BLANK PAGE

	As constructed	Revision	Original design
Type of Fill			Durable Rock
Size of Fill	Length (it)		3210
	Area (acres)		29.4
	Volume (mcy)		1.5
Surface Configuration			
Elevations	Crown (ft)		1180
	Toe (It)		1080
Slopes	Toe Foundation (%)		2.0
	Fill Face (dcg.)		27.0
Surface Drainage Control			Perimeter
Subsurface Drainage Control			Underdrain
Stability Analysis Software Used			REAME
Safety Factor	Static		1.5
	Seismic		1.2
Engineering Properties (Spoil)	Unit Weight (pcf)		125
	Friction Angle		24
	Cohesion (psf)		160
Engineering Properties (Foundation)	unit Weight (pcf)		
	Friction Angle (deg.)		
	Cohesion (psf)		
Phreatic Surface			P-.05

		Appl. Phase Certification		Appl.Quarterly certification	Photography Type
Construction Documentation and Certifications	Foundation Preparation	Yes [ ]	No [X]	97/2	None
	Underdrains	Yes [ ]	No [X]	9712	None
	Surface Drains	Yes [ ]	No [X]	99/01	None
	Grading and Revegetation	Yes [ ]	No [XI	99/01	None
	Find Certification	Yes [ ]	No [X]	99/0	None

Aerial Survey and Ground Level Review*	If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ]	No [ ]
	Foundation data:		Text
	Dip of strata relative to fill:		
	Were NOV's written on the fill?	Yes [X]	No [ ]
	Surface drainage control working properly?	Yes [X]	No I]
	Subsurface drainage control working properly?	Yes [X]	No [ ]
	If active fill. was active spoil disposal determined to be on-going?	Yes [ ]	No [X]
	If spoil disposal site inactive, how long was disposal operation idle (months)?		
	If a durable rock till is under construction,		
	Approximately 80% durable rock by volume?	Yes [ ]	No [X]
	If no to above. estimate percentage:		60
	Discernable blanket or core drain forming?	Yes [X]	No [ ]
	If the fill is completed. compare the Size with the *sire* in the latest pre-completion revision?		Same
	If the fill is significantly smaller. what is the reason according lo the documentation or inspector?		
	Fill surface configuration:		Concave
	Is the fill situated in landslide topography?	Yes [ ]	No [X]
	Were there ground cracks observed on the fill face or benches?	Yes [ ]	Nu [X]
	Number of benches on fill:		

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *	2			

Location of Depressions *

Were there depressions on the fill benches? Yes [1 No I i (Potential Water Depfh)

1			
2			
4			
5			

Location of Erosion Areas *

Were there areas of erosion on the fill benches? Yes [ ] No [ ] (Maximum Gully Depfh)

1			
2			
3			
4			
5			

Location of Ground Bulges *

Were there bulges or hummocky terrain? Yes [ ] No [ ]

1			
2			
3			
4			
5			

Location of Springs/Seeps *

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

1			
2			
3			
4			
5			

Location of Changes'

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]

1			
2			
3			
4			
5			
6			

Movement Characteristics *

Did a failure occur on the fill? Yes [ ] No [X]

f so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement	Mass 1		
	Mass 2		
	Mass 3		

Comments

'n March 30, 1999 was completing final grading

on-compliance (#610585) was issued for buried timber at toe of fill (observed by OSM in March 1998) Fill was constructed as a wing fill due to change of operation and using a ighwall miner Disturbed a large area of drainage duo to CHANGE OF OPERATION TO A HIGHWALL MINER

813-0238
HF # 8

Company: Addington Enterprises	Fill: HF # 10		Date of permit file review: 04/16/99
Permit: 813-0238	Mine: Prater #1		Date fill contruction started: 09/02/97
State: KY	War this fill visited at ground level?	Yes [X] No [ ]	Finished: 04/05/99
County: Breathitt	Date of visit:	06/08/99	Number of fill size revisions:
Latitude: 37-31-26	Had the fill **been** reclaimed at the time of the air survey?	Yes [ ] No [X]	%Sandstone in overburden: 63
Longitude: 83-00-56	Date of survey:	12/3 1/99	

	As constructed	Revision	Original design
Type of Fill			Durable Rock
Size of Fill	Length (ft)		650
	Area (acres)		**4.6**
	Volume (mcy)		0.2
Surface Configuration			
Elevations	Crown (ft)		1180
	Toe (ft)		1040
Slopes	Toe Foundation (%)		2.0
	Fill Face (deg.)		
Surface Drainage Control			Perimeter
Subsurface Drainage Control			Underdrain
Stability **Analysis Software** Used			REAME
Safety Factor	Static		**1.5**
	Seismic		1.2
Engineering Properties (Spoil)	Unit Weight (pcf)		125
	Friction **Angle**		24
	Cohesion (psf)		160
Engineering Properties (Foundation)	Unit Weight (pcf)		
	Friction Angle (deg.)		
	Cohesion (psf)		
Phreatic Surface			P-.05

Construction Documentation and Certifications

	Appl. Phase Certification		Appl.Quarterly certification	Photography Type
Foundation Preparation	Yes [X]	No [ ]	97/02	None
Underdrains	Yes [X]	No [ ]	97/07	None
Surface Drains	Yes [ ]	No [X]	99/01	None
Grading and Revegetation	Yes [ ]	No [X]	99/01	None
Final Certification	Yes [X]	No [ ]	99/1	None

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ]	No [ ]
Foundation data:		Text
Dip of strata relative to fill:		
Were NOV's written on the **fill?**	Yes [ ]	No [X]

Aerial Survey and Ground Level Review*

Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control working properly?	Yes [X]	No [ ]
If active fill, was active spoil disposal determined to be **on-going?**	Yes [ ]	No [ ]
If spoil disposal site inactive, how long **was** disposal operation idle (months)?		**3**
If a durable **rock fill** is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [ ]
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [ ]	No [ ]
If the **fill** is completed, compare the size with the size in tho latest pre-completion revision?		
If the till is significantly smaller, what is the reason according to the documentation or inspector?		
Fill **surface** configuration:		Flat
Is the **fill** situated in landslide topography?	Yes [ ]	No [X]
Were there ground cracks observed on the till face or benches?	Yes [ ]	No [X]
Number of benches on fill:		

	Location	Length (ft)	Width (ft)	Depth (in)
Location or Cracks *	I			
	2			
	3			

Were there depressions on the fill benches? Yes [ ] **No** [1 **(Potential Water Depth)**

Location or Depressions *	I			
	2			
	3			
	4			
	5			

Were there areas of erosion on the fill benches? Yes **I** 1 ***No*** [ ] **(Maximum Gully Depth)**

Location or Erosion Areas *	I			
	2			
	3			
	4			
	5			

Were there bulges or hummocky terrain? **Yes** [ ] No [ ]

Location "f Ground Bulges *	1			
	2			
	3			
	4			
	5			

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

Location of Springs/Seeps *	1			
	2			
	3			
	4			
	5			

Were changes in vegetation or spoil color **observed** on fill? **Yes** [ ] No [ ]

Location of Changes *	1			
	2			
	3			
	4			
	5			
	6			

Movement Characteristics *

Did a failure occur on the fill? Yes [ ] No [X]

f so, enter the source of information on the failure:

Stage of construction during failure:

	Mars 1	**Mans 2**	**Mass 3**
Bench #			
Length (ft)			
Width (A)			
Scarp Height *(ft)*			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement **Mass** I			
Mass 2			
Mass 3			

Comments

Was Fill #1 in permit # **811-0218**

nal certification April 05,1990 Quarterly certs only No photos

813-0238
HF # 10

Type of Fill			Durable Rock
Size of Fill	Length (A)	1400	1500
	Area (acres)	s.4	11.2
	Volume (mcy)	0.6	1.0
Surface Configuration		Flat	Flat
Elevations	Crown (ft)	1200	1200
	Toe (ft)	1055	1050
Slopes	Toe Foundation (%)	1.0	1.0
	Fill Face (deg.)		
Surface Drainage Control		Perimeter	Perimeter
Subsurface Drainage Control		Underdrain	Underdrain
Stability Analysis Software Used		REAME	REAME
Safety Factor	Static	1.4	1.5
	Seismic	1.1	1.2
Engineering Properties (spoil)	Unit Weight (pcf)	125	125
	Friction Angle	30	30
	Cohesion (psf)	200	200
Engineering Properties (Foundation)	Unit Weight (pcf)		
	Friction Angle (deg.)		
	Cohesion (psf)		
Phreatic Surface		P-.05	P-.05

		Appl. Phase Certification		Appl.Quarterly Certification	Photography Type
construction Documentation and certifications	Foundation Preparation	Yes [ ]	No [X]	97/4	None
	Underdrains	Yes [ ]	No [X]	9811	None
	Surface Drains	Yes [ ]	No [X]	98/4	None
	Grading and Revegetation	Yes [ ]	No [X]	9814	None
	Final Certification	Yes [ ]	No [X]	9911	None

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ]	No [ ]
Foundation data:		Text
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [ ]	No [X]

Aerial survey and Ground Level Review*

Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control working properly?	Yes [X]	No [ ]
If active fill, was active spoil disposal determined to be on-going?	Yes [ ]	No [X]
If spoil disposal site inactive, how long was disposal operation idle (months)?		3
f a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [ ]
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [ ]	No [ ]
If the fill is completed, compare the size with the size in the latest prc-completion revision?		Larger
If the fill is significantly smaller, what is the reason according to the documentation or inspector?		Don't know
Fill surface configuration:		Flat
Is the fill situated in landslide topography?	Yes [ ]	No [X]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [X]
Number of benches on till:		

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	1			
	2			
	3			

Were there depressions on the fill benches? Yes [ ] No [ ] **(Potential Water Depth)**

Location of Depressions				
	2			
	3			
	5			

Were there areas of erosion on the fill benches? Yes [ ] No [ ] **(Maximum Gully Depth)**

Location of Erosion Areas	1			
	2			
	3			
	4			
	5			

Were there bulges or hummocky terrain? Yes [ ] No [ ]

Location of Ground Bulges				
	2			
	3			
	4			
	5			

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

Location of Springs/Seeps	1			
	2			
	3			
	4			
	5			

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]

Location of Changes	1			
	2			
	3			
	4			
	5			
	6			

Did a failure occur on the fill? Yes [ ] No [X]

Movement Characteristics

If so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement	**Mass 1**	
	Mass 2	
	Mass 3	

Comments

evision reduced size of the fill to allow use of an existing road

On March 30, 1999 fill was completed and final grading was occuring

813-0238
HF # 12

Kentucky
Addington Enterprises
Prater #1

Permit: 813-0238 Fill: HF# 8

Permit: 813-0238 Fill: HF# 8

Kentucky
Addington Enterprises
Prater #1

Permit: 813-0238 Fill: HF# 8

Kentucky
Addington Enterprises
Prater #1

Permit: 813-0238 Fill: HF# 10

Permit: 813-0238 Fill: HF# 10

Kentucky
Addington Enterprises
Prater #1

Permit: 813-0238 Fill: HF# 10

Permit: 813-0238 Fill: HF# 10

Kentucky
Addington Enterprises
Prater #1

Permit: 813-0238 Fill: HF# 12

Permit: 813-0238 Fill: HF# 12

Kentucky
Addington Enterprises
Prater #1

Permit: 813-0238 Fill: HF# 12

Kentucky
Addington, Inc.
UK #1

Permit: 813-0180

Fill: HF #3
Fill: HF #7

BLANK PAGE

Company: Addington, Inc.	**Fill:** HF # 3		Date of permit file review: 05/18/99
Permit: 813-0180	**Mine:** UK#1		Date fill contruction started: 01/15/95
State: KY	**Was** this fill visited at ground level?	**Yes** [X] No [ ]	Finished: 04/20/98
County: Breathitt	Date of visit:	06109199	Number of fill size revisions:
Latitude: 37-25-16	Had the fill been reclaimed at the time of the air survey?	Yes [ ] No [X]	%Sandstone in overburden: 57
Longitude: 83-11-45	Date of survey:	12/31/99	

Type of Fill	Durable **Rock**		Durable **Ruck**		Durable **Rock**
Size "f Fill	1900	Length (ft)	1900		1900
	15.0	Area (acres)	15.0		15.0
	2.0	Volume (mcy)	2.0		2.0
Surface Configuration	Flat		Flat		Flat
Elevations	1240	Crown (ft)	1240		1240
	1030	Toe (ft)	1030		1030
Slopes	13.0	Toe Foundation (%)	13.0		13.0
	27.0	Fill Face **(deg.)**	27.0		***27.0***
Surface Drainage Control	Perimeter		Perimeter		Perimeter
Subsurface **Drainage Control**	Grav. Segregated		Grav. Segregated		Grav. Segregated
Stability Analysis Software Used	REAME		REAME		REAME
Safety Factor	1.9	static	1.9		1.5
	1.5	Seismic	1.5		1.2
Engineering Properties (Spoil)	125	Unit Weight (pcf)	125		125
	30	Friction Angle	30		30
	200	Cohesion (psf)	200		200
Engineering Properties (Foundation)		Unit Weight (pcf)			
		Friction Angle (deg.)			
		Cohesion (psf)			
Phreatic Surface	P-.1		P-.1		P-05

Construction Documentation and Certifications

	Appl. Phase Certification	**Appl.Quarterly Certification**	**Photography Type**
Foundation Preparation	Yes [ ] No [X]		None
Underdrains	**Yes** [ ] No [X]		None
Surface Drains	Yes [ ] **No** [X]	97/3	B&W
Grading and Revegetation	Yes [ ] No [X]	98/1	B&W
Final Certification	Yes [ ] No [X]	98/2	**B&W**

Aerial Survey and Ground Level Review *

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ]	No [ ]
Foundation data:		Text
Dip of **strata** relative to **fill:**		
Were NOV's written on the fill?	Yes [ ]	No [X]
Surface drainage control working properly?	**Yes** [X]	**No** [ ]
Subsurface drainage control **working** properly?	Yes [X]	No [ ]
If active till, was active spoil disposal determined to be on-going?	Yes [ ]	No [ ]
If spoil disposal site inactive, haw long was disposal operation idle (months)?		
f a durable **rock fill is under construction**		
Approximately 80% durable **rock** by volume?	Yes [ ]	No [ ]
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [ ]	No [ ]
ifthc **fill** is completed, compare the size with the **size** in the latest pre-completion revision?		Same
If the fill is significantly **smaller.** what *is* the reason according to the documentation or inspector?		
Fill surface configuration:		Flat
Is the **fill** situated in landslide topography?	Yes [ ]	No [X]
Were there ground **cracks** observed on the fill face or benches?	Yes [ ]	No [X]
Number of benches on fill:		

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *				
	3			

Location of Depressions *	Were there depressions on the fill benches? **Yes** [ ] No [ ]		**(Potential Water Depth)**
	2		
	3		
	4		
	5		

Location of Erosion Areas *	Were there areas of erosion on the fill benches? Yes [ ] No [ ]		**(Maximum Gully Depth)**
	1		
	2		
	3		
	4		
	5		

Location of Ground Bulges *	**Were** there **bulges or hummocky terrain?** Yes [ ] No [ ]		
	2		
	3		
	4		
	5		

Location of Springs/Seeps *	**Were** there springs or seeps observed **in** disposal areas? Yes [ ] No [ ]		
	2		
	3		
	5		

Location of Changes *	Were **changes** in vegetation or **spoil** color observed on **fill?** ***Yes*** [ ] Nu [ ]		
	1		
	2		
	3		
	4		
	6		

Movement Characteristics *

Did a failure occur on **the fill?** **Yes** [ ] No [X]

f so, **enter** the source of information on the failure:

Stage **of** construction **during** failure:

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp **Height** (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement	**Mass 1**		
	Mass 2		
	Mass 3		

Comments

nal certification "as built' dated 9/24/98 only minor deviations from original design

813-0180
HF # 3

#

Type of Fill		Durable Rock	Durable Rock
Sire of fill	Length (ft)	1700	1150
	Area (acres)	26 6	6 1
	Volume (mcy)	6 1	0.7
Surface Configuration		Flat	Flat
Elevations	Crown (it)	1240	1190
	Toe (ft)	985	1000
Slopes	Toe Foundation (%)	16.0	16.0
	Fill Face (deg.)	27.0	27 0
Surface Drainage Control		Perimeter	Perimeter
Subsurface Drainage Control		Grav. Segregated	Grav. Segregated
Stability Analysis Software Used		REAME	REAME
Safety Factor	Static	1.6	1.5
	Seismic	1.2	1.2
Engineering Properties (Spoil)	Unit Weight (pcf)	125	125
	Friction Angle	24	24
	Cohesion (psf)	160	160
Engineering Properties (Foundation)	Unit Weight (pcf)	125	125
	Friction Angle (deg.)	30	30
	Cohesion (psf)	200	200
Phreatic Surface		p.05	P-.1

Construction Documentation and Certifications		Appl. Phase Certification		Appl. Quarterly Certification	Photography Type
	Foundation Preparation	Yes [ ]	No [X]	9413	None
	Underdrains	Yes [1	No [X]	9413	None
	Surface Drains	Yes [ ]	No [X]	97/3	None
	Grading and Revegetation	Yes [ ]	No [X]	97/3	None
	Final Certification	Yes [X]	No [ ]	9713	B&W

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ]	No [ ]
Foundation data:		Text
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [ ]	No [X]

Aerial Survey and Ground Level Review*			
	Surface drainage control working properly?	Yes [XI	No [ ]
	Subsurface drainage control working properly?	Yes [ ]	No [X]
	If active fill, was active spoil disposal determined to be on-going?	Yes [X]	No [ ]
	If spoil disposal site inactive, how long was disposal operation idle (months)?		
	f a durable rock fill is under construction,		
	Approximately 80% durable rock by volume?	Yes [ ]	No [X]
	If no to above, estimate percentage:		50
	Discernable blanket or core drain forming?	Yes [X]	No [ ]
	If the fill is completed, compare the size with the size in the latest pre-completion revision?		Larger
	If the fill is significantly smaller, what is the reason according to the documentation or inspector?		Auger Mine
	Fill surface configuration:		Flat
	Is the fill situated in landslide topography?	Yes [ ]	No [X]
	Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [1
	Number of benches on fill		

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	1 TOE OF FILL	40	20	
	2			
	3			

Location of Depressions

Were there depressions on the **fill benches?** **Yes** [ ] No [ ] **(Potential Water Depth)**

1

3

5

Location of Erosion Areas

Were there areas **of** erosion on the till benches? **Yes** [ ] **No** [ ] **(Maximum Gully Depth)**

1
2
3
4
5

Location of Ground Bulges

Were there bulges or hummocky terrain? Yes [ ] No [ ]

1
2
3

Location of Springs/Seeps

Were there springs or seeps observed in disposal areas? **Yes** [ ] No [1

1
2
4
5

Location of Changer

Were **changes** in vegetation or **spoil** color **observed** on fill? Yes [ ] No [ ]

2
3
4
5
6

Movement Characteristics

Did a failure occur on **the fill?** Yes [X] No [1

? so, enter the source of **information** on the failure:

Stage **of** construction during **failure:**

	Mass 1	Mass 2	Mass 3
Bench #	TO		
Length (ft)	40		
Width (ft)	20		
Scarp **Height** (ft)			
Depth to **Slip** Plane (A)			
Transport **Distance** (A)			
Rate of Movement	Slow		
Extent of Failure Movement	Bulge		

Cause of Movement **Mass 1** Inadequate UnderDrains
Mass 2
Mass 3

comments

Had repaired small slide movement @ toe of fill. Signifiant seepage @ toe area with heavy iron staining. Seepage located from sides and toe area indicate underdrain was not workir operly.

811-0180
HF # 7

Kentucky
Addington Inc.
UK#1

Permit: 813-0180 Fill: HF# 3

Permit: 813-0180 Fill: HF# 7

Kentucky
Addington Inc.
UK#1

Permit: 813-0180 Fill: HF# 7

Permit: 813-0180 Fill: HF# 7

Kentucky
Big Creek Mining, Inc.
Hunt's Branch Strip

Permit: 898-0490

Fill: HF #SA
Fill: HF #SB (No Photo)
Fill: HF #6
Fill: HF #9
Fill: HF #10
Fill: HF #11
Fill: HF #16

BLANK PAGE

Company:	Big Creek Mining, Inc.	**Fill:**	HF # 5A	Date of permit file review:	04/16/99
Permit:	898-0490	**Mine:**	Hunt's Branch Strip	Date fill contruction started:	07/01/97
State:	KY	Was this fill visited at ground level?	Yes [X] No [ ]	Finished:	/ /
County:	Pike	Date of visit:	07/08/99	Number of fill size revisions:	1
Latitude:	37-26-50	Had the fill been reclaimed at the time of the air survey?	Yes [ ] No [X]	%Sandstone in overburden:	59
ngitude:	82-13-35	Date of survey:	12/31/99		

		As constructed	Revision	Original design
Type of Fill			Durable Rock	Durable Rock
Size of Fill	Length (ft)		200	1150
	Area (acres)		1.1	7.6
	Volume (mcy)		0.0	0.5
Surface Configuration			Flat	Flat
Elevations	Crown (ft)		1190	1190
	Toe (ft)		1090	1090
Slopes	Toe Foundation (%)		2.1	2.1
	Fill Face (deg.)		27.0	27.0
Surface Drainage Control			Perimeter	Perimeter
Subsurface Drainage Control			Grav. Segregated	Grav. Segregated
Stability Analysis Software Used			REAME	REAME
Safety Factor	Static		1.4	1.5
	Seismic		1.1	1.1
Engineering Properties (Spoil)	Unit Weight (pcf)		125	125
	Friction Angle		34	30
	Cohesion (psf)		160	160
Engineering Properties (Foundation)	Unit Weight (pcf)			
	Friction Angle (deg.)			
	Cohesion (psf)			
Phreatic Surface			P-.1	P-.1

Construction Documentation and Certifications

	Appl. Phase Certification	Appl.Quarterly Certification	Photography Type
Foundation Preparation	Yes [ ] No [X]	02/97	Color
Underdrains	Yes [ ] No [X]	03/97	Color
Surface Drains	Yes [ ] No [X]	03/97	None
Grading and Revegetation	Yes [ ] No [ ]		
Final Certification	Yes [ ] No [ ]		

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation? Yes [ ] No [ ]

Foundation data: Text

Dip of strata relative to fill:

Were NOV's written on the fill? Yes [ ] No [X]

Aerial Survey and Ground Level Review *

Surface drainage control working properly? Yes [X] No [ ]

Subsurface drainage control working properly? Yes [X] No [ ]

If active fill, was active spoil disposal determined to be on-going? Yes [X] No [ ]

If spoil disposal site inactive, how long was disposal operation idle (months)?

If a durable rock fill is under construction,

Approximately 80% durable rock by volume? Yes [ ] No [X]

If no to above, estimate percentage: 60

Discernable blanket or core drain forming? Yes [X] No [ ]

If the fill is completed, compare the size with the size in the latest pre-completion revision?

If the fill is significantly smaller, what is the reason according to the documentation or inspector?

Fill surface configuration:

Is the fill situated in landslide topography? Yes [ ] No [ ]

Were there ground cracks observed on the fill face or benches? Yes [ ] No [ ]

Number of benches on fill:

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	2			
	3			
Location of Depressions	Were there depressions on the fill benches? Yes [ ] No [ ]			**(Potential Water Depth)**
	1			
	2			
	1			
	4			
	5			
Location "f Erosion Areas	Were there areas of erosion on the fill benches? Yes [ ] No [ ]			**(Maximum Gully Depth)**
	1			
	2			
	3			
	4			
	5			
Location of Ground Bulges'	Were **there** bulges or hummocky terrain? Yes [ ] No [ ]			
	I			
	2			
	3			
	4			
	5			
Location of Springs/Seeps	Were there **springs** or seeps observed in **disposal** areas? **Yes [ ]** No [ ]			
	I			
	2			
	1			
	4			
	5			
Location of Changes	Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]			
	2			
	1			
	4			
	5			
	6			
Movement Characteristics	**Did** a failure occur **on** the fill? Yes [ ] No [X]			
	so. enter the source of information on the failure:			
	Stage of construction during failure:			
		Mass 1	**Mass 2**	**Mass 3**
	Bench #			
	Length (ft)			
	Width (ft)			
	Scarp Height (ft)			
	Depth to **Siip** Plane (ft)			
	Transport Distance (ft)			
	Rate of Movement			
	Extent of Failure Movement			
	Cause of Movement **Mass 1**			
	Mass 2			
	Mass 3			
Comments	jor Revision #1 (8/11/98 split Fill #5 into Fill #5A and #5B			
	1# 5A is a sidehill fill			
	;hwall miner in permit			

898-0490
HF # 5A

Company: Big Creek Mining, Inc.	Fill: IIF # 5B	Date of permit file review:	1213 1199
Permit: 898-0490	Mine: Hunt's Branch Strip	Date till contruction started:	12/22/97
State: KY	Was this fill visited at ground level? Yes [X] No [ ]	Finished:	1 1
County: Pike	Date of visit: 12/31/99	Number of till size revisions:	1
Latitude: 31-26-50	Had the fill been reclaimed at the time of the air survey? Yes [ ] No [X]	%Sandstone in overburden:	59
Longitude: 82-13-35	Date of survey:		

		As constructed	Original design
Type of Fill		Durable Rock	**Durable Rock**
Size of Fill	**Length** (ft)	900	1150
	Area (acres)	3 2	**7 6**
	Volume (mcy)	0.3	0.5
Surface Configuration		Flat	Flat
Elevations	Crown (ft)	1220	1270
	Toe (fl)	1140	1140
Slopes	Toe Foundation (%)	2 0	2.0
	Fill Face (deg.)	27.0	21 0
Control		Perimeter	Perimeter
Drainage Control		Grav. Segregated	Grav. Segregated
Stability Analysis **Software Used**		REAME	REAME
Safety Factor	Static	1.?	1.?
	Seismic	1.1	1.1
Engineering Properties (Spoil)	Unit Weight (pcf)	125	125
	Friction Angle	34	24
	Cohesion (psf)	160	160
Engineering Properties (Foundation)	Unit Weight (pcf)		125
	Friction Angle (deg.)		34
	Cohesion (psf)		111
Phreatic **Surface**		P-.1	P- 1

Construction Documentation and Certifications	Appl. Phase **Certification**		**Appl.Quarterly certification**	**Photography Type**
Foundation Preparation	**Yes** [ ]	No [X]	9713	Color
Underdrains	Yes [ ]	No [X]	9713	Color
Surface Drains	***Yes*** [ ]	No [X]	**9913**	None
Grading and Revegetation	**Yes** [ ]	No [X]	9913	None
Final Certification	Yes [ ]	No [ ]		

If **a DRF,** did the photographs show **the** rock **blanket** or core underdrain by gravity segregation?	Yes [X]	No [ ]
Foundation data:		Text
Dip of strata relative lo fill:		
Were NOV's written on the fill?	Yes [ ]	No [X]

Aerial Survey and Ground Level Review *

Surface drainage control working properly?	**Yes** [X]	No [ ]
Subsurface drainage control working properly?	**Yes** [X]	**No** [ ]
If active fill, **was** active spoil disposal determined to he on-going?	Yes [X]	**No** [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
f a durable rock fill is under construction,		
Approximately 80% durable rock by **volume?**	***Yes*** [ ]	No [X]
If no to above. estimate percentage:		60
Discernable blanket or core drain forming?	Yes [X]	No [ ]
If the **fill** is completed, compare **the** size with the size in the latest pre-completion revision?		Larger
If the **fill** is significantly smaller, what is the reason according to **the** documentation or inspector?		Don't know
Fill surface configuration:		Flat
Is the **fill** situated in landslide topography?	Yes [ ]	No [X]
Were there ground cracks observed on the fill face or benches?	***Yes*** [ ]	No [X]
Number of benches on **fill:**		

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *	1			
	2			

Were there depressions on the fill benches? Y e [ ] No [ ] (Potential Water Depth)

Location of Depressions *	1			
	2			
	3			
	4			
	5			

Were there areas of erosion on the fill benches? Yes [ ] No [ ] (Maximum Gully Depth)

Location of Erosion Areas	1			
	2			
	3			
	4			
	5			

Were there bulges or hummocky terrain? Yes [ ] No [ ]

Location of Ground Bulges *	1			
	2			
	3			
	4			
	5			

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

Location of Springs/Seeps *	1			
	2			
	3			
	4			
	5			

Were changes in vegetation or spoil color observed on fill? Yes [I No [ ]

Location of Changes *				
	2			
	3			
	4			
	5			
	6			

Did a failure occur on the fill? Yes [ ] No [X]

f so, enter the source of information on the failure:

Stage of construction during failure.

	Miss 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (A)			
Transport Distance (A)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement	Mass 1		
	Mass 2		
	Mass 3		

Comments

ajor Revision #1 split Fill # 5 into Fill #5A and #5B

ighwall miner on permit

ll was 15% completed on 3/29/99

898-0490
HF # 5B

		As constructed	Revision	Original design
Type of Fill			Durable Rock	Durable Rock
Size of Fill	Length (ft)		800	800
	Area (acres)		6.0	4.0
	Volume (mcy)		0.3	0.0
Surface Configuration			Flat	Flat
Elevations	crown (A)		1260	1250
	Toe (A)		1110	1120
Slopes	Toe Foundation (%)		3.4	3.4
	Fill Face (deg.)		27.0	27.0
Surface Drainage Control			Perimeter	Perimeter
Subsurface Drainage Control			Grav. Segregated	Grav. Segregated
Stability Analysis Software Used			REAME	REAME
Safety Factor	Static		1.5	1.5
	Seismic		1.2	1.2
Engineering Properties (spoil)	Unit Weight (pcf)		125	125
	Friction Angle		24	24
	Cohesion (psi)		160	160
Engineering Properties (Foundation)	Unit Weight (pcf)			
	Friction Angle (deg.)			
	Cohesion (psf)			
Phreatic Surface			P- 1	P- 1

		Appl. Phase Certification		Appl.Quarterly Certification	Photography Type
Construction Documentation and Certifications	Foundation Preparation	Yes [ ]	No [X]	97/2	None
	Underdrains	Yes [ ]	No [X]	97/2	None
	Surface Drains	Yes [ ]	No [X]	97/3	Color
	Grading and Revegetation	Yes [ ]	No [X]	98/1	None
	Final Certification	Yes [ ]	No [ ]		

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ]	No [X]
Foundation data:		Text
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [ ]	No [X

Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control working properly?	Yes [X]	No [ ]
If active fill, was active spoil disposal determined to bc on-going?	Yes [X]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		11
f a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [X]
If no to above, estimate percentage:		50
Discernable blanket or core drain forming?	Yes [ ]	No [X]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		Larger
If the fill is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		Flat
Is the fill situated in landslide topography?	Yen [ ]	No [X]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [X]
Number of benches on fill:		

Aerial survey and Ground Level Review *

	Location	Length (ft)	Width (ft)	Depth (in)
Location of **Cracks** *	1			
	2			

Were there depressions on the fill benches'? Yes [ ] No [ ] (Potential Water Depth)

Location of Depressions *				
	3			
	4			
	5			

Were there areas of erosion **on the** fill benches? Yes [ ] No [ ] **(Maximum Gully Depth)**

Location of Erosion Areas *	1			
	2			
	3			
	4			
	5			

Were there bulges or hummocky terrain? Yes [ ] No [ ]

Location of Ground Bulges *	2			
	3			
	4			
	5			

Were there springs or seeps observed in **disposal** areas? Yes [ ] No [ ]

Location **of Springs/Seeps** *	2			
	3			
	4			
	5			

Were changes in vegetation or spoil color observed on **fill?** Yes [ ] No [ ]

Location of Changes *	2			
	3			
	4			
	5			
	6			

Did a failure occur on the fill? **Yes** [ ] No [X]

f so, enter the source of information on the failure:

Stage of construction during failure:

Movement Characteristics *

	Mass 1	Mass 2	Mass 3
Bench 4			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (A)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement	Mass I		
	Mass 2		
	Mass 3		

Comments

3/29/99 fill was 90 % complete

vision #1 increased size of the fill

nstruction method was "wingfill" construction with inadequate gravity segregation

898-0490
HF # 6

		As constructed	Revision	Original design
Type of Fill			Durable Rock	Durable Rock
Size of Fill	Length (h)		750	750
	Area (acres)		10.0	4.6
	Volume (mcy)		0.6	0.2
Surface configuration			Flat	Flat
Elevations	Crown (ft)		1540	1550
	Toe (ft)		1240	1280
Slopes	Toe Foundation (%)		22.0	22.0
	Fill Face (deg.)		27.0	27.0
Surface Drainage Control			Perimeter	Perimeter
Subsurface Drainage Control			Grav. Segregated	Grav. Segregated
Stability Analysis Software Used			REAME	REAME
Safely Factor	Static		1.4	1.5
	Seismic		1.1	1.1
Engineering Properties (Spoil)	Unit Weight (pcf)		125	125
	Friction Angle		34	34
	Cohesion (psf)		111	111
Engineering Properties (Foundation)	Unit Weight (pcf)			
	Friction Angle (deg.)			
	Cohesion (psf)			
Phreatic Surface			P- 1	P- 1

		Appl. Phase Certification		Appl.Quarterly Certification	Photography Type
Construction Documentation and Certifications	Foundation Preparation	Yes [ ]	No [X]	9712	None
	Underdrains	Yes [X]	No [ ]	9x12	Color
	Surface Drains	Yes [ ]	No [X]		None
	Grading and Revegetation	Yes [ ]	No [ ]		
	Final Certification	Yes [ ]	No [ ]		

if a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [X]	No [ ]
Foundation data:		Text
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [ ]	No [X]

Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control working properly?	Yes [X]	No [ ]
If active fill. was active spoil disposal determined to be on-going?	Yes [X]	No [ ]
If spoil disposal rite inactive, how long was disposal operation idle (months)?		
If a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [X]
If no to above. estimate percentage:		50
Discernable blanket or core drain forming?	Yes [X]	No [ ]
If the till is completed, compare the size with die size in the latest pre-completion revision?		
If the fill is significantly smaller. what is the reason according to the documentation or inspector?		
Fill surface configuration:		Flat
Is the fill situated in landslide topography?	Yes [ ]	No [X]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [X]
Number of benches on fill:		

Aerial Survey and Ground Level Review *

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks*	1			
	2			
	3			

Location of Depressions*

Were there depressions on the fill benches? Yes [ ] No [1 (Potential Water Depth)

1
2
3
4
5

Location of Erosion Areas*

Were there areas of erosion on the fill benches? Yes [ ] No [1 (Maximum Gully Depth)

1
2
3
4

Location "f Ground Bulges*

Were there bulges or hummocky terrain? Yes [ ] No [1

1
2
3
4
5

Location of Springs/Seeps*

Were there springs or seeps observed in disposal areas? Yes [ ] No [1

1
2
3
4
5

Location of Changes'

Were changes in vegetation or spoil color observed on fill! Yes [ ] No [ ]

2
3
4
5
6

Movement Characteristics*

Did a failure occur on the fill? Yes [ ] No [X]

If so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
scarp Height (A)			
Depth to Slip Plane (ft)			
Transport Distance (R)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement	Mass 1		
	Mass 2		
	Mass 3		

Comments

Major revision X1 increase fill size slightly. Revision # 2 increased fill size

Revision (9/30/97) required removal of overburden to bedrock

3/28/00 Fill was 32% complete

898-0490
HF # 9

Company: Big Creek Mining. Inc.	Fill: HF # 10	Date of permit file review:	04116199
Permit: 898-0490	**Mine:** Hunt's Branch Strip	Date fill contruction started:	09/27/00
state: KY	Was this **fill** visited at ground **level?** **Yes** [X] No [ ]	Finished:	/ /
County: **Pike**	Date of visit: 07/08/99	Number of **fill** size revisions:	
Latitude: 37-27-14	Had the fill been reclaimed at the time of the air **survey?** Yes [ ] No [X]	%Sandstone in overburden:	59
Longitude: 82-13-25	Date of survey: 12/31/99		

	As constructed	Revision	Original design
Type of Fill			Durable Rock 2800
Size of Fill	Length (ft)		*2800*
	Area (acres)		**34.7**
	Volume (mcy)		1.9
Surface Configuration			
Elevations	Crown (ft)		1510
	Toe (ft)		**1260**
Slopes	Toe Foundation (%)		5.0
	Fill Face (deg.)		**27.0**
surface Drainage Control			Perimeter
Subsurface **Drainage Control**			Grav. Segregated
Stability **Analysis Software Used**			**REAME**
Safety Factor	Static		1.7
	Seismic		1.3
Engineering Properties (Spoil)	Unit Weight (pcf)		125
	Friction Angle		**24**
	Cohesion (psf)		160
Properties (Foundation)	Friction Angle (deg.)		34
	Cohesion (psf)		111
Phreatic Surface			P-.05

		Appl. Phase Certification		**Appl.Quarterly Certification**	**Photography Type**
Construction **Documentation** and **Certifications**	Foundation Preparation	Yes [ ]	No [X]	*9712*	None
	Underdrains	Yes [ ]	*No* [X]	97/2	None
	Surface Drains	Yes [ ]	No [X]	97/3	Color
	Grading and Revegetation	Yes [ ]	No [ ]		
	Final Certification	Yes [ ]	No [ ]		

If a DRF, did the photographs show the **rock** blanket or core underdrain by gravity segregation?	Yes [ ]	No [ ]
Foundation data:		Text
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [ ]	**No** [X]

Aerial Survey and Ground Level Review *

Surface drainage control working properly?	**Yes** [X]	No [ ]
Subsurface drainage control **working** properly?	Yes [X]	No [ ]
If active fill. **was** active spoil disposal determined to be on-going?	**Yes** [ ]	**No** [ ]
If spoil disposal site inactive, how long **was** disposal operation idle (months)?		
If a durable rock fill **is** under construction,		
Approximately 80% durable rock by volume?	**Yes** [ ]	No [X]
If no to above, estimate percentage:		60
Discernable blanket or core drain forming?	Yes [X]	No [ ]
If the **fill** is completed, compare the size with the **size** in the latest pre-completion revision?		Same
If the **fill** is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		Flat
Is the till situated in landslide topography?	Yes [ ]	No [X]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [X]
Number **of** benches on till:		

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *	1			
	2			
	3			

Location of Depressions *

Were there depressions on the till benches? Yes [ ] No [ ] **(Potential Water Depth)**

	1			
	2			
	3			
	4			
	5			

Location of Erosion Areas *

Were there areas of erosion on the **fill benches?** Yes [ ] No [ ] **(Maximum Gully Depth)**

	1			
	2			
	3			
	4			
	5			

Location of Ground Bulges *

Were there bulges or hummocky terrain? **Yes** [ ] No [ ]

	1			
	2			
	3			
	4			
	5			

Location of Springs/Seeps *

Were there **springs** or seeps observed in **disposal** areas? Yes [ ] No [ ]

	1			
	2			
	3			
	4			
	5			

Location of Changes *

Were changes in vegetation or spoil color observed on fill? Yes [1 No [1

	1			
	2			
	3			
	4			
	5			
	6			

Movement Characteristics *

Did a failure occur **on** the fili? **Yes** [ ] No [X]

f so. **enter** the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (it)			
Scarp Height (it)			
Depth to Slip Plane (ft)			
Transport Distance (it)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement Mass 1			
Mass 2			
Mass 3			

Comments

898-049C
HF # 10

Type of Fill		Durable Rack	Durable Rock
***Sire* of Fill**	Length (ft)	1100	1100
	Area (acres)	10.0	10.8
	Volume (mcy)	*0.5*	*0.6*
Surface Configuration		Flat	Flat
Elevations	Crown (ft)	1580	1580
	Toe (ft)	1340	1340
Slopes	Toe **Foundation** (%)	3.7	3.7
	Fill Face (deg.)	27.0	27.0
Surface Drainage Control		Perimeter	Perimeter
Subsurface Drainage Control		Grav. Segregated	Grav. Segregated
Stability **Analysis Software Used**		REAME	REAME
Safety Factor	Static	1.5	1.5
	Seismic	1.2	1.2
Engineering Properties (Spoil)	Unit Weight (pcf)	**125**	125
	Friction Angle	**24**	24
	Cohesion (psf)	160	160
Engineering Properties (Foundation)	Unit Weight (pcf)	125	*125*
	Friction Angle (deg.)	**34**	34
	Cohesion (psf)	111	111
Phreatic Surface		**P-.os**	p-.05

Construction Documentation and Certifications

Foundation Preparation	Yes [ ]	No [X]	98/2	None
Underdrains	Yes [X]	No [1	*9813*	Color
Surface Drains	Yes [ ]	No [ ]		
Grading and Revegetation	**Yes** [ ]	No [ ]		
Find Certification	Yes [ ]	No [ ]		

Aerial Survey and Ground Level Review *

If a DRF. did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [X]	No [ ]
Foundation data:		Text
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [ ]	No [X]
Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control working properly?	***Yes*** [X]	No [ ]
If active fill, was active spoil **disposal** determined to be on-going?	Yes [ ]	No [X]
If spoil **disposal** site inactive, how long was disposal **operation idle** (months)?		15
f **a durable rock fill is under** construction,		
Approximately ***80%*** **durable rock** by volume?	Yes [X]	No [ ]
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [X]	No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion **revision?**		
If the fill is significantly smaller, what is the reason according to the **documentation** or inspector?		
Fill surface configuration:		Flat
Is the **fill** situated in landslide topography?	Yes [ ]	No [X]
Were there ground cracks observed on the **fill** face or benches?	Yes [ ]	No [X]
Number of benches on fill:		

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *	2			
	3			

Were **there depressions** on **the** fill benches? **Yes** [1 No [ ] **(Potential Water Depth)**

Location of Depressions *	2			
	3			
	5			

Were there areas of **erosion** on **the** fill benches? **Yes** [ ] No [ ] **(Maximum Gully Depth)**

Location of Erosion Areas *	1			
	2			
	3			
	4			
	5			

Were there bulges or hummocky terrain? Yes [ ] No [ ]

Location of Ground Bulges *	2			
	3			
	4			
	5			

Were there springs or seeps observed in **disposal** areas? Yes [ ] No [ ]

Location "f Springs/Seeps *	2			
	3			
	4			

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]

Location of Changes *	1			
	2			
	3			
	4			
	5			
	6			

Movement Characteristics *

Did a failure occur on the fill? Yes [ ] No [X]

f so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement **Mass 1**			
Mass 2			
Mass 3			

Comments

ajor Revision # 1 - decrease in fill size

l used as faceup area for underground mine

) change in fill since 06/29/99 (through 3/28/00)

) special drainage scheme for old contour cut under the fill

898-0490
HF # 11

Type of Fill		Durable Rock
Size of Fill	Length (ft)	980
	Area (acres)	2.1
	Volume (mcy)	**0.3**
Surface Configuration		
Elevations	Crown (ft)	1530
	Toe (ft)	1250
Slopes	Toe Foundation (%)	15.0
	Fill Face (deg.)	27.0
Surface Drainage Control		Perimeter
Subsurface Drainage Control		Grav. Segregated
Stability Analysis Software Used		REAME
Safety Factor	Static	1.4
	Seismic	1.1
Engineering Properties (spoil)	Unit Weight (pcf)	125
	Friction Angle	24
	Cohesion (psf)	160
Engineering Properties (Foundation)	Unit Weight (pcf)	125
	Friction **Angle** (deg.)	34
	Cohesion (psf)	111
Phreatic Surface		P-.05

Construction Documentation and Certifications

Foundation Preparation	Yes [ ]	No [X]	9812	None
Underdrains	**Yes** [X]	No [1	98/3	Color
Surface Drains	**Yes** [X]	No [ ]		None
Grading **and** Revegetation	Yes [X]	No [ ]		None
Find Certification	**Yes** [ ]	No [ ]		

Aerial survey and Ground Level Review *

Ifa DRF. did the photographs show the rack **blanket** or core underdrain by gravity segregation?	**Yes** [ ]	No [ ]
Foundation data:		Texr■
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [ ]	No [X]
Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control working properly?	Yes [X]	No [1
If active fill. was active spoil **disposal** determined to be on-going?	Yes [X]	No [ ]
If spoil **disposal** site inactive, how long was disposal operation idle (months)?		
f a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [X]	No [ ]
I■fo to above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [X]	No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		
If the **fill** is significantly smaller, what is the reason according to the documentation or inspector?		
Fill **surface** configuration:		Flat
In the **fill** situated in landslide topography?	Yes [ ]	No [X]
Were there ground cracks observed on the fill race or benches?	**Yes** [ ]	No [X]
Number of benches on **fill:**		

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *	2			
Location of Depressions *	Were there depressions on the fill benches? Yes [ ] No [ ]			**(Potential Water Depth)**
	3			
	4			
	5			
Location of Erosion Areas *	Were there areas of erosion on the fill benches? Yes [ ] No [ ]			**(Maximum Gully Depth)**
	2			
	3			
	4			
	5			
Location of Ground Bulges *	Were there bulges or hummocky terrain? Yes [ ] No [ ]			
	2			
	3			
	5			
Location of Springs/Seeps *	Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]			
	2			
	4			
	5			
Location of Changer *	Were changes in vegetation or spoil color observed on fill? Yes [1] No [ ]			
	2			
	3			
	4			
	5			
	6			
Movement Characteristics *	Did a failure occur on the fill? Yes [ ] No [X]			
	f so, enter the source of information on the failure:			
	Stage of construction during failure:			
		Mass 1	**Mass 2**	**Mass 3**
	Bench #			
	Length (ft)			
	Width (ft)			
	Scarp Height (A)			
	Depth to Slip Plane (ft)			
	Transport Distance (ft)			
	Rate of Movement			
	Extent of Failure Movement			
	Cause of Movement	**Mass I**		
		Mass 2		
		Mass 3		
Comments	ll added in Revision #2			

898-0490
HF # 16

Kentucky
Big Creek Mining, Inc.
Hunt's Branch Strip

Permit: 898-0490 Fill: HF# 5A

Permit: 898-0490 Fill: HF# 5A

Kentucky
Big Creek Mining, Inc.
Hunt's Branch Strip

Permit: 898-0490 Fill: HF# 5A

Kentucky
Big Creek Mining, Inc.
Hunt's Branch Strip

Permit: 898-0490 Fill: HF# 6

Permit: 898-0490 Fill: HF# 6

Kentucky
Big Creek Mining, Inc.
Hunt's Branch Strip

Permit: 898-0490 Fill: HF# 6

Kentucky
Big Creek Mining, Inc.
Hunt's Branch Strip

Permit: 898-0490 Fill: HF# 9

Kentucky
Big Creek Mining, Inc.
Hunt's Branch Strip

Permit: 898-0490 Fill: HF# 10

Permit: 898-0490 Fill: HF# 10

Kentucky
Big Creek Mining, Inc.
Hunt's Branch Strip

Permit: 898-0490 Fill: HF# 11

Permit: 898-0490 Fill: HF# 11

Kentucky
Big Creek Mining, Inc.
Hunt's Branch Strip

Permit: 898-0490 Fill: HF# 11

Permit: 898-0490 Fill: HF# 11

Kentucky
Big Creek Mining, Inc.
Hunt's Branch Strip

Permit: 898-0490 Fill: HF# 16

Permit: 898-0490 Fill: HF# 16

BLANK PAGE

Kentucky
Cheyenne Resources
Surface Mine Job #3

Permit: 860-0377

Fill: HF #03
Fill: HF #4

BLANK PAGE

		As constructed	Revision	Original design
Type of Fill			Durable Rock	Durable Rock
Size "f Fill	Length (H)		1500	1600
	Area (acres)		53.0	82.0
	Volume (mcy)		53.0	10.4
Surface Configuration			Convex	Convex
Elevations	Crow,, (ft)		1810	1760
	Toe (R)		1380	1350
Slopes	Toe Foundation (%)		21 0	21.0
	Fill Face (deg.)		27.0	27.0
Surface Drainage Control			Perimeter	Perimeter
Subsurface Drainage Control			Grav. Segregated	Grav. Segregated
Stability Analysis Software Used			REAME	REAME
Safety Factor	Static		1.4	1.6
	Seismic		1.1	1.2
Engineering Properties (Spoil)	Unit Weight (pcf)		125	125
	Friction Angle		24	24
	Cohesion (psf)		160	160
Engineering Properties (Foundation)	Unit Weight (pcf)			125
	Friction Angle (deg.)			38
	Cohesion (psf)			0
Phreatic Surface			P-.05	P-.1

		Appl. Phase certification		Appl.Quarterly Certification	Photography Type
Construction Documentation and Certifications	Foundation Preparation	Yes [ ]	No [X]	94/01	None
	Underdrains	Yes [ ]	No [X]	98/2	Color
	Surface Drains	Yes [ ]	No [ ]		
	Grading and Revegetation	Yes [ ]	No [ ]		
	Final Certification	Yes [ ]	No [ ]		

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ]	No [ ]
Foundation data:		Text
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [X]	No [ ]

Surface drainage control working properly?	Yes [ ]	No [X]
Subsurface drainage control working properly'?	Yes [ ]	No [X]
If active fill, was active spoil disposal determined to be on-going?	Yes [X]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
f a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [X]
If no to above. estimate percentage:		60
Discernable blanket or core drain forming?	Yes [X]	No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		
If the fill is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		Flat
Is the fill situated in landslide topography?	Yes [X]	No [ ]
Were there ground cracks observed on the fill face or benches?	Yes [X]	No [ ]
Number of benches on fill:		

Aerial Survey and Ground Level Review*

Location of Cracks *

1
2
3

Location of Depressions *

Were there depressions on the fill benches? Yes [ ] No [ ] **(Potential Water Depth)**

1
2
3
4
5

Location of Erosion Areas *

Were there areas of erosion **on** the **fill** benches? **Yes** [ ] No [ ] **(Maximum Gully Depth)**

1
2
3
4
5

Location of Ground Bulges *

Were there bulges or **hummocky** terrain? **Yes** [1 Nu [1

1
2
3
4
5

Location of Springs/Seeps *

Were there springs or seeps **observed** in disposal areas? ***Yes*** [ ] No [ ]

1
2
3
4
5

Location of Changes *

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]

1
2
3
4
5
6

Movement Characteristics *

Did a failure occur on the fill? Yes [X] No [ ]

f so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	**Mass 2**	**Mass 3**
Beuch #	#!		
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement	Slow		
Extent of Failure Movement	Slide		

Canse of Movement **Mass 1** Inadequate UnderDrains
Mass 2
Mass 3

Comments

/C #41-0365 issued for fill failure. Inspection tech. report (5/27/98) cause was underdrain failure. Lower two benches liquified. Did not drain old auger works

ad not completed remedial repairs at time of field visit.

860-0377
HF # 03

Type of Fill		Durable Rock	Durable Rock
Size of Fill	Length (ft)	1340	2300
	Area (acres)	33.8	35.0
	Volume (mcy)	1.9	5.2
Surface Configuration		Flat	Flat
Elevations	Crown (ft)	1840	1885
	Toe (ft)	1520	1522
Slopes	Toe Foundation (%)	7.5	7.5
	Fill Face (deg.)	27.0	27.0
Surface Drainage Control		Perimeter	Perimeter
Subsurface Drainage Control		Grav. Segregated	Grav. Segregated
Stability Analysis Software Used		REAME	KAME
Safety Factor	static	1.5	1.4
	Seismic	1.2	1.1
Engineering Properties (Spoil)	Unit Weight (pcf)	125	125
	Friction Angle	24	24
	Cohesion (psf)	160	160
Engineering Properties (Foundation)	Unit Weight (pcf)		
	Friction Angle (deg.)		
	Cohesion (psf)		
Phreatic Surface		P-.05	P-.05

Construction Documentation and Certifications

	Appl. Phase Certification	Appl. Quarterly Certification	Photography Type
Foundation Preparation	Yes [ ] No [X]	94/01	None
Underdrains	Yes [ ] No [X]	94/01	None
Surface Drains	Yes [ ] No [X]	96/02	None
Grading and Revegetation	Yes [ ] No [ ]		
Final Certification	Yes [ ] No [ ]		

Aerial Survey and Ground Level Review*

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation? Yes [ ] No [ ]

Foundation data: Holes

Dip of strata relative to fill:

Were NOV's written on the fill? Yes [ ] No [X]

Surface drainage control working properly? Yes [X] No [ ]

Subsurface drainage control working properly? Yes [X] No [ ]

If active fill, was active spoil disposal determined to be on-going'? Yen [X] No [ ]

If spoil disposal site inactive, how long was disposal operation idle (months)?

a durable rock fill is under construction,

Approximately 80% durable rock by volume? Yes [ ] No [X]

If no to above, estimate percentage: 60

Discernable blanket or core drain forming? Yes [X] No [ ]

If the fill is completed. compare the size with the size in the latest pre-completion revision'!

If the 611 is significantly smaller, what is the reason according to the documentation or inspector?

Fill surface configuration: Flat

Is the fill situated in landslide topography? Yes [X] No [ ]

Were there ground cracks observed on the fill face or benches? Yes [ ] No [X]

Number of benches on fill:

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *	1			
	2			
	3			

Were there depressions on the **fill** benches? Yes [ ] No [ ] **(Potential Water Depth)**

Location of Depressions *	1			
	2			
	3			
	4			
	5			

Were there areas of erosion on the fill benches? Yes [ ] No [ ] **(Maximum Gully Depth)**

Location of Erosion Areas *	1			
	2			
	3			
	4			
	5			

Were there bulges or hummocky terrain? Yes [ ] No [ ]

Location "f Ground Bulges *	1			
	2			
	3			
	4			
	5			

Were there **springs** or seeps observed in disposal areas? Yes [ ] No [ ]

Location "f Springs/Seeps *	1			
	2			
	3			
	4			
	5			

Location of Changes *	1			
	2			
	3			
	4			
	5			
	6			

Did a failure occur on the fill? Yes [ ] No [X]

f so, enter the source of information on the failure:

Stage of construction during failure:

Movement Characteristics *

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement **Mass 1**			
Mass 2			
Mass 3			

Comments

ermit transfer from Leslie Resources on 4/29/99, permit # 860-0307

riginal fill was completed on 8/19/96 , new fill places additional material on old fill.

860-0377
HF # 4

Kentucky
Cheyenne Resources
Surface Mine Job #3

Permit: 860-0377 Fill: HF# 03

Permit: 860-0377 Fill: HF# 03

Kentucky
Cheyenne Resources
Surface Mine Job #3

Permit: 860-0377 Fill: HF# 03

Permit: 860-0377 Fill: HF# 03

Kentucky
Cheyenne Resources
Surface Mine Job #3

Permit: 860-0377 Fill: HF# 03

Permit: 860-0377 Fill: HF# 4

BLANK PAGE

Kentucky
Coal Mac Mining, Inc.
No Mine Identifier

Permit: 498-0204

Fill: HF #1
Fill: HF #2

BLANK PAGE

Company: Coal Mac Mining, Inc.	**Fill:** HF # 1			Date of permit file review:	06/14/00
Permit: 498-0204	**Mine:** N/A			Date fill contruction started:	/ /
State: KY	Was this fill visited at ground level?	Yes [X]	No [ ]	Finished:	12/31/87
County: Pike	Date of visit:	06/15/00		Number of fill size revisions:	1
Latitude: 37-37-12	Had the fill been reclaimed at the time of the air survey?	Yes [X]	No [ ]	%Sandstone in overburden:	92
ongitude: 82-20-18	Date of survey:	12/31/99			

	As constructed		Revision	Original design
Type of Fill	Conventional		Conventional	Durable Rock
Size of Fill	1400	Length (ft)	1400	1250
	18.3	Area (acres)	18.3	15.6
	0.4	Volume (mcy)	0.4	0.4
Surface Configuration	Flat		Flat	Flat
Elevations	1500	Crown (ft)	1500	1600
	1000	Toe (ft)	1000	1050
Slopes	4.2	Toe Foundation (%)	4.2	4.2
	27.0	Fill Face (deg.)	27.0	27.0
Surface Drainage Control	Perimeter		Perimeter	Perimeter
Subsurface Drainage Control	Underdrain		Underdrain	Grav. Segregated
Stability Analysis Software Used	REAME		REAME	REAME
Safety Factor	1.6	Static	1.6	1.7
	1.3	Seismic	1.3	1.3
Engineering Properties (Spoil)	125	Unit Weight (pcf)	125	125
	30	Friction Angle	30	30
	200	Cohesion (psf)	200	200
Engineering Properties (Foundation)		Unit Weight (pcf)		
		Friction Angle (deg.)		
		Cohesion (psf)		
Phreatic Surface	P-.05		P-.O5	P-.05

		Appl. Phase Certification		Appl.Quarterly Certification	Photography Type
Construction Documentation and Certifications	Foundation Preparation	Yes [ ]	No [X]		None
	Underdrains	Yes [ ]	No [X]		None
	Surface Drains	Yes [ ]	No [X]		None
	Grading and Revegetation	Yes [X]	No [ ]	4/87	None
	Final Certification	Yes [X]	No [ ]	4/87	None

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ]	No [ ]
Foundation data:		Text
Dip of strata relative to fill:		Toward Fill
Were NOV's written on the fill?	Yes [X]	No [ ]

Aerial Survey and Ground Level Review *

Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control working properly?	Yes [X]	No [ ]
If active fill, was active spoil disposal determined to be on-going?	Yes [ ]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
If a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [ ]
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [ ]	No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		Same
If the fill is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		Flat
Is the fill situated in landslide topography?	Yes [ ]	No [X]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [X]
Number of benches on fill:		

	Location	Length (ft)	Width (ft)	Depth (in)
Location "f Cracks *	1			
	2			
	3			

Were there depressions on the fill benches? Yes [ ] No [ ] (Potential Water Depth)

Location of Depressions *				
	2			
	3			
	4			
	5			

Were there areas of erosion on the fill benches? Yes [ ] Nu [ ] (Maximum Gully Depth)

Location of Erosion Areas *	I			
	2			
	3			
	4			
	5			

Were there bulges or hummocky terrain? Yes [ ] No [ ]

Location "f Ground Bulges *	I			
	2			
	3			
	4			
	5			

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

Location "f Springs/Seeps *	1			
	2			
	3			
	4			
	5			

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]

Location "f Changes *	I			
	2			
	3			
	4			
	5			
	6			

Movement Characteristics *

Did a failure occur on the fill? Yes [X] No [ ]

f so, enter the source of information on the failure: DEP Inspector

Stage of construction during failure: Active - Post Construction, Inactive - Post Constr

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement	Rapid		
Extent of Failure Movement			
Cause of Movement	Mass 1 Underground Mine Drainage		
	Mass 2		
	Mass 3		

Comments

Passive fill failure in upper terrace Causation due to underground mine drainage into the fill DSMRE awed non-compliance #057293 on April 19, 1993 Remedial measures required an engineering plan to be submitted and is in Revision #5

498-0204
HF # 1

Type of Fill	Conventional		Conventional	Durable **Rack**
Size of Fill	2100	Length (ft)	2100	1300
	17.4	Area (acres)	**17.4**	12.3
	1.4	Volume (mcy)	1.4	1.4
Surface Configuration	Flat		Flat	Flat
Elevations	1400	Crown (ft)	1400	1400
	900	Toe (ft)	900	1000
Slopes	4.6	Toe Foundation (%)	4.6	4.6
				27.0
Surface Drainage Control	Perimeter		Perimeter	Perimeter
Subsurface Drainage Control	Underdrain		Underdrain	Grav. **Segregated**
Stability **Analysis Software Used**	REAME		REAME	REAME
Safety Factor	1.5	Static	1.5	1.6
	1.1	Seismic	1.1	1.3
Engineering Properties (Spoil)	125	Unit Weight (pcf)	125	125
	30	Friction Angle	30	30
	200	Cohesion (psf)	200	200
Engineering Properties (Foundation)		Unit Weight (pcf)		
		Friction Angle (deg.)		
		Cohesion (psi)		
Phreatic Surface	P-.os		P-.05	P-.05

Construction Documentation and **Certifications**	Foundation Preparation	Yes [ ]	No [X]		None
	Underdrains	Yes [ ]	No [X]		None
	Surface Drains	**Yes** [ ]	No [X]		None
	Grading and Revegetation	Yes [X]	No [ ]	3/87	None
	Final Certification	**Yes** [X]	No [ ]	3187	None

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	**Yes** [ ]	No [ ]
Foundation data:		Text
Dip of strata relative to fill:		Toward Fill
Were NOV's written on the fill?	Yes [X]	No [ ]

Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control working properly?	**Yes** [X]	No [ ]
If active till, was active spoil **disposal** determined to bc on-going?	Yes [ ]	No [ ]
If spoil disposal Site inactive, how long was disposal operation idle (months)?		

Aerial Survey and Ground Level Review *

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	1			
	2			
	3			

Location of Depression?

