of stockpile ROS1 or to No. 3 Clean Coal Belt (RBC2/PE) which transfers (TP2R/FE) to No. 3 Stacking Tube of stockpile ROS1. OS2 is reclaimed (TP22/FE) by No. 1 Main River Belt (BC18/PE) which transfers to Barge (TP23/MD). ROS1 is reclaimed (TP3R/FE) by Conveyor Belt RBC3/PE and sent to No. 1 Main River Belt (BC18/PE) (TP7R/FE). Alternately, ROS1 is reclaimed (TP4R/FE) by conveyor RBC4/PE and transfers (TP5R/FE) to the batch weigh bin BWBS1/FE then to railcar (TP6R/PE).

Direct ship/clean coal is dumped (TP24/MD) by truck to stockpiles OS3 and OS4. Endloaders transfer (TP25A/MD and TP26B/MD) the coal to belt feeders DC1/PE and DC2/PE which transfer (TP25/PE and TP26/PE respectively) to No. 2 Down River Belt (BC19/PE) which transfers (TP28/FE) to crusher CR1/FE and then (TP28A/FE+WS) to either Direct Coal Bypass Belt (RBC5/PE) or No. 1 Down River Belt (BC20/PE). RBC5/PE feeds (TP8R/FE) ROS1 or RBC2/PE. BC20/PE feeds (TP29/FE) to No. 1 Main River Belt (BC18/PE).

The are four (4) coal sampling systems: on RBC4/PE which transfers (STP1/FE) to sample pulverizer (SCR1/FE) to screw conveyor SBC7/FE (STP2/FE) back to RBC4/PE (STP3/FE); on BC18/PE which transfers (STP4/PE) to conveyor SBC1/FE to sample pulverizer SCR2/FE (STP5/FE) to conveyor SBC2/FE (STP6/FE) and back to BC18/PE (STP7/PE); on BC15/PE which transfers (STP8/FE) to conveyor SBC3/FE to sample pulverizer SCR3/FE (STP9/FE) to conveyor SBC4/FE (STP10/FE) and back to BC15/PE (STP11/FE); and on RBC5/PE which transfers (STP12/FE) to conveyor SBC5/FE to sample pulverizer SCR4/FE (STP13/FE) to conveyor SBC6/FE (STP14/FE) to ground (STP15/MD).

Coal is delivered off site from the clean and direct ship stockpiles by endloader to truck (TP30/MD).

Refuse System (Figure 2)

Refuse exits the preparation plant on No. 1 Refuse Belt (BC7/PE) and transfers (TP9/FE) to No. 2 Refuse Belt (BC8/PE) to No. 3-4 Combined Refuse Belt (BC9A/PE) (TP10/FE) to No. 9 Refuse Belt BC10A/PE (TP11/PE) which transfers (TP12A/PE) to No. 10 Refuse Belt (BC10B/PE). No. 10 Refuse Belt transfers (TP12B/PE) to No. 8 Refuse Belt (BC23/PE) then to Stacker BC24/PE (TP33/PE) to the refuse pile (TP34/MC). A tripper on No. 8 Refuse Belt (BC23/PE) can transfer (TP33/PE) material to a stacker (BC12/PE) then to the refuse pile (TP14/MC). The No. 8 Refuse Belt can also transfer (TP33/PE) to No. 11 Refuse Belt (BC25/PE), then to No. 12 Refuse Belt (BC26/PE) (TP68/PE) to No. 13 Refuse Belt (BC27/PE) (TP69/PE) to No. 14 Refuse Belt (BC28/PE) (TP70/PE) to No. 15 Refuse Belt (BC29/PE) (TP71/PE) to Radial Stacker (BC30/PE) (TP72/PE) to the refuse pile (TP73/MC). A tripper on the No. 11 Refuse Belt (BC25/PE) can send material (TP68/PE) to the G1 Belt (BC31/N) which transfers (TP74/PE) material to the G2 Belt (BC32/N), then to the G3 Belt (BC33/N) (TP75/PE), to the G4 Belt (BC34/N) (TP76/PE), to the G Stacker (BC35/N) (TP77/PE), then to the refuse pile (TP78/MC). The Gizmo system (Belts G1 through G4 and G Stacker) can be used anywhere in the refuse system downstream of No. 8 Refuse Belt (BC23/PE).

Material can be sent to a second refuse area by transferring from the No. 3-4 Combined Refuse Belt (BC9A/PE) to the No. 16 Refuse Belt (MC20/PE) (TP11/FE) then to No. 6 Refuse Belt (MC17/PE) (TP79/PE) to No. 7 Refuse Belt (MC18/PE) (TP65/PE) to Stacker (MC19/PE) (TP66/PE) then to the refuse pile (TP67/MC).

Lime Silo

Lime is delivered by truck to silo LS1/DC1 (TPL1/DC1). Emissions from silo loading are controlled by dust collector DC1. Lime transfers (TPL2/FE) to a screw conveyor (LSC/FE) to (TPL3/PE) the existing No. 2 Refuse Belt (BC8/PE).

Lime addition will be a ton per ton replacement for refuse.

Emergency Generators

The Caterpillar D25-6 Generator Set (Gen Set 1/1E) with a 47 HP Perkins 2450/1800 diesel engine is an emergency generator for back-up power for fire protection in the plant. The Caterpillar SR-4 Generator Set (Gen Set 2/3E) powered with a 155 HP Caterpillar 3304PC diesel engine is an emergency generator for back-up power to Security Post 1 and for a pump located behind security.

Magnetite Plant (Figure 3)

With this application, Jacks Branch is requesting that the Magnetite Plant be removed from the permit. The facility will no longer be involved with the processing of magnetite.

Synfuel

By this application, Jacks Branch is requesting that references to synfuel and permit conditions relating to synfuel be removed from the permit. The facility will no longer be involved with the processing or transport of synfuel products.

