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REPORT OF INVESTIGATION
(UNDERGROUND COAL MINE)

MULTIPLE FATAL BUMP ACCIDENT (OUTBURST)

Olga No. 1 & 2 mine (ID No. 46-01407)
Olga Coal Company
Coalwood, McDowell County, West Virginia

October 18, 1983

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

AUG 8 C 1984

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October 18, 1983

by

Cloyd Blankenship
Mining Engineer

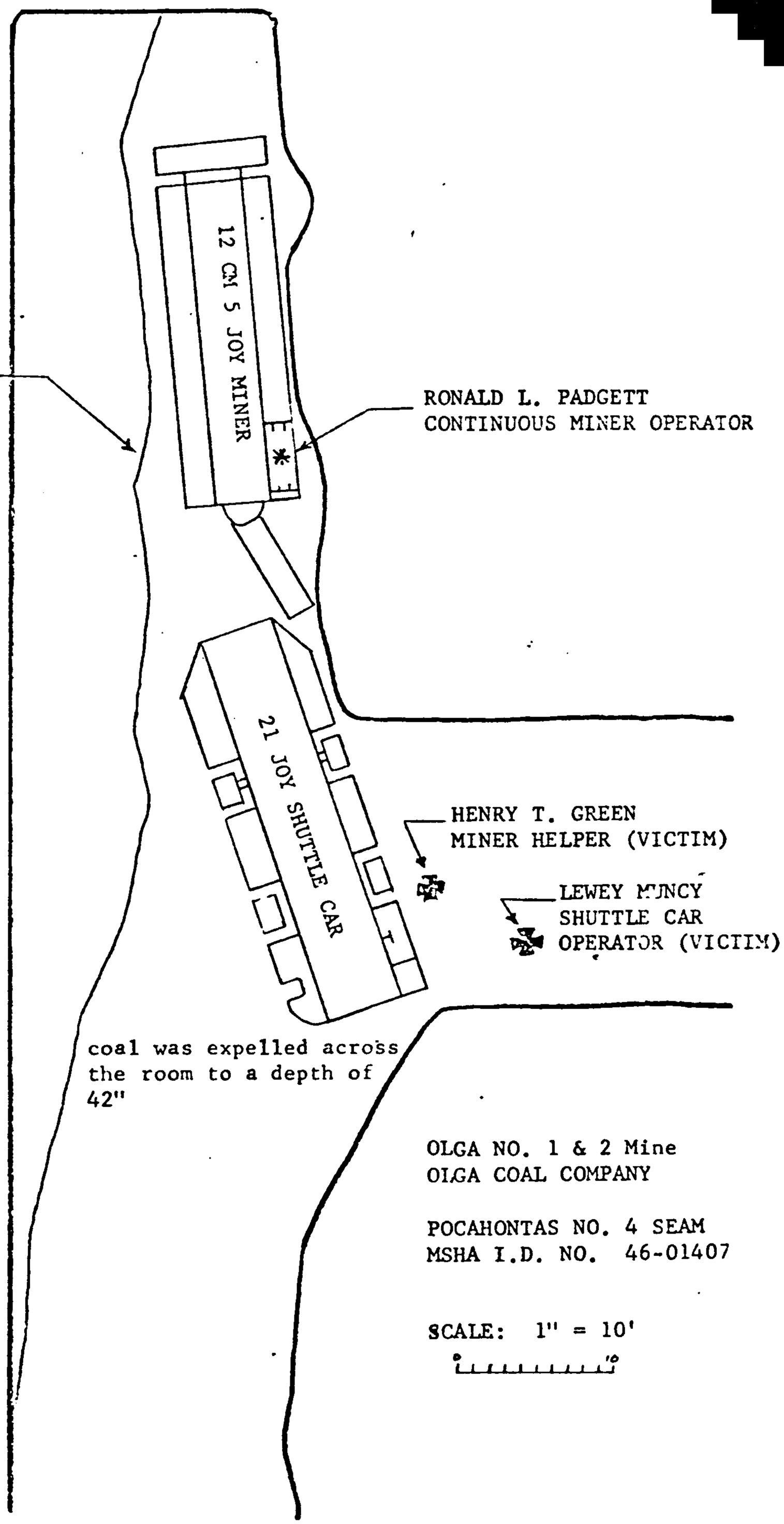
Aubrey T. Castanon
Coal Mine Safety & Health Inspector

