COAL MINE BLAST LOG

Permit # PA 1234 Shot # 1 Date 1/5/00

Permittee SKY HAVEN COAL Operator DO. Time (Hrs) 12:11 PM

Blaster JIM JONES Signature JJ— Cert. 5678 Exact Location (GPS) GLEN HOPE

Weather / Sky Coverage CLEAR Temp F 23 Wind speed / direction 5 / NE Coal seam REDSTONE

Protected Structures Name VISSNOSKI Distance (ft) 650 Azimuth NE Scale Distance 38.16

Utility /other feature Name Distance (ft) Azimuth Scale Distance

Material blasted (%) Sandstone X Shale Limestone Other

Blast Type Breakdown Presplit Cast Production Other

Diameter 6 1/4 Burden 17 Spacing 17 Cubic yards blasted 14342 Average PF 0.78 Highest PF 0.78

Hole depth (ft) 36 # holes 40 Stemming (ft) 9 Type CUT. Interdeck (ft) — Backfill (ft) -2 Total feet 11

Hole depth (ft) # holes Stemming (ft) Type Interdeck (ft) Backfill (ft) Total feet

Explosive Type and Weight ANFO 11215 Emulsion Blend Primers 40 - ORANGE

Density 0.85 Density Density # used 40

Manufacturer AUSTIN Manufacturer Manufacturer Manufacturer AUSTIN

Maximum exp. / hole (lbs) 290

Maximum charge weight / 8 ms delay 290 MAX # charges / 8ms 1 Total weight of explosives in blast 11255

Detonators

	Delay	Quanity		Delay	Quanity
Electric			Nonelectric	325	
Series			AUSTIN	25	
yes / no				42	
Parallel					
No.circuts					

Lead Line (ft)

Det cord (ft)

Other

Blasting Machine/Initiation Method SNAPPER

Seismograph Model GEO 2000 DK Location VISSNOSKI Distance (ft) 650 PPV (in/s) L .17 T .14 V .09

Operator TOM CRAIN Trigger levels (PPV/dB) .05 / — Air (dB) 132 Frequency L 17.8 T 22.7 V 29.4

Analyst GEOSONICS Calibration Date 9/30/99

Blasting crew

Comments: Mats or other protection used or reasons and conditions for an unscheduled blast NO

COAL MINE BLAST LOG

Permit # PA 1234 **Shot #** 1 **Date** 2/10/00

Permittee SKY HAVEN COAL **Operator** DO. **Time (Hrs)** 10:16 AM

Blaster Jim JONES Signature JJ— Cert. 567B Exact Location (GPS) Glen HOPE

Weather / Sky Coverage CLEAR Temp F 40 Wind speed / direction 2 Coal seam REDSTONE

Protected Structures Name ANDERS Distance (ft) 1800 Azimuth ____ Scale Distance 58.84

Utility /other feature Name ____ Distance (ft) ____ Azimuth ____ Scale Distance ____

Material blasted (%) Sandstone X Shale ____ Limestone ____ Other ____

Blast Type Breakdown ____ Presplit ____ Cast X Production ____ Other ____

Diameter 6 1/4 Burden 17 Spacing 17 Cubic yards blasted 19427 Average PF 0.84 Highest PF 0.84

Hole depth (ft) 62 # holes 30 Stemming (ft) 13 Type CHIPS Interdeck (ft) — Backfill (ft) — Total feet 13

Hole depth (ft) ____ # holes ____ Stemming (ft) ____ Type ____ Interdeck (ft) ____ Backfill (ft) ____ Total feet ____

Explosive Type and Weight

	ANFO	Emulsion	Blend	Primers
	16300			ORANGE
Density	0.85			# used 40
Manufacturer	AUSTIN			AUSTIN.