The facility shall be modified and operated in accordance with the following equipment and control device information taken from permit application R13-1975I and any amendments thereto:

Equip-ment ID No.	Date of Construction, Reconstruction or Modification [1]	Description	Maximum Rated Throughputs		Control Device[2]	Associated Transfer Points		
			TPH	TPY		Location: B -Before A -After	ID. No.	Control Device[2]
2 North Area								
MC4A	M 2005	No. 7 Belt - receives raw coal from the underground mine and transfers it to MC4	2,000	4,300,000	PE	B A	N/A TP35A	N/A FE
MC4	M 2005	No. 6 Cross Hollow Belt - receives raw coal from MC4A and MC8A and transfers it to SP1 or MC9	2,000	4,300,000	PE	B B A	TP35A TP41 TP35B	FE PE PE
SP1	M 2005	"2 North Area" - Raw Coal Open Stockpile - maximum 100,000 tons capacity, 75,000 ft^2 base area and 75' height - receives raw coal from MC4 and trucks, stores it and then it is reclaimed onto MC7	2,000	4,300,000	N	B B A	TP35B TP35C TP38	PE MD FE
MC7	M 2005	Raw Coal Reclaim Belt Conveyor - reclaims raw coal from SP1 and transfers it to MC8A	2,000	4,300,000	PE	B A	TP38 TP39	FE PE
MC8A	M 2005	Raw Coal Belt Conveyor - receives raw coal from MC7 and transfers it back to MC4	2,000	4,300,000	PE	B A	TP39 TP41	PE PE
Overland Conveyor System								
MC9	M 2005	No. 5 Overland Bel - receives raw coal from MC4 (see 2North Area above) and transfers it to MC10A	2,000	4,300,000	PE	B A	TP35B TP42	PE FE
MC10A	M 2005	No. 4 Overland Belt - receives raw coal from MC9 and two endloader feed points and transfers it to MC10B	2,000	4,300,000	PE	B B B A	TP42 TP61 TP62 TP43	FE PE PE PE
MC10B	M 2005	No. 3 Overland Belt - receives raw coal from MC10A and one endloader feed point transfers it to MC11A	2,000	4,300,000	PE	B B A	TP43 TP63 TP44	PE PE PE
MC11A	M 2005	No. 2 Overland Belt - receives raw coal from MC10B and one endloader feed point and transfers it to MC11B	2,000	4,300,000	PE	B B A	TP44 TP64 TP45	PE PE PE

Equip-ment ID No.	Date of Construction, Reconstruction or Modification [1]	Description	Maximum Rated Throughputs		Control Device[2]	Associated Transfer Points		
			TPH	TPY		Location: B -Before A -After	ID. No.	Control Device[2]
MC11B	M 2005	No. 4 Overland Belt - receives raw coal from MC11A and transfers it to MS1	2,000	4,300,000	PE	B A	TP45 TP48	PE FE
MS1	M 2005	Raw Coal Silo - 20,000 tons capacity - receives raw coal from MC11B, stores it and then drops it onto BC1 (see Combined Raw Coal Circuit below)	2,000	4,300,000	FE	B A	TP48 TP50	FE FE
Marsan System								
OS5	M 2001	Raw Coal Open Stockpile - maximum 25,000 tons capacity, 58,750 ft^2 base area and 30' height - receives raw coal from trucks, stores it and then endloaders transfer it to B5	200	600,000	N	B A	TP5A TP5B	MD MD
B5	M 2001	Truck Dump Bin - receives raw coal from OS5 via endloaders and drops it onto BC5	200	600,000	PE	B A	TP5B TP5	MD FE
BC5	M 2001	No. 123 Belt - receives raw coal from B5 and transfers it to SD1	200	600,000	PE	B A	TP5 TP6	FE PE+WS
SD1	M 2001	Raw Coal Single Deck Screen - receives raw coal from BC5, classifies it and then oversize material goes to CR4 while pass through material goes to BC5A	200	600,000	PE+WS	B A A	TP6 TP6A TP6B	PE+WS FE PE
CR4	M 2001 *	Crusher - receives oversize raw coal from SD1, crushes it and then drops it onto BC5A (* Installed in 2001, but not included in the permit until 2017)	200	600,000	FE	B A	TP6B TP6C	PE FE
BC5A	M 2001 *	No. 119 Belt - receives pass through raw coal from SD1 and crushed raw coal from CR4 and transfers it to BC3 (* Installed in 2001, but not included in the permit until 2017)	200	600,000	PE	B B A	TP6A TP6C TP6D	FE FE FE
Combined Raw Coal Circuit								
BC1	M 2001	Reclaim Belt - receives raw coal from MS1 and transfers it to BC2	1,400	4,300,000	PE	B A	TP50 TP1	FE FE
BC2	M 2001	Decline Belt - receives raw coal from BC1 and transfers it to BS1 or BS2	1,400	4,300,000	PE	B A	TP1 TP2	FE FE
BS1	M 2001	Raw Coal Storage Bin 1 - 1,000 tons capacity - receives raw coal from BC2, stores it and then drops it onto BC3	1,400	4,300,000 combined	FE	B A	TP2 TP3	FE FE
BS2	M 2001	Raw Coal Storage Bin 2 - 1,000 tons capacity - receives raw coal from BC2, stores it and then drops it onto BC3	1,400		FE	B A	TP2 TP3	FE FE
BC3	M 2001	No. 106 Belt - receives raw coal from BS1 and BS2 and transfers it to BC4	1,400	4,300,000	PE	B A	TP3 TP4	FE FE
BC4	M 2001	No. 105 Belt - receives raw coal from BC3 and transfers it to SC1	1,400	4,300,000	FE	B A	TP4 TP4A	FE FE
Truck Dump Raw Coal Circuit								
Bin 7	M 2001	Truck Dump Bin - receives direct ship coal from trucks and drops it into CR3	800	2,500,000	PE+WS	B A	TP15A TP15	MD FE
CR3	C 2010 * M 2001	Feeder Breaker - receives direct ship coal from Bin 7, crushes it and then drops it onto BC13 (* The original Coal Crusher was replaced with this Feeder Breaker in 2010, but changes not included in the permit until 2017)	800	2,500,000	FE	B A	TP15 TP16	FE FE
BC13	M 2001	No. 510 Belt - receives crushed direct ship coal from CR3 and transfers it to OS1	800	2,500,000	PE	B A	TP16 TP17	FE WS
OS1	M 2001	Raw Coal Open Stockpile with a Stacking Tube - maximum 75,000 tons capacity, 56,192 ft^2 base area and 75' height - receives crushed direct ship coal from BC13, stores it and then it is reclaimed under pile onto BC14	800	2,500,000	N	B A	TP17 TP18	WS FE
BC14	M 2001	No. 530 Plant Feed Belt - receives crushed direct ship coal from OS1 and transfers it to SC1 (see above)	800	2,500,000	PE	B A	TP18 TP4A	FE FE
In-Plant Raw Coal Processing								
SC1	M 2017 C 1996 *	Scalping Screen - receives raw coal from BC4 and BC14 (see Direct Ship Coal Circuit below), classifies it and the oversize raw coal drops into CR5 and the pass through raw coal drops onto BC4A (* Constructed in 1996, but not included in the permit until 2017)	1,400	6,800,000	FE	B A A	TP4A TP4B TP4C	FE FE FE