Originating Office - Mine Safety and Health Administration
4015 Wilson Boulevard, Arlington, Virginia 22203
Joseph A. Lamonica, Administrator for Coal Mine Safety and Health

ROOF BOLTED ACCORDING
TO STANDARD

NO. 5 ROOM OFF
3 SOUTH SECTION

NO. 3 BARRIER BLOCK



OLGA NO. 1 & 2 Mine
OLGA COAL COMPANY

POCAHONTAS NO. 4 SEAM
MSHA I.D. NO. 46-01407

SCALE: 1" = 10'

Abstract of Investigation

U.S. Department of Labor
Mine Safety and Health Administration

Authority—This report is based on an investigation made pursuant to the Federal Mine Safety and Health Act of 1977, Public Law 91-173, as amended by Public Law 95-164.

Section A—Identification Data

1. Title of investigation: Multiple Fatal Bump Accident (Outburst)
2. Date MSHA investigation started: October 18, 1983
3. Report release date: FEB 2 5 1984
4. Mine: Olga No. 1 & 2 mine
5. Mine ID number: 46-01407
6. Company: Olga Coal Company
7. Town, County, State: Coalwood, McDowell County, West Virginia
8. Author(s): Cloyd Blankenship and Aubrey T. Castanon

Section B—Mine Information

9. Daily production: 3000 tons
10. Surface employment: 59
11. Underground employment: 195
12. Name of coalbed: Pocahontas No. 4 mine
13. Thickness of coalbed: 72 inches

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

14. Industry: 10.16
15. This operation: 4.78
16. Training program approved: Yes
17. Mine Profile Rating: Not currently rated

Section D—Originating Office

18. Mine Safety and Health Administration Coal Mine Health and Safety District No.: Office of the Administrator
Address: 4015 Wilson Boulevard Arlington, Virginia 22203

Section E—Abstract

On Tuesday, October 18, 1983, at 10:30 a.m., a fatal bump accident occurred on the 3 south section (038) of the Olga No. 1 & 2 mine, Olga Coal Company. The accident occurred while the No. 3 barrier block (140 feet by 350 feet) was being developed. Henry Green, continuous miner helper, with 10 years mining experience, was fatally injured when he was struck by the full force of the bump and the shuttle car that was displaced. Lewey Muncy, shuttle car operator, with 17 years experience, was critically injured when he was thrown from the confines of the operator's cab. Muncy died from his injuries on November 2, 1983, at 2:30 a.m. The accident occurred when the barrier block was reduced to a size (approximately 100 feet by 100 feet) that would no longer support the abutment pressures that were being exerted.

Section F—Mine Organization

Company officials:	Name	Address
19. President:	D. T. Kalil	3 Gateway Center Pittsburgh, PA 15219
20. Superintendent:	Dwight Strong	Coalwood, WV 24824
21. Safety Director:	Kenneth Bowling	Coalwood, WV 24824
22. Principle officer—H&S:	Martin Valeri	Coalwood, WV 24824
23. Labor Organization:	UMWA, District 29	POB 511, Beckley, WV 25801
24. Chairman—H&S Committee:	Leonard Sparks	English, WV 24832

MSHA Form 2000-57, Apr 82 (revised)

Commentary

On Tuesday, October 18, 1983, the 3 south crew, which was composed of nine miners, entered the mine at approximately 7 a.m. and arrived on the section at about 7:45 a.m. After the crew arrived on the section, Andy Christian, section foreman, and Ronald Padget, continuous miner operator, conducted the on-shift examinations. Christian stated that there was a scrap cut in the No. 9 pillar. Prior to leaving the surface, however, it had been decided to leave the scrap cut and to begin splitting the No. 1 pillar.

According to Padget, the section was quiet all morning except for one minor bump which occurred while the last shuttle car was being loaded out of the No. 1 pillar. Padget stated that the continuous miner was moved from the No. 1 pillar to the face of the No. 5 barrier room where the next cut was to be mined. There had been some clean-up coal from the roadway stored in the face so Padget positioned the continuous miner on the right side (curtain side) and loaded the first shuttle car. Henry Green, continuous miner helper (victim), was located at the edge of the crosscut between the Nos. 5 and 6 rooms. After loading the first shuttle car, Padget positioned the continuous miner to load the second shuttle car, but had not penetrated the coal face. As he was watching the shuttle car come in behind the continuous mining machine, at approximately 10:30 a.m., the bump occurred. The forces exerted by the bump apparently knocked Padget unconscious for a while; when he came to, he began to yell for help.