Maximum exp. / hole (lbs) 566

Maximum charge weight / 8 ms delay 566 Max. # charges / 8ms 1 Total weight of explosives in blast 16340

Detonators

	Delay	Quanity		Delay	Quanity
Electric (circled) AUSTIN	350		Nonelectric		
Series					
yes / no (circled)					
Parallel					
No.circuts					

Lead Line (ft) ____ Det cord (ft) ____ Other ____

Blasting Machine/Initiation Method SEQUENTIAL 10/175

Seismograph Model GEO 2000 DK Location ANDERS Distance (ft) 1800 PPV (in/s) L .18 T .19 V .15

Operator D. HAYWARD Trigger levels (PPV/dB) .05/— Air (dB) 118 Frequency L 10 T 5.6 V 11.6

Analyst GEOSONICS Calibration Date 12/2/99

Blasting crew ____

Comments: Mats or other protection used or reasons and conditions for an unscheduled blast NO

COAL MINE BLAST LOG

Permit # 1234 - PA **Shot #** 1 **Date** 3/28/00

Permittee SKY HAVEN COAL **Operator** DO. **Time (Hrs)** 12:28 PM

Blaster JIM JONES Signature JJ- Cert. 5678 Exact Location (GPS) GLEN HOPE

Weather / Sky Coverage CLOUDY Temp F 42 Wind speed / direction Coal seam RED STONE

Protected Structures Name ECKINRIDGE Distance (ft) 1400 Azimuth NE Scale Distance 57.68

Utility /other feature Name Distance (ft) Azimuth Scale Distance

Material blasted (%) Sandstone X Shale Limestone Other

Blast Type Breakdown Presplit Cast X Production Other

Diameter 6 1/4 Burden 17 Spacing 17 Cubic yards blasted 19427 Average PF 0.83 Highest PF 0.83

Hole depth (ft) 66 # holes 30 Stemming (ft) 13 Type CUT. Interdeck (ft) — Backfill (ft) -2 Total feet 15

Hole depth (ft) # holes Stemming (ft) Type Interdeck (ft) Backfill (ft) Total feet

Explosive Type and Weight ANFO 16220 Emulsion Blend Primers ORANGE

Density 0.85 Density Density # used 40

Manufacturer AUSTIN Manufacturer Manufacturer Manufacturer AUSTIN

Maximum exp. / hole (lbs) 589

Maximum charge weight / 8 ms delay 589 Max. # charges / 8ms 1 Total weight of explosives in blast 16260

Detonators

	Delay	Quanity		Delay	Quanity
Electric AUSTIN	150		Nonelectric		
Series	200				
yes / no	250				
Parallel	300				
No.circuts	350				
	400				

Lead Line (ft)

Det cord (ft)

Other

Blasting Machine/Initiation Method SEQUENTIAL 175(10)

Seismograph Model GEO 2000 DK Location ECKINRIDGE Distance (ft) 1400 PPV (in/s) L .53 T .40 V .20

Operator TOM CRAIN Trigger levels (PPV/dB) .05/— Air (dB) 119 Frequency L 14.2 T 6.1 V 19.2

Analyst GEOSONICS Calibration Date 12/2/99

Blasting crew

Comments: Mats or other protection used or reasons and conditions for an unscheduled blast NO

COAL MINE BLAST LOG

Permit # 1234 - PA | Shot # 1 | Date 4/4/00

Permittee SKY HAVEN COAL. | Operator DO. | Time (Hrs) 12:02 PM

Blaster JIM JONES | Signature JJ | Cert. 5678 | Exact Location (GPS) GLEN HOPE

Weather / Sky Coverage | Temp F 42 | Wind speed / direction 10-15/N | Coal seam RED STONE

Protected Structures Name ECKINRIDGE | Distance (ft) 1300 | Azimuth NE | Scale Distance 53.56

Utility /other feature Name | Distance (ft) | Azimuth | Scale Distance

Material blasted (%) Sandstone X | Shale | Limestone | Other

Blast Type Breakdown | Presplit | Cast | Production X | Other

Diameter 6 1/4 | Burden 17 | Spacing 17 | Cubic yards blasted 21,921 | Average PF .85 | Highest PF .85