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CR5	M 2017 C 1996 *	Crusher - receives oversize raw coal from SC1, crushes it and drops it onto BC4A (* Constructed in 1996, but not included in the permit until 2017)	1,400	4,300,000	FE	B A	TP4B TP4D	FE FE
BC4A	M 2017 C 1996 *	No. 104 Belt - receives sized raw coal from SC1 and CR5 and transfers it to the wet wash circuit (* Constructed in 1996, but not included in the permit until 2017)	1,400	6,800,000	FE	B B A	TP4C TP4D TP4E	FE FE FE
Clean Coal Circuit								
CR6	M 2017 C 1996 *	Crusher - receives clean coal from the wet wash circuit, crushes it and drops it onto BC15 (* Constructed in 1996, but not included in the permit until 2017)	900	4,000,000	FE	B A	TP19A TP19B	FE FE
BC15	M 2017 M 2001	No. 1 Clean Coal Belt - receives clean coal from CR6 and crushed sampler coal from SBC4 and transfers it to SBC3 and BC16	900	4,000,000	PE	B B A A	TP19B STP11 STP8 TP19	FE FE FE FE
SBC3	C 2006 *	Belt Conveyor - receives clean coal from BC15 and transfers it to SCR3 (* Constructed in 2006, but not included in the permit until 2017)	5	43,800	FE	B A	STP8 STP9	FE FE
SCR3	C 2006 *	Sample Pulverizer - receives clean coal from SBC3, crushes it and then drops it onto SBC4 (* Constructed in 2006, but not included in the permit until 2017)	5	43,800	FE	B A	STP9 STP10	FE FE
SBC4	C 2006 *	Belt Conveyor - receives clean crushed coal from SCR3 and transfers it back onto BC15 (* Constructed in 2006, but not included in the permit until 2017)	5	43,800	FE	B A	STP10 STP11	FE FE
BC16	M 2017 M 2007 vs 2001	No. 2 Clean Coal Belt - receives clean coal from BC15 and transfers it to OS2 through No. 1 Stacking Tube, ROS1 through No. 2 Stacking Tube or RBC2 (see below)	900	4,000,000	PE	B A A	TP19 TP20 TP1R	FE PE FE
OS2	M 2017 M 2001	Clean Coal Open Stockpile with No. 1 Stacking Tube-maximum 312,000 tons capacity, 320,000 ft^2 base area and 75' height - receives clean coal from BC16 via a tripper, stores it and then it is reclaimed under pile onto BC18 (see below)	900 in 2,900 out	4,000,000	N	B A	TP20 TP22	PE FE
ROS1	M 2017 M 2007	Clean Coal Open Stockpile with No. 2 and No. 3 Stacking Tubes - maximum 30,000 tons capacity, 62,800 ft^2 base area and 75' height - receives clean coal from BC16 and RCB2 (see below) and direct ship coal from RBC5 (see below), stores it and then it is reclaimed under pile onto RBC3 or RBC4 (see below)	1,200 in 4,500 out	10,000,000	N	B B B A A	TP1R TP2R TP8R TP3R TP4R	FE FE FE FE FE
RBC2	M 2017 M 2007	No. 3 Clean Coal Belt - receives clean coal from BC16 and transfers it to ROS1 through No. 3 Stacking Tube	900	5,200,000	PE	B A	TP1R TP2R	FE FE
RBC3	M 2017 M 2007	Clean Coal Belt Conveyor - receives clean coal from ROS1 and transfers it to BC18 (see below)	2,900	10,000,000	PE	B A	TP3R TP7R	FE FE
RBC4	M 2017 M 2007	No. 1 Train Loadout Belt - receives clean coal from ROS1 and transfers it to SCR1 and BWBS1	4,500	5,200,000	PE	B B A A	TP4R STP3 STP1 TP5R	FE FE FE FE
SCR1	C Jan. 2008 *	Sample Pulverizer - receives clean coal from RBC4, crushes it and the feeds it to SBC7 (* Constructed in 2008, but not included in the permit until 2017)	5	43,800	FE	B A	STP1 STP2	FE FE
SBC7	C Jan. 2008 *	Belt Conveyor - receives clean crushed coal from SCR3 and transfers it back onto BC15 (* Constructed in 2008, but not included in the permit until 2017)	5	43,800	FE	B A	STP2 STP3	FE FE
BWBS1	M 2017 M 2007	Batch Weigh Bin System - 370 tons capacity - receives clean coal from RBC4, weighs it and then loads it into railcars	4,500	5,200,000	FE	B A	TP5R TP6R	FE PE
Direct Ship Coal Circuit								
OS3	M 2001	Raw/Clean/Direct Ship Coal Open Stockpile - maximum 468,000 tons capacity, 480,000 ft^2 base area and 75' height - receives direct ship coal from trucks, stores it and then an endloader reclaims it and transfers it into DC1	1,200	3,600,000 combined	N	B A	TP24 TP25A	MD MD