At the time the bump occurred, the roof bolting crew had just begun installing roof bolts in the face of the No. 1 pillar cut. According to Greenberry Blankenship, roof bolter operator on the left side, he had just installed the first bolt. Wesley Bailey, roof bolter operator on the right side, was just beginning to set up to install his first bolt. Blankenship stated that he and Bailey were knocked into the left corner of the face by the forces exerted by the bump.

At the time of the occurrence, Christian stated that a Federal mine inspector, a company safety inspector, and a miners representative were on the section. These three individuals and the four other crew members were near the section loading ramp. Christian stated that the mine atmosphere was heavily ladened with coal dust and visibility was severely limited. As the section ventilation began to clear the air, the seven men travelled to the area of the bump. Christian stated that Green was found near the operator's deck of the shuttle car and was unconscious; Lewey Muncy, shuttle car operator (victim), was found about 15 feet from the shuttle car and was unconscious; Bailey had a broken leg; and Blankenship and Padget were not seriously injured.

Emergency medical technicians were instructed to go to the section where they examined Bailey, Muncy, and Green. The miners were placed on stretchers and transported to the surface. All the injured miners were transported to the Stevens Clinic, Welch, West Virginia, where Green was pronounced dead-on-arrival. Muncy was found to be in critical condition and was transferred to the Charleston Medical Center, Charleston, West Virginia, where he died from his injuries on November 2, 1983, at 2:30 a.m. Bailey received a compound fracture of the left leg and was transferred to the Princeton Community

Hospital, Princeton, West Virginia. Padget and Blankenship were examined, treated for minor scratches and bruises, and then released from the Stevens Clinic.

Discussion and Evaluation

The investigation of the accident revealed the following:

1. The bump occurred in No. 3 barrier block (see Sketch No. 2) that was approximately 140 feet by 350 feet by 6 feet in size. Forces from the bump moved the 12CM continuous miner by knocking it into the right rib and the 21SC standard drive shuttle car by knocking it into the crosscut between the Nos. 5 and 6 rooms; the left rib in the No. 5 room was displaced approximately 8 feet and coal filled the rest of the entry to a depth of 42 inches for a distance of approximately 86 feet. The roof bolting machine was not moved by the forces; however, coal was expelled from the two bump cuts and filled the No. 2 room with coal from 3 1/2 feet to 5 feet in depth for a distance of approximately 60 feet.

2. The barrier block was being developed by utilizing the "narrow room method" (on 39-foot centers). According to mine management, the narrow room method for developing barriers had been used for several years. The specific way of developing each block was determined on a block-by-block evaluation using the knowledge of the miners and management in bump control. The No. 2 barrier block located just inby the No. 3 barrier (accident area) was developed by the narrow room method. Three rooms were developed next to the section pillar line and then three rooms were developed parallel to the old gob line. When the No. 2 room reached a depth of approximately 120 feet, the barrier block bumped, expelling several tons of coal into the room and moving the continuous miner. This bump occurred during an idle shift when no one was on the section. The No. 1 barrier had been mined by developing the pillars in a size comparable to the other pillars; no bump occurred in this barrier (see Sketch No. 3).

3. The change in the projected development of the No. 3 barrier was due to the bump that had occurred in the No. 2 barrier. It was determined by mine management that (1) the No. 2 room should be developed first to create a chain pillar the same size as the one inby, which was developed in the 1930's, and (2) to begin advancing the No. 8 room a sufficient distance before starting to advance the No. 7 room. To reduce bump potential, the consensus was to develop and gradually release any stored energy within the barrier block by staggering the rooms diagonally. A cut-by-cut mining plan (sequence) was formulated for the development of the No. 3 barrier block by mine management. Observations at the accident scene and statements indicated that the plan was being followed. The barrier block had been developed down to an approximate size of 100 feet by 100 feet when the bump occurred.

4. When barriers or chain pillars are not developed and destressed in advance of the abutment zone, abnormal pressures occur subjecting the pillar or barrier to a bump potential. The No. 3 barrier block was located at the junction of two pillar lines that intersected at right angles. The mining practices and procedures in the section had allowed the barrier to remain intact until the adjacent pillar lines had approached the immediate area of the barrier before

mine management started to reduce the barrier size (see Sketch No. 3).

5. In the accident area, the coalbed was covered by approximately 935 feet of strata. Directly over the coalbed was massive sandstone approximately 60 feet in depth. The mine floor was composed of shale, which averaged 2 feet in thickness. Directly under the shale was massive sandstone of an undetermined thickness.