Were there depressions on the fill benches? Yes [ ] No [ ] **(Potential Water Depth)**

1
2
3
4
5

Location of Erosion Areas

Were there areas of erosion on the fill benches? Yes [ ] No [ ] **(Maximum Gully Depth)**

2
3
4
5

Location of Ground Bulges

Were there bulges or hummocky terrain? Yes [ ] No [ ]

2
3
4
5

Location of Springs/Seeps

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

2
3
4
5

Location of Changes

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]

2
3
5
6

Movement Characteristics

Did a failure occur on the fill? Yes [X] No [ ]

If so, enter the source of information on the failure: DEP Inspector

Stage or construction during failure: Active - Post Construction, Inactive - Post Constr

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (A)			
Depth to Slip Plane (Aj			
Transport Distance (A)			
Rate of Movement	Slow		
Extent of Failure Movement			
Cause of Movement	Mass 1 Inadequate UnderDrains		
	Mass 2		
	Mass 3		

Comments

SMRE issued N/C 053389 on April 8, 1987 and IDCO 050343 Massive failure apparently due to underdrain problems Approximately 8 5 acres off site damaged by slide

nendment # 1 (submitted 5/01/87) included remedial measures for the fill failure

498-0204
HF # 2

Kentucky
Coal Mac Mining, Inc.
No Mine Identifier

Permit: 498-0204 Fill: HF# 1

Permit: 498-0204 Fill: HF# 1

Kentucky
Coal Mac Mining, Inc.
No Mine Identifier

Permit: 498-0204 Fill: HF# 2

Permit: 498-0204 Fill: HF# 2

Kentucky
CZAR Coal Corp.
Panther Fork Mine

Permit: 880-0122

Fill: HF #2

BLANK PAGE

Type of Fill		Durable Rock
Size of Fill	Length (ft) Area (acres) Volume (mcy)	1300 22 8 3.4
Surface Configuration		
Elevations	Crown (ft) Toe (ft)	1237 865
Slopes	Toe Foundation (%) Fill Face (dcg.)	7.0
Surface Drainage Control		Perimeter
Subsurface Drainage Control		Grav. Segregated
Stability Analysis Software Used		REAME
Safety Factor	Static Seismic	1.4 1.1
Engineering Properties (Spoil)	Unit Weight (pcf) Friction Angle Cohesion (psf)	125 30 200
Engineering Properties (Foundation)	Unit Weight (pcf) Friction Angle (deg.) Cohesion (psf)	
Phreatic Surface		P-.05

Construction Documentation and Certifications	Certification		certification	Type
Foundation Preparation	Yes [ ]	No [XI	1/90	None
Underdrains	Yes [ ]	Nu [X]	3/91	B&W
Surface Drains	Yes [I	No [X]	1/93	None
Grading and Revegetation	Yes [ ]	No [X]	1/93	None
Final Certification	Yes [ ]	No [X]		

Aerial Survey and Ground Level Review *			
If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [X]	No [ ]	
Foundation data:			Text
Dip of strata relative to fill:			
Were NOV's written on thr fill?	Yes [X]	No [ ]	
Surface drainage control working properly?	Yes [ ]	NO [X]	
Subsurface drainage control working properly?	Yes [ ]	No [X]	
Hictive fill.was active spoil disposal determined to be on-gomg?	Yes [ ]	No [ ]	
If spoil disposal site inactive. how long was disposal operation idle (months)?			
If a durable rock fill is under construction.			
Approximately 80% durable rock by volume?	Yes [ ]	No [ ]	
If no to above, estimate percentage:			
Discernable blanket or core drain forming?	Yes [ ]	No [ ]	
Ifthc fill is completed, compare the size with the size in the latest pre-completion revision?			Same
If thc fill is significantly smaller, what is the reason according to the documentation or inspector?			
Fill surface configuration:			Flat
Is the fill situated in landslide topography?	Yes [ ]	No [ ]	
Were there ground cracks observed on the fill face or benches?	Yes [X]	No [ ]	
Number of benches on fill:			

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *	1			
	2			
	3			

Location of Depressions *	Were there depressions on the fill **benches'?** **Yes** [ ] Nu [ ]		**(Potential Water Depth)**
	1		
	2		
	3		
	4		
	5		

Location of Erosion Areas *	Were there **areas** of **erosion** on the fill benches? **Yes** [X] No [ ]		**(Maximum Gully Depth)**
	2		
	3		
	4		
	5		

Location "f Ground Bulges *	Were there **bulges** or **hummocky** terrain? **Yes** [ ] No [ ]		
	1		
	2		
	3		
	4		
	5		

Location of Springs/Seeps *	**Were** there **springs** or seeps observed in disposal **areas?** **Yes** [ ] No [ ]		
	1		
	2		
	3		
	4		
	5		

Location of Changes *	Were changes **in vegetation or spoil color** observed on fill? Yes [X] No [ ]		
	3		
	4		
	5		
	6		

Movement Characteristics *

Did a failure occur on the fili? **Yes** [X] No [ ]

f so, enter the source of information on the **failure:** DEP Inspector

Stage of construction during failure:

	Mass 1	**Mass 2**	**Mass 3**
Bench #	1		
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (A)			
Rate of Movement	Slow		
Extent of Failure Movement	Bulge		

Cause of Movement **Mass 1** Inadequate UnderDrains, **Underground** Mine **Drainage**

Mass 2

Mass 3

Comments

ide **caused by** undergound mining **draining** into fill **Drainage** saturated fill due to inadequate underdrain **Heavy** Fe staining drainage at toe of fill Entire fill shows **movement**

880-0122
HF # 2

Kentucky
CZAR Coal Corp.
Panther Fork Mine

Permit: 880-0122 Fill: HF# 2

Permit: 880-0122 Fill: HF# 2

Kentucky
CZAR Coal Corp.
Panther Fork Mine

Permit: 880-0122 Fill: HF# 2

Permit: 880-0122 Fill: HF# 2

Kentucky
EDCO Energy Corp.
EDCO Mine

Permit: 836-0100

Fill: HF #1 (No Photo)

BLANK PAGE

Company: EDCO Energy Corp.	Fill: HF # 1		Date of permit file review: 05/03/00
Permit: 836-0100	Mine: EDCO Mine		Date **fill** contruction started: / /
State: KY	Was this **fill** visited at ground **level?**	Yes [X] No [ ]	Finished: / /
Count): Floyd	Date of visit:	06/22/00	Number of fill size revisions:
Latitude: 37-33-55 Longitude: 82-47-10	Had the fill been reclaimed at the time of the air survey?	Yes [X] No [1	%Sandstone in overburden: 81
	Date of survey:	*1213* 1/99	

	As constructed	Revision	Original design
Type of Fill			Conventional
Size of Fill	Length (ft)		1500
	Area (acres)		22.8
	Volume (mcy)		1.0
Surface Configuration			
Elevations	Crown (ft)		1380
	Toe (ft)		800
Slopes	Toe Foundation (%)		12.0
	Fill Face (deg.)		27.0
Surface Drainage Control			Perimeter
Subsurface Drainage Control			Underdrain
Stability **Analysis Software Used**			REAME
Safety Factor	Static		
	Seismic		
Engineering **Properties** (Spoil)	Unit Weight (pcf)		
	Friction **Angle**		
	Cohesion (psf)		
Engineering **Properties** (Foundation)	Unit Weight (pcf)		
	Friction **Angle** (deg.)		
	Cohesion (psf)		
Phreatic Surface			

Construction Documentation and Certifications	**Appl. Phase Certification**	**Appl.Quarterly Certification**	**Photography Type**
Foundation Preparation	Yes [ ] No [X]		None
Underdrains	Yes [ ] No [X]		None
Surface Drains	Yes [ ] No [X]		None
Grading and Revegetation	**Yes** [ ] No [X]		None
Final Certification	Yes [ ] No [X]		None

Aerial Survey **and Ground** Level Review *		
If a DRF, did the photographs show the **ruck** blanket or core underdrain by gravity segregation?	Yes [ ]	No [1
Foundation data:		Text
Dip of strata relative to fill:		
Were NOV's written on the **fill?**	Yes [X]	**No [ ]**
Surface drainage control working **properly?**	Yes [ ]	No [ ]
Subsurface drainage control working properly?	**Yes** [ ]	No [ ]
If active **fill,** was active spoil disposal determined to be on-going?	**Yes** [ ]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
If a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [1	No [1
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	**Yes** [ ]	No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		Same
If the **fill** is significantly smaller, what is the reason according to the documentation or **inspector?**		
Fill surface configuration:		
Is the **fill** situated in landslide topography?	Yen [1	No [1
Were there ground cracks observed on the **fill** face or **benches'?**	Yes [ ]	No [ ]
Number of benches on **All:**		

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	1			
	2			
	3			

Location of Depressions

Were there depressions on the fill benches? **Yes** [ ] No [1 **(Potential** Water Depth)

1	
2	
3	
4	
5	

Location of Erosion Areas

Were **there** areas of erosion on the **fill** benches? ***Yes*** [ ] **Nu** [ ] **(Maximum Gully Depth)**

1	
2	
3	
4	
5	

Location of Ground Bulges

Were there bulges or hummocky terrain? Yes [ ] No [1

2	
3	
4	
5	

Location of Springs/Seeps

Were there springs or seeps **observed** in disposal areas? Yes [1 No [ ]

2	
3	
4	
5	

Location of Changes

Were changes in vegetation or spoil color observed on **fill?** **Yes** [ ] No [ ]

1	
2	
3	
4	
5	
6	

Movement Characteristics

Did a failure occur on the **fill?** **Yes** [X] No [ ]

so, enter the source of information on the failure: DEP Inspector

Stage of construction during **failure:** Active - Post Construction, Inactive - Post Constr

	Mass I	**Mass 2**	**Mass 3**
Bench ■			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth **to Slip** Plane (A)			
Transport Distance (A)			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement **Mass i** Durability of Rock, Thick Soil Foundation
Mass 2
Mass 3

Comments

3M inspection (original) 7/86 following fill failure

3M inspection 06/22/00 showed that **fill** was stable Final **Bond** release - 12/09/97

836-0100
HF # 1

Kentucky
Elkhorn Coal Corp.
Homer Short Surface Mine

Permit: 880-0130

Fill: HF #1 (No Photo)
Fill: HF #2
Fill: HF #3
Fill: HF #4
Fiii: HF #5
Fill: HF #6 (No Photo)
Fill: HF #7 (No Photo)
Fill: HF #8 (No Photo)
Fill: HF #9

BLANK PAGE

Company: Elkhorn Coal Corp.	Fill: HF # 1		Date of permit file review: *04112100*
Permit: 880-0130	Mine: Homer Short Surface Mine		Date fill contruction started: 03/05/98
State: KY	Was this fill visited at ground level?	**Yes** [X] No [ ]	Finished: / /
County: Martin	Date of visit:	07/28/99	Number of fill **size** revisions:
Latitude: 37-46-57	Had the till **been** reclaimed at the time of the air **survey?**	Yes [ ] No [X]	%Sandstone in overburden: 92
ongitude: *82-37-05*	Date of survey:	12/31/99	

	As constructed	Revision	Original design
Type of Fill			Durable Rock
	Volume (mcy)		1.0
Surface Configuration			
Elevations	Crown (ft)		1000
	Toe (ft)		750
Slopes	Toe Foundation (%)		10.0
	Fill Face (deg)		27.0
Surface Drainage Control			Perimeter
Subsurface Drainage Control			Underdrain
Stability Analysis Software Used			REAME
Safety Factor	Static		1.5
	Seismic		1.2
Engineering Properties (Spoil)	**Unit** Weight (pcf)		125
	Friction **Angle**		24
	Cohesion (psf)		160
Engineering Properties (Foundation)	Unit Weight (pcf)		
	Friction Angle **(deg.)**		
	Cohesion (psf)		
Phreatic Surface			P-.05

		Appl. Phase Certification	Appl.Quarterly Certification	Photography Type
Construction Documentation and Certifications	Foundation Preparation	Yes [ ] **No** [X]	**9811**	B&W
	Underdrains	Yes [ ] **No** [X]	98/1	**U&W**
	Surface Drains	**Yes** [ ] No [X]	00/1	None
	Grading **and** Revegetation	Yes [ ] No [X]	00/1	None
	Final Certification	Yes [ ] No [ ]		

If a DRF. **did** the photographs show the ruck blanket or core underdrain by gravity segregation? Yes [ ] No [ ]

Foundation **data:** Text

Dip of strata relative to fill:

Were NOV's written on the fill? Yes [ ] No [X]

Aerial Survey and Ground Level Review *

Surface drainage control working properly? Yes [X] No [ ]

Subsurface drainage control working properly? Yes [X] **No** [ ]

If active fill, was active spoil disposal determined to be on-going? Yes [X] No [ ]

If spoil disposal site inactive, how long was disposal operation idle (months)?

If a durable rock fill is under construction,

Approximately 80% durable rock **by** volume? Yes [X] No [ ]

If no to above, estimate percentage:

Discernable blanket **or** core drain forming? **Yes** [X] **No** [ ]

If the fill is completed, compare the size with the **size** in the latest pre-completion revision?

If the **fill** is significantly smaller, what is the reason according to the documentation or inspector?

Fill surface configuration: Flat

Is the fill situated in **landslide** topography? Yes [ ] No [X]

Were there ground cracks observed on the **fill** face or benches? Yes [ ] No [X]

Number of benches on fill:

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks*	1			
	2			
	3			

Location of Depressions*

Were **there** depressions on **the fill** benches? **Yes** [ ] No [ ] **(Potential Water Depth)**

2
3
4
5

Location of Erosion Areas*

Were there areas of erosion on the **fill benches'?** Yes [ ] No [ ] **(Maximum Gully Depth)**

1
2
3
4
5

Location of Ground Bulges*

Were there bulges or hummocky terrain? Yes [ ] No [ ]

1
2
3
4
5

Location of Springs/Seeps*

Were there springs or **seeps** observed in disposal areas? Yes [1 No [ ]

1
2
3
4
5

Location of Changes*

Were changes in **vegetation** or spoil color observed on fill? Yes [ ] No [ ]

1
2
3
4
5
6

Movement Characteristics*

Did a **failure** occur on the **fill?** Yes [ ] NO [ ]

f so, enter the source of information on **the** failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (R)			
Depth to Slip Plane (A)			
Transport Distance (A)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement	**Mass 1**		
	Mass 2		
	Mass 3		

Comments

n 04/24/00-Fill #1 was 99% complete

uarterly certs but no critical phase certs **Only** original cert ***(3105198)*** **had** photos

onstructed underdrain- 16' x 8'

880-0130
HF # 1

Company:	Elkhorn Coal Corp.	Fill:	HF # 2	Date of permit file review:	04112100
Permit:	880-0130	Mine:	Homer Short Surface Mine	Date fill contruction started:	01131198
State:	KY	Was this fill visited at ground level?	Yes [X] No [ ]	Finished:	/ /
County:	Martin	Date of visit:	07128199	Number of fill size revisions:	
Latitude:	37-47-03	Had the fill been reclaimed at the time of the air survey?	Yes [ ] No [X]	%Sandstone in overburden:	92
Longitude:	82-37-29	Date of **survey:**	12131199		

		As constructed	Revision	Original design
Type of Fill				Durable Rock
Size "f Fill	Length (it)			**830**
	Area (acres)			4.0
	Volume (mcy)			**0.5**
Surface Configuration				
Elevations	Crown (ft)			990
	Toe (ft)			**830**
Slopes	Toe Foundation (%)			6.0
	Fill Face (deg.)			27.0
Surface Drainage **Control**				Perimeter
Subsurface **Drainage Control**				Underdrain
Stability **Analysis Software Used**				REAME
Safety Factor	Static			1.6
	Seismic			1.2
Engineering Properties (Spoil)	Unit Weight (pcf)			125
	Friction Angle			24
	Cohesion (psf)			160
Engineering **Properties** (Foundation)	Unit Weight (pcf)			
	Friction **Angle** (deg.)			
	Cohesion (psf)			
Phreatic Surface				P-.05

		Appl. Phase Certification		Appl.Quarterly Certification	Photography Type
Construction Documentation and **Certifications**	Foundation Preparation	Yes [ ]	No [X]	98/1	B&W
	Underdrains	Yes [ ]	Nu [X]	9811	None
	Surface Drains	Yes [ ]	No [X]	0011	None
	Grading and Revegetation	Yes [1	No [X]	00/1	None
	Final Certification-	Yes [ ]	No [ ]		

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [X]	No [ ]
Foundation data:		Text
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [ ]	No [X]

Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control working properly?	**Yes** [X]	No [ ]
If active till. was active spoil disposal determined to be on-going?	Yes [X]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
If a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [X]	No [1
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [X]	No [ ]
If the till is completed. compare the size with the size in the latest pre-completion revision?		
If the till is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		Flat
Is the till situated in landslide topography?	Yes [ ]	No [X]
Were there ground cracks observed on the fill face or benches?	**Yes** [ ]	No [X]
Number of benches on fill:		

Aerial Survey and Ground Level Review *

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	2			
	3			

Location of Depressions

Were there depressions on the fill benches? Yes [ ] No [ ] **(Potential Water Depth)**

	1			
	2			
	3			
	4			
	5			

Location of Erosion Areas

Were there areas of erosion on the fill benches? Yes [ ] No [ ] **(Maximum Gull) Depth)**

	2			
	3			
	4			
	5			

Location "f Ground Bulges

Were there bulges or hummocky terrain? Yes [ ] No [ ]

	1			
	2			
	3			
	4			
	5			

Location of Springs/Seeps

Were there **springs** or seeps observed in disposal areas? Yes [1 No [1

	1			
	2			
	3			
	4			
	5			

Location of Changes

Were changes **in vegetation** or spoil color observed on fill? Yes [ ] No [ ]

	1			
	3			
	4			
	5			
	6			

Movement Characteristics

Did a failure occur on the fill? Yes [ ] No [ ]

'so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement

Mass 1

Mass 2

Mass 3

Comments

1 04/24/00 Fill # 2 was 99% complete

iarterly certs but no critical certs. Only original(01/31/98) had photos.

ıstructed underdrain 10' x 4'

880-0130
HF # 2

Company: Elkhorn Coal Corp.	Fill: HF # 3	Dale of permit file review:	04112100
Permit: 880-0130	Mine: Homer Short Surface Mine	Dale fill contruction started:	01131/98
State: KY	Was this fill visited at ground level? Yes [X] No [ ]	Finished:	/ /
County: Martin	Date of visit: 07128199	Number of fill size revisions:	1
Latitude: 37-47-08	Had the fill been reclaimed at the lime of the air survey? Yes [ ] No [X]	%Sandstone in overburden:	92
Longitude: 82-37-30	Date of survey: 1213 1199		

		As constructed	Revision	Original design
Type of Fill			Durable Rock	Durable Rock
	Volume (mcy)		1.0	0.8
Surface Configuration			Flat	Flat
Elevations	Crown (ft)		881	870
	Toe (ft)		770	770
Slopes	Toe Foundation (%)		2.0	2.0
	Fill Face (deg)		27.0	27.0
Surface Drainage Control			Perimeter	Perimeter
Subsurface Drainage Control			Underdrain	Underdrain
Stability **Analysis Software Used**			REAME	REAME
Safety Factor	Static			1.5
	Seismic			1.2
Engineering Properties (Spoil)	Unit Weight (pcf)		125	125
	Friction Angle		24	24
	Cohesion (psf)		160	160
Engineering Properties (Foundation)	Unit Weight (pcf)			
	Friction Angle (deg.)			
	Cohesion (psf)			
Phreatic Surface				P-.05

		Appl. Phase Certification		Appl.Quarterly Certification	Photography Type
Construction Documentation and Certifications	Foundation Preparation	Yes [ ]	No [X]	9811	Color
	Underdrains	Yes [ ]	No [X]	98/1	None
	Surface Drains	Yes [ ]	No [X]	00/1	None
	Grading and Revegetation	Yes [ ]	No [X]	00/1	None
	Final Certification	Yes [ ]	No [ ]		

	If a DRF. did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [X]	No [ ]
	Foundation data:		Text
	Dip of strata relative to fill:		
	Were NOV's written on the fill?	Yes [ ]	No [X]
Aerial Survey and Ground Level Review *	Surface drainage control working properly?	Yes [X]	No [ ]
	Subsurface drainage control working properly'?	Yes [X]	No [ ]
	If active fill, was active spoil disposal determined to be on-going?	Yes [X]	No [ ]
	If spoil disposal site inactive, how long was disposal operation idle (months)?		
	I a durable rock fill is under construction,		
	Approximately 80% durable rock by volume'?	Yen [X]	No [ ]
	If no to above, estimate percentage		
	Discernable blanket or core drain forming?	Yes [X]	No [ ]
	If the fill is completed, compare the size with the size in the latest pre-completion revision?		Larger
	If the fill is significantly smaller, what is the reason according to the documentation or inspector?		
	Fill surface configuration:		
	Is the fill situated in landslide topography?	Yes [ ]	No [X]
	Were there ground cracks observed on the fill face or benches?	Yen [ ]	No [X]
	Number of benches on till:		

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	1			
	2			
	3			

Were there depressions on the fill benches? Yes [ ] No [ ]

				(Potential Water Depth)
Location of Depressions	1			
	2			
	3			
	5			

Were there areas of erosion on the fill benches? Yes [ ] No [ ]

				(Maximum Gully Depth)
Location of Erosion Areas	2			
	3			
	4			
	5			

Were there bulges or hummocky terrain? Yes [ ] No [ ]

Location of Ground Bulges	1			
	2			
	3			
	4			
	5			

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

Location of Springs/Seeps	1			
	2			
	3			
	4			
	5			

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]

Location of Changes	1			
	2			
	3			
	4			
	5			
	6			

Movement Characteristics

Did a failure occur on the fill? Yes [ ] No [ ]

f so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement	
	Mass 1
	Mass 2
	Mass 3

Comments

n 1/20/99 Fill # 3 was 98 % completed

onstructed underdrain 10' x 4'

880-0130
HF # 3

Company:	Elkhorn Coal Corp.	**Fill:**	HF # 4	Date of permit file review:	04/12/00
Permit:	880-0130	Mine:	Homer **Short** Surface **Mine**	Date fill contruction started:	01/02/00
State:	KY	**Was this fill visited** at ground **level?**	Yes [X] No [ ]	Finished:	02/28/99
County:	Martin	Date of visit:	07/28/99	Number **of** fill **size** revisions:	
Latitude:	37-47-14	**Had** the fill **been reclaimed** at the time **of the** air survey?	Yes [ ] No [X]	**%Sandstone** in overburden:	92
.ongitude:	82-37-25	Date of survey:	12/3 1/99		

	As constructed	Revision	Original design
Type of Fill			Durable Rock
Size of Fill	Length (ft)		1600
	Area (acres)		11 6
	Volume (mcy)		0.9
Surface Configuration			
Elevations	Crown (ft)		1000
	Toe (ft)		**850**
Slopes	Toe Foundation (%)		4.0
	Fill Face (deg.)		27.0
Surface Drainage Control			Perimeter
Subsurface Drainage Control			Underdrain
Stability Analysis Software Used			REAME
Safety Factor	Static		1.5
	Seismic		1.2
Engineering Properties	Unit Weight (pcf)		
	Friction Angle		
	Cohesion (psf)		
Engineering Properties (Foundation)	Unit Weight (pcf)		
	Friction Angle (deg.)		
	Cohesion (psf)		
Phreatic Surface			P-.05

		Appl. Phase Certification	**Appl.Quarterly Certification**	**Photography Type**
Construction Documentation and Certifications	Foundation Preparation	Yes [X] No [ ]	99/1	**Color**
	Underdrains	Yes [X] No [ ]	99/1	Color
	Surface Drains	Yes [ ] No [X]	00/1	None
	Grading and Revegetation	Yes [ ] No [X]	00/1	Nonc
	Final Certification	Yes [ ] No [ ]		

If a DRF, did the photographs show the **rack** blanket or core underdrain by gravity segregation?	Yes [X]	No [ ]
Foundation data:		Text
Dip of strata relative to fill		
Were NOV's written on the fill?	Yes [ ]	No [X]

Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control working properly?	Yes [X]	No [ ]
If active **fill**.was active spoil disposal determined to be on-going?	Yes [ ]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
f a durable rock **fill is under construction,**		
Approximately 80% durable **rock** by volume?	**Yes** [X]	No [ ]
If no to above, estimate percentage:		
Discernable **blanket** or core drain forming?	Yes [X]	No I 1
If the fill is completed, compare the size with the size in the latest pre-completion revision?		Same
If the fill is significantly smaller. what is the reason according to the documentation or inspector?		
Fill surface configuration:		Flat
Is the fill situated in landslide topography?	Yes [ ]	Nu [X]
Were there ground cracks observed on the 6ll face or benches?	Yes [ ]	No [X]
Number of benches on fill:		

Aerial Survey and Ground Level Review *

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *	1			
	2			
	3			

Location of Depressions *	Were there depressions on the **fill** benches?	Yes [ ]	No [ ]	**(Potential Water Depth)**
	1			
	2			
	3			
	5			

Location "f Erosion Areas *	Were there areas of **erosion** on the till benches?	**Yes** [ ]	No [1	**(Maximum Gully Depth)**
	1			
	2			
	3			
	4			
	5			

Location of Ground Bulges'	Were there bulges or hummocky terrain?	Yes [ ]	No [ ]
	1		
	2		
	3		
	4		
	5		

Location of Springs/Seeps *	**Were** there springs or seeps observed in **disposal** areas?	Yes [ ]	No [ ]
	1		
	2		
	3		
	4		
	5		

Location of Changes *	Were changes in **vegetation** or **spoil** color observed on fill?	Yes [ ]	No [I
	1		
	2		
	3		
	4		
	5		
	6		

Movement Characteristics *

Did a failure occur on **the** filly Yes [ ] No [ ]

f so, enter the source of information on the failure:

Stage of construction **during** failure-

	Mass 1	**Mars 2**	**Mars 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to **Slip** Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of **Failure** Movement			
Cause of Movement **Mass 1**			
Mass 2			
Mass 3			

Comments

n04/24/00 Fill #4 was 99% complete

itial cert (04/27/99) **had** color photos. No other critical phase certs or photos

onstructed underdrain 10' x 4'

880-0130
HF # 4

	As constructed	Revision	Original design
Type of Fill			Durable Rock
She of Fill	Length (ft)		575
	Area (acres)		2.0
	Volume (mcy)		0.2
Surface Configuration			
Elevations	Crown (ft)		1000
	Toe (ft)		870
Slopes	Toe Foundation (%)		12.0
	Fill Face (deg.)		27.0
Surface Drainage Control			perimeter
Subsurface Drainage Control			Underdrain
Stability Analysis Software Used			REAME
Safety Factor	Static		1.6
	Seismic		1.2
Engineering Properties (Spoil)	Unit Weight (pcf)		
	Friction Angle		
	Cohesion (psf)		
Engineering Properties (Foundation)	Unit Weight (pcf)		
	Friction Angle (deg.)		
	Cohesion (psf)		
Phreatic Surface			P-.05

Construction Documentation and Certifications	Appl. Phase Certification		Appl.Quarterly Certification	Photography Type
Foundation Preparation	Yes [X]	No [ ]	99/1	Color
Underdrains	Yes [X]	No [ ]	9911	Color
Surface Drains	Yes [ ]	No [X]	00/1	None
Grading and Revegetation	Yes [ ]	No [X]	00/1	None
Final Certification	Yes [ ]	No [ ]		

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [X]	No [ ]
Foundation data:		Text
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [ ]	NO [X]

Aerial survey and Ground Level Review *		
Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control working properly?	Yes [X]	No [ ]
If active fill, was active spoil disposal determined to be on-going?	Yes [ ]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
if a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [X]
If no to above. estimate percentage:		50
Discernable blanket or core drain forming?	Yes [X]	No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		Same
If the fill is significantly smaller. what is the reason according to the documentation or inspector?		
Fill surface configuration:		Flat
Is the fill situated in landslide topography?	Yes [ ]	No [X]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [X]
Number of benches on fill:		

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *	1			
	2			
	3			

Location of Depressions *	Were there depressions on the **fill benches?** Yes [ ] No [ ]			**(Potential Water Depth)**
	1			
	2			
	3			
	4			
	5			

Location of Erosion Areas *	Were there areas of erosion on the **fill** benches? Yes [ ] No [ ]			**(Maximum Gully Depth)**
	1			
	2			
	3			
	4			
	5			

Location of Ground Bulges *	**Were there** bulges or hummocky terrain? **Yes** [ ] No [ ]			
	1			
	2			
	3			
	4			
	5			

Location of Springs/Seeps *	**Were** there springs or seeps observed **in** disposal areas? Yes [ ] **No** [ ]			
	1			
	2			
	3			
	4			
	5			

Location of Changes	Were changes in vegetation or spoil color **observed** on **fill?** **Yes** [ ] **No** [ ]			
	2			
	3			
	4			
	5			
	6			

Movement Characteristics

Did a failure occur on the till? **Yes** [ ] No [ ]

so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement

Mass 1

Mans 2

Mass 3

Comments

04/24/00 Fill # 5 was 99% complete

iginal cert *(04127199)* had color **photos** No other critical phase certs or photos

nstructed underdrain 10' x 4'

880-0130
HF # 5

Company:	Elkhorn Coal Corp.	**Fill:**	HF # 6	Date of permit file review:	12/31/99
Permit:	880-0130	**Mine:**	'Homer Short Surface Mine	Date fill contruction started:	/ /
State:	KY	**Was** this till visited at ground **level?**	**Yes** [X] No [ ]	Finished:	/ /
County:	Martin	Date of visit:	07/28/99	Number of fill size revisions:	
Latitude:	37-47-16	Had **the** fill been reclaimed at **the** time of **the** air survey?	Yes [ ] No [X]	%Sandstone in overburden:	92
Longitude:	82-37-17	Date of survey:	12/3 1/99		

	As constructed	Revision	Original design
Type of Fill			**Durable** Rock
Size of Fill	Length (ft)		**475**
	Area (acres)		**0.8**
	Volume (mcy)		ñ 0
Surface Configuration			
Elevations	Crown (ft)		1000
	Toe (ft)		875
Slopes	Toe Foundation (%)		12.0
	Fill Face (deg.)		
Surface Drainage Control			Perimeter
Subsurface Drainage Control			Underdrain
Stability Analysis Software Used			REAME
Safety Factor	Static		1.5
	Seismic		1.2
Engineering Properties (Spoil)	Unit Weight (pcf)		**125**
	Friction Angle		**24**
	Cohesion (psf)		160
Engineering Properties (Foundation)	Unit Weight (pcf)		
	Friction Angle (deg.)		
	Cohesion (psf)		
Phreatic Surface			P-.05

Construction Documentation and Certifications

	Appl. Phase Certification	Appl.Quarterly Certification	Photography Type
Foundation Preparation	**Yes** [ ] No [X]		None
Underdrains	Yes [ ] No [X]		None
Surface Drains	Yes [ ] No [X]	Y	None
Grading and Revegetation	**Yes** [ ] No [X]	Y	None
Final Certification	**Yes** [ ] No [ ]		

Aerial Survey and Ground Level Review *

If a DRF, **did** the photographs show **the** rock blanket or **core** underdrain by gravity segregation'?	Yes [ ]	No [ ]
Foundation data:		Text
Dip of strata relative to **fill:**		
Were NOV's written on the fill?	Yes [ ]	No [X]
Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control **working** properly?	**Yes** [X]	No [ ]
If active fill. was active spoil **disposal** determined to be on-going?	Yes [ ]	No [X]
If **spoil disposal** site inactive. how long **was disposal operation idle** (months)?		
If a durable ruck fill is under construction,		
Approximately 80% **durable** rock by volume?	Yes [X]	**No** [ ]
If no to above. estimate percentage:		
Discernable blanket or core drain forming?	Yes [X]	**No** [ ]
If the **fill** is **completed, compare** the **size** with the **size** in the latest pre-completion **revision?**		
If the **fill is** significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		Flat
Is the fill situated in **landslide** topography?	Yes [ ]	**No** [X]
Were there **ground** cracks observed on the **fill** face **or benches'?**	Yes [ ]	No [X]
Number of benches on fill:		

	Location	Length (ft)	Width (ft)	Depth (in)
Location Of Cracks*	2			
Location of Depressions*	Were there depressions on the fill **benches'!** Yes [ ] No [ ] **(Potential Water Depth)** 1 2 3 4 5			
Location of Erosion Areas*	Were there areas of erosion **on** the fill benches? Yes [ ] No [ ] **(Maximum Gully Uepth)** I 2 3 4 5			
Location of Ground Bulges*	Were there bulges or hummocky terrain? Yes I 1 No [1 2 3 4 5			
Location Of Springs/Seeps*	Were there springs or seeps observed **in** disposal areas? Yes [ ] No [ ] 1 2 3 4 5			
Location of Changes*	Were changes in vegetation or spoil color observed on **fill?** Yes [ ] No [ ] 1 2 3 4 5 6			
Movement Characteristics*	**Did a failure** occur on the **fill?** **Yes** [ ] No [ ] f **so,** enter the source **of** information on **the failure:** **Stage** of construction during **failure:**	**Mass 1**	**Mass 2**	**Mass 3**
	Bench *4*			
	Length (ft)			
	Width (ft)			
	Scarp **Height** (ft)			
	Depth to Slip Plane (ft)			
	Transport Distance (A)			
	Rate of Movement			
	Extent of Failure **Movement**			
	Cause of Movement **Mass** I			
	Mass 2			
	Mass 3			
Comments	On 04/24/00 Fill #6 was 99% complete uarterly certs only - begin with 04/27/99 with fill 60% complete Constructed underdrain 10' x 4'			

880-0130
HF # 6

Company: Elkhorn Coal Corp. **Fill:** HF # 7 Date of permit file review: 04/12/00

Permit: 880-0130 **Mine:** Homer Short Surface **Mine** Date fill contruction started: 04/27/99

	As constructed	Revision	Original design
Type of Fill			Durable Rock
Size of Fill	Length (A)		700
	Area (acres)		**1.8**
	Volume (mcy)		0.2
Surface Configuration			
Elevations	Crown (A)		1000
	Toe (A)		800
Slopes	Toe Foundation (%)		12.0
	Fill Face (deg.)		27.0
Surface Drainage Control			Perimeter
Subsurface Drainage Control			Underdrain
Stability Analysis Software Used			REAME
Safety Factor	Static		1.7
	Seismic		1.3
Engineering **Properti ■ (Spoil)**	Unit Weight (pcf)		125
	Friction Angle		24
	Cohesion (psf)		160
Engineering Properties (Foundation)	Unit Weight (pcf)		
	Fiction Angle (deg.)		
	Cohesion (psf)		
Phreatic Surface			P-.05

Construction Documentation and Certifications

	Appl. Phase certification		Appl. Quarterly Certification	Photography **Type**
Foundation Preparation	Yes [ ]	No [X]	99/01	None
Underdrains	Yes [ ]	No [X]	99/02	None
Surface Drains	Yes [ ]	No [X]	00/1	None
Grading and Revegetation	Yes [ ]	No [X]	0011	None
Final Certification	Yes [ ]	No [ ]		

If a DRF, did the photographs show the **ruck** blanket or core underdrain by gravity segregation? Yes [ ] No [ ]

Foundation data: Text

Dip of strata relative to fill:

Were NOV's written on the fill? Yes [ ] No [X]

Aerial Survey and Ground Level Review *

Surface drainage control working properly? Yes [X] No [ ]

Subsurface drainage control working properly? Yes [X] No [ ]

If active fill, was active spoil disposal determined to be on-going? Yes [1 No [1

if spoil disposal rite inactive. how long was disposal operation idle (months)?

f a durable rock **fill is** under construction,

Approximately SO% durable rock by volume? Yes [X] No [ ]

If no to above, estimate percentage:

Discernable blanket or core drain forming? Yes [X] No [ ]

Jf the fill is completed, compare the size with **the** size in the latest pre-completion revision?

If the fill is significantly smaller, what is the reason according to the documentation or inspector?

Fill surface configuration: Flat

Is the fill situated in landslide topography? Yes [ ] No [X]

Were there ground cracks observed on the fill face or benches? Yes [ ] No [X]

Number of benches on fill:

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	1			
	2			
	3			

Were there depressions on the fill benches? Yes [ ] No [ ]

				(Potential Water Depth)
Location of Depressions	1			
	2			
	3			
	5			

Were there areas of erosion on the fill benches? Yes [ ] No [ ]

				(Maximum Gully Depth)
Location of Erosion Areas	1			
	2			
	3			
	4			
	5			

Were there bulges or hummocky terrain? Yes [ ] No [ ]

Location of Ground Bulges	2			
	3			
	4			
	5			

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

Location of Springs/Seeps	1			
	2			
	3			
	4			
	5			

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]

Location of Changes	1			
	2			
	3			
	4			
	5			
	6			

Did a failure occur on the fill? Yes [ ] No [ ]

Movement Characteristics

If so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement

Mass 1

Mass 2

Mass 3

Comments

On 4/27/99 fill had not been started

No critical phase certs or photos in Frankfort or Regional files

onstructed rock underdrain is 10' x 4'

880-0130
HF # 7

Company:	Elkhorn Coal Corp.	**Fill:**	HF # 8	Date of permit file review:	04/12/00
Permit:	880-0130	**Mine:**	Homer Short Surface Mine	Date fill contruction started:	01/02/00
State:	KY	Was this fill visited at ground level?	Yes [X] No [ ]	Finished:	/ /
County:	Martin	Date of visit:	07/28/99	Number of fill size revisions:	
Latitude:	37-47-28	Had the fill been reclaimed at the time of the air survey?	Yes [ ] No [X]	%Sandstone in overburden:	92
ongitude:	82-37-26	Date of survey:	12/31/99		

	As constructed	Revision	Original design
Type of Fill			Durable Rock
Size of Fill	Length (ft)		1650
	Area (acres)		12.1
	Volume (mcy)		1.1
Surface Configuration			
Elevations	Crown (ft)		1000
	Toe (ft)		825
Slopes	Toe Foundation (%)		3.0
	Fill Face (deg.)		
Surface Drainage Control			Perimeter
Subsurface Drainage Control			Underdrain
Stability Analysis Software Used			REAME
Safety Factor	Static		1.5
	Seismic		1.1
Engineering Properties (Spoil)	Unit Weight (pcf)		125
	Friction Angle		24
	Cohesion (psf)		160
Engineering Properties (Foundation)	Unit Weight (pcf)		
	Friction Angle (deg.)		
	Cohesion (psf)		
Phreatic Surface			P-.05

Construction Documentation and Certifications

	Appl. Phase Certification	Appl.Quarterly Certification	Photography Type
Foundation Preparation	Yes [X] No [ ]	99/2	Color
Underdrains	Yes [X] No [ ]	99/2	Color
Surface Drains	Yes [ ] No [X]		None
Grading and Revegetation	Yes [ ] No [X]		None
Final Certification	Yes [ ] No [ ]		

Aerial Survey and Ground Level Review *

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [X]	No [ ]
Foundation data:		Text
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [ ]	No [X]
Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control working properly?	Yes [X]	No [ ]
If active fill, was active spoil disposal determined to be on-going?	Yes [ ]	No [X]
If spoil disposal site inactive, how long was disposal operation idle (months)?		3
If a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [X]	No [ ]
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [X]	No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		
If the fill is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		Flat
Is the fill situated in landslide topography?	Yes [ ]	No [X]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [X]
Number of benches on fill:		

Location "f Cracks*

1
2
3

Location of Depressions*

Were there depressions on the **fill** benches? Yes [ ] No [ ] **(Potential Wafer Depth)**

1
2
3
4
5

Location of Erosion Areas*

Were there areas of erosion on the **fill** benches? Yes [ ] No [ ] **(Maximum Gully Depth)**

1
2
3
4
5

Location of Ground Bulges*

Were there bulges or hummocky terrain? Yes [1 No [1

2
3
4
5

Location "f Springs/Seeps*

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

1
2
3
4
5

Location of Changes*

Were changer in vegetation or spoil color observed on fill? **Yes** [ ] Nu [ ]

i
2
3

5
6

Movement Characteristics*

Did a failure occur on the **fill**? Yes [ ] No [ ]

f **so,** enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (A)			
Rate of Movement			
Extent of Failure **Movement**			

Cause of Movement

Mass i
Mass 2
Mass 3

Comments

'n **04/24/00** fill # 8 was 99% complete Fill smaller than **planned** but no **revision** was **seen** in the fills!

ritical phase **with photos** only on 4/27/99, remainder are quarterly certs with no photos

onstructed underdrain 16' x 8.

880-0130
HF # 8

Company:	Elkhorn Coal Corp.	Fill:	HF # 9	Date of permit file review:	04/12/00
Permit:	880-0130	Mine:	Homer Short Surface Mine	Date fill contruction started:	01/02/00
State:	KY	Was this fill visited at ground level'?	Yes [X] No [ ]	Finished:	02128199
County:	Martin	Date Of visit:	01/07/00	Number of fill size revisions:	
Latitude:	37-47-13	Had the till been reclaimed at the lime of the air survey?	Yes [ ] No [X]	%Sandstone in overburden:	92
Longitude:	82-37-32	Date of survey:	12/31/99		

	As constructed	Revision	Original design
Type of Fill			Durable Rock
Size of Fill	Length (ft)		390
	Area (acres)		0.3
	Volume (mcy)		0.0
Surface configuration			
Elevations	Crown (ft)		1010
	Toe (ft)		875
Slopes	Toe Foundation (%)		2.0
	Fill Face (deg.)		27.0
Surface Drainage Control			Perimeter
Subsurface Drainage Control			Underdrain
Stability **Analysis Software** Used			REAME
Safety Factor	Static		1.5
	Seismic		1.1
Engineering Properties (Spoil)	Unit Weight (pcf)		125
	Friction Angle		24
	Cohesion (psf)		160
Engineering Properties (Foundation)	Unit Weight (pcf)		
	Friction Angle (deg.)		
	Cohesion (psf)		
Phreatic Surface			P-.05

Construction Documentation **and Certifications**		**Appl. Phase** Certification	**Appl.Quarterly Certification**	**Photography** Type
	Foundation Preparation	Yes [X] No [1	0011	Color
	Underdrains	Yes [X] No [1	0011	Color
	Surface Drains	Yes [ ] No [X]		None
	Grading and Revegetation	Yes [1 No [X]		None
	Final Certification	Yes [ ] No [1		

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [X]	No [ ]
Foundation data:		Text
Dip of sham relative to fill		
Were NOV's written on the fill?	Yes [ ]	No [X]

Aerial Survey and Ground Level Review'		
Surface drainage control working properly?	Yes [ ]	No [X]
Subsurface drainage control working properly?	Yes [X]	No [ ]
If active fill, was active spoil disposal determined to be on-going?	Yes [X]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
[f a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [XI
If no to above. estimate percentage:		50
Discernable blanket or core drain forming?	Yes [X]	No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		
If the fill is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		Convex
Is the fill situated in landslide topography?	Yes [ ]	No [X]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [XI
Number of benches on fill:		

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *	1			
	2			
	3			

Location Of Depressions*

Were there **depressions** on the fill benches? Yes [ ] No [ ] **(Potential Water Depth)**

	1			
	2			
	3			
	4			
	5			

Location of Erosion Areas*

Were **there** areas **of** erosion **on** the fill benches? Yes [ ] No [ ] **(Maximum Gully Depth)**

	1			
	2			
	3			
	4			
	5			

Location of Ground Bulges*

Were **thcrc bulges** or hummocky terrain? **Yes** [ ] No [ ]

	1			
	2			
	3			
	4			
	5			

Location of Springs/Seeps*

Were **thcrc springs** or seeps **observed** in **disposal** areas? **Yes** [ ] No [ ]

	1			
	2			
	3			
	4			
	5			

Location of Changes*

Were changes in vegetation or **spoil** color **observed** on fill? Yes [ ] No [ ]

	i			
	2			
	3			
	4			
	5			
	6			

Movement Characteristics*

Did a failure occur on the fill? Yes [ ] No [ ]

f so. enter the source of information on **the failure:**

Stage of construction **during failure:**

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to **Slip** Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure **Movement**			
Cause of Movement	**Mass 1**		
	Mass 2		
	Mass 3		

Comments

n 04/24/00 fill # 9 was 99% complete

ritical phase with photos **only on** initial cert (4/27/99) Rest are quarterly certs with no photos

onstructed underdrain is 10' x 4'

880-0130
HF # 9

Kentucky
Elkhorn Coal Corp.
Homer Short Surface Mine

Permit: 880-0130 Fill: HF# 2

Kentucky
Elkhorn Coal Corp.
Homer Short Surface Mine

Permit: 880-0130 Fill: HF# 3

Permit: 880-0130 Fill: HF# 3

Kentucky
Elkhorn Coal Corp.
Homer Short Surface Mine

Permit: 880-0130 Fill: HF# 3

Permit: 880-0130 Fill: HF# 3

Kentucky
Elkhorn Coal Corp.
Homer Short Surface Mine

Permit: 880-0130 Fill: HF# 4 and HF# 5

Permit: 880-0130 Fill: HF# 5

Kentucky
Elkhorn Coal Corp.
Homer Short Surface Mine

Permit: 880-0130 Fill: HF# 9

Permit: 880-0130 Fill: HF# 9

BLANK PAGE

Kentucky
H & D Coal Co., Inc.
Isom Branch

Permit: 898-0440

Fill: HF #1

BLANK PAGE

Type of Fill		Durable Rock	Durable Rock
size of Fill	Length [it)	1600	1580
	Area (acres)	13.6	13.6
	Volume (mcy)	1.0	1.0
Surface Configuration		Flat	Flat
Elevations	crown (ft)	1840	1800
	Toe (ft)	1250	1250
Slopes	Toe Foundation (%)	9.4	9.4
	Fill Face (deg.)	25.2	25.2
Surface Drainage Control		Perimeter	Perimeter
Subsurface Drainage Control		Grav. Segregated	Grav. Segregated
Stability Analysis Software Used		REAME	REAME
Safety Factor	Static	1.4	1.5
	Seismic	1.1	1.2
Engineering Properties (Spoil)	Unit Weight (pcf)	125	125
	Friction Angle	30	30
	Cohesion (psf)	200	200
Engineering Properties (Foundation)	Unit weight (pcf)		
	Friction Angle (deg.)		
	Cohesion (psf)		
Phreatic Surface		P-.1	P- 05

Construction Documentation and Certifications

	Appl. Phase Certification		Appl. Quarterly Certification	Photography Type
Foundation Reparation	Yes [ ]	No [X]	4/95	R&W
Underdrains	Yes [ ]	No [X]		None
Surface Drains	Yes [ ]	No [X]	3/98	B&W
Grading and Revegetation	Yes [ ]	No [X]	3/98	B&W
Final Certification	Yes [ ]	No [ ]		

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation? Yes [ ] No [X]

Foundation data: Text

Dip of strata relative to fill:

Were NOV's written on the fill? Yes [X] No [ ]

Aerial Survey and Ground Level Review*

Surface drainage control working properly? Yes [ ] No [X]

Subsurface drainage control working properly? Yes [1 No [X]

If active fill, was active spoil disposal determined to be on-going? Yes [ ] No [ ]

If spoil disposal site inactive, how long was disposal operation idle (months)?

If a durable rock till is under construction,

Approximately 80% durable rock by volume? Yes [1 No !]

If no lo above, estimate percentage:

Discernable blanket or core drain forming? Yes [ ] No [ ]

If the fill is completed. compare the size with the size in the latest pre-completion revision? Same

If the fill is significantly smaller, what is the reason according to the documentation or inspector?

Fill surface configuration: Flat

Is the fill situated in landslide topography? Yes [1 Nn [X]

Were there ground cracks observed on the fill race or benches? Yes [X] No [ ]

Number of benches on fill:

	Location	Length (ft)	Width (ft)	Depth (in)
Location "f Cracks	2			
	3			

Location of Depressions

Were there depressions on the **fill** benches? **Yes [ ]** No [1 **(Potential Water Depth)**

1
2
3
4
5

Location "f Erosion Areas

Were there areas of erosion on the fill benches? Yes [ ] No **[ ]** **(Maximum Gully** Depth)

1
2
3
4
5

Location If Ground Bulges

Were there bulges **or** hummocky terrain? Yes **[ ]** No **[ ]**

2
3
4
5

Location of Springs/Seeps

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

2
3
4
5

Location of Changes

Were changes in vegetation or spoil color observed **on fill?** **Yes [ ]** No [ ]

3
4
5
6

Movement Characteristics

Did a failure occur on the fill? Yes [X] No [1

If so, enter **the** source of information on the failure: DEP Inspector

Stage of construction during **failure:**

	MISS I	Mass 2	Mass 3
Bench #	1		
Length (ft)			
Width (ft)			
Scarp Height **(ft)**			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement	Slow		
Extent of Failure Movement	Bulge		
Cause of Movement	Mass **1** Inadequate UnderDrains		
	Mass 2		
	Mass 3		

Comments

ıp of pavement and small, underlying coal seams draining info(ill causing instability Blanket **drain** was **not formed** which caused **fill to be** saturated No special design for pavemen nd coal seams dipping into fill

898-0440
HF # 1

Kentucky
H & D Coal Co., Inc.
Isom Branch

Permit: 898-0440 Fill: HF# 1

Permit: 898-0440 Fill: HF# 1

Kentucky
H & D Coal Co., Inc.
Isom Branch

Permit: 898-0440 Fill: HF# 1

Permit: 898-0440 Fill: HF# 1

Kentucky
Lodestar Energy, Inc.
No Mine Identifier

Permit: 836-0261

Fill: HF #3A
Fill: HF #4
Fill: HF #6C

BLANK PAGE

Company:	Lodestar Energy, Inc.	**Fill:**	HF # 3A	Date of permit file review:	04/16/99
Permit:	836-0261	**Mine:**	N/A	Date fill contruction started:	03/29/93
State:	KY	Was this fill visited at ground level?	Yes [X] No [ ]	Finished:	10/28/98
County:	Floyd	Date of visit:	01/07/00	Number of fill size revisions:	1
Latitude:	37-41-34	Had the fill been reclaimed at the time of the air survey?	Yes [ ] No [X]	%Sandstone in overburden:	47
ongitude:	82-45-10	Date of survey:	12/31/99		

		As constructed	Revision	Original design
Type of Fill			Durable Rock	Conventional
Size of Fill	Length (ft)		1019	650
	Area (acres)		13.5	2.8
	Volume (mcy)		1.5	0.4
Surface Configuration			Flat	Flat
Elevations	Crown (ft)		1000	920
	Toe (ft)		740	750
Slopes	Toe Foundation (%)		5.2	5.2
	Fill Face (deg.)		27.0	27.0
Surface Drainage Control			Perimeter	Perimeter
Subsurface Drainage Control			Grav. Segregated	Grav. Segregated
Stability Analysis Software Used			REAME	REAME
Safety Factor	Static		1.5	1.8
	Seismic		1.2	1.5
Engineering Properties (Spoil)	Unit Weight (pcf)		125	125
	Friction Angle		37	30
	Cohesion (psf)		160	200
Engineering Properties (Foundation)	Unit Weight (pcf)			
	Friction Angle (deg.)			
	Cohesion (psf)			
Phreatic Surface			P-.05	P-.1

		Appl. Phase Certification		Appl.Quarterly Certification	Photography Type
Construction Documentation and Certifications	Foundation Preparation	Yes [ ]	No [X]	93/1	None
	Underdrains	Yes [ ]	No [X]	93/1	None
	Surface Drains	Yes [ ]	No [X]	94/1	None
	Grading and Revegetation	Yes [ ]	No [X]	98/3	None
	Final Certification	Yes [ ]	No [X]	98/3	None

Aerial Survey and Ground Level Review*

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ]	No [ ]
Foundation data:		Text
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [ ]	No [X]
Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control working properly?	Yes [X]	No [ ]
If active fill, was active spoil disposal determined to be on-going?	Yes [ ]	No [X]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
If a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [X]
If no to above, estimate percentage:		50
Discernable blanket or core drain forming?	Yes [ ]	No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		Larger
If the fill is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		Flat
Is the fill situated in landslide topography?	Yes [ ]	No [X]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [X]
Number of benches on fill:		

	Location	Length (ft)	Width (ft)	Depth (in)
Location "f Cracks	1			
	2			
	3			

Location of Depressions

Were **there** depressions **on the till benches?** Yes [ ] No [ ] **(Potential Wafer Depth)**

	1			
	2			
	3			
	4			
	5			

Location of Erosion Areas

Were **there** areas of erosion **on** the **fill** benches? **Yen** [ ] No [ ] **(Maximum Gully Depth)**

	1			
	2			
	3			
	4			
	5			

Location of Ground Bulges

Were there bulges or hummocky terrain? Yes [ ] No [ ]

	1			
	2			
	3			
	4			
	5			

Location of Springs/Seeps

Were there **springs** or **seeps** observed in disposal areas? Yes [ ] No [1

	1			
	2			
	3			
	4			

Location of Changes

Were changes in **vegetation or spoil color** observed on fill? **Yes** [ ] **No** [ ]

	1			
	2			
	3			
	4			
	5			
	6			

Movement Characteristics

Did a failure occur on the fill? Yes [ ] No [ ]

Fro, enter the source of information on **the failure:**

Stage of construction during **failure:**

	Mass I	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp **Height** **(It)**			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement **Mass 1**			
Mass 2			
Mass 3			

Comments

:vision **4** enlarged Fill #3A

nal cert on original fill 12/29/94, no photos or critical phase certificates

838-0261
HF # 3A

Type of Fill		Durable Rock	Conventional
Size of Fill	Length (it)	1895	925
	Area (acres)	8.5	2.9
	Volume (mcy)	2.0	0.5
Surface Configuration		Flat	Flat
Elevations	Crown (ft)	1400	1000
	Toe (ft)	750	750
Slopes	Toe Foundation (%)	9.5	9.5
	Fill Face (deg.)	27.0	27.0
Surface Drainage Control			Perimeter
Subsurface Drainage Control			Grav. Segregated
Stability Analysis Software Used		REAME	REAME
Safety Factor	Static		1.5
	Seismic		1.3
Engineering Properties (spoil)	Unit Weight (pcf)		125
	Friction Angle		24
	Cohesion (psf)		160
Engineering Properties (Foundation)	Unit weight (pcf)		
	Friction Angle (deg.)		
	Cohesion (psf)		
Phreatic Surface			[illegible]

		Appl. Phase Certification	Appl.Quarterly Certification	Photography Type
construction Documentation and certifications	Foundation Preparation	Yes [ ] No [X]	94/2	Color
	Underdrains	Yes [ ] No [X]	9413	Color
	Surface Drains	Yes [ ] No [X]	9611	None
	Grading and Revegetation	Yes [ ] Nn [ ]		
	Final Certification	Yes [ ] No [ ]		

If a DRF. did the photographs show the rock blanket or core underdrain by gravity segregation? Yes [ ] No [ ]

Foundation data: Text

Dip of strata relative to fill:

Were NOV's written on the fill? Yes [ ] No [X]

Aerial Survey and Ground Level Review *

Surface drainage control working properly? Yes [X] No [ ]

Subsurface drainage control working properly? Yes [X] Na [ ]

If active fill, was active spoil disposal determined to be on-going? Yes [ ] No [X]

If spoil disposal site inactive. how long was disposal operation idle (months)?

: fa durable rock fill is under construction,

Approximately 80% durable rock by volume? Yes [ ] No [X]

If no to above, estimate percentage: 40

Discernable blanket or core drain forming? Yes [ ] No [ ]

If the till is completed, compare the size with the size in the latest pre-completion revision?

If the fill is significantly Smaller, what is the reason according to the documentation or inspector?

Fill surface configuration:

Is the fill situated in landslide topography? Yes [1 No [1

Were there ground cracks observed on the fill face or benches? Yes [ ] No [ ]

Number of benches on fill:

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	1			
	2			
	3			

Location of Depressions	Were there **depressions** on the **till benches?** Yes [ ] No [ ]		**(Potential Water Depth)**
	1		
	2		
	3		
	4		
	5		

Location of Erosion Areas	Were there **areas** of erosion **on the** fill benches? Yes [ ] **No** [ ]		**(Maximum Gully Depth)**
	2		
	3		
	4		
	5		

Location of Ground Bulges	Were there bulges or **hummocky** terrain? Yes [1 No [ ]		
	1		
	2		
	4		
	5		

Location of Springs/Seeps	Were there **springs** or seeps observed in disposal areas? Yes [ ] No [ ]		
	1		
	2		
	3		
	4		
	5		

Location of Changes	Were changes in vegetation or **spoil** color observed on **fill?** ***Yes*** [ ] No [ ]		
	2		
	3		
	4		
	5		
	6		

Movement Characteristics

Did a failure **occur** on the fill? Yes [ ] No [ ]

so, enter the source of information **on** the **failure:**

Stage of construction during **failure:**

	Mass I	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to **siip** Plane (ft)			
Transport Distance (ft)			
Rate **of** Movement			
Extent of Failure Movement			

Cause **of** Movement **Mass *1***
Mars 2
Mass 3

Comments

:vision #3 **added** 1,555,184 cu yds Above lowest 2 coal seams

836-0261
HF # 4

Company:	Lodestar Energy, Inc.	**Fill:**	HF # 6C	Date of permit file review:	04/16/99
Permit:	836-0261	**Mine:**	N/A	Date fill contruction started:	12/31/99
State:	KY	Was this fill visited at ground level?	Yes [X] No [ ]	Finished:	06/04/99
County:	Floyd	Date of visit:	07/29/99	Number of fill size revisions:	2
Latitude:	37-41-25	Had the fill been reclaimed at the time of the air survey?	Yes [ ] No [X]	%Sandstone in overburden:	47
ongitude:	82-44-41	Date of survey:	12/31/99		

	As constructed		Revision	Original design
Type of Fill	Durable Rock		Durable Rock	Durable Rock
Size of Fill	1250	Length (ft)	1250	1537
	101.8	Area (acres)	101.8	
	28.5	Volume (mcy)	28.5	3.4
Surface Configuration	Flat		Flat	Flat
Elevations	1150	Crown (ft)	1150	1200
	755	Toe (ft)	755	760
Slopes	2.7	Toe Foundation (%)	2.7	2.7
	27.0	Fill Face (deg.)	27.0	27.0
Surface Drainage Control	Perimeter		Perimeter	Perimeter
Subsurface Drainage Control	Grav. Segregated		Grav. Segregated	Grav. Segregated
Stability Analysis Software Used	REAME		REAME	REAME
Safety Factor	1.8	Static	1.8	1.5
	1.3	Seismic	1.3	1.2
Engineering Properties (Spoil)	125	Unit Weight (pcf)	125	125
	30	Friction Angle	30	24
	200	Cohesion (psf)	200	160
Engineering Properties (Foundation)		Unit Weight (pcf)		
		Friction Angle (deg.)		
		Cohesion (psf)		
Phreatic Surface	P-.1		P-.1	P-.01

		Appl. Phase Certification		Appl.Quarterly Certification	Photography Type
Construction Documentation and Certifications	Foundation Preparation	Yes [ ]	No [X]	95/2	Color
	Underdrains	Yes [ ]	No [X]	95/2	Color
	Surface Drains	Yes [ ]	No [X]	99/2	None
	Grading and Revegetation	Yes [ ]	No [X]	99/2	None
	Final Certification	Yes [ ]	No [X]	99/2	None

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [X]	No [ ]
Foundation data:		Text
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [X]	No [ ]

Aerial Survey and Ground Level Review*

Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control working properly?	Yes [ ]	No [X]
If active fill, was active spoil disposal determined to be on-going?	Yes [ ]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
If a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [X]
If no to above, estimate percentage:		40
Discernable blanket or core drain forming?	Yes [ ]	No [X]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		Larger
If the fill is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		Flat
Is the fill situated in landslide topography?	Yes [X]	No [ ]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [X]
Number of benches on fill:		

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	2			
	3			

Location of Depressions

Were there depressions on the fill benches? Yes [ ] No [ ] (Potential Water Depth)

	2			
	3			
	4			
	5			

Location of Erosion Areas

Were there areas of erosion on the fill benches? Yes [ ] No [ ] (Maximum Gully Depth)

	I			
	2			
	4			
	5			

Location of Ground Bulges

Were there bulges or hummocky terrain? Yes [ ] No [ ]

	2			
	3			
	4			
	5			

Location of Springs/Seeps

Were there springs or seeps observed in disposal areas? Yes [X] No [1

	I			
	2			
	3 BENCH #3	20	10	
	4			
	5			

Location of Changes

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]

	!			
	2			
	3			
	4			
	5			
	6			

Movement Characteristics

Did a failure occur on the fill? Yes [ ] No [ ]

fso, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mars 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (A)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement			

Mars I
Mars 2
Mass 3

Comments

ngineering analysis of fill requested by City of Prestonsburg due to high level seeps and concern for long term stability of fill

ill monitored by U K survey monuments

836-0261
HF # 6C

Kentucky
Lodestar Energy, Inc.
No Mine Identifier

Permit: 836-0261 Fill: HF# 3A and HF# 4

Kentucky
Lodestar Energy, Inc.
No Mine Identifier

Permit: 836-0261 Fill: HF# 6C

Permit: 836-0261 Fill: HF# 6C

Kentucky
Martin County Coal Corp.
No Mine Identifier

Permit: 880-0103

Fill: HF #33
Fill: HF #34

BLANK PAGE

Company: Martin County Coal Corp.	Fill: HF # 33	Dale of permit tile review:	04/16/99
Permit: 880-0103	Mine: N/A	Date fill contruction started:	/ /
State: KY	Was this till visited at ground level? Yes [X] No [ ]	Finished:	/ /
County: Martin	Date of visit: 07/28/99	Number of fill size revisions:	I
Latitude: 37-46-15	Had the till been reclaimed at the time of the air survey? Yes [ ] No [X]	%Sandstone in overburden:	97
Longitude: 82-29-51	Date of survey: 12/3 1/99		

		As constructed	Revision	Original design
Type of Fill			Durable Rock	Durable Rock
Size of Fill	Length (ft)		2000	1800
	Area (acres)		51.4	
	Volume (mcy)		7.7	3.2
Surface Configuration			Flat	Flat
Elevations	Crown (ft)		1000	1100
	Toe (ft)		760	760
Slopes	Toe Foundation (%)		3.0	4.0
	Fill Face (deg.)		27.0	27.0
surface Drainage Control			Perimeter	Perimeter
Subsurface Drainage Control			Grav. Segregated	Grav. Segregated
Stability Analysis Software Used			REAME	REAME
Safety Factor	Static		1.6	1.7
	Seismic		1.2	1.3
Engineering Properties (Spoil)	Unit Weight (pcf)		125	125
	Friction Angle		24	24
	Cohesion (psf)		160	160
Engineering Properties (Foundation)	Unit Weight (pcf)			
	Friction Angle (deg.)			
	Cohesion (psi)			
Phreatic Surface			P-.05	P-.05

construction Documentation and Certifications		Appl. Phase certification		Appl.Quarterly Certification	Photography Type
	Foundation Preparation	Yes [ ]	No [X]	02/99	Color
	Underdrains	Yes [ ]	No [X]	03/99	Color
	Surface Drains	Yes [ ]	No [X]	02/00	Color
	Grading and Revegetation	Yes [ ]	No [ ]		
	Final Certification	Yes [ ]	No [ ]		

Aerial Survey and Ground Level Review*			
If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?		Yes [X]	No [ ]
Foundation data:			Text
Dip of strata relative to fill:			
Were NOV's written on the fill?		Yes [ ]	No [X]
Surface drainage control working properly?		Yes [X]	No [ ]
Subsurface drainage control working properly?		Yes [X]	No [ ]
If active till, was active spoil disposal determined to be on-going?		Yes [X]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?			
f a durable rock fill is under construction,			
Approximately 80% durable rock by volume?		Yes [X]	No [ ]
If no lo above. estimate percentage:			
Discernable blanket or core drain forming?		Yes [X]	No [ ]
If the till is completed. compare the size with the size in the latest pre-completion revision?			
lithe fill is significantly smaller, what is the reason according to the documentation or inspector?			
Fill surface configuration:			Flat
Is the fill situated in landslide topography?		Yes [ ]	Nu [ ]
Were there ground cracks observed on the fill face or benches?		Yes [ ]	No [X]
Number of benches on fill:			

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *	1 2			
Location of Depressions *	Were there **depressions on** the fill benches? Yes [ ] No [ ] **(Potential Water Depth)** 2 3 4			
Location of Erosion Areas *	Were there areas of erosion on the **fill** benches? Yes [ ] No [ ] **(Maximum Gully Depth)** 2			
Location of Ground Bulges *	Were there bulges or hummocky terrain? **Yes** [ ] No [ ] 2 3 4 5			
Location of Springs/Seeps *	Were there springs or seeps observed in disposal areas? **Yes** [ ] **No** [ ] 2 3 4 5			
Location of Changes'	**Were** changes in **vegetation** or spoil color observed on **fill?** **Yes** [ ] No [ ] 1 2 4 5 6			
Movement Characteristics *	Did a failure occur on the fill? **Yes** [ ] No [1 f so, enter the source of information on **the** failure: Stage of construction during failure:	**Mass 1**	**Mass 2**	**Mass 3**
	Bench #			
	Length (ft)			
	Width (ft)			
	Scarp Height (ft)			
	Depth to Slip Plane (ft)			
	Transport Distance (ft)			
	Rate of Movement			
	Extent of Failure Movement			
	Cause of Movement **Mass 1**			
	Mass 2			
	Mass 3			
Comments	ll # 33 added in Amendment #3, replaced Fill #15B uarterly certs-on 4/12/99, 7/13/99,1O/27/99,01/18/99,04/14/99 ALL HAVE COLOR PHOTOS (Reg. Office files only) No discussion of % completed or notes that the certs are itical stage certifications.			

