

FRANK - Mine is located 7 miles East of Price  
and 12 miles North of Wellington on the 9 mile Road.  
Jm.

UNITED STATES  
DEPARTMENT OF LABOR  
MINE SAFETY AND HEALTH ADMINISTRATION

District 9

ACCIDENT INVESTIGATION REPORT  
(Underground Coal Mine)

NONINJURY COAL OUTBURST

SOLDIER CANYON MINE (ID NO. 42-00077)  
SOLDIER CREEK COAL COMPANY  
WELLINGTON, CARBON COUNTY, UTAH

JANUARY 21, 1993

BY

DENNIS P. BOYACK  
COAL MINE SAFETY AND HEALTH INSPECTOR

AND

JACK MATEKOVIC  
SUPERVISORY COAL MINE SAFETY AND HEALTH INSPECTOR



ORIGINATING OFFICE: MINE SAFETY AND HEALTH ADMINISTRATION  
215 EAST MAIN STREET, PRICE, UTAH 84501  
TONY GABOSI, SUBDISTRICT MANAGER

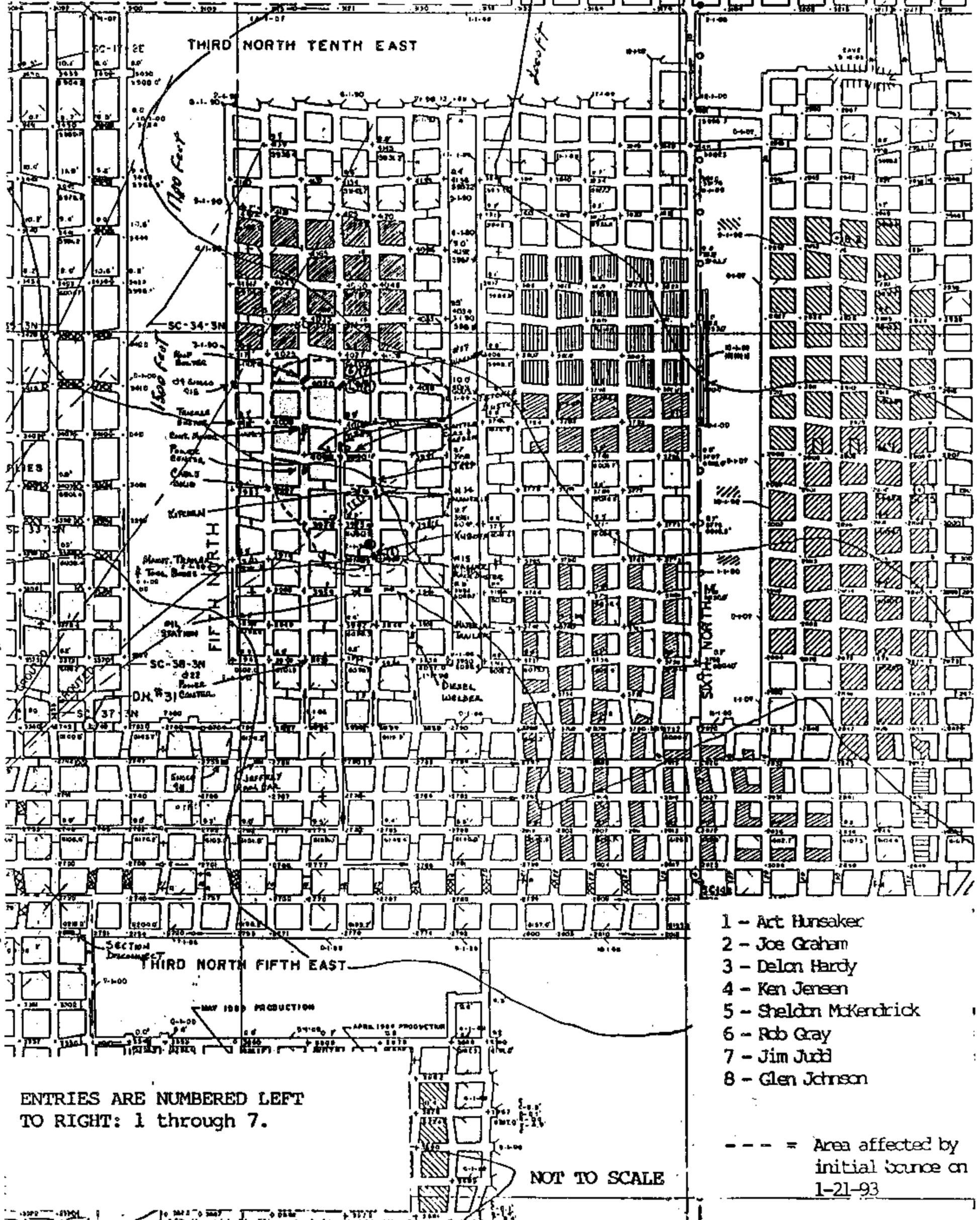
**ACCIDENT INVESTIGATION REPORT**  
(underground Coal Mine)