6. Apparently Green received fatal injuries when he was struck by the full forces of the bump and the shuttle car that was moved.

7. Muncy sustained fatal injuries when he was thrown against the gate of the shuttle car cab. The impact broke the latch on the gate and Muncy was ejected from the confines of the cab. He was propelled for a distance of 15 feet from the operator's compartment of the shuttle car.

Findings of Fact

Evidence and findings of the investigation indicated there were no violations of 30 CFR Part 75 which contributed to the occurrence of the accident.

Conclusion

1. The accident occurred when the barrier block was reduced to a size (approximately 100 feet by 100 feet) that would no longer support the abutment pressures that were being exerted.

2. The barrier block was located in a high stress area of an abutment zone that was connected at right angles to two pillar lines.

Cloyd Blankenship
Mining Engineer

Aubrey T. Castanon
Coal Mine Safety and Health Inspector

Approved by:

Joseph A. Lamonica
Administrator
for Coal Mine Safety and Health

APPENDIX

The following people were present and/or provided relevant information to the investigation:

Olga Coal Company Officials

D. L. Ashcraft	Manager of Mines
Bill Thorpe	Manager of Safety Services
R. V. Rao	Chief Mining Engineer
Martin Valeri	General Superintendent
Dwight Strong	Superintendent
Kenneth Bowling	Director of Safety
Andy Christian	Section Foreman
Aaron Charles	Safety Inspector

Olga Coal Company Employees

Greenberry Blankenship	Roof Bolter Operator
Ronald Padget	Continuous Miner Operator

Representative of Miners
United Mine Workers of America

Dennis Saunders	President, District 29
Bernard Shrewsberry	International Safety Inspector
Sam Fragile	District Board Member
Leonard Sparks	Chairman, Mine Safety and Health Committee
Elija Oakes	Safety and Health Committeeman
Curtis Young	Safety and Health Committeeman
Gilbert Boring	Miners Representative