Hole depth (ft) 67 | # holes 32 | Stemming (ft) 13 | Type CUT. | Interdeck (ft) — | Backfill (ft) 3 | Total feet 16

Hole depth (ft) | # holes | Stemming (ft) | Type | Interdeck (ft) | Backfill (ft) | Total feet

Explosive Type and Weight

	ANFO	Emulsion	Blend	Primers
	18,715			ORANGE
Density	0.85			# used 32
Manufacturer	AUSTIN			AUSTIN

Maximum exp. / hole (lbs) 589

Maximum charge weight / 8 ms delay 589 | Max. # charges / 8ms 1 | Total weight of explosives in blast 18,747

Detonators

		Delay	Quanity		Delay	Quanity
Electric	AUSTIN	200		Nonelectric		
Series		250				
yes / no		300				
Parallel		350				
No.circuts		400				
	GEO	450				
	2000DK	500				

Lead Line (ft) | Det cord (ft) | Other

Blasting Machine/Initiation Method SEQUENTIAL 175(30)

Seismograph Model | Location ECKINRIDGE | Distance (ft) 1300 | PPV (in/s) L .32 T .59 V .15

Operator TOM CRAIN | Trigger levels (PPV/dB) .05/— | Air (dB) 117 | Frequency L 10.6 T 10.4 V 23.8

Analyst GEOSONICS | Calibration Date 6/22/99

Blasting crew

Comments: Mats or other protection used or reasons and conditions for an unscheduled blast

COAL MINE BLAST LOG

Permit # PA-1234 Shot # 1 Date 4/07/00

Permittee SKY HAWEN COAL Operator DO. Time (Hrs) 12:16 PM

Blaster JIM JONES Signature JJ— Cert. 5678 Exact Location (GPS) GLEN HOPE

Weather / Sky Coverage CLOUDY Temp F 50 Wind speed / direction Coal seam RED STONE

Protected Structures Name ECKINRIDGE Distance (ft) 1425 Azimuth NE Scale Distance 63.22

Utility /other feature Name Distance (ft) Azimuth Scale Distance

Material blasted (%) Sandstone X Shale Limestone Other

Blast Type Breakdown Presplit Cast Production X Other

Diameter 6 1/4 Burden 17 Spacing 17 Cubic yards blasted 17,982 Average PF 0.82 Highest PF 0.82

Hole depth (ft) 58 # holes 30 Stemming (ft) 12 Type CUT Interdeck (ft) — Backfill (ft) 2 Total feet 14

Hole depth (ft) # holes Stemming (ft) Type Interdeck (ft) Backfill (ft) Total feet

Explosive Type and Weight ANFO 14855 Emulsion Blend Primers ORANGE

Density 0.85 Density Density # used 30

Manufacturer AUSTIN Manufacturer Manufacturer Manufacturer AUSTIN.

Maximum exp. / hole (lbs) 508

Maximum charge weight / 8 ms delay 508 Max. # charges / 8ms 1 Total weight of explosives in blast 14,885

Detonators Delay Quanity Delay Quanity

Electric AUSTIN. 50 Nonelectric Lead Line (ft) Blasting Machine/Initiation Method

Series 100 Det cord (ft) SEQUENTIAL

yes / no 150 175 (10)

Parallel 200 Other

No.circuits 250

300

Seismograph Model 2000DK Location ECKINRIDGE Distance (ft) 1425 PPV (in/s) L .14 T .26 V .07

Operator TOM CRAIN Trigger levels (PPV/dB) .05/— Air (dB) 106 Frequency L 11.1 T 11.6 V 15.6

Analyst GEOSONICS Calibration Date 6/22/99

Blasting crew

Comments: Mats or other protection used or reasons and conditions for an unscheduled blast NO