**NONINJURY COAL OUTBURST**

**SOLDIER CANYON MINE (ID NO. 42-00077)**  
**SOLDIER CREEK COAL COMPANY**  
**WELLINGTON, CARBON COUNTY, UTAH**

**JANUARY 21, 1993**

Accident Investigation Report  
 (Underground Coal Mine)  
 Noninjury Coal Outburst  
 Soldier Canyon Mine (ID No. 42-00077)  
 Soldier Creek Coal Company  
 Wellington, Carbon County, Utah  
 January 21, 1993



ENTRIES ARE NUMBERED LEFT TO RIGHT: 1 through 7.

- 1 - Art Hunsaker
- 2 - Joe Graham
- 3 - Delon Hardy
- 4 - Ken Jensen
- 5 - Sheldon McKendrick
- 6 - Rob Gray
- 7 - Jim Judd
- 8 - Glen Johnson

--- = Area affected by initial source on 1-21-93

NOT TO SCALE



**Authority**—This report is based on an investigation made pursuant to the Federal Mine Safety and Health Act of 1977, Public Law 95-173, as amended by Public Law 95-164.

## Section A—Identification Data

1. Title of investigation: Noninjury Coal Outburst	2. Date MSHA investigation started: January 21, 1993
3. Report release date: March 8, 1993	4. Mine: Soldier Canyon Mine
5. Mine ID number: 42-00077	6. Company: Soldier Creek Coal Company
7. Town, County, State: Price, Carbon, Utah	8. Author(s): Dennis P. Boyack/Jack Matekovic

## Section B—Mine Information

9. Daily production: 2,625 tons	10. Surface employment: 6
11. Underground employment: 61	12. Name of coalbed: Rock Canyon Seam
13. Thickness of coalbed: 8 to 10 feet	

## Section C—Last Quarter Injury Frequency Rate (HSAC) for:

14. Industry: 14.42	15. This operation: 6.88
16. Training program approved: 04/27/88	17. Mine Profile Rating: N/A

## Section D—Originating Office

18. Mine Safety and Health Administration Coal Mine Health and Safety District No. : 9	Address: P.O. Box 25367, DFC Denver, CO 80225
---	--

## Section E—Abstract

On Thursday, January 21, 1993, at approximately 2:00 a.m., a severe coal outburst occurred in the 5th North pillar retreat section. Approximately 25 pillars were affected by the outburst. The eight miners working in the section at the time of the outburst were able to work their way out of the section. There were no injuries. There was extensive property damage to ventilation stoppings on the section.

## Section F—Mine Organization

Company officials:	Name	Address
19. President:	Rick Olsen	P.O. Box I, Price, Utah 84501
20. Superintendent:	Darrel Curtis	(same as above)
21. Safety Director:	Ray Bridge	(same as above)
22. Principle officer—H&S:	Ray Bridge	(same as above)
23. Labor Organization:	N/A	
24. Chairman—H&S Committee:	N/A	

## GENERAL INFORMATION

The Soldier Canyon Mine is an underground coal mine owned and operated by Soldier Creek Coal Company, a division of Sun Coal Company. The mine is located in the Bookcliff coal fields at the mouth of Nine Mile Canyon, approximately 22 miles northeast of Price, Utah. The mine was opened in 1906, with limited prospecting on the property. In 1935, Premium Coal Company was granted a lease on the property and continued operations until 1972, producing approximately 1.2 million tons of coal. California Portland Cement purchased the property in June 1974 but did not start production until June 15, 1976. In 1985, Sun Coal Company purchased the property.

The mine operates in the Rock Canyon and Sunnyside coal seams. The Sunnyside Seam lies 130 feet above the Rock Canyon seam. The seams are interconnected by two sets of rock slopes, and one 6-foot diameter shaft.

The mine is ventilated by two Joy Axivane fans, which operate exhausting. The No. 1 fan is seven feet in diameter, driven by a 500 horsepower motor; while the No. 2 fan is 10 feet in diameter driven by an 800 horsepower motor. Both fans are equipped with auxiliary diesel backup motors. No. 1 fan ventilates the main north side of the mine, while No. 2 fan ventilates the active 3rd north section of the Rock Canyon seam, as well as the active areas of the Sunnyside seam.

Entries are driven in sets of seven to ten on advance and pillars are extracted on retreat using remote-controlled continuous mining machines. The roof is fully supported with 5-foot resin grouted rods and the ribs are supported with mechanical bolts installed on 5-foot centers.

The mine employs 67 employees, 61 underground and 6 on the surface. The mine produces coal two shifts per day, five days a week and maintenance is performed on the third shift. Coal production averages approximately 2,600 tons per day. A regular safety and health inspection was in progress at the time of this occurrence. The most recent return air samples indicated 3,871,809 cubic feet of methane are being liberated daily.