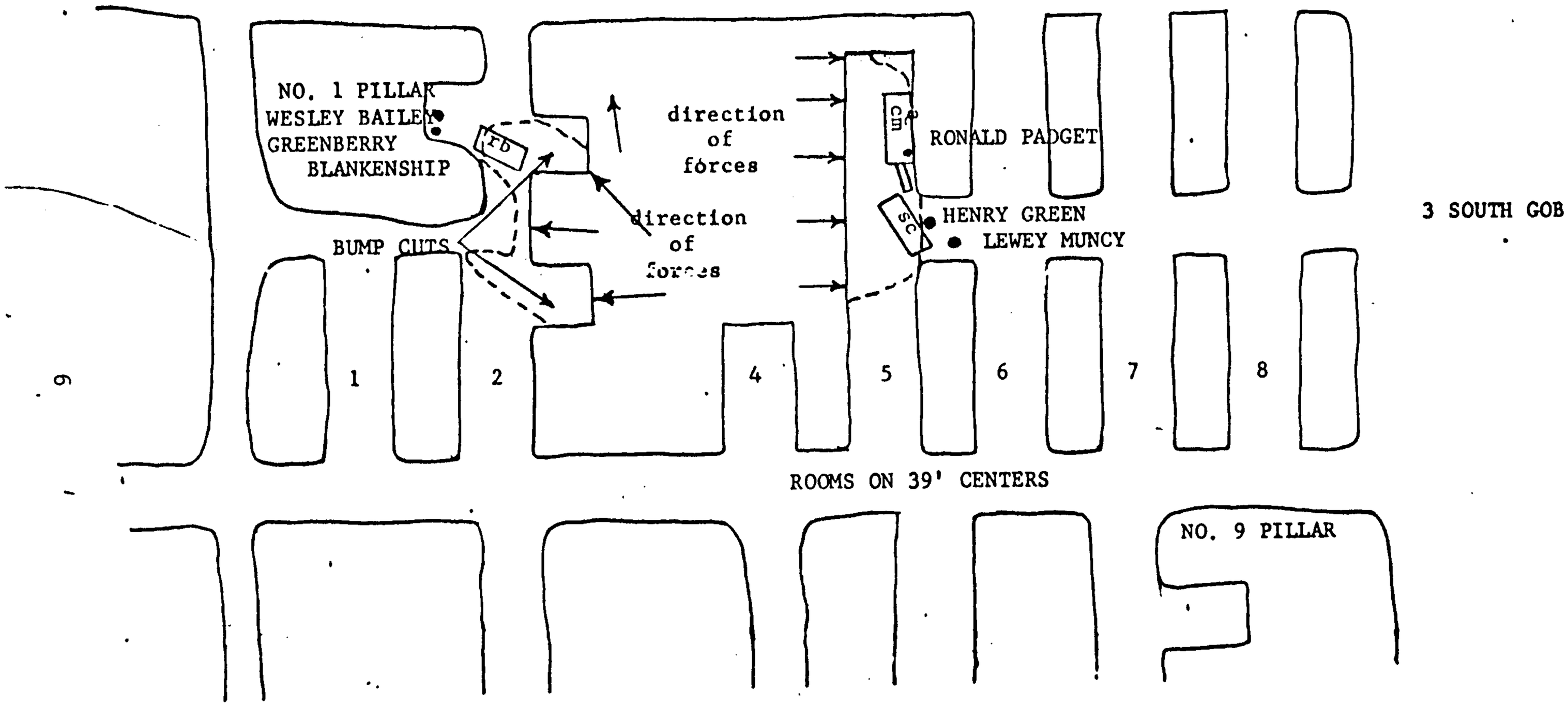
West Virginia Department of Mines

Ray Blevins	Inspector-at-Large
Fred Stinson	Assistant Inspector-at-Large
Clifford Mitchem	Roof Control Specialist
David Henderson	Mine Inspector

Mine Safety and Health Administration

J. M. Krese	District Manager
Conrad T. Spangler, Jr.	Subdistrict Manager
Joseph I. Singleton	Supervisory Coal Mine Safety & Health Inspector
Fred H. Ryan	Supervisory Mine Safety & Health Specialist (Roof Control)
A. W. Barnett, Jr.	Coal Mine Safety & Health Inspector (Roof Control)
Aubrey T. Castanon	Coal Mine Safety & Health Inspector
Cloyd Blankenship	Mining Engineer

SKETCH OF NO. 3 BARRIER BLOCK
10-18-83
OLGA NO. 1 & 2 MINE
BROKEN LINES INDICATES
EXTENT OF BUMP



SCALE: 1" = 50'

SKETCH NO. 2

Data Sheet

U.S. Department of Labor
Mine Safety and Health Administration

Section A—Victim Data

1. Name: Henry T. Green
2. Sex: ☒ Male ☐ Female
3. Social Security Number: 8389
4. Age: 38
5. Job Classification: Continuous Miner Helper
6. Experience at this Classification: 8 years
7. Total Mining Experience: 10 years
8. What activity was being performed at time of accident? Same
9. Victim's Experience at this Activity: Same
10. Was victim trained in this task? Yes

Section B—Victim Data for Health and Safety Courses/Training Received *(related to accident)*

	Date Received
11. Task (Continuous Miner Helper)	6/9/75 11/24/76 02/21/83
12.	
13.	
14.	

Section C—Supervisor Data *(supervisor of victim)*

15. Name: Andy Christian
16. Certified: ☒ Yes ☐ No
17. Experience as Supervisor: 8 years
18. Total Mining Experience: 11 years

Section D—Supervisor Data for Health and Safety Courses/Training Received *(related to accident)*

	Date Received
19. Refresher Training	3/21/83
20.	
21.	
22.	