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			TPH	TPY		Location: B -Before A -After	ID. No.	Control Device[2]
OS4	R 2009	Raw Coal Open Stockpile - maximum 100,000 tons capacity, 80,150 ft^2 base area and 75' height - receives direct ship coal from trucks, stores it and then an endloader reclaims it and transfers it into DC2	1,200		N	B A	TP24 TP26B	MD MD
DC1	Replaced2010* C 2001 *	Direct Ship Belt Feeder - receives direct ship coal from OS3 via endloader and transfers it to BC19 (* Constructed in 2001 and replaced in 2010, but not included in the permit until 2017)	1,200	3,600,000	PE	B A	TP25A TP25	MD PE
DC2	Replaced2010* C 2001*	Direct Ship Belt Feeder - receives direct ship coal from OS4 via endloader and transfers it to BC19 (* Constructed in 2001 and replaced in 2010, but not included in the permit until 2017)	1,200	3,600,000	PE	B A	TP26B TP26	MD PE
BC19	M 2001	No. 2 Down River Belt - receives direct ship coal from DC1 and DC2 and transfers it to CR1	1,200	3,600,000	PE	B B A	TP25 TP26 TP28	PE PE FE
CR1	M 2001	Direct Ship Coal Crusher - receives direct ship coal from BC19, crushes it and then drops it onto RBC5 or BC20	1,200	3,600,000	FE	B A	TP28 TP28A	FE FE+WS
BC20	M 2001	No. 1 Down River Belt - receives crushed direct ship coal from CR1 and transfers it to BC18	1,200	3,600,000	PE	B A	TP28A TP29	FE+WS FE
RBC5	Replaced2010* C 2001*	Direct Coal Bypass Belt - receives crushed direct ship coal from CR1 and transfers it to SBC5, ROS1 via No. 2 Stacking Tube or RBC2 (* Constructed in 2001 and replaced in 2010, but not included in the permit until 2017)	1,200	3,600,000	PE	B A A	TP28A STP12 TP8R	FE+WS FE FE
SBC5	C 2012 *	Belt Conveyor - receives crushed direct ship coal from RBC1 and transfers it to SCR4 (* Constructed in 2012, but not included in the permit until 2017)	5	43,800	FE	B A	STP12 STP13	FE FE
SCR4	C 2012 *	Sample Pulverizer - receives crushed direct ship coal from SBC5, crushes it and then drops it onto SBC6 (* Constructed in 2012, but not included in the permit until 2017)	5	43,800	FE	B A	STP13 STP14	FE FE
SBC6	C 2012 *	Belt Conveyor - receives crushed direct ship coal from SCR4 and transfers it onto the ground (* Constructed in 2012, but not included in the permit until 2017)	5	43,800	FE	B A	STP14 STP15	FE MD
Barge Loaodut								
BC18	M 2001	No. 1 Main River Belt - receives clean coal from OS2 and RBC3 and crushed direct ship coal from BC20 and transfers it to barges	2,900	10,000,000	PE	B B B B A A	TP22 TP7R TP29 STP7 STP4 TP23	FE FE FE PE PE MD
SBC1	C 2007	Belt Conveyor - receives clean and direct ship coal from BC18 and transfers it to SCR2 (* Constructed in 2007, but not included in the permit until 2017)	5	43,800	FE	B A	STP4 STP5	PE FE
SCR2	C 2007	Sample Pulverizer - receives clean and direct ship coal from SBC1, crushes it and then drops it onto SBC2 (* Constructed in 2007, but not included in the permit until 2017)	5	43,800	FE	B A	STP5 STP6	FE FE
SBC2	C 2007	Belt Conveyor - receives crushed clean and direct ship coal from SCR2 and transfers it back onto BC18 (* Constructed in 2007, but not included in the permit until 2017)	5	43,800	FE	B A	STP6 STP7	FE PE
Refuse System								
BC7	M 2017 M 2001	No. 1 Refuse Belt - receives refuse from the wet wash circuit and transfers it to BC8	500	4,380,000	PE	B A	WW TP9	FE FE
LS1	C 2015	Lime Silo - 50 tons capacity - vents to baghouse DC1 - receives lime pneumatically fed by trucks, stores it and then it is reclaimed by LSC	50 in 2 out	5,000	DC1	B A	TPL1 TPL2	BH-DC1 FE
BH-DC1	C 2015	Belgrade Steel Tank Co., Inc. - Belle 225 Dust House - Collection Efficiency rating of 99.99% - pneumatic shaker - polyester bags						
LSC	C 2015	Lime Screw Conveyor - receives lime from LS1 and transfers it onto BC8	2	5,000	FE	B A	TPL2 TPL3	FE PE

