

U. S. Department of Labor

Mine Safety and Health Administration  
100 Bluestone Road  
Mount Hope, WV 25880-1000

Keep Forever

Newer

Supercede

*[Handwritten signature]*



FEB 13 2009

Mr. Chris Blanchard  
President  
Performance Coal Company  
P. O. Box 69  
Naoma, WV 25140

DO NOT  
SUPERCEDE

Dear Mr. Blanchard:

Subject: Mine Ventilation Plan, Section 75.370, 30 CFR 75, Upper  
Big Branch Mine - South, I.D. No. 46-08436, Performance  
Coal Company, Montcoal, Raleigh County, West Virginia

This will acknowledge receipt of a revision to the ventilation plan, submitted to this office and dated February 4, 2009, providing information relative to the minimum barrier pillar thickness that will be left in place, between the active Tailgate No. 1 North section and the adjacent sealed area in Tailgate 11, in order to prevent a potential inundation. The plan proposes to maintain a minimum barrier thickness of 104 feet and also includes the procedures for maintaining and monitoring the water level in the sealed area at an elevation between 801.7 and 825 feet. The revision includes a portion of the mine map, dated February 2, 2009, and a calculation of the 'ARMPS' stability factors that were submitted with the request.

This revision is hereby approved and will be made a part of the approved plan for this mine. This approval is limited to the requested change as described in the submittal letter and as shown on the map. Please be advised that when the water elevation is discovered to exceed 825 feet, immediate actions are expected to be taken to assure the safety of the miners.

Should you have any questions concerning this matter, please contact the Ventilation Department at (304) 877-3900/Ext. 142.

Sincerely,

/s/ ROBERT G. HARDMAN

Robert G. Hardman  
District Manager  
Coal Mine Safety and Health, District 4

KEEP FOREVER

Cc: Mt. Hope Field Office (3 incl.)/ Files/nlc

SUPERVISORY ACKNOWLEDGEMENT

Initials *RL* Date *2/13/09*  
Initials *ju* Date *2/13*



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President  
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Sincerely,

A handwritten signature in black ink, appearing to read "Robert G. Hardman". The signature is written in a cursive style with a large, prominent initial "R".

Robert G. Hardman  
District Manager  
Coal Mine Safety and Health, District 4



# Performance Coal Company

P.O. Box 69

Naoma, WV

25140

February 4, 2009

Mr. Robert Hardman  
Mine Safety and Health Administration  
100 Bluestone Road  
Mount Hope, WV 25880

Re: Performance Coal Company  
Upper Big Branch Mine  
MSHA ID : 46-08436  
State ID: U-3042-92  
Ventilation Revision

Dear Sir:

Enclosed for your review and approval please find the ventilation revision you requested, for the barrier pillar in the Upper Big Branch Mine. This revision includes the items addressed in the letter received on Monday January 26, 2009. These items include; overburden thickness, water level in adjacent, sealed workings, status of the two dewatering pumps located in the adjacent sealed area, a barrier analysis of the barrier pillar between the active and sealed panels, and the accuracy and location of the control loop surveys.

At this time Performance Coal Company does not have a miner's representative at this operation. If you have any questions or comments, feel free to contact me at (304)854-3516.

Respectfully Submitted,  
Performance Coal Company, Inc.

Eric Lilly  
Mine Engineer

MSHA  
MOUNT HOPE, WV  
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The barrier pillar in question is located on the western end of the No.1 North Longwall Panel. In this area, the overburden is approximately 1,000ft thick and the mining height averages approximately 5.5ft high. The minimum barrier pillar width between the projections, which depict centerlines, and the sealed area is 114ft; once the projections have been mined the barrier pillar width will be 104ft

The water level inside the sealed area will be monitored and recorded a minimum of three times each week. It is controlled through the use of two vertical turbine pumps, both of which are controlled by a bubbler system with a high setting of 30" and a low setting of 10". The water level in the sealed area is currently at 801.7ft and will be maintained between this elevation and 825ft under normal conditions.

The maximum hydrostatic head that the 104ft barrier can withstand was calculated using the Pennsylvania Mine Inspector's formula. Using the formula,  $Width = 20 + (4 * \text{seam height}) + (0.1 * \text{hydrostatic head})$  to back calculate the amount of hydrostatic head that the 104ft wide barrier can withstand gives a value of 620ft. The maximum height that the water in the sealed area can achieve is 127 ft. Any amount above the 127 ft mark (917 elevation) would run out the water trap in seal set 15.

In order to calculate the safety factor of the barrier pillar due to overburden stress, the ARMPS program was used. The projected 104ft barrier pillar has a safety factor of 2.74. The minimum width required for a safety factor of 2.0 would be 76ft. Printouts of these calculations are included with this revision.

The 114ft wide projected barrier calculates to be sufficiently strong to maintain integrity both from overburden pressure and hydrostatic pressure.

Check surveys have been ran in both Tailgate 11, and Tailgate No. 1 North. The check survey in Tailgate 11 tied with an accuracy of one foot in 175,221ft (1:175,221) and the accuracy of the No. 1 North Tailgate is one foot in 58,199ft (1:58,199).

