

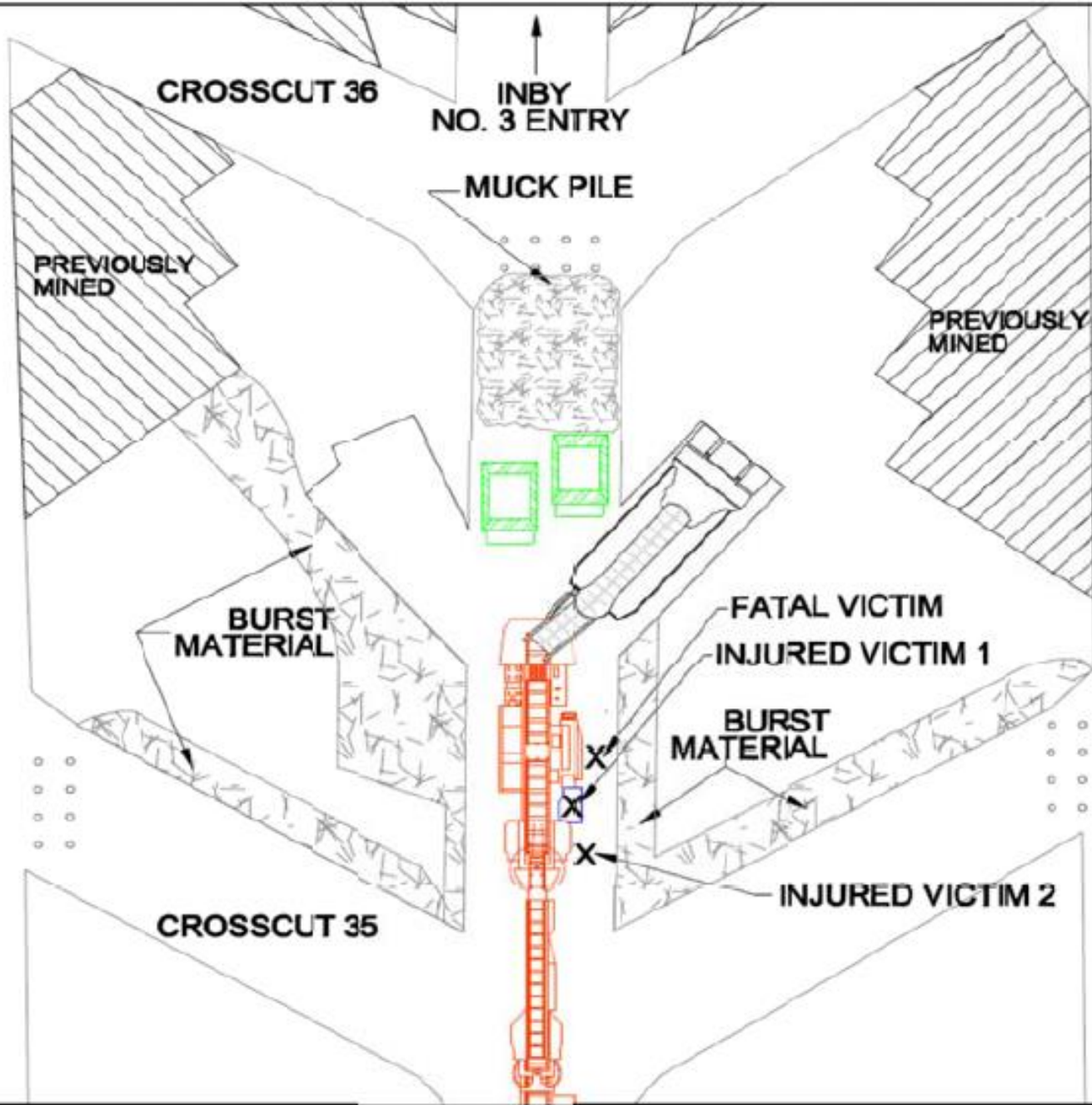
Lone Mountain Processing Inc Huff Creek #1 Mine Harlan County, KY

August 6, 2013


Fall of Face, Rib, Pillar, Side, or Highwall

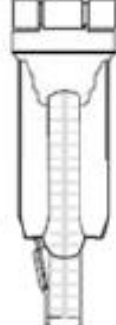
Overview

- Underground coal mine (room and pillar) (2013: approximately 299,166 h worked and 121 employees)
- Mining height near the accident: 6 ½ ft – 4 ft of coal and 2 to 3 ft of roof rock
- Maximum overburden: 2,200 ft (1,640 ft at accident site)
- Mine is overlain by another seam and interburden between them ranges from 43 to 50 ft. The seam above has been mined at several locations and whenever mining was done in an area beneath old mine workings that have been pillared the mining conditions were usually good. Conversely, when working beneath an area where no mining has taken place, conditions founds were usually bad
- 56-year-old continuous mining machine operator
- Victim and his crew were retreat mining when a coal/rock burst occurred
- Two other miners were injured, one seriously



