May 15, 2007

MSHA Belt Air Technical Panel Visit

Skyline Mine Overview

Arch Western Bituminous Group, LLC

Arch Western Resources, LLC

ARCH COAL, INC.
Underground Bituminous Coal Mines
2000 - 2007
MSHA Reportable Injury Incidence Rate Comparison

Skyline Health & Safety Perfromance
Underground Bituminous Coal Mines
2000 - 2007
MSHA Lost Time Injury Rate Comparison

Skyline Health & Safety Performance

A subsidiary of Arch Western Resources, LLC.
Bliminus Group, LLC.
UDOGM 2007 Earth Day Award for Musk Thistle control
underground coal

MISHA/NMA 2005 Sentinel of Safety Award for Large
element to safety success

Monthly Standup For Safety meetings have been a key
Focus on behavior

Core belief is that all injuries can be prevented.

Safety of all personnel to be core values
maintaining healthy work conditions, and ensuring the
Skylime Mine considers protection of the environment,
and environmentally responsible workplace

A non compromising commitment to achieve an injury free

Safety Is A Value
Skylime Mine
NOTICES OF VIOLATION
Skylive Environmental Performance

2000 - 2007
1994 Used Longwall purchased and Rebuilt - Mecosta Face
1993 Overland Pipe Belt Began Operation
1991 Second Longwall Commissioned - Callirick Face
1986 Longwall Commissioned - KB Face
1985 First Unit Train Shipped From New Loadout To IPA
1984 Getty Interest Bought Out By Coastal Corporation
1982 Initial Production Mine 1 - Upper O'Conner Seam
1981 Initial Production Mine 3 - Lower O'Conner A Seam
1980 Permits Approved/Initial Construction
1979 Getty Mining Became A Joint Venture Partner
1978 Coastal Corporation Acquired Skyline Coal Properties
1974 Reserve Drilling Started
1972 First Coal Lease Acquired By McKinnon Family

SKYLINE HISTORY

ARCH WESTERN
BURNINGGROUNDS GROUP, LLC
Longwall mining operations resumed 2006
Operations Resumed In North Leased With Continuous Miners 2005
Operations Idled Because of Geologic And Water Inflow Problems 2004
Mine I Portals Sealed 2003
High Water Inflow Encountered In 10 Lef Development 2001
Spontaneous Combustion Mine Fire 2001
Acquired by Arch Coal Inc. 1998
Canyon Fuel Company, LLC 1996
Arco & Iochu Corporation Bought Skyline From Coastal And Formed 1995
Initial Production Mine 2 Began - Lower O'Conner B Seam

Skyline History
Geological Challenges

Skyline Mine

- Rock mining often requires use of drilling and blasting methods...not part of miners' normal routine
- Reduced amount of rock mining with 2 entry
- Hardness 3, 300 psi to 20,000 psi
  - Width 5 ft to 100 ft
- Fractured Dikes
- Reduced exposure to fault-weakened root and rib with 2 entry
- Displacement 1 ft to 15 ft
- Faults
- Reduced exposure to horizontal stress damage with 2 entry
  - Magnitude Vuling X Vertical Stress
  - Principal Direction = N 80 W
  - High Horizontal Stress
- Pillar bump potential reduced with 2 entry
- Increased longwall abutment pressure
  - 1,000 ft to 2,200 ft of overburden results in high vertical stress and
  - 1,000 ft to 2,200 ft of overburden results in high vertical stress and
- Depth of Cover

- Roof/Rib Control Impacted By
The use of 2 entity yield pillar provides a uniform subsidence profile.

- Surface Subsidence:
  - Surface Subsidence footprint beneath overlying chain pillars
  - The use of 2 entity yield pillar design diminishes most of the stress underlying seam
  - Seam containing to hight amount of deformation of roof and rib in large multi-entity chain pillars cause high stress zones in the underlyng seam to mine design in underlaying seam
  - Stress footprint of overlying mine works on an underlaying seam is critical

- Multi-Beam Mining:
  - Reduced exposure to channel-edge roof problems with 2 entity conditions along channel edges
  - Channel washouts and scours are often associated with difficult roof
  - Sandstone Channels

- Geological Challenges:
  - Skyline Mine
Belt Air Petition For Modification Approved May 22, 2001

- Enable Fire Fighting From Fresh Air Side
- To Align Belt Entry Air Flow and Water Flow Direction

- Reduce Exposure to Injury From Roof & Rib
- To Reduce The Number of Entries Required