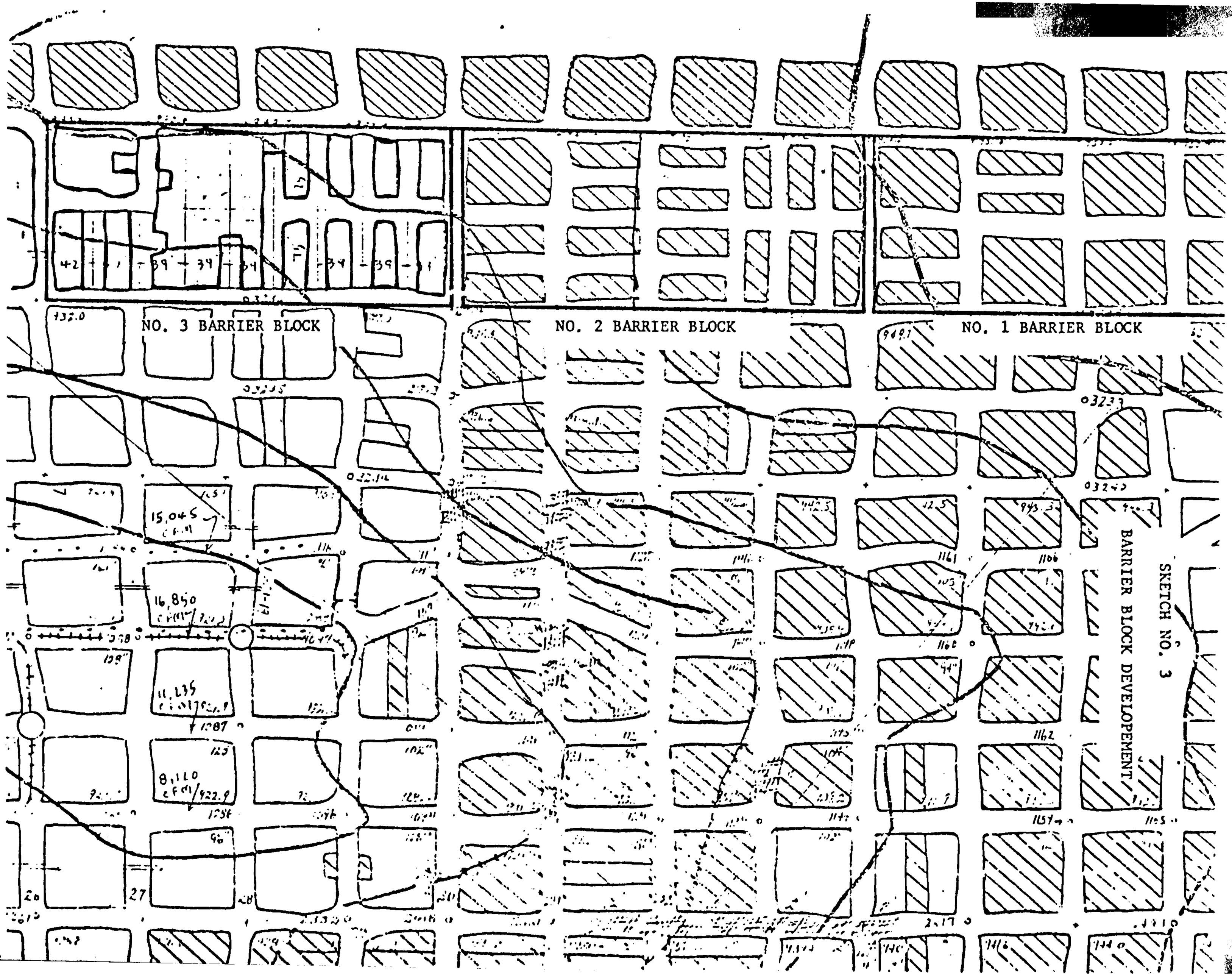
23. When was the supervisor last present at accident scene prior to the accident?
Approximately 10 minutes

24. What did he do when he was there?
Helped install line curtain

25. When was he last in contact with the victim?
10 minutes prior to accident

26. Did he issue instructions relative to the accident?
No

27. Was he aware of or did he express an awareness of any unsafe practice or condition?
No


NO. 3 BARRIER BLOCK
NO. 2 BARRIER BLOCK
NO. 1 BARRIER BLOCK
15,045
16,850
11,635
8,110
BARRIER BLOCK DEVELOPEMENT
SKETCH NO. 3

Data Sheet

U.S. Department of Labor
Mine Safety and Health Administration

Section A—Victim Data

1. Name: Lewey Muncy
2. Sex: ☒ Male ☐ Female
3. Social Security Number: 1348
4. Age: 56
5. Job Classification: Shuttle Car Operator
6. Experience at this Classification: 17 years
7. Total Mining Experience: 17 years
8. What activity was being performed at time of accident? Same
9. Victim's Experience at this Activity: Same
10. Was victim trained in this task? Yes

Section B—Victim Data for Health and Safety Courses/Training Received *(related to accident)*

	Date Received
11. Annual Refresher	2/21/83
12.	
13.	
14.	

Section C—Supervisor Data *(supervisor of victim)*

15. Name: Andy Christian
16. Certified: ☒ Yes ☐ No
17. Experience as Supervisor: 8 years
18. Total Mining Experience: 11 years

Section D—Supervisor Data for Health and Safety Courses/Training Received *(related to accident)*

	Date Received
19. Refresher Training	3/21/83
20.	
21.	
22.	