880-0103
HF # 33

Type of Fill		Durable **Rock**
Size of Pill	Length (it) **Area** (acres) Volume (mcy)	2500 20.5 6.5
Surface Configuration		
Elevations	crown (ft) **Toe** (ft)	1600 720
Slopes	Toe Foundation (%) Fill Face (deg.)	8 0 27.0
Surface Drainage Control		Perimeter
Subsurface Drainage Control		Grav. Segregated
Stability Analysis Software Used		REAME
Safety Factor	Static Seismic	1.4 1.1
Engineering Properties (Spoil)	Unit Weight (pcf) Friction Angle Cohesion (psf)	125 34 160
Engineering Properties (Foundation)	Unit Weight (pcf) Friction Angle (deg.) Cohesion (psf)	
Phreatic Surface		P-.05

Construction Documentation and Certifications

	Appl. Phase **Certification**		Appl.Quarterly **Certification**	Photography **Type**
Foundation Preparation	**Yes** [ ]	No [X]	03199	Color
Underdrains	Yes [ ]	No [X]	04199	Color
Surface Drains	Yes [ ]	No [ ]		
Grading and Revegetation	**Yes** [ ]	No [ ]		
Final Certification	Yes [ ]	No [ ]		

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation? Yes [X] **No** [ ]

Foundation data: Text

Dip of strata relative to **fill:**

Were NOV's written on the fill? Yes [ ] No [X]

Aerial Survey and Ground Level Review *

Surface drainage control working properly? **Yes** [ ] No [X]

Subsurface drainage control working properly? Yes [X] No [ ]

If active **fill,** was active spoil **disposal** determined to be on-going? **Yes** [X] No [ ]

If spoil disposal site inactive, how long was disposal operation idle (months)?

f a durable **rock** fill is under **construction.**

Approximately 80% durable rock by volume? Yes [X] No [ ]

If no to above, estimate percentage:

Discernable **blanket** or core **drain** forming? Yes [X] No [ ]

I f the **fill** is completed, compare the size with the size in the latest pre-completion revision?

I f the fill is significantly smaller, what is the reason according to the documentation or inspector?

Fill surface configuration:

Is the **fill** situated in **landslide** topography? Yes [ ] No [X]

Were there ground cracks observed on the fill face or benches? **Yes** [ ] No [X]

Number of benches on **fill:**

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	2			
	3			

Location of Depressions

Were there depressions on the fill benches? Yes [1 No [1 **(Potential Water Depth)**

2

Location of Erosion Areas

Wcrc **there** areas **of** eroston on **the** fill benches? Yes [ ] No [ ] **(Maximum Gully Depth)**

1
2
3
4
5

Location of Ground Bulges'

Wcrc **there** bulges or hummocky terrain? Yes [ ] No [ ]

1
2
3
4
5

Location of Springs/Seeps'

Were there springs or seeps observed in **disposal** areas? ***Yes*** [ ] No [ ]

1
2
3
4
5

Location of Changes'

Were **changes** in vegetation or **spoil** color observed on fill'? **Yes** [ ] **No** [ ]

1
2
3
4
5
6

Movement Characteristics'

Did **a** failure occur on the fill' **Yen** [ ] No [ ]

If so. **enter** the source of information on the failure:

Stage of construction during failure:

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent **of** Failure Movement			
Cause of Movement	**Mass 1**		
	Mass 2		
	Mans 3		

Comments

ill #34 **added** on 10/27/99 **in** Amendment #4 (MPA-3)

wingfill construction technique

Quarterly certs 7/12/99,10/27/99 *01118100,* 04/14/00 all **hare** color photos (Regional Office **only**) None are marked critical stage certifications

880-0103
HF # 34

Kentucky
Martin County Coal Corp.
No Mine Identifier

Permit: 880-0103 Fill: HF# 33

Permit: 880-0103 Fill: HF# 33

Kentucky
Martin County Coal Corp.
No Mine Identifier

Permit: 880-0103 Fill: HF# 33

Permit: 880-0103 Fill: HF# 33

Kentucky
Martin County Coal Corp.
No Mine Identifier

Permit: 880-0103 Fill: HF# 34

Permit: 880-0103 Fill: HF# 34

BLANK PAGE

Kentucky
Miller Brothers Coal
Wolf Creek #1

Permit: 813-0207

Fill: HF #13
Fill: HF #14
Fill: HF #15
Fill: HF #16
Fill: HF #17
Fill: HF #18

BLANK PAGE

Company: Miller Brothers Coal	Fill: HF # 13		Date of permit file review: 04/16/99
Permit: 813-0207	Mine: Wolf Creek #I		Date till contruction **started:** 06/08/99
State: KY	Was this fill visited at ground **level'?**	Yes [X] No [ ]	Finished: / /
Count?: Breathitt	Date of visit:	06108199	Number of **fill** size revisions:
Latitude: 37-35-31	Had the **fill** been reclaimed at the time of the air survey?	Yes [ ] No [X]	%Sandstone in overburden: 52
Longitude: 83-11-27	Date of survey:	12131199	

	As constructed		Revision	**Original design**
Type of Fill				Durable **Rock**
Size of Fill		**Length** (A)		**1200**
		Area (acres)		**8.0**
	7.9	Volume (mcy)		**0.5**
Surface Configuration				
Elevations		crown (it)		1140
		Toe (ft)		940
Slopes		Toe Foundation (%)		14.0
		Fill Face (deg.)		27.0
Surface Drainage Control				Perimeter
Subsurface **Drainage Control**				Grav. Segregated
Stability Analysis Software Used				REAME
Safety Factor		Static		1.4
		Seismic		1.1
Engineering Properties **(Spoil)**		**Unit** Weight (pcf)		**125**
		Friction Angle		**24**
		Cohesion (psf)		160
Engineering Properties (Foundation)		Unit Weight (pcf)		**125**
		Friction Angle (deg.)		**35**
		Cohesion (psf)		**0**
Phreatic **Surface**				P- **05**

Construction Documentation and Certifications	Foundation Preparation	Yes [ ]	No [X]	None
	Underdrains	Yes [ ]	No [X]	None
	Surface Drains	Yes [ ]	No [X] **9913**	None
	Grading and Revegetation	Yes [ ]	No [X] **9913**	None
	Final Certification	Yes [ ]	No [ ]	

]

data:

Aerial survey **and Ground Level Review***

[

[

[

[

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *	1			
	2			

Location of Depressions *	Were there depressions on the **fill** benches? Yes [ ] No [ ]		**(Potential Water Depth)**
	2		
	4		
	5		

Location of Erosion Areas *	Were there areas of erosion on the **fill** benches? ***Yes*** [ ] No [ ]		**(Maximum Gully Depth)**
	2		
	3		
	4		
	5		

Location of Ground Bulges *	Were there **bulges** or hummocky **terrain'!** Yes [ ] No [ ]		
	2		
	3		
	4		
	5		

Location of Springs/Seeps *	Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]		
	2		
	4		
	5		

Location of Changes*	**Were changer** in vegetation or **spoil** color observed on fill? Yes [ ] **No** [ ]		
	1		
	2		
	3		
	4		
	5		
	6		

Movement Characteristics *

Did a failure occur on the fill? Yes [ ] No [ ]

f so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench 4			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement	
	Mass 1
	Mass 2
	Mass 3

comments

n 6/08/99- Fill area had been cleared/grubbed No spoil placement had occurred

o field review of certs only Frankfort files

813-0207
HF # 13

Type of Fill		Durable Rock
Size of Pill	Length (ft)	1000
	Area (acres)	7.9
	Volume (mcy)	06
Surface Configuration		
Elevations	crown (ft)	1150
	Toe (ft)	900
Slopes	Toe Foundation (%)	16.0
	Fill Face (dcg.)	27.0
Surface Drainage **Control**		Perimeter
Subsurface Drainage Control		Grav. Segregated
Stability **Analysis Software Used**		REAME
Safety Factor	Static	1.4
	Seismic	1.1
Engineering Properties (Spoil)	Unit Weight (pcf)	125
	Fiction Angle	24
	Cohesion (psf)	160
Engineering Properties **(Foundation)**	Unit Weight (pcf)	I25
	Friction Angle (deg.)	35
	Cohesion (psf)	0
Phreatic Surface		P-05

		Appl. Phase **Certification**		Appl.Quarterly Certification	Photography **Type**
Construction **Documentation** and Certification.	Foundation Preparation	Yes [ ]	No [X]	9911	None
	Underdrains	Yes [ ]	No [X]	9911	None
	Surface Drains	Yes [ ]	NO [X]	99/2	None
	Grading and Revegetation	Yes [ ]	No [X]	99/2	None
	Final Certification	Yes [ ]	No [X]	99/3	None

If a DKF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ]	No [ ]
Foundation data:		Text
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [ ]	No [X]

Aerial Survey and Ground Level Review*

Surface drainage control working properly?	Yes [X]	Nn [ ]
Subsurface drainage control working properly?	Yes [X]	No [ ]
If active **fill**.was active spoil disposal determined to be on-going?	***Yes*** [X]	No [ ]
If **spoil** disposal site inactive, how long was disposal operation idle **(months)?**		
f a durable rock **fill** is **under** construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [X]
If no to above, estimate percentage:		60
Discernable blanket or core drain forming?	Yes [X]	No [ ]
If the fill is **completed,** compare the **size** with the size in the latest pre-completion revision?		Same
If the **fill is** significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		Flat
Is the **fill** situated in landslide topography?	Yes [ ]	No [X]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [X]
Number of benches on **fill:**		

Location of Cracks *

1
2
3

Location of Depressions *

Were there depressions on the fill benches? Yes [ ] No [ ] (Potential Water Depth)

1
2
3
4
5

Location of Erosion Areas *

Were there areas of erosion on the fill benches? Yes [ ] No [ ] (Maximum Gully Depth)

1
2
3
4
5

Location of Ground Bulges *

Were there bulges or hummocky terrain? Yes [ ] No [ ]

2
3
4
5

Location of Springs/Seeps *

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

2
3
4
5

Location of Changes *

Were changes in vegetation or spoil color observed on till? Yes [ ] No [ ]

2
3
4
5
6

Movement Characteristics *

Did a failure occur on the fill? Yes [ ] No [ ]

If so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement	Mass 1		
	Mass 2		
	Mass 3		

comments

* field check of certs, Frankfort files only

813-0207
HF # 14

Company:	Miller Brothers Coal	**Fill:**	HF # 15	Date of permit file **review:**	04/16/99
Permit:	813-0207	**Mine:**	Wolf Creek #1	Date **till** contruction started:	/ /
State:	**KY**	Was this fill visited at ground level?	*Yes* [X] No [ ]	Finished:	10/2 1199
County:	Brcathitt	Date of visit:	06/08/09	Number of fill **size** revisions:	
Latitude:	37-35-44	Had the **fill been** reclaimed **at** the time **of the** air survey'!	Yes [ ] No [X]	%Sandstone in overburden:	52
ongitudc:	83-11-05	Date of survey:	12/31/99		

	As constructed	Revision	Original design
Type of Fill			Durable Rnrk
Size of Fill	Length (ft)		1210
	Area (acres)		11.5
	Volume (mcy)		1.0
surface Configuration			
Elevations	crown (ft)		1150
	Toe (ft)		950
Slopes	Toe Foundation (%)		10.0
	Fill **Face** (deg.)		27.0
Surface Drainage Control			Perimeter
Subsurface Drainage Control			Grav. Segregated
Stability Analysis Software Used			REAME
Safety Factor	Static		1.4
	Seismic		1.1
Engineering Properties (Spoil)	Unit Weight (pcf)		125
	Friction Angle		**24**
	Cohesion (psi)		160
Engineering Properties (Foundation)	Unit Weight (pcf)		125
	Friction Angle (deg.)		35
	Cohesion (psf)		160
Phreatic Surface			R-.05

Construction Documentation and Certifications		Appl. Phase Certification	Appl.Quarterly Certification	Photography Type
	Foundation Preparation	Yes [ ] No [X]		None
	Underdrains	Yes [ ] No [X]		Nonc
	Surface Drains	Yes [ ] No [X]	9912	None
	Grading and Revegetation	Yes [ ] No [X]	99/2	None
	Final Certification	Yes [X] No [ ]	99/3	None

Aerial Survey and Ground Level Review*

If a DRF, did the photographs show tho **rock** blanket or core underdrain by gravity segregation? **Yes** [ ] No [ ]

Foundation data: Text

Dip of strata relative to fill:

Were NOV's written on the fill? Yes [ ] No [X]

Surface drainage control working properly? Yes [X] No [ ]

Subsurface drainage control working properly? **Yes** [X] No [ ]

If active **fill, was** active spoil disposal determined to be on-going? Yes [X] No [ ]

If spoil disposal rite inactive, **how** long was disposal operation idle (months)?

f a durable rock fill **is under construction,**

Approximately 80% durable **rock by** volume? **Yes** [ ] No [X]

If no to above, estimate percentage: 50

Discernable blanket or core drain forming? Yes [X] No [ ]

If the fill is completed. compare the size with **the size** in the latest pre-completion **revision?**

If the **fill is** significantly smaller. what is the reason according to the documentation or inspector?

Fill surface configuration: **Flat**

Is the fill situated in landslide topography? Yes [ ] No [X]

Were there ground cracks observed on the **fill** face or benches? Yes [ ] No [X]

Number of benches on fill

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	2			
	3			

Location of Depressions

Were there depressions on the fill benches? **Yes** [ ] No [ ] **(Potential Water Depth)**

	2			
	3			
	4			
	5			

Location of Erosion Areas'

Were there areas **of** erosion **on the fill benches?** Yes [ ] No [ ] **(Maximum Gully Depth)**

	2			
	3			
	4			
	5			

Location of Ground Bulges

Were there bulges or hummocky terrain? Yes [ ] No [ ]

	1			
	2			
	3			
	4			
	5			

Location of Springs/Seeps

Were there springs **or** seeps observed in **disposal** areas? Yes [ ] No [ ]

	1			
	2			
	3			
	4			
	5			

Location of Changes

Were **changer in** vegetation or spoil color **observed** on fill? Yes [ ] No [ ]

	1			
	2			
	3			
	4			
	5			
	6			

Movement Characteristics

Did a failure occur on the till' **Yes** [ ] No [ ]

f so, enter **the** source of **information** on the **failure:**

Stage of **construction** during **failure:**

	Mass I	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport **Distance** **(ft)**			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement **Mass 1**			
Mass 2			
Mass 3			

Comments

813-0207
HF # 15

Company:	Miller Brothers Coal	Fill:	HF # 16	Date of permit file review:	04116199
Permit:	813-0207	Mine:	Wolf Creek #1	Date till contruction started:	12/31/98
State:	KY	Was this fill visited at ground level'?	Yes [X] No [ ]	Finished:	09/30/99
County:	Breathitt	Date of visit:	06/08/99	Number of fill size revisions:	
Latitude:	37-36-02	Had the till been reclaimed at the time of the air survey?	Yes [ ] No [X]	%Sandstone in overburden:	52
Longitude:	83-10-58	Date of survey:	12/3 1/99		

Typo of Pill		Durable Rock
Size of Fill	Length (ft)	1200
	Area (acres)	13.0
	Volume (mcy)	1.1
Surface Configuration		
Elevations	Crown (ft)	1150
	Toe (fl)	930
Slopes	**Toe** Foundation (%)	13.0
	Fill Face (deg.)	27.0
Surface Drainage Control		Perimeter
Subsurface Drainage Control		Grav. Segregated
Stability Analysis Software Used		REAME
Safety Factor	Static	1.5
	Seismic	1.1
Engineering Properties (Spoil)	Unit Weight (pcf)	125
	Friction Angle	24
	Cohesion (psf)	**160**
Engineering Properties (Foundation)	Unit Weight (pcf)	125
	Friction Angle (dcg.)	35
	Cohesion (psf)	0
Phreatic Surface		P-.05

Construction Documentation and Certifications

	Appl. Phase Certification		Appl.Quarterly Certification	Photography Type
Foundation Preparation	**Yen [ ]**	No [X]	98/3	None
Underdrains	Yes [ ]	No [X]	98/3	None
SurfaceDrains	Yes [ ]	**No** [X]	99/2	None
Grading and Revegetation	Yes [1	No [X]	99/2	None
Final **Certification**	**Yes [ ]**	No [ ]		

If a DRF, did the photographs show the **rock** blanket or core underdrain by gravity segregation? Yes [ ] No [ ]

Foundation data: Text

Dip of strata relative to **fill:**

Were NOV's written on the fill? Yes [ ] No [X]

Aerial Survey and Ground Level Review*

Surface drainage control **working** properly? **Yes [XI** No [ ]

Subsurface drainage control **working** properly? Yes [X] No [ ]

If **active** fill, was active spoil disposal determined to be on-going? Yes [X] No [ ]

If spoil disposal site inactive. how long was disposal operation idle (months)?

If a durable rock till is under **construction,**

Approximately 80% durable **rock** by volume? Yes [ ] No [X]

If no to above, estimate percentage: 60

Discernable blanket or core drain forming? **Yes** [X] No [ ]

If the **fill** is completed. compare the size with the size in the latest pre-completion revision?

If the **fill** is significantly smaller. what is the reason according **to** the documentation or inspector'?

Fill surface **configuration:** Flat

Is the fill situated in landslide topography? Yes [ ] No [X]

Were there ground **cracks** observed on the fill face or benches? Yes [ ] No [X]

Number of benches on fill:

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	2			
	3			

Were there depressions on the fill benches? Yes [ ] No [ ] **(Potential Water Depth)**

Location of Depressions	1			
	2			
	3			
	4			
	5			

Were there areas of erosion on the fill benches? Yes [ ] No [ ] **(Maximum Gully Depth)**

Location of Erosion Areas	1			
	2			
	3			
	4			
	5			

Were there bulges or hummocky terrain? Yes [ ] No [ ]

Location of Ground Bulges	1			
	2			
	3			
	4			
	5			

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

Location of Springs/Seeps	1			
	2			
	3			
	4			
	5			

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]

Location of Changes	1			
	2			
	3			
	4			
	5			
	6			

Movement Characteristics

Did a failure occnr on the fill? Yes [ ] No [ ]

If so, enter the source of information on the failure:

Stage of construction during failnre:

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement

Mass 1

Mass 2

Mass 3

Comments

io field check of certs, only Frankfort files

813-0207
HF # 16

Type of Fill		Durable Rock
Size of Fill	Length (ft)	1320
	Area (acres)	126
	Volume (mcy)	1.0
Surface Configuration		
Elevations	Crown (ft)	1150
	Toe (ft)	930
Slopes	Toe Foundation (%)	13.0
	Fill Face (deg.)	27.0
Surface Drainage Control		perimeter
Subsurface Drainage Control		Grav. Segregated
Stability Analysis Software Used		REAME
Safety Factor	Static	1.4
	Seismic	1.1
Engineering Properties (Spoil)	Unit Weight (pcf)	125
	Friction Angle	24
	Cohesion (psf)	160
Engineering Properties (Foundation)	Unit Weight (pcf)	125
	Friction Angle (deg.)	35
	Cohesion (psf)	160
Phreatic Surface		P-.05

Construction Documentation and Certifications

	Appl. Phase certification		Appl. Quarterly Certification	Photography Type
Foundation Preparation	Yes [ ]	No [X]		None
Underdrains	Yes [ ]	No [X]		None
Surface Drains	Yes [1	No [X]	99/3	None
Grading and Revegetation	Yes [ ]	No [X]	99/3	None
Final Certification	Yes [ ]	No!]		

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation'?	Yes [ ]	No [ ]
Foundation data:		Text
Dip of strata relative to fill:		
Were NOV's written an the fill?	Yes [ ]	No [X]

Aerial Survey and Ground Level Review*

Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control working properly?	Yes [X]	No [ ]
If active fill, was active spoil disposal determined to be on-going?	Yes [X]	No [ ]
If spoil disposal site inactive. how long was disposal operation idie (months)?		
f a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [X]
If no to above, estimate percentage:		70
Discernable blanket or core drain forming?	Yes [X]	No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		
If the fill is significantly smaller. what is the reason according to the documentation or inspector?		
Fill surface configuration:		Fiat
Is the fill situated in landslide topography?	Yes [ ]	No [X]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [X]
Number of benches on till:		

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *	1			
	3			

Location of Depressions *

Were there depressions on the fill benches? **Yes** [1 No [ ] **(Potential Water Depth)**

	1			
	2			
	3			
	4			
	5			

Location of Erosion Areas *

Were there areas of erosion on the fill benches? Yes [ ] No [ ] **(Maximum Gully Depth)**

	1			
	2			
	3			
	4			
	5			

Location of Ground Bulges *

Were there bulges or hummocky terrain? Yes [ ] **No** [ ]

	1			
	2			
	3			
	4			
	5			

Location of Springs/Seeps *

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

	1			
	2			
	3			
	4			
	5			

Location of Changes

Were changes in vegetation or spoil color observed on fill? **Yes** [ ] No [ ]

	2			
	3			
	4			
	5			
	6			

Movement Characteristics

Did a failure occur on the till? **Yes** [ ] Nu [ ]

f so, enter the source of information on **the** failure:

Stage of construction during failure:

	Mars 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (it)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement

Mass 1

Mass 2

Mass 3

comments

s of 9/30/99 fill was pending final cert.

'o field review of cert data only Frankfort files

813-0207
HF # 17

Company: Miller Brothers Coal	**Fill:** HF # 18	Date of permit file review:	04116199
Permit: 813-0207	**Mine:** Wolf Creek #1	Date fill contruction started:	/ /
State: KY	Was this fill visited at ground level? **Yes** [X] No [ ]	Finished:	09/30/99
Count).: Breathitt	Date of visit: 06/08/99	Number of fill size revisions:	
Latitude: 37-16-21	Had the fill been reclaimed at the **time** of the air survey? Yes [ ] No [X]	%Sandstone in overburden:	52
.ongitude: 83-10-46	Date of survey: 12/31/99		

Type of Fill		Durable Rock
Size of Fill	Length (ft)	**1200**
	Area (acres)	10.9
	Volume (mcy)	0.9
Surface Configuration		
Elevations	Crown (ft)	1140
	Toe (ft)	920
Slopes	Toe Foundation (%)	12.0
	Fill Face (deg.)	27.0
Surface Drainage Control		Perimeter
Subsurface Drainage Control		Grav. Segregated
Stability Analysis Software Used		REAME
Safety Factor	Static	**1.4**
	Seismic	1.1
Engineering Properties (Spoil)	Unit Weight (pcf)	**125**
	Friction Angle	**24**
	Cohesion (psf)	**16U**
Engineering Properties (Foundation)	Unit Weight (pcf)	125
	Friction **Angle** (deg.)	35
	Cohesion (psf)	I60
Phreatic Surface		**P- 05**

Construction Documentation and Certifications

	Appl. Phase Certification	Appl.Quarterly Certification	Photography Type
Foundation Preparation	**Yes** [ ] No [X]		None
Underdrains	Yes [ ] No [X]		None
Surface Drains	Yes [ ] No [X]	99/3	None
Grading and Revegetation	Yes [ ] No [X]	99/3	None
Final Certification	Yes [ ] No [1		

If a DRF, did the photographs show the rock blanket or core underdrain by **gravity** segregation? **Yes** [ ] No [ ]

Foundation data: Text

Dip of strata relative to fill:

Were NOV's written on the till? Yes [ ] No [X]

Aerial Survey and Ground Level Review *

Surface drainage **control** working properly? **Yes** [X] No [ ]

Subsurface drainage control working properly? **Yes** [X] No [ ]

If active fill, was active **spoil disposal** determined to be on-going? **Yes** [X] No [ ]

If spoil **disposal** site inactive, how long was disposal operation idle (months)?

if a durable rock 6l1 is **under construction,**

Approximately 80% durable rock by volume? Yes [ ] No [X]

If no to above, estimate percentage: 50

Discernable blanket or core drain forming? Yes [X] No [ ]

If the fill is completed, compare the size wilh the size in the latest pre-completion revision?

If the fill is significantly smaller, what **is** the reason according to the documentation or inspector?

fill surface configuration: Flat

Is the fill situated in landslide topography? Yes [ ] No [X]

Were there ground cracks observed on the till face or benches? **Yes** [ ] No [X]

Number of benches on till:

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *	2			

Location of Depressions *

Were there depressions on the fill benches? **Yes** [1 No [ ] **(Potential Water Depth)**

1
3
4
5

Location of Erosion Areas *

Were there areas of erosion on the fill benches? Yes [ ] No [ ] **(Maximum Gully Depth)**

2
3
4
5

Location of Ground Bulges *

Were there bulges or hummocky terrain? **Yes** [ ] No [ ]

2
3
4
5

Location of Springs/Seeps *

Were there springs or seeps observed in disposal areas? **Yes** [ ] No [ ]

2
3
4
5

Location of Changes

Were changes in vegetation or spoil color observed on fill? Yes [ ] Nu [ ]

2
3
4
5
6

Movement Characteristics

Did a failure occur **on** the fill? **Yes** [ ] Nu [ ]

f **so**, enter **the** source of information on **the** failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp **Height** (ft)			
Depth i" Slip Plane (ft)			
Transport Distance (ftj			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement	**Mass 1**		
	Mass 2		
	Mass 3		

Comments

s of 09/30/99 fill was complete pending final cert

o field check of certs, only Frankfort files

813-0207
HF # 18

Kentucky
Miller Brothers Coal
Wolf Creek #1

Permit: 813-0207 Fill: HF# 13

Permit: 813-0207 Fill: HF# 13

Kentucky
Miller Brothers Coal
Wolf Creek #1

Permit: 813-0207 Fill: HF# 14

Permit: 813-0207 Fill: HF# 14

Kentucky
Miller Brothers Coal
Wolf Creek #1

Permit: 813-0207 Fill: HF# 14

Permit: 813-0207 Fill: HF# 14

Kentucky
Miller Brothers Coal
Wolf Creek #1

Permit: 813-0207 Fill: HF# 15

Permit: 813-0207 Fill: HF# 15

Kentucky
Miller Brothers Coal
Wolf Creek #1

Permit: 813-0207 Fill: HF# 15

Kentucky
Miller Brothers Coal
Wolf Creek #1

Permit: 813-0207 Fill: HF# 16

Permit: 813-0207 Fill: HF# 16

Kentucky
Miller Brothers Coal
Wolf Creek #1

Permit: 813-0207 Fill: HF# 16

Permit: 813-0207 Fill: HF# 16

Kentucky
Miller Brothers Coal
Wolf Creek #1

Permit: 813-0207 Fill: HF# 17

Permit: 813-0207 Fill: HF# 17

Kentucky
Miller Brothers Coal
Wolf Creek #1

Permit: 813-0207 Fill: HF# 18

Permit: 813-0207 Fill: HF# 18

Kentucky
Miller Brothers Coal
Wolf Creek #1

Permit: 813-0207 Fill: HF# 18

Permit: 813-0207 Fill: HF# 18

Kentucky
Mountain Clay, Inc.
#32

Permit: 518-0157

Fill: HF #3

BLANK PAGE

Company:	Mountain Clay, Inc.	Fill:	HF # 3	Date of permit file review:	05103100
Permit:	518-0157	Mine:	#32	Date till contruction started:	06101/81
State:	KY	Was this fill visited at ground level?	Yes [X] No [ ]	Finished:	02/01/87
County:	Whitley	Date of visit:	06108100	Number of fill size revisions:	
Latitude:	36-41-57	Had the fill been reclaimed at the time of the air survey?	Yes [X] No [ ]	%Sandstone in overburden:	20
Longitude:	84-11-28	Date of survey:	02101/88		

	As constructed	Revision	Original design
Type "f Fill			Durable Rock
	Volume (mcy)		1.6
Surface Configuration			
Elevations	Crown (ft)		1818
	Toe (ft)		1320
Slopes	Toe Foundation (%)		3.0
	Fill Face (deg.)		27.0
Surface Drainage Control			Perimeter
Subsurface Drainage Control			Grav. Segregated
Stability Analysis Software Used			REAME
Safety Factor	Static		1.7
	Seismic		
Engineering Properties (Spoil)	unit Weight (pcf)		113
	Friction Angle		24
	Cohesion (psf)		90
Engineering Properties (Foundation)	Unit Weight (pcf)		
	Friction Angle (deg.)		
	Cohesion (psf)		
Phreatic Surface			P-.05

Construction Documentation and Certifications

	Certification	Certification	Type
Foundation Preparation	Yes [ ]	No [1	
Underdrains	Yes [ ]	No [ ]	
Surface Drains	Yes [ ]	Na [ ]	
Grading and Revegetation	Yes [ ]	No [ ]	
Find Certification	Yes [I	No [ ]	

Aerial Survey and Ground Level Review*

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ]	No [ ]
Foundation data:		Text
Dip of strata relative to fill:		
Were NOV's written on the till?	Yes [X]	No [ ]
Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control working properly?	Yes [X]	No [ ]
If active fill, was active spoil disposal determined to be on-going?	Yes [ ]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
If a durable rock fill is under construction.		
Approximately 80% durable rock by volume?	Yes [ ]	No [ ]
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [ ]	No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		Same
If the fill is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		Flat
Is the fill situated in landslide topography?	Yes [ ]	No [X]
Were there ground cracks observed on the fill face or benches?	Yen [ ]	No [X]
Number of benches on fill:		

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	1			
	3			

Location of Depressions

Were there depressions on the fill benches? Yes [ ] No [ ] (Potential Water Depth)

2
3
4
5

Location "f Erosion Areas

Were there areas of erosion on the fill benches? Yes [ ] No [1 (Maximum Gully Depth)

2
3
4
5

Location of Ground Bulges

Were there bulges or hummocky terrain? Yes [ ] No [1

3
4
5

Location of Springs/Seeps

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

1
2
3
4
5

Location If Changes'

Were changer in vegetation or spoil color observed on fill? Yes [ ] No [ ]

2
3
5
6

Movement Characteristics

Did a failure occur on the fill? Yes [X] No [ ]

f so, enter the source of information on the failure: Permit File

Stage of construction during failure: Inactive - Post Constr

	Mass 1	Mass 2	Mars 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement	Slow		
Extent of Failure Movement			
cause of Movement	Inadequate UnderDrains		

Mass 1
Mass 2
Mass 3

Comment.

riginal OSM inspection in March 1987

ll construction began in June1981 Massive fill failure occurred in spring 1987 Aerial video (#020188) shows fill as of 08/06/1998

nal bond release 11/1993

518-0157
HF # 3

Kentucky
Mountain Clay, Inc.
#32

Permit: 518-0157 Fill: HF# 3

Permit: 518-0157 Fill: HF# 3

BLANK PAGE

Kentucky
New Ridge Mining
Road Fork of Big Creek

Permit: 898-0415

Fill: HF #K (No Photo)

BLANK PAGE

Company:	New Ridge Mining	**Fill:**	HF # K	Date of permit file review:	05/03/00
Permit:	898-0415	**Mine:**	Road Fork of Big Creek	Date fill contruction started:	12/15/87
State:	KY	Was this fill visited at ground level?	Yes [X] No [ ]	Finished:	05/21/97
County:	Pike	Date of visit:	06/22/00	Number of fill size revisions:	1
Latitude:	37-35-31	Had the fill been reclaimed at the time of the air survey?	Yes [X] No [ ]	%Sandstone in overburden:	80
ongitude:	82-21-58	Date of survey:	12/31/99		

		As constructed	Revision	Original design
Type of Fill			Conventional	Durable Rock
Size of Fill	Length (ft)		2400	1425
	Area (acres)		46.8	24.8
	Volume (mcy)		2.7	2.7
Surface Configuration			Convex	Convex
Elevations	Crown (ft)		1675	1660
	Toe (ft)		950	1020
Slopes	Toe Foundation (%)		11.0	11.0
	Fill Face (deg.)		19.0	27.0
Surface Drainage Control			Perimeter	Perimeter
Subsurface Drainage Control			Underdrain	Grav. Segregated
Stability Analysis Software Used			REAME	REAME
Safety Factor	Static		1.5	1.4
	Seismic		1.1	1.1
Engineering Properties (Spoil)	Unit Weight (pcf)		125	125
	Friction Angle		35	35
	Cohesion (psf)		100	100
Engineering Properties (Foundation)	Unit Weight (pcf)			
	Friction Angle (deg.)			
	Cohesion (psf)			
Phreatic Surface			Phreatic Surface	p-.05

Construction Documentation and Certifications

	Appl. Phase Certification	Appl.Quarterly Certification	Photography Type
Foundation Preparation	Yes [X] No [ ]	4/88	None
Underdrains	Yes [ ] No [X]		None
Surface Drains	Yes [ ] No [X]		None
Grading and Revegetation	Yes [ ] No [X]		None
Final Certification	Yes [ ] No [X]		None

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation? Yes [ ] No [ ]

Foundation data: Text

Dip of strata relative to fill:

Were NOV's written on the fill? Yes [X] No [ ]

Aerial Survey and Ground Level Review *

Surface drainage control working properly? Yes [ ] No [ ]

Subsurface drainage control working properly? Yes [ ] No [ ]

If active fill, was active spoil disposal determined to be on-going? Yes [ ] No [ ]

If spoil disposal site inactive, how long was disposal operation idle (months)?

If a durable rock fill is under construction,

Approximately 80% durable rock by volume? Yes [ ] No [ ]

If no to above, estimate percentage:

Discernable blanket or core drain forming? Yes [ ] No [ ]

If the fill is completed, compare the size with the size in the latest pre-completion revision?

If the fill is significantly smaller, what is the reason according to the documentation or inspector?

Fill surface configuration:

Is the fill situated in landslide topography? Yes [ ] No [ ]

Were there ground cracks observed on the fill face or benches? Yes [ ] No [ ]

Number of benches on fill:

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	2			

Location of Depressions

Were there depressions on the till benches? Yes [ ] No [ ] **(Potential Water Depth)**

2
3
5

Location "f Erosion Areas

Were there areas of erosion on the fill benches? Yes [1 No [ ] **(Maximum Gully Depth)**

1
2
4
5

Location of Ground Bulges

Were there bulges or hummocky terrain? Yes [ ] No [ ]

1
2
3
4

Location of Springs/Seeps

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

1
2
3
4
5

Location of Changes

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]

1
2
3
4
5
6

Movement Characteristics

Did a failure occur on the fill? Yes [X] No [ ]

f so, enter the source of information on the failure: DEP Inspector

Stage of construction during failure: Active - Port Construction, Inactive - Post Constr

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
cause of Movement			
Mass 1			
Mass 2			
Mass 3			

Comments

ll Failure occurred 6/1 1/89 Permit revision 03/09/90 contained remedial repairs No certs after this dare

omplete release 9/25/97

emedial measures included rock foe buttress (free draining) Hollowfill was stable at lime of inspection on 6/22/00

898-0415
HF # K

Kentucky
Pine Branch Coal Sales
Haddock Fork Mine

Permit: 897-0271

Fill: HF #10
Fill: HF #13 (No Photo)
Fill: HF #DD

BLANK PAGE

Company: Pine Branch Coal Sales		**Fill:** HF # 10		**Date of permit tile review:**	**0211 0100**
Permit: 897-0271		**Mine:** Haddock Fork Mine		Date fill contruction started:	09101193
State: KY		Was this till visited at ground level'?	Yes [X] Nu [ ]	**Finished:**	/ /
County: Perry		Date of visit:	10127198	Number of till size revisions:	1
Latitude: 37-23-04		**Had the fill been reclaimed at the time of the air survey?**	Yes [ ] No [X]	%Sandstone in overburden:	52
Longitude: 83-19-37		Date of survey:	12131199		

		As constructed	Revision	Original design
Type of Fill			Durable Rock	Durable Rock
Size of Pill	Length (A)		3550	2100
	Area (acres)		98.1	43.2
	Volume (mcy)		27.8	13.0
Surface Configuration			Flat	Flat
Elevations	Crown(ft)		1330	1270
	Toe (A)		975	99u
Slopes	Toe Foundation (%)		5.0	5.0
	Fill Face (deg.)		27.0	27.0
Surface Drainage Control			Perimeter	Perimeter
Subsurface Drainage Control			Grav. Scgregated	Grav. Segregated
Stability Analysis Software Used			REAME	REAME
Safety Factor	Static			1.6
	Seismic			1.6
Engineering Properties (Spoil)	Unit Weight (pcf)		125	125
	Friction Angle		38	38
	Cohesion (psf)		160	160
Engineering Properties (Foundation)	Unit Weight (pcf)			
	Friction Angle (deg.)			
	Cohesion (psf)			
Phreatic Surface				None

		Appl. Phase Certification		Appl.Quarterly Certification	Photography Type
Construction Documentation and Certifications	Foundation Preparation	Yes [ ]	No [X]	93/3	None
	Underdrains	Yes [ ]	No [X]	93/3	None
	Surface Drains	Yes [1	No [X]	N	
	Grading and Revegetation	Yes [ ]	No [X]	N	
	Final Certification	Yes [ ]	No [ ]		

Aerial survey and Ground Level Review *

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	n1			
	2			
	3			

Location of Depressions

Were there **depressions** on **the fill** benches? Yes [ ] No [ ] **(Potential Wafer Depth)**

3
4
5

Location of Erosion Areas

Were there areas of erosion on **the** fill benches? Yes [ ] No [ ] **(Maximum Gully Depth)**

I
2
3
4
5

Location of Ground Bulges

Were there bulges or hummocky terrain? Yes [ ] No [ ]

1
2
3
4
5

Location of Springs/Seeps

Were there springs or seeps **observed** in disposal **areas?** **Yes** [ ] No [ ]

I
2
3
4
5

Location of Changes

Were changes in **vegetation** or **spoil** color observed on fill? Yes [ ] **No** [ ]

I
2
4
5
6

Movement Characteristics

Did a failure occur on the fill? **Yea** [ ] No [ ]

f so, enter the source **of** information on **the** failure:

Stage of construction during **failure:**

	Mass 1	Mass 2	Mass 3
Bench #			
Length **in)**			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane **(ft)**			
Transport Distance **(ft)**			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement **Mass I**
Mass 2
Mass 3

Comments

mendment #3 (6/21/96) -expanded **fill** size

ll joins with backfill/same elevation, no **special** drainage provisions

Quarterly certs **began 4/93** through 3/2000 No photos of fills and no critical construction phase certificates

Fill is completed to 120' high **and reeded**

897-0271
HF # 10

Company: Pine Branch Coal Sales	**Fill:** HF # 13	**Date** of permit tile review:	02/10/00
Permit: 897-0271	**Mine:** Haddock Fork Mine	Date fill contruction started:	03/31/00
State: KY	**Was this fill** visited at **ground level?** Yes [X] No [ ]	**Finished:**	/ /
county: Perry	**Date** of visit: 10/27/98	**Number of fill size revisions:**	2
Latitude: 37-22-08	Had the fill been reclaimed at the time of the air survey? Yes [ ] No [X]	%Sandstone in overburden:	52
Longitude: 83-18-40	**Date** of survey: 12/31/99		

		As constructed	Revision	Original design
Type of Fill			Durable Rock	Durable Rock
Size of Fill	Length (ft)		2250	2650
	Area (acres)		33.0	33.0
	Volume (mcy)		6 8	10.8
Surface Configuration			Flat	Flat
Elevations	Crown (ft)		1260	1300
	Toe (A)		990	980
Slopes	Toe Foundation (%)		5.0	5.0
	Fill Face (dcg.)		27.0	27.0
Surface Drainage Control			Perimeter	Perimeter
Subsurface Drainage Control			Grav. Segregated	Grav. Segregated
Stability Analysis Software Used			REAME	REAME
Safety Factor	Static		1.6	1.6
	Seismic		1.2	
Engineering Properties (Spoil)	Unit weight (pcf)		125	125
	Friction Angle		24	24
	Cohesion (psf)		160	160
Engineering Properties (Foundation)	Unit Weight (pcf)			
	Friction Angle (dcg.)			
	Cohesion (psf)			
Phreatic Surface			P-.05	P-.os

Construction Documentation and Certifications		Appl. Phase Certification	Appl. Quarterly Certification	Photography Type
	Foundation Preparation	Yes [ ] No [X]	00/1	None
	Underdrains	Yes [ ] No [ ]		
	Surface Drains	Yes [ ] No [ ]		
	Grading and Revegetation	Yes [ ] No [ ]		
	Final Certification	Yes [ ] No [ ]		

Aerial Survey and Ground Level Review *		
If a DRF. did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ]	No [ ]
Foundation data:		Text
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [ ]	No [X]
Surface drainage control working properly?	Yes [ ]	No [ ]
Subsurface drainage control working properly?	Yes [ ]	No [ ]
If active fill, was active spoil disposal determined to be on-going?	Yes [ ]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
If a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [ ]
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [ ]	No [ ]
If the fill is completed. compare the size with the size in the latest pre-completion revision?		
If the fill is significantly smaller. what is the reason according to the documentation or inspector?		
Fill surface configuration:		
Is the fill situated in landslide topography?	Yes [ ]	No [ ]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [ ]
Number of benches on fill:		

	Location	Length (ft)	Width (ft)	Depth (in)
Location "f Cracks	2			
	3			

Location of Depressions

Were there depressions on the **fill** benches? **Yen [ ]** No [ ] **(Potential Water Depth)**

1
2
3
4

Location of Erosion Areas

Were there areas of erosion on the fill benches? Yes [ ] No [ ] **(Maximum Gully Depth)**

2
3
5

Location of Ground Bulges

Were there bulges or hummocky terrain? Yes [ ] No [ ]

2
3
4

Location of Springs/Seeps

Were there **springs** or seeps observed in **disposal** areas? ***Yes*** [ ] No [1

1
2
3
4

Location of Changes

Were changes **in** vegetation or **spoil** color observed on fill? ***Yes*** [ ] No [ ]

2
3
4
5
6

Movement Characteristics

Did a failure occur on the fill? Yes [ ] No [ ]

If so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement
Mass 1
Mass 2
Mass 3

Comments

ill # 13 added-Amendment # 2 (5/08/95

amendment # 14 (11/19/98) revised fill (smaller)

First cert. found was 3/31/00 which stated brushing was completed as of 3/2000 fill construction had not started.

897-0271
HF # 13

Company: Pine Branch Coal Sales	**Fill:** HF # DD			Date of permit file review:	02/10/00
Permit: 897-0271	**Mine:** Haddock Fork Mine			Date fill contruction started:	10/01/95
State: KY	Was this fill visited at ground level?	Yes [X]	No [ ]	Finished:	/ /
County: Perry	Date of visit:	10/27/98		Number of fill size revisions:	2
Latitude: 37-22-22	Had the fill been reclaimed at the time of the air survey?	Yes [ ]	No [X]	%Sandstone in overburden:	52
ongitude: 83-18-45	Date of survey:	12/31/99			

		As constructed	Revision	Original design
Type of Fill			Durable Rock	Durable Rock
Size of Fill	Length (ft)		8700	1500
	Area (acres)		262.4	8.0
	Volume (mcy)		90.8	2.9
Surface Configuration			Flat	Flat
Elevations	Crown (ft)		1350	1240
	Toe (ft)		975	1000
Slopes	Toe Foundation (%)		5.0	5.0
	Fill Face (deg.)		27.0	27.0
Surface Drainage Control			Perimeter	Perimeter
Subsurface Drainage Control			Grav. Segregated	Grav. Segregated
Stability Analysis Software Used			REAME	REAME
Safety Factor	Static		2.6	1.7
	Seismic		1.8	1.2
Engineering Properties (Spoil)	Unit Weight (pcf)		125	125
	Friction Angle		24	24
	Cohesion (psf)		160	160
Engineering Properties (Foundation)	Unit Weight (pcf)			
	Friction Angle (deg.)			
	Cohesion (psf)			
Phreatic Surface			P-.05	P-.05

Construction Documentation and Certifications

	Appl. Phase Certification		Appl.Quarterly Certification	Photography Type
Foundation Preparation	Yes [ ]	No [X]	95/2	None
Underdrains	Yes [ ]	No [X]	95/4	None
Surface Drains	Yes [ ]	No [ ]		
Grading and Revegetation	Yes [ ]	No [ ]		
Final Certification	Yes [ ]	No [ ]		

Aerial Survey and Ground Level Review*

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation? Yes [ ] No [ ]

Foundation data: Text

Dip of strata relative to fill:

Were NOV's written on the fill? Yes [ ] No [X]

Surface drainage control working properly? Yes [X] No [ ]

Subsurface drainage control working properly? Yes [X] No [ ]

If active fill, was active spoil disposal determined to be on-going? Yes [X] No [ ]

If spoil disposal site inactive, how long was disposal operation idle (months)?

If a durable rock fill is under construction,

Approximately 80% durable rock by volume? Yes [X] No [ ]

If no to above, estimate percentage:

Discernable blanket or core drain forming? Yes [X] No [ ]

If the fill is completed, compare the size with the size in the latest pre-completion revision?

If the fill is significantly smaller, what is the reason according to the documentation or inspector?

Fill surface configuration:

Is the fill situated in landslide topography? Yes [ ] No [X]

Were there ground cracks observed on the fill face or benches? Yes [ ] No [X]

Number of benches on fill:

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	2			
	3			

Location "f Depressions	Were there depressions on the Fill benches? Yes [ ] No [ ]		**(Potential Water Depth)**
	1		
	2		
	3		
	4		
	5		

Location of Erosion Areas	**Were** there areas of erosion **on the** fill benches? Yes [ ] No [ ]		**(Maximum Gully Depth)**
	2		
	3		
	4		
	5		

Location of Ground Bulges	Were there **bulges** or hummocky terrain? **Yes** [ ] No [ ]		
	2		
	3		
	4		
	5		

Location of Springs/Seeps	Were there **springs** or seeps observed in disposal areas? Yes [ ] No [ ]		
	1		
	2		
	3		
	4		
	5		

Location of Changes	**Were changes** in vegetation or spoil color observed on fill? Yes [ ] No [ ]		
	2		
	3		
	4		
	5		
	6		

Movement Characteristics

Did a failure occur on the fill? Yes [ ] No [ ]

f so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement **Mass 1**			
Mass 2			
Mass 3			

Comments

atitude -37-22-22

ad cleared and grubbed entire area before fill construction

roposed permanent stream at the top of the fill

ill size increased in Amendment # 1 and Amendment #4

uarterly certs from 6/95 through 3/2000. No photos or critical phase certs.

897-0271
HF # DD

Kentucky
Pine Branch Coal Sales
Haddock Fork Mine

Permit: 897-0271 Fill: HF# 10

Permit: 897-0271 Fill: HF# 10

Kentucky
Pine Branch Coal Sales
Haddock Fork Mine

Permit: 897-0271 Fill: HF# 10

Permit: 897-0271 Fill: HF# 10

Kentucky
Pine Branch Coal Sales
Haddock Fork Mine

Permit: 897-0271 Fill: HF# DD

Permit: 897-0271 Fill: HF# DD

Kentucky
Pine Branch Coal Sales
Haddock Fork Mine

Permit: 897-0271 Fill: HF# DD

Permit: 897-0271 Fill: HF# DD

Kentucky
Richardson Fuels, Inc.
Mine #2

Permit: 836-0212

Fill: HF #1

BLANK PAGE

Company: Richardson Fuels, Inc.	**Fill:** HF # 1	Date of permit file review:	**05/17/00**
Permit: 836-0212	**Mine:** Mine #2	**Date fill** contruction started:	**06/06/90**
State: KY	**Was this fill visited at ground** level? Yes [X] No [ ]	Finished:	/ /
County: Floyd	**Date** of visit: *04105199*	Number of fill size revisions:	
Latitude: 37-30-36	**Had the fill been** reclaimed **at** the **time** of the **air** survey'? Yes [ ] No [X]	**%Sandstone in** overburden:	**32**
Longitude: 82-49-28	Date of survey: 12/3 *1199*		

	As constructed	Revision	Original design
Type of Fill			Durable **Rock**
Size "f Pill	Length (ft)		1500
	Area (acres)		*25.3*
	Volume (mcy)		***2.6***
Surface Configuration			Flat
Elevations	Crown (A)		1300
	Toe (ft)		750
Slopes	**Toe** Foundation (%)		*30.0*
	Fill Face **(deg.)**		
Surface Drainage Control			Perimeter
Subsurface Drainage Control			Grav. **Segregated**
Stability Analysis Software Used			REAME
Safety Factor	Static		1.7
	Seismic		1.3
Engineering Properties (Spoil)	Unit Weight (pcf)		125
	Friction **Angle**		**34**
	Cohesion (psf)		200
Engineering Properties (Foundation)	unit Weight (pcf)		
	Friction Angle (deg.)		
	Cohesion (psf)		
Phreatic Surface			P-.05

Construction Documentation and Certifications

	Appl. Phase Certification	Appl.Quarterly Certification	Photography Type
Foundation Preparation	Yes [X] **No!** 1	90/2	Color
Underdrains	**Yes** [X] **No!**]	90/3	Color
Surface Drains	**Yes** [X] **No** [ ]	91/1	Color
Grading and Revegetation	**Yes** ! 1 No [X]	91/1	None
Final Certification	Yes [ ] **No** [ ]		

Aerial Survey and Ground Level Review *

If a DRF, did the photographs show the **rock** blanket or core underdrain **by gravity segregation?**	**Yes** [X]	**No** [ ]
Foundation data:		Text
Dip of strata relative to fill		
Were NOV's written on the **fill?**	**Yes** [X]	**No** ! !
Surface drainage control working **properly?**	**Yes** ! 1	No [X]
Subsurface drainage control working properly?	**Yes** [ ]	**No** [X]
If active fill, was **active spoil disposal** determined **to be on-going?**	**Yes** [ ]	**NO** [ ]
If spoil **disposal** site **inactive, haw** long was **disposal** operation **idle (months)?**		
f a durable rock fill is under construction;		
Approximately 80% **durable rock by** volume?	**Yes** [ ]	No [ ]
If no to **above,** estimate **percentage:**		
Discernable blanket or **core** drain **forming?**	**Yes** [ ]	No [ ]
If the fill is **completed.** compare the size **rith the size in** the latest pre-completion revision?		Same
If the till is significantly smaller. what **is** the reason **according** to **the** documentation or inspector?		
Fill **surface** configuration:		Flat
Is the fill situated **in** landslide topography?	**Yes** [X]	No [1
Were there ground **cracks** observed on **the** fill face or **beaches?**	**Yes** [X]	No [ ]
Number of benches on fill:		

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *	1			
	2			
	3			

Location of Depressions *

Were there depressions on the fill benches? Yes [X] No [ ] **(Potential Water Depth)**

1
2
3
4
5

Location of Erosion Areas *

Were there areas of erosion on the fill benches? Yes [X] No [ ] **(Maximum Gully Depth)**

2
4
5

Location of Ground Bulges'

Were there bulges or hummocky terrain? Yes [ ] No [ ]

2
3
4
5

Location of Springs/Seeps *

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

2
3
4
5

Location of Changes *

Were changes in vegetation or spoil color observed on fill? Yes [X] No [ ]

2
3
4
5
6

Movement Characteristics *

Did a failure occur on the fill? Yes [X] No [ ]

If so, enter the source of information on the failure: Field Measurements

Stage of construction during failnre:

	Mass 1	Mass 2	Mass 3
Bench #	#1		
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)	50		
Rate of Movement	Slow		
Extent of Failure Movement	Slide		

Cause of Movement
Mass 1 Inadequate UnderDrains
Mass 2
Mass 3

Comments

Completion of fill-4/30/91

N/C issued for fill failure 3/23/94, Slide due to inadequate underdrain (Hazard#4 ?)

Operator advised in fill visit that fill had been placed in 4" lifts but permit says durable rock fill

Revision was issued 7/13/99 to accomodate regrading of fill due to failure. As of 2/04/2000 regrading has continued.

836-0212
HF # 1

Kentucky
Richardson Fuels, Inc.
Mine #2

Permit: 836-0212 Fill: HF# 1

Permit: 836-0212 Fill: HF# 1

Kentucky
Richardson Fuels, Inc.
Mine #2

Permit: 836-0212 Fill: HF# 1

Permit: 836-0212 Fill: HF# 1

Kentucky
Starfire Coals, Inc.
Skyline

Permit: 060-0080

Fill: HF #1 (No Photo)

BLANK PAGE

Company: Starfire Coals, Inc.	**Fill:** IIF # I	Date of permit file review:	*05103100*
Permit: 060-0080	Mine: Skyline	Date till contruction started:	/ /
State: KY	Was this fill visited at ground level? Yes [ ] No [X]	Finished:	/ /
County: Knott		Number of fill size revisions:	1
Latitude: *82-55-51*	Had the fill been reclaimed at the time of the air survey'? Yes [ ] No [X]	%Sandstone in overburden:	***56***
Longitude: *37-17-56*			
	Date of survey: *1213 1199*		

	As constructed	Revision	Original design
Type of Fill		Durable Rock	Conventional
Size of Fill	Length (it)	1035	1035
	Area (acres)	39.0	39.0
	Volume (mcy)	1.6	1.6
Surface Configuration		Flat	Flat
Elevations	Crown (ft)	1280	1280
	Toe (ft)	1110	1110
Slopes	Toe Foundation (%)	23.0	23.0
	Fill Face (dcg.)	27.0	27.0
Surface Drainage Control		Perimeter	Perimeter
Subsurface Drainage Control		Grav. Segregated	Underdrain
Stability Analysis **Software Used**		REAME	REAME
Safety Factor	Static		**1.6**
	Seismic		1.3
Engineering Properties (Spoil)	Unit Weight (pcf)		125
	Friction Angle		34
	Cohesion (psf)		0
Engineering Properties (Foundation)	Unit Weight (pcf)		
	Friction **Angle** (dcg.)		
	Cohesion (psf)		
Phreatic Surface			P-05

		Appl. Phase Certification	Appl.Quarterly Certification	Photograph) Type
Construction **Documentation** and Certifications	Foundation Preparation	Yes [ ] No [ ]		
	Underdrains	Yes [ ] No [ ]		
	Surface Drains	**Yen** [ ] No [ ]		
	Grading and Revegetation	Yes [ ] No [ ]		
		]		

If a DRF, did the photographs **show** the **rock** blanket or core underdrain by gravity segregation?	Yes [ ]	No [ ]
Foundation data:		Text
Dip of strata **relative** to fill:		
Were NOV's written on the fill?	Yes [X]	No [ ]
Surface drainage control working properly?	Yes [I	No [ ]
Subsurface drainage control working properly?	Yes [ ]	No [ ]
If active **fill**. was active spoil disposal determined to be on-going?	**Yes** [ ]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle **(months)?**		
If a durable ruck till **is under construction,**		
Approximately SO% durable rock by volume?	Yes [ ]	No [ ]
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	**Yes** [1	No [1
lithe **fill** is completed, compare the size with the size in the latest pre-completion **revision?**		
If the till is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		
Is the till situated in landslide topography?	Yes [ ]	No [ ]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [ ]
Number of benches on fill:		

Aerial Survey and Ground Level Review*

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks*	1			
	2			
	3			

Location of Depressions*

Were there depressions on the **fill benches?** Yes [ ] No [ ] **(Potential Water Depth)**

1
2
3
4
5

Location of Erosion Areas*

Were there areas of erosion on the **fill** benches'? Yes [ ] No [ ] **(Maximum Gully Depth)**

1
2
3
4
5

Location of Ground Bulges*

Were there bulges or hummocky terrain? Yes [1 No [ ]

1
2
3
4
5

Location "f Springs/Seeps*

Were there springs or seeps observed in disposal areas? Yes [ ] No [1

1
2
3
4
5

Location of Changes'

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]

1
2
3

5
6

Movement Characteristics*

Did a **failure** occur on the **fill?** Yes [X] No [ ]

f so, enter the source **of information** on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to **Slip** Plane (ft)			
Transport Distance (ft)			
Rate of Movement	Slow		
Extent of Failure Movement			

Cause of Movement **Mass i** Inadequate UnderDrains. Durability of Rock
Mass 2
Mass 3

Comments

verlapped by permits #460-0080 **and then** #860-9005 with hollowfills greatly enlarged to 300 2 acres

ew fills cover original fill-no field inspection possible

060-008C
HF # 1

Kentucky
Sunny Ridge Mining Co.
Jones Fork

Permit: 898-0507

Fill: HF #7
Fill: HF #9

BLANK PAGE

Company: Sunny Ridge Mining Co.	**Fill:** HF # 7			Date of permit file review:	04/16/99
Permit: 898-0507	**Mine:** Jones Fork			Date fill contruction started:	03/17/97
State: KY	Was this fill visited at ground level?	Yes [X]	No [ ]	Finished:	/ /
County: Pike	Date of visit:	07/07/99		Number of **till** size revisions:	**2**
Latitude: 37-25-05	Mad the fill been reclaimed at the time of the air survey?	Yes [ ]	No [X]	%Sandstone in overburden:	78
Longitude: 82-10-38	Date of survey:	12131199			

	As constructed		Revision	Original design
Type of Fill	Durable Rock		Durable Rock	Durable Ruck
Size of Fill	1200	Length (ft)	3150	3125
	6.9	Area (acres)	18.1	31.6
	0.3	Volume (mcy)	4 2	5.1
Surface Configuration	Concave		Flat	Flat
Elevations	1835	Crown *(el)*	1880	1880
	1643	Toe (ft)	1440	1420
Slopes	7 0	Toe Foundation (%)	7.0	7 0
	27.0	Fill Face (deg.)	27.0	27 0
Surface Drainage Control	Perimeter		Perimeter	Perimeter
Subsurface Drainage Control	Grav. Segregated		Grav. Segregated	Grav. Segregated
Stability Analysis Software Used	REAME		REAME	REAME
Safety Factor	2.0	Static	1.6	1.7
	1.4	seismic	1.3	1.3
Engineering Properties (Spoil)	125	Unit Weight (pcf)	125	125
	35	Friction Angle	35	34
	200	Cohesion (psf)	200	200
Engineering Properties (Foundation)		Unit Weight (pcf)		
		Friction Angle (deg.)		
		Cohesion (psf)		
Phreatic Surface	P-.05		P-.05	P-.05

Construction Documentation and Certifications		Appl. Phase certification		Appl.Quarterly Certification	Photography Type
	Foundation Preparation	Yes [ ]	No [X]	9711	None
	Underdrains	Yes [ ]	No [X]	9712	None
	Surface Drains	Yes [ ]	No [ ]	9912	None
	Grading and Revegetation	Yes [ ]	No [ ]	9912	None
	Final Certification	Yes [ ]	No [ ]		

Aerial survey and Ground Level Review*			
	If a DRF. did the photographs show the **rock blanket** or core underdrain by gravity segregation?	Yes [ ]	No [ ]
	Foundation data:		Text
	Dip of strata relative to **fill:**		
	Were NOV's written on the **fill?**	Yes [ ]	No [X]
	Surface drainage control **working** properly?	Yes [X]	No [ ]
	Subsurface drainage control working properly?	Yes [X]	No [ ]
	If active fill, was active spoil disposal determined to be on-going!	Yes [ ]	No [X]
	If spoil disposal site inactive, how long **was** disposal operation idle (months)?		
	If a durable rock fill is under construction,		
	Approximately 80% durable rock by volume?	Yes [ ]	No [ ]
	If no to above, estimate **percentage:**		
	Discernable **blanket** or core drain forming?	Yes [ ]	No [ ]
	If the **fill** is completed, compare the **size** with the **size** in the latest pre-completion revision?		Smaller
	If the fill is significantly smaller, what is the reason according to the documentation or inspector?		Don't know
	Fill surface configuration:		Concave
	Is the **fill** situated in landslide topography'!	Yes [ ]	No [X]
	Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [X]
	Number of benches on fill:		

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks				
	3			

Location of Depressions

Were there **depressions** on **the fill** benches? *Yes* [ ] No [ ] **(Potential Water Depth)**

2
3
5

Location of Erosion Areas

Were **there** areas of erosion on **the** fill benches'! ***Yes*** [ ] No [ ] **(Maximum Gully Depth)**

1
2
3
4
5

Location of Ground Bulges

Were **there** bulges or hummocky terrain? Yes [ ] No [ ]

1
2
3
4
5

Location of Springs/Seeps

Were there springs **or** seeps observed **in disposal** areas? Yes [ ] No [ ]

2
3
5

Location of Changes

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]

2
3
4
5
6

Movement Characteristics

Did a failure occur **on** the fill? Yes [ ] No [1

so, enter the source of information **on** the failure:

Stage of construction during failure:

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (it)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure **Movement**			
Cause of Movement	**Mass 1**		
	Mass 2		
	Mass 3		

Comments

nendment #2 added Fill # 7 , Amendment # 4 (3/17/98) reduced fill size

;inal as-built was submitted as revision to original design

Qtr Certs- 3/17/97, 6/20/97, 10/4/99 (PENDING REVEG AND COMPLETION OF FINAL GRADING)

898-0507
HF # 7

Company: Sunny Ridge Mining Co.	**Fill:** HF # 9			Date of permit file review:	04/16/99
Permit: 898-0507	**Mine:** Jones Fork			Date fill contruction started:	/ /
State: KY	Was this fill visited at ground level?	Yes [X]	No [ ]	Finished:	10/04/99
County: Pike	Date of visit:	07/07/09		Number of fill size revisions:	1
Latitude: 37-25-02	Had the fill been reclaimed at the time of the air survey?	Yes [ ]	No [X]	%Sandstone in overburden:	78
Longitude: 82-10-23	Date of survey:	12/31/99			

	As constructed		Revision	Original design
Type of Fill	Durable Rock		Durable Rock	Durable Rock
Size of Fill	1200	Length (ft)	1200	625
	25.1	Area (acres)	25.1	3.0
	1.7	Volume (mcy)	1.7	0.5
Surface Configuration				
Elevations	1875	Crown (ft)	1875	1875
	1455	Toe (ft)	1455	1720
Slopes	27.0	Toe Foundation (%)	27.0	36.0
	27.0	Fill Face (deg.)	27.0	27.0
Surface Drainage Control	Perimeter		Perimeter	Perimeter
Subsurface Drainage Control	Grav. Segregated		Grav. Segregated	Grav. Segregated
Stability Analysis Software Used	REAME		REAME	REAME
Safety Factor	1.6	Static	1.6	1.6
	1.2	Seismic	1.2	1.3
Engineering Properties (Spoil)		Unit Weight (pcf)		125
		Friction Angle		35
		Cohesion (psf)		100
Engineering Properties (Foundatiou)		Unit Weight (pcf)		
		Friction Angle (deg.)		
		Cohesion (psf)		
Phreatic Surface	P-.05		P-.05	P-.05

Construction Documentation and Certifications

	Appl. Phase Certification		Appl.Quarterly Certification	Photography Type
Fonndation Preparation	Yes [ ]	No [X]		None
Underdrains	Yes [ ]	No [X]		None
Surface Drains	Yes [ ]	No [X]		None
Grading and Revegetation	Yes [ ]	No [X]	99/3	None
Final Certification	Yes [ ]	No [ ]		

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ]	No [ ]
Foundation data:		None
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [ ]	No [X]

Aerial Survey and Ground Level Review*

Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control working properly?	Yes [X]	No [ ]
If active fill, was active spoil disposal determined to be on-going?	Yes [X]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
If a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [X]
If no to above, estimate percentage:		50
Discernable blanket or core drain forming?	Yes [X]	No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		Larger
If the fill is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		Convex
Is the fill situated in landslide topography?	Yes [X]	No [ ]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [X]
Number of benches on fill:		

	Location	Length (ft)	width (ft)	Depth (in)
Location of Cracks	I			
	2			
	3			

Location of Depressions	Were there **depressions** on the fill benches?	Yes [ ]	No [ ]	**(Potential Water Depth)**
	I			
	2			
	4			

Location of Erosion Areas	Were there areas of erosion on the fill **benches?**	**Yes [ ]**	No [ ]	**(Maximum Gully Depth)**
	1			
	2			
	3			
	4			
	5			

Location of Ground Bulges	Were there bulges or **hummocky** terrain?	Yes [ ]	No [1
	I		
	2		
	4		

Location of Springs/Seeps	Were there springs or seeps observed in **disposal areas'?**	Yes [1	No [1
	2		
	3		

Location of Changes	Were changes in vegetation or **spoil** color observed on fill?	Yes [ ]	No [ ]
	2		
	3		
	4		
	6		

Movement Characteristics

Did a failure occur on the fill? Yes [ ] No [ ]

f so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement **Mass 1**			
Mass 2			
Mass 3			

Comments

mendment # 4 added hollowfills 8- 13 to balance reduction of Fill # 7

wingfill construction on steep side hill with 11 foot wide terraces

Quarterly certifications 10/04/99, 04/21/00 only. First cert. shows fill completed. No critical phase certifications or photos.