- Reduce Exposure to Respirable Dust

- To Provide Higher Volumes of Air at the Working Face

Belt Air Petition For Modification Submitted October 27, 2000

Belt Air
Skyline Mine

ARCH WESTERN

A subsidiary of Arch Western Resources, LLC

Brimming Group, LLC
Two Entry Petition for Modification Submitted March 28, 2000

Skyline Mine

ARCH Western

Brimmion Group, LLC

Two Entry

Incentives

Reduced to Mining Under Deep Cover By Reducing the Occurrence of These

- Reduce Exposure to Injury From Coal Bursts, Roof Falls, and Rib Rolls

- To Reduce The Number of Entries Required
Coal Extraction Process

- Reducing the level of dust that miners are exposed to during the mining process.
- Reduces exposure to respirable dust and black lung disease.
- Provides higher volumes of air at the working face.
- Under deep cover in faulted and high geologically stressed areas.
  - Such as coal bursts, root failures, and rib rolls related to mining subsidence.
  - Essential for utilization of the two entry system.

Belt Air Advantages

- Skyline Mine

Arch Western

Brumings Group LLC
Way

• Reduces Exposure to Respirable Dust and Black Lung Disease By Reducing the Level of Dust That Miners Are Exposed To in the Travel

• Provides Lower Air Velocity In Main Travel Way

• Enables a Fire in the Belt Entry to be Fought From the Fresh Air Side of the Fire.

• Systems Fail, Facilitates Detection of Fire By Smell in the Event All Other Detection

• Provides Air Direction in Belt Entry Toward Working Section

Belt Air Advantages

Skyline Mine

A Subsidiary of Arch Western Resources, LLC

Arch Western bituminous Group, LLC
Associated With High Pressure Ventilation Doors:

- Reduces Exposure to Strains, Sprains, Falls, and Contacted-by Injuries
- Gob Pillars
- Reduces the Risk of Spontaneous Combustion
- System Pressure
- Lowers Main Fan Operating Point and Mine Ventilation

Belt Air Advantages

Skyline Mine
Skyline Mine
Belt Air and Two Entry System

- Utilization
  - Development Mining
    - Belt is Return Airway From Belt Tail to Near Belt Drive
  - Longwall Mining
    - Belt Air Is Intake Airway From Drive to Face
- All Belt Air Monitored for Methane
  - Methane Monitoring
    - Alert/Alarm Device on Section Intake and Belt
    - Alarm at 15 ppm above ambient
    - Alert at 10 ppm above ambient
  - Diesel Discriminating Sensors
- CO Monitoring
  - Water Risers in Intake Every 300 ft With Hose at Strategic Locations
- Intake Fire Risers
- Rock Dust
  - Intake and Belt Line with Tools to Cut Belt
  - Fire doors
- Safety Precautions

Skyline Mine

Belt Air and Two Entry System

Arch Western
- Diesel Fuel Cannot Be Stored in Two Entity System
- Fire Suppression Systems and Fuel Shut Off
- Special Protection of Fuel and Hydraulic Systems
- Call-In Procedure When Leaving Two Entity
- Idle Down Notification
- Call-In Procedure When Entering Two Entity
- Diesel Equipment

- No Compressor Stations or Portable Compressors Allowed in Two Entity
- Two Distinct Methods of Communication Are Provided
- Communication

Safety Precautions (continued)

Belt Air and Two Entity System

Skyline Mine
Belt Air and Two Entry System
Skyline Mine
Skyline Mine

Belt Air and Two Entry System
Service of Drives, Take-Ups, Head Pulleys and Tail Pulleys
Clean up
Belt Wipers Must Be Maintained
Sprinkler Fire Suppression Systems
Thorough Pre-Shift and On-Shift Exams of Belts
AMS Monitoring System
Isolation of Belt Air with Effective Stoppings

Belt Infrastructure Maintenance Is Key

Belt Air and Two Entry System
Skyline Mine
- DM&K OR NCB 158 Electrical Resistance Test
- NCB 158 Propane Burner Test
- DM&K OR NCB 158 Drum Friction Test
- MSHA Schedule 2-G, EMEK', OR NCB 158 Flame Test

- All underground belting meets MSHA Requirements

- Belt Materials

Belt Air and Two Entry System

Skiving Mine
Example:

- Monitoring System Has Provided Early Warning
- Mined Four Panels Successfully
- No Reportable Roof Falls In Two Entries

Results at Skyline Belt Air and Two Entry System

Skyline Mine