23. When was the supervisor last present at accident scene prior to the accident? Approximately 30 minutes
24. What did he do when he was there? Nothing
25. When was he last in contact with the victim? 30 minutes prior
26. Did he issue instructions relative to the accident? No
27. Was he aware of or did he express an awareness of any unsafe practice or condition? No

Section I (Coal Only)

MSHA and/or State Certification and/or Qualification

Mine ID 46-01407 Christian

Date Training Plan Approved _____

		Date Training Received			Date Training Received
		Asst. Mine Foreman			
*[x]	Certified Person (Underground)	WV State 6/18/76	[ ]	Dust	
*[ ]	Certified Person (Surface)		[ ]	Dust (Calibration)	
*[x]	Methane & Oxygen Deficiency Testing	6/83	[ ]	Noise	
*[ ]	Electrical		*[ ]	Impoundments	
*[ ]	Energized Surface High Voltage		*[ ]	Hoisting Engineer	

*Annual Retraining Required

Section II (Metal/Non-Metal and Coal)
MSHA Training Programs Completed

Date of Hire 5/29/73 Date Training Plan Approved 7/10/80

Required Training (Victim)		Date Training Received	Required Training (Victim)		Date Training Received
[x]	New Miner (U.G.)	5/73	[ ]	Hazard Training (U.G.)	
[ ]	New Miner (Sur.)		[ ]	Hazard Training (Sur.)	
[ ]	Newly Employed Experienced (U.G)				
[ ]	Newly Employed Experienced (Sur.)		Task Training Specify Type:		
[x]	Annual Refresher (U.G.)	3/21/83			
[ ]	Annual Refresher (Sur.)				

Section III

Company Training Program Completed:

Training	OJT/Formal	Instructor	Date Completed
Safety Meetings		Foreman	Various

Data Sheet

U.S. Department of Labor
Mine Safety and Health Administration

Section A—Victim Data

1. Name: Lewey Muncy
2. Sex: ☒ Male ☐ Female
3. Social Security Number: 1348
4. Age: 56
5. Job Classification: Shuttle Car Operator
6. Experience at this Classification: 17 years
7. Total Mining Experience: 17 years
8. What activity was being performed at time of accident? Same
9. Victim's Experience at this Activity: Same
10. Was victim trained in this task? Yes

Section B—Victim Data for Health and Safety Courses/Training Received *(related to accident)*

	Date Received
11. Annual Refresher	2/21/83
12.	
13.	
14.	

Section C—Supervisor Data *(supervisor of victim)*

15. Name: Andy Christian
16. Certified: ☒ Yes ☐ No
17. Experience as Supervisor: 8 years
18. Total Mining Experience: 11 years

Section D—Supervisor Data for Health and Safety Courses/Training Received *(related to accident)*

	Date Received
19. Refresher Training	3/21/83
20.	
21.	
22.	

23. When was the supervisor last present at accident scene prior to the accident? Approximately 30 minutes
24. What did he do when he was there? Nothing
25. When was he last in contact with the victim? 30 minutes prior
26. Did he issue instructions relative to the accident? No
27. Was he aware of or did he express an awareness of any unsafe practice or condition? No

MSHA Form 2000-58, June 83 (Revised)

Section IV

Did victim have training specifically related to the task being performed at the time of the accident?

[X] YES [ ] NO WHEN? Various

By Whom: Supervisors How was Training Given: Daily Briefings on Mining Conditions and Foreman's own prior experience

Section V

Recommend Training Plan Evaluation by Education and Training Office?

[ ] YES [ ] NO

Section I (Coal Only)

MSHA and/or State Certification and/or Qualification

Mine ID 46-01407 Bailey

Date Training Plan Approved		Date Training Received			Date Training Received
*[x]	Certified Person (Underground)	WV Miner's Cert. 148703	[ ]	Dust	
*[ ]	Certified Person (Surface)		[ ]	Dust (Calibration)	
*[x]	Methane & Oxygen Deficiency Testing	6/83	[ ]	Noise	
*[ ]	Electrical		*[ ]	Impoundments	
*[ ]	Energized Surface High Voltage		*[ ]	Hoisting Engineer	

*Annual Retraining Required

Section II (Metal/Non-Metal and Coal)
MSHA Training Programs Completed

Date of Hire 12/10/45 Date Training Plan Approved 7/10/80

Required Training (Victim)		Date Training Received	Required Training (Victim)	Date Training Received
[ ]	New Miner (U.G.)		[ ] Hazard Training (U.G.)	
[ ]	New Miner (Sur.)		[ ] Hazard Training (Sur.)	
[ ]	Newly Employed Experienced (U.G)			
[ ]	Newly Employed Experienced (Sur.)		Task Training Specify Type:	
[x]	Annual Refresher (U.G.)	2/28/83		
[ ]	Annual Refresher (Sur.)			