898-0507
HF # 9

Kentucky
Sunny Ridge Mining Co.
Jones Fork

Permit: 898-0507 Fill: HF# 7

Permit: 898-0507 Fill: HF# 7

Kentucky
Sunny Ridge Mining Co.
Jones Fork

Permit: 898-0507 Fill: HF# 7

Permit: 898-0507 Fill: HF# 9

Kentucky
Sunny Ridge Mining Co.
Jones Fork

Permit: 898-0507 Fill: HF# 9

Permit: 898-0507 Fill: HF# 9

Kentucky
Sunny Ridge Mining Co.
Jones Fork

Permit: 898-0507 Fill: HF# 9

Permit: 898-0507 Fill: HF# 9

TENNESSEE

BLANK PAGE

TENNESSEE

Company	Mine	Permit	Fill
Cumberland Coal Co., LLC	Turner Mine/Area #I	2981	Excess Spoil Storage
Gatliff Coal Co.	Wolfpen Hollow	2833	HF #1
Gatliff Coal Co.	Wolfpen Hollow	2833	HF #2
Valley View Coal, Inc.	Area #2	2431	Fill A
Valley View Coal, Inc.	Area #2	2431	Fill B
Valley View Coal, Inc.	Area #3A	2475	Area #3A Hollowfill

BLANK PAGE

Tennessee
Cumberland Coal Co., LLC
Turner Mine/Area #1

Permit: 2981

Fill: Excess Spoil Storage

BLANK PAGE

Type of Fill		Durable Rock
Size of Fill	Length (ft)	3200
	Area (acres)	91.0
	Volume (mcy)	5.2
Surface Configuration		Convex
Elevations	Crown (ft)	2050
	Toe (ft)	1840
Slopes	Toe Foundation (%)	11.0
	Fill Face (deg.)	27.0
Surface Drainage Control		Perimeter
Subsurface **Drainage Control**		Grav. Segregated
Stability **Analysis Software Used**		Other
Safety Factor	static	1.6
	Seismic	1.6
Engineering Properties (Spoil)	Unit Weight (pcf)	110
	Friction Angle	35
	Cohesion (psf)	100
Engineering Properties (Foundation)	Unit Weight (pcf)	
	Friction Angle (deg.)	
	Cohesion (psf)	
Phreatic Surface		None

Construction Documentation and Certifications

	Appl. Phase		Appl. Quarterly	Photography
Foundation Preparation	Yes [X]	No [ ]		None
Underdrains	Yes [ ]	No [X]		
Surface Drains	Yes [X]	No [ ]	Y	None
Grading and Revegetation	Yes [ ]	No [ ]		
Final Certification	Yes [ ]	No [ ]		

Aerial Survey and Ground Level Review*

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ]	Nn [ ]
Foundation data:		None
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [ ]	No [X]
Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control working properly?	Yes [X]	No [ ]
If active fill, was active spoil disposal determined to be on-going?	Yes [XI	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
f a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [X]	No [ ]
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [X]	No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		
If the fill is significantly smaller. what is the reason according to the documentation or inspector'!		
Fill surface configuration:		Flat
Is the fill situated in landslide topography?	Yes [ ]	No [X]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [X]
Number of benches on fill:		

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	1			
	2			

Location "f Depressions

Were there depressions on the fill benches? Yes [1 No [X] **(Potential Water Depth)**

3
4
5

Location of Erosion Areas

Were there **wear** of erosion on the fill benches? Yes [ ] No [X] **(Maximum Gully Depth)**

1
2
3
4
5

Location of Ground Bulges

Were there bulges or hummocky terrain? Yes [ ] No [X]

2
3
4
5

Location of Springs/Seeps

Were there **springs** or seeps **observed** in disposal areas? **Yes** [ ] No [X]

1
2
4
5

Location of Changes

Were changes in **vegetation or spoil** color observed on **fill?** Yes [ ] No [X]

2
3
4
5
6

Movement Characteristics

Did a failure occur on the fill? Yes [ ] No [X]

f so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement **Mass 1**
Mass 2
Mass 3

Comments

is fill has northern and southern sides with the crown in the center. The north side has been totally revegetated, while the south side has about half of the proposed material in it.

eatment cells for water quality problems have been placed near the toe of the northern side of the fill.

e only problem noted was that clearing and grubbing was not far enough in advance of material placement on the south side of the fill. The inspector notified the operator of this fore we left the site.

2981
Excess Spoil Storage

Tennessee
Cumberland Coal Co., LLC
Turner Mine/Area #1

Permit: 2981 Fill: Excess Spoil Storage

Permit: 2981 Fill: Excess Spoil Storage

Tennessee
Cumberland Coal Co., LLC
Turner Mine/Area #1

Permit: 2981 Fill: Excess Spoil Storage

Permit: 2981 Fill: Excess Spoil Storage

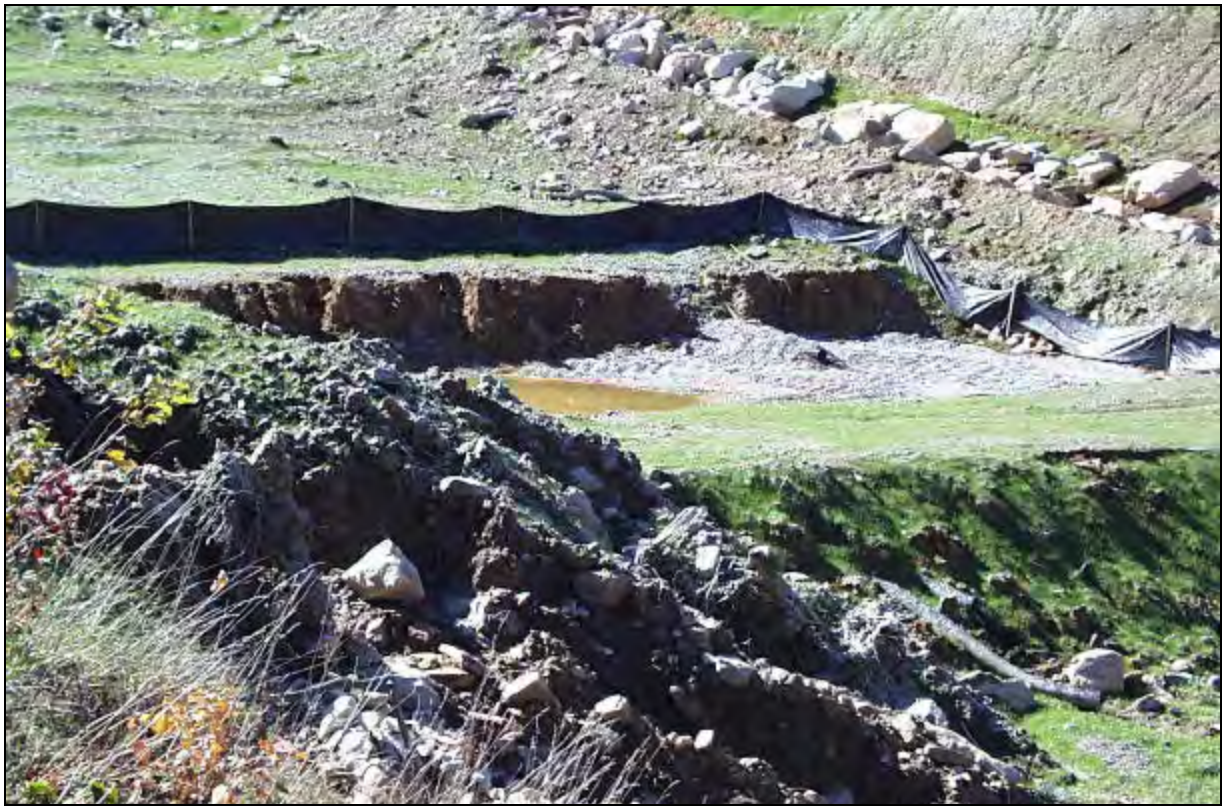
Tennessee
Cumberland Coal Co., LLC
Turner Mine/Area #1

Permit: 2981 Fill: Excess Spoil Storage

Permit: 2981 Fill: Excess Spoil Storage

Tennessee
Cumberland Coal Co., LLC
Turner Mine/Area #1

Permit: 2981 Fill: Excess Spoil Storage



Permit: 2981 Fill: Excess Spoil Storage

Tennessee
Gatliff Coal Co.
Wolfpen Hollow

Permit: 2833

Fill: HF #1 (No Photo)
Fill: HF #2

BLANK PAGE

Type of Fill		Conventional
Size of Fill	Length (ft)	250
	Area (acres)	
	Volume (mcy)	0.0
Surface Configuration		Flat
Elevations	Crown (ft)	
	Toe (ft)	
Slopes	Toe Foundation (%)	
	Fill Face (deg.)	
Surface Drainage Control		Perimeter
Subsurface Drainage Control		Underdrain
Stability Analysis Software Used		SWASE REAME
Safely Factor	static	1.6
	Seismic	1.3
Engineering Properties (Spoil)	Unit Weight (pcf)	
	Friction Angle	30
	Cohesion (psf)	
Engineering Properties (Foundation)	unit Weight (pcf)	
	Friction **Angle** (deg.)	
	Cohesion (psf)	
Phreatic Surface		None

Construction Documentation and Certifications

Foundation Preparation	Yes [ ]	No [ ]
Underdrains	Yes [1	No [ ]
Surface Drains	***Yes*** [ ]	No [ ]
Grading and Revegetation	Yes [ ]	No [ ]
Final Certification	**Yes** [ ]	No [ ]

Aerial Survey and Ground Level Review*

If a DRF, **did** the photographs **show** the rock **blanket** or core underdrain by gravity segregation?	Yes [ ]	No [ ]
Foundation data:		None
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [ ]	No [ ]
Surface drainage control working properly?	Yes [ ]	No [ ]
Subsurface drainage control **working** properly?	**Yes** [ ]	***No*** [ ]
If active **fill**, was active spoil disposal determined to **be** on-going?	**Yes** [ ]	No [ ]
If **spoil** disposal site inactive, how long was disposal operation idle (months)?		
If a durable rock fill is under construction,		
Approximately 80% durable **rock** by volume?	***Yes*** [ ]	No [ ]
If **no** to above, estimate percentage:		
Discernable blanket **or** core drain forming?	Yes [ ]	No [ ]
lithe fill is completed, compare **the** size with the size in the latest pre-completion **revision?**		
If the **fill** is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface **configuration:**		
Is the **fill** situated in landslide topography?	Yes [ ]	No [ ]
Were there ground **cracks** observed on the **fill** face or benches?	Yes [ ]	No [ ]
Number of benches on fill:		

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	2			
	3			

Were there depressions on the fill benches? Yes [ ] No [ ] **(Potential Water Depth)**

Location of Depressions	2			
	3			
	4			
	5			

Were there areas of erosion on the fill benches? Yes [ ] No [ ] **(Maximum Gully Depth)**

Location of Erosion Areas	2			
	3			
	4			
	5			

Were there bulges or hummocky terrain? Yes [ ] Nu [1

Location of Ground Bulges	2			
	3			
	4			
	5			

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

Location "f Springs/Seeps	2			
	4			
	5			

Were changes in vegetation or spoil color observed on fill? **Yes** [ ] Nu [ ]

Location of Changes	1			
	2			
	3			
	4			
	5			
	6			

Did a failure occur on the **fill?** Yes [ ] No [X]

? so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (it)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement **Mass 1**			
Mass 2			
Mass 3			

Movement Characteristics

Comments

ɔllowfill #1 was never constructed.

2833
HF #1

Type of Fill	Conventional		Conventional
Size of Fill	550	Length (ft)	820
		Area (acres)	
		Volume (mcy)	0.1
Surface Configuration	Concave		Flat
Elevations	1920	Crown (ft)	1960
	1840	Toe (ft)	1840
Slopes	23 0	Toe Foundation (%)	23 0
	21.0	Fill Face (deg.)	27 0
Surface Drainage Control	Perimeter		Perimeter
Subsurface Drainage Control	Underdrain		Underdrain
Stability Analysis Software Used	REAME		SWASE REAME
Safety Factor	2.4	Static	1.6
		Seismic	1.3
Engineering **Properties (Spoil)**	128	Unit Weight (pcf)	125
	33	Friction Angle	30
	200	Cohesion (psf)	200
Engineering Properties (Foundation)		Unit Weight (pcf)	
		Friction Angle (deg.)	
		Cohesion (psf)	
Phreatic Surface	P-0 05		P-0.05

Construction Documentation and Certifications

	Appl. Phase Certification	Appl.Quarterly certification	Photography Type
Foundation Preparation	Yes [1 **No** [X]		Copies
Underdrains	Yes [ ] No [X]		
Surface Drains	Yes [ ] No [X]		
Grading and Revegetation	Yes [ ] No [X]		
Final Certification	**Yes** [X] No [ ]	92/2	

Aerial Survey and **Ground** Level Review *

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation? **Yes** [ ] No [ ]

Foundation data: Holes

Dip of strata relative to **fill:**

Were NOV's written on the **fill?** Yes [X] No [ ]

Surface drainage control working properly? Yes [ ] No [ ]

Subsurface drainage control working properly? Yes [ ] No [ ]

if active **fill was** active spoil disposal determined to **be** on-going? **Yes** [ ] No [ ]

If spoil disposal site inactive, how long was disposal operation idle (months)?

If **a** durable rock fill is under construction,

Approximately 80% durable rock by volume? Yes [ ] No [ ]

If no to above. estimate percentage:

Discernable blanket or core drain forming? Yes [ ] No [ ]

If the **fill** is completed. compare the size with the size in the latest pre-completion revision? Smaller

If the **fill** is significantly smaller, what is the reason according to the documentation or inspector?

Fill surface configuration:

Is the **fill** situated in landslide topography? Yes [ ] No [ ]

Were there ground cracks observed on the **fill** face or benches? Yes [ ] No [ ]

Number of benches on fill:

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	2			
	3			

Location of Depressions

Were there depressions on the fill benches? **Yes** [ ] No [I **(Potential Water Depth)**

1
2
3
4

Location of Erosion Areas

Were there areas of erosion on the fill benches? Yes [ ] No [1 **(Maximum Gully Depth)**

2
3
5

Location of Ground Bulges

Were there bulges or hummocky terrain? Yes [ ] **No** [I

1
2
3
4
5

Location of Springs/Seeps

Were **there** springs or seeps observed in disposal **areas?** Yes [ ] No [1

2
3
4
5

Location of Changes

Were changes in vegetation or spoil **color** observed on fill? **Yes** [ ] No [ ]

2
3
4
5
6

Movement Characteristics

Did a failure occur on the fill? Yes [ ] No [X]

If so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement
Mass 1
Mass 2
Mass 3

Comments

Iollowfill #2 was built considerably smaller than designed.

ın NOV was issued 10/16/91 for a diversion ditch breach allowing water to flow across the fill.

2833
HF #2

Tennessee
Gatliff Coal Co.
Wolfpen Hollow

Permit: 2833 Fill: HF# 2

Permit: 2833 Fill: HF# 2

Tennessee
Gatliff Coal Co.
Wolfpen Hollow

Permit: 2833 Fill: HF# 2

Permit: 2833 Fill: HF# 2

Tennessee
Valley View Coal, Inc.
Area #2

Permit: 2431

Fill: Fill A
Fill: Fill B

BLANK PAGE

Company: Valley View Coal, Inc.	**Fill:** Fill A			Date of permit file review:	04/08/99
Permit: 2431	**Mine:** Area #2			Date fill contruction started:	05/26/89
State: TN	Was this fill visited at ground level?	Yes [ ]	No [X]	Finished:	10/12/90
County: Anderson				Number of fill size revisions:	
Latitude: 36-15-16	Had the fill been reclaimed at the time of the air survey?	Yes [ ]	No [X]	%Sandstone in overburden:	65
ongitude: 84-13-55	Date of survey:	/ /			

	As constructed		Revision	Original design
Type of Fill	Durable Rock			Durable Rock
Size of Fill	1500	Length (ft)		1500
	37.8	Area (acres)		37.8
	5.8	Volume (mcy)		5.8
Surface Configuration	Concave			Concave
Elevations	2900	Crown (ft)		
	2600	Toe (ft)		
Slopes		Toe Foundation (%)		
		Fill Face (deg.)		27.0
Surface Drainage Control	Perimeter			Perimeter
Subsurface Drainage Control	Grav. Segregated			Grav. Segregated
Stability Analysis Software Used				REAME
Safety Factor		Static		1.5
		Seismic		1.5
Engineering Properties (Spoil)		Unit Weight (pcf)		120
		Friction Angle		30
		Cohesion (psf)		200
Engineering Properties (Foundation)		Unit Weight (pcf)		
		Friction Angle (deg.)		
		Cohesion (psf)		
Phreatic Surface				

		Appl. Phase Certification		Appl.Quarterly Certification	Photography Type
Construction Documentation and Certifications	Foundation Preparation	Yes [ ]	No [ ]		
	Underdrains	Yes [ ]	No [ ]		
	Surface Drains	Yes [ ]	No [X]	Y	Color
	Grading and Revegetation	Yes [ ]	No [ ]		
	Final Certification	Yes [ ]	No [ ]		

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ]	No [ ]
Foundation data:	Text	Holes
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [X]	No [ ]

Aerial Survey and Ground Level Review*

Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control working properly?	Yes [X]	No [ ]
If active fill, was active spoil disposal determined to be on-going?	Yes [ ]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
If a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [ ]
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [ ]	No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		Same
If the fill is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		Concave
Is the fill situated in landslide topography?	Yes [ ]	No [X]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [ ]
Number of benches on fill:		

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks*	1			
	3			

Location of Depressions*	Were there depressions on the fill benches? **Yes** [ ] No [ ]		**(Potential Water Depth)**
	2		
	3		
	4		
	5		

Location of Erosion Areas*	Were there areas of erosion on the fill benches? **Yes** [ ] No [ ]		**(Maximum Gully Depth)**
	2		
	3		
	4		
	5		

Location of Ground Bulges*	Were there bulges or hummocky terrain? **Yen** [ ] No [ ]		
	2		
	3		
	4		
	5		

Location of Springs/Seeps*	Were **there** springs or seeps observed in **disposal** areas? **Yes** [ ] No [ ]		
	2		
	3		
	5		

Location of Changes*	Were changes in vegetation or spoil color observed on fill? **Yes** [ ] No [ ]		
	1		
	2		
	3		
	4		
	6		

Movement Characteristics*

Did a failure occur on the fill? Yes [ ] No [X]

f so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (it)			
Transport Distance (fl)			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement	
	Mass 1
	Mass 2
	Mass 3

Comments

a NOV was issued 5/2/90 for failure to construct Fill "A" in accordance with revision #03 **The** final **graded** configuration was approved in revision #13 on 10114190

he quarterly certs. **referenced** a seep that contributed to a small slough ***on*** one of the terraces after fill construction was **complete.**

2431
Fill A

Company: Valley View Coal, Inc.	**Fill:** Fill B	Date of permit file review:	04/08/99
Permit: 2431	**Mine:** Area #2	Date fill contruction started:	01/10/86
State: 'IN	Was this fill visited at ground level? Yes [ ] No [X]	Finished:	09/21/89
County: Anderson		Number of fill size revisions:	1
Latitude: 36-15-16	Had the fill been reclaimed at the time of the air survey? Yes [X] No [ ]	%Sandstone in overburden:	**65**
Longitude: 84-13-55			
	Date of survey: / /		

	As constructed		Revision	Original design
Type of Fill	Durable Rock			Durable Rock
***Sire* "f Fill**	1400	Length (fl)		1400
	35.6	**Area (acres)**		**24.6**
	6.5	Volume **(mcy)**		**4 1**
Surface Configuration	Concave			Concave
Elevations	2900	Crown (ft)		
	2600	Toe (ft)		
Slopes	11.0	Toe Foundation (%)		11.0
		Fill Face (deg.)		27.0
Surface **Drainage Control**	Perimeter			Perimeter
Subsurface Drainage Control	Grav. Segregated			Grav. Segregated
Stability Analysis **Software Used**	REAME			REAME
Safety Factor	**1.5**	**Static**		**1.6**
	1.4	Seismic		**1.5**
Engineering Properties (Spoil)	95	Unit Weight (pcf)		120
	35	**Friction Angle**		**30**
	0	**Cohesion** (psf)		200
Engineering Properties (Foundation)		Unit Weight (pcf)		
		Friction Angle (deg.)		
		Cohesion (psf)		
Phreatic Surface	Phreatic Surface			

		Appl. Phase certification	Appl. Quarterly **Certification**	Photography **Type**
Construction Documentation and Certifications	Foundation **Preparation**	Yes [X] No [ ]		Copier
	Underdrains	Yen [X] No [ ]		Copies
	Surface Drains	Yes [ ] No [X]	Y	Color
	Grading and Revegetation	Yes [X] No [ ]		None
	Final Certification	**Yes** [ ] No!]		

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ] No [ ]
Foundation data:	Text Holes
Dip of strata relative to fill:	
Were NOV's written on the fill?	Yes [ ] No [X]

Aerial Survey and Ground Level Review *

Surface drainage control working properly?	Yes [X] No [ ]
Subsurface drainage control working properly?	Yes [X] No [ ]
If active fill, was active spoil disposal determined to be on-going?	Yes [ ] **No** [ ]
If spoil disposal rife inactive, how long was disposal operation idle (months)?	
If a durable rock fill is under construction,	
Approximately 80% durable rock by volume?	Yes [ ] No [ ]
If no to above, **estimate** percentage:	
Discernable blanket or core drain forming?	Yes [ ] No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion revision?	Same
If the fill is significantly smaller, what is **the** reason according to the documentation or inspector?	
fill surface configuration:	Concave
Is the fill situated in landslide topography'!	Yes [ ] No [X]
Were there ground cracks observed on the fill face or benches?	Yes [ ] No [ ]
Number of benches on fill:	

	Location	Length (ft)	Width (ft)	Depth (in)
Location or Cracks *	2			
	3			

Were there depressions on the fill benches? Yes [ ] No [ ] **(Potential Water Depth)**

Location ıf Depressions *	1			
	2			
	3			
	4			
	5			

Were there areas of erosion on the **fill** benches? **Yes** [ ] No [ ] **(Maximum Gully Depth)**

Location of Erosion Areas *	1			
	2			
	3			
	4			
	5			

Were there bulges or hummocky terrain? **Yes** I] No [ ]

Location or Ground Bulges *	2			
	3			
	4			
	5			

Were there springs or seeps observed in disposal areas? Yes [ ] **No** [ ]

Location of Springs/Seeps *	1			
	2			
	4			

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]

Location of Changes *	1			
	2			
	3			
	4			
	5			
	6			

Did a failure occur on the fill? Yes [ ] No [X]

f so, enter the source of information on the failure:

Stage of construction during failure:

Movement Characteristics *

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement	**Mass 1**		
	Mass 2		
	Mass 3		

Comments

n additional 1.8 mcy of spoil material was added to Fill "B" in revision #03.

2431
Fill B

Tennessee
Valley View Coal, Inc.
Area #2

Permit: 2431 Fill: A

Permit: 2431 Fill: A

Tennessee
Valley View Coal, Inc.
Area #2

Permit: 2431 Fill: B

Permit: 2431 Fill: B

Tennessee
Valley View Coal, Inc.
Area #2

Permit: 2431 Fill: B

Permit: 2431 Fill: B

BLANK PAGE

Tennessee
Valley View Coal, Inc.
Area #3A

Permit: 2476

Fill: Area #3A Hollowfill (No Photo)

BLANK PAGE

Type of Fill		Durable Rock
Size of Fill	Length (ft) Area (acres) Volume (mcy)	1250 51.0 7.4
Surface Configuration		Concave
Elevations	Crown (ft) Toe (ft)	2900 2560
Slopes	Toe Foundation (%) Fill Face (deg.)	2.0 27 0
Surface Drainage **Control**		Perimeter
Subsurface Drainage Control		Grav. Segregated
Stability **Analysis** Software Used		Other
Safety Factor	Static Seismic	**1.5** 1.5
Engineering Properties (Spoil)	Unit Weight (pcf) Friction Angle **Cohesion** (psf)	95 35 0
Engineering Properties (Foundation)	Unit Weight (pcf) Friction Angle (deg.) Cohesion (psf)	
Phreatic Surface		Phreatic Surface

	Appl. **Phase**	**Appl.Quarterly**	**Photography**
	Certification	Certification	Type
Construction **Documentation** and Certifications	Foundation Preparation Yes [ ] No [ ] Underdrains Yes [ ] No [ ] Surface Drains Yes [ ] No [ ] Grading and Revegetation Yes [ ] No [ ] Final Certification Yes [ ] No [ ]		

If a DRF, did the photographs show the rock blanket or core underdrain **by** gravity segregation'!	**Yes** [ ]	No [ ]
Foundation data:		None
Dip **of** strata relative to **fill.**		
Were NOV's written on the fill?	Yes [ ]	No [ ]
Surface drainage control working properly?	Yes [ ]	No [1
Subsurface drainage control working properly?	Yes [ ]	No [ ]
If active fill, **was** active spoil disposal determined to be on-going!	Yes [ ]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle **(months)?**		
If a durable rock fill is under construction,		
Approximately 80% durable rack by volume?	Yes [ ]	No [ ]
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	**Yes** [ ]	No [1
If the **fill** is completed. compare the size with the size in the latest pre-completion revision?		
If **the fill** is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		
Is the **fill** situated in landslide topography?	Yes [ ]	No [1
Were there ground cracks observed on **the fill** face or benches?	Yes [ ]	No [1
Number of benches on fill:		

Aerial **Survey** and Ground Level **Review** *

	Location	Length (ft)	Width (ft)	Depth (in)
Location "f Cracks *	3			

Location of Depressions *	Were there depressions on the fill benches?	Yes [ ]	No [ ]	(Potential Water Depth)
	1			
	2			
	3			
	4			

Location "f Erosion Areas	Were there areas of erosion on the till benches?	Yes [ ]	No [ ]	(Maximum Gully Depth)
	2			
	3			
	4			
	5			

Location of Ground Bulges *	Were there bulges or hummocky terrain?	Yes [ ]	No [ ]
	1		
	2		
	3		
	4		
	5		

Location of Springs/Seeps *	Were there springs or seeps observed in disposal areas?	Yes [ ]	No [ ]
	2		
	3		
	4		

Location of Changes *	Were changes in vegetation or spoil color observed on filly	Yes [ ]	No [ ]
	2		
	3		
	4		
	5		
	6		

Movement Characteristics *

Did a failure occur on the fill? Yes [ ] No [X]

f so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (A)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement	Mass 1		
	Mass 2		
	Mass 3		

Comments

ie Hollowfill for Area #3A was never constructed

2476
Area #3A Hollowfill

VIRGINIA

BLANK PAGE

VIRGINIA

Company	Mine	Permit	Fill
A & G Coal Corp.	Coastal Coal Co.	1101692	HF #1
A & G Coal Corp.	Coastal Coal Co.	1101692	HF #2
A & G Coal Corp.	Coastal Coal Co.	1101692	HF #A
Clinchfield Coal Co.	The Black Thunder Mme	1101218	HF #3
Cumberland River Coal Co.	Trace Fork Strip Mine	1101623	Fill A
Cuinherland River Coal Co.	Trace Fork Strip Mine	1101623	Fill B
Motivation Coal Co.	Pawpaw Gap Surface Mine	1101369	Fill #1
Motivation Coal Co.	Pawpaw Gap Surface Mine	1101369	Fill #3
.Motivation Coal Co.	Pawpaw Gap Surface Mine	1101360	Fill #4
Motivation Coal Co.	Lovers Gap Surface Mine	1101548	Fill C
Red River Coal Co.	Buckhead	1100717	HF #1
Red River Coal Co.	Buckhead	1100717	HF #3
Red River Coal Co.	Buckhead	1100717	HF #5
Red River Coal Lo , Inc	Flat Gap Mine	1101272	HF #1
Red River Coal Co , Inc.	Flat Gap Minc	1101272	HF #2
Red River Coal Co., Inc.	Flat Gap Mine	1101272	HF #3
Red fiver Coal Co., Inc.	Flat Gap Mine	1101272	HF #4
Red River Coal Co., Inc.	North Fox Gap Surfacc Mine	1101401	Fill #6
Red River Coal Co., Inc.	North Fox Gap Surface Mine	1101401	Fill K7
Red River Coal Co., Inc.	North Fox Gap Surface Mine	1101401	Fill #8
Red fiver Coal Co., Inc.	Black Creek Surface Mine	1601576	HF-B
Red River Coal Co., Inc.	Black Creek Surfacc Mine	1601576	HF-C
Rrd River Coal Co., Inc	Black Creek Surface Mine	1601576	HF-D
Virginia Iron, Coal and Coke	Boldcamp Surface Mine	1101537	Fill #1B
Virginia Iron, Coal and Coke	Boldcamp Surface Mine	1101537	Fill #5

BLANK PAGE

Virginia
A & G Coal Corp.
Coastal Coal Co.

Permit: 1101692

Fill: HF #1
Fill: HF #2
Fill: HF #A (No Photo)

BLANK PAGE

Type of Fill		Durable **Rock**
Sire of Fill	**Length** (ft) Area (acres) Volume (mcy)	**1200** ***1.2*** 1.1
Surface Configuration	Flat	
Elevations	Crown (ft) Toe (ft)	2300 2080
Slopes	Toe Foundation (%) Fill Face (deg.)	**12.0** 22.0
Surface Drainage Control		Perimeter
Subsurface Drainage Control		Const. Underdrain
Stability Analysis Software Used		REAME
Safety Factor	Static Seismic	1.8
Engineering Properties (Spoil)	Unit Weight (pcf) Friction Angle Cohesion (psf)	125 30 200
Engineering Properties (Foundation)	Unit Weight (pcf) **Friction Angle (deg.)** **Cohesion** (psf)	
Phreatic Surface		P-.05

Construction Documentation and Certifications

	Appl. Phase Certification		**Appl. Quarterly certification**	**Photography Type**
Foundation Preparation	**Yes** [X]	No [ ]	**Y**	**Color**
Underdrains	**Yes** [X]	**No** [ ]	**Y**	**Color**
Surface Drains	Yes [X]	**No** [ ]	**Y**	**Color**
Grading and Revegetation	**Yes** [X]	No [ ]	**Y**	**Color**
Final Certification	Yes [ ]	**Nu** [ ]		

Aerial Survey and Ground Level Review *

If a DRF, did the **photograph** show the **rock blanket** or core underdrain by gravity segregation? **Yen** [ ] No [ ]

Foundation data: Pits

Dip of strata relative to fill:

Were NOV's written on the fill? Yes [ ] **No** [X]

Surface drainage control working properly? Yes [ ] No [ ]

Subsurface drainage control working properly? Yes [ ] No [ ]

If active **fill,** was active spoil **disposal** determined to be **on-going?** **Yes** [ ] **No** [ ]

If spoil disposal site inactive, how long was disposal **operation** idle (months)?

If a durable rock fill is **under construction.**

Approximately 80% durable rack by volume? Yes [ ] **No** [ ]

If no to above, estimate **percentage:**

Discernable **blanket or** core drain forming? **Yes** [ ] **No** [ ]

If the till is completed, compare the size with the size in **the latest** pre-completion revision?

If the **fill** is significantly smaller, what is the reason according to **the** documentation or inspector?

Fill **surface** configuration:

Is the fill situated in landslide topography? **Yes** [ ] **No** [ ]

Were there ground cracks observed on the **fill** face or benches? Yes [ ] No [ ]

Number of **benches** on **fill:**

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	3			

Location of Depressions

Were there **depressions** on the **fill** benches? **Yes** [ ] No [ ] **(Potential Water Depth)**

2
3
4
5

Location of Erosion Areas

Were there areas of erosion on the **fill** benches? Yes [ ] No [ ] **(Maximum Gully Depth)**

1
2
3
4
5

Location of Ground Bulges

Were there bulges or hummocky terrain? **Yes** [ ] No [ ]

1
2
3
5

Location of Springs/Seeps

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

1
2
3
4
5

Location of Changes

Were changes in vegetation or **spoil** color observed on fill? **Yes** [ ] No [ ]

1
2
3
4
5
6

Movement Characteristics

Did a failure occur on the fill? Yes [ ] No [X]

f so, enter the source **of** information on the failure:

Stage of construction during failure:

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (A)			
Rate of Movement			
Extent **of Failure Movement**			
Cause of Movement	**Mass 1**		
	Mass 2		
	Mass 3		

Comments

ermit review fill completion pending find vegetation **on** upper terrace H. photos show some **exposure** of gravel inside of the right side drain Possibly erosion related, **but** not bulated

1101692
HF # 1

Type of Fill			Durable Rock
Size of Fill	Length (ft)		2500
	Area (acres)		26.9
	Volume (mcy)		5.9
Surface Configuration	Flat		
Elevations	Crown (ft)	2420	2370
	Toe (ft)	1990	1990
Slopes	Toe Foundation ('A)		12.0
	Fill Face (deg.)		22.0
Surface Drainage Control			Perimeter
Subsurface Drainage Control			Grav. Segregated
Stability Analysis Software Used			REAME
Safety Factor	Static		1.5
	Seismic		
Engineering Properties (Spoil)	Unit Weight (pcf)		125
	Friction Angle		30
	Cohesion (psf)		200
Engineering Properties (Foundation)	Unit Weight (pcf)		
	Friction Angle (deg.)		
	Cohesion (psf)		
Phreatic Surface			P-.05

Construction Documentation and Certifications

	Appl. Phase Certification		Appl. Quarterly Certification	Photography Type
Foundation Reparation	Yes [X]	No [ ]	Y	Color
Underdrains	Yes [X]	No [ ]	Y	Color
Surface Drains	Yes [X]	No [ ]	Y	Color
Grading and Revegetation	Yes [X]	No [ ]	Y	Color
Final Certification	Yes [ ]	No [ ]		

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [X]	No [ ]
Foundation data:		Text
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [ ]	No [X]

Aerial Survey and Ground Level Review*

Surface drainage control working properly?	Yes [ ]	No [ ]
Subsurface drainage control working properly?	Yes [ ]	No [ ]
If active fill, was active spoil disposal determined to be on-going?	Yes [ ]	No [ ]
If spoil disposal Site inactive. how long was disposal operation idle (months)?		
If a durable rock fill is under construction,		
Approximately 80% durable rack by volume?	Yes [ ]	No [ ]
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [ ]	No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		
If the fill is significantly smaller. what is the reason according to the documentation or inspector?		
Fill surface configuration:		Flat
Is the fill situated in landslide topography?	Yes [ ]	No [ ]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [ ]
Number of benches on fill:		7

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *	1			
	2			
	3			

Location of Depressions *

Were there depressions on the till benches? Yes [X] No [ ] **(Potential Water Depth)**

1	**R4-5,** Q1
2	
4	
5	

Location of Erosion Areas *

Were there areas of erosion on the fill benches? **Yes** [ ] No [ ] **(Maximum Gully Depth)**

1	
2	
3	
4	
5	

Location of Ground Bulges *

Were there bulges or hummocky terrain? Yes [ ] No [ ]

1	
2	
4	
5	

Location "f Springs/Seeps *

Were **there** springs or seeps observed in disposal areas? **Yes [ ]** No [ ]

1	
2	
3	
4	
5	

Location of Changes *

Were changes in vegetation or spoil color observed on fill? **Yes [ ]** No [X]

1	
2	
3	
4	
5	
6	

Movement Characteristics *

Did a failure occur on the fill? Yes [ ] No [ ]

f so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement	**Mass 1**		
	Mass 2		
	Mass 3		

Comments

:rmit Revision (5/12/97) raised fill by 50'. New stability analysis but no revised volume amounts. As of 7/07/99 fill is complete except for vegetation on fill crown. H. photos show a w areas of minor moisture concentrations on benches. Not tabulated. Fill face is primarily flat. First Q is concave above the second bench and this is the area where the tabulated :pression and color change occur. The depression is placed on the slope between benches. May result from runoff erosion or minor slippage.

1101692
HF # 2

review:

Type of Fill		Durable Rock
size Or Pill	Length (tt)	1900
	Area (acres)	
	Volume (mcy)	1.3
Surface Configuration		
Elevations	Crown (ft)	2475
	roc (ft)	2000
Slopes	Tor Foundation (%)	12.0
	fill Face (dcg.)	22.0
Surface Drainage Control		Perimeter
Subsurface Drainage Control		Grav. Segregated
Stability Analysis Software Used		REAME
Safety Factor	Static	1.5
	Seismic	
Engineering Properties (Spoil)	Unit Weight (pcf)	125
	Friction Angle	30
	Cohesion (psf)	200
Engineering Properties (Foundation)	Unit Weight (pcf)	
	Friction Angle (deg.)	
	Cohesion (psf)	
Phreatic Surface		P-.os

		Appl. Phase Certification	Appl.Quarterly Certification	Photography Type
Construction Documentation and Certifications	Foundation Preparation	Yes [ ]	No [X]	None
	Underdrains	Yes [ ]	No [ ]	
	Surface Drains	Yes [1	No [1	
	Grading and Revegetation	Yes [ ]	No [ ]	
	Final Certification	Yes [ ]	No [ ]	

Aerial Survey and Ground Level Review*	If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ]	No [ ]
	Foundation data:		Pits
	Dip of strata relative to till		
	Were NOV's written on the fill?	Yes [ ]	No [X]
	Surface drainage control working properly?	Yes [ ]	No [ ]
	Subsurface drainage control working properly?	Yes [ ]	No [ ]
	If active fill. was active spoil disposal determined to be on-going?	Yes [ ]	No [ ]
	If spoil disposal site inactive, how long was disposal operation idle (months)?		
	f a durable rock fill is under construction.		
	Approximately 80% durable rock by volume?	Yes [ ]	No [ ]
	If no to above, estimate percentage:		
	Discernable blanket or core drain forming?	Yes [ ]	No [ ]
	If the till is completed, compare the size with the size in the latest pre-completion revision?		
	If the fill is significantly smaller. what is the reason according to the documentation or inspector?		
	Fill surface configuration:		
	Is the till situated in landslide topography?	Yes [ ]	No [1
	Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [!
	Number of benches on fill:		

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	2			

Location of Depressions	Were there depressions on the fill benches? **Yes** [ ] **No** [1		**(Potential Water Depth)**
	2		
	5		

Location If Erosion Areas'	Were there areas **of** erosion on the till benches? Yes [ ] No [ ]		**(Maximum Gully Depth)**
	1		
	2		
	3		
	4		
	5		

Location of Ground Bulges	Were there **bulges** or hummocky terrain? ***Yes*** [ ] No [ ]		
	I		
	2		
	3		
	4		
	5		

Location of Springs/Seeps	Were there springs or seeps **observed** in **disposal** areas? ***Yes*** [ ] No [ ]		
	2		
	3		

Location of Changes	Were **changes** in vegetation or spoil color observed on till? **Yes** [ ] No [ ]		
	I		
	2		
	3		
	4		
	5		
	6		

Movement Characteristics

Did a failure occur on the fill? Yes [ ] No [X]

f so, enter the source of information on the failure:

Stage of **construction** during failure:

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (it)			
Depth to Slip Plane (ft)			
Transport Distance (A)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement	**Mass I**		
	Mass 2		
	Mass 3		

Comments

ill added 1/28/99, Amendment #910747t

ill construction has "or started

1101692
HF # A

Virginia
A & G Coal Corp.
Coastal Coal Co.

Permit: 1101692 Fill: HF# 1

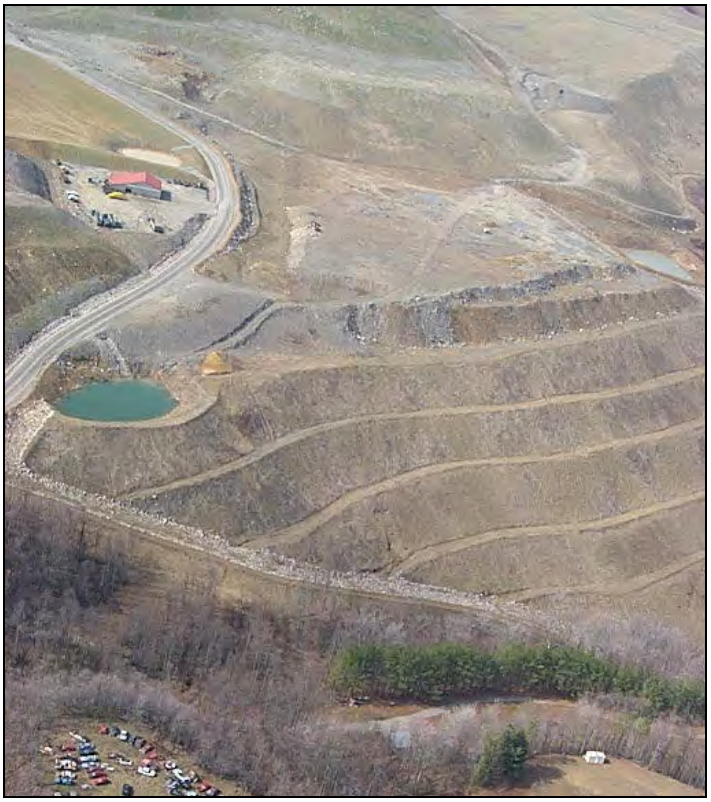
Permit: 1101692 Fill: HF# 1

Virginia
A & G Coal Corp.
Coastal Coal Co.

Permit: 1101692 Fill: HF# 1

Permit: 1101692 Fill: HF# 2

Virginia
A & G Coal Corp.
Coastal Coal Co.



Permit: 1101692 Fill: HF# 2

Permit: 1101692 Fill: HF# 2

BLANK PAGE

Virginia
Clinchfield Coal Co.
The Black Thunder Mine

Permit: 1101218

Fill: HF #3

BLANK PAGE

	As constructed		Revision	Original design
Type of Fill	Durable Rock		Durable Rock	Conventional
Size of Fill		Length (ft)	1445	1150
		Area (acres)		
		Volume (mcy)	2.0	1.2
Surface Configuration	Flat		Flat	Flat
Elevations		Crown (h)	1990	1940
		Toe (ft)	1800	1810
Slopes		Toe Foundation (%)	5.0	10.0
	26.0	Fill Face (deg.)	24.0	23.0
Surface Drainage Control	Perimeter		Perimeter	Perimeter
Subsurface Drainage Control	Grav. Segregated		Grav. Segregated	Const. Underdrain
Stability Analysis Software Used			REAME	REAME
Safety Factor		Static	1.7	1.5
		Seismic	1.3	
Engineering Properties (Spoil)		Unit Weight (pcf)	130	125
		Friction Angle	38	40
		Cohesion (psf)	0	0
Engineering Properties (Foundation)		Unit Weight (pcf)	115	115
		Friction Angle (deg.)	34	34
		Cohesion (psf)	400	400
Phreatic Surface			P-0.05	P-0.05

		Appl. Phase Certification		Appl. Quarterly Certification	Photography
construction Documentation and Certifications	Foundation Preparation	Yes [X]	No [ ]	9212	None
	Underdrains	Yes [X]	No [ ]	9512	Color
	Surface Drains	Yes [X]	No [ ]	98/3	None
	Grading and Revegetation	Yes [X]	No [ ]	98/3	Color
	Final Certification	Yes [X]	No [ ]	98/4	None

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [X]	No [ ]
Foundation data:	Holes	
Dip of strata relative to fill:	Right Flank High	
Were NOV's written on the fill?	Yes [X]	No [ ]

Aerial Survey and Ground Level Review *	Surface drainage control working properly'!	Yes [X] No [ ]
	Subsurface drainage control working properly?	Yes [X] No [ ]
	If active till, was active spoil disposal determined lo be on-going?	Yes [ ] No [ ]
	If spoil disposal Site inactive. how long was disposal operation idle (months)?	
	f a durable rock fill is under construction,	
	Approximatcly 80% durable rock by volume?	Yes [ ] No [ ]
	If no to above, estimate percentage:	
	Discernable blanket or core drain forming?	Yes [ ] No [ ]
	If the fill is completed. compare the size with the size in the latest pre-completion revision?	Unknown
	If the fill is significantly smaller, what is the reason according to the documentation or inspector?	
	Fill surface configuration:	Flat
	Is the fill situated in landslide topography?	Yes [X] No [ ]
	Were there ground cracks observed on the fill face or benches?	Yes [ ] No [X]
	Number of benches on fill:	3

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	I			
	2			

Location of Depressions

Were there depressions on the fill benches? Yes [ ] No [X] (Potential Water Depth)

2
3
4
5

Location of Erosion Areas

Were there areas of erosion on the fill benches? Yes [X] No [ ] (Maximum Gully Depth)

I Right Side Drain below B3
2
3
4
5

Location of Ground Bulges'

Were there bulges or hummocky terrain? Yes [X] No [1

i 1/4 on face between B2 & B3
2
3
4
5

Location Of Springs/Seeps

Were there springs or seeps observed in disposal areas? Yes [X] No [ ]

I Flowing into right drain below B3
2
3
4
5

Location of Changes

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [X]

I
2
3
5
6

Movement Characteristics*

Did a failure occur on the till? Yes [ ] No [X]

f so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench ii			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement			
Mass 1			
Mass 2			
Mass 3			

Comments

evision approved 5/26/92 changed HF #3 10 a durable rock fill Revision approved 6/24/94 added 8 5 acres of new mining area and modified HF #3 to accommodate the additional oil The toe was moved approximately 100 feet downstream resulting in an extra 50-foot lift An NOV was issued 9112/97 because flooding severely eroded the perimeter ditches ndslide just above the right side perimeter ditch appeared 10 be caused by water emanating from orphan spoil Loin of trees leaning and water flowing in right side ditch There was rge side-hill fill to the left side of HF #3 The difference in elevation between benches #2 and #3 was estimated to be 70 feet

1101218
HF # 3

Virginia
Clinchfield Coal Co.
The Black Thunder Mine

Permit: 1101218 Fill: HF# 3

Permit: 1101218 Fill: HF# 3

Virginia
Clinchfield Coal Co.
The Black Thunder Mine

Permit: 1101218 Fill: HF# 3

Permit: 1101218 Fill: HF# 3

Virginia
Cumberland River Coal Co.
Trace Fork Strip Mine

Permit: 1101623

Fill: Fill A
Fill: Fill B

BLANK PAGE

	As constructed	Revision	Original design
Type of Pill			Durable Ruck
Sire of Fill	Length (ft)		1240
	Area (acres)		
	Volume (mcy)		3.4
Surface Configuration			
Elevations	Crown (ft)		3030
	Toe (ft)		2630
Slopes	Toe Foundation (%)		
	Fill Face (deg)		18.0
Surface Drainage Control			Perimeter
Subsurface Drainage Control			Grav. Segregated
Stability Analysis Software Used			REAME
Safety Factor	Static		1.8
	Seismic		
Engineering Properties (Spoil)	Unit Weight (pcf)		135
	Friction Angle		34
	Cohesion (psf)		250
Engineering Properties (Foundation)	Unit Weight (pcf)		130
	Friction Angle (deg)		32
	Cohesion (psf)		146
Phreatic Surface			Phreatic Surface

		Appl. Phase Certification	Appl. Quarterly Certification	Photography Type
Construction Documentation and Certifications	Foundation Preparation	Yes [X] No [ ]	Y	None
	Underdrains	Yes [ ] No [1		
	Surface Drains	Yes [ ] No [ ]		
	Grading and Revegetation	Yes [ ] No [ ]		
	Final Certification	Yes [ ] No [ ]		

If a DRF. did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ]	No [ ]
Foundation data:		Pits
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [ ]	No [X]

Surface drainage control working properly?	Yes I 1	No [ ]
Subsurface drainage control working properly?	Yes [ ]	No [ ]
If active till, was active spoil disposal determined to bc on-going?	Yes [X]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
f a durable rock fill is under construction.		
Approximately 80% durable rock by volume?	Yes [!	No [ ]
If no lo above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [X]	No [1
If the till is completed, compare the size with the size in the latest pre-completion revision?		
If the till is significantly smaller, what is the reason according to the documentation or inipector?		
Fill surface configuration:		
Is the fill situated in landslide topography'!	Yes [ ]	No [ ]
Were there ground cracks observed on the till face or benches'!	Yes [ ]	No [1
Number of benches on fill:		

Aerial Survey and Ground Level Review *

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	2			
	3			

Location Of Depressions

Were there depressions on the fill benches? **Yes** [ ] No [ ] **(Potential Water Depth)**

1
2
4

Location of Erosion Areas

Were there areas of erosion **on** the fill benches? Yes [ ] No [ ] **(Maximum Gully Depth)**

1
3
5

Location of Ground Bulges'

Were there bulges or hummocky terrain? **Yes** [ ] No [ ]

1
2
3
4
5

Location of Springs/Seeps

Were **there** springs or seeps observed in disposal areas? Yes [ ] No [ ]

2
3
4
5

Location of Changes

Were changes in vegetation or spoil color **observed** on fill? Yes [ ] **Nu** [ ]

2
3
4
5
6

Movement Characteristics

Did a failure occur on the fill? ***Yes*** [ ] No [X]

If so, **enter** the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distauce (ft)			
Rate of Movement			
Extent of Failure Moveiuent			

Cause of Movement
Mass 1
Mass 2
Mass 3

Comments

ollowfill "A" was added in a revision approved 4/15/99.

nderground mining of the Parsons and Lowsplint coal seams occurred below the fill.

ccording to the aerial photos, a gravity segregated underdrain was in place, but recent dumping was not reaching the toe.

1101623
Fill A

Company:	Cumberland River **Coal** Co.	**Fill:**	Fill B	Date of permit tile **review:**	04/17/00
Permit:	1101623	**Mine:**	Trace Fork Strip Mine	Date **fill** contruction started:	03/01/99
State:	**VA**	Was this **fill** visited at ground **level?**	Yes [X] No [ ]	Finished:	/ /
County:	WIse	Date of visit:	04/18/00	**Number** of **fill** size revisions:	
Latitude:	37-01-28	Had the fill **been** reclaimed **at** the **time** of the air survey?	Yes [ ] No [X]	**%Sandstone in uverburden**	**42**
Longitude:	82-45-45	**Date** of survey:	02/23/00		

Type of Fill		Durable Rock
Size of Fill	Length (ft)	2120
	Area (acres)	
	Volume (mcy)	**8.8**
Surface Configuration		Concave
Elevations	Crown (ft)	3270
	Toe (ft)	**2510**
Slopes	Toe Foundation (%)	18.0
	Fill Face (dcg.)	25.0
Surface Drainage Control		Perimeter
Subsurface Drainage Control		Grav. Segregated
Stability **Analysis Software Used**		REAME
Safety Factor	Static	1.5
	Seismic	1.1
Engineering **Properties (Spoil)**	Unit weight (pcf)	135
	Friction Angle	34
	Cohesion (psf)	*250*
Engineering Properties (Foundation)	Unit Weight (pcf)	130
	Friction Angle (dcg.)	32
	Cohesion (psf)	182
Phreatic **Surface**		Phreatic Surface

		Certification	Certification	**Type**
Construction Documentation **and** Certifications	Foundation Preparation	Yes [X] No [1	99/1	Color
	Underdrains	Yes [ ] No [X]	9912	None
	Surface Drains	Yes [ ] No [ ]		
	Grading and Revegetation	Yes [1 No [X]	*9914*	None
	Final Certification	Yes [ ] No [1		

If a DRF, did the photographs show the rock blanket or core underdrain **by** gravity segregation?	Yes [1	No [X]
Foundation data:		Pits
Dip of strata relative to fill:		
Were NOV's written on the **till?**	Yes [ ]	No [X]

Surface drainage control working properly?	Yes [ ]	No [X]
Subsurface drainage control working properly?	Yes [ ]	No [X]
If active fill, was active **spoil** disposal determined lo he on-ping?	Yes [X]	No [ ]
If spoil disposal site inactive, how long **was** disposal operation idle (months)?		
If a durable rock fill **is under construction.**		
Approximately 80% durable rock by volume?	Yes [ ]	No [X]
If **no** to above, estimate percentage:		**50**
Discernable blanket or core drain forming?	Yes [ ]	No [X]
If the till is completed, compare the size with the size in the latest pre-completion revision'?		
If the fill is significantly smaller, what is the reason according lo the documentation or inspector?		
Fill surface configuration:		
Is the fill situated in landslide topography?	Yes [ ]	Nn [1
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [ ]
Number of benches on till		

Aerial **survey and Ground Level Review** *

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	1			
	2			

Location of Depressions

Were there depressions on the fill **benches?** Yes [ ] No [ ] **(Potential Water Depth)**

2
3
4
5

Location of Erosion Areas

Were there **areas** of erosion on the fill benches? Yes [ ] No [ ] **(Maximum Gully Depth)**

2
3
4
5

Location of Ground Bulges

Were there bulges or hummocky terrain? **Yes** [ ] No [ ]

2
3
4
5

Location of Springs/Seeps

Were there springs or **seeps observed** in disposal areas? Yes [X] No [ ]

1 Near toe on right **side**
2
3
4
5

Location of Changes

Were changes in vegetation or spoil color observed on fill? Yes [1 No [1

2
3
5
6

Movement Characteristics

Did a failure occur on the fill? Yes [ ] No [X]

f so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement
Mass 1
Mass 2
Mass 3

Comments

ollowfill "B" was added in a revision approved 11/23/98. Underground mining occurred beneath the fill. An old refuse embankment that was located in the same hollow had failed veral years earlier. Not all of this refuse material was removed during fill construction. Seeps and springs noted during pre-mine site visit estimated at 10 gpm. They were not llected by an underdrain. They flowed across the surface of the fill. Two roads across the fill will serve as the terraces upon final reclamation. The problem is that these terraces will 350 to 400 feet apart in elevation. Surface drainage plans call for a diversion above the fill and diversions along the two internal access roads. Drainage will all flow to right side of l.

1101623
Fill B

Virginia
Cumberland River Coal Co.
Trace Fork Strip Mine

Permit: 1101623 Fill: Fill A

Permit: 1101623 Fill: Fill A

Virginia
Cumberland River Coal Co.
Trace Fork Strip Mine

Permit: 1101623 Fill: Fill B

Permit: 1101623 Fill: Fill B

Virginia
Cumberland River Coal Co.
Trace Fork Strip Mine

Permit: 1101623 Fill: Fill B

Permit: 1101623XX Fill: Fill B

Virginia
Cumberland River Coal Co.
Trace Fork Strip Mine

Permit: 1101623 Fill: Fill B

Permit: 1101623 Fill: Fill B

Virginia
Motivation Coal Co.
Pawpaw Gap Surface Mine

Permit: 1101369

Fill: Fill #1
Fill: Fill #3
Fill: Fill #4

BLANK PAGE

Company: Motivation Coal Co.	Fill: Fill # 1	Date of permit file review:	12/06/99
Permit: 1101369	Minr: Pawpaw Gap Surface Mine	Date till contruction started:	12/31/91
State: VA	Was this **fill** visited at ground **level?** **Yes** [ ] No [X]	Finished:	11/23/94
County: Buchanon		Number of fill size revisions:	I
Latitude: 37-12-09	Had the fill been reclaimed at the time of the air survey? Yes [X] No [ ]	%Sandstone in overburden:	71
Longitude: 82-13-17			
	Date of survey: 02123100		

	As constructed	Revision	**Original design**
Type of Fill		Durable Rock	Durable Rock
Size of Fill	Length (ft)		*2080*
	Area (acres)		
	Volume (mcy)		4.1
Surface Configuration	Flat		Flat
Elevations	Crown (ft)		*2000*
	Toe (ft)		1550
Slopes	Toe Foundation (%)		*20.0*
	Fill Face (deg.)		*23.0*
Surface Drainage **Control**			Perimeter
Subsurface Drainage Control			Grav. Segregated
Stability Analysis **Software Used**			REAME
Safety Factor	Static		1.6
	Seismic		
Engineering Properties **(Spoil)**	unit Weight (pcf)		145
	Friction Angle		36
	Cohesion (psf)		**50**
Engineering Properties (Foundation)	Unit Weight (pcf)		130
	Friction **Angle** (deg)		36
	Cohesion (psf)		**455**
Phreatic Surface			P-0 05

Construction Documentation and Certifications	Appl. Phase **Certification**		**Appl.Quarterly** Certification	Photography **Type**
Foundation Preparation	Yes [x]	No [ ]	*9312*	Color
Underdrains	Yes [X]	No [ ]	9114	Color
Surface Drains	Yes [X]	No [ ]	9212	Color
Grading and Revegetation	Yes [X]	No [ ]	94/2	Color
Final Certification	Yes [X]	No [ ]	*9413*	Color

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation? Yes [X] No [ ]

Foundation data: Pits

Dip ***of*** strata relative to **fill**:

Were NOV's written on the fill? **Yes** [X] No [ ]

Aerial Survey and Ground Level Review *

Surface drainage control working properly? Yes [ ] No [ ]

Subsurface drainage control working properly? Yes [ ] No [ ]

If active fill. was active spoil **disposal** determined to be on-going? Yes [ ] No [ ]

If spoil disposal site inactive, how long was disposal operation idle (months)?

f a durable rock fill is under construction,

Approximately 80% durable rock by volume? Yes [ ] No [ ]

If no to above, estimate percentage:

Discernable blanket or core drain forming? Yes [ ] No [ ]

Ifthc fill is completed, compare the size with the size in the latest prc-completion revision?

If the fill is significantly **smaller,** what is the reason according to the documentation or inspector?

Fill surface configuration:

Is the **fill** situated in landslide topography'? Yes [1 No [ ]

Were there ground cracks observed on the **fill** face or benches? Yes [ ] No [ ]

Number of benches on **fill**:

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	1			
	2			
	3			

Location of Depressions

Were there depressions on the fill benches? Yes [ ] No [ ] **(Potential Water Depth)**

2
3
4
5

Location of Erosion Areas

Were there areas of erosion on the fill benches? Yes [X] No [ ] **(Maximum Gully Depth)**

1 Top of Fill
2
3
4
5

Location of Ground Bulges

Were there bulges or hummocky terrain? Yes [ ] No [ ]

1
2
3
4
5

Location of Springs/Seeps

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

1
2
3
4
5

Location of Changes

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]

1
2
3
4
5
6

Movement Characteristics

Did a failure occur on the fill? Yes [ ] No [X]

If so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement **Mass 1**			
Mass 2			
Mass 3			

Comments

Revision approved 4/29/93 addressed the placement of additional material in HF #1. The fill toe was extended 200 feet to coincide with the originally approved plans. More material was generated after the fill was initially revegetated.

A portion of the fill overlies an old deep mine.

An NOV dated 2/25/92 cited failure to construct diversions above and around fill.