The principal officers at the mine are:

Rick Olsen  
Darrel Curtis  
Ray Bridge  
Sheldon McKendrick

President  
Superintendent  
Safety Director  
Section Foreman

## DESCRIPTION OF ACCIDENT

On Wednesday, January 20, 1993, about 11:00 p.m., Ken Jensen, shift foreman, and Sheldon McKendrick, section foreman, entered the mine with the graveyard maintenance crew and proceeded to the 5th North section. McKendrick examined the section and assigned two roof bolters, Jim Judd and Glen Johnson, and utility man, Robert Gray, to duties in the face areas. Jensen assigned Joe Graham, electrician; Delon Hardy, mechanic; and Art Hunsaker, utility man, to equipment maintenance duties outby the working faces. Work continued without incident until 2:00 a.m. on January 21, 1993, when without prior warning, a severe outburst of coal occurred on the section.

McKendrick, Judd, Johnson and Gray had just finished setting a breaker row between the Nos. 4 and 5 pillar when the outburst occurred. After the dust settled and visibility improved, they traveled the secondary intake (No. 2 entry) to the mouth of the section. Jensen was in the cab of a parked shuttle car at the feeder breaker and Graham and Hardy were standing next to a large steel tool box three crosscuts outby the feeder breaker. Hunsaker prepared to climb into the cab of a Wagner diesel scoop and was covered up to his chest with fine coal. Jensen, Graham, and Hardy assisted in removing the fine coal from around Hunsaker. The four men then proceeded up the main intake entry (No. 5) to the mouth of the section where they joined the other crew members. Jensen checked for injuries, while Graham called to the surface to report the incident at approximately 2:30 a.m. MSHA was notified of the occurrence at 6:50 a.m. on January 21, 1993, when an inspector arrived at the mine.

## PHYSICAL FACTORS INVOLVED

The investigation revealed the following factors relevant to the occurrence:

1. The outburst caused damage to approximately 25 pillars.
2. The outburst damaged ventilation structures (stoppings) in the section.
3. The outburst increased methane gas liberation throughout the section.
4. The outburst thrust coal into the entries and crosscuts, six pillar blocks outby the pillar line, especially in the Nos. 4, 5, 6, and 7 entries. The floor was heaved approximately four feet in a few locations.
5. The force of the outburst sheared the bolts from the transformer lid, which caused the lid switch to drop out the circuit breaker at the section power disconnect at 4 north 5 east (see map).

6. The outburst of coal was recorded as a 3.6 magnitude earthquake on the Richter Scale in Salt Lake City, Utah, 135 miles northwest of the mine.
7. The Denver Safety and Health Technology Center has prepared a separate report on this incident.

#### CONCLUSION

The outburst of coal was created by excessive roof pressures probably caused by a combination of full and partial pillar extraction in the adjacent 6 and 7 north panels. Abrupt changes occurred in the overburden across the three panels that ranged from 1,500 to 2,000 feet. A small 64-foot barrier pillar was left between the 5 north and 6 north pillar sections, and three rows of pillars were left intact in the middle of the 6 north section.

#### VIOLATIONS

1. A 103(k) order, No. 3851390, was issued to ensure the safety of miners in the affected area pending the outcome of the investigation.
2. A 104(a) Citation, No. 3851391, was issued for failure of the operator to immediately notify the district or subdistrict office of an outburst of coal, a violation of 50.10, 30 CFR.

Submitted by,

Dennis P. Boyack  
Dennis P. Boyack

Approved by,

Tony Gabossi  
Tony Gabossi  
Subdistrict Manager

William A. Holgate  
William A. Holgate  
District Manager

**APPENDIX**

The investigation was conducted by the Mine Safety & Health Administration and those present during the investigation were:

**SOLDIER CREEK COAL COMPANY OFFICIALS**

Rick Olsen	President
Darrel Curtis	Superintendent
Ray Bridge	Safety Director
Ken Jensen	Graveyard Shift Foreman
Sheldon McKendrick	Section Foreman
James Noyes	Mine Foreman
Tom Paluso	Mine Engineer

**SOLDIER CREEK COAL COMPANY EMPLOYEES**

Joe Graham	Electrician
Delon Hardy	Mechanic

**MINE SAFETY & HEALTH ADMINISTRATION**

Jack Matekovic	Supervisory	Coal Mine Safety & Health Inspector
Dennis P. Boyack		Coal Mine Safety & Health Inspector
Donald B. Hanna		Coal Mine Safety & Health Inspector (Roof Control)
Jerry O.D. Lemon		Coal Mine Safety & Health Inspector
Laurence J. Ganser		Coal Mine Safety & Health Inspector
Allison D. Gray		Coal Mine Safety & Health Inspector
Richard L. Bury		Coal Mine Safety & Health Inspector
Warren Andrews		Technical Support
Sid Hansen		Technical Support