 MOBILE ROOF SUPPORT UNIT

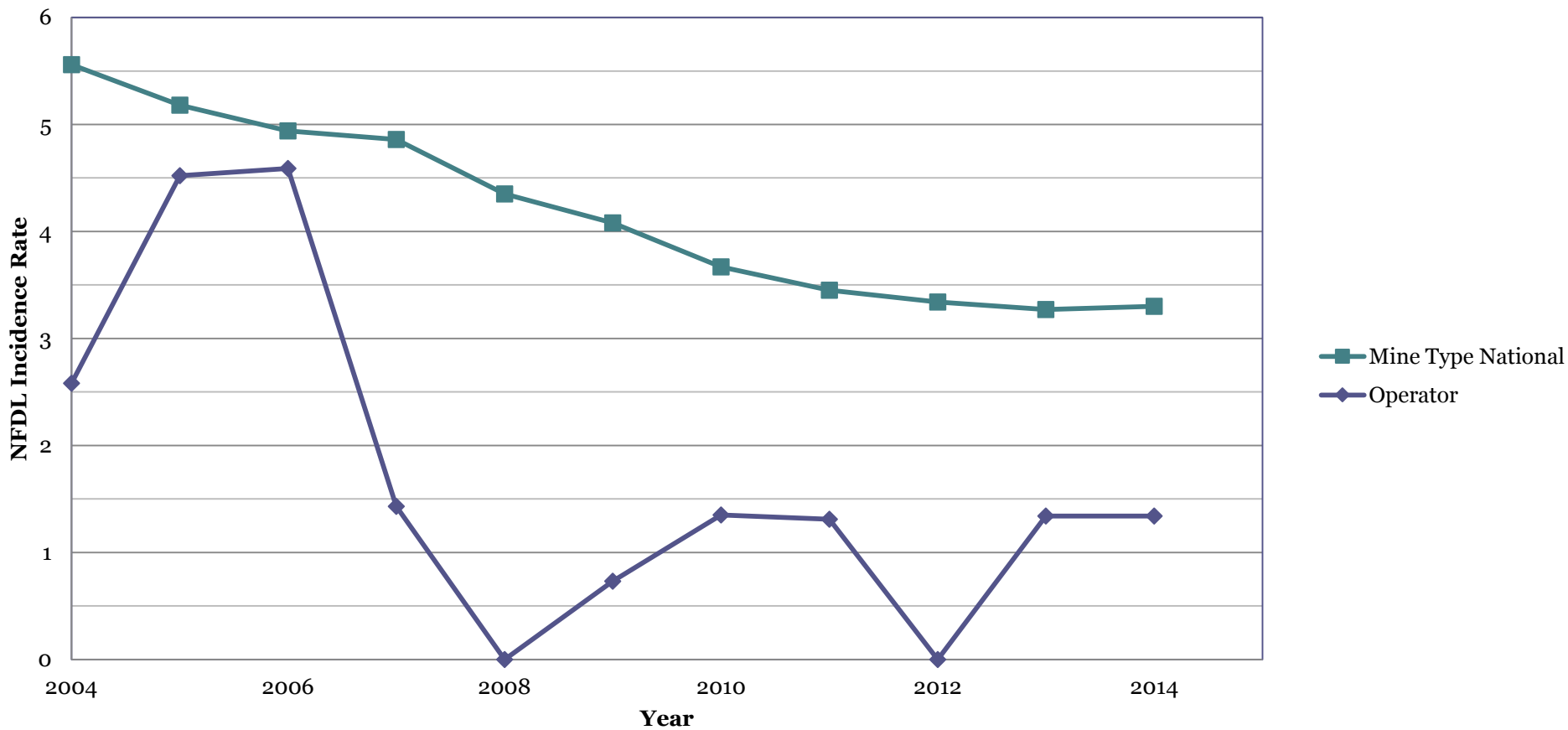
 JOY CHS0501 CHAIN HAULAGE #4 BREAKER CAR MODULE

 JOY 14CM15 CONTINUOUS MINER

**SKETCH OF ACCIDENT SCENE
FATAL COAL/ROCK BURST**
LONE MOUNTAIN PROCESSING, INC
HUFF CREEK NO. 1 MINE; 006 MMU
6 LEFT PANEL OFF OF B-4 MAIN
AUGUST 6, 2013 - 11:52 A.M.
NOT TO SCALE