1101389
Fill # 1

Type of Fill			Durable **Rock**
Size of Fill		Length (ft) Area (acres) Volume (mcy)	880
Surface configuration	Concave		Concave
Elevations		Crown (ft) Toe (A)	1950 1700
Slopes	26.0	**Toe** Foundation (%) Fill Face **(deg.)**	5.0 23.0
surface Drainage Control			perimeter
Subsurface Drainage Control			Grav. Segregated
Stability Analysis Software Used			REAME
Safety Factor		Static Seismic	1.5
Engineering Properties (spoil)		Unit Weight (pcf) Friction Angle Cohesion (psf)	125 30 200
Engineering Properties (Foundation)		Unit Weight (pcf) Friction **Angle** (deg.) Cohesion (psf)	127 34 **942**
Phreatic Surface			P-0.05

Construction Documentation and Certifications

	Appl. Phase Certification	Appl.Quarterly Certification	Photography Type
Foundation Preparation	Yes [ ] No [X]		
Underdrains	Yes [X] No [ ]	93/2	Copier
Surface Drains	Yes [ ] No [X]		
Grading and Revegetation	Yes [ ] No [X]		
Final Certification	Yes [X] No [ ]	94/2	Color

If a DRF, did the photographs show the **rock** blanket or core underdrain by gravity Segregation? **Yes** [X] No [ ]

Foundation data: Pits

Dip of strata relative to fill:

Were NOV's written on the fill? Yes [ ] No [X]

Aerial Survey and Ground Level Review *

Surface drainage control working properly? Yes [X] No [ ]

Subsurface drainage control working properly? Yes [X] **No** [ ]

If active **fill,** was active spoil **disposal** determined to be on-going? Yes [ ] No [ ]

If **spoil** disposal site inactive, how long was **disposal** operation idle (months)?

If a durable rock fill is under construction.

Approximately 80% durable rock by volume? **Yes** [ ] No [ ]

If no to **above,** estimate percentage:

Discernable blanket or core drain forming? **Yes** [ ] No [ ]

If the fill is **completed, compare** the size with the size in the latest pre-completion **revision?**

If the fill **is** significantly smaller. what is the reason according to the documentation or inspector?

Fill surface configuration: Concave

Is the fill situated in landslide topography? **Yes** [ ] No [X]

Were there ground **cracks observed** on the fill **face** or benches? Yes [X] No [ ]

Number of benches on fill: 5

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	1 Crown Q 314 to Q 1			
	2 B2 Q 0 to Q 1/8			

Location of Depressions

Were there depressions on the fill benches? Yen [XI No [ ] (Potential Wafer Depth)

1 B4 Q 1/8 to Q 1/4
2 B2 Q 3/4 to Q1
3
4
5

Location of Erosion Areas

Were there areas of erosion on the fill benches? Yes [X] No [ ] (Maximum Gully Depth)

1 Side Drains
2
5

Location "f Ground Bulges

Were there bulges or hummocky terrain? Yea [1 No [X]

1
2
3
4
5

Location of Springs/Seeps

Were there springs or seeps observed in disposal areas? Yes [ ] No [X]

1
2
3
4
5

Location of Changes

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [X]

3
4
5
6

Movement Characteristics

Did a failure occur on the fill? Yes [ ] No [X]

so, enter the source of information on the failure:

Stage of construction during failure:

	Mass I	MISS 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (A)			
Depth to Slip Plane (ft)			
Transport Distance (A)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement	Mass 1		
	Mass 2		
	Mass 3		

comments

:vision approved 3/17/03 added Fill #3 to the approved permit plans This small fill was needed to mine an additional 101 acres

gas well and its associated bench are located adjacent (right hand side) to the fill face between benches 4 and 5

ie crests of several fill face had settled and broken off right at the bench intersection

1101369
Fill # 3

Type of Fill			Durable Rock
Size "f Pill		Length (ft) Area (acres) Volume (mcy)	950
Surface Configuration	Concave		Concave
Elevations		Crown (ft) Toe (ft)	1950 1750
Slopes		Toe Foundation (%) Fill Face (deg.)	5.0 24.0
Surface Drainage Control			Perimeter
Subsurface Drainage Control			Grav. Segregated
Software Used			
Safety Factor		Static Seismic	1.5
Engineering Properties (Spoil)		Unit Weight (pcf) Friction Angle Cohesion (psf)	125 30 200
Engineering Properties (Foundation)		Unit Weight (pcf) Friction Angle (deg) Cohesion (psf)	115 33 922
Phreatic Surface			P-0.05

Construction Documentation and Certifications

Foundation Preparation	Yes [ ]	No [X]		
Underdrains	Yes [X]	No [ ]	93/2	Copies
Surface Drains	Yes [ ]	No [X]		
Grading and Revegetation	Yes [ ]	No [X]		
Final Certification	Yes [X]	No [ ]	94/2	Color

Aerial Survey and Ground Level Review*

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation? Yes [X] No [ ]

Foundation data: Pits

Dip of strata relative to fill:

Were NOV's written on the fill? Yes [ ] No [X]

Surface drainage control working properly? Yes [ ] No [ ]

Subsurface drainage control working properly? Yes [ ] Nu [ ]

If active fill, was active spoil disposal determined to be on-going? Yes [ ] No [ ]

If spoil disposal site inactive, how long war disposal operation idle (months)?

If a durable rock fill is under construction,

Approximately 80% durable rock by volume? Yes [ ] No [ ]

If no to above, estimate percentage:

Discernable blanket or core drain forming'? Yes [1 No [1

If the fill is completed, compare the size with the size in the latest pre-completion revision?

If the fill is significantly smaller, what is the reason according to the documentation or inspector?

Fill surface configuration: Concave

Is the fill situated in landslide Topography? Yes [ ] No [ ]

Were there ground cracks observed on the fill face or benches? Yes [ ] No [ ]

Number of benches on fill:

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	1			
	2			
	3			

Location of Depressions

Were there depressions on the fill benches? Yes [XI No [ ] **(Potential Water Depth)**

1 Multiple locations
2
3
4
5

Location of Erosion Areas

Were there areas of erosion on the **fill** benches? **Yes** [X] No [ ] **(Maximum Gully Depth)**

1 Multiple locations
2
3
4
5

Location of Ground Bulges

Were there bulges or hummocky terrain? **Yes** [ ] Nu [ ]

2
3
4
5

Location of Springs/Seeps

Were there springs or **seeps** observed in disposal **areas?** **Yes** [ ] No [ ]

1
2
3
4
5

Location of Changes

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]

2
3
5
6

Movement Characteristics

Did a failure occur on the fill? Yes [ ] No [X]

f so, enter the source of infonnation on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement **Mass 1**			
Mass 2			
Mass 3			

Comments

evision approved 3/17/93 added Fill #4 to the approved permit plans. This small fill was needed to mine an additional 101 acres.

1101369
Fill # 4

Virginia
Motivation Coal Co.
Pawpaw Gap Surface Mine

Permit: 1101369 Fill: Fill # 1

Permit: 1101369 Fill: Fill # 1

Virginia
Motivation Coal Co.
Pawpaw Gap Surface Mine

Permit: 1101369 Fill: Fill # 3

Permit: 1101369 Fill: Fill # 3

Virginia
Motivation Coal Co.
Pawpaw Gap Surface Mine

Permit: 1101369 Fill: Fill # 3

Permit: 1101369 Fill: Fill # 3

Virginia
Motivation Coal Co.
Pawpaw Gap Surface Mine

Permit: 1101369 Fill: Fill # 4

Permit: 1101369 Fill: Fill # 4

Virginia
Motivation Coal Co.
Lovers Gap Surface Mine

Permit: 1101548

Fill: Fill C

BLANK PAGE

Company: Motivation Coal Co.	Fill: Fill C	Date of permit file review:	12/15/99
Permit: 1101548	Mine: Lovers Gap Surface Mine	Date fill contruction started:	07/01/96
State: VA	Was this fill visited at ground level? Yes [ ] No [X]	Finished:	/ /
County: Buchanon		Number of fill size revisions:	
Latitude: 37-12-43	Had the fill been reclaimed at the time of the air survey? Yes [ ] No [X]	%Sandstone in overburden:	78
Longitude: 82-09-21	Date of survey: 02123100		

	As constructed	Revision	Original design
Type of Fill			Durable Rock
Size of Fill	Length (A)		450
	Area (acres)		
	Volume (mcy)		0.1
Surface Configuration			Flat
Elevations	Crown (ft)		2200
	Toe (ft)		2050
Slopes	Toe Foundation (%)		11.0
	Fill Face (deg.)		19.0
Surface Drainage Control			Perimeter
Subsurface Drainage Control			Grav. Segregated
Stability Analysis Software Used			REAME
Safety Factor	Static		1.6
	Seismic		
Engineering Properties (Spoil)	unit Weight (pcf)		135
	Friction Angle		36
	Cohesion (psf)		100
Engineering Properties (Foundation)	Unit Weight (pcf)		129
	Friction Angle (deg.)		31
	Cohesion (psf)		104
Phreatic Surface			Phreatic Surface

Construction Documentation and Certifications

	Certification		certification	
Foundation Preparation	Yes [ ]	No [X]		
Underdrains	Yes [ ]	No [X]		Color
Surface Drains	Yes [ ]	No [X]	9811	None
Grading and Revegetation	Yes [ ]	No [X]	9913	None
Final Certification	Yes [ ]	No [ ]		

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation? Yes [ ] No [ ]

Foundation data: Pits

Dip of strata relative to fill:

Were NOV's written on the fill? Yes [ ] No [X]

Aerial survey and Ground Level Review*

Surface drainage control working properly? Yes [ ] No [ ]

Subsurface drainage control working properly? Yes [ ] No [ ]

If active fill, was active spoil disposal determined to be on-going? Yes [X] No [ ]

If spoil disposal site inactive, how long was disposal operation idle (months)?

f a durable rock fill is under construction,

Approximately 80% durable rock by volume? Yes [ ] Nu [1

If no to above, estimate percentage:

Discernable blanket or core drain forming? Yes [1 No [1

If the fill is completed, compare the size with the size in the latest pre-completion revision?

If the fill is significantly smaller, what is the reason according to the documentation or inspector?

Fill surface configuration:

Is the fill situated in landslide topography? Yes [ ] No [1

Were there ground cracks observed on the fill face or beaches? Yes [ ] Nu [ ]

Number of benches on fill:

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	2			
	3			

Location of Depressions

Were there depressions on the fill benches? *Yes* [ ] No [ ] **(Potential Water Depth)**

i			
2			
3			
5			

Location Of Erosion Areas

Were there areas of erosion on the fill benches? Yes [ ] No [ ] **(Maximum Gully Depth)**

2			
3			
4			
5			

Location "f Ground Bulges

Were there bulges or hummocky terrain? Yes [ ] No [ ]

2			
3			
4			
5			

Location of Springs/Seeps

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

2			
3			
4			
5			

Location of Changes

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]

I			
2			
3			
4			
5			
6			

Movement Characteristics

Did a failure occur on the fill? Yes [ ] No [X]

If so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement

Mass 1

Mars 2

Mass 3

Comments

nderground mining of the Hagy coal seam occurred beneath the fill

1101548
Fill C

Virginia
Motivation Coal Co.
Lovers Gap Surface Mine

Permit: 1101548 Fill: Fill C

Permit: 1101548 Fill: Fill C

Virginia
Motivation Coal Co.
Lovers Gap Surface Mine

Permit: 1101548 Fill: Fill C

Permit: 1101548 Fill: Fill C

Virginia
Red River Coal Co.
Buckhead

Permit: 1100717

Fill: HF #1
Fill: HF #3
Fill: HF #5

BLANK PAGE

Company: Red River Coal Co.	**Fill:** HF # 1		Dale of permit file review: 12/01/99
Permit: 1100717	**Mine:** Buckhead		Date fill contruction started: 01/10100
State: VA	Was this fill visited at ground level?	**Yes** [ ] No [X]	Finished: 10101185
County: Wise			Number of fill size revisions:
Latitude: 37-03-04	Had the fill been reclaimed at the time of the air **survey?**	Yes [ ] No [X]	%Sandstone in overburden: 70
Longitude: 82-38-36			
	Date ***of*** **survey:**	02/23/00	

	An constructed	Revision	Original design
Typo of Fill			Durable Rock
***Sire* of Fill**	Length (ft)		1500
	Area (acres)		
	Volume (mcy)		9.8
Surface Configuration	Concave		
Elevations	Crown (ft)		***2625***
	roe (ft)		2300
Slopes	Toe Foundation (%)		2.0
	Fill Face (deg.)		27.0
Surface Drainage Control			Perimeter
Subsurface **Drainage Control**			Grav. Segregated
Stability Analysis Software Used			REAME
Safety Factor	Static		1.9
	Seismic		
Engineering Properties (Spoil)	Unit Weight (pcf)		**125**
	Friction **Angle**		***30***
	Cohesion (psf)		200
Engineering Properties (Foundation)	Unit Weight (pcf)		
	Friction Angle (deg.)		
	Cohesion (psf)		
Phreatic Surface			P-.05

		Appl. Phase certification	Appl. Quarterly **Certification**	**Photography Type**
Construction Documentation and Certifications	Foundation Preparation	Yes [ ] No [X]	**1/86**	B&W
	Underdrains	Yes [ ] No [X]		
	Surface Drains	**Yes** [ ] No [X]		
	Grading and Revegetation	Yes [ ] No [X]		
	Final Certification	Yes [ ] No [ ]		

If **a** DRF, **did** lhe photographs show the **rack** blanker or core underdrain by gravity segregation?	**Yes** [1 No [X]
Foundation data:	Text Holes
Dip of strata relative to fill:	
Were NOV's written on the fill?	**Yes** [X] Na [ ]

Surface drainage control working properly?	Yes [ ] No [X]
Subsurface drainage control working properly?	Yes [ ] No [ ]
If active fill, was active spoil disposal determined to be on-going?	**Yes** [ ] No [X]
If spoil disposal site inactive, how long was disposal operation idle (months)?	
If a durable ruck fill is under construction,	
Approximately 80% durable **rock** by volume?	**Yes** [X] No [ ]
If no to above, estimate percentage:	
Discernable blanket or core drain forming?	Yes [X] No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion revision?	**Smaller**
If the fill is significantly smaller, what is the reason according to the documentation or inspector?	
Fill surface configuration	Concave
Is the fill situated in landslide topography?	Yes [1 No **[XI**
Were there ground cracks observed on the fill face or **beaches?**	Yes [ ] **No** [X]
Number of benches on till:	**4**

Aerial Survey and Ground Level Review *

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *	1			
	2			
	3			

Were there depressions on the fill benches? Yes [ ] No [ ] **(Potential Water Depth)**

Location of Depressions *	1			
	2			
	3			
	4			
	5			

Were there areas **of** erosion on the fill benches? ***Yes*** [X] No [ ] **(Maximum Gully Depth)**

Location of Erosion Areas *	1	B t		
	2			
	4			
	5			

Were there bulges or hummocky **terrain'!** **Yes** [1 No [ ]

Location of Ground Bulges	1			
	2			
	3			
	4			
	5			

Were there springs or **seeps observed** in **disposal areas?** **Yes** [ ] No [ ]

Location "f Springs/Seeps *	1			
	2			
	3			
	4			
	5			

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]

Location of Changes'	1			
	2			
	3			
	4			
	5			
	6			

Movement Characteristics *

Did a failure ocenr on the fill? Yes [ ] No [X]

f so, enter the source of infonnation on the failure:

Stage of construction dnring failure:

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failnre Movement			
Cause of Movement	**Mass 1**		
	Mass 2		
	Mass 3		

Comments

ıspection Report (10/16/99) indicates fills # 1 and #5 were active then. Plans show construction in 50' lifts. Helicopter photos show two smaller fills in adjoining hollows. One seems t ɜ reclaimed but without surface drains. Is this temporary reclamation? The other is unreclaimed. Natural vegetation setting in. Seems to have been idle for some time.

1100717
HF # 1

Company: Red River coal Co.	Fill: HF # 3		Date of permit file review: 12/01/99
Permit: 1100717	Mine: Huckhead		Date **fill** contruction started: / /
State: VA	Was this **fill** visited at ground level?	Yes [ ] No [X]	Finishad: 10/17191
County: Wisc			Number of fill size revisions:
Latitude: 37-03-04	Had the **fill** been reclaimed at the time **of the** air survey?	Yes [X] No [1	%Sandstone in overburden: 70
.ongitude: 82-38-36	Date of survey:	02/23/00	

	As constructed	Revision	Original design
Type of Fill			Durable **Rock**
Size of **Fill**	Length (ft)		2000
	Area (acres)		
	Volume (mcy)		**2.2**
Surface Configuration	Convex		Flat
Elevations	Crown (ft)		2725
	Toe (ft)		2400
Slopes	Toe Foundation (%)		18 0
	Fill Face (deg.)		27.0
Surface Drainage Control			Perimeter
Subsurface Drainage **Control**			Grav. Segregated
Stability Analysis Software Used			REAME
Safety Factor	Static		1.6
	Seismic		
Engineering Properties (Spoil)	Unit Weight (pcf)		125
	Friction **Angle**		30
	Cohesion (psf)		200
Engineering Properties (Foundation)	Unit Weight (pcf)		
	Friction **Angle** (deg.)		
	Cohesion (psf)		
Phreatic Surface			P-.05

Construction Documentation and certification,

	Appl. Phase Certification	**Appl. Quarterly Certification**	Photography **Type**
Foundation Preparation	Yes [X]	No [ ]	None
Underdrains	Yes [ ]	No [X]	
Surface Drains	Yes [ ]	No [X]	
Grading and Revegetation	Yes [ ]	No [XI	
Final Certification	Yes [ ]	No [X]	

Aerial Survey and Ground Level **Review** *

If a DRF, did the photographs show the **rock** blanket or core underdrain by gravity segregation?	Yes [ ] No [ ]
Foundation data:	Text Holes
Dip of strata relative to fill	
Were NOV's **written** on the **fill?**	Yes [ ] No [X]
Surface drainage control working properly?	Yes [ ] No [X]
Subsurface drainage control working properly?	Yes [1 No [1
If active fill. was active spoil disposal determined to be on-going?	Yes [ ] Nu [ ]
If spoil disposal site **inactive,** how long was disposal operation idle (months)?	
Ifa durable rock **fill is** under construction,	
Approximately 80% durable **rock** by volume?	Yes [ ] No [ ]
If no to above, estimate percentage:	
Discernable **blanket** or core drain forming?	Yes [1 No [ ]
If the **fill** is completed, compare the **size** with the size in the latest pre-completion revision?	Smaller
If the till is significantly smaller, what is the reason according to the documentation or inspector?	
Fill surface configuration:	Convex
Is the fill situated in landslide topography?	Yes [I No [X]
Were there ground cracks observed on the fill face or benches?	**Yes [ ]** **No** [X]
Number of benches on fill:	6

	Location	Length (ft)	Width (ft)	Depth (in)
Location "f Cracks	I			
	2			

Location of Depressions

Were there depressions on the fill benches'! Yes [ ] No [ ] (Potential Water Depth)

1				
2				
3				
4				
5				

Location of Erosion Areas

Were there areas of erosion on the fill benches? Yes [X] No [ ] (Maximum Gully Depth)

I	B toe-			
2	B2-3.			
3				
4				
5				

Location of Ground Bulges

Were there bulges or hummocky terrain? Yes [ ] No [ ]

I				
2				
3				
4				
5				

Location of Springs/Seeps

Were there springs or seeps observed in disposal areas? Yes [1 No [ ]

1				
2				
3				
4				
5				

Location of Changes

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]

I				
2				
3				
4				
5				
6				

Movement Characteristics

Did a failure occur on the fill? Yes [ ] No [X]

f so. enter the source of information on the Failure:

Stage of construction during failure:

	Mass I	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement	Mars 1		
	Mass 2		
	Mass 3		

Comments

ıspection Report (10/16/99) showed fill completed with 80 % vegetative cover Plans show construction in 50' lifts H photos show the fill is concave at the first bench. bur convex ɔove The side drains are poorly developed to non-existent Permit plan view of the fill shows 6 benches

1100717
HF # 3

Company: Red River Coal Co., Inc.	**Fill:** HF # 5			Date of permit tile review:	12/01/99
Permit: 1100717	Mine: Buckhead			Date fill contruction started:	12131/99
State: **VA**	Was this till visited at ground **level'?**	**Yes** [X]	No [1	Finished:	/ /
County: Wise	Date of visit:	04/20/00		Number of fill size **revisions:**	
Latitude: 37-03-04	Had the fill **been** reclaimed at the time of the **air** survey'!	Yes [ ]	No [X]	%Sandstone in overburden:	70
Longitude: 82-38-36	Date of survey:	02/23/00			

	As constructed	Revision	Original design
Type of Fill			Durable Rock
Size of Fill	Length (ft)		**2400**
	Area (acres)		
	Volume (mcy)		*7.3*
Surface Configuration			
Elevations	Crown (ft)		**2700**
	Toe (ft)		**2175**
Slopes	Toe Foundation (%)		**180**
	Fill Face (deg.)		27 **0**
Surface Drainage Control			Perimeter
Subsurface Drainage Control			Grav. Segregated
Stability **Analysis Software Used**			REAME
Safety Factor	Static		1.5
	Seismic		
Engineering Properties (Spoil)	Unit Weight (pcf)		125
	Friction Angle		30
	Cohesion (psf)		**200**
Engineering Properties (Foundation)	Unit Weight (pcf)		
	Friction **Angle** (deg.)		
	Cohesion (psf)		
Phreatic **Surface**			P-.05

		Appl. Phase **Certification**	Appl.Quarterly **certification**	Photography **Type**
Construction Documentation and Certifications	Foundation Preparation	Yes [X]	**No** [1	
	Underdrains	**Yes** [ ]	**No** [X]	
	Surface Drains	Yes [1	No [X]	
	Grading and Revegetation	Yes [ ]	No [X]	
	Final Certification	**Yes** [ ]	**No** [X]	

If **a** DRF, **did** the photographs show the **rock** blanket or core underdrain by gravity segregation?	**Yes** [ ]	**No** [X]
Foundation data:		Text Holes
Dip of strata relative to fill		
Were NOV's written on the **fill?**	Yes [ ]	No [X]

Surface drainage control **working** properly?	**Yes** [ ]	**No** [X]
Subsurface drainage control **working** properly?	**Yes** [X]	**No** !]
If active fill; **was** active spoil **disposal determined** to be on-going?	**Yes** [ ]	**No** [X]
If spoil disposal site inactive. how long **was** disposal Operation idle (months)?		
If a durable rock fill is under construction,		
Approximately 80% durable **rock** by volume?	**Yes** [ ]	No [X]
If no to above, estimate percentage:		**60**
Discernable blanket or core drain forming?	**Yen** [X]	No [ ]
If the fill **is** completed, compare the size with the size in the latest pre-completion revision?		
If the **fill** is significantly **smaller.** what is the reason according to the documentation or inspector?		
Fill surface configuration:		
Is the **fill** situated in landslide topography?	**Yes** [ ]	**No** [X]
Were there ground cracks observed on the fill race or benches?	Yes [ ]	**No** [X]
Number of benches on fill:		

Aerial Survey **and Ground Level Review** *

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *	1			
	2			
	3			

Were there depressions on the fill benches? Yes [ ] No [ ] **(Potential Water Depth)**

Location of Depressions *	1			
	2			
	3			
	4			
	5			

Were there areas of erosion on **the** fill benches? Yes [X] No [ ] **(Maximum Gully Depth)**

Location of Erosion Areas *	1	R toe-crow		
	2			
	3			
	4			
	5			

Were there bulges or hummocky terrain? **Yes [** 1 No [ ]

Location of Ground Bulges *	1			
	2			
	3			
	4			
	5			

Were there springs or **seeps** observed in disposal areas? **Yea** [ ] No [ ]

Location of Springs/Seeps *	1			
	2			
	3			
	4			
	5			

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]

Location of Changes *	1			
	2			
	3			
	4			
	5			
	6			

Movement Characteristics *

Did a failure occur on the fill? Yes [ ] No [X]

If so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement **Mass 1**
Mass 2
Mass 3

Comments

'ill has been in Temporary Cessation status for several years. Surface drainage over face of the fill with severe surface erosion. One pond full and second pond partially full. Appearance of 60 % durability results from prolonged exposure of spoil to weathering. Perimeter ditch at top completed day before we arrived on April 20,00. Surface drainage contrc ind temporary vegetation inadequate to maintain fill stability. Inspection report (7/17/98) required temporary seeding on Fill # 5. H. photos show good gravity segregation on right par of fill, but not to the left where severe weathering and erosion occurs. Seems to include old terraces that are now being wiped away.

1100717
HF # 5

Virginia
Red River Coal Co.
Buckhead

Permit: 1100717 Fill: HF# 1

Permit: 1100717 Fill: HF# 1

Virginia
Red River Coal Co.
Buckhead

Permit: 1100717 Fill: HF# 1

Permit: 1100717 Fill: HF# 1

Virginia
Red River Coal Co.
Buckhead

Permit: 1100717 Fill: HF# 3

Permit: 1100717 Fill: HF# 3

Virginia
Red River Coal Co.
Buckhead

Permit: 1100717 Fill: HF# 5

Permit: 1100717 Fill: HF# 5

Virginia
Red River Coal Co.
Buckhead

Permit: 1100717 Fill: HF# 5

Permit: 1100717 Fill: HF# 5

Virginia
Red River Coal Co.
Buckhead

Permit: 1100717 Fill: HF# 5

Permit: 1100717 Fill: HF# 5

Virginia
Red River Coal Co., Inc.
Flat Gap Mine

Permit: 1101272

Fill: HF #1
Fill: HF #2
Fill: HF #3
Fill: HF #4

BLANK PAGE

#

Type of Fill		Durable **Rock**
Size of Fill	Length (A)	290
	Area (acres)	
	Volume (mcy)	**2.3**
Surface Configuration	Concave	
Elevations	Crown (A)	2300
	Toe (A)	2020
Slopes	Toe Foundation (%)	5.0
	Fill Face (deg.)	27.0
Surface Drainage Control		Perimeter
Subsurface Drainage Control		Grav. Segregated
Stability **Analysis Software Used**		REAME
Safety Factor	Static	1.9
	Seismic	
Engineering Properties (Spoil)	Unit Weight (pcf)	130
	Friction Angle	40
	Cohesion (psf)	0
Engineering Properties **(Foundation)**	Unit Weight (pcf)	
	Friction Angle (deg.)	
	Cohesion *(psi)*	
Phreatic **Surface**		P-.05

		Appl. Phase certification	**Appl.Quarterly** Certification	Photography **Type**
Construction Documentation and Certifications	Foundation Preparation	Yes [ ] No [X]		
	Underdrains	**Yes** [ ] No [X]		
	Surface Drains	Yes [ ] No [X]		
	Grading and Revegetation	Yes [ ] No [X]		
	Final Certification	**Yes** [ ] No [ ]		

If a DRF, did the photographs **show** the rock blanket or core underdrain by gravity segregation?	**Yes** [ ]	No [ ]
Foundation data:		Pits
Dip of strata relative to fill:		
Were NOV's written on the fill'	Yes [ ]	No [X]

Surface drainage control working properly?	Yes [ ]	No [ ]
Subsurface drainage control working properly?	Yes ! !	No [ ]
If active fill, was active spoil disposal determined to be on-going?	**Yes** [ ]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
if a durable rock fill is under construction,		
Approximately SO% durable rock by volume?	Yes [!	No [1
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [ ]	No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion **revision'?**		
If the **fill** is significantly **smaller,** what is the reason according to the documentation or inspector?		
Fill surface configuration:		Concave
Is the fill situated in landslide topography?	Yes [ ]	No [1
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [ ]
Number of benches on fill:		6

Aerial Survey and Ground Level Review *

Location of Cracks *

1
2
3

Location of Depressions *

Were there depressions on the till **benches?** Yes [ ] No [ ] **(Potential Water Depth)**

1
2
3
4
5

Location of Erosion Areas

Were there areas **of** erosion on the **fill** benches? Yes [ ] No [ ] **(Maximum Gully Depth)**

1
2
3
4
5

Location of Ground Bulges

Were there bulges or hummocky terrain? Yes [ ] No [ ]

1
2
3
4
5

Location "f Springs/Seeps

Were there **springs** or seeps observed in **disposal areas'!** Yes [ ] No [ ]

1
2
3
4
5

Location of Changes

Were changes in vegetation or **spoil** color **observed** on **fill?** Yes [X] No [ ]

1
2
3
4
5
6

Movement Characteristics *

Did a failure occur on the fill? Yes [ ] No [X]

f so. enter the source of information on the failure:

Stage of construction **during** failure:

	Mass 1	*Mass* 2	**Mass** *3*
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (A)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement **Mass 1**			
Mass *2*			
Mass *3*			

Comment.

ompleted to third terrace with 75% vegetative cover **H** photos show numerous vegetation changes that may represent minor concentrations of moisture from runnoff as **opposed** to epage One anomaly at toe is tabulated Toe is **up** against **the** pond

1101272
HF # 1

Type of Fill		Durable **Rock**
She of Fill	Length (ft) **Area** (acres) Volume (mcy)	420 **8.9**
Surface Configuration	Concave	
Elevations	Crown (ft) Toe (ft)	2270 1910
Slopes	Toe Foundation (%) Fill Face (deg.)	**5.0** *27* 0
Surface Drainage Control		Perimeter
Subsurface Drainage Control		Grav. Segregated
Stability Analysis Software Used		**REAME**
Safety Factor	Static Seismic	1.6
Engineering Properties (Spoil)	Unit Weight (pcf) Friction Angle Cohesion (psf)	130 40 0
Engineering Properties (Foundation)	Unit Weight (pcf) Friction **Angle** (deg.) Cohesion (psf)	
Phreatic Surface		P-.05

Construction Documentation and Certification.

	Appl. Phase Certification	Appl. Quarterly Certification	Photography Type
Foundation Preparation	**Yes** [ ] No [X]	Y	None
Underdrains	***Yes*** [1 No [X]	***Y***	None
Surface Drains	**Yes** [ ] No [X]	***Y***	None
Grading and Revegetation	Yes [ ] No [X]	Y	None
Final Certification	**Yes** [ ] No [X]		

If a DRF, did the photographs **show** the **rock** blanket or core underdrain by gravity segregation? Yes [ ] No [ ]

Foundation data: Pits

Dip of strata relative to fill:

Were NOV's written on the **fill')** Yes [! No [X]

Aerial Survey and Ground Level Review *

Surface drainage control working **properly?** **Yes** I 1 No I 1

Subsurface drainage control working properly? **Yes** [1 No [1

If active fill, was active spoil disposal determined to be on-going? **Yes** [ ] No [ ]

If spoil disposal site inactive, how long was disposal operation idle (months)?

f a durable **rock** fill *is* under **construction,**

Approximately 80% durable rock by volume? Yes [ ] No [ ]

If no to above, estimate percentage:

Discernable blanket or **core** drain forming? ***Yes*** [ ] No [ ]

If the **fill** is completed, compare the size with the size in the **latest** pie-completion revision?

If the **fill** is significantly smaller, what is the reason according to the documentation or inspector?

Fill surface configuration: Concave

Is the fill situated in landslide topography? Yes [ ] No [ ]

Were there ground **cracks** observed on the fill face or benches? Yes [ ] No [ ]

Number of benches on fill:

	Location	Length (ft)	Width (ft)	Depth (in)
Location "f Cracks	I			
	2			
	3			

Location of Depressions

Were there depressions on the fill benches? Yes [X] No [ ] **(Potential Water Depth)**

I	B2, Q2	
2		
3		
4		
5		

Location of Erosion Areas

Were there areas of **erosion** on the fill benches? Yes [ ] No [ ] **(Maximum Gully Depth)**

I		
2		
3		
4		
5		

Location of Ground Bulges'

Were **there** bulges or hummocky terrain? Yes [ ] No [ ]

3		
4		
5		

Location "f Springs/Seeps [4]

Were there springs or seeps **observed** in **disposal** areas? Yes [ ] No [1

I		
2		
3		
4		
5		

Location of Changes'

Were changes in **vegetation** or **spoil** color observed on fill? Yes [X] No [ ]

1		
2		
3		
4		
5		
6		

Movement Characteristics *

Did a failure occur on the fill? Yes [ ] No [X]

f **so**, enter the source of information on the **failure:**

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure **Movement**			
Cause of Movement	**Mass 1**		
	Mass 2		
	Mass 3		

Comment.

rst three terraces complete with 75% vegetation Clearing and grubbing operations limited to **300** feet ahead of mining operations **H photos limited 10 completed benches Fill** toes ıı at sediment pond, which may **present** an **underdrain problem The B** toe color change occurs along the toe shore line **The B1-2 color** change is **placed** where the **side** drain **has** a arp **change** in **direction**

1101272
HF # 2

Company: Red River Coal Co., Inc.	Fill: HF # 3		Date of permit **file** review: 12101199
Permit: 1101272	Mine: Flat Gap Mine		Date **fill** contruction started: 01/17/91
State: VA	**Was** this **till** visited at ground level?	Yes [ ] No [X]	Finished: / /
county: Wisc			Number of **till** size revisions:
Latitude: 37-04-15	Had the **till** been reclaimed at the time of the **air** survey?	Yes [ ] No [X]	%Sandstone in overburden: ***56***
Longitude: 82-42-30	Date of survey:	*12131/99*	

	As constructed	Revision	Original design
Type of Fill			Durable Rock
Size of Fill	Length (ft)		300
	Area (acres)		
	Volume (mcy)		2.2
Surface Configuration	Flat		
Elevations	Crown (A)		2170
	Toe (A)		1920
Slopes	Toe Foundation (%)		5.0
	Fill Face (dcg.)		***27.0***
Surface Drainage Control			Perimeter
Subsurface Drainage Control			Grav. Segregated
Stability Analysis			REAME
Safety Factor	Static		**1.6**
	Seismic		
Engineering Properties (Spoil)	Unit Weight (pcf)		130
	Friction **Angle**		40
	Cohesion (psf)		0
Engineering Properties (Foundation)	Unit Weight (pcf)		
	Friction Angle (dcg.)		
	Cohesion (psf)		
Phreatic **Surface**			P-.05

		Appl. Phase **Certification**	Appl. Quarterly **Certification**	Photography
Construction Documentation **and Certifications**	Foundation Preparation	**Yes** [ ] **No** [X]	Y	
	Underdrains	**Yes** [ ] No [X]	Y	
	Surface Drains	Yes [ ] No [X]	Y	
	Grading and Revegetation	Yes [ ] No [X]	Y	
	Final Certification	Yes [ ] No [X]		

If a DRF, **did** the photographs show the rock blanket or core underdrain by gravity segregation?	**Yes** [ ]	No [ ]
Foundation data:		"R"
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [ ]	No [X]

Surface drainage control working properly?	Yes [ ]	**No** [ ]
Subsurface drainage control working properly?	Yes [1	No [1
If active **fill**. was active spoil disposal determined to be on-going?	Yes [ ]	No [ ]
If spoil disposal site inactive, how long **was** disposal operation **idle** (months)?		
I f r **durable rock fill is** under construction,		
Approximately 80% **durable** rock by volume?	Yes [ ]	No [ ]
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [ ]	No [ ]
Ifthc **fill** is completed, compare the size with the **size** in the latest pre-completion revision?		
Ifthc **fill** is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		Flat
Is the **till** situated in landslide topography?	Yes [ ]	No [ ]
Were there ground **cracks** observed on the 611 lace or benches?	**Yes** [ ]	**No** [ ]
Number of benches on fill:		

Aerial Survey and Ground Level Review*

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	1			
	2			
	3			

Location of Depressions

Were there depressions on **the fill benches?** Yes [ ] No [ ] **(Potential Water Depth)**

2
3
4
5

Location of Erosion Areas

Were **there areas** of erosion on the fill **benches?** Yes [ ] No [ ] **(Maximum Gully Depth)**

1
2
3
4

Location of Ground Bulges

Were **there** bulges or **hummocky** terrain? Yes [ ] No [ ]

3
4
5

Location of Springs/Seeps

Were there **springs** or seeps **observed** in **disposal** areas? Yes [ ] No [ ]

2
3
4
5

Location of Changes

Were changer in vegetation or **spoil color** observed on fill? Yes [ ] No [ ]

2
3
4
5
6

Movement Characteristics

Did a failure occur **on the** fill? Yes [ ] No [X]

If so, **enter the** source of information on the failure:

Stage of construction **during** Failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scam **Height** (A)			
Depth i" Slip Plane (ft)			
Transport Distance **(R)**			
Rate of Movement			
Extent of **Failure** Movement			
Cause of Movement	**Mass 1**		
	Mass 2		
	Mass 3		

Comments

omplete 10 third terrace with 75% vegetative cover **Clearing** and grubbing operations 300" **ahead** of active mining H photos show fill toe against sediment pond

1101272
HF # 3

Company: Red River Coal Co., Inc.	Fill: **HI: # 4**		Date of permit **tile** review: 12/01/99
Permit: 1101272	**Mine:** Flat Gap Mine		Date fill contruction started: 08/21/90
State: VA	**Was** this fill visited at ground level?	Yes [ ] No [X]	Finished: / /
County: Wise			Number of fill size revisions:
Latitude: 37-04-15 Longitude: 82-42-30	llad the fill been reclaimed at the time of the air survey?	Yes [ ] No [X]	%Sandstone in overburden: 56
	Date of survey:	02/23/00	

	As constructed	Revision	Original design
Type of Fill			Durable Rock
Size of Fill	Length (ft)		**295**
	Area (acres)		
	Volume (mcy)		6.2
Surface Configuration	Flat		
Elevations	**Crown** (it)		**2210**
	Toe (it)		1900
Slopes	Toe Foundation (%)		5.0
	Fill Face (deg.)		27.0
Surface Drainage Control			Perimeter
Subsurface Drainage Control			Grav. Segregated
Stability **Analysis Software Used**			REAME
Safety Factor	static		1.6
	Seismic		
Engineering Properties (Spoil)	unit Weight (pcf)		130
	Friction Angle		34
	Cohesion (psf)		**0**
Engineering **Properties** (Foundation)	Unit Weight (pcf)		
	Friction **Angle** (deg.)		
	Cohesion (psi)		
Phreatic Surface			P-.05

Construction Documentation and Certifications

	Appl. Phase **Certification**	Appl.Quarterly **Certification**	Photography **Type**
Foundation Preparation	Yes [ ] No [XI	Y	
Underdrains	Yes [1 No [XI	Y	
Surface Drains	Yes [ ] No [X]	Y	
Grading and Revegetation	Yes [ ] No [X]	**Y**	
Final Certification	Yes [ ] No [X]		

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation? Yes [ ] No [ ]

Foundation data: Pits

Dip of strata relative to fill:

Were NOV's written on the fill' Yes [ ] No [X]

Aerial Survey and Ground Level Review *

Surface drainage control working properly? Yes [ ] No [ ]

Subsurface drainage control working properly? Yes [ ] **No** [ ]

If active fill, was active spoil disposal determined to be on-going? ***Yes*** [ ] **No** [1

If spoil disposal site inactive. how long **was** disposal operation idle (months)?

f a durable rock **fill is under construction**

Approximately 80% durable rock by volume? Yes [ ] No **I** 1

If no to above. estimate percentage:

Discernable blanket or core drain forming? Yes **I** 1 No [1

If the **fill** is completed, compare the size with the size in the latest pre-completion revision?

If the **fill** is significantly smaller, what is the reason according to the documentation or inspector?

Fill surface configuration: Flat

Is the **fill** situated in landslide topography? Yes [ ] No [ ]

Were there ground cracks observed on the **fill** face or benches? Yes [ ] Na [ ]

Number of benches on fill: 4

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	1			
	2			
	3			

Location of Depressions

Were there depressions on the fill benches? Yes [ ] No [ ] **(Potential Water Depth)**

1
2
3
4
5

Location of Erosion Areas

Were there areas of erosion on the fill benches? Yes [ ] No [ ] **(Maximum Gully Depth)**

1
2
3
4
5

Location of Ground Bulges

Were there bulges or hummocky terrain? **Yes** [ ] No [ ]

1
2
3
4
5

Location of Springs/Seeps

Were there springs or seeps **observed** in disposal areas? **Yes** [ ] No [ ]

1
2
3
4
5

Location of Changes

Were changes in vegetation or **spoil** color observed on fill? Yes [ ] No [ ]

1
2
3
4
5
6

Movement Characteristics

Did a failure occur on the fill? Yes [ ] NO [X]

so, enter **the** source of information on the failure:

Stage of construction **during** failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height **(ft)**			
Depth to Slip Plane (ft)			
Transport **Distance** (fl)			
Rate of Movement			
Extent of **Failure Movement**			

Cause of Movement
Mass 1
Mass 2
Mass 3

Comments

mpleted 4 terraces with 75 % vegetative cover Clearing *and* grubbing operations limited to **300** 'ahead of mining H photos of only the lower, completed terraces Fill toe against ment pond

1101272
HF # 4

Virginia
Red River Coal Co., Inc.
Flat Gap Mine

Permit: 1101272 Fill: HF# 1

Permit: 1101272 Fill: HF# 2

Virginia
Red River Coal Co., Inc.
Flat Gap Mine

Permit: 1101272 Fill: HF# 2

Permit: 1101272 Fill: HF# 2

Virginia
Red River Coal Co., Inc.
Flat Gap Mine

Permit: 1101272 Fill: HF# 3 and HF#4

Permit: 1101272 Fill: HF# 3 and HF#4

Virginia
Red River Coal Co., Inc.
Flat Gap Mine

Permit: 1101272 Fill: HF# 3 and HF#4

Permit: 1101272 Fill: HF# 3 and HF#4

Virginia
Red River Coal Co., Inc.
North Fox Gap Surface Mine

Permit: 1101401

Fill: Fill #6
Fill: Fill #7
Fill: Fill #8

BLANK PAGE

Company:	Red River Coal Co , Inc.	**Fill:**	Fill # 6	Date of permit file review:	12/07/99
Permit:	1101401	Mine:	North Fox Gap Surface Mine	Date **fill** contruction started:	12131/92
State:	VA	Was this fill visited at ground level?	**Yes** [ ] No [X]	Finished:	/ /
County:	Wise			Number of fill size revisions:	1
Latitude:	37-03-59	Had the **fill** been reclaimed at the time of the air survey?	Yes [X] No [1	%Sandstone in overburden:	55
Longitude:	82-39-38	Date of survey:	02123100		

	As constructed	Revision	Original design
Type of Pill			Durable **Rock**
Sire of Fill	Length (ft)		2700
	Area (acres)		
	Volume (mcy)		7.1
Surface Configuration	Flat		Flat
Elevations	Crown (ft)		2400
	Toe (ft)		1890
Slopes	Toe Foundation (%)		11.0
	Fill Face (deg.)		18.0
Surface Drainage **Control**			Perimeter
Subsurface Drainage Control			Grav. **Segregated**
Stability Analysis **Software** Used			REAME
Safety Factor	Static		1.5
	Seismic		
Engineering **Properties** (Spoil)	Unit Weight (pcf)		130
	Friction Angle		35
	Cohesion (psf)		0
Engineering Properties (Foundation)	Unit Weight (pcf)		***126***
	Friction **Angle** (deg.)		29
	Cohesion (psf)		0
Phreatic Surface			P-0.05

		Appl. Phase Certification	Appl. Quarterly Certification	Photography Type
Construction Documentation and Certifications	Foundation Preparation	Yes [X] No [1		Color
	Underdrains	Yes [X] No [ ]		Color
	Surface Drains	Yes [ ] No [X]		
	Grading and Revegetation	Yes [X] No [1	99/3	Color
	Final Certification	Yes [ ] No [X]		

If a DRF, did the photographs show the rock blanket or core underdrain by gravity **segregation?** **Yes** [ ] No [1

Foundation data: Pits

Dip of strata relative to fill:

Were NOV's written on the fill? Yes [ ] No [X]

Aerial Survey and Ground **Level Review** *

Surface drainage control working properly? **Yes** [ ] Na [ ]

Subsurface drainage control working properly? Yes i 1 No [ ]

If active fill, was **active** spoil **disposal** determined to **be** on-going? Yes [1 No [ ]

If spoil disposal site inactive, how long **was** disposal operation idle (months)?

f a durable rack fill is **under** construction,

Approximately 80% durable **rock** by volume? Yes [ ] No [ ]

If no to **above,** estimate percentage:

Discernable blanket or core drain forming? Yes [ ] **No** [ ]

If the fill is completed, compare the **size** with the size in the latest pre-completion revision?

lithe fill is significantly smaller, what is the reason according to the documentation or inspector?

Fill surface configuration Flat

Is the **fill** situated in landslide topography? Yes [1 No [ ]

Were there ground cracks observed on the fill **face** or **benches?** **Yes** [ ] No [1

Number of benches **on** till:

	Location	Length (ft)	Width (ft)	Depth (in)
Location "f Cracks	1			
	2			
	3			

Location "f Depressions

Were there **depressions** on **the** fill **benches?** Yes [X] No [ ] **(Potential Water Depth)**

1 B2 Q 1/4 to Q 3/4
2
3
4
5

Location of Erosion Areas

Were there areas of erosion on the **fill** benches? **Yes** [X] **No [ ]** **(Maximum Gully Depth)**

1 Right side drain **near fop** of fill
2
3
4

Location 0f Ground Bulges

Were there bulges or hummocky terrain? **Yes** [ ] **No** [ ]

2
3
4
5

Location 0f Springs/Seeps

Were there springs or seeps **observed** in disposal areas? Yes [ ] No [ ]

3
4
5

Location of Changes

Were changes in vegetation or spoil color observed on fill? **Yen [ ]** **No** [ ]

2
3
5
6

Movement Characteristics

Did a failure occur on the fill? Yes [ ] **No** [X]

If *so.* enter **the** source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to **Slip** Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement **Mass i**			
Mass 2			
Mass 3			

Comments

evision approved **7/14/92** allowed approximately 230,000 cy of spoil to be taken to another permit instead of Fill #6.

he upper part of **the** fill covers the highwall associated with mining **the** Imboden Marker coal seam

1101401
Fill # 6

Company: Red River Coal Co.. Inc.	Fill: Fill # 7	Date of permit file review:	*12/07/99*
Permit: 1101401	Mine: North Fox Gap Surface Mine	Date fill contruction started:	12/3 1/93
State: VA	**Was** this fill visited at ground level? **Yes** [ ] No [X]	Finished:	/ /
County: Wise		Number of fill size revisions:	
Latitude: 37-03-42	Had the **till been** reclaimed at the time of the air survey? Yes [X] No [1	%Sandstone in overburden:	***55***
Longitude: 82-39-37	Date of **survey:** 02/23/00		

	As constructed	Revision	Original design
Type of Fill			Durable Rock
Size **of** Fill	Length (ft)		620
	Area (acres)		5.0
	Volume (mcy)		0.2
Surface Configuration	Flat		Flat
Elevations	Crown (ft)		2000
	Toe (ft)		1800
Slopes	Toe Foundation (%)		
	Fill Face (deg)		23.0
Surface Drainage Control			Perimeter
Subsurface Drainage **Control**			Grav. Segregated
Stability Analysis Software Used			REAME
Safety Factor	Static		1.5
	Seismic		
Engineering Properties (Spoil)	Unit Weight (pcf)		130
	Friction Angle		35
	Cohesion (psf)		0
Engineering Properties (Foundation)	Unit Weight (pcf)		128
	Friction **Angle** (deg.)		31
	Cohesion (psf)		326
Phreatic **Surface**			P-0.05

Construction Documentation **and Certifications**	Appl. Phase Certification	Appl.Quarterly Certification	Photography Type
Foundation Preparation	Yes [X] No [1		Color
Underdrains	Yes [X] No [ ]		Color
Surface Drains	**Yes** [ ] No [X]	*9913*	
Grading and Revegetation	Yes [ ] No [X]		
Final Certification	Yes [ ] No [X]		

Aerial Survey and Ground Level Review *		
If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ]	No [ ]
Foundation data:		rus
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [ ]	No [X]
Surface drainage control working properly?	Yes [ ]	No [X]
Subsurface **drainage** control working properly?	***Yes*** [1	No [ ]
If active fill, was active spoil disposal determined lo be on-going?	Yes [ ]	No [ ]
If spoil **disposal** site inactive, how long **was** disposal operation idle (months)?		
If a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	Nu [ ]
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [ ]	No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		
If the **fill** is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		Flat
Is the **fill** situated in landslide topography?	Yes [X]	No [ ]
Were there ground cracks observed on the fill face or benches?	***Yes*** [ ]	No [ ]
Number of benches on fill:		

	Location	Length (ft)	Width (ft)	Depth (in)
Location "f Cracks	1			
	2			

Location of Depressions

Were there depressions on the fill benches? Yes [X] No [ ] (Potential Water Depth)

1	B1 Q 1/2 to Q 1			
2				
3				
4				
5				

Location of Erosion Areas

Were there areas of erosion on the fill benches? Yes [X] No [ ] (Maximum Gully Depth)

1	Right side drain near fop of fill			
2				
3				
4				
5				

Location of Ground Bulges

Were there bulges or hummocky terrain? Yes [ ] No [ ]

2				
3				
4				
5				

Location 0f Springs/Seeps

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

2				
3				
4				
5				

Location of Changes

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]

1				
2				
3				
5				
6				

Movement Characteristics

Did a failure occur on the fill? Yes [ ] No [ ]

f so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (A)			
Depth to Slip Plane (A)			
Transport Distance (R)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement	Mass i		
	Mass 2		
	Mass 3		

comments

evision approved 7/21/93 added Pill #7

small, previously repaired slide to the right of the third face toes out at the right perimeter ditch on bench #2

1101401
Fill # 7

Company: Red River Coal Co., Inc.	**Fill:** Fill # **8**	Date of permit file review:	12/07/99
Permit: J101401	Mine: North **Fox** Gap Surface Mine	Date fill contruction started:	03/01/94
State: VA	Was this fill visited at ground level? Yes [X] No [ ]	Finished:	/ /
County: Wise	Date of visit: 04/20/00	Number of fill **size revisions:**	
Latitude: 37-04-00	Had the fill been reclaimed at the time of the **air** survey'! Yes [X] No [ ]	%Sandstone in overburden:	**55**
Longitude: 82-40-30	Date of survey: 02/23/00		

	As constructed	Revision	Original design
Type of Fill			Durable Rock
Size of Fill		Length (ft)	1080
		Area (acres)	
		Volume (mcy)	*0.3*
surface Configuration			Flat
Elevations		crown (ft)	2235
		Toe (ft)	2080
Slopes		Toe Foundation (%)	
	23.0	Fill Face (deg.)	21.0
Surface Drainage Control			Perimeter
Subsurface **Drainage Control**			Grav. Segregated
Stability Analysis Software Used			REAME
Safety Factor		Static	1.5
		Seismic	
Engineering Properties (Spoil)		Unit **Weight** (pcf)	**130**
		Friction **Angle**	**35**
		Cohesion (psf)	0
Engineering Properties (Foundation)		Unit Weight (pcf)	132
		Friction Angle **(deg.)**	32
		Cohesion (psf)	188
Phreatic Surface			P-0.05

Construction **Documentation** and Certifications	Appl. Phase certification		Appl.Quarterly Certification	Photography Type
Foundation Preparation	**Yes** [X]	No [I	Y	Color
Underdrains	Yes [X]	No [ ]	Y	Color
Surface Drains	**Yen** [1	No [X]		
Grading and Revegetation	Yes [ ]	Nu [X]		
Final Certification	Yes [ ]	No [X]		

If a DRF, did the photographs show the rock blanket or **core** underdrain by gravity segregation?	Yes [1	No [ ]
Foundation darn:		Pits
Dip or strata relative to fill:		
Were NOV's written on the fill?	Yes [ ]	No [X]

Aerial Survey and Ground Level Review*		
Surface drainage control working properly?	Yes [ ]	No [X]
Subsurface drainage control working properly'?	Yes [X]	No [ ]
If active **fill,** was active spoil disposal determined to be on-going?	Yes [ ]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
f a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [ ]
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [ ]	**No** [ ]
If the **fill** is completed, compare the size with the **size** in the latest pre-completion revision?		
If the till **is** significantly smaller, what **is** the reason according to the documentation or inspector?		
Fill surface configuration:		Flat
Is the fill situated in landslide topography?	Yes [ ]	No [ ]
Were **there** mound cracks observed **on** the **fill** face or benches?	Yes [X]	No [ ]
Number of benches on fill:		3

		Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	I	**Face** #2 Q 1/8 to Q 1/2	**30**	10	
	2				
	3				

Location of Depressions

Were there depressions on the **fill benches'!** Yes [X] **No** [ ] **(Potential Water Depth)**

I	B3 Q li4 **to** Q 3/4		**3**
2			
3			
4			
5			

Location of Erosion Areas

Were there areas of erosion **on** the **fill** benches? Yes [ ] **No** [X] **(Maximum Gully Depth)**

2			
3			
4			
5			

Location of Ground Bulges

Were there bulges or hummocky terrain? Yes [ ] **No** [X]

2			
3			
5			

Location of Springs/Seeps

Were there springs **or** seeps observed in disposal areas? Yes [ ] **No** [X]

3			
4			
5			

Location oi Changes'

Were changes in vegetation or **spoil color observed** on **fill?** **Yes** [ ] **No** [X]

i			
2			
3			
4			
5			
6			

Movement Characteristics

Did a failure occur on the fill? Yes [ ] **No** [X]

f so, enter **the** source of information on the **failure:**

Stage **of** construction during **failure:**

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp **Height** (ft)			
Depth to **Slip Plane** (ft)			
Transport Distance (ft)			
Rate **of** Movement			
Extent of Failure Movement			
Cause of Movement	**Mass i**		
	Mass 2		
	Mass 3		

Comments

evision approved 2/8/94 added Fill #8 Deep mining of Lower Kelley coal seam occurred below Fill #8 location **An old** "healed over" slip **plane** surface between benches **#1 and** #2 ıay **have** resulted from ponding **on** bench #1 Benches **#1 and #2 had** recently been **regraded** to get rid of ponding Bench #3 **had water** standing with cattails The perimeter ditches ere **regraded** prior to our arrival at the site We **could** not tell what prompted this action

1101401
Fill # 8

Virginia
Red River Coal Co., Inc.
North Fox Gap Surface Mine

Permit: 1101401 Fill: HF# 6

Permit: 1101401 Fill: HF# 6

Virginia
Red River Coal Co., Inc.
North Fox Gap Surface Mine

Permit: 1101401 Fill: HF# 7

Permit: 1101401 Fill: HF# 7

Virginia
Red River Coal Co., Inc.
North Fox Gap Surface Mine

Permit: 1101401 Fill: HF# 8

Permit: 1101401 Fill: HF# 8

Virginia
Red River Coal Co., Inc.
North Fox Gap Surface Mine

Permit: 1101401 Fill: HF# 8

Permit: 1101401 Fill: HF# 8

Virginia
Red River Coal Co., Inc.
Black Creek Surface Mine

Permit: 1601576

Fill: HF-B
Fill: HF-C
Fill: HF-D (No Photo)

BLANK PAGE

Company: Red River Coal Co., Inc.	Fill: HF-B	Date of permit file review.	12/16/99
Permit: *1601576*	Mine: Black Creek Surface Mine	Date till contruction started:	06/01/97
State: **VA**	**Was** this fill visited at ground level? Yes [ ] No [X]	Finished:	/ /
county: Wise		Number of fill size revisions:	
Latitude: 36-56-11	Had the fill been reclaimed at the time of the air survey'? Yes [ ] No [X]	%Sandstone in overburden:	**63**
Longitude: 82-41-12			
	Date of survey: *02123100*		

Type of Fill		Durable Rock
Size of Pill	Length (ft)	4200
	Area (acres)	
	Volume (mcy)	16.7
surface configuration		
Elevations	Crown (A)	2450
	Toe (ft)	2150
Slopes	**Toe** Foundation (%)	5.0
	Fill Face (deg.)	25.0
Surface Drainage Control		Perimeter
Subsurface Drainage Control		Grav. **Segregated**
Stability **Analysis Software Used**		REAME
Safety Factor	Static	1.5
	Seismic	
Engineering Properties (Spoil)	Unit Weight (pcf)	130
	Friction **Angle**	33
	Cohesion (psf)	200
Engineering Properties (Foundation)	Unit Weight (pcf)	131
	Friction Angle (deg.)	26
	Cohesion (psf)	**544**
Phreatic Surface		Phreatic **Surface**

Construction Documentation and Certifications				
Foundation Preparation	Yes [ ]	No [X]	**9913**	None
Underdrains	**Yes** [ ]	No [X]	*9812*	None
Surface Drains	**Yes** [ ]	No [ ]		
Grading and Revegetation	Yes [ ]	No [ ]		
Final Certification	Yes [ ]	No [ ]		

IFDRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ]	No [ ]
Foundation data:		Pits
Dip of strata relative to fill:		
Were NOV's written on the fill?	**Yes** [ ]	No [X]

Aerial Survey **and Ground Level Review** *		
Surface drainage control working properly?	Yes [ ]	No [ ]
Subsurface drainage control working properly?	Yes [ ]	No [ ]
If active fill; **was** active spoil disposal determined to be on-going?	**Yes** [X]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
If a durable rock fill is under construction,		
Approximately 80% durable **rock** by volume?	Yes [ ]	No [X]
If no to above, estimate percentage:		60
Discernable blanket or core drain forming?	Yes [ ]	No [X]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		
If the fill is significantly **smaller,** what is the reason according to the documentation or **inspector?**		
Fill surface configuration:		
Is the fill situated in landslide topography?	**Yes** [ ]	No [ ]
Were there ground cracks observed on the **fill** face or benches?	Yes [ ]	No [ ]
Number of benches on till:		

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	1			
	2			
	3			

Location of Depressions

Were there depressions on the fill benches? Yes [ ] No [ ] (Potential Water Depth)

	1			
	2			
	3			
	4			
	5			

Location of Erosion Areas

Were there wens of erosion on the fill benches? Yes [ ] No [ ] (Maximum Gully Depth)

	2			
	3			
	4			
	5			

Location of Ground Bulges

Were there bulges or hummocky terrain? Yes [1 No [ ]

	1			
	2			
	4			
	5			

Location "f Springs/Seeps

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

	1			
	2			
	3			
	4			
	5			

Location of Changes

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [1

	1			
	2			
	3			
	4			
	5			
	6			

Movement Characteristics

Did a failure occur on the fill? Yes [ ] No [X]

`so, enter the source of information on the failnre:

Stage of construction during failnre:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement	Mass 1		
	Mass 2		
	Mass 3		

Comments

derground mining occurred beneath the fill in the 1960's

I "B" has been end dumped in up to 8 different lifts

1601576
HF-B

Company: Red River Coal Co., Inc.	**Fill:** HF-C	Date of permit file review:	12116199
Permit: 1601576	**Mine:** Black Creek Surface Mine	Date till contruction started:	/ /
Slate: VA	**War** this fill **visited** at ground level'? Yes [ ] No [X]	Finished:	/ /
County: Wise		Number of fill size revisions:	
Latitude: 36-56-56 **Longitude:** 82-40-40	Had *the* fill been reclaimed at **the** time of the air survey? Yes [ ] No [X]	%Sandstone **in** overburden:	**63**
	Date of survey: 02/23/00		

	A S constructed	Revision	Original design
Type of Fill			Durable Rock
	Area (acres)		
	Volume (mcy)		3.7
Surface Configuration	Flat		
Elevations	crown (it)		2320
	Toe (tt)		2140
Slopes	Toe Foundation (%)		2.0
	Fill Face (deg.)		24.0
Surface **Drainage** Control			Perimeter
Subsurface **Drainage** Control			Grav. **Segregated**
Stability **Analysis Software Used**			REAME
Safety Factor	Static		1.6
	Seismic		
Engineering Properties (Spoil)	Unit Weight (pcf)		130
	Friction Angle		33
	Cohesion (psf)		200
Engineering **Properties (Foundation)**	Unit Weight (pcf)		129
	Friction Angle **(deg.)**		31
	Cohesion (psf)		108
Phreatic Surface			Phreatic Surface

Construction **Documentation and Certifications**	Foundation Preparation	Yes [ ]	No [ ]
	Underdrains	**Yes** [ ]	No [ ]
	Surface Drains	Yes [ ]	No [ ]
	Grading and Revegetation	Yes [ ]	No [ ]
	Final Certification	Yes [ ]	No [ ]

If a DRF, did the photographs show the rock blanket or core **underdrain** by gravity segregation?	**Yes** [ ]	No [ ]
Foundation data:		Pits
Dip of strata relative to **fill:**		
Were NOV's written on the fill?	**Yes** [ ]	No [X]

Aerial Survey and Ground Level Review *

Surface drainage control working properly?	Yes [ ]	No [ ]
Subsurface drainage control working properly?	Yes [ ]	No [ ]
If active fill. was active spoil disposal determined to he on-going?	Yes [ ]	No [ ]
If spoil **disposal** site inactive, how long **was** disposal operation idle **(months)?**		
If a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [ ]
If no to above. estimate percentage:		
Discernable blanket or core drain forming?	**Yes** [ ]	No [ ]
If the **fill** is **completed.** compare the size wilh the size in the latest pre-completion revision?		
If the till is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		Flat
Is the **fill situated** in **landslide** topography?	**Yes** [ ]	No [ ]
Were there ground cracks observed **on** the **fill face or benches?**	**Yes** [ ]	No [ ]
Number of benches on **fill:**		

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	2			
	3			

Location of Depressions

Were there depressions on the fill benches? Yes [ ] No [1 **(Potential Water Depth)**

1
2
3
4
5

Location of Erosion Areas

Were there areas of erosion on the fill **benches'?** **Yes** [ ] No [ ] **(Maximum Gully Depth)**

1
2
3
4
5

Location "f Ground Bulges

Were there bulges or hummocky terrain? Yes [ ] No [ ]

1
2
3
4
5

Location of Springs/Seeps

Were there springs or seeps observed in **disposal** areas? Yes [1 No [1

1
2
4
5

Location of Changes

Were changes in vegetation or spoil color observed on **fill?** Yes [ ] No [ ]

1
2
3
4
5
6

Movement Characteristics

Did a failure occur on the **fill?** **Yes** [ ] No [X]

fso, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth lo **Slip** Plane (ft)			
Transport Distance (A)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement	**Mass 1**		
	Mass 2		
	Mass 3		

Comments

F -C not started as of Inspection Report dated 9/16/99 Fill **could** not be located during **aerial** flight

nderground mining occurred beneath the proposed **fill** location **in** the 1960's

1601576
HF-C

Company: Red River Coal Co.. Inc.	**Fill:** HF-D	Date of permit **file** review:	12116199
Permit: 1601576	**Mine:** Black Creek Surface Mine	Date fill contruction started:	/ /
State: VA	Was this fill visited at ground level? Yes [ ] No [X]	Finished:	/ /
County: Wise		Number of fill size revisions:	
Latitude: 37-87-13 Longitude: 82-40-20	Had the fill been reclaimed at the time of the air survey? Yes [ ] No [X]	%Sandstone in overburden:	63
	Date of survey: *02/23/00*		

	As constructed	Revision	Original design
Type of Fill			Durable Rock
Sire of Fill	Length (ft)		1200
	Area (acres)		
	Volume (mcy)		1.8
Surface Configuration			
Elevations	Crown (ft)		2330
	Toe (ft)		2170
Slopes	Toe Foundation (%)		3.0
	Fill Face (deg.)		25.0
Surface Drainage Control			Perimeter
Subsurface **Drainage** Control			Grav. **Segregated**
Stability **Analysis Software** Used			**REAME**
Safety Factor	Static		1.5
	Seismic		
Engineering Properties (spoil)	Unit Weight (pcf)		130
	Friction Angle		33
	Cohesion (psi)		200
Engineering Properties (Foundation)	Unit Weight (pcf)		130
	Friction Angle (deg.)		22
	Cohesion (psf)		**634**
Phreatic Surface			Phreatic Surface

Construction Documentation and Certifications

Foundation Reparation	Yea [ ]	No [ ]
Underdrains	Yes [ ]	No [ ]
Surface Drains	Yes [ ]	No [ ]
Grading and Revegetation	Yes [ ]	No [ ]
Final Certification	Yes [ ]	No [ ]

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation? Yes [ ] No [ ]

Foundation data Pits

Dip of strata relative to fill

Were NOV's written on the fill? **Yes** [ ] No [X]

Aerial survey and Ground Level Review *

Surface drainage control working properly? Yes [ ] No [ ]

Subsurface drainage control working properly? Yes [ ] No [ ]

If active **fill**, was active spoil disposal determined to he on-going? Yes [ ] No [ ]

If spoil disposal rite inactive, how long was disposal operation idle (months)?