Equip-ment ID No.	Date of Construction, Reconstruction or Modification [1]	Description	Maximum Rated Throughputs		Control Device[2]	Associated Transfer Points		
			TPH	TPY		Location: B -Before A -After	ID. No.	Control Device[2]
BC8	M 2017 Replaced 2014 M 2001	No. 2 Refuse Belt - receives refuse from BC7 and lime from LSC and transfers it to BC9A	500	4,380,000	PE	B B A	TP9 TPL3 TP10	FE PE FE
BC-9A	M 2017 C 2015 *	No. 3-4 Combined Refuse Belt - receives refuse from BC8 and transfers it to BC10A (see below) or MC20 (* Constructed in 2015, but not included in the permit until 2017)	500	4,380,000	PE	B A	TP10 TP11	FE FE
MC20	C 2017	No. 16 Refuse Belt - receives refuse from BC8 and transfers it to BC10A or MC20	500	4,380,000	PE	B A	TP11 TP79	FE PE
MC17	M 2017 M 2005	No. 6 Refuse Belt - receives refuse from MC17and transfers it to MC18	500	4,380,000	PE	B A	TP79 TP65	PE PE
MC18	M 2017 M 2005	No. 7 Refuse Belt - receives refuse from MC20 and transfers it to MC19	500	4,380,000	PE	B A	TP65 TP66	PE PE
MC19	M 2017 M 2005	Radial Stacker - receives refuse from MC18 and transfers it to the refuse disposal area	500	4,380,000	PE	B A	TP66 TP67	PE MC
BC10A	M 2017 C 2015 *	No. 9 Refuse Belt - receives refuse from BC9A and transfers it to BC10B (* Constructed in 2015, but not included in the permit until 2017)	500	4,380,000	PE	B A	TP11 TP12A	FE PE
BC10B	M 2017 C 2014 *	No. 10 Refuse Belt - receives refuse from BC10A and transfers it to BC23 (* Constructed in 2014, but not included in the permit until 2017)	500	4,380,000	PE	B A	TP12A TP12B	PE PE
BC23	M 2017 M 2001	No. 8 Refuse Belt - receives refuse from BC10B and transfers it to BC12, BC24, BC25 or BC31	500	4,380,000	PE	B A	TP-12B TP33	PE PE
BC12	M 2017 M 2001	Radial Stacker - receives refuse from BC23 and transfers it to the refuse disposal area	500	4,380,000	PE	B A	TP33 TP14	PE MC
BC24	M 2017 M 2001	Radial Stacker - receives refuse from BC23 and transfers it to the refuse disposal area	500	4,380,000	PE	B A	TP33 TP34	PE MC
BC25	C 2017	No. 11 Refuse Belt - receives refuse from BC23 and transfers it to BC26	500	4,380,000	PE	B A	TP33 TP68	PE PE
BC26	C 2017	No. 12 Refuse Belt - receives refuse from BC25 and transfers it to BC27	500	4,380,000	PE	B A	TP68 TP69	PE PE
BC27	C 2017	No. 13 Refuse Belt - receives refuse from BC26 and transfers it to BC28	500	4,380,000	PE	B A	TP69 TP70	PE PE
BC28	C 2017	No. 14 Refuse Belt - receives refuse from BC27 and transfers it to BC29	500	4,380,000	PE	B A	TP70 TP71	PE PE
BC29	C 2017	No. 15 Refuse Belt - receives refuse from BC28 and transfers it to BC30	500	4,380,000	PE	B A	TP71 TP72	PE PE
BC30	C 2017	Radial Stacker - receives refuse from BC29 and transfers it to the refuse disposal area	500	4,380,000	PE	B A	TP72 TP73	PE MC
BC31	C 2017	G1 Belt - receives refuse from BC23 and transfers it to BC32	500	4,380,000	N	B A	TP73 TP74	MC PE
BC32	C 2017	G2 Belt - receives refuse from BC31 and transfers it to BC33	500	4,380,000	N	B A	TP74 TP75	PE PE
BC33	C 2017	G3 Belt - receives refuse from BC32 and transfers it to BC34	500	4,380,000	N	B A	TP75 TP76	PE PE
BC34	C 2017	G4 Belt - receives refuse from BC33 and transfers it to BC35	500	4,380,000	N	B A	TP76 TP77	PE PE
BC35	C 2017	G Stacker - receives refuse from BC34 and transfers it to the refuse disposal area	500	4,380,000	N	B A	TP77 TP78	PE MC

[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 on or before April 28, 2008 shall not discharge gases which exhibit 20 percent opacity or greater. 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] FE - Full Enclosure; PE - Partial Enclosure; MC - Moisture Content; WS - Water Sprays; N - None; BH - Baghouse

Reciprocating Internal Combustion Engines (R.I.C.E.) Information

Emission Unit ID No.	Emission Unit Description (Make, Model, Serial No., etc.)	Year Manufactured	Year Installed	Design Capacity (Bhp/rpm)
Gen Set 1	Caterpillar Model D25-6/ Perkins 2450/1800 - emergency generator	2007	2011	47 / 1,800
Gen Set 2	Caterpillar 3304PC - emergency gen.	1976	2012	155 / 1,800

Emission Unit ID No.	Subject to 40CFR60 Subpart IIII?	Subject to 40CFR60 Subpart JJJJ?	Subject to Sections 9.1.4/9.2.1 (Catalytic Reduction Device)
Gen Set 1	Yes	No	No
Gen Set 2	No	No	No

SITE INSPECTION

On February 13, 2017, a site inspection was performed by Fred Teel of the DAQ's Compliance and Enforcement Section. Mr. Teel's did not enter any notes from the inspection. Based on the results of the inspection, the facility was given a status code of 10: Out of Compliance. On April 6, 2017, the DAQ issued an NOV. On April 24, 2017, the DAQ received a response to the NOV.

On November 21, 2013, a site inspection was performed by James Jarrett of the DAQ's Compliance and Enforcement Section. Mr. Jarrett's notes from the inspection were as follows: "Two (2) crushers and a raw coal scalping screen are not listed in the permit. The plant is operating without a Title V Operating Certificate." Based on the results of the inspection, the facility was given a status code of 10: Out of Compliance.

Directions from Charleston are to take US Route 60 East toward Montgomery and the facility is located on the right approximately one mile before Smithers and the exit/bridge to Montgomery.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

The Caterpillar D25-6 Generator Set (Gen Set 1/1E) with a 47 HP Perkins 2450/1800 diesel engine is an emergency generator for back-up power for fire protection in the plant. The Caterpillar SR-4 Generator Set (Gen Set 2/3E) powered with a 155 HP Caterpillar 3304PC diesel engine is an emergency generator for back-up power to Security Post 1 and for a pump located behind security.

For Gen Set - 1, the applicant's consultant calculated the emissions for criteria pollutants using emission factors from the engine manufacturer's data and California Environmental Protection Agency Air Resources Board Certification for Engine Family 7PKXL03.3DC1. Hazardous and toxic air pollutants were calculated using emission factors from AP 42, Fifth Edition, Volume I Chapter 3.3 Gasoline and Diesel Industrial Engines Table 3.3.2.

For Gen Set - 2, the applicant's consultant calculated the emissions for criteria pollutants using emission factors from AP 42, Fifth Edition, Volume I Chapter 3.3 Gasoline and Diesel

Industrial Engines Table 3.3.1. Hazardous and toxic air pollutants were calculated using emission factors from AP 42, Fifth Edition, Volume I Chapter 3.3 Gasoline and Diesel Industrial Engines Table 3.3.2.

The maximum permitted emissions from Jacks Branch Coal Company's diesel fired Gen Set 1 and Gen Set 2 are summarized in the table below. Gen Set 1 and Gen Set 2 each are limited to 500 hours per year of operation.