Section III

Company Training Program Completed:

Training	OJT/Formal	Instructor	Date Completed
Safety Meetings		Foreman	Various
Roof Control Briefings		Foreman	Daily

Section IV

Did victim have training specifically related to the task being performed at the time of the accident?

[X] YES [ ] NO WHEN? Various

By Whom: Foreman How was training given: Briefings by foreman/Job Briefings has been a roof bolter since 1960

Section V

Recommend Training Plan Evaluation by Education and Training Office?

[ ] YES [ ] NO

Section I (Coal Only)

MSHA and/or State Certification and/or Qualification

Mine ID 46-01407 (Muncy)

Date Training Plan Approved _____

		Date Training Received			Date Training Received
*[X]	Certified Person (Underground)	WV Miner's Cert. 149995	[ ]	Dust	
*[ ]	Certified Person (Surface)		[ ]	Dust (Calibration)	
*[ ]	Methane & Oxygen Deficiency Testing		[ ]	Noise	
*[ ]	Electrical		*[ ]	Impoundments	
*[ ]	Energized Surface High Voltage		*[ ]	Hoisting Engineer	

*Annual Retraining Required

Section II (Metal/Non-Metal and Coal)
MSHA Training Programs Completed

Date of Hire 3/22/66 Date Training Plan Approved 7/10/80

Required Training (Victim)		Date Training Received	Required Training (Victim)		Date Training Received
[ ]	New Miner (U.G.)		[ ]	Hazard Training (U.G.)	
[ ]	New Miner (Sur.)		[ ]	Hazard Training (Sur.)	
[ ]	Newly Employed Experienced (U.G)				
[ ]	Newly Employed Experienced (Sur.)		Task Training Specify Type:		
[X]	Annual Refresher (U.G.)	2/21/83			
[ ]	Annual Refresher (Sur.)				

Section III

Company Training Program Completed:

Training	OJT/Formal	Instructor	Date Completed
Safety Meetings		Foreman	Various

Section IV

Did victim have training specifically related to the task being performed at the time of the accident?

[x] YES [ ] NO WHEN? Various

By Whom: Foreman How was training given: Briefings by foreman/Job Briefings--has been a shuttle car operator since 1966

Section V

Recommend Training Plan Evaluation by Education and Training Office?

[ ] YES [ ] NO

Section I (Coal Only)

MSHA and/or State Certification and/or Qualification

Mine ID 46-01407 Green

Date Training Plan Approved		Date Training Received			Date Training Received
*[x]	Certified Person (Underground)	WV Miner's Cert. P-3421	[ ]	Dust	
*[ ]	Certified Person (Surface)		[ ]	Dust (Calibration)	
*[x]	Methane & Oxygen Deficiency Testing	6/83	[ ]	Noise	
*[ ]	Electrical		*[ ]	Impoundments	
*[ ]	Energized Surface High Voltage		*[ ]	Hoisting Engineer	

*Annual Retraining Required

Section II (Metal/Non-Metal and Coal)
MSHA Training Programs Completed

Date of Hire 11/14/73 Date Training Plan Approved 7/10/80

Required Training (Victim)		Date Training Received	Required Training (Victim)		Date Training Received
[ ]	New Miner (U.G.)		[ ]	Hazard Training (U.G.)	
[ ]	New Miner (Sur.)		[ ]	Hazard Training (Sur.)	
[ ]	Newly Employed Experienced (U.G)				
[ ]	Newly Employed Experienced (Sur.)		Task Training Specify Type:		
[x]	Annual Refresher (U.G.)	2/21/83			
[ ]	Annual Refresher (Sur.)				

Section III

Company Training Program Completed:

Training	OJT/Formal	Instructor	Date Completed
Safety Meetings		Foreman	Various

Section IV

Did victim have training specifically related to the task being performed at the time of the accident?

[x] YES [ ] NO WHEN? Various

By Whom: Foreman How was training given: Briefings by foreman/job briefings--had been miner operator or helper since 1975

Section V

Recommend Training Plan Evaluation by Education and Training Office?

[ ] YES [ ] NO