If a durable rock fill is **under** construction,

Approximately 80% durable **rock** by volume? Yes [ ] No [ ]

If no to above. estimate percentage:

Discernable blanket or core drain forming? Yes [ ] No [ ]

If the fill is completed, compare the size with the size in the latest pre-completion **revision?**

If the fill is significantly smaller. what is the reason according to the documentation or inspector?

Fill surface configuration:

Is the fill situated in landslide topography? Yes [ ] No [ ]

Were there ground cracks observed on the **fill** face or benches? Yes [ ] No [ ]

Number of benches on fill:

	Location	Length (ft)	Width (ft)	Depfh (in)
Location of Cracks	2			
	3			
Location of Depressions	**Were** there depressions on the fill benches? Yes [ ] No [ ]			**(Potential Water Depth)**
	1			
	2			
	3			
	4			
	5			
Location "f Erosion Areas	**Wcrc there** areas of **erosion** on the fill benched Yes [ ] No [ ]			**(Maximum Gully Depth)**
	1			
	2			
	3			
	4			
	5			
Location 0 f Ground Bulges	**Wcrc** there bulges or hummocky terrain? Yes [ ] No [ ]			
	1			
	2			
	3			
	4			
	5			
Location 0 f Springs/Seeps	**Wcrc** there **springs** or seeps observed in **disposal** areas? **Yes** [1 No [ ]			
	2			
	3			
	4			
	5			
Location of Changes	**Were changes in vegetation** or **spoil** color observed **on** till? Yes [ ] No [ ]			
	1			
	2			
	3			
	4			
	5			
	6			

Movement Characteristics

Did a failure occur on the fill? Yes [ ] No [X]

If so, enter the source of information on the **failure:**

Stage **of** construction during failure:

	Mass I	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp **Height** (ft)			
Depth **to Slip** Planc (ft)			
Transport **Distance** (ft)			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement **Mass I**
Mass 2
Mass 3

Comments

IF -D not started as of 12116199 Fill could not be located **during** aerial flight

Inderground **mining** occurred beneath the proposed fill **location** in **the** 1960's

1601576
HF-D

Virginia
Red River Coal Co., Inc.
Black Creek Surface Mine

Permit: 1601576 Fill: HF- B

Permit: 1601576 Fill: HF- B

Virginia
Red River Coal Co., Inc.
Black Creek Surface Mine

Permit: 1601576 Fill: HF– C

Permit: 1601576 Fill: HF– C

Virginia
Virginia Iron, Coal and Coke
Boldcamp Surface Mine

Permit: 1101537

Fill: Fill #1B
Fill: Fill #5

BLANK PAGE

Type of Fill		Conventional Lift
Size of Fill	Length (ft) Area (acres) Volume (mcy)	1430 6.0 0.4
Surface Configuration	Flat	Flat
Elevations	Crown (ft) Toe (ft)	1950 1760
Slopes	Toe Foundation (%) Fill Face (deg.)	16.0 24 0
Surface Drainage Control		Perimeter
Subsurface Drainage Control		Underdrain
Software Used		
Safely Factor	Static Seismic	1.6
Engineering Properties (Spoil)	Unit Weight (pcf) Friction Angle Cohesion (psf)	125 30 200
Engineering Properties (Foundation)	Unit Weight (pcf) Friction Angle (deg.) Cohesion (psf)	121 32 12
Phreatic Surface		Phreatic Surface

Construction Documentation and Certifications

Foundation Preparation	Yes [X]	**Na** [ ]	Color
Underdrains	Yes [X]	No [ ]	Color
Surface Drains	Yes [ ]	No [X]	
Grading and Revegetation	**Yes** [ ]	No [X]	
Final Certification	Yes [ ]	No [ ]	

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation? Yes [ ] No [ ]

Foundation data: Pits

Dip of strata relative to fill:

Were NOV's written on the fill? **Yes** !] No [X]

Aerial Survey and Ground Level Review *

Surface drainage control working properly? **Yes** [ ] No [ ]

Subsurface drainage control working properly? **Yes** [ ] No [1

If active fill. was active spoil disposal determined to bc an-going? Yes [ ] No [ ]

If spoil disposal site inactive, how long was disposal operation idle (months)?

If a durable rock fill **is under construction,**

Approximately 80% durable **rock** by volume? Yes [ ] No [ ]

If no to above, estimate percentage:

Discernable blanket or core drain forming? Yes [ ] **No** [ ]

If the **fill** is completed. compare the size with the size in the latest pre-completion **revision?**

If the **fill** is significantly **smaller.** what is the reason according to the documentation or inspector?

Fill surface configuration: Flat

Is the fill situated in landslide topography! Yes [1 No [ ]

Were there ground cracks observed on the **fill** face or benches? Yes [ ] No [ ]

Number of benches on **fill:**

	Location	Length (it)	Width (ft)	Depth (in)
Location of Cracks	i			
	2			
	3			

Location of Depressions

Were there depressions on the fill benches? Yes [ ] No [ ] **(Potential Water Depth)**

	1			
	2			
	3			
	4			
	5			

Location of Erosion Areas

Were there areas of erosion on the fill benches? Yes [ ] No [ ] **(Maximum Gully Depth)**

	i			
	2			
	3			
	4			
	5			

Location of Ground Bulges'

Were there bulges or hummocky terrain? Yes [ ] No [ ]

	1			
	2			
	3			
	4			
	5			

Location of Springs/Seeps

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

	1			
	2			
	3			
	4			
	5			

Location of Changes'

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]

	!			
	2			
	3			
	4			
	5			
	6			

Movement Characteristics

Did a failure occur on the fill? Yes [ ] No [X]

fro. enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (It)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (It)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement Mass I			
Mass 2			
Mass 3			

Comments

ll #1B is a "zoned concept" fill The "structural zone" near the toe is compacted in 4-foot lifts and h e underdrain is wrapped in filter fabric The"nonstructural"zone is typical of rable rock fills Spoil associated with removal of the Norton coal seam was the only material placed in Fill #1B Fill #1B is separated from Fill #1A by a rock outcrop divide cording to the aerial photos

1101537
Fill # 1B

Company: Virginia Iron. Coal and Coke	**Fill:** Fill # 5	Date of permit file review:	12/08/99
Permit: 1101537	Mine: Boldcamp Surface Mine	Date fill contruction started:	04101199
State: VA	**Was** this till visited at ground level? Yes [ ] No [X]	Finished:	/ /
County: Wise		Number of fill size revisions:	
Latitude: 37-04-34	Had **the fill** been reclaimed at the time of the air survey? Yes [X] No [ ]	%Sandstone in overburden:	
ongitude: 82-30-41	Date of survey: 02/23/00		

	As constructed	Revision	Original design
Type of Fill			Conventional
Size "f Pill	Length (ft)		1050
	Area (acres)		8.0
	Volume (mcy)		1.9
surface Configuration	Flat		Flat
Elevations	Crown (ft)		2000
	Toe (ft)		1710
Slopes	Toe Foundation (%)		17.0
Control			Perimeter
Subsurface Drainage Control			Underdrain
Stability Analysis Software Used			REAME
Safety Factor	Static		1.6
	Seismic		
Engineering Properties (Spoil)	Unit Weight (pcf)		125
	Friction Angle		30
	Cohesion (psf)		200
Engineering Properties (Foundation)	Unit Weight (pcf)		122
	Friction Angle (dcg.)		31
	Cohesion (psf)		37
Phreatic **Surface**			Phreatic **Surface**

construction Documentation and Certifications

	Appl. Phase Certification	Appl.Quarterly Certification	Photography Type
Foundation Preparation	Yes [ ] No [ ]		
Underdrains	Yes [ ] No [ ]		
Surface Drains	Yes [ ] No [ ]		
Grading and Revegetation	Yen [ ] No [ ]		
Final Certification	Yes [ ] No [ ]		

Aerial Survey and Ground Level Review *

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	**Yes** [ ]	No [ ]
Foundation data:		Pits
Dip of strata relative to fill:		
Were NOV's written on the **fill?**	Yes [ ]	No [X]
Surface drainage control working properly?	**Yes** [ ]	No [ ]
Subsurface drainage control working properly?	Yes [ ]	No [ ]
If active fill, **was** active spoil disposal determined to be on-going7	**Yes** [ ]	**No** [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
If a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [ ]
If to lo above, estimate percentage:		
Discernable **blanket** or core drain forming?	Yes [ ]	No [ ]
If the till is completed, compare the size with the **size** in the latest pre-completion revision?		
If the fill is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		Flat
Is **the** fill situated in landslide topography'!	Yes [ ]	No [ ]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [ ]
Number of benches on **till:**		

	Location	Length (fl)	Width (ft)	Depth (in)
Location of Cracks *	1			
	2			

Location of Depressions *	Were there depressions on the fill **benches?** Yes [ ] No [ ]		(Potential Water Depth)
	2		
	3		
	5		

Location of Erosion Areas *	Were there areas of erosion on the **fill** benches? Yes [ ] No [ ]		(Maximum Gully Depth)
	I		
	2		
	4		
	5		

Location "f Ground Bulges *	Were there bulges or hummocky terrain? Yes [ ] No [ ]		
	1		
	2		
	3		
	4		
	5		

Location "f Springs/Seeps *	Were there springs or seeps observed in disposal areas? Yes [ ] **No** [ ]		
	I		
	2		
	4		
	5		

Location of Changes	Were changes in vegetation or spoil color observed on fill? Yes [ ] **No** [ ]		
	1		
	2		
	3		
	4		
	5		
	6		

Movement Characteristics

Did a failure occur on the fill? *Yes* [ ] No [X]

If so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement	Mass 1		
	Mass 2		
	Mass 3		

Comment.

ill #5 is a "**zoned** concept" fill. The "structural zone" near the toe **is** compacted in 4-foot lifts and the underdrain is wrapped in filter fabric The "nonstructural" zone is **typical** of durabl ock fills Hollowfill #5 was added in a revision approved 10/8/96 **Some** ponding **and** erosion on this freshly revegetated **fill** The 1st and 2nd fill faces **look** rough in the aerial photos

1101537
Fill # 5

Virginia
Virginia Iron, Coal and Coke
Boldcamp Surface Mine

Permit: 1101537 Fill: Fill# 1B

Permit: 1101537 Fill: Fill# 1B

Virginia
Virginia Iron, Coal and Coke
Boldcamp Surface Mine

Permit: 1101537 Fill: Fill# 1B

Permit: 1101537 Fill: Fill# 1B

Virginia
Virginia Iron, Coal and Coke
Boldcamp Surface Mine

Permit: 1101537 Fill: Fill# 5

Permit: 1101537 Fill: Fill# 5

BLANK PAGE

WEST VIRGINIA

BLANK PAGE

WEST VIRGINIA

Company	Mine	Permit	Fill
Apogee (or Amherst)	Amherst 3A	S-159-74	#8
Apogee	Cartwright Valley Fill #3	S-5069-92	#3
Appalachian Mining, Inc.	No Mine Identifier	S-6034-88	#1
Appalachian Mining, Inc.	Alloy #1	S-6009-88	HF #1
Battle Ridge Coal	Orgas No. 2	S-5004-91	Fill #1A
Bluestone Coal Corp	Poca 11	S-4021-88	#2
Bradford Coal Co.	Brown Tract	102-77	#1
Bradford Coal Co.	Brown Tract	102-77	#2
Bradford Coal Co.	Brown Tract	102-77	#3
BURCO Resources	East Cazy Surface Mine	S-5016-90	#2
Cannelton, Inc.	Custer Hollow Surface Mine	S-78-55	#1
Cannelton, Industries, Inc.	Cannelton 9S Surface Mine	615-70C	Fill #1
Caternary Coal Co.	Stanley Heritage Surface Mine	S-3035-93	DRF #3
Chafin Branch Coal Co.	Harrys Branch Surface Mine	180-77	#1
Chafin Branch Coal Co.	Rich Fork of Harrys Branch	S-5015-86	#1
Chafin Branch Coal Co.	Skillet Creek Surface Operations	S-5082-86	Fill #1
Colony Bay	No Mine Identifier	S-15-81	#5
Costain Coal	Pax No. 5	S-3023-91	#1
			#2
Cumberland River Coal	No Mine Identifier	S-5027-89	112
Cyprus Kanawha Corp	Sycamoie South Mtn Top Job	S-6020-89	Laurel Branch #1
Dal-Tex Coal Corp	Bumbo #2 Mine	S-5049-91	Fill #5
Eastern Associated	No Mine Identifier	S-53-85	#6
Elkay Coal Co	Tower Mountain	S-5023-93	Fill #1
Evergreen	No Mine Identifier	S-35-76	#1

WEST VIRGINIA

Company	Mine	Permit	Fill
Evergreen Mining Co	Knight-Ink #1 Mine	S-2019-88	#5
Fola Coal Co.	No Mine Identifier	S-2012-93	B
High Power Energy	Twenty Mile Creek Mme #901	S-3026-90	S2-X
High Power Energy	Twenty Mill Creek Mine #90	S-51-85	E
Hobet Mining, Jnc.	West Ridge	S-5003-96	Fill #52
Independence Coal Co., Inc.	Twilight MTR Surface Miiie	S-5023-96	Fill #1 James Creek
James Coal Co. (River Ridge Coal)	No. 1 Surface Mine	S-5033-87	#1
Julianna Mining	Camp Creek Surface Mine	S-2002-94	VF #1
K & B Coal Co. (after Lionel)	Grace #3	S-3010-86	113
K & B Coal Co. (after Lionel)	Grace #3	S-3010-86	#4
Lone Star	Surface Mine No. 6	S-3016-92	#3
Marrowbone Development (Triad)	Dingess Tunnel Mine #1	S-5024-88	#2
Mingo-Logan	Low Gap Branch Surface Mine #2	S-4013-95	#4
New Land Leasing Co., Inc.	Pax *if2*	S-3039-91	VF #6
Peerless Eagle Coal Co.	Lilly Fork Surface Mme	S-3021-93	VF #7
Pen Coal Corp.	Devilstrace Smface Mine	O-5015-89	#2
Princess Beverly	Carbon Fuel Tract	27-81	#2
Rawl Coal Sales & Processing Co.	Sprouse Creek Surface Mine	S-5033-88	Calf's Branch #4
Rawl Coal Sales & Processing Co.	Mary Taylor Mtn Project	S-5011-87	C
Red River Coal	RRC-Surface Mine No 2	S-5089-87	#5
Suzanne Fuels, Iiic	Laurel Cieek #1 Mine	S-3011-90	#1
Terry Eagle Coal Co.	Little Elk Mine #1	S-3034-88	Fill #1
Westmoreland Coal Co.	Hampton #47	S-5050-89	K

WEST VIRGINIA

Company	Mine	Permit	Fill
White Flame (Mingo Logan Coal)	Surface Mine #5	S-5066-92	Fill **A**

BLANK PAGE

West Virginia
Apogee (or Amherst)
Amherst 3A

Permit: S-159-74

Fill: #8

BLANK PAGE

Company: Apogee *(or* Amherst)	Fill: # 8	*Date of* permit file review:	10/13/99
Permit: S-159-74	*Mine:* Amherst 3A	Date fill contruction started:	04/01/82
State: WV	**Was** this fill **visited** at ground level? Yes [ ] **No** [X]	Finished:	09/04/98
County: Logan		Number of till **size revisions:**	
Latitude: 37-46-15	**Had the** till been **reclaimed** at the time *of* **the air** survey'? Yes [X] No [ ]	%Sandstone in overburden:	**89**
Longitude: *XI-42-30*	Date of survey: 12/22/99		

Type of Fill	Durable **Rock**	**Chimney**
Sheaf Fill	Length (ft)	1100
	Area (acres)	
	Volume (mcy)	
Surface Configuration	Flat	Flat
Elevations	Crown (ft)	**2120**
	Toe (A)	1850
Slopes	Toe **Foundation** (%)	**10.0**
	Fill **Face (deg.)**	**27.0**
Surface Drainage Control	Perimeter	Chimney core
Subsurface Drainage Control	Gravity **Segregated**	**Chimney** Core
Safety Factor	Static	
	Seismic	
Engineering Properties (Spoil)	Unit Weight (pcf)	
	Friction **Angle**	
	Cohesion (psf)	
Engineering Properties (Foundation)	**Unit** Weight (pcf)	
	Friction Angle **(deg)**	
	Cohesion (psf)	
Phreatic Surface		

construction Documentation and Certifications

				Type
Foundation Preparation	**Yes** [ ]	*No* [X]	82/2	Color
Underdrains	Yes [ ]	No [X]	*9312*	Color
Surface Drains	Yes [1	**No** ixi	96/2	**Color**
Grading and Revegetation	**Yes** [ ]	**No** [X]	**9711**	**Color**
Final Certification	Yes [ ]	No [X]	98/2	Color

If a DRF, **did** the **photographs** show the **rack** blanket or core underdrain by **gravity segregation?** **Yes** [ ] No [ ]

Foundation data: None

Dip of strata relative to **fill:**

Were NOV's written on the fill? Yes [ ] No [ ]

Aerial survey and Ground Level Review*

Surface drainage control working properly? Yes [ ] No [ ]

Subsurface drainage control working properly? Yes [ ] No [ ]

If active fill, was active spoil **disposal determined** to he **on-going?** **Yes** [ ] **No** [ ]

If spoil **disposal** site inactive, how long was disposal operation **idle (months)?**

f a durable rock fill is under construction,

Approximately **80%** durable **rock** by volume? Yes [ ] No [ ]

If no to above, estimate percentage:

Discernable **blanket** or core drain forming? Yes [ ] No [ ]

If the **fill** is **completed,** compare the **size** with the size in **the** latest pre-completion revision? Same

If the **fill is** significantly smaller, what **is** the reason according **to the documentation** or **inspector?**

Fill surface configuration: Flat

Is **the** fill situated in **landslide** topography? **Yes** [ ] **No** [ ]

Were there **ground cracks** observed on **the fill face or** hcnchcs? **Yes** [ ] **No** [ ]

Number of benches on **fill:** 10

	Location	Length (ft)	Width (ft)	Depth (in)
Location "f Cracks *	2			
	3			

Were there depressions on **the fill benches?** Yes [1 No [1 **(Potential Water Depth)**

Location "f Depressions *	2			
	3			
	4			
	5			

Were there areas of erosion on the **fill benches?** Yes [ ] No [ ] **(Maximum Gully Depth)**

Location of Erosion Arras *	2			
	3			
	4			
	5			

Were there bulges or hummocky terrain? **Yes** [ ] No [ ]

Location of Ground Bulges *	1			
	2			
	3			
	4			
	5			

Were there springs or **seeps** observed in disposal areas? Yes [ ] No [ ]

Describe location **of** seep

Location of Springs/Seeps *	1			
	2			
	3			
	4			

Were changes in vegetation or spoil color observed on **fill?** Yes [ ] No [ ]

Location of Changes *	1			
	2			
	3			
	4			
	5			
	6			

Did a failure occur on the fill? Yes [ ] No [ ]

f so. enter the source of information on the failure:

Stage of construction during failure:

Movement Characteristics *

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement **Mass 1**
Mass 2
Mass 3

Comments

n undated modification request includes a diagram of chimney-drain design. A 12/13/94 map shows a grouted rip rap or fabri-form at toe that crosses a minor existing road. The rmit file includes both a rock-durability and soil-substitute study of the predominant sandstone (both dated 1981). Rock durability is justified by high SDI values. Soil substitution is sed on favorable chemical characteristics. The same samples seem to be used in both reports. The soil-substitute report indicates the author's preference that the spoil be crushed pri application. But the certification photographs indicate rapid natural breakdown of the dumped spoil; i.e. crushing may not have been necessary. A stability analysis was not found. T ck-durability report presented friction-angle and cohesion values and these might reflect that an analysis was in fact done. There seemed to be lots of fill-related NOVs for this permi ost of them do not specify which fill. Did not find a specific reference to fill 8, except in a couple of inspection reports (11/10/98 and 4/2/99) referencing the "reclamation" of the fill 21/79 inspection report mentions a slide on fill 6. The helicopter photos show a steep and shallow fill 8. There were small dark areas on the snow-dusted surface, potentially indicativ seeps and/or uncontrolled surface drainage. These are not certain enough to warrant tabulation.

S-159-74
8

West Virginia
Apogee (or Amherst)
Amherst 3A

Permit: S-159-74 Fill: # 8

Permit: S-159-74 Fill: # 8

West Virginia
Apogee (or Amherst)
Amherst 3A

Permit: S-159-74 Fill: # 8

Permit: S-159-74 Fill: # 8

West Virginia
Apogee
Cartwright Valley Fill #3

Permit: S-5069-92

Fill: #3

BLANK PAGE

Type of Fill	Durable Rock	Durable Rock	Durable Rock
Size of Fill	2860	Length (ft)	2860
	154.0	Area (acres)	154.0
	23.9	Volume (mcy)	23 9
Surface Configuration	Flat		Flat
Elevations	2200	Crown (ft)	2200
	1340	Toe (ft)	1340
Slopes	7.0	Toe Foundation (%)	7.0
	19.0	Fill Face (deg.)	19.0
Surface Drainage control	Perimeter		Perimeter
Subsurface Drainage Control	Gravity Segregated		Gravity Segregated
Stability Analysis Software Used	REAME		REAM€
Safety Factor	1.5	static	1.5
	1.2	Seismic	1.2
Engineering Properties (Spoil)	136	Unit Weight (pcf)	136
	37	Friction Angle	37
	0	Cohesion (psf)	0
Engineering Properties (Foundation)	121	Unit Weight (pcf)	121
	37	Friction Angle (deg.)	37
	0	Cohesion (psf)	0
Phreatic Surface	None		None

construction Documentation and Certifications

	Appl. Phase Certification		Appl.Quarterly certification	Photography Type
Foundation Preparation	Yes [X]	No [ ]	94/1	Copies
Underdrains	Yes [X]	No [ ]	9813	Copies
Surface Drains	Yes [X]	No [ ]	9612	Copies
Grading and Revegetation	Yes [X]	No [ ]	99/3	Copies
Final Certification	Yes [X]	No [ ]	99/2	Copies

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation? Yes [X] No [ ]

Foundation data: Pits

Dip of strata relative to fill: Toward Fill

Were NOV's written on the fiiii Yes [X] No [ ]

Aerial Survey and Ground Level Review *

Surface drainage control working properly? Yes [X] No [ ]

Subsurface drainage control working properly? Yes [ ] No [ ]

If active till, was active spoil disposal determined to be on-going? Yes [ ] No [X]

If spoil disposal site inactive. how lung was disposal operation idle (months)?

If a durable rock fill is under construction,

Approximately 80% durable rock by volume? Yes [ ] No [ ]

If no to above, estimate percentage:

Discernable blanket or core drain forming? Yes [ ] No [ ]

Ifthe fill is completed. compare the size with the size in the latest pre-completion revision?

If the fill is significantly smaller, what is the reason according to the documentation or inspector?

Fill surface configuration: Flat

Is the fill situated in landslide topography? Yes [ ] No [ ]

Were there ground cracks observed on the fill face or benches? Yes [ ] No [ ]

Number of benches on fill 16

	Location	Length (ft)	Width (ft)	Depth (in)
Location 'f Cracks	3			
Location 0 f Depressions	Were there depressions on the fill benches? Yes [ ] No [ ]			(Potential Water Depth)
	2			
	3			
	5			
Location of Erosion Areas	Were there areas of erosion on the fill benches? Yes [ ] No [ ]			(Maximum Gully Depth)
	I			
	2			
	3			
	4			
	5			
Location of Ground Bulges	Were there bulges or hummocky terrain? Yes [1 No I 1			
	1			
	2			
	3			
	4			
	5			
Location of Springs/Seeps	Were there springs or seeps observed in disposal areas? Yes [ ] Nu [1			
	I			
	2			
	3			
	4			
Location of Changes	Were changes in vegetation or spoil color observed on till? Yes [ ] No [ ]			
	1			
	2			
	3			
	4			
	5			
	6			
Movement Characteristics	Did a failure occur on the fill? Yes [ ] No [ ]			
	If so, enter the source of information on the failure:			
	Stage of construction during failure:			
		Mass I	Mass 2	Mass 3
	Bench #			
	Length (ft)			
	Width (ft)			
	Scarp Height (ft)			
	Depth to Slip Plane (ft)			
	Transport Distance (ft)			
	Rate of Movement			
	Extent of Failure Movement			
	Cause of Movement Mass I			
	Mass 2			
	Mass 3			
comments	o Coal Mined on permit, Only structure on site was spoil disposal for adjoining permits Chilton seam was U/G mined in vicinity of fill but does not appear to be under the fill area late NOY issued for downstream flooding but storm event believed to be greater that 10yr/24hr event wo fills have been merged into one fill at bench #3			

S-5069-92
3

West Virginia
Apogee
Cartwright Valley Fill #3

Permit: S-5069-92 Fill: # 3

Permit: S-5069-92 Fill: # 3

West Virginia
Apogee
Cartwright Valley Fill #3

Permit: S-5069-92 Fill: # 3

Permit: S-5069-92 Fill: # 3

West Virginia
Appalachian Mining, Inc.
No Mine Identifier

Permit: S-6034-88

Fill: #1

BLANK PAGE

Company: Appalachian Mining, Inc.	**Fill:** # 1		Date of permit file review: 10/14/99
Permit: S-6034-88	**Mine:** N/A		Date fill contruction started: / /
Stnte: WV	**Was** this fill visited at ground **level'?**	Yes [1 No [X]	Finished: 06/10/94
County: Kanawha			Number of fill size **revisions:** 1
Latitude: 38-20-36	Had the fill been reclaimed at **the** time of the air survey?	Yes [X] No [ ]	%Sandstone in overburden: 84
ongitude: **81-27-40**	Date ***of*** **survey:**	12/20/99	

	As constructed		Revision	Original design
Type of **Fill**	Chimney			Chimney
Size of Fill	4400	Length (ft)		4600
		Area (acres)		
	5.6	Volume (mcy)		
Surface Configuration	Flat			Flat
Elevations	1175	crows (ft)		1250
	975	Toe (ft)		975
Slopes	2.7	Toe Foundation (%)		2.7
	27.0	Fill Face (deg.)		27.0
Surface Drainage Control	Chimney Core			Chimney Core
Subsurface Drainage Control	Chimney Core			Chimney core
Stability **Analysis Software Used**				RE —
Safety Factor		Static		1.6
		Seismic		
Engineering Properties (Spoil)		Unit Weight (pcf)		132
		Friction Angle		35
		Cohesion (psf)		I
Engineering Properties (Foundation)		Unit Weight (pcf)		91
		Friction **Angle** (deg.)		30
		Cohesion (psf)		1
Phreatic **Surface**				None

Construction Documentation and Certifications				
Foundation Preparation	Yes [ ]	No [X]		
Underdrains	Yes [ ]	No [X]	9313	None
Surface Drains	Yes [ ]	No [X]	9313	None
Grading and Revegetation	Yes [ ]	No [X]		
Final Certification	Yes [X]	No [ ]	6/94	

Aerial Survey and Ground Level Review *

[

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks*	1			
	2			

Were there depressions on the fill benches! **Yes** [ ] No [ ] (Potential Water Depth)

Location of Depressions*	1			
	2			
	3			
	4			
	5			

Were there areas of erosion on the fill benches? **Yes** [X] No [ ] (Maximum Gully Depth)

Location of Erosion Areas*	1			
	2			
	3			
	4			
	5			

Were there bulges or hummocky terrain? Yes [ ] No [ ]

Location of Ground Bulges*	1			
	2			
	3			
	4			
	5			

Were there springs or seeps observed in disposal areas? Yes [X] No [ ]

Location of Springs/Seeps*	1			
	2			
	3			
	4			
	5			

Were changes in vegetation or spoil color observed on fill? Yes [X] No [ ]

Location of Changer*	1			
	2			
	3			
	4			
	5			
	6			

Did a failure occur on the fill? Yes [ ] No [X]

Movement Characteristics*

f so, enter the source of information on the failure:

Stage of constructiou during failure:

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Planc (ft)			
Trausport Distance (ft)			
Rate of Movement			
Extent of Failure Movcment			

Cause of Movemcnt **Mass 1**
Mass 2
Mass 3

Comments

very long and shallow chimney drain fill with 3 face ups in the main hollow and 4 tributary fills. As-built plan view shows one of the tributary fills with perimeter drains. Helicop ıotos indicate that there may be 2 tributary fills with side drains although drains of one of the fills are very close together. Do not know if these fills are of the durable rock or ›nventional lift type. The foundation engineering values listed above may relate to (1) the toe of an older fill that underlies the top of the fill or (2) the natural foundation extending :neath most of the fill. Do not know which. The helicopter recon. found 2 sets of seeps on one of the tributary fills with side drains. They occur on the side slope and within broad eas of anomalous vegetation. The other tributary fill includes a small, shallow slip on a side slope. There are numberous dark spots along the slde slopes of the entire fill.

S-6034-88
1

West Virginia
Appalachian Mining, Inc.
No Mine Identifier

Permit: S-6034-88 Fill: # 1

Permit: S-6034-88 Fill: # 1

West Virginia
Appalachian Mining, Inc.
No Mine Identifier

Permit: S-6034-88 Fill: # 1

Permit: S-6034-88 Fill: # 1

West Virginia
Appalachian Mining, Inc.
Alloy #1

Permit: S-6009-88

Fill: HF #1

BLANK PAGE

Company:	Appalachian Mining, Inc.	**Fill:**	HF #1	Date of permit file review:	08/12/99
Permit:	S-6009-88	**Mine:**	Alloy #1	Date fill contruction started:	10/01/88
State:	WV	Was this fill visited at ground level?	Yes [X] No [ ]	Finished:	/ /
County:	Fayette	Date of visit:	08/26/99	Number of fill size revisions:	1
Latitude:	38-09-33	Had the fill been reclaimed at the time of the air survey?	Yes [X] No [ ]	%Sandstone in overburden:	76
Longitude:	81-15-00	Date of survey:	12/20/99		

		As constructed	Revision	Original design
Type of Fill			Chimney	Durable Rock
Size of Fill	Length (ft)		1340	1900
	Area (acres)			8.4
	Volume (mcy)			3.9
Surface Configuration			Flat	Flat
Elevations	Crown (ft)		1000	1480
	Toe (ft)		890	960
Slopes	Toe Foundation (%)		6.0	7.0
	Fill Face (deg.)	7.0	5.0	18.0
Surface Drainage Control			Center Drain	Perimeter
Subsurface Drainage Control			Chimney Core	Constructed Underdrain
Stability Analysis Software Used				REAME
Safety Factor	Static			1.7
	Seismic			
Engineering Properties (Spoil)	Unit Weight (pcf)			129
	Friction Angle			38
	Cohesion (psf)			0
Engineering Properties (Foundation)	Unit Weight (pcf)			
	Friction Angle (deg.)			
	Cohesion (psf)			
Phreatic Surface				P-0.05

		Appl. Phase Certification	Appl.Quarterly Certification	Photography Type
Construction Documentation and Certifications	Foundation Preparation	Yes [ ] No [X]		
	Underdrains	Yes [ ] No [X]		
	Surface Drains	Yes [ ] No [X]	94/4	Copies
	Grading and Revegetation	Yes [ ] No [X]	99/2	None
	Final Certification	Yes [ ] No [X]		

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ]	No [X]
Foundation data:		None
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [X]	No [ ]

Aerial Survey and Ground Level Review *

Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control working properly?	Yes [X]	No [ ]
If active fill, was active spoil disposal determined to be on-going?	Yes [ ]	No [X]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
If a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [ ]
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [ ]	No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		
If the fill is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		Flat
Is the fill situated in landslide topography?	Yes [ ]	No [X]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [X]
Number of benches on fill:		2

LZ-AM

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *	2 3			
Location of Depressions *	Were there **depressions** on the **fill benches?** **Yes** [ ] No [X] **(Potential Water Depth)** 2 3 4 5			
Location of Erosion Areas *	Were there areas of erosion on the fill benches? Yes [ ] No [X] **(Maximum Gully Depth)** 1 2 3 4 5			
Location of Ground Bulges *	Were there bulges or hummocky terrain? **Yes** [ ] No [X] 1 2 3 4 5			
Location of Springs/Seeps *	Were **there springs** or **seeps** observed in **disposal areas?** Yes [ ] No [X] 2 3 4 5			
Location of Changes *	**Were** changes in vegetation or spoil color observed on fill? **Yes** [ ] No [X] 1 2 3 4 5 6			
Movement Characteristics *	Did a failure occur on the fill? **Yes** [ ] No [X] f so, enter the source of information on the failure: **Stage** of construction **during** failure:			
		Mass 1	**Mass 2**	**Mass 3**
	Bench #			
	Length (ft)			
	Width (ft)			
	Scarp Height (ft)			
	Depth to Slip Plane (ft)			
	Transport Distance **(ft)**			
	Rate of Movement			
	Extent **of** Failure **Movement**			
	Cause of Movement	**Mass 1**		
		Mass 1		
		Mass 3		
Comments	erial photos show adjacent **backfill** area **with** an **old** failure surface and lots of erosion on it evision #08, approved 10/19/94, completely changed the fill **configuration,** size, volume, **and** location Material volume was significantly reduced If was changed from a durable rocl 1 to a conventional **fill** with rock **chimney** core ll face slope measurements in **field** 15% from **toe** to first bench; **10% from** first bench to fop **of** 611			

S-6009-88
HF #1

West Virginia
Appalachian Mining, Inc.
Alloy #1

Permit: S-6009-88 Fill: HF# 1

Permit: S-6009-88 Fill: HF# 1

West Virginia
Appalachian Mining, Inc.
Alloy #1

Permit: S-6009-88 Fill: HF# 1

Permit: S-6009-88 Fill: HF# 1

West Virginia
Battle Ridge Coal
Orgas No. 2

Permit: S-5004-91

Fill: Fill #1A

BLANK PAGE

	As constructed	Revision	Original design
Type of Fill		Durable Rock	Durable Rock
Size of Fill	Length (ft)	2070	3300
	Area (acres)		166.7
	Volume (mcy)		21.4
Surface Configuration	Concave		Flat
Elevations	Crown (ft)	1550	1450
	Toe (ft)	1015	1000
Slopes	Toe Foundation (%)	8.0	8.0
	Fill Face (deg.)	15.0	15.0
Surface Drainage Control		Perimeter	Perimeter
Subsurface Drainage Control		Gravity Segregated	Gravity Segregated
Stability Analysis Software Used		REAME	SB Slope
Safety Factor	Static	1.9	1.7
	Seismic	1.6	1.3
Engineering Properties (Spoil)	Unit Weight (pcf)	135	135
	Friction Angle	36	36
	Cohesion (psi)	200	0
Engineering Properties (Foundation)	Unit Weight (pcf)		
	Friction Angle (deg.)		
	Cohesion (psf)		
Phreatic Surface		P-0.05	None

Construction Documentation and Certifications

	Appl. Phase Certification		Appl. Quarterly certification	Photography Type
Foundation Preparation	Yes [ ]	No [ ]		
Underdrains	Yes [X]	No [ ]	91/3	Copies
Surface Drains	Yes [X]	No [ ]	9212	Copies
Grading and Revegetation	Yes [ ]	No [ ]		
Final Certification	Yes [ ]	No [ ]		

If a DRF, did the photographs show the rack blanket or core underdrain by gravity segregation? Yes [X] No [ ]

Foundation data: Pits

Dip of strata relative to fill:

Were NOV's written on the fill? Yes [X] No [ ]

Aerial Survey and Ground Level Review*

Surface drainage control working properly? Yes [X] No [ ]

Subsurface drainage control working properly? Yes [ ] No [ ]

If active fill, was active spoil disposal determined to be on-going? Yes [ ] No [X]

If spoil disposal site inactive, how long was disposal operation idle (months)?

If a durable rock fill is under construction,

Approximately 80% durable rock by volume'? Yes [ ] No [ ]

If no to above, estimate percentage.

Discernable blanket or core drain forming? Yes [ ] No [ ]

If the fill is completed. compare the size with the size in the latest pre-completion revision?

If the fill is significantly smaller, what is the reason according to the documentation or inspector?

Fill surface configuration: Concave

Is the fill situated in landslide topography? Yes [ ] No [ ]

Were there ground cracks observed on the fill face or benches? Yes [ ] No [ ]

Number of benches on fill: 12

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	2 3			
Location of Depressions	Were there depressions on the fill benches? Yes [1 No [1 **(Potential Water Depth)** 2 3 4 5			
Location of Erosion Areas	Were **there wear** of erosion **on the** fill benches? Yes [ ] No [ ] **(Maximum Gully Depth)** 2 5			
Location of Ground Bulges	Were there bulges or hummocky terrain? Yes [ ] Nu [ ] 1 2 3 4 5			
Location of Springs/Seeps	Were there springs or seeps observed in disposal areas? Yes [ ] No [ ] 1 2 3 4 5			
Location of Changes'	Were changes in vegetation or spoil **color** observed on till? **Yes** [ ] No [ ] 1 2 3 4 5 6			
Movement Characteristics	Did a failure occur on the fill? ***Yes*** [ ] No [ ] **fro, enter** the source of information on the failure: Stage of construction during failure:			

	Mass 1	**Mars 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (A)			
Rate of Movement			
Extent of Failure Movement			
cause of Movement **Mass i**			
Mass 2			
Mass 3			

Comments

oal seams #5 Block, Original fill #1 was modified to two separate fills in August 97; Some ponding on benches # 6,7,8 and 9 near center of fill. Two fills separated by a ridge mad ,1A Smaller fil is flat

S-5004-91
Fill #1A

West Virginia
Battle Ridge Coal
Orgas No. 2

Permit: S-5004-91 Fill: Fill# 1A

Permit: S-5004-91 Fill: Fill# 1A

West Virginia
Battle Ridge Coal
Orgas No. 2

Permit: S-5004-91 Fill: Fill# 1A

West Virginia
Bluestone Coal Corp.
Poca 11

Permit: S-4021-88

Fill: #2 (No Photo)

BLANK PAGE

Type of Fill	Chimney		Chimney
Size of Fill	390	Length (ft)	390
	1.6	Area (acres)	1.6
		Volume (mcy)	
Surface Configuration	Concave		Flat
Elevations	2450	Crown (ft)	2450
	2355	Toe (ft)	2355
Slopes	8.0	Toe Foundation (%)	8.0
	22 0	Fill Face (deg.)	22.0
Surface **Drainage** Control	Chimney Core		Chimney **Core**
Subsurface Drainage **Control**			Chimney Core Chimney Core
Stability Analysis **Software Used**			
Safety Factor		Static	
		Seismic	
Engineering Properties (Spoil)		Unit Weight (pcf)	
		Friction **Angle**	
		Cohesion (psf)	
Engineering Properties (Foundation)		Unit Weight (pcf)	
		Friction Angle (deg.)	
		Cohesion (psf)	
Phreatic Surface			

Construction Documentation and **Certifications**

	Certification		**Certification**	**Type**
Foundation Preparation	Yes [X]	No [ ]	9214	None
Underdrains	Yes [ ]	No [ ]		None
Surface Drains	Yes [X]	No [ ]	96/2	None
Grading and Revegetation	Yes [ ]	No [X]	97/1	None
Final Certification	Yes [ ]	No!]		

Aerial Survey and **Ground Level Review** *

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation? Yes [ ] No [X]

Foundation data: None

Dip of strata relative to till Left Flank High Toward Fill

Were NOV's written on the till? Yes [X] No [ ]

Surface drainage control working properly? **Yes** [ ] No [1

Subsurface drainage control working properly? **Yes** [ ] No [ ]

If active fill, was active spoil disposal determined to **bo** on-going'? Yes [ ] No [ ]

If spoil disposal site inactive, haw long **was disposal** operation idle (months)?

If a durable rock fill is under construction,

Approximately 80% **durable** rock by volume? Yes [1 No [ ]

If no lo above, estimate percentage:

Discernable blanket or core drain forming? Yes [ ] No [ ]

If the fill is completed, compare the size with **the** size in the latest pre-completion revision?

If the till is significantly smaller, what **is** the reason **according** to the documentation or inspector?

Fill surface configuration:

Is **the** fill situated in **landslide** topography'! Yes [ ] No [ ]

Were there ground cracks observed on the fill face or benches? Yes [ ] No [ ]

Number of benches on fill:

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	2			
	3			
Location "f , Depressions	Were there **depressions** on the till **benches?** *Yes* [ ] No [ ]			**(Potential Water Depth)**
	2			
	4			
	5			
Location "f , Erosion Areas	**Were there** areas **of** erosion on the **fill** benches? Yes [ ] No [ ]			**(Maximum Gully Depth)**
	i			
	2			
	3			
	4			
Location of Ground Bulges	**Were there** bulges or hummocky terrain? Yes [ ] No [ ]			
	1			
	2			
	3			
	4			
	5			
Location of Springs/Seeps	**Were** there springs or seeps observed in **disposal** areas? **Yes** [1 No [ ]			
	I			
	2			
	4			
	5			
Location of Changes	Were changes in **vegetation** or **spoil** color observed on fill? Yes [ ] No [ ]			
	1			
	2			
	3			
	4			
	6			
Movement Characteristics	Did a failure occur on the fill? **Yes** [ ] No [ ]			
	? so, enter **the** source of **information** on **the failure:**			
	Stage of construction during **failure:**			
		Mass 1	**Mass 2**	**Mass 3**
	Bench #			
	Length (ft)			
	Width (ft)			
	Scarp Height (ft)			
	Depth **to Slip** Plane (ft)			
	Transport Distance (ft)			
	Rate of Movement			
	Extent of Failure Movement			
	Cause of Movement **Mass i**			
	Mass 2			
	Mass 3			
Comments	›al seams Pocahontas #11. Pocahontas #12; No design **found** in permit, **All** engnieering properties were left **blank** on form; State NOVs issued **for** lifts greater than 4 feet			

S-4021-88
2

West Virginia
Bradford Coal Co.
Brown Tract

Permit: 102-77

Fill: #1 (No Photo)
Fill: #2
Fill: #3

BLANK PAGE

Company: Bradford Coal Co.	**Fill:** # 1			Date of permit file review:	/ /
Permit: 102-77	**Mine:** Brown Tract			Date fill contruction started:	/ /
State: WV	Was this fill visited at ground level?	Yes [ ]	No [X]	Finished:	05/20/80
County: Boone				Number of fill size revisions:	
Latitude: 38-06-40	Had the fill been reclaimed at the time of the air survey?	Yes [ ]	No [ ]	%Sandstone in overburden:	84
ongitude: 81-35-58	Date of survey:	/ /			

	As constructed		Revision	Original design
Type of Fill	Chinney		Chimney	Chimney
Size of Fill	640	Length (ft)	640	640
	3.7	Area (acres)	3.7	3.7
		Volume (mcy)		
Surface Configuration				Flat
Elevations	1355	Crown (ft)	1355	1355
	1200	Toe (ft)	1200	1200
Slopes	9.0	Toe Foundation (%)	9.0	9.0
	25.0	Fill Face (deg.)	25.0	25.0
Surface Drainage Control	Chimney Core		Chimney Core	Chimney Core
Subsurface Drainage Control			Chimney Core	Chimney Core
Stability Analysis Software Used	Other		Other	Other
Safety Factor		Static		
		Seismic		
Engineering Properties (Spoil)		Unit Weight (pcf)		
		Friction Angle		
		Cohesion (psf)		
Engineering Properties (Foundation)		Unit Weight (pcf)		
		Friction Angle (deg.)		
		Cohesion (psf)		
Phreatic Surface				

Construction Documentation and Certifications

	Appl. Phase Certificatinn	Appl.Quarterly Certification	Photography Type
Foundation Preparation	Yes [ ] No [ ]		None
Underdrains	Yes [ ] No [ ]		None
Surface Drains	Yes [X] No [ ]	80/2	None
Grading and Revegetation	Yes [ ] No [X]	89/12	None
Final Certification	Yes [ ] No [ ]		None

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation? Yes [ ] No [ ]

Foundation data: None

Dip of strata relative to fill: Right Flank High Toward Fill

Were NOV's written on the fill? Yes [ ] No [X]

Aerial Survey and Ground Level Review *

Surface drainage control working properly? Yes [ ] No [ ]

Subsurface drainage control working properly? Yes [ ] No [ ]

If active fill, was active spoil disposal determined to be on-going? Yes [ ] No [ ]

If spoil disposal site inactive, how long was disposal operation idle (months)?

If a durable rock fill is under construction,

Approximately 80% durable rock by volume? Yes [ ] No [ ]

If no to above, estimate percentage:

Discernable blanket or core drain forming? Yes [ ] No [ ]

If the fill is completed, compare the size with the size in the latest pre-completion revision?

If the fill is significantly smaller, what is the reason according to the documentation or inspector?

Fill surface configuration:

Is the fill situated in landslide topography? Yes [ ] No [ ]

Were there ground cracks observed on the fill face or benches? Yes [ ] No [ ]

Number of benches on fill:

EP-AM

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks*	I			
	2			
	3			

Location of Depressions*

Were there depressions on the fill benches? Yes [1 No I 1 **(Potential Water Depth)**

	I			
	2			
	3			
	4			
	5			

Location of Erosion Areas*

Were thcrc areas of erosion on the fill benches? Yes [ ] No [ ] **(Maximum Gully Depth)**

	1			
	2			
	3			
	4			
	5			

Location of Ground Bulges*

Were thcrc bulges or hummocky terrain? *Yes* [ ] No [ ]

	1			
	2			
	3			
	4			
	5			

Location of Springs/Seeps*

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

	1			
	2			
	3			
	4			
	5			

Location of Changes*

Were changes in vegetation or spoil color observed on fill? *Yes* [ ] No [ ]

	1			
	2			
	3			
	4			
	5			
	6			

Movement Characteristics*

Did a failure occur on the fill? *Yes* [ ] No [ ]

f so. enter the source of information on the failure:

Stage of construction during failure:

	Mass i	Mars 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (it)			
Depth to Slip Plane (flj			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement			
Mass i			
Mass 2			
Mass 3			

Comments

ɔal seam #5 Block, No design criteria found in permit Permit issued in 1977 during interim program One revision to permit to change from 4 foot lift to 50 foot lifts
ɔwer five tiffs were pre-law and likely have no OSM jurisdiction

ɔ photography available

102-77
1

Company: Bradford Coal Co.	**Fill:** # 2		Date of permit file review: 10119199
Permit: 102-77	**Mine:** Brown Tract		Date fill contruction started: / /
State: WV	Was this **fill** visited at ground **level?**	Yes [ ] No [X]	Finished: 09/01/89
County: Boone			Number of fill size **revisions:**
Latitude: 38-06-40	Had the fill been reclaimed at the time of the air survey?	Yes [X] No [ ]	%Sandstone in overburden: 84
Longitude: 81-35-58			
	Date of survey:	12/21/99	

	As constructed		Revision	Original design
Type of Fill	Chimney		Chimney	Chimney
She of Fill	1585	Length *(ft)*	1585	1585
	26.7	Area (acres)	*26.7*	26.7
		Volume (mcy)		
Surface Configuration	Flat			Flat
Elevations	1410	Crown (ft)	1410	1410
	1010	Toe (ft)	1010	1010
Slopes	*6.0*	Toe Foundation (%)	6.0	6.0
	23 0	Fill Face (deg.)	23.0	22.0
Control	Chimney core		Chimney Core	Chimney core
Drainage Control			Chimney Core	Chimney **Core**
Stability **Analysis Software Used**	Other		Other	Other
Safety Factor		Static		
		Seismic		
Engineering Properties (Spoil)		Unit Weight (pcf)		
		Friction Angle		
		Cohesion (psf)		
Engineering Properties (Foundation)		Unit Weight (pcf)		
		Friction Angle (deg.)		
		Cohesion (psf)		
Phreatic Surface				

		Appl. Phase Certification		**Appl.Quarterly Certification**	Photography **Type**
construction Documentation **and** Certifications	Foundation Preparation	Yes [ ]	No [ ]		None
	Underdrains	**Yes** [ ]	**No** [ ]		
	Surface Drains	Yes [X]	No [ ]	***8012***	None
	Grading **and** Revegetation	Yes [ ]	No [X]	**89/12**	None
	Final Certification	Yes [ ]	No [ ]		None

Aerial Survey and Ground Level Review*

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation? Yes [ ] No [ ]

Foundation data: None

Dip of strata relative to **fill:** Righl Flank High Toward Fill

Were NOV's written on ths fill? Yes [ ] No [X]

Surface drainage control working properly? Yes [ ] No [ ]

Subsurface drainage control working properly? Yes [ ] No [ ]

If active till, was active spoil disposal determined to be on-going? Yes [ ] **No** [ ]

If spoil **disposal** site inactive, how long was **disposal** operation idle (months)?

If a **durable** rock fill is under construction,

Approximately 80% **durable** rock by volume? **Yes** [ ] No [ ]

If no to above, estimate percentage:

Discernable blanket or core drain forming? **Yes** [1 **No** [1

If the **fill** is completed, compare the size with the **size** in the latest pre-completion revision?

If the **fill** is significantly smaller, what is the reason according to the documentation or inspector?

Fill **surface** configuration:

Is the **fill** situated in landslide topography'? **Yes** [ ] No [ ]

Were there ground cracks observed on the till face or benches? Yes [ ] No [ ]

Number of benches on **fill:**

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *	I			
	2			
	3			

Location of Depressions *

Were there depressions on the fill benches? *Yes* [ ] No [ ] **(Potential Water Depth)**

	I			
	2			
	3			
	4			
	5			

Location of Erosion Areas *

Were there areas of erosion on the **fill** benches? **Yes** [ ] No [ ] **(Maximum Gully** Depth)

	2			
	4			
	5			

Location "f Ground Bulges *

Were there bulges or hummocky terrain? Yes [ ] **No** [ ]

	2			
	3			
	4			
	5			

Location of Springs/Seeps *

Were there **springs or** seeps observed in disposal areas? Yes [ ] No [ ]

	2			
	3			
	4			
	5			

Location of Changes *

Were changes in vegetation or spoil color observed on **fill?** Yes [1 No [ ]

	2			
	3			
	4			
	5			
	6			

Movement Characteristics *

Did a failure occur on the fill? Yes [1 No [ ]

f so, enter the source of information on tlic failure:

Stage **of** construction during failure:

	Mass I	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft]			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement **Mass 1**
Mass 2
Mass 3

Comments

oal **seam** #5 Block No design criteria found in permit Permit issued in 1977 **during** interim program **One** revision to permit to change from 4 foot lift to 50 foot lifts

ine tree established on ½ of fill face Volunteer trees on other ½ of fill (Look at on the ground)

102-77
2

Company:	Bradford Coal Co.	**Fill:**	# 3	Date of permit file review:	10/19/99
Permit:	102-77	**Mine:**	Brown Tract	Date fill contruction started:	/ /
State:	WV	Was this fill visited at ground level?	Yes [ ] No [X]	Finished:	09/01/89
County:	Boone			Number of fill size revisions:	
Latitude:	38-06-40	Had the fill been reclaimed at the time of the air survey?	Yes [X] No [ ]	%Sandstone in overburden:	84
Longitude:	81-35-58	Date of survey:	12/20/99		

	As constructed		Revision	Original design
Type of Fill	Chimney		Chimney	Chimney
Size of Fill	1220	Length (ft)	1220	1220
	22.4	Area (acres)	22.4	22.4
		Volume (mcy)		
Surface Configuration	Flat			Flat
Elevations	1420	Crown (ft)	1420	1420
	1020	Toe (ft)	1020	1020
Slopes	14.0	Toe Foundation (%)	14.0	14.0
	23.0	Fill Face (deg.)	23.0	23.0
Surface Drainage Control	Chimney Core		Chimney Core	Chimney Core
Subsurface Drainage Control			Chimney Core	Chimney Core
Stability Analysis Software Used	Other		Other	Other
Safety Factor		Static		
		Seismic		
Engineering Properties (Spoil)		Unit Weight (pcf)		
		Friction Angle		
		Cohesion (psf)		
Engineering Properties (Foundation)		Unit Weight (pcf)		
		Friction Angle (deg.)		
		Cohesion (psf)		
Phreatic Surface				

Construction Documentation and Certifications	Appl. Phase Certification	Appl.Quarterly Certification	Photography Type
Foundation Preparation	Yes [ ] No [ ]		None
Underdrains	Yes [ ] No [ ]		None
Surface Drains	Yes [X] No [ ]	80/2	None
Grading and Revegetation	Yes [ ] No [X]	89/12	None
Final Certification	Yes [ ] No [ ]		None

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation? Yes [ ] No [ ]

Foundation data: None

Dip of strata relative to fill: Right Flank High Toward Fill

Were NOV's written on the fill? Yes [ ] No [X]

Aerial Survey and Ground Level Review*

Surface drainage control working properly? Yes [ ] No [ ]

Subsurface drainage control working properly? Yes [ ] No [ ]

If active fill, was active spoil disposal determined to be on-going? Yes [ ] No [ ]

If spoil disposal site inactive, how long was disposal operation idle (months)?

If a durable rock fill is under construction,

Approximately 80% durable rock by volume? Yes [ ] No [ ]

If no to above, estimate percentage:

Discernable blanket or core drain forming? Yes [ ] No [ ]

If the fill is completed, compare the size with the size in the latest pre-completion revision?

If the fill is significantly smaller, what is the reason according to the documentation or inspector?

Fill surface configuration:

Is the fill situated in landslide topography? Yes [ ] No [ ]

Were there ground cracks observed on the fill face or benches? Yes [ ] No [ ]

Number of benches on fill:

	Location	Length (ft)	Width (ft)	Depth (in)
Location Of Cracks	2			
	3			

Location of Depressions*

Were there depressions on the **fill benches!** Yes [ ] No [ ] **(Potential Water Depth)**

1				
2				
3				
4				
5				

Location of Erosion Areas*

Were there areas of **erosion** on the fill benches? Yes [ ] No [ ] **(Maximum Gully Depth)**

2				
4				
5				

Location of Ground Bulges

Were there bulges or hummocky terrain? **Yes** [ ] No [ ]

1				
2				
3				
4				
5				

Location of Springs/Seeps*

Were there springs or seeps observed in disposal areas? **Yes** [ ] No [ ]

2				
3				
4				
5				

Location of Changes*

Were changes in vegetation or **spoil** color **observed** on fill? Yes [ ] No [ ]

2				
3				
4				
5				
6				

Movement Characteristics*

Did a failure occur on **the** fill? Yes [ ] No [ ]

If so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement **Mass 1**
Mass 2
Mass 3

Comments

Coal seam: #5 Block; No design criteria found in permit. Permit issued in 1977 during interim program; One revision to permit to change from 4 foot lift to 50 foot lifts. State NOVs issued for failing to construct in four foot lifts. State NOV issued for contamination of rock core with fine material.

Fill has pine trees established on approximately 1/3 of the face. (Field visit should be done to examine surface erosion and seeps)

102-77
3

West Virginia
Bradford Coal Co.
Brown Tract

Permit: 102-77 Fill: #2

Permit: 102-77 Fill: #3

West Virginia
Bradford Coal Co.
Brown Tract

Permit: 102-77 Fill: #3

Permit: 102-77 Fill: #3

West Virginia
BURCO Resources
East Cazy Surface Mine

Permit: S-5016-90

Fill: #2

BLANK PAGE

Company: BURCO Resources	**Fill:** # 2		Date of permit file review: 10/07/99
Permit: S-5016-90	**Mine:** East Cazy Surface Mine		Date fill contruction started: 01/01/91
State: WV	Was this fill visited at ground level?	Yes [ ] No [X]	Finished: / /
County: Boone			Number of fill size revisions:
Latitude: 37-55-25	Had the fill been reclaimed at the time of the air survey?	Yes [ ] No [X]	%Sandstone in overburden: 79
Longitude: 81-42-40	Date of survey:	12/21/99	

	As constructed	Revision	Original design
Type of Fill			Durable Rock
Size of Fill	Length (ft)		4800
	Area (acres)		113.0
	Volume (mcy)		40.7
Surface Configuration	Concave		Flat
Elevations	Crown (ft)		1780
	Toe (ft)		1170
Slopes	Toe Foundation (%)		7.0
	Fill Face (deg.)		23.0
Surface Drainage Control		Center Drain	Perimeter
Subsurface Drainage Control			Gravity Segregated
Stability Analysis Software Used			REAME
Safety Factor	Static		1.5
	Seismic		1.3
Engineering Properties (Spoil)	Unit Weight (pcf)		140
	Friction Angle		36
	Cohesion (psf)		0
Engineering Properties (Foundation)	Unit Weight (pcf)		135
	Friction Angle (deg.)		36
	Cohesion (psf)		200
Phreatic Surface			Phreatic Surface

Construction Documentation and Certifications

	Appl. Phase Certification	Appl.Quarterly Certification	Photography Type
Foundation Preparation	Yes [X] No [ ]	91/2	Copies
Underdrains	Yes [X] No [ ]	91/2	Copies
Surface Drains	Yes [X] No [ ]	98/4	Copies
Grading and Revegetation	Yes [ ] No [ ]		
Final Certification	Yes [ ] No [ ]		

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [X]	No [ ]
Foundation data:	Text, Pits	
Dip of strata relative to fill:	Toward Fill	
Were NOV's written on the fill?	Yes [X]	No [ ]

Aerial Survey and Ground Level Review*

Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control working properly?	Yes [ ]	No [ ]
If active fill, was active spoil disposal determined to be on-going?	Yes [X]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		

If a durable rock fill is under construction,

Approximately 80% durable rock by volume?	Yes [ ]	No [ ]
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [ ]	No [ ]

If the fill is completed, compare the size with the size in the latest pre-completion revision?

If the fill is significantly smaller, what is the reason according to the documentation or inspector?

Fill surface configuration:		
Is the fill situated in landslide topography?	Yes [ ]	No [ ]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [ ]
Number of benches on fill:		11

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	2			
	3			

Were there depressions on the fill benches? **Yes** [ ] No [ ] **(Potential Water Depth)**

Location of Depressions	1			
	2			
	3			
	4			
	5			

Were there areas of erosion on **the till** benches? Yes [ ] No [ ] **(Maximum Gully Depth)**

Location of Erosion Areas	1			
	2			
	3			
	4			
	5			

Were there bulges or hummocky terrain? Yes [ ] No [ ]

Location of Ground Bulges	1			
	2			
	3			
	4			
	5			

Were **there** springs or seeps observed in disposal areas? Yes [ ] Nu [ ]

Location of Springs/Seeps	1			
	2			
	3			
	4			
	5			

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]

Location of Changes				
	2			
	3			
	4			
	5			
	6			

Did a failure occur on the **fill?** Yes [ ] **No** [ ]

If so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement	Mass 1		
	Mass 2		
	Mass 3		

Movement Characteristics

Comments

eams mined #5 Block, Upper Stockton, Lower Stockton, Coalburg, Middle Stockton, **Cedar** Grove seam was U/G **mined** on this permit, Wing dumping proposed **as** the construction ethod,

ower seven benches reclaimed **upper** three benches **under** construction Appears to be wing dumping on right flank **of** fill

S-5016-90
2

West Virginia
BURCO Resources
East Cazy Surface Mine

Permit: S-5016-90 Fill: # 2

Permit: S-5016-90 Fill: # 2

West Virginia
BURCO Resources
East Cazy Surface Mine

Permit: S-5016-90 Fill: # 2

Permit: S-5016-90 Fill: # 2

West Virginia
Cannelton, Inc.
Custer Hollow Surface Mine

Permit: S-78-55

Fill: #1

BLANK PAGE

Company: Cannelton, Inc.	**Fill:** # 1	Date of permit tile **review**	10/19/99
Permit: S-78-85	**Mine:** Custer Hollow **Surface Mine**	Date **fill**contruction started:	04/01/88
state: WV	**Was** this fill visited at ground **level?** **Yes** [ ] No [X]	Finished:	10/13/90
County: Kanawha		Number of fill size revisions:	
Latitude: 38-11-58	Had the fill been reclaimed at the time of the air survey? Yes [ ] No [ ]	%Sandstone in overburden:	***52***
Longitude: 81-22-14			
	Date of **survey:** 12/31/99		

	AS constructed		**Revision**	**Original design**
Type of Fill	Durable **Rock**			Durable Rock
***Size* of Fill**	2400	Length (ft)		2400
	22.1	Area (acres)		22.1
		Volume (mcy)		
Surface configuration	Concave			
Elevations	975	Crown (ft)		975
	760	Toe (ft)		760
Slopes	9 0	Toe **Foundation** (%)		9.0
	16 0	Fill Face (deg.)		16.0
Surface Drainage **Control**	Center Drain			Center Drain
Subsurface Drainage **Control**	Gravity Segregated			Gravity Segregated
Stability Analysis Software Used	REAME			REAME
Safety Factor	1.7	Static		1.7
		Seismic		
Engineering Properties (Spoil)	120	Unit Weight (pcf)		120
	37	Friction Angle		37
	0	Cohesion (psf)		0
Engineering Properties (Foundation)	95	**unit** Weight (pcf)		95
	34	Friction Angle (deg.)		**34**
	200	Cohesion (psf)		200
Phreatic Surface	None			None

		Appl. Phase Certification	**Appl.Quarterly Certification**	**Photography Type**
Construction Documentation and Certifications	Foundation Preparation	**Yes** [ ]	No [X]	None
	Underdrains	**Yes!**]	**No** [X]	None
	Surface Drains	**Yes** [ ]	No [X]	None
	Grading and Revegetation	**Yes** [ ]	No [X]	None
	Final Certification	**Yes!**]	**No** [X]	None

If a DRF, did the photographs **show the rock** blanket or core underdrain by gravity segregation? **Yes** [ ] No [X]

Foundation data: Text, Holes

Dip of strata relative to fill: Right Flank High **Away** from Fill

Were NOV's written on the fill? Yes [X] No [ ]

Aerial survey and Ground Level Review *

Surface drainage control working properly? **Yes** [ ] Nu[ ]

Subsurface drainage control working properly? Yes [ ] No[1

If active fill, was active spoil disposal determined to ***be*** on-going'! Yes [ ] No [ ]

If **spoil disposal** site inactive, how long **was** disposal operation idle (months)?