Criteria Pollutants	*Gen Set 1*			*Gen Set 2*		
	Emission Factors	**Maximum Hourly Emissions (lb/hr)**	**Maximum Annual Emissions (TPY)**	**Emission Factors**	**Maximum Hourly Emissions (lb/hr)**	**Maximum Annual Emissions (TPY)**
NO_X	7.3 g/kW-hr [1]	0.56	0.14	4.41 lb/MMBtu [2]	9.18	2.30
CO	1.6 g/kW-hr [1]	0.12	0.03	0.95 lb/MMBtu [2]	1.98	0.50
SO_2	0.29 lb/MMBtu [2]	0.10	0.03	0.29 lb/MMBtu [2]	0.60	0.15
$PM/PM_{10}/PM_{2.5}$	0.21 g/kW-hr [1]	0.02	0.01	0.31 lb/MMBtu [2]	0.65	0.16
TOC (VOC)	0.36 lb/MMBtu [2]	0.12	0.03	0.36 lb/MMBtu [2]	0.75	0.19
Total HAP	various [3]	0.0014	0.0004	various [3]	0.0075	0.0019

[1] Emission factors for NO_X, CO and PM_{10} were taken from California Environmental Protection Agency Air Resources Board Certification for Engine Family 7PKXL03.3DC1

[2] The emission factors for SO_2 and TOC was taken from AP-42, Fifth Edition, Volume I, Chapter 3.3 Gasoline and Diesel Industrial Engines (10/96), Table 3.3-1 Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines. The emission factor for SO_X was used for SO_2 because it is the only emission factor available and it will be a conservative estimate since SO_2 will be a portion of SO_X. The emission factor for TOC was used for VOC because it is the only emission factor available and it will be a conservative estimate since VOC will be a portion of TOC.

[3] Emission factors for the various HAPs were taken from AP 42, Fifth Edition, Volume I, Chapter 3.3 Gasoline and Diesel Industrial Engines (10/96), Table 3.3-2. Speciated Organic Compound Emission Factors for Uncontrolled Diesel Engines.

The total combined HAPs calculated for Gen Set 1 is 0.0014 lb/hr and 0.0004 TPY and Gen Set 2 is 0.0075 lb/hr and 0.0019 TPY and the individual HAPs are summarized in the following table.

Hazardous Air Pollutants	Emission Factor[1] (lb/MMBtu)	Gen Set 1		Gen Set 2	
		Maximum Hourly Emissions (lb/hr)	**Maximum Annual Emissions (TPY)**	**Maximum Hourly Emissions (lb/hr)**	**Maximum Annual Emissions (TPY)**
Benzene	0.000933	0.0003	0.00008	0.0019	0.0005
Toluene	0.000409	0.0002	0.00005	0.0009	0.0002
Xylenes	0.000285	0.0001	0.00003	0.0006	0.0002
1,3-Butadiene	0.0000391	0.00002	0.00001	0.00009	0.00003
Formaldehyde	0.00118	0.0004	0.0001	0.002	0.0005
Acetaldehyde	0.000767	0.0003	0.00008	0.0016	0.0004
Acrolein	0.0000925	0.00003	0.000008	0.00019	0.00005
Naphthalene	0.0000848	0.00003	0.000008	0.00018	0.00005
Total HAP's		**0.0014**	**0.0004**	**0.0075**	**0.0019**

[1] Emission factors were taken from AP 42, Fifth Edition, Volume I, Chapter 3.3 Gasoline and Diesel Industrial Engines (10/96), Table 3.3-2. Speciated Organic Compound Emission Factors for Uncontrolled Diesel Engines.

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 "Compilation of Air Pollution Emission Factors." 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. Emissions calculations were performed by the applicant's consultant and were checked for accuracy by the writer.

The proposed modification will result in a new facility-wide potential to discharge controlled particulate matter emissions of 843.12 pounds per hour (lb/hour) and 376.73 tons per year (TPY) of particulate matter (PM), of which 268.50 lb/hour and 151.32 TPY will be particulate matter less than 10 microns in diameter (PM_{10}) and 33.35 lb/hour and 24.46 TPY will be particulate matter less than 2.5 microns in diameter ($PM_{2.5}$). Refer to the following table for a complete summary of the facility's proposed potential to discharge:

- New Facility-wide Emissions - **Jacks Branch Coal Company Mammoth Preparation Plant**	**Controlled PM Emissions**		**Controlled PM_{10} Emissions**		**Controlled $PM_{2.5}$ Emissions**	
	lb/hour	TPY	lb/hour	TPY	lb/hour	TPY
Fugitive Emissions						
Open Storage Pile Emissions	14.49	63.46	6.90	30.22	1.04	4.53
Unpaved Haulroad Emissions	716.67	138.48	211.42	40.85	21.23	4.11
Paved Haulroad Emissions	18.57	18.52	3.73	3.73	0.92	0.91
Fugitive Emissions Total	*749.73*	*220.46*	*222.05*	*74.80*	*23.19*	*9.55*
Point Source Emissions						
Crushing Emissions	36.64	50.68	17.45	24.13	2.62	3.62
Screening Emissions	32.00	74.00	15.24	35.24	2.29	5.29
Transfer Point Emissions	24.08	31.42	13.09	16.98	4.59	5.83
Gen Set 1 and Gen Set 2 combined	0.67	0.17	0.67	0.17	0.67	0.17
Point Source Emissions Total (PTE)	*93.39*	*156.27*	*46.45*	*76.52*	*10.16*	*14.91*
TOTAL EMISSIONS	**843.12**	**376.73**	**268.50**	**151.32**	**33.53**	**22.46**

REGULATORY APPLICABILITY

NESHAPS, NSPS and PSD have no applicability to the proposed modification. The proposed modification of Jacks Branch's existing coal preparation plant 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's existing coal processing equipment 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), Section 4 (thermal dryer and stack requirements), 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 within the permit applications 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 new and modification of existing equipment and open storage piles which are defined as affected facilities and subject to 40 CFR 60 Subpart Y and one (1) emergency generator subject to 40 CFR 60 Subpart IIII. Therefore, the proposed changes require a permit modification. The applicant published a Class I legal advertisement in the *Charleston Gazette Mail* on March 31, 2017. The $1,000 application fee and $1,000 NSPS fee were submitted on January 16, 2015 with application R13-1975G, which was later withdrawn on June 8, 2016.