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ARMPS module build: 5.1.22  
 Project File: G:\Engineering\Mining\Rt3\Member Files\Eric Lilly\UBB BARRIER PILLAR.ARM  
 Input Units: (ft) (psi)

[PROJECT TITLE]

[PROJECT DESCRIPTION]

[DEVELOPMENT GEOMETRY PARAMETERS]

Entry Height.....5.5 (ft)  
 Depth of Cover.....1000 (ft)  
 Crosscut Angle.....90 (deg)  
 Entry Width.....20 (ft)  
 Number of Entries.....5  
 Crosscut Spacing.....100 (ft)  
 Center to Center Distance #1.....80 (ft)  
 Center to Center Distance #2.....80 (ft)  
 Center to Center Distance #3.....80 (ft)  
 Center to Center Distance #4.....80 (ft)

[DEFAULT PARAMETERS]

In Situ Coal Strength.....900 (psi)  
 Unit Weight of Overburden.....162 (pcf)  
 Breadth of AMZ.....158 (ft)  
 AMZ set automatically

[RETREAT MINING PARAMETERS]

Loading Condition.....ONE SIDE + ACTIVE GOB  
 Extend of Active Gob.....0 (ft)  
 Abutment Angle of Active Gob.....21 (deg)  
 Extend of First Gob.....713 (ft)  
 Abutment Angle of 1st Gob.....21 (deg)  
 Barrier Pillar Width of 1st Gob.....104 (ft)  
 Depth of Slab Cut in Barrier Pillar of 1st Gob....0 (ft)

[ARMPS STABILITY FACTORS]

DEVELOPMENT.....2.43  
 ACTIVE GOB.....2.43  
 ONE SIDE + ACTIVE GOB.....2.14

[BARRIER PILLAR STABILITY FACTORS]

FIRST SIDE GOB.....2.74

[DATA ABOUT THE ACTIVE MINING ZONE (AMZ)]

AMZ Width.....320.0 (ft)  
 AMZ Breadth.....158.0 (ft)  
 AMZ Area.....50560.0 (ft)\*(ft)  
 Extraction Ratio Within AMZ.....0.40  
 Development Load on AMZ.....4.10E+06 (tons)  
 Front Abutment Load.....0 (tons)/(ft)  
 First Side Abutment Load.....15467 (tons)/(ft)

R-FACTOR For Front Abutment.....0.901  
 R-FACTOR For First Side Abutment.....0.770

TOTAL LOADINGS ON AMZ, INCLUDING TRANSFER FROM BARRIERS

LOAD	ABUTMENT	LTRANSBAR	LTRANSREM	TOTAL
CONDITION	LOAD (tons)	(tons)	(tons)	(tons)
DEVELOPMENT	0.00E+00	0.00E+00	0.00E+00	4.10E+06
ACTIVE GOB	0.00E+00	0.00E+00	0.00E+00	4.10E+06

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1S + ACTIVE GOB      5.61E+05      0.00E+00      0.00E+00      4.66E+06

R-Factor for front abutment is the percent of the total front abutment load that is applied to the AMZ.

R-Factor for side abutment is the percent of the total side abutment load that is applied to the barrier pillar (the remainder is applied to the AMZ).

LTRANSBAR is the load transferred to the AMZ from the barrier pillar between the side and active gob if the barrier's SF is less than 1.5.

LTRANSREM is the load transferred to the AMZ from the remnant barrier between the side and active gob if the remnant's SF is less than 1.5.

[PILLAR PARAMETERS]

PILLAR	ENTRY CENTER (ft)	MINIMUM DIMENSION (ft)	MAXIMUM DIMENSION (ft)
1	80.00	60.00	80.00
2	80.00	60.00	80.00
3	80.00	60.00	80.00
4	80.00	60.00	80.00

PILLAR	AREA (ft)*(ft)	STRENGTH (psi)	LOAD-BEARING CAPACITY (tons)
1	4.80E+03	4.55E+03	1.57E+06
2	4.80E+03	4.55E+03	1.57E+06
3	4.80E+03	4.55E+03	1.57E+06
4	4.80E+03	4.55E+03	1.57E+06

TOTAL LOAD-BEARING CAPACITY OF PILLARS WITHIN AMZ: 9.94E+06 (tons)

To view the distribution of Pillar Load Bearing Capacity select 'View Plots->Settings->Pillar Load Bearing Capacity'

[BARRIER PILLAR PARAMETERS]

BARRIER PILLAR	WIDTH (ft)	STRENGTH (psi)	LOAD-BEARING CAPACITY (tons)
First	104.00	7.75e+03	9.17E+06

[BARRIER PILLAR LOADS]

BARRIER PILLAR	DEVELOPMENT LOAD (tons)	FRONT-ABUTMENT LOAD (tons)	SIDE-ABUTMENT LOAD (tons)
First	1.46E+06	0.00E+00	1.88E+06

[BARRIER PILLAR LOADS (cont'd)]

BARRIER PILLAR	TOTAL LOAD (tons)	STABILITY FACTOR	LTRANSBAR (tons)
First	3.34E+06	2.74	0.00E+00

[BARRIER PILLAR STRESSES]

BARRIER PILLAR	DEVELOPMENT STRESS (psi)	FRONT-ABUTMENT STRESS (psi)	SIDE-ABUTMENT STRESS (psi)	TOTAL STRESS (psi)
First	1233	0	1591	2824

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