I a durable rock fill is under construction,

Approximately 80% durable rock by volume? **Yes** [1 No [1

If no to above, estimate **percentage:**

Discernable blanket or core **drain** forming? Yes [1 No [1

If the fill is completed, compare the ***size*** with the size in the latest pie-completion revision?

If the fill is **significantly** smaller, what is the reason according to the documentation or inspector?

Fill surface configuration:

Is **the** fill situated in landslide topography? **Yes** [ ] No [ ]

Were there ground **cracks** observed on the fill face or benches? **Yes** [ ] No [ ]

Number of benches on fill:

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks*	1			
	2			
	3			

Location "f Depressions*

Wcrc there **depressions on the fill** benches? **Yes [ ]** No [ ] **(Potential Water Depth)**

	1			
	2			
	3			
	4			
	5			

Location of Erosion Areas*

Were there areas of erosion on the till **benches?** Yes [ ] No [ ] **(Maximum Gully Depth)**

	1			
	2			
	3			
	4			
	5			

Location of Ground Bulges*

Were there bulges or hummocky terrain? **Yes [ ]** No [1

	1			
	2			
	3			
	4			
	5			

Location of Springs/Seeps*

Were there springs or seeps observed in **disposal** areas? Yes [ ] No [ ]

	1			
	2			
	3			
	4			
	5			

Location of Changes

Wcrc changes in **vegetation or spoil color observed** on till? Yes [ ] No [ ]

	1			
	2			
	3			
	4			
	5			
	6			

Movement Characteristics

Did a failure occur **on** the **fill?** Yes [ ] No [ ]

.f so, cnter the source of **information on the failure**:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement			
Mass 1			
Mass 2			
Mass 3			

Comments

oal seams: **Upper Winifrede Lower Winifred, Coalburg,** Stockton. Clarion, #5 Block; U/G miningoccurred **under** part of fill site, State NOV issued far contamination of rock core ith fines;

S-78-85
1

West Virginia
Cannelton, Inc.
Custer Hollow Surface Mine

Permit: S-78-85 Fill: #1

Permit: S-78-85 Fill: #1

BLANK PAGE

West Virginia
Cannelton Industries, Inc.
Cannelton 9S Surface Mine

Permit: 615-70C

Fill: Fill #1

BLANK PAGE

Company: Cannelton Industries, Inc.	**Fill:** Fill #1			Date of permit file review:	10/06/99
Permit: 615-70C	**Mine:** Cannelton 9S Surface Mine			Date fill contruction started:	06/01/78
State: WV	Was this fill visited at ground level?	Yes [ ]	No [X]	Finished:	11/01/88
County: Fayette				Number of fill size revisions:	
Latitude: 38-13-01	Had the fill been reclaimed at the time of the air survey?	Yes [X]	No [ ]	%Sandstone in overburden:	56
ongitude: 81-17-26	Date of survey:	12/20/99			

	As constructed		Revision	Original design
Type of Fill				Durable Rock
Size of Fill		Length (ft)	1300	1300
		Area (acres)	33.1	33.1
		Volume (mcy)		
Surface Configuration	Concave		Concave	Concave
Elevations	1350	Crown (ft)	1350	1350
	1000	Toe (ft)	1000	1000
Slopes	14.0	Toe Foundation (%)	14.0	14.0
	24.0	Fill Face (deg.)	24.0	24.0
Surface Drainage Control	Perimeter Center Drain		Perimeter Center Drain	Perimeter Center Drain
Subsurface Drainage Control	Gravity Segregated		Gravity Segregated	Gravity Segregated
Stability Analysis Software Used	SB Slope		SB Slope	Stabil
Safety Factor	1.5	Static	1.5	1.5
	1.2	Seismic	1.2	
Engineering Properties (Spoil)	110	Unit Weight (pcf)	110	110
	38	Friction Angle	38	38
	0	Cohesion (psf)	0	0
Engineering Properties (Foundation)		Unit Weight (pcf)		
		Friction Angle (deg.)		
		Cohesion (psf)		
Phreatic Surface	Phreatic Surface		Phreatic Surface	None

Construction Documentation and Certifications

	Appl. Phase Certification		Appl.Quarterly Certification	Photography Type
Foundation Preparation	Yes [ ]	No [ ]		None
Underdrains	Yes [ ]	No [X]	87/4	None
Surface Drains	Yes [X]	No [ ]	91/4	None
Grading and Revegetation	Yes [ ]	No [X]	99/3	None
Final Certification	Yes [X]	No [ ]	91/4	None

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ]	No [X]
Foundation data:		None
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [X]	No [ ]

Aerial Survey and Ground Level Review*

Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control working properly?	Yes [ ]	No [ ]
If active fill, was active spoil disposal determined to be on-going?	Yes [ ]	No [X]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
If a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [ ]
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [ ]	No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		
If the fill is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		
Is the fill situated in landslide topography?	Yes [ ]	No [ ]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [ ]
Number of benches on fill:		4

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	2			
	3			

Location of Depressions	Were there depressions on the fill benches? **Yes [ ]** No [ ]		**(Potential Water Depth)**
	1		
	2		
	3		
	4		
	5		

Location of Erosion Areas	Were there areas of erosion on the **fill** benches? Yes [ ] No [ ]		**(Maximum Gully Depth)**
	2		
	3		
	4		
	5		

Location of Ground Bulges	Were there bulges or hummocky terrain? **Yes [ ]** No [ ]		
	1		
	2		
	3		
	4		
	5		

Location of Springs/Seeps	Were there springs or seeps **observed** in **disposal** areas? Yes [ ] No [ ]		
	1		
	2		
	3		
	4		
	5		

Location of Changes	Were **changes** in vegetation or spoil color **observed** on fill? **Yes** [ ] No [ ]		
	3		
	4		
	5		
	6		

Movement Characteristics

Did a failure occur on the fill? Yes [X] No [ ]

If so, enter the sonrce of information on the failnre: Permit File

Stage of construction during failure: Active

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)	800		
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement	Rapid		
Extent of Failure Movement			

Cause of Movement

Mass 1	Inadequate Surface Drains
Mass 2	
Mass 3	

Comments

:oal Seams #5 Block; No original design found in permit; First design documents were to revise the original structure. Permit language indicates that revised plans replace the origna lans. Three revision to correct various enforcement actions taken. State violations issued for landslide in fill face

:arren areas at bench #3 quarter 3. Some volunteer tree growth on fill face.

615-70C
Fill #1

West Virginia
Cannelton Industries, Inc.
Cannelton 9S Surface Mine

Permit: 615-70C Fill: Fill #1

Permit: 615-70C Fill: Fill #1

West Virginia
Cannelton Industries, Inc.
Cannelton 9S Surface Mine

Permit: 615-70C Fill: Fill #1

West Virginia
Caternary Coal Co.
Stanley Heritage Surface Mine

Permit: S-3035-93

Fill: DRF #3

BLANK PAGE

Company:	Caternary Coal Co.	**Fill:**	DRF #3	Date of permit file review:	09/23/99
Permit:	S-3035-93	**Mine:**	Stanley Heritage Surface Mine	Date fill contruction started:	07/01/95
State:	WV	Was this fill visited at ground level?	Yes [ ] No [X]	Finished:	07/31/98
County:	Kanawha			Number of fill size revisions:	2
Latitude:	37-58-50	Had the fill been reclaimed at the time of the air survey?	Yes [X] No [ ]	%Sandstone in overburden:	90
ongitude:	81-28-25	Date of survey:	12/20/99		

	As constructed		Revision	Original design
Type of Fill			Durable Rock	Durable Rock
Size of Fill		Length (ft)	2350	4500
		Area (acres)		98.0
		Volume (mcy)	4.9	44.0
Surface Configuration	Concave		Concave	Flat
Elevations		Crown (ft)	1910	2040
		Toe (ft)	1590	1350
Slopes		Toe Foundation (%)	17.0	7.0
		Fill Face (deg.)	21.0	21.0
Surface Drainage Control			Perimeter	Perimeter
Subsurface Drainage Control			Gravity Segregated	Gravity Segregated
Stability Analysis Software Used				REAME
Safety Factor		Static		1.7
		Seismic		
Engineering Properties (Spoil)		Unit Weight (pcf)		128
		Friction Angle		38
		Cohesion (psf)		0
Engineering Properties (Foundation)		Unit Weight (pcf)		
		Friction Angle (deg.)		
		Cohesion (psf)		
Phreatic Surface				P-0.05

Construction Documentation and Certifications

	Appl. Phase Certification	Appl.Quarterly Certification	Photography Type
Foundation Preparation	Yes [X] No [ ]	95/2	Copies
Underdrains	Yes [X] No [ ]	97/4	Copies
Surface Drains	Yes [X] No [ ]	98/3	Copies
Grading and Revegetation	Yes [X] No [ ]	98/3	Copies
Final Certification	Yes [X] No [ ]	98/3	Copies

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation? Yes [ ] No [ ]

Foundation data: Pits, Text

Dip of strata relative to fill:

Were NOV's written on the fill? Yes [ ] No [X]

Aerial Survey and Ground Level Review *

Surface drainage control working properly? Yes [ ] No [ ]

Subsurface drainage control working properly? Yes [ ] No [ ]

If active fill, was active spoil disposal determined to be on-going? Yes [ ] No [ ]

If spoil disposal site inactive, how long was disposal operation idle (months)?

If a durable rock fill is under construction,

Approximately 80% durable rock by volume? Yes [ ] No [ ]

If no to above, estimate percentage:

Discernable blanket or core drain forming? Yes [ ] No [ ]

If the fill is completed, compare the size with the size in the latest pre-completion revision?

If the fill is significantly smaller, what is the reason according to the documentation or inspector?

Fill surface configuration: Concave

Is the fill situated in landslide topography? Yes [ ] No [ ]

Were there ground cracks observed on the fill face or benches? Yes [ ] No [ ]

Number of benches on fill:

	Location	Length (it)	Width (ft)	Depth (in)
Location of Cracks	2			

Location of Depressions

Were there depressions on the fill benches? Yes [ ] No [ ] (Potential Water Depth)

1
2
3
4
5

Location of Erosion Areas'

Were there areas of erosion on the fill benches? Yes [1 No [I (Maximum Gully Depth)

I
3
4
5

Location of Ground Bulges

Were there bulges or hummocky terrain? Yes [ ] No [ ]

1
2
3
4
5

Location of Springs/Seeps

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

I
2
3
4
5

Location of Changes

Were changes in vegetation or spoil color observed on till? *Yes* [ ] No [ ]

2
3
4
5
6

Movement Characteristics

Did a failure occur on the fill? Yes [ ] No [X]

If so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (A)			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement
Mass 1
Mass 2
Mass 3

comments

3R #2 moved the toe of DRF #3 400 feet upstream

3R #6 moved the toe of DRF #3 2000 feet upstream

lectrical resistivity soundings were used in the foundation investigations

S-3035-93
DRF #3

West Virginia
Caternary Coal Co.
Stanley Heritage Surface Mine

Permit: S-3035-93 Fill: DRF #3

Permit: S-3035-93 Fill: DRF #3

West Virginia
Caternary Coal Co.
Stanley Heritage Surface Mine

Permit: S-3035-93 Fill: DRF #3

West Virginia
Chafin Branch Coal Co.
Harrys Branch Surface Mine

Permit: 180-77

Fill: #1

BLANK PAGE

Company: Chafin Branch Coal Co.	Fill: # 1	Date of permit file review:	10/08/99
Permit: 180-77	**Mine:** Harrys Branch Surface Mine	Date fill contruction started:	09/01/82
State: WV	**Was** this fill visited at ground level? Yes [ ] No [X]	Finished:	12/01/94
County: Mingo		Number of fill size revisions:	1
Latitude: 37-31-50	Had the fill been reclaimed at the time of the air survey? Yes [X] No [ ]	%Sandstone in **overburden:**	
Longitude: 81-50-50			
	Date of **survey:** 12120199		

		As constructed	Revision	Original design
Type of Fill				Durable Rock
Size of Pill	Length *(8)*		2000	2200
	Area (acres)		50.8	**65.6**
	Volume (mcy)			
Surface Configuration		Flat		
Elevations	Crown (ft)		1700	1680
	Toe (ft)		1115	1040
Slopes	Toe Foundation (%)		13.0	9.0
	Fill **Face** (deg.)		**22.0**	IR.0
Surface Drainage Control			Chimney **Core**	Chimney Core
Subsurface Drainage Control			Gravity Segregated	Gravity Segregated
Stability Analysis **Software Used**			SB Slope	Other
Safety Factor	Static		1.6	
	Seismic		1.4	
Engineering Properties (Spoil)	Unit Weight (pcf)		**120**	**114**
	Friction Angle		**35**	**32**
	Cohesion (psf)		0	75
Engineering Properties (Foundation)	Unit Weight (pcf)		130	105
	Friction Angle (deg.)		*32*	*25*
	Cohesion (psf)		0	**300**
Phreatic Surface			Phreatic Surface	None

Construction Documentation and Certifications

Foundation Preparation	Yes [ ]	No [X]	**8214**	None
Underdrains	Yes [ ]	No [X]	**8213**	None
Surface Drains	**Yes** [X]	No [ ]	94/4	Copies
Grading and Revegetation	Yes [ ]	No [X]	**9811**	copies
Final Certification	Yes [X]	No [ ]	**9414**	Copies

If DRF, did the photographs show the **rock** blanket or core underdrain by gravity segregation? **Yes** [X] No [ ]

Foundation data: Pits

Dip of strata relative to fill: Right Flank High Away **From** Fill

Were NOV's written on the fill? Yes [X] No [ ]

Aerial Survey and Ground Level Review *

Surface drainage control working properly'! Yes [X] No ! 1

Subsurface drainage control working properly? Yes [X] No [ ]

If active fill, was active spoil disposal determined to be on-going? **Yes** [ ] No [X]

If spoil disposal site inactive, how long was disposal operation idle (months)?

If a durable rock fill is **under construction,**

Approximately 80% durable rock by volume? Yes [ ] No [ ]

If no to above. estimate percentage:

Discernable blanket or core drain forming? Yes ! 1 No [1

If the **fill** is completed, compare **the** size with the size in the latest pre-completion revision?

If the fill is significantly smaller. what is the reason according to the documentation or inspector?

Fill surface configuration: Concave

Is the **fill** situated in landslide topography? **Yes** [ ] No [X]

Were there ground **cracks** observed on the till face or benches? Yes [ ] No [ ]

Number of benches on fill: 13

Location "f Cracks*

1
2
3

Location "f Depressions*

Were there **depressions** on the fill benches? Yes [ ] No [ ] **(Potential Water Depth)**

1
2
3
4
5

Location of Erosion Areas*

Were there areas of erosion on the **fill benches'!** **Yes** [ ] No [ ] **(Maximum Gully Dcpfh)**

2
3
4
5

Location of **Ground Bulges***

Were there bulges or **hummocky** terrain? Yes [ ] No [ ]

1
2
3
5

Location of Springs/Seeps*

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

2
3

Location of Changes*

Were **changes** in vegetation or spoil color observed on fill? Yes [ ] No [ ]

1
2
3
4
5
6

Movement Characteristics*

Did a failure occur on the fill? Yes [X] No [1

fso, enter **the** source of information on **the** failure:

Stage of construction during **failure:**

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport **Distance** (A)			
Rate of Movement			
Extent of Failure Movement			
Cause of **Movement**	**Mass 1**		
	Mass 2		
	Mass 3		

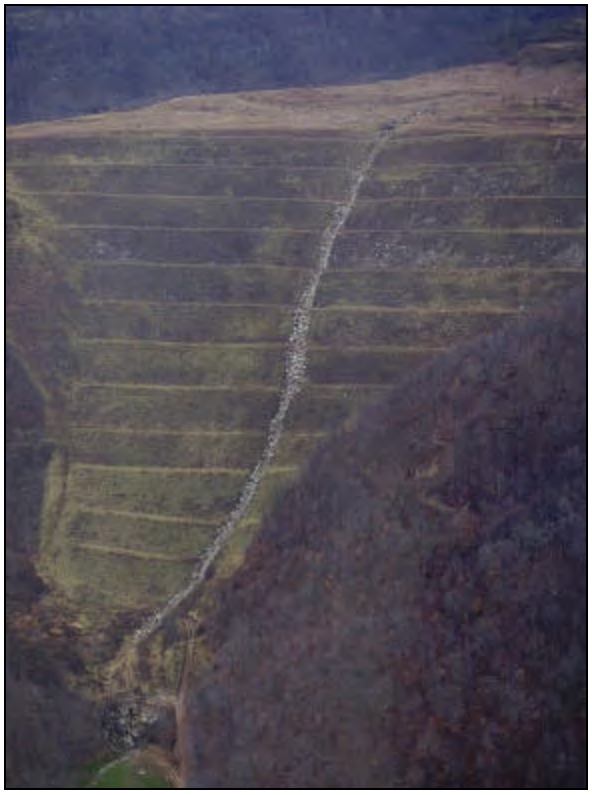
Comments

oal seams: Cedar Grove, Alma; No original design in permit, Modification #1 used as original design, IBR#3 was final certification of fill design and construction, State NOVs issued or slides in fill during construction and failure to follow permit plan while constructing fill. IBR#3 reduced the face slope.

ome erosion and bare areas on benches 8-11 on right ½ of fill.

180-77
1

West Virginia
Chafin Branch Coal Co.
Harrys Branch Surface Mine



Permit: 180-77 Fill: #1

Permit: 180-77 Fill: #1

BLANK PAGE

West Virginia
Chafin Branch Coal Co.
Rich Fork of Harrys Branch

Permit: S-5015-86

Fill: #1

BLANK PAGE

	As constructed		Revision	Original design
Type of Fill	Durable Rock		Durable Rock	Durable Rock
Size of Fill		Length (ft)	1320	2000
		Area (acres)	27.0	37.0
		Volume (mcy)		4.0
Surface Configuration	Concave		Concave	Concave
Elevations		Crown (ft)	1730	1750
		Toe (A)	1209	1170
Slopes		Toe Foundation (%)	39.0	12.0
	31.0	Fill Face (deg.)	31.0	27.0
Surface Drainage Control	Center Drain		center Drain	Center Drain
Subsurface Drainage Control	Gravity Segregated		Gravity Segregated	Gravity Segregated
Stability Analysis Software Used			Purdu	REAME
Safety Factor		Static	1.5	1.5
		Seismic		
Engineering Properties (Spoil)		Unit Weight (pcf)	125	135
		Friction Angle	35	37
		Cohesion (psf)	0	0
Engineering Properties (Foundation)		Unit Weight (pcf)		
		Friction Angle (deg.)		
		Cohesion (psf)		
Phreatic Surface			Phreatic surface	None

Construction Documentation and Certifications

	Appl. Phase Certification		Appl. Quarterly Certification	Photography Type
Foundation Preparation	Yes [ ]	No [ ]		
Underdrains	Yes [ ]	No [X]	9412	Color
Surface Drains	Yes [ ]	No [ ]		
Grading and Revegetation	Yes [ ]	No [ ]		
Final Certification	Yes [X]	No [ ]	Y	

Aerial survey and Ground Level Review*

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ]	No [ ]
Foundation data:		None
Dip of strata relative to fill:		Toward Fill
Were NOV's written on the fill?	Yes [X]	No [ ]
Surface drainage control working properly?	Yes [ ]	No [X]
Subsurface drainage control working properly?	Yes [ ]	No [X]
If active fill, was active spoil disposal determined to be on-going?	Yes [ ]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
If a durable rock fill is under construction,		
Approximately 80% durable rock by volume'?	Yes [ ]	No [ ]
If no to above. estimate percentage:		
Discernable blanket or core drain forming?	Yes [ ]	No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		Unknown
If the fill is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		Concave
Is the fill situated in landslide topography?	Yes [X]	No [ ]
Were there ground cracks observed on the fill face or benches!	Yen [X]	No [ ]
Number of benches on fill:		11

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	1 B toe-1, Q I 2			

Location of Depressions

Were there depressions on the fill benches? Yes [X] No I 1 (Potential Water Depth)

1 B toe-1 I
2
3
5

Location of Erosion Areas

Were there areas of erosion on the fill benches? Yes [X] No [ ] (Maximum Gully Depth)

I B foe-I, Q I
2
3
4
5

Location of Ground Bulges

Wcrc there bulges or hummocky terrain? Yes [X] No [ ]

1
2
3
4
5

Location of Springs/Seeps

Were there springs or seeps observed in disposal areas? Yes [X] No [ ]

Describe location of seep

I B toe-1, Q I
2
3
4

Location of Changes

Were changes in vegetation or spoil color observed on till? Yes [X] No [ ]

!
2
3
4
5
6

Movement Characteristics

Did a failure occur on the fill? Yes [X] No [ ]

'so, enter the source of information on the failure: Permit File, Field Measurements, DEP Inspector, Co

Stage of construction during failure: During Construction

	Mass I	Mass 2	Mass 3
Bench #	6	9	10
Length (ft)			
Width (ft)			
Scarp Height (R)			
Depth to Slip Plane (it)			
Transport Distance (ft)			
Rate of Movement	Slow	Slow	Slow
Extent of Failure Movement	Slip	Slip	Slip

Cause of Movement

Mass 1	Inadequate UnderDrains, Underground Mine Drainage, Underground
Mass 2	Inadequate UnderDrains, Underground Mine Drainage, Underground
Mass 3	Inadequate UnderDrains, Underground Mine Drainage, Underground

Comments

cording to 4/1 U93 mine inspection report, NOV # 7 had been issued " for failure to assure static safety factor of 1 5 " By the 7/12/91 quarterly certification, seepages had been ntified and excavated and drains were being installed Symptoms of failure continued to be reported in the 11/8/93 inspection report On 1/18/94 a consultant to the mining company omitted a report to DEP discussing the nature of the stability problems and proposing 4 phases of corrective measurer. The report identified several slip areas which were dominantly below the elevation of the Eagle Coalbed outcrop The remedial measures included regrading parts of the fill face. reconfiguration of the center drain where necessary, d construction of an additional drain that will intersect old mine workings in the Eagle seam The report noted that the structure of the coalbed dips into the fill; there was no record t any open mine portals beneath tho fill were ever sealed; and no discharge horn the outcrop had been observed prior to and during construction of the fill In addition to the possible luence of uncontrolled drainage from tho mine portals, the report concluded that settlement on the fill resulted from subsidence of underground working in the Eagle Coalbed The cument proposed inspections 2 times a week and the installation of a piezometer to monitor the fill's stability. The fill was stable at that time Plan maps dated 2/94 and 5/94 of the fi ow several slump areas between the 3rd and 10th benches. and a long subsidence crack above and roughly parallel to bench 11 Based on the longitudinal section, the maximum ckness of the till is 100 ft or less and rho fill rests on a steep slope starting at the toe As of the field visit, slips and seepages continue to occur The helicopter survey also noted a se arcuate cracks near the toe This may correspond to the ground-level inspection report's mention of ground saturation in the lower 2 benches (the crack pattern may not have been cernable at ground level) Ponding was prevalent on the benches and there were appearances of over-staking of spoil in some placer Repairs of past failures were noted More recent

S-5015-86
1

West Virginia
Chafin Branch Coal Co.
Rich Fork of Harrys Branch

Permit: S-5015-86 Fill: #1

Permit: S-5015-86 Fill: #1

West Virginia
Chafin Branch Coal Co.
Rich Fork of Harrys Branch

Permit: S-5015-86 Fill: #1

Permit: S-5015-86 Fill: #1

West Virginia
Chafin Branch Coal Co.
Skillet Creek Surface Operations

Permit: S-5082-86

Fill: Fill #1

BLANK PAGE

	As constructed		Revision	Original design
Type of Fill	Durable **Rock**			Durable **Rock**
Sine of Fill	1630	Length *(A)*		1970
	37.4	Area (acres)		54.3
	8.6	Volume (mcy)		7.7
Surface Configuration	Flat			
Elevations	1620	Crown *(A)*		1640
	1040	Toe (ft)		1035
Slopes	12.0	Toe Foundation (%)		15.0
	24.0	**Fill Face** (deg.)		23.0
Surface Drainage Control	Perimeter Center Drain			Center **Drain**
Subsurface Drainage Control	Gravity Segregated			Gravity Segregated
Stability **Analysis Software Used**	REAME			REAME
Safety Factor	1.5	Static		**1.6**
		Seismic		
Engineering Properties (Spoil)	135	**Unit** Weight (pcf)		**135**
	35	Friction Angle		*31*
	0	Cohesion (psf)		0
Engineering Properties (Foundation)	120	Unit Weight (pcf)		120
	28	Friction Angle **(deg.)**		28
	250	Cohesion (psf)		250
Phreatic Surface	Phreatic **Surface**			Phreatic Surface

		Appl. Phase Certification		Appl.Quarterly Certification	Photography Type
Construction Documentation and Certifications	Foundation Preparation	Yes [X]	No [ ]	9512	None
	Underdrains	Yes [X]	No [ ]	97/1	None
	Surface Drains	***Yes*** [X]	No [ ]	9912	None
	Grading and Revegetation	Yes [X]	No [ ]	9912	None
	Final **Certification**	Yes [X]	No [ ]	9912	None

If a DRF, did the photographs **show** the **rock** blanket or core underdrain by gravity segregation?	**Yes** [ ]	No [ ]
Foundation data:		Pits
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [X]	No [ ]

Aerial Survey and Ground **Level Review** *

Surface drainage control working properly?	Yes [X]	**No** [ ]
Subsurface drainage control working properly?	Yes [X]	No [ ]
If active till. was active spoil disposal determined to he **on-going?**	**Yes** [ ]	***No*** [X]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
If a durable **rock** till is under construction,		
Approximately 80% durable **rock** by volume?	Yes [ ]	No [ ]
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [ ]	No [ ]
If the till **is** completed, compare **the** size with the size in the latest pie-completion revision?		
If **the** fill is significantly **smaller,** what is the reason according to the documentation or inspector?		
Fill **surface** configuration:		
Is the fill situated in landslide topography?	**Yes** [ ]	No [ ]
Were there ground cracks observed on the fill face **or** benches?	Yes [ ]	No [ ]
Number of benches on till:		13

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *	2			
Location of Depressions *	Were there depressions on the fill benches? **Yes** [ ] No [ ]			**(Potential Wafer Depth)**
	2			
	3			
	5			
Location of Erosion Areas *	**Were** there **areas** of erosion on the fill benches? Yes [ ] No [ ]			**(Maximum Gully Depth)**
	I			
	2			
	3			
	4			
	5			
Location of Ground Bulges *	**Were** there bulges or **hummocky** terrain? **Yes** [ ] No [ ]			
	1			
	2			
	3			
	4			
	5			
Location of Springs/Seeps *	Were there springs or **seeps** observed **in** disposal areas? Yes [1 No [I			
	1			
	2			
	3			
	4			
	5			
Location of Changes *	**Were changes in** vegetation or **spoil** color observed on **fill?** **Yes** [ ] Nu [ ]			
	2			
	3			
	4			
	5			
	6			
Movement Characteristics *	**Did** a failure **occur** on the fill? Yes [ ] Nu [ ]			
	f **so,** enter the source of information on the **failure:**			
	Stage of construction during failure:			
		Mass 1	**Mass 2**	**Mass 3**
	Bench #			
	Length (ft)			
	Width (ft)			
	Scarp Height (ft)			
	Depth **lo** Slip Plane (ft)			
	Transport Distance (ft)			
	Rate of Movement			
	Extent of Failure Movement			
	Cause of Movement **Mass 1**			
	Mass 2			
	Mass 3			
Comments	ıree permit **modifications.** IBR #2 changed **drainage** ditches; Fill located 200' above active U/G mine (Jumacris #19); Wing **dumping** occurred during **fill** construction: **NOY** #6 wrı r **failing to** remove organics from fill site osion **on** benches 2,3,4 terrace face			

S-5082-86
Fill #1

West Virginia
Chafin Branch Coal Co.
Skillet Creek Surface Operations

Permit: S-5082-86 Fill: Fill #1

Permit: S-5082-86 Fill: Fill #1

BLANK PAGE

West Virginia
Colony Bay
No Mine Identifier

Permit: S-15-81

Fill: #5

BLANK PAGE

Company: Colony Bay	**Fill:** # 5			Date of permit file review:	10/26/99
Permit: S-15-81	**Mine:** N/A			Date fill contruction started:	11/30/87
State: WV	Was this fill visited at ground level?	Yes [ ]	No [X]	Finished:	09/01/96
County: Boone				Number of fill size revisions:	1
Latitude: 37-53-04	Had the fill been reclaimed at the time of the air survey?	Yes [X]	No [ ]	%Sandstone in overburden:	60
ongitude: 81-41-38	Date of survey:	12/31/99			

	As constructed		Revision	Original design
Type of Fill			Durable Rock	Chimney
Size of Fill		Length (ft)	5400	2350
		Area (acres)		
	22.7	Volume (mcy)		
Surface Configuration	Flat		Flat	
Elevations		Crown (ft)		1835
		Toe (ft)	1100	1360
Slopes		Toe Foundation (%)	5.2	20.0
		Fill Face (deg.)	24.6	26.6
Surface Drainage Control			Center Drain	Chimney Core
Subsurface Drainage Control			Gravity Segregated	Chimney Core
Stability Analysis Software Used			REAME	Other
Safety Factor		Static	1.7	1.9
		Seismic		
Engineering Properties (Spoil)		Unit Weight (pcf)	102	102
		Friction Angle	37	37
		Cohesion (psf)	0	0
Engineering Properties (Foundation)		Unit Weight (pcf)		
		Friction Angle (deg.)		
		Cohesion (psf)		
Phreatic Surface			None	None

		Appl. Phase Certification		Appl.Quarterly Certification	Photography Type
Construction Documentation and Certifications	Foundation Preparation	Yes [ ]	No [X]		
	Underdrains	Yes [ ]	No [X]	89/4	Color
	Surface Drains	Yes [ ]	No [X]	96/2	Color
	Grading and Revegetation	Yes [ ]	No [X]	96/4	Color
	Final Certification	Yes [ ]	No [ ]		

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [X]	No [ ]
Foundation data:		Text
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [X]	No [ ]

Aerial Survey and Ground Level Review*

Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control working properly?	Yes [X]	No [ ]
If active fill, was active spoil disposal determined to be on-going?	Yes [ ]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
If a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [ ]
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [ ]	No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		Unknown
If the fill is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		Flat
Is the fill situated in landslide topography?	Yes [ ]	No [X]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [X]
Number of benches on fill:		

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *				

Location of Depressions *

Were there **depressions on the fill** benches? **Yes** [ ] **No** [X] **(Potential Water Depth)**

2
3
5

Location of Erosion Areas *

Were there areas of erosion on **the fill** benches? Yes [ ] **No** [X] **(Maximum Gully Depth)**

1
2
3
4
5

Location of Ground Bulges *

Were there bulges or hummocky terrain? **Yes** [ ] **No** [X]

2
4
5

Location "f Springs/Seeps *

Were there springs or seeps observed **in disposal** areas? Yes [ ] **No** [X]

1
2
4
5

Location of Changes *

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [X]

1
2
3
4
5
6

Movement Characteristics *

Did a failure occur on the fill? Yes [ ] No [X]

f so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Exteut of Failure Movement			

Cause of Movement **Mass 1**
Mass 2
Mass 3

Comments

he revegitation is still setting in, i.e. there are some bare spots (not erosion related). Helicopter photoes also may indicate minor seepage and ponding. In the reviewers judgement, if is is the case, its not significant enough to tabulate above. The shape of the fill is similar to the permit design. Includes a long crown and a relatively steep face. Can't tell if there's a gnificant size difference. The as-built fill seems to be a durable-rock type with a center drain (as designed in the revision). Permit application indicates 80 % sandstone. Disparity wit bulated data may be a matter of which coal seam in the stratigraphic column was the lowest one mined. A 6/22/87 letter report from Colony Bay refers to the "retained slaking test." his test seems less rigorous than the SDI. The values listed are all 100. Could not find any phreatic-surface data.

S-15-81
5

West Virginia
Colony Bay
No Mine Identifier

Permit: S-15-81 Fill: #5

Permit: S-15-81 Fill: #5

West Virginia
Colony Bay
No Mine Identifier

Permit: S-15-81 Fill: #5

West Virginia
Costain Coal
Pax No. 5

Permit: S-3023-91

Fill: #1

BLANK PAGE

Company:	Costain Coal	**Fill:**	# 1	Date of permit file review:	11/16/99
Permit:	S-3023-91	**Mine:**	Pax No. 5	Date fill contruction started:	07/22/92
State:	WV	Was this fill visited at ground level?	Yes [ ] No [X]	Finished:	10/20/94
County:	Fayette			Number of fill size revisions:	
Latitude:	37-54-20	Had the fill been reclaimed at the time of the air survey?	Yes [X] No [ ]	%Sandstone in overburden:	54
ongitude:	81-18-05	Date of survey:	12/20/99		

	As constructed	Revision	Original design
Type of Fill	Durable Rock		Durable Rock
Size of Fill	Length (ft)		1640
	Area (acres)		
	Volume (mcy)		2.6
Surface Configuration	Flat		Flat
Elevations	Crown (ft)		2440
	Toe (ft)		2030
Slopes	Toe Foundation (%)		12.0
	Fill Face (deg.)		26.6
Surface Drainage Control	Perimeter		Perimeter
Subsurface Drainage Control	Gravity Segregated		Gravity Segregated
Stability Analysis Software Used			SB Slope
Safety Factor	Static		1.7
	Seismic		
Engineering Properties (Spoil)	Unit Weight (pcf)		110
	Friction Angle		36
	Cohesion (psf)		0
Engineering Properties (Foundation)	Unit Weight (pcf)		145
	Friction Angle (deg.)		45
	Cohesion (psf)		2500
Phreatic Surface			None

Construction Documentation and Certifications

	Appl. Phase Certification	Appl.Quarterly Certification	Photography Type
Foundation Preparation	Yes [ ] No [X]	92/2	Color
Underdrains	Yes [ ] No [X]	92/3	Color
Surface Drains	Yes [ ] No [X]	94/1	Color
Grading and Revegetation	Yes [ ] No [X]	94/2	Color
Final Certification	Yes [X] No [ ]	Y	Color

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation? Yes [ ] No [X]

Foundation data: Text

Dip of strata relative to fill:

Were NOV's written on the fill? Yes [X] No [ ]

Aerial Survey and Ground Level Review*

Surface drainage control working properly? Yes [ ] No [ ]

Subsurface drainage control working properly? Yes [ ] No [ ]

If active fill, was active spoil disposal determined to be on-going? Yes [ ] No [ ]

If spoil disposal site inactive, how long was disposal operation idle (months)?

If a durable rock fill is under construction,

Approximately 80% durable rock by volume? Yes [ ] No [ ]

If no to above, estimate percentage:

Discernable blanket or core drain forming? Yes [ ] No [ ]

If the fill is completed, compare the size with the size in the latest pre-completion revision? Same

If the fill is significantly smaller, what is the reason according to the documentation or inspector?

Fill surface configuration: Flat

Is the fill situated in landslide topography? Yes [ ] No [X]

Were there ground cracks observed on the fill face or benches? Yes [ ] No [ ]

Number of benches on fill: 7

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	2			
	3			

Location of Depressions

Were there depressions on the till benches? **Yes** [ ] No [ ] **(Potential Water Depth)**

1
2
3
4
5

Location of Erosion Areas'

Were there areas of erosion on the till **benches!** **Yes** [ ] No [ ] **(Maximum Gully Depth)**

2
3
5

Location of Ground Bulges

Were there bulges or hummocky terrain? Yes [ ] No [ ]

1
2
3
4
5

Location of Springs/Seeps

Were there springs or seeps observed in disposal **areas'?** **Yen** [ ] ***No*** [ ]

1
2
3
4
5

Location α Changes

Were changes in vegetation or spoil color observed on fill? Yes [X] No [ ]

1 Toe B2-3
2 BI-2
3
4
5
6

Movement Characteristics

Did a failure occur on the till? Yes [ ] No [X]

so, **enter** the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height **(ft)**			
Depth **to** Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement	**Mass 1**		
	Mass 2		
	Mars 3		

Comments

·mit application proposes 1 enlarge or build upon most (up to highest **bench**) of preexisting valley **fill** constructed **under** older **permit** (S-3015 or S-3023-89) The soil is to be noved in the toe area **where** sandstone subcrops **All** strata (including the **shale)** meet the SDI limit for durability The stability analysis recognises 2 soil types Soil 1 may be the ndation **material**, bur the cross section indicates that it is the old fill Don't **know** what the friction angle and cohesion are so high Are they supposed to represent the sandstone at tc ter soil removal)? If so, the cross-section doesn't match it **The 6/29/92** inspection report observes >50% **fins** material during **the** end dumping The cert. photos seem to agree **The** t report claims 80% durable **material** Helicopter photos **show dark** areas **along** the **ride** drains in **the** lower part **of** the fill (tabulated above) Also, **a** few small, isolated **dark** spots i higher reaches (not significant enough to tabulate)

S-3023-91
1

West Virginia
Costain Coal
Pax No. 5

Permit: S-3023-91 Fill: #1

BLANK PAGE

West Virginia
Cumberland River Coal
No Mine Identifier

Permit: S-38-79

Fill: #2

BLANK PAGE

Company:	Cumberland River Coal	**Fill:**	# 2	Date of permit file review:	10/13/99
Permit:	S-38-79	**Mine:**	N/A	Date fill contruction started:	04/01/92
State:	WV	Was this fill visited at ground level?	Yes [X] No [ ]	Finished:	/ /
County:	Mingo	Date of visit:	02/23/00	Number of fill size revisions:	1
Latitude:	37-40-34	Had the fill been reclaimed at the time of the air survey?	Yes [X] No [ ]	%Sandstone in overburden:	
Longitude:	82-03-23	Date of survey:	12/21/99		

Type of Fill	Chimney		Durable Rock	Durable Rock
Size of Fill		Length (ft)	3000	2800
		Area (acres)		
		Volume (mcy)	10.0	13.6
Surface Configuration	Flat		Flat	Flat
Elevations		Crown (ft)	1940	1920
		Toe (ft)	1420	1360
Slopes		Toe Foundation (%)	9.2	
	25.0	Fill Face (deg.)	26.6	26.6
Surface Drainage Control	Perimeter		Perimeter	Chimney Core
Subsurface Drainage Control			Gravity Segregated	Chimney Core
Stability Analysis Software Used				
Safety Factor		Static	1.5	
		Seismic		
Engineering Properties (Spoil)		Unit Weight (pcf)	135	
		Friction Angle	35	
		Cohesion (psf)	0	
Engineering Properties (Foundation)		Unit Weight (pcf)		
		Friction Angle (deg.)		
		Cohesion (psf)		
Phreatic Surface			Phreatic Surface	

		Appl. Phase Certification		Appl.Quarterly Certification	Photography Type
Construction Documentation and Certifications	[illegible]	[illegible]	[illegible]	[illegible]	Copies
	Underdrains	Yes [ ]	No [X]	94/4	Copies
	Surface Drains	Yes [ ]	No [ ]		
	Grading and Revegetation	Yes [ ]	No [ ]		
	Final Certification	Yes [ ]	No [ ]		

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ]	No [X]
Foundation data:		None
Dip of strata relative to fill:		Right Flank High
Were NOV's written on the fill?	Yes [X]	No [ ]

Aerial Survey and Ground Level Review*

Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control working properly?	Yes [X]	No [ ]
If active fill, was active spoil disposal determined to be on-going?	Yes [ ]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
If a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [ ]
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [ ]	No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		Smaller
If the fill is significantly smaller, what is the reason according to the documentation or inspector?		Previously mined, pinch
Fill surface configuration:		Flat
Is the fill situated in landslide topography?	Yes [ ]	No [X]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [X]
Number of benches on fill:		10

	Location	Length (ft)	Width (ft)	Depth (in)
Location "f Cracks	3			

Location of Depressions

Were there depressions on the fill benches? Yes [XI No [ ] **(Potential Water Depth)**

1 Bench 1, Quarters 1-4
2 Bench 2, Quarter 4
3 Bench 3, Quarter 4
4 Bench 5, Quarters 3-4
5

Location of Erosion Areas

Were there areas of erosion on the fill benches? Yes [X] No [ ] **(Maximum Gully Depth)**

1 Benches 6-7, Qtrs 1-2
2
3
4
5

Location "f Ground Bulges

Were **there** bulges or hummocky terrain? Yes [X] No [ ]

1 Benches 7-8, Quarter 1
2
3
5

Location of Springs/Seeps

Were **there** springs or seeps observed in disposal areas? **Yes** [ ] No [X]

1
2
3
4
5

Location of Changes'

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [X]

1
2
3
4
5.
6

Movement Characteristics *

Did a failure ocenr on the fill? Yes [ ] No [X]

f so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement	**Mass 1**		
	Mass 2		
	Mass 3		

Comments

:art and completion of fill construction not recorded for lack of specific dates from field report and insufficient certifications in file. Field report indicates final grading in 8/95. % ndstone was estimated during the permit review, but geologic column (if present in the file) was not copied for measurement. Estimated 50-90 %. Field report indicates some hard ndstone exposure on the finished fill. The 4th quarterly cert. for 1994 indicated a decision to construct some of the underdrain since the gravity-fed system was not working properly ıotoes from the same cert. show end-dumping into standing water. Cannot answer the 80 % durable rock question with certainty. Based on some of the cert. photoes, an estimate of ; % was made. Whether a blanket drain seemed to be forming depended on which photo was observed. A thin blanket drain in general. Exception is the 1994 quarterly cert. mentioıt ove; but unclear if the underdrain is gravity-fed or constructed in this case. Helicopter photoes indicate that the fill crown is much shorter than as-designed. The field report identifie turation in lower portion of the fill. It shows a spatial relation between ponding/dipressions and the dip of the strata. Overall the present condition of the fill appeared to be fairly goo ıe subsurface may be of concern for the long term.

S-38-79
2

West Virginia
Cumberland River Coal
No Mine Identifier

Permit: S-38-79 Fill: #2

Permit: S-38-79 Fill: #2

West Virginia
Cumberland River Coal
No Mine Identifier

Permit: S-38-79 Fill: #2

Permit: S-38-79 Fill: #2

West Virginia
Cumberland River Coal
No Mine Identifier

Permit: S-5027-89

Fill: #2

BLANK PAGE

Company:	Cumberland River Coal	Fill:	# 2	Date of permit file review:	09/08/99
Permit:	S-5027-89	**Mine:**	N/A	Date fill contruction started:	07/01/92
State:	WV	Was this fill visited at ground **level?**	**Yes** [X] No [ ]	Finished:	05/01/97
County:	Logan	Date of visit:	02/23/00	Number of till size revisions:	I
Latitude:	37-42-40	Had the **fill** been reclaimed at the time of the air **survey?**	Yes [ ] No [X]	%Sandstone in overburden:	64
Longitude:	82-03-03	Date of survey:	12/21/99		

	As constructed		Revision	Original design
Type of Fill	Durable Rock		Durable Rock	Durable Rock
Size of Fill	1280	Length (ft)	1280	2300
	6.0	**Area (acres)**	6.0	24.0
	2.3	Volume (mcy)	2.3	10.6
Surface Configuration	Flat			
Elevations	1800	Crown (ft)	1800	1790
	1315	Toe (ft)	1315	1230
Slopes	32 0	**Toe** Foundation (%)	32.0	32.0
	19.0	Fill Face (deg.)	19.0	23.0
Surface Drainage Control	Center Drain		Perimeter	center Drain
Subsurface Drainage Control	Gravity Segregated		Gravity Segregated	Gravity Segregated
Stability Analysis Software Used	REAME		REAME	REAME
Safety Factor	1.5	Static	1.5	1.6
	1.2	Seismic	1.2	1.5
Engineering Properties **(Spoil)**	125	Unit Weight (pcf)	125	120
	35	Friction Angle	35	30
	0	Cohesion (psf)	0	0
Engineering Properties (Foundation)	125	Unit Weight (pcf)	125	135
	35	Friction Angle (deg.)	35	35
	0	Cohesion (psf)	0	0
Phreatic Surface	P-0.05		P-0.05	None

		Appl. Phase Certification		**Appl.Quarterly Certification**	**Photography Type**
construction **Documentation and Certifications**	Foundation Preparation	Yes [ ]	No [ ]		None
	Underdrains	**Yes** [X]	No [ ]	92/3	Color
	Surface Drains	Yes [X]	No [ ]	97/2	Color
	Grading and Revegetation	Yes [X]	No [ ]	97/2	Color
	Final Certification	**Yes** [X]	No [ ]	9712	Color

Aerial survey and Ground Level Review *

If a DRF. did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ]	No [X]
Foundation data:		None
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [ ]	No [X]
Surface drainage control working properly?	**Yes** [X]	No [ ]
Subsurface drainage control working properly?	Yes [X]	No [ ]
If active **fill,** was active spoil disposal determined to be on-going?	**Yes** [ ]	No [X]
If spoil disposal site inactive, how long was disposal operation **idle** (months)?		
f a durable rock till is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [ ]
If no to above. estimate percentage:		
Discernable blanket or core drain forming?	**Yes** [ ]	No [ ]
If the fill **is** completed, compare the size with the size in the latest pre-completion revision?		Same
If the fill **is** significantly smaller. **what** is the reason according to the documentation or inspector?		Don't Know
Fill surface configuration:		Convex
Is the fill **Situated** in landslide topography?	Yes [ ]	No [X]
Were there ground cracks observed on the fill face or benches?	Yes [XI	No [ ]
Number of benches on fill:		11

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	**Bench** #5, Qtr 2	35	5	3
	Bench #5,Qtr 3	40	6	5
	3			

	Were there **depressions** on the **fill benches?** Yes [X] No [ ]			**(Potential Water Depth)**
Location of Depressions	**Bench** #7, Qtr **3**	25	**8**	**8**
	Bench #5, Qtr **3**	35	**4**	**8**
	3			
	4			
	5			

	Were there areas **of** erosion on the fill benches? Yes [X] No [ ]			**(Maximum Gully Depth)**
Location "f Erosion Areas	Bench #9, Qtr 2	40	50	3
	2			
	3			
	4			

	Were there bulges or hummocky terrain? Yes [ ] **No** [X]
Location of Ground Bulges	
	2
	3
	4
	5

	Were there springs or seeps **observed in disposal** areas? Yes [ ] No [X]
Location of Springs/Seeps	
	3
	4
	5

	Were changes in vegetation or **spoil** color observed on **fill?** **Yes** [ ] No [X]
Location of Changes	
	2
	3
	4
	5
	6

Movement Characteristics

Did **a failure** occur on the **fill?** Yes [X] No [ ]

'so, **enter** the source **of** information on the **failure:** Field Measurements

Stage of construction during failure:

	Mass 1	**Mass 2**	**Mans 3**
Bench #	**P4**		
Length (ft)	35		
Width (ft)	25		
Scarp **Height** (ft)	2		
Depth to Slip Plane (ft)	**8**		
Transport Distance (ft)	55		
Rate of Movement	Slow		
Extent **of** Failure Movement	**Slip**		

Cause of Movement **Mass 1** Inadequate Surface Drains, **Durability of Rock**

Mass 2

Mass 3

Comments

al seam Dorothy (Coalburg), Stockton, #5 Block; Three modiofications to **fill, One** revised size **Two** changed construction and final configuration characteristics Slip at bench #4 a sloughing **info** center drain which would eventually be caught in sediment pond Wing Dumping occurred during construction of fill The **wind** dump area is eroded **due** to epness

S-5027-89
2

West Virginia
Cumberland River Coal
No Mine Identifier

Permit: S-5027-89 Fill: #2

Permit: S-5027-89 Fill: #2

West Virginia
Cumberland River Coal
No Mine Identifier

Permit: S-5027-89 Fill: #2

Permit: S-5027-89 Fill: #2

West Virginia
Cyprus Kanawha Corp.
Sycamore South Mtn. Top Job

Permit: S-6020-89

Fill: Laurel Branch #1

BLANK PAGE

Company:	Cyprus Kanawha Corp.	**Fill:**	Laurel Branch #I	Date of permit file review:	09/23/99
Permit:	S-6020-89	**Mine:**	Sycamore South Mtn. **Top** lob	Date **fill** contruction started:	07/01/93
State:	WV	Was this fill visited at ground **level?**	*Yes* [ ] No [X]	Finished:	10/01/97
County:	Fayette			Number of **fill** size revisions:	
Latitude:	38-03-11	Had the **fill** been reclaimed at the time of the air survey?	Yes [X] No [ ]	%Sandstone in overburden:	68
Longitude:	81-20-53				
		Date of **survey:**	12/20/99		

	As constructed	Revision	Original design
Type of Pill			Durable Rack
Size of Pill		Length (A)	3200
		Area (acres)	
		Volume (mcy)	
surface Configuration	Concave		Concave
Elevations		Crown (ft)	1950
		Toe (ft)	980
Slopes		Toe Foundation (%)	12.0
		Fill Face (deg.)	23.0
Surface Drainage Control			Perimeter
Subsurface Drainage Control			Gravity Segregated
Stability Analysis Software Used			REAME
Safety Factor		Static	1.6
		Seismic	
Engineering Properties (Spoil)		Unit Weight (pcf)	165
		Friction Angle	40
		Cohesion (psf)	0
Engineering Properties (Foundation)		Unit Weight (pcf)	
		Friction **Angle** (deg.)	
		Cohesion (psf)	
Phreatic Surface			None

Construction Documentation and certifications

	Appl. Phase **certification**		**Appl.Quarterly certification**	Photography **Type**
Foundation Preparation	Yes [X]	No [1	95/4	Copies
Underdrains	Yes [X]	No [ ]	95/1	Copies
Surface Drains	Yes [X]	No [ ]	98/1	Copies
Grading and Revegetation	Yes [X]	No [ ]	9911	Copies
Final Certification	Yes [I	**No** *i*]		

Aerial Survey and Ground Level **Review** *

If **a** DRF. did the photographs show the rock blanket or core underdrain by gravity segregation?	**Yes** [X]	No [ ]
Foundation data:		Text
Dip of strata relative to 611:		
Were NOV's written on the fill?	Yes [ ]	**No** [X]
Surface drainage control working properly?	Yes [1	No [1
Subsurface drainage control working properly?	Yes [ ]	No [ ]
If active fill, was active spoil disposal determined to be on-going?	***Yes*** [ ]	No [ ]
If **spoil** disposal site inactive, how **long** was disposal operation idle (months)?		
f a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [ ]
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	**Yes** [ ]	No [ ]
If the fill is completed, **compare** the size with the size in the latest pre-completion revision?		
If the till is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface **configuration:**		Concave
Is the **fill** situated in landslide topography?	Yes [ ]	No [ ]
Were there ground cracks observed on the **fill** face or benches?	**Yes** [ ]	**No** [1
Number of benches on fill:		18

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks*	1			
	2			
	3			

Location of Depressions*	Were there depressions on the fill benches?	**Yes** [ ]	No [ ]	**(Potential Water Depth)**
	1			
	2			
	3			
	4			
	5			

Location "f Erosion Areas*	Were there areas of erosion on the **fill** benches?	Yes [X]	No [ ]	**(Maximum Gully Depth)**
	1 B 1, Q 2		100	
	2 B 2, Q 2		80	
	3 B3, Q 3		70	
	4			
	5			

Location of Ground Bulges*	Were there bulges or hummocky terrain?	Yes [ ]	No [ ]
	1		
	2		
	4		
	5		

Location of Springs/Seeps*	Were **thcrc** springs or seeps observed in **disposal areas?**	**Yes** [X]	No [ ]
	1 **'Toe,** *Q 2*		
	2		
	3		
	4		
	5		

Location of Changes*	Were **changes** in vegetation or spoil color observed on fill?	**Yes** [X]	**No** [ ]
	1 B 1, Q 4		100
	2 B 2, Q 4		**50**
	3		
	4		
	5		
	6		

Movement characteristics*

Did a **failure** occur on the fill? Yes [ ] No [X]

f so, enter **the** source of information on **the** failure:

Stage of construction **during failure:**

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement	**Mass 1**		
	Mass 2		
	Mass 3		

Comments

ourth quarter 1993 certification shows piezometers installed in **tho** lowest lift of the fill

S-6020-89
Laurel Branch #1

West Virginia
Cyprus Kanawha Corp.
Sycamore South Mtn. Top Job

Permit: S-6020-89 Fill: Laurel Branch #1

Permit: S-6020-89 Fill: Laurel Branch #1

West Virginia
Cyprus Kanawha Corp.
Sycamore South Mtn. Top Job

Permit: S-6020-89 Fill: Laurel Branch #1

West Virginia
Dal-Tex Coal Corp.
Rockhouse Mine

Permit: S-5024-86

Fill: VF #6

BLANK PAGE

Company: Dal-Tex Coal Corp.	**Fill:** VF#6			Date of permit file review:	10/20/99
Permit: S-5024-86	**Mine:** Rockhouse Mine			Date fill contruction started:	/ /
State: WV	Was this fill visited at ground level?	Yes [ ]	No [X]	Finished:	03/28/97
County: Logan				Number of fill size revisions:	4
Latitude: 37-55-23	Had the fill been reclaimed at the time of the air survey?	Yes [X]	No [ ]	%Sandstone in overburden:	52
ongitude: 81-50-00	Date of survey:	12/21/99			

	As constructed		Revision	Original design
Type of Fill	Durable Rock		Durable Rock	Durable Rock
Size of Fill	8000	Length (ft)	8000	8000
	293.0	Area (acres)	293.0	293.0
	65.0	Volume (mcy)	65.0	95.4
Surface Configuration	Flat		Flat	Flat
Elevations	1650	Crown (ft)	1650	1650
	1060	Toe (ft)	1060	1060
Slopes	5.0	Toe Foundation (%)	5.0	5.0
	22.0	Fill Face (deg.)	22.0	21.0
Surface Drainage Control	Center Drain		Center Drain	Center Drain
Subsurface Drainage Control	Gravity Segregated		Gravity Segregated	Chimney Core
Stability Analysis Software Used			SB Slope	REAME
Safety Factor		Static	1.9	1.8
		Seismic	1.7	1.8
Engineering Properties (Spoil)		Unit Weight (pcf)	115	115
		Friction Angle	38	38
		Cohesion (psf)	0	0
Engineering Properties (Foundation)		Unit Weight (pcf)	135	135
		Friction Angle (deg.)	31	31
		Cohesion (psf)	0	0
Phreatic Surface			Phreatic Surface	P-0.1

Construction Documentation and Certifications

	Appl. Phase Certification		Appl.Quarterly Certification	Photography Type
Foundation Preparation	Yes [ ]	No [X]	89/4	None
Underdrains	Yes [X]	No [ ]	90/1	MBB
Surface Drains	Yes [X]	No [ ]	99/1	B&W
Grading and Revegetation	Yes [ ]	No [X]	99/2	B&W
Final Certification	Yes [ ]	No [ ]		

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation? Yes [X] No [ ]

Foundation data: Pits

Dip of strata relative to fill:

Were NOV's written on the fill? Yes [ ] No [ ]

Aerial Survey and Ground Level Review*

Surface drainage control working properly? Yes [X] No [ ]

Subsurface drainage control working properly? Yes [X] No [ ]

If active fill, was active spoil disposal determined to be on-going? Yes [ ] No [X]

If spoil disposal site inactive, how long was disposal operation idle (months)?

If a durable rock fill is under construction,

Approximately 80% durable rock by volume? Yes [ ] No [ ]

If no to above, estimate percentage:

Discernable blanket or core drain forming? Yes [ ] No [ ]

If the fill is completed, compare the size with the size in the latest pre-completion revision?

If the fill is significantly smaller, what is the reason according to the documentation or inspector?

Fill surface configuration: Concave

Is the fill situated in landslide topography? Yes [ ] No [X]

Were there ground cracks observed on the fill face or benches? Yes [ ] No [X]

Number of benches on fill: 7

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks*	I			
	2			
	3			

Location of Depressions*	Were there depressions on the fill benches? Yes [1 No [I		**(Potential Water Depth)**
	1		
	2		
	3		
	4		
	5		

Location of Erosion Areas*	Were there areas of erosion on the **fill** benches? Yes [ ] **No** [ ]		**(Maximum Gully Depth)**
	I		
	2		
	3		
	4		
	5		

Location of Ground Bulges'	Were there bulges or hummocky terrain'! **Yes** [ ] No [ ]		
	I		
	2		
	3		
	4		
	5		

Location of Springs/Seeps*	Were there springs or seeps **observed** in disposal areas? **Yes** [ ] No [ ]		
	2		
	3		
	5		

Location of Changes*	Were changes in vegetation or **spoil color** observed on fill? **Yes** [ ] No [ ]		
	1		
	2		
	3		
	4		
	5		
	6		

Movement Characteristics*

Did a failure occur on the fill? Yes [ ] No [1

If so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (H)			
Depth to Slip Plane (ft)			
Transport Distance **(ft)**			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement	
	Mass j
	Mass 2
	Mass 3

Comments

arge fill 1 5 miles total length; Permit calls for SWASE analysis but REAME analysis included in **permit.** Spoil from S-5005-91 **placed** in this **fill**

ill well **vegetated with** effective surface **drains** in-place

S-5024-86
VF#6

West Virginia
Dal-Tex Coal Corp.
Rockhouse Mine

Permit: S-5024-86 Fill: VF #6

Permit: S-5024-86 Fill: VF #6

West Virginia
Dal-Tex Coal Corp.
Rockhouse Mine

Permit: S-5024-86 Fill: VF #6

Permit: S-5024-86 Fill: VF #6

West Virginia
Dal-Tex Coal Corp.
Bumbo #2 Mine

Permit: S-5049-91

Fill: Fill #5 (No Photo)

BLANK PAGE

Company: Dal-Ten Coal Corp.	**Fill:** Fill #5		Date of permit file **review:** *11103199*
Permit: S-5049-91	**Mine:** Bumbo $2 Mine		Date fill contruction started: / /
State: WV	**Was** this till visited at ground **level?**	Yes [ ] No [X]	Finished: / /
County: Logan			Number of fill size revisions:
Latitude: 37-53-50	Had the **fill** been reclaimed at the time of the air survey?	Yes [ ] No [X]	%Sandstone in overburden: ***59***
Longitude: *81-52-36*	Date of survey:	/ /	

	As constructed	Revision	Original design
Type of Fill			Durable **Rack**
Size of Fill	Length (ft)		5400
	Area (acres)		**55.6**
	Volume (mcy)		11.9
Surface Configuration			Flat
Elevations	Crown (ft)		1380
	Toe (ft)		1180
Slopes	Toe Foundation (%)		4.0
	Fill Face (deg.)		24.0
Surface Drainage Control			Perimeter
Subsurface Drainage Control			Constructed Underdrain
Stability Analysis Software Used			**SB Slope**
Safety Factor	Static		1.7
	Seismic		1.4
Engineering Properties (Spoil)	Unit Weight (pcf)		148
	Friction **Angle**		**50**
	Cohesion (psf)		0
Engineering Properties (Foundation)	Unit Weight (pcf)		125
	Friction Angle **(deg.)**		**36**
	Cohesion (psf)		0
Phreatic Surface			None

Construction Documentation and Certifications

Foundation Preparation	Yes [ ]	No [ ]
Underdrains	**Yes** [ ]	No [ ]
Surface **Drains**	**Yes** [ ]	No [ ]
Grading and Revegetation	**Yes** [ ]	No [ ]
Find Certification	**Yes** [ ]	No [ ]

Aerial Survey and Ground Level Review *

If a DRF, did the photographs show the **rock** blanket or core underdrain by gravity segregation?	**Yes** [ ]	No [ ]
Foundation data:		None
Dip of strata relative to fill		Toward Fill
Were NOV's written on the fill?	Yes [ ]	No [ ]
Surface drainage control working properly?	Yes [ ]	**No** [ ]
Subsurface drainage control working properly?	Yes [ ]	**No** [ ]
If active fill, was active spoil disposal determined to be on-going?	**Yes** [ ]	No [ ]
If spoil disposal Site inactive. how long **was** disposal operation idle (months)?		
If a durable rock fill is **under** construction,		
Approximately 80% durable rack by volume?	**Yes** [ ]	No [ ]
If no to **above,** estimate percentage:		
Discernable blanket or core drain forming?	**Yes** [ ]	No [ ]
If the fill is completed, compare the size with the size in the latest pie-completion revision?		
If the **fill is** significantly smaller, what **is the** reason according to the documentation or inspector?		
Fill surface configuration		
Is the fill situated in landslide **topography?**	**Yes** [ ]	No [ ]
Were there ground cracks observed on **the** fill face or benches?	Yes [ ]	No [ ]
Number of benches on **fill.**		

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	2 3			
Location of Depressions	Were there depressions on the fill benches? Yes [ ] No [ ]			(Potential Water Depth)
	1 2 3 4 5			
Location of Erosion Areas	Were there areas of erosion on the fill benches? Yes [ ] No [ ]			(Maximum Gully Depth)
	2 3 4 5			
Location of Ground Bulges	Were there bulges or hummocky terrain? Yes [ ] No [ ]			
	1 2 3 4 5			
Location of Springs/Seeps	Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]			
	1 2 3 4 5			
Location of Changes	Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]			
	1 2 3 4 5 6			
Movement Characteristics	Did a failure occur on the fill? Yes [ ] No [ ]			

f so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement
Mass 1
Mass 2
Mass 3

ill not started. U/G entries encountered during fill construction will be drained to the rock core underdrain.