45CSR16 Standards of Performance for New Stationary Sources
40 CFR 60 Subpart Y: Standards of Performance for Coal Preparation 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 involves the construction of new and modification of existing equipment and open storage piles which are defined as affected facilities and subject to 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(a) (less than 20% opacity for coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal constructed, re-constructed or modified on or before April 28, 2008) and Section 254(b) (less than 10% opacity for 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) 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.

45CSR16 Standards of Performance for New Stationary Sources

40 CFR 60 Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

The provisions of Subpart IIII are applicable to owners and operators of stationary compression ignition (CI) internal combustion engines (ICE) which are manufactured after April 1, 2006, are not fire pump engines and commence construction after July 11, 2005. For the purposes of Subpart IIII, the date that construction commences is the date the engine is ordered by the owner or operator.

The Caterpillar D25-6 Generator Set (Gen Set 1/1E) with a 47 HP Perkins 2450/1800 diesel engine is an emergency generator for back-up power for fire protection in the plant. Gen Set 1 was manufactured in 2007 and is a 4 stroke diesel that is EPA Tier 2 certified. In accordance with § 60.4200 (2), this engine is subject to Subpart IIII because it was manufactured after April 1, 2006 and commenced construction after July 11, 2005.

In accordance with § 60.4207(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 use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel."

40 CFR 89 Control of Emissions From New and In-use Nonroad Compression-Ignition Engines

This part applies to all compression-ignition nonroad engines except those specified in paragraph (b) of this section. This means that the engines for which this part applies include but are not limited to compression-ignition engines exempted from the requirements of 40 CFR Part 92 by 40 CFR 92.207 or 40 CFR Part 94 by 40 CFR 94.907. This part applies as specified in 40 CFR part 60 subpart IIII, to compression-ignition engines subject to the standards of 40 CFR part 60, subpart IIII.

45CSR30 Requirements for Operating Permits

In accordance with 45CSR30 Major Source Determination, the modification of this existing wet wash coal preparation plant is not listed in 45CSR30 subsection 2.26.b as one of the categories of stationary sources which must include fugitive emissions (coal open storage piles constructed or modified on or before May 27, 2009 and haulroads) when determining whether it is a major stationary source for the purposes of § 302(j) of the Clean Air Act. The facility's new potential to emit will be 85.85 TPY for PM_{10} (coal open storage piles OS2 and ROS1 which were constructed or modified after May 27, 2009 and point sources combined), which is less than the 45CSR30 threshold of 100 TPY of a regulated air pollutant used to define a major stationary source. Therefore, the facility will be subject to 45CSR30 and remain classified as a Title V deferred non-major source.

The proposed modification of Jacks Branch Coal Company's Mammoth Preparation Plant is not subject to the following state and federal rules:

45CSR14 Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration

In accordance with 45CSR14 Major Source Determination, this coal preparation plant is not one of the 100 TPY stationary sources listed under the definition of "Major Stationary Source" in subsection 2.43.a. Therefore, it must have the potential to emit 250 TPY or more of any regulated pollutant to meet the definition of a major source in subsection 2.43.b. At the end of subsection 2.4.3, this facility is not listed in Table 1 - Source Categories Which Must Include Fugitive Emissions. So, fugitive emissions (from coal open storage piles constructed or modified on or before May 27, 2009 and haulroads) are not included when determining major stationary source applicability. The facility's new potential to emit will be 177.71 TPY for PM (coal open storage piles OS2 and ROS1 which were constructed or modified after May 27, 2009 and point sources combined), which is less than the 45CSR14 threshold of 250 TPY for a regulated air pollutant used to define a major stationary source. Therefore, the proposed construction is not subject to the requirements set forth within 45CSR14.

40 CFR 63 Subpart ZZZZ: National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations.

For stationary RICE located at an area source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.

The Caterpillar SR-4 Generator Set (Gen Set 2/3E) powered with a 155 HP Caterpillar 3304PC diesel engine is an emergency generator for back-up power to Security Post 1 and for a pump located behind security. Gen Set 2 was manufactured in 1976 and is a 4 stroke diesel.

In accordance with Section §63.6585(f)(2), "Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in §63.6640(f)(4)(ii)" are not subject to this subpart.

In accordance with Section §63.6640(f)(2)(i), "Emergency stationary RICE may be operated

for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year."

In accordance with Section §63.6640(f)(4), "Emergency stationary RICE located at area sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of this section. Except as provided in paragraphs (f)(4)(i) and (ii) of this section, the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

A toxicity analysis was not performed because the main pollutants being emitted from this facility will be PM (particulate matter) and PM_{10} (particulate matter less than 10 microns in diameter), which are non-toxic pollutants.

The only non criteria regulated pollutants that are addressed by this permit application are the very small amount of Hazardous Air Pollutants that are the normal byproduct of diesel combustion from the two emergency generators Gen Set -1 and Gen Set-2. The majority of non-criteria regulated pollutants fall under the definition of HAPs which, with some revision since, were 188 compounds identified under Section 112(b) of the Clean Air Act (CAA) as pollutants or groups of pollutants that EPA knows or suspects may cause cancer or other serious human health effects. The following lists includes each HAP's carcinogenic risk (as based on analysis provided in the Integrated Risk Information System (IRIS)):

Acetaldehyde:
Acetaldehyde is mainly used as an intermediate in the synthesis of other chemicals. It is ubiquitous in the environment and may be formed in the body from the breakdown of ethanol. Acute (short-term) exposure to acetaldehyde results in effects including irritation of the eyes, skin, and respiratory tract. Symptoms of chronic (long-term) intoxication of acetaldehyde resemble those of alcoholism. Acetaldehyde is considered a probable human carcinogen (Group B2) based on inadequate human cancer studies and animal studies that have shown nasal tumors in rats and laryngeal tumors in hamsters.