Non-Fatal Days Lost (NFDL) Incidence Rate

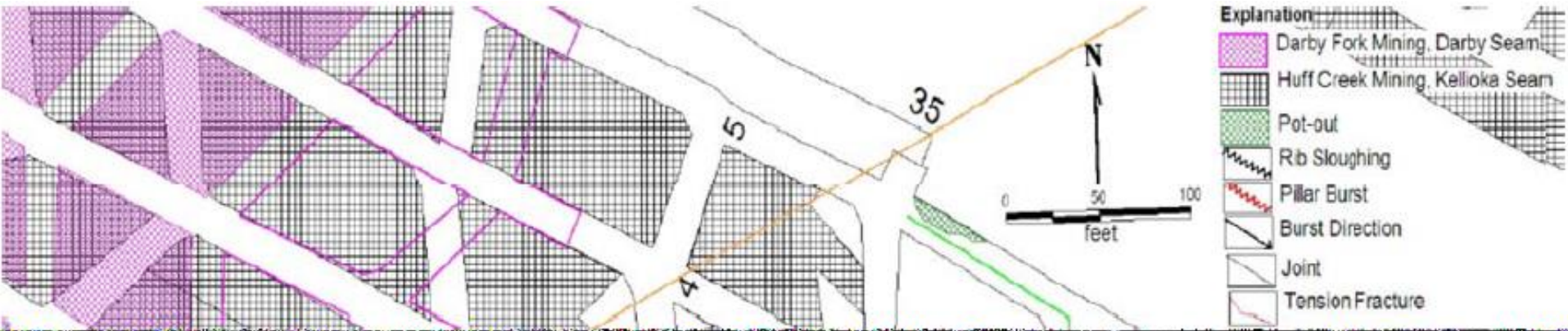


Findings

- Victim had 37 years of mining experience, with 16 at this mine and work activity. All training records were up to date
- Hard roof and floor conditions were found, commonly associated with burst activity
- A joint zone near the area may have shifted the weight onto the pillar remnants. Its effect could not have been ruled out
- Mining was being done beneath an area where no mining of the seam above had been done – often resulting in poorer mining conditions

Findings

- Management had several strong indicators that the retreat mining plan was inadequate, such as:
 - Five months earlier MSHA provided management with a technical report stating that retreat mining for the specific panel was inadvisable as it was between two gobs
 - In similar mining conditions in the company's Darby Fork #1 Mine, burst mitigation methods would be used
 - Pillar extraction should be done from the most inby portion towards the outby end of the pillar in highly ground-stressed areas and not start at the center, most highly stressed area, as was being done
 - A previous non-injury outburst happened just hours before the accident, yet no changes were made to the mining plan



Root causes

- The retreat mining method used was incompatible with the prevailing geological conditions
- The approved roof control plan was not revised when mining conditions and geological information indicated that it was not suitable anymore

Best practices

- Ensure that the approved roof control plan support provisions are suitable for the geological conditions at the mine and that the plan is followed
- Ensure that the pillar dimensions and mining method are suitable for the conditions or ensure that roof and rib control methods are adequate for the depth of cover and for the potential effects of any mines above or below active workings
- Develop a map of geological features and anomalies to determine orientation as a means to predict when and where they will be encountered during mining, so additional roof support can focus on those areas
- When gob falls have been delayed for periods that exceed routine intervals for the mining conditions, evaluate the area and consider evacuating miners and equipment to a safe area until the fall occurs
- Conduct frequent and adequate examinations of roof, face, and ribs. Be alert for changing conditions. When hazardous conditions are detected, danger off access to the area until it is made safe for work and travel
- Maintain proper entry widths and pillar dimensions



MSHA's Safety Targets Program Roof and Rib Falls (Coal)

Content

Please note, due to the extensive nature of the content found on the CD's and/or DVD's we are providing you with a sample of what may be found. If you are interested in the entire content, please see the contact information above.

- ["Do's and Don'ts"](#)

- Multimedia
 - [Booklet - Roof and Rib Control - Coal Miner's Handbook](#)

- Videos
 1. ["Roof and Rib Control"](#)
 2. ["Make it Safer with Roof Screens"](#)
 3. "Supervisor's Responsibilities in Roof Control" (On DVD)
 4. ["Scaling"](#) 5. ["Roof Fall Entrapment: Survivor and Eye Witness Accounts"](#)

Collection contains accounts from:

 - i. Larry Clevenger
 - ii. Donzil Cutlip
 - iii. Dave Garry
 - iv. Dave Murone
 - v. Larry Strayer

- [Fatalgrams](#)

- [Miner's Tips & Safety Ideas](#)

- Innovative Products
 - [Roof Bolting Machine Outby Rocker Pad Deflector](#)
 - [Collapsible Cable Hangers](#)



MSHA's Safety Targets Program Roof and Rib Falls (Coal)

- [Best Practices And Safety Initiative Bulletins](#)
- [Coal Mine Safety and Health Info-Grams and Close Call Accidents](#)
- Program Information Bulletins
 - [P09-03 March 16, 2009, General Guidelines for the Use of Numerical Modeling to Evaluate Ground Control Aspects of Proposed Coal Mining Plans](#)
 - [P07-24 September 17, 2007, Use of Portable Roof Drills](#)
 - [P05-19 November 25, 2005, Use of Mobile Roof Support \(MRS\) Units for Retreat Mining](#)
- Procedure Instruction Letter
 - [I08-V-2 May 29, 2008 Technical Support Assistance in Reviewing Roof Control Plans](#)
- MSHA Job Safety Tips And Murphy's Law
 - [Safety Hazard Pocket Card - Roof and Rib Safety in Coal Mines](#)
 - [Hazard Alert - It Hurts To Be In The "Red Zone"](#)
 - [Murphy's Law for Coal Mine Safety](#)
- [Equipment Safety and Health Concerns Internet Link](#)
- [Billboard used in 2009 PROP Initiative](#)