Comment.

S-5049-91
Fill #5

West Virginia
Eastern Associated
No Mine Identifier

Permit: S-53-85

Fill: #6

BLANK PAGE

Company:	Eastern Associated	**Fill:**	# 6	Date of permit file review:	10/27/99
Permit:	S-53-85	**Mine:**	N/A	Date fill contruction started:	10/12/85
State:	WV	Was this fill visited at ground level?	Yes [ ] No [X]	Finished:	09/09/97
County:	Boone			Number of fill size revisions:	1
Latitude:	37-53-37	Had the fill been reclaimed at the time of the air survey?	Yes [X] No [ ]	%Sandstone in overburden:	86
ongitude:	81-43-01	Date of survey:	12/21/99		

		As constructed	Revision	Original design
Type of Fill		Durable Rock	Durable Rock	Durable Rock
Size of Fill	Length (ft)		2000	6000
	Area (acres)			
	Volume (mcy)		3.2	20.0
Surface Configuration		Flat	Flat	Flat
Elevations	Crown (ft)		1950	1740
	Toe (ft)		1600	1400
Slopes	Toe Foundation (%)		13.0	4.0
	Fill Face (deg.)		22.6	26.6
Surface Drainage Control			Center Drain	Center Drain
Subsurface Drainage Control			Gravity Segregated/Constructed Underdrain	Gravity Segregated Constructed Underdrain
Stability Analysis Software Used			REAME	Other
Safety Factor	Static		1.5	1.6
	Seismic			
Engineering Properties (Spoil)	Unit Weight (pcf)		125	115
	Friction Angle		35	35
	Cohesion (psf)		0	0
Engineering Properties (Foundation)	Unit Weight (pcf)		110	95
	Friction Angle (deg.)		28	28
	Cohesion (psf)		0	0
Phreatic Surface			None	None

Construction Documentation and Certifications

	Appl. Phase Certification	Appl.Quarterly Certification	Photography Type
Foundation Preparation	Yes [ ] No [X]		
Underdrains	Yes [ ] No [X]	90/3	Copies
Surface Drains	Yes [ ] No [X]	97/3	Color
Grading and Revegetation	Yes [ ] No [ ]		
Final Certification	Yes [ ] No [ ]		

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation? Yes [ ] No [ ]

Foundation data: Text, Pits

Dip of strata relative to fill:

Were NOV's written on the fill? Yes [ ] No [X]

Aerial Survey and Ground Level Review *

Surface drainage control working properly? Yes [X] No [ ]

Subsurface drainage control working properly? Yes [X] No [ ]

If active fill, was active spoil disposal determined to be on-going? Yes [ ] No [ ]

If spoil disposal site inactive, how long was disposal operation idle (months)?

If a durable rock fill is under construction,

Approximately 80% durable rock by volume? Yes [ ] No [ ]

If no to above, estimate percentage:

Discernable blanket or core drain forming? Yes [ ] No [ ]

If the fill is completed, compare the size with the size in the latest pre-completion revision? Smaller

If the fill is significantly smaller, what is the reason according to the documentation or inspector?

Fill surface configuration: Flat

Is the fill situated in landslide topography? Yes [ ] No [ ]

Were there ground cracks observed on the fill face or benches? Yes [ ] No [ ]

Number of benches on fill:

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks*	2 3			
Location of Depressions*	**Were** there depressions on the **fillbenches?** Yes [1 **No** [ ] (Potential Water Depth) 1 2 3 4 5			
Location of Erosion Areas*	Were there areas *of* erosion on the fill benches? Yes [ ] No [ ] (Maximum **Gully** Depth) 1 2 3 4 5			
Location "f Ground Bulges*	Were there bulges or hummocky terrain? Yes [ ] No [ ] 1 2 3 4 5			
Location 0f Springs/Seeps*	**Were** there springs or seeps observed in disposal areas? Yes [ ] No [I 1 2 3 4 5			
Location of Changes*	Were **changes** in vegetation or spoil color observed on fill? **Yes** [ ] No [ ] 1 2 3 4 5 6			
Movement Characteristics*	Did a failure occur on the till? **Yes** [ ] No [ ] f **so,** enter the source of information on the failure: Stage of construction during failure:			
		***Mass* 1**	**Mass 2**	**Mars 3**
	Bench #			
	Length (ft)			
	Width (ft)			
	Scarp Height (ft)			
	Depth to Slip Plane (ft)			
	Transport Distance (ft)			
	Rate of Movement			
	Extent of Failure **Movement**			
	Cause of Movement **Mass 1**			
	Mass 2			
	Mass 3			
Comments	y the first certification on file, 600,000 **cy were** already in place The **spoil in place** seemed to have a fair amount of **durable rock** Could not **discern** foundation **on** the copied photo ne first revision found in the file is dated 10/12/85 By the 1996 revision (IBR), fill # 6 had been severely reduced in size into two fills 6 and 6A The reason for this was not found nly **fill 6** data is listed above The engineering parameters for the stability analysis is based on the internal properties of the rock lithologies making up the **fill. The** same revision dicates previous shallow failure problems on the 2 1 slopes, forcing **the** use of 2 **4 1 instead** Fill **6 looked** stable from **the** helicopter Possible minor ponding on **the 2nd bench** next t e center **drain**			

S-53-85
6

West Virginia
Eastern Associated
No Mine Identifier

Permit: S-53-85 Fill: #6

Permit: S-53-85 Fill: #6

BLANK PAGE

West Virginia
Elkay Coal Co.
Tower Mountain

Permit: S-5023-93

Fill: Fill #1

BLANK PAGE

Company: Elkay Coal Co.	pill: Fill #1		Date of permit tile review: 09/21/99
Permit: S-5023-93	Mine: Tower Mountain		Date **fill** contruction started: 10/0 1/93
State: WV	Was this **fill** visited at ground level?	Yes [ ] No [X]	Finished: / /
County: Logan			Number of **fill size** revisions: 1
Latitude: 37-41-33	Had the **fill** bees reclaimed at the time of the air survey?	Yes [ ] No [X]	**%Sandstone** in overburden: 49
Longitude: 81-53-51			
	Date of survey:	12/31/99	

		As constructed	Revision	Original design
Type of Fill			Durable Rock	Durable Rock
Sire of Fill	Length (ft)		**2475**	**4000**
	Area (acres)		**77.0**	102.0
	Volume (mcy)			91.1
Surface configuration				
Elevations	Crown (ft)		1900	1840
	Toe (ft)		1230	1050
Slopes	Toe Foundation (%)		16.0	8.0
	Fill Face (deg.)		22.0	23.0
Surface Drainage **Control**			Perimeter	Perimeter
Subsurface Drainage Control			Constructed Underdrain	**Constructed** Underdrain
Stability **Analysis** Software Used			REAME	SB **Slope**
Safety Factor	Static		1.6	1.6
	Seismic		1.4	1.4
Engineering Properties (Spoil)	Unit Weight (pcf)		130	135
	Friction Angle		35	35
	Cohesion (psf)		0	**0**
Engineering Properties (Foundation)	Unit Weight (pcf)			
	Friction Angle (deg.)			
	Cohesion (psf)			
Phreatic Surface			Phreatic Surface	None

		Appl. Phase Certification		Appl. Quarterly **Certification**	Photography **Type**
Construction Documentation **and Certifications**	Foundation Preparation	Yes [X]	No [ ]	94/3	Copies
	Underdrains	Yes [X]	No [ ]	95/2	Copies
	Surface Drains	**Yes** [ ]	No [ ]		
	Grading and Revegetation	Yes [ ]	No [ ]		
	Final Certification	**Yes!**]	No [ ]		

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation'?	Yes [X]	No [ ]
Foundation data:		Pits
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [ ]	No [X]

Surface drainage control working properly?	**Yes** [1	No [1
Subsurface drainage control working properly'?	Yea [1	No [ ]
If active fill, was active spoil **disposal** determined to be on-going?	Yes [ ]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
'a durable rock fill **is under** construction,		
Approximately 80% durable **rock** by volume?	**Yes** [ ]	No [ ]
If no to above, estimate percentage:		
Discernable blanket **or** core drain forming?	**Yes** [1	No [ ]
If the fill is **completed,** compare the **size with the** size in the latest pre-completion revision?		
If the fill is significantly smaller, **what** is **the** reason according to the documentation or inspector?		
Fill surface configuration:		
Is the **fill** situated **in** landslide topography?	Yes [ ]	No [ ]
Were there ground cracks observed **on** the **fill** face or **benches?**	Yes [ ]	No [ ]
Number **of benches on** till:		

Aerial Survey and Ground Level Review *

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	1			
	2			
	3			

Location of Depressions *

Were there depressions on the fill benches? Yes [ ] No [1 **(Potential Water Depth)**

	1			
	2			
	3			
	4			
	5			

Location of Erosion Areas

Were **there** areas **of** erosion on the **fill** benches? Yes [ ] No [ ] **(Maximum Gull) Depth)**

	1			
	2			
	4			
	5			

Location of Ground Bulges *

Were there bulges or hummocky terrain? Yes [ ] No [ ]

	1			
	2			
	4			
	5			

Location of Springs/Seeps *

Were there springs or seeps **observed** in disposal areas? Yes [ ] No [ ]

	1			
	2			
	3			
	4			
	5			

Location of Changes *

Were changes in vegetation or **spoil** color **observed on till?** **Yes [ ]** No [ ]

	2			
	3			
	4			
	5			
	6			

Movement Characteristics *

Did a failure occur on the **till?** Yes [ ] No [ ]

f so, enter the **source of** information on the failure:

Stage of construction during **failure:**

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (A)			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement **Mass 1**
Mars 2
Mass 3

Comment.

ermittee **performed triaxial shear** tests on **foundation material,** Fill **P I** was **separated** into **two till from a** larger single **fill** Coal seams mined were **Stockton, Upper Coalburg, Middl**
oalburg, **Lower** Coalburg, **OSM issued** TDN 94-113-524-001 for not capturing drainage from auger **holes in** fill area

S-5023-93
Fill #1

West Virginia
Elkay Coal Co.
Tower Mountain

Permit: S-5023-93 Fill: Fill #1

Permit: S-5023-93 Fill: Fill #1

West Virginia
Elkay Coal Co.
Tower Mountain

Permit: S-5023-93 Fill: Fill #1

Permit: S-5023-93 Fill: Fill #1

West Virginia
Evergreen
No Mine Identifier

Permit: S-35-76

Fill: #1

BLANK PAGE

Company: Evergreen	Fill: # 1	Date of permit tile review:	*10126199*
Permit: S-35-76	Mine: N/A	Date fill contruction started:	03/28/91
State: WV	Was this fill visited at ground level? Yes [ ] No [X]	Finished:	/ /
County: Webster		Number of fill size revisions:	1
Latitude: 38-25-26	Had the fill been reclaimed at the time of the air **survey?** Yes [ ] No [X]	%Sandstone in overburden:	43
Longitude: 80-36-35			
	Date of survey: 12131/99		

	As constructed		Revision	**Original** design
Type of Fill	Durable Rock		Durable Rock	Conventional
Size of Fill		Length (ft)	3400	
		Area (acres)		
		Volume (mcy)	1.1	
Surface Configuration			Flat	Flat
Elevations		Crown (h)	*2500*	
		Toe (h)	2400	
Slopes		Toe Foundation (%)		
		Fill Face (deg.)	26.6	
Surface Drainage Control			Perimeter Center Drain	
Subsurface Drainage **Control**			Gravity Segregated	
Stability Analysis Software Used			**REAME**	**REAME**
Safety Factor		Static	1.6	
		Seismic		
Engineering Properties (Spoil)		Unit **Weight** (pcf)	**140**	
		Friction **Angle**	36	
		Cohesion (psf)	**150**	
Engineering Properties (Foundation)		Unit Weight (pcf)	115	
		Friction Angle (deg.)	30	
		Cohesion (psf)	150	
Phreatic Surface			None	

	Appl. Phase		**Appl.Quarterly**	**Photography**
Construction **Documentation and Certifications**	Foundation Preparation	Yes [ ] No [X]	9111	Color
	Underdrains	Yes [ ] No [X]	91/1	Color
	Surface Drains	Yes [ ] No [X]	*9912*	**Color**
	Grading wid Revegetation	Yes [ ] No [ ]		
	Final Certification	**Yes** [ ] No [ ]		

If a DRF, **did** the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [X]	No [ ]
Foundation dacr.		Text
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [ ]	No [X]

Surface drainage control working properly?	Yes [ ]	No [ ]
Subsurface drainage control working properly?	Yes [ ]	No [ ]
If active fill, was active spoil **disposal** determined to be on-going?	Yes [X]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
If a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [1	No [1
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [X]	No [ ]
If the till is completed, compare the size **with** the **size** in the latest pre-completion revision?		Unknown
If the **fill** is significantly smaller. **what** is **the** reason according to the documentation or inspector?		
Fill surface configuration:		
Is the fill situated in landslide topography?	Yes [ ]	No [ ]
Were there ground cracks observed on **the** fill face or benches?	Yes [ ]	**No** [X]
Number of benches on fill:		

Aerial Survey and Ground Level Review *

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *	1			
	2			

Location of Depressions *	Were **there depressions** on the fill benches? Yes [ ] **No** [X]		**(Potential Wafer Depth)**
	1		
	2		
	3		
	4		
	5		

Location of Erosion Areas *	Were ihere areas of erosion on **the fill** benches? Yes [ ] No [X]		**(Maximum Gully Depth)**
	1		
	2		
	3		
	4		
	5		

Location of Ground Bulges *	Were there bulges or hummocky terrain? **Yes** [ ] No [X]		
	2		
	3		
	4		
	5		

Location of Springs/Seeps *	Were there springs or seeps observed **in disposal areas?** Yes [ ] No [ ]		
	2		
	3		
	4		
	5		

Location of Changes *	Were changes in vegetation or spoil color **observed** on fill? **Yes** [ ] No [ ]		
	2		
	3		
	4		
	5		
	6		

Movement Characteristics *

Did a failure occur on the fill? **Yes** [ ] No [X]

f so, enter **the** source of information on the failure:

Stage of construction during **failure:**

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (it)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement	**Mass 1**		
	Mass 2		
	Mass 3		

comments

fl 1 **started** as a lift typo and was **extended** in size **as a durable** rack type 1991 **cert shows underdrain construction** 1998 plan map seems **to show constructed underdrains in the** fina esigned **fill so, don if't know why Permit** review **began with fills** A **and B**, bur **there discontinued** in a **1996 IBR Fill 1 has become a combination valley** and **side-hill** fill **Includes** irrface side drain along lower side (along the main trend of the fill) and (in the 1998 design) 3 surface "flumes" connected to it The toe dope is close to flat The fill's crown is lung, ce is a relatively minor part of the **configuration** Stability **analysis includes 1 longitudinal** section and 2 cross-sections The original **parameters of fills A and B partly differ** from fill **oil cohesion** for **both A** and B is 0 For **till B, foundation unit weight and cohesion** is **92** and 0 respectively **There's** use of the critical **foundation** concept in the **permit** Helicopter iotoes show the end-dumping process to be nearly complete **Appear;** to involve **2 lifts The upper lift not** yet regraded near the toe In spite **of the** short slope, the gravity segregation ocess seems to be working very **well**

S-35-76
1

West Virginia
Evergreen
No Mine Identifier

Permit: S-35-76 Fill: #1

Permit: S-35-76 Fill: #1

West Virginia
Evergreen
No Mine Identifier

Permit: S-35-76 Fill: #1

West Virginia
Evergreen Mining Co.
Knight-Ink #1 Mine

Permit: S-2019-88

Fill: #5

BLANK PAGE

	As Constructed	Revision	Original design
Type of Fill		Durable **Rock**	Chimney
Size of Fill	Length (ft)	1520	1750
	Area (acres)	32.0	32.0
	Volume (mcy)	1.4	
Surface Configuration		Flat	Flat
Elevations	Crown (ft)	2520	2515
	Toe (ft)	2400	2400
Slopes	Toe Foundation (%)	6.0	6.0
	Fill Face (deg)	24.0	20.0
Surface Drainage Control		Center Drain	Chimney Core
Subsurface **Drainage** Control		Gravity Segregated	Chimney Core
Stability Analysis Software Used		REAME	REAME
Safety Factor	Static	1.8	1.7
	Seismic	1.5	
Engineering Properties (spoil)	Unit Weight (pcf)	140	140
	Friction Angle	36	*36*
	Cohesion (psf)	0	0
Engineering Properties (Foundation)	unit Weight (pcf)	120	120
	Friction Angle (deg.)	30	30
	Cohesion (psf)	*250*	250
Phreatic **Surface**		None	None

		Appl. Phase certification		Appl.Quarterly **Certification**	Photography **Type**
construction Documentation and Certifications	Foundation Preparation	Yes [ ]	No [ ]	**3/98**	B&W
	Underdrains	Yes [X]	No [ ]	2/99	R&W
	Surface Drains	**Yes** [ ]	No [ ]		
	Grading and Revegetation	**Yes** [ ]	No [ ]		
	Final Certification	Yes [ ]	No [ ]		

Aerial Survey and Ground Level Review*	**if a** DRF, did the photographs show the **rock** blanket or core underdrain by gravity segregation?	Yes [ ]	No [ ]
	Foundation data:		None
	Dip **of** strata relative to fill:		
	Were NOV's written on the fill?	Yes [ ]	No [ ]
	Surface drainage control working properly?	Yes [ ]	No [ ]
	Subsurface drainage control working properly?	**Yes** [X]	No [ ]
	If active **fill,** was active spoil disposal determined to be on-going?	Yes [X]	No [ ]
	if spoil disposal site inactive, how long was disposal operation idle (months)?		
	If **a** durable **rock fill is** under construction,		
	Approximately 80% durable rock by volume?	**Yes** [ ]	No [ ]
	If no to above. estimate percentage:		
	Discernable blanket or core drain forming?	Yes [X]	No [ ]
	If the **fill is** completed, compare the **size** with the size in the latest pre-completion revision?		
	If the **fill** is significantly smaller, what is the reason according to **the** documentation or inspector?		
	Fill surface configuration		
	Is the fill situated in landslide topography?	Yes [ ]	No [ ]
	Were there ground cracks observed on the fill **face** or benches?	Yes [ ]	No [ ]
	Number of benches on **fill:**		

	Location	Length (ft)	Width (ft)	Depth (in)
Location "f Cracks *	2 3			
Location of Depressions *	Were there depressions on the fill benches? Yes [ ] No [ ]			**(Potential Water Depth)**
	2 3 4 5			
Location of Erosion Areas *	Were there areas of erosion on the fill benches? Yes [ ] No [ ]			**(Maximum Gully Depth)**
	1 2 3 4 5			
Location "f Ground Bulges *	Were there bulges or hummocky terrain? Yes [1 No [ ]			
	1 2 3 4 5			
Location of Springs/Seeps *	Were there springs or seeps observed in **disposal areas?** Yes [ ] No [ ]			
	1 2 3 4 5			
Location of Changes *	Were changes in vegetation or spoil color observed on fill? Yes [1 **No** [ ]			
	1 2 3 4 5 6			
Movement Characteristics *	Did a failure occur on the fill? Yes [1 No [ ]			
	`so, enter the source of information on the failure:			
	Stage of construction during **failure:**			
		Mass 1	**Miss 2**	**Mass 3**
	Bench #			
	Length (ft)			
	Width (ft)			
	Scarp Height (ft)			
	Depth to Slip Plane (ft)			
	Transport Distance (ft)			
	Rate of Movement			
	Extent of Failure Movement			
	Cause of Movement **Mass 1**			
	Mass 2			
	Mass 3			
Comments	›al seams Freeport & splits Mcarns, Widen, Kittanning & splits, "B" & "C" **Seam,** "A" seam R #2 revised **fill** from **chimney drain** to DRF with segregated **ruck blanket**			

S-2019-88
5

West Virginia
Evergreen Mining Co.
Knight-Ink #1 Mine

Permit: S-2019-88 Fill: #5

Permit: S-2019-88 Fill: #5

BLANK PAGE

West Virginia
Fola Coal Co.
No Mine Identifier

Permit: S-2012-93

Fill: B

BLANK PAGE

Company: Fola Coal Co.	Fill: B	Date of permit file review:	10/27/99
Permit: S-2012-93	**Mine:** N/A	Date fill contruction started:	01/20/95
state: WV	Was this fill visited at ground **level'?** Yes [ ] No [X]	Finished:	/ /
County: Clay		Number of fill size revisions:	
Latitude: 38-21-16	Had the fill **been** reclaimed at the time of the air survey'? Yes [ ] No [X]	%Sandstone in overburden:	70
Longitude: 81-02-44	Date of **survey:** 12/20/99		

Type of Fill	Durable Rock	Durable Rock	Durable Rock
Size of Fill	Length (ft)		6000
	Area (acres)		
	Volume (mcy)		51.7
Surface Configuration	Flat		Flat
Elevations	Crown (ft)		1600
	Toe (ft)		1100
Slopes	Toe Foundation (%)		2.0
	Fill Face (deg.)		27.0
Surface Drainage Control	Center Drain	Center Drain	Perimeter
Subsurface Drainage Control	**Gravity** Segregated	Gravity Segregated	Gravity **Segregated**
Stability Analysis Software Used			REAME
Safety Factor	Static		1.7
	Seismic		
Engineering Properties (Spoil)	Unit Weight (pcf)		140
	Fiction Angle		38
	Cohesion (psf)		0
Engineering Properties (Foundation)	Unit Weight (pcf)		*125*
	Fiction Angle (deg.)		*33*
	Cohesion (psf)		*40*
Phreatic Surface			P-0 05

Construction Documentation and Certifications

	Appl. Phase Certification	Appl. Quarterly Certification	Photography Type
Foundation Preparation	Yes [ ] **No** [X]	95/1	**Color**
Underdrains	**Yes** [ ] **No** [X]	95/4	Color
Surface Drains	Yes [ ] No [X]		
Grading and Revegetation	**Yes** [ ] **No** [X]		
Final Certification	**Yes** [ ] No [X]		

Aerial Survey and Ground Level Review *

If a DRF, did the photographs **show** the **rock** blanket or core underdrain by gravity segregation? **Yes** [X] No [ ]

Foundation data: Holes

Dip of strata relative to fill:

Were NOV's written on the fill? Yes [X] No [ ]

Surface drainage control working **properly?** Yes [ ] No [ ]

Subsurface drainage **control** working properly? Yes [ ] No [ ]

If **active** fill, was active spoil disposal determined to be on-going? Yes [X] No [ ]

If **spoil** disposal site inactive, **how** long was disposal operation idle (months)?

If a durable rock fill is under construction.

Approximately 80% durable rock by volume? **Yes** [ ] Nu [X]

If **no** to **above. estimate** percentage: 70

Discernable blanket or core drain forming? Yes [X] No [ ]

If the fill is completed, compare the size **with** the size in the latest pre-completion revision? Unknown

If the **fill** is significantly smaller, what is the reason according to the documentation or inspector?

Fill surface configuration: **Flat**

Is **the fill** situated in **landslide** topography? Yes [ ] **No** [X]

Were there ground cracks observed on the fill face or benches? Yes [ ] **No** [ ]

Number of benches on fill:

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	3			

Location of Depressions

Were there depressions on the fill benches? Yes [1 No [1 (Potential Wafer Depth)

1
2
3
4

Location of Erosion Areas

Were there areas of erosion on the fill benches? Yes [ ] No [1 (Maximum Gully Depth)

3
4
5

Location of Ground Bulges

Were there bulges or hummocky terrain? Yes [ ] Nu [ ]

1
2
3
4
5

Location of Springs/Seeps

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

1
2
3
4
5

Location of Changes

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]

1
2
3
4
5
6

Movement Characteristics

Did a failure occur on the fill? *Yes* [ ] No [ ]

If so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement
Mass 1
Mass 2
Mass 3

Comments

he original application includes perimeter surface drains However, the size of the fill and the shape of the hollow appears to have required a complex netwok s of drains running :ross a broad fill crown shared by at least 2 other fills This involved multiple face-ups and drainage divides (referencing 2/17/94 plan map) A revision dated 6/22/94 shows a tributa /stem of center drains in a considerably smaller fill (albeit still large) separated from the other fills by the natural topography Permit includes a soil-substitution study showing verburden with superior properties for sustaining vegetation relative to the natural soil The spoil materials proposed for substitution includes most of the overburden, including most ie sandstone. End dumping had already begun by the time of the first certification. There were two NOVs found in the file placement of acid/toxic materials and dumping beyond th 00 ft from toe limit. By the helicopter survey, the face had been regraded and on-going dumping and grading occurred at the crown Even on the short dumping slopes above the fac :avity segregation was evident

S-2012-93
B

West Virginia
Fola Coal Co.
No Mine Identifier

Permit: S-2012-93 Fill: B

Permit: S-2012-93 Fill: B

BLANK PAGE

West Virginia
High Power Energy
Twenty Mile Creek Mine #901

Permit: S-3026-90

Fill: S2-X

BLANK PAGE

Company:	High Power Energy	**Fill:**	S2-X	Date of permit file review:	11/18/99
Permit:	S-3026-90	**Mine:**	Twenty Mile Creek Mine #901	Date fill contruction started:	01/01/91
State:	WV	Was this fill visited at ground level?	Yes [ ] No [X]	Finished:	12/31/95
County:	Nicholas			Number of fill size revisions:	
Latitude:	38-17-26	Had the fill been reclaimed at the time of the air survey?	Yes [X] No [ ]	%Sandstone in overburden:	
ongitude:	81-01-31	Date of survey:	12/20/99		

	As constructed		Revision	Original design
Type of Fill	Durable Rock			Durable Rock
Size of Fill	1240	Length (ft)		1240
		Area (acres)		
		Volume (mcy)		1.5
Surface Configuration	Flat			Flat
Elevations	1670	Crown (ft)		1640
	1390	Toe (ft)		1400
Slopes		Toe Foundation (%)		11.0
	25.0	Fill Face (deg.)		22.0
Surface Drainage Control	Center Drain			Center Drain
Subsurface Drainage Control	Gravity Segregated			Gravity Segregated
Stability Analysis Software Used	REAME			Stabl
Safety Factor	1.6	Static		1.5
		Seismic		
Engineering Properties (Spoil)	120	Unit Weight (pcf)		120
	35	Friction Angle		35
	0	Cohesion (psf)		0
Engineering Properties (Foundation)	125	Unit Weight (pcf)		125
	30	Friction Angle (deg.)		30
	0	Cohesion (psf)		0
Phreatic Surface	Phreatic Surface			Phreatic Surface

Construction Documentation and Certifications

	Appl. Phase Certification	Appl.Quarterly Certification	Photography Type
Foundation Preparation	Yes [X] No [ ]	91/3	None
Underdrains	Yes [ ] No [X]	91/3	None
Surface Drains	Yes [ ] No [ ]		
Grading and Revegetation	Yes [ ] No [X]	95/4	None
Final Certification	Yes [X] No [ ]	96/1	None

Aerial Survey and Ground Level Review*

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation? Yes [ ] No [X]

Foundation data: Pits, Holes

Dip of strata relative to fill:

Were NOV's written on the fill? Yes [X] No [ ]

Surface drainage control working properly? Yes [ ] No [ ]

Subsurface drainage control working properly? Yes [ ] No [ ]

If active fill, was active spoil disposal determined to be on-going? Yes [ ] No [ ]

If spoil disposal site inactive, how long was disposal operation idle (months)?

If a durable rock fill is under construction,

Approximately 80% durable rock by volume? Yes [ ] No [ ]

If no to above, estimate percentage:

Discernable blanket or core drain forming? Yes [ ] No [ ]

If the fill is completed, compare the size with the size in the latest pre-completion revision?

If the fill is significantly smaller, what is the reason according to the documentation or inspector?

Fill surface configuration:

Is the fill situated in landslide topography? Yes [ ] No [ ]

Were there ground cracks observed on the fill face or benches? Yes [ ] No [ ]

Number of benches on fill:

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *				
Location of Depressions *	Were there depressions on the fill benches? Yes [1 No l 1			**(Potential Water Depth)**
Location of Erosion Areas *	Were there areas of erosion on the fill benches? Yes [ ] No [ ]			**(Maximum Gully Depth)**
	1			
	2			
	3			
	4			
	5			
Location of Ground Bulges *	Were there bulges or hummocky terrain? Yes [ ] No [ ]			
	1			
	2			
	4			
	5			
Location of Springs/Seeps *	Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]			
	I			
	2			
	4			
	5			
Location of Changes *	Were changes in vegetation or spoil color observed on fill? **Yes [ ]** No [ ]			
	1			
	2			
	3			
	4			
	5			
	6			

Movement Characteristics *

Did a failure occur on the till? Yes [ ] No [X]

f so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (A)			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement **Mass 1**
Mars 2
Mass 3

Comments

nuary 17, 1996 certification states that upper part of **fill**was **banded** for **a** deep mine. In **the** aerial photos it appears that **a large** seep is emanating **(tomabove** the fill

n **NOV** was issued **May** 14, 1991, **for** failure to remove **all** organic material prior to **fill placement**

S-3026-90
S2-X

West Virginia
High Power Energy
Twenty Mile Creek Mine #901

Permit: S-3026-90 Fill: S2-X

Permit: S-3026-90 Fill: S2-X

West Virginia
High Power Energy
Twenty Mile Creek Mine #901

Permit: S-3026-90 Fill: S2-X

West Virginia
High Power Energy
Twenty Mile Creek Mine #90

Permit: S-51-85

Fill: E

BLANK PAGE

	As constructed		Revision	Original design
Type of Fill	Durable Rock		Durable Rock	Durable Rock
Size of Fill	1700	Length (A)	1700	2300
	37.0	Area (acres)	37.0	64.0
		Volume (mcy)		27.0
Surface Configuration	Flat		Flat	Concave
Elevations	1800	Crown (ft)	1800	1850
	1380	Toe (ft)	1380	1225
Slopes	4.0	Toe Foundation (%)	9.0	19.0
	22.0	Fill Face (deg)	22.0	23.0
Surface Drainage Control	Center Drain		Center Drain	Chimney Core Center Drain
Subsurface Drainage Control	Gravity Segregated		Gravity Segregated	Gravity Segregated Chimney Co
Stability Analysis Software Used	REAME		REAME	SB Slope
Safety Factor	1.6	Static	1.6	1.7
	1.2	Seismic	1.2	1.4
Engineering Properties (spoil)	120	Unit Weight (pcf)	120	120
	33	Friction Angle	33	**35**
	100	Cohesion (psf)	100	0
Engineering Properties (Foundation)		Unit Weight (pcf)		
		Friction Angle (deg.)		
		Cohesion (psi)		
Phreatic Surface	P-0.05		P-0.05	None

		Appl. Phase **Certification**		Appl.Quarterly Certification	Photography **Type**
Construction Documentation and Certifications	Foundation Preparation	Yes [X]	No [ ]	91/4	None
	Underdrains	Yes [X]	No [ ]	9012	B&W
	Surface Drains	Yes [X]	No [ ]	9311	B&W
	Grading and Revegetation	Yes [X]	No [ ]	93/1	B&W
	Final Certification	**Yes** [X]	No [ ]	96/1	None

If a DRF. did the photographs show the rock blanket or core underdrain by gravity segregation? **Yes** [X] No [ ]

oundation data. Pits

Dip of strata relative to fill: Left Flank Hi& Toward Fill

Were NOV's written o: the fill? Yes [X] No [ ]

Aerial Survey and Ground **Level Review** *

Surface drainage control working properly? Yes [X] No [ ]

Subsurface drainage control working properly? Yes [ ] No [ ]

If active fill. war active spoil disposal determined to he on-going? Yes [ ] No [ ]

If **spoil disposal** site inactive, how long was **disposal** operation idle (months)?

If a durable rock fill is under construction,

Approximately 80% durable rock by volume? Yes [ ] No [ ]

If no to above, estimate percentage:

Discernable blanket or core drain forming? **Yes** [ ] No [ ]

If the fill is completed. compare the size with the Size in the latest pre-completion revision?

If the fill is significantly **smaller,** what is the reason according to the documentation or **inspector?**

Fill surface configuration:

Is the fill situated in landslide topography? **Yes** [ ] **No** [ ]

Were there ground cracks observed on the fill face or benches? **Yes** [ ] No [ ]

Number of benches on fill: ***8***

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *	1			
	2			
	3			

Location of Depressions

Were there depressions on the fill benches? Yes [ ] No [ ] (Potential Water Depth)

	1			
	2			
	3			
	4			
	5			

Location of Erosion Areas

Were there areas of erosion on the fill benches? Yes [ ] No [ ] (Maximum Gully Depth)

	1			
	2			
	3			
	4			
	5			

Location of Ground Bulges *

Were there bulges or hummocky terrain? Yes [ ] No [ ]

	1			
	2			
	3			
	4			
	5			

Location of Springs/Seeps *

Were there springs or seeps observed in disposal areas? Yes [ ] No [ ]

	1			
	2			
	3			
	4			
	5			

Location of Changes *

Were changes in vegetation or spoil color observed on fill? Yes [ ] No [ ]

	2			
	3			
	4			
	5			
	6			

Movement Characteristics *

Did a failure occur on the till? Yes [ ] Nu [1

f so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (A)			
Transport Distance (A)			
Rate of Movement			
Extent of Failure Movement			
Cause of Movement	Mass 1		
	Mass 2		
	Mass 3		

comments

oal Seams Coalburg, Stockton, 5-Block; Original design called for 50' lifts but was modified to DRF;

nding on top surface of fill; Pond constructed on backfilled area above fill

S-51-85
E

West Virginia
High Power Energy
Twenty Mile Creek Mine #90

Permit: S-51-85 Fill: E

Permit: S-51-85 Fill: E

Blank Page

West Virginia
Hobet Mining, Inc.
West Ridge

Permit: S-5003-96

Fill: Fill #52

BLANK PAGE

Type of Fill		Durable Rock
Size of Pill	Length (h)	3700
	Area (acres)	**82.9**
	Volume (mcy)	7.7
Surface Configuration		Flat
Elevations	Crown (ft)	**1250**
	Toe (ft)	**850**
Slopes	Toe Foundation (%)	8.0
	Fill Face **(deg.)**	23.0
Surface Drainage Control		Center Drain
Subsurface Drainage Control		Gravity Segregated
Stability Analysis Software Used		Other
Safety Factor	static	1.6
	Seismic	
Engineering Properties (Spoil)	Unit Weight (pcf)	125
	Friction Angle	34
	Cohesion (psf)	0
Engineering Properties (Foundation)	Unit Weight (pcf)	
	Friction **Angle** (deg.)	
	Cohesion (psf)	
Phreatic Surface		None

construction Documentation and Certifications

	Appl. Phase Certification		**Appl.Quarterly Certification**	**Photography Type**
Foundation **Preparation**	**Yes** [ ]	No [ ]		
Underdrains	Yes [X]	No [ ]	9614	None
Surface Drains	Yes [X]	No [ ]	9714	None
Grading and Revegetation	Yes [X]	No [ ]	9714	None
Final Certification	Yes [ ]	No [ ]		

Aerial Survey and Ground Level Review *

If a DRF, did the photographs show the rock blanket or core underdrain **by** gravity segregation?	**Yes** [ ]	No [X]
Foundation data:		Holes
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [X]	No [ ]
Surface **drainage** control working properly?	Yes [ ]	**Nu** [X]
Subsurface drainage control working properly?	Yes [X]	No [ ]
If active **fill, was** active spoil disposal determined to be on-going?	**Yes** [ ]	No [X]
If spoil disposal site inactive, how long was **disposal** operation idle (months)?		30
If a durable rock fill is under Construction,		
Approximately 80% durable rock **by** volume?	**Yes** [ ]	No [X]
If no to above, estimate percentage:		40
Discernable blanket or core drain forming?	**Yes** [X]	No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion **revision?**		Same
If the fill is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		Convex
Is the till situated in **landslide** topography?	**Yes** [ ]	No [X]
Were there **ground** cracks observed on the **fill** face or benches?	Yes [X]	No [ ]
Number of benches on fill:		**5**

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	Bch#4. Full length, Paral	600	5	2
	Bch#3. 3&4 Qrtl, Parallel	300	5	2

Location of Depressions

Were there depressions on the fill benches? **Yes** [X] No [ ]

			(Potential Water Depth)
Bch 83, 2 Quratile	15	5	8
Bch#1. 2 Quratile	15	8	8

Location of Erosion Areas

Were there areas of erosion on the fill benches? Yes [ ] No [X]

	(Maximum Gully Depth)
1	
3	
4	
5	

Location of Ground Bulges

Were **there** bulges or hummocky terrain? **Yes** [X] No [ ]

Bch #3, 2 83 Quartile	25	5
Bch #2. 2&3 Quartile	15	5

Location of Springs/Seeps

Were there springs or seeps observed in disposal areas? Yes [ ] Nu [X]

2
3
4
5

Location of Changes

Were **changes** in **vegetation** or spoil color observed on fill? Yes [ ] Nn [X]

2
3
4
5
6

Movement Characteristics

Did a failure occur on the fill? Yes [X] No [ ]

f so, enter **the** source **of** information on the failure: Field Measurements

Stage of construction during failure: **Post-construction** active

	Mass 1	Mass 2	Mass 3
Bench #	3		
Length (ft)			
Width (ft)	25		
Scarp Height (A)			
Depth to Slip Plane (ti)			
Transport Distance (ft)			
Rate of Movement	None		
Extent **of** Failure Movement	None		

Cause of Movement **Mass 1** Durability of Rock
Mass 2
Mass 3

Comments

ield review **revealed** bulges on benches #3 and #2 **Company** indicates bulges **and** cracks are **normal** maintenance and not failures

hotos were on Fill #53 not #52

S-5003-96
Fill #52

West Virginia
Hobet Mining, Inc.
West Ridge

Permit: S-5003-96 Fill: Fill #52

Permit: S-5003-96 Fill: Fill #52

West Virginia
Hobet Mining, Inc.
West Ridge

Permit: S-5003-96 Fill: Fill #52

Permit: S-5003-96 Fill: Fill #52

West Virginia
Independence Coal Co., Inc.
Twilight MTR Surface Mine

Permit: S-5023-96

Fill: Fill #1 James Creek

BLANK PAGE

	As constructed	Revision	Original design
Type of Fill		Durable Rock	Durable Rock
Size of Fill	Length (A)	9800	9800
	Area (acres)	135.0	135.0
	Volume (mcy)	201.0	201.0
Surface Configuration		Flat	Flat
Elevations	Crown (it)	2060	2060
	Toe (ft)	1300	1300
Slopes	Toe Foundation (%)	3.0	3.0
	Fill Face (deg.)	27.0	27.0
Surface Drainage Control		Center Drain	Center Drain
Subsurface Drainage Control		Constructed Underdrain	Gravity Segregated
Stability Analysis Software Used		REAME	REAME
Safety Factor	static	1.5	1.5
	Seismic		
Engineering Properties (Spoil)	Unit Weight (pcf)	140	140
	Friction Angle	40	40
	Cohesion (psf)	0	0
Engineering Properties (Foundation)	unit Weight (pcf)		
	Friction Angle (deg.)		
	Cohesion (psf)		
Phreatic Surface		P-0.05	P-0.05

		Appl. Phase Certification	Appl.Quarterly Certification	Photography Type
Construction Documentation and Certifications	Foundation Preparation	Yes [ ] No [X]	98/4	None
	Underdrains	Yes [ ] No [X]		Copies
	Surface Drains	Yes [ ] No [X]		Copies
	Grading and Revegetation	Yes [ ] No [ ]		
	Final Certification	Yes [ ] No [ ]		

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [X]	No [ ]
Foundation data:		
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [X]	No [ ]

Surface drainage control working properly?	Yes [ ]	No [ ]
Subsurface drainage control working properly?	Yes [ ]	No [ ]
If active fill. was active spoil disposal determined to be on-going'!	Yes [X]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
If a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [ ]
If no lo above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [X]	No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		
If the fill is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		
Is the till situated in landslide topography?	Yes [ ]	No [ ]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [ ]
Number of benches on fill:		

Aerial Survey and Ground Level Review *

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *	1			
	2			
	3			

Location of Depressions *	Were there depressions on the fill benches? Yes [ ] No [ ]			**(Potential Water Depth)**
	1			
	2			
	3			
	4			
	5			

Location of Erosion Areas *	Were there areas of **erosion** on the fill benches? Yes [ ] No [ ]			**(Maximum Gully Depth)**
	1			
	2			
	3			
	4			
	5			

Location of Ground Bulges *	Were **there** bulges or hummocky terrain? **Yes** [ ] No [ ]			
	1			
	2			
	3			
	4			
	5			

Location of Springs/Seeps *	Were there springs or seeps observed in disposal **areas?** **Yes** [ ] No [ ]			
	2			
	3			
	4			
	5			

Location of Changer *	Were changes in vegetation or spoil color observed on fill' **Yes** [ ] No [ ]			
	2			
	3			
	4			
	5			
	6			

Movement Characteristics *

Did a failure occur on the fill? Yes [ ] No [X]

f so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (it)			
Transport Distance (A)			
Rate of Movement			
Extent of **Failure** Movement			
Cause of Movement **Mass 1**			
Mass 2			
Mass 3			

Comments

alley Fills #2 and #3 combine with the James Creek fill to form VF #1. It is a multi-lift fill with 4 different crown elevations.

new "constructed" underdrain system was approved in Modification #3. This was in direct response to inspection concerns about improper gravity segregation

omments in February 8, 1999, inspection report indicate drainage from old deep mines needs to be collected and internally routed through the VF #1 underdrain.

An Nov was issued January 20, 1999, for side dumping

S-5023-96
Fill #1 James Creek

West Virginia
Independence Coal Co., Inc.
Twilight MTR Surface Mine

Permit: S-5023-96 Fill: Fill #1 James Creek

Permit: S-5023-96 Fill: Fill #1 James Creek

West Virginia
Independence Coal Co., Inc.
Twilight MTR Surface Mine

Permit: S-5023-96 Fill: Fill #1 James Creek

Permit: S-5023-96 Fill: Fill #1 James Creek

West Virginia
James Coal Co. (River Ridge Coal)
No. 1 Surface Mine

Permit: S-5033-87

Fill: #1

BLANK PAGE

	As constructed		Revision	Original design
Type of Fill	Durable Rock		Durable Rock	Durable Rock
Size of Fill	1050	Length (ft)	1050	1300
	14.5	Area (acres)	14.5	32.0
	0.8	Volume (mcy)	0.8	4.5
Surface Configuration	Concave		Flat	Flat
Elevations	1400	Crown (ft)	1400	1610
	1150	Toe (ft)	1150	1150
Slopes	9.0	Toe Foundation (%)	9.0	9.0
	23.0	Fill Face (deg.)	23.0	25.0
Surface Drainage Control	Perimeter		Perimeter	Center Drain
Subsurface Drainage Control	Gravity Segregated		Gravity Segregated	Gravity Segregated
Stability Analysis Software Used	REAME		REAME	REAME
Safety Factor	1.6	Static	1.6	1.6
		Seismic		
Engineering Properties (Spoil)	140	Unit Weight (pcf)	140	130
	33	Friction Angle	33	36
	1	Cohesion (psf)	1	100
Engineering Properties (Foundation)		Unit Weight (pcf)		
		Friction Angle (deg.)		
		Cohesion (psf)		
Phreatic Surface	None		None	None

Construction Documentation and Certifications

	Appl. Phase Certification		Appl. Quarterly Certification	Photography Type
Foundation Preparation	Yes [ ]	No [ ]		None
Underdrains	Yes [ ]	No [ ]		None
Surface Drains	Yes [X]	No [ ]	93/2	None
Grading and Revegetation	Yes [ ]	No [X]	99/1	None
Final Certification	Yes [X]	No [ ]	94/3	Copies

Aerial survey and Ground Level Review*

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation'! Yes [ ] No [ ]

Foundation data: Fills

Dip of strata relative to fill: Left Flank High Away From Fill

Were NOV's written on the fill? Yes [X] No [ ]

Surface drainage control working properly? Yes [ ] No [X]

Subsurface drainage control working properly? Yes [ ] No [ ]

If active fill, was active spoil disposal determined to be on-going? Yes [ ] No [X]

If spoil disposal site inactive. how lung was disposal operation idle (months)?

If a durable rock fill is under construction,

Approximately 80% durable rock by volume? Yes [ ] No [ ]

If no to above, estimate percentage:

Discernable blanket or core drain forming? Yes [ ] No [ ]

If the fill is completed, compare the size with the size in the latest pie-completion revision?

If the fill is significantly smaller. what is the reason according to the documentation or inspector?

Fill surface configuration:

Is the fill situated in landslide topography? Yes [ ] No [ ]

Were there ground cracks observed on the fill face or benches? Yes [ ] No [ ]

Number of benches on fill: 9

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks	1			
	2			
	3			

Location of Depressions	Were there depressions on the fill benches?	Yes [ ]	No [ ]	**(Potential Water Depth)**
	1			
	2			
	3			
	4			
	5			

Location of Erosion Areas'	Were there areas of erosion on the fill benches?	Yes [ ]	No [ ]	**(Maximum Gully Depth)**
	2			
	3			
	4			
	5			

Location of Ground Bulges	Were there bulges or hummocky terrain?	Yes [ ]	No [ ]
	1		
	2		
	3		
	4		
	5		

Location of Springs/Seeps	Were there springs or seeps observed in disposal areas?	Yes [ ]	No [ ]
	1		
	2		
	3		
	4		
	5		

Location of Changes	Were changes in vegetation or spoil color observed on fill?	Yes [ ]	No [ ]
	1		
	2		
	3		
	4		
	5		
	6		

Movement Characteristics

Did a failure occur on the fill? **Yes** [ ] No [ ]

f so, enter the source of information on the failure:

Stage of construction during failure:

	Mass 1	Mass 2	Mass 3
Bench #			
Length (ft)			
Width (ft)			
Scarp Height (ft)			
Depth to Slip Plane (ft)			
Transport Distance (ft)			
Rate of Movement			
Extent of Failure Movement			

Cause of Movement	
	Mass 1
	Mass 2
	Mass 3

Comments

oal seam. Upper Cedar Grove, Lower Cedar Grove, Alma; Slate NOVs issued for contemporaneous reclamation improper drainage, improper construction, and erosion , Seeps rming at bench #1 which were drained as shown on final certification

onding on bench #7, quarter #4

S-5033-87
1

West Virginia
James Coal Co. (River Ridge Coal)
No. 1 Surface Mine

Permit: S-5033-87 Fill: #1

Permit: S-5033-87 Fill: #1

BLANK PAGE

West Virginia
Julianna Mining
Camp Creek Surface Mine

Permit: S-2002-94

Fill: VF #1

BLANK PAGE

Company: Julianna Mining	Fill: VF #1	Date of permit file review:	11/03/99
Permit: S-2002-94	Mine: Camp Creek Surface Mine	Date fill contruction started:	11/01/94
State: WV	Was this fill visited at ground level? Yes [ ] No [X]	Finished:	/ /
County: Webster		Number of fill size revisions:	3
Latitude: 38-30-15	Had the fill been reclaimed at the time of the air survey? Yes [ ] No [X]	%Sandstone in overburden:	59
Longitude: 58-03-10			
	Date of survey: 12/21/99		

		As constructed	Revision	Original design
Type of Fill				Durable Rock
Sire of Fill	Length (ft)		2580	3740
	Area (acres)		108.0	108.0
	Volume (mcy)		18.1	16.4
Surface Configuration			Flat	Flat
Elevations	crown (ft)		2250	2140
	Toe (ft)		1920	1875
Slopes	Toe Foundation (%)		6.0	6.0
	Fill Face (deg.)		47.0	47.0
Surface Drainage Control			Center Drain	Perimeter
Subsurface Drainage Control			Gravity Segregated	Gravity Segregated
Stability Analysis Software Used			Stabil	Stabil
Safety Factor	Static		1.6	1.8
	Seismic		1.4	
Engineering Properties (Spoil)	Unit Weight (pcf)		125	125
	Friction Angle		38	35
	Cohesion (psf)		0	100
Properties (Foundation)	Friction Angle (dcg.)		32	27
	Cohesion (psf)		0	0
Phreatic Surface			Phreatic Surface	Phreatic Surface

Construction Documentation and certifications	Appl. Phase Certification		Appl. Quarterly Certification	Photography Type
Foundation Preparation	Yes [X]	No [ ]	4/97	B&W
Underdrains	Yes [X]	No [ ]	4/97	B&W
Surface Drains	Yes [ ]	No [ ]		
Grading and Revegetation	Yes [ ]	No [ ]		
Final Certification	Yes [ ]	No [ ]		

Aerial Survey and Ground Level Review *		
If a DRF, did the photographs show the rock blanket or cure underdrain by gravity segregation?	Yes [X]	No [ ]
Foundation data:	Text ,Pits	
Dip of strata relative to fill:	Away From Fill	
Were NOV's written on the fill?	Yes [ ]	No [ ]
Surface drainage control working properly?	Yes [X]	No [ ]
Subsurface drainage control working properly?	Yes [ ]	No [ ]
If active fill, was active spoil disposal determined to be on-going?	Yes [ ]	No [X]
If spoil disposal site inactive. how long was disposal operation idle (months)?		
If a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [ ]
If no to above, estimate percentage:		
Discernable blanket or core drain forming?	Yes [ ]	No [ ]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		
If the fill is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:	Flat	
Is the fill situated in landslide topography?	Yes [ ]	No [X]
Were there ground cracks observed on the fill face or benches?	Yes [ ]	No [X]
Number of benches on fill:	8	

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks *	2			

Location of Depressions *

Were there depressions on the fill benches? *Yes* [ ] No [ ] **(Potential Water Depth)**

1
2
3
4
5

Location of Erosion Areas *

Were there areas **of** erosion on the **fill benches'!** **Yen** [X] No [ ] **(Maximum Gully Depth)**

1 **Entire** Face
2
3
4
5

Location of Ground Bulges *

Were **there** bulges or hummocky terrain? Yes [ ] No [ ]

1
2
3
4
5

Location of Springs/Seeps *

Were there springs or seeps observed in disposal **areas'!** Yes [X] No [ ]

1 Toe **Area,** QTR 4
2
3
4
5

Location of Changes*

Were changes in vegetation or **spoil color** observed **on fill?** Yes [ ] **No** [ ]

2
4
5
6

Movement Characteristics *

Did **a** failure occur **on the** fill? Yes [ ] No [ ]

f so, enter the source of information on **the** failure:

Stage of construction during failure:

	Mass 1	**Mass 2**	**Mass 3**
Bench #			
Length (ft)			
Width (ft)			
Scarp **Height** (R)			
Depth to **Slip** Plane **(A)**			
Transport **Distance** (I?)			
Rate of Movement			
Extent *of* failure **Movement**			
Cause **of** Movement	**Mass 1**		
	Mass 2		
	Miss 3		

Comments

3R #1 changes center drains to ground drains; IBR 42 increased capacity by raising final elevation; Rev #9 **added** refuse disposal **on** bench above VF#1 **in** backstack area

ıbstantial erosion on area above seep at toe Erosion extends **up** the terrace face to bench #1

S-2002-94
VF #1

West Virginia
Julianna Mining
Camp Creek Surface Mine

Permit: S-2002-94 Fill: VF #1

Permit: S-2002-94 Fill: VF #1

West Virginia
Julianna Mining
Camp Creek Surface Mine

Permit: S-2002-94 Fill: VF #1

Permit: S-2002-94 Fill: VF #1

West Virginia
K & B Coal Co. (after Lionel)
Grace #3

Permit: S-3010-86

Fill: #3
Fill: #4

BLANK PAGE

Company:	K & B Coal Co. (after Lionel)	**Fill:**	# 3	Date of permit file review:	08/08/00
Permit:	S-3010-86	**Mine:**	Grace # 3	Date fill contruction started:	12/01/90
State:	WV	Was this fill visited at ground level?	Yes [X] No [ ]	Finished:	07/24/92
County:	Nicholas	Date of visit:	03/21/00	Number of fill size revisions:	
Latitude:	38-23-21	Had the fill been reclaimed at the time of the air survey?	Yes [X] No [ ]	%Sandstone in overburden:	54
Longitude:	80-38-54	Date of survey:	12/22/99		

		As constructed	Revision	Original design
Type of Fill		Durable Rock	Durable Rock	Chimney
Size of Fill	Length (ft)		637	625
	Area (acres)			9.7
	Volume (mcy)		0.1	
Surface Configuration		Flat	Flat	Flat
Elevations	Crown (ft)		2590	2600
	Toe (ft)		2350	2350
Slopes	Toe Foundation (%)		34.0	36.0
	Fill Face (deg.)	27.0	27.0	27.0
Surface Drainage Control		Center Drain	Center Drain	Chimney Core
Subsurface Drainage Control		Gravity Segregated	Gravity Segregated	Chimney Core
Stability Analysis Software Used			REAME	Other
Safety Factor	Static		1.6	1.7
	Seismic			
Engineering Properties (Spoil)	Unit Weight (pcf)		120	120
	Friction Angle		36	36
	Cohesion (psf)		10	0
Engineering Properties (Foundation)	Unit Weight (pcf)		115	115
	Friction Angle (deg.)		30	34
	Cohesion (psf)		120	100
Phreatic Surface			None	None

Construction Documentation and Certifications

	Appl. Phase Certification		Appl.Quarterly Certification	Photography Type
Foundation Preparation	Yes [ ]	No [X]		
Underdrains	Yes [ ]	No [X]		
Surface Drains	Yes [ ]	No [X]	92/2	Color
Grading and Revegetation	Yes [ ]	No [X]		
Final Certification	Yes [ ]	No [ ]		

Aerial Survey and Ground Level Review*

If a DRF, did the photographs show the rock blanket or core underdrain by gravity segregation?	Yes [ ]	No [X]
Foundation data:		Text, Pits
Dip of strata relative to fill:		
Were NOV's written on the fill?	Yes [X]	No [ ]
Surface drainage control working properly?	Yes [ ]	No [X]
Subsurface drainage control working properly?	Yes [ ]	No [X]
If active fill, was active spoil disposal determined to be on-going?	Yes [ ]	No [ ]
If spoil disposal site inactive, how long was disposal operation idle (months)?		
If a durable rock fill is under construction,		
Approximately 80% durable rock by volume?	Yes [ ]	No [X]
If no to above, estimate percentage:		15
Discernable blanket or core drain forming?	Yes [ ]	No [X]
If the fill is completed, compare the size with the size in the latest pre-completion revision?		Unknown
If the fill is significantly smaller, what is the reason according to the documentation or inspector?		
Fill surface configuration:		Flat
Is the fill situated in landslide topography?	Yes [ ]	No [X]
Were there ground cracks observed on the fill face or benches?	Yes [X]	No [ ]
Number of benches on fill:		6

TOZ-AM

	Location	Length (ft)	Width (ft)	Depth (in)
Location of Cracks*	3			

Location of Depressions*

Were there depressions on the fill benches? Yes [X] No [ ] **(Potential Water Depth)**

1
2

Location of Erosion Areas*

Were **there** areas of erosion on the fill benches? Yes [X] **No** [ ] **(Maximum Gully Depth)**

1 B 6-crown, Q 1
2 B 2-toe, Q 2
3
5

Location "f Ground Bulges*

Were there bulges or hummocky terrain? **Yes** [X] No [ ]

1
2
3
4

Location of Springs/Seeps*

Were there springs or **seeps** observed in **disposal** areas? Yes [X] **No** [ ]

Describe **location** of **seep**

1 B crown. Q 1
2 B 2, Q 2
3 B 3 Q 3-4
4

Location of Changes*

Were changes in vegetation or **spoil** color **observed** on **fill?** *Yes* [X] **No** [ ]

1
2
3
4
5
6

Movement Characteristics*

Did a **failure** occur on the **fill?** **Yes** [X] **No** [ ]

f so, enter the source of information **on** the **failure:** Permit File, Field Measurements, DEP Inspector

Stage of construction **during** failure:

	Mass 1	**Mass 2**	**Mass 3**
Bench #	6	3	2
Length (ft)			
Width (ft)			
Scarp **Height** (ft)			
Depth to Slip Plane (ft)	30		
Transport Distance (ft)	**9**		1
Rate of Movement	Slow	Slow	Slow
Extent of Failure Movement	Slip	**Slip**	Slip

Cause of Movement

Mass 1 **Inadequate** UnderDrains. Underground Mine Drainage, Durability of Rock.

Mass 2 **Inadequate** UnderDrains, **Durability** of **Rock,** Steep Stream Profile

Mass 3 **Inadequate** UnderDrains, Durability of Rock, **Steep** Stream **Profile**

Comments

ıe first **modification** for fill **3** (5/8/90) **allowed for** end-dumping **and** then **reworking** the **spoil far** the **lift** construction **(as opposed** to **a complete** haul-down **of** the material to **the** ıtom **of** the **developing** fill). Along with **fills 2 and 4, ıt** was **changed** to **the durable-rock type** on **7/16/90** **This** occurred **under** the **original** company **(Lionel–permitted** 2/2/90). 8 mples above the Lower Kittaning Coalbed were tested for durability, using SDI Three of these were shale, the rest sandstone **All but one shale sample passed** as **durable** **The permi** viewer **could** not **determine** why **samples** between the **Lower** Kittaning **and Clarion Coalbeds were** not taken **A profile of** fill 4, the crown of which is at an elevation very close to th ɔwn of fill 3, shows it back-stacked over a bench into the **Clarion** There's a thick, massive sandstone between the two seams The permit was revoked on 7/16/90 due to problems **lated to effluent** limits, **sediment control systems,** and the **construction of the valley fills** **Repair** work **began under contract on 6/29/94** **slip** on fill 3 **was first documented ın the** 1/28/92 quarterly **certification** report Certification **photographs indicate** that the **slip** was **corrected by** 7/24/92, but **reoccurred** by 2/12/93. ıe contracted work on fill 3 began by 10/12/94 The inspection report **claimed** that a large **discharge** was **faking** place at **the fill** toe and that trees **and** excessive **spoil had been placed** e slip area The **projected** was **completed by** 12/7/94 However **the slip** reappeared by **3/3/95** **The** slip **was reclaimed a third** time by 7/20/95 **A final** inspection **took** place on 1/30/9 most a year after the contractor's release **The** current problems on the fill must have started between this last **inspection and the 12/99** helicopter **survey** **The** slip referenced **in** the rtification **and inspection** reports is **listed under** mass # 1 in the table **above** Two **other** independent failures **were observed during** the **OSM ground-level review** **The maximum dept** **the largest slip is estimated to be 30** to 40 feet, **whish** corresponds to the depth **of** the **fill** **There** is **a significant seep** at bench 3, **whish** is connected to the mass # 2 failure There is a

S-3010-86
3

Company: K & B Coal Co. (after Lionel)	Fill: # 4		Date of permit **file review:** **08/08/00**
Permit: S-3010-86	Mine: Grace # 3		Date fill contruction started: 12/01/90
state: WV	Was this fill visited at ground level?	Yes [X] No [ ]	Finished: 07/24/92
County: Nicholas	Date of visit:	03/21/00	Number of fill size revisions:
Latitude: 38-23-21	Had the fill **been** reclaimed at the time of the air survey?	Yes [X] No [ ]	%Sandstone in overburden: 54
Longitude: 80-38-54	Date of survey:	12/22/99	

		As constructed	Revision	Original design
Type of Fill		Durable Rock	Durable Rock	Chimney
Size of Fill	Length (A)		1128	1075
	Area (acres)			14.8
	Volume (mcy)		1.5	
Surface Configuration		Concave	Flat	Flat
Elevations	Crown (ft)		2615	2600
	Toe (ft)		2315	2320
Slopes	Toe Foundation (%)		10.0	10.0
	Fill Face (deg.)	27 0	27.0	27.0
Surface Drainage Control		**Center** Drain	Center Drain	Chimney Core
Drainage Control		Gravity Segregated	Gravity Segregated	Chimney Core
Stability Analysis **Software Used**			REAME	Other
Safety Factor	Static		1.6	1.7
	Seismic			
Engineering Properties (Spoil)	Unit Weight (pcf)		120	120
	Friction Angle		36	36
	Cohesion (psf)		10	0
Engineering Properties (Foundation)	Unit Weight (pcf)		115	115
	Friction Angle (deg)		30	34
	Cohesion (psf)		120	100
Phreatic Surface			None	None

		Appl. Phase **Certification**	Appl.Quarterly **Certification**	Photography **Type**
Construction Documentation and **Certifications**	Foundation Preparation	Yes [ ] No [X]		
	Underdrains	Yes [ ] No [X]		
	Surface Drains	Yes [ ] No [X]	9211	Color
	Grading and Revegetation	Yes [ ] No [X]	92/4	Color
	Find Certification	Yes [ ] No [ ]		

If a DRF, did the photographs show the rock blanket or core underdrain by gravity **segregation?**	Yes [ ] No [X]
Foundation data:	Text, Pits
Dip of strata relative to **fill:**	
Were NOV's written on the fill?	**Yes** [X] No [ ]

Surface drainage control working properly?	**Yes** [X] No [ ]
Subsurface drainage control working properly?	**Yes** [ ] No [X]
If active fill, was active spoil disposal determined to **be** on-going?	Yes [ ] **No** [ ]
If spoil disposal site inactive, how long was **disposal** operation idle (months)?	
If a durable rock till **is** under construction	
Approximately ***80%*** durable rock by volume?	Yes [ ] No [X]
If no to above, estimate percentage:	15
Discernable blanket or core **drain** forming?	**Yes** [ ] No [X]
If the fill is completed, compare the sire with the size in **the** latest pre-completion revision?	**Unknown**
If the fill is significantly smaller, what is the reason according to the documentation or inspector?	
Fill surface **configuration:**	Concave
Is the **fill** situated in landslide topography?	Yes [ ] No [X]
Were there ground cracks observed on the fill face or benches?	Yes [X] No [ ]
Number of benches on fill	7

Aerial Survey **and Ground Level** Review *