Acrolein:
Acrolein is primarily used as an intermediate in the synthesis of acrylic acid and as a biocide. It may

be formed from the breakdown of certain pollutants in outdoor air or from the burning of organic matter including tobacco, or fuels such as gasoline or oil. It is toxic to humans following inhalation, oral or dermal exposures. Acute (short-term) inhalation exposure may result in upper respiratory tract irritation and congestion. No information is available on its reproductive, developmental, or carcinogenic effects in humans, and the existing animal cancer data are considered inadequate to make a determination that acrolein is carcinogenic to humans.

Benzene:
Benzene is found in the air from emissions from burning coal and oil, gasoline service stations, and motor vehicle exhaust. Acute (short-term) inhalation exposure of humans to benzene may cause drowsiness, dizziness, headaches, as well as eye, skin, and respiratory tract irritation, and, at high levels, unconsciousness. Chronic (long-term) inhalation exposure has caused various disorders in the blood, including reduced numbers of red blood cells and aplastic anemia, in occupational settings. Reproductive effects have been reported for women exposed by inhalation to high levels, and adverse effects on the developing fetus have been observed in animal tests. Increased incidence of leukemia (cancer of the tissues that form white blood cells) have been observed in humans occupationally exposed to benzene. EPA has classified benzene as a Group A, human carcinogen.

Formaldehyde:
Formaldehyde is used mainly to produce resins used in particle board products and as an intermediate in the synthesis of other chemicals. Exposure to formaldehyde may occur by breathing contaminated indoor air, tobacco smoke, or ambient urban air. Acute (short-term) and chronic (long-term) inhalation exposure to formaldehyde in humans can result in respiratory symptoms, and eye, nose, and throat irritation. Limited human studies have reported an association between formaldehyde exposure and lung and nasopharyngeal cancer. Animal inhalation studies have reported an increased incidence of nasal squamous cell cancer. EPA considers formaldehyde a probable human carcinogen (Group B1).

Naphthalene:
Naphthalene is used in the production of phthalic anhydride; it is also used in mothballs. Acute (short-term) exposure of humans to naphthalene by inhalation, ingestion, and dermal contact is associated with hemolytic anemia, damage to the liver, and neurological damage. Cataracts have also been reported in workers acutely exposed to naphthalene by inhalation and ingestion. Chronic (long-term) exposure of workers and rodents to naphthalene has been reported to cause cataracts and damage to the retina. Hemolytic anemia has been reported in infants born to mothers who "sniffed" and ingested naphthalene (as mothballs) during pregnancy. Available data are inadequate to establish a causal relationship between exposure to naphthalene and cancer in humans. EPA has classified naphthalene as a Group C, possible human carcinogen.

Toluene:
The acute toxicity of toluene is low. Toluene may cause eye, skin, and respiratory tract irritation. Short-term exposure to high concentrations of toluene (e.g., 600 ppm) may produce fatigue, dizziness, headaches, loss of coordination, nausea, and stupor; 10,000 ppm may cause death from respiratory failure. Ingestion of toluene may cause nausea and vomiting and central nervous system depression. Contact of liquid toluene with the eyes causes temporary irritation. Toluene is a skin

irritant and may cause redness and pain when trapped beneath clothing or shoes; prolonged or repeated contact with toluene may result in dry and cracked skin. Because of its odor and irritant effects, toluene is regarded as having good warning properties. The chronic effects of exposure to toluene are much less severe than those of benzene. No carcinogenic effects were reported in animal studies. Equivocal results were obtained in studies to determine developmental effects in animals. Toluene was not observed to be mutagenic in standard studies.

Xylene:
Commercial or mixed xylene usually contains about 40-65% m-xylene and up to 20% each of o-xylene and p-xylene and ethyl benzene. Xylenes are released into the atmosphere as fugitive emissions from industrial sources, from auto exhaust, and through volatilization from their use as solvents. Acute (short-term) inhalation exposure to mixed xylenes in humans results in irritation of the eyes, nose, and throat, gastrointestinal effects, eye irritation, and neurological effects. Chronic (long-term) inhalation exposure of humans to mixed xylenes results primarily in central nervous system (CNS) effects, such as headache, dizziness, fatigue, tremors, and incoordination; respiratory, cardiovascular, and kidney effects have also been reported. EPA has classified mixed xylenes as a Group D, not classifiable as to human carcinogenicity.

All HAPs have other non-carcinogenic chronic and acute effects. These adverse health affects may be associated with a wide range of ambient concentrations and exposure times and are influenced by source-specific characteristics such as emission rates and local meteorological conditions. Health impacts are also dependent on multiple factors that affect variability in humans such as genetics, age, health status (e.g., the presence of pre-existing disease) and lifestyle. *There are no federal or state ambient air quality standards for these specific chemicals*. For a complete discussion of the known health effects of each compound refer to the IRIS database located at *www.epa.gov/iris*.

AIR QUALITY IMPACT ANALYSIS

Air dispersion modeling was not performed due to the size and location of this facility and the modifications proposed. This facility is located in Kanawha County, WV, which is currently in attainment for PM (particulate matter), PM_{10} (particulate matter less than 10 microns in diameter), SO_2 (sulfur dioxide), and CO (carbon monoxide). This modified facility will remain a minor source as defined by 45CSR14, therefore, an air quality impact analysis is not required.

MONITORING OF OPERATIONS

For the purposes of determining compliance with maximum throughput limits, the applicant shall maintain certified daily and monthly records. An example form is included as Appendix A to Permit R13-1975I. An example form for tracking the amount of water applied by the water truck is included as Appendix B to Permit R13-1975I. An example form for the Monthly Opacity Testing is included as Appendix C to Permit R13-1975I. The Certification Of Data Accuracy statement shall be completed within fifteen (15) days of the end of the reporting period. These records shall be

maintained on-site for at least five (5) years and be made available to the Director of the Division of Air Quality or his or her duly authorized representative upon request.

RECOMMENDATION TO DIRECTOR

The information contained in this application for a modification permit update 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. Therefore, the granting of a permit to Jacks Branch Coal Company for the modification of an existing wet wash coal preparation plant located adjacent to US Route 60 approximately 1.0 miles west of Smithers, Kanawha County, WV is hereby recommended.

Daniel P. Roberts, Engineer Trainee
NSR Permitting Section

February 14, 2018
Date