

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

REPORT OF INVESTIGATION

Underground
(Coal)

Fatal Powered Haulage Accident
January 22, 2021

Davy Branch Mine
Aracoma Coal Company, Inc.
Logan, Logan County, West Virginia
ID No. 46-09574

Accident Investigator

Gordon L. Varney II
Mine Safety and Health Inspector

Nicholas Christian
Supervisory Mine Safety and Health Inspector

David Thacker, Jr.
Mine Safety and Health Inspector

Originating Office
Mine Safety and Health Administration
East Region - Pineville District
4499 Appalachian Highway
Pineville, West Virginia 24874
Brian M. Dotson, District Manager

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OVERVIEW

On January 22, 2021, at 7:44 a.m., Justin L. Lafferty, a 38-year-old shuttle car operator with approximately 11 years of mining experience, was injured when another shuttle car struck the operator's compartment of the shuttle car he was operating. On February 21, 2021, Lafferty died as a result of the injuries sustained during the accident.

The accident occurred because the mine operator did not have policies or procedures in place to assure safe underground haulage when: 1) mobile equipment traveled through a transparent ventilation curtain (flypad), and 2) shuttle cars from different mechanized mining units (MMU) shared a common intersection where flypads are used.

GENERAL INFORMATION

Aracoma Coal Company, Inc. operates the Davy Branch Mine near Logan, Logan County, West Virginia. The underground coal mine employs 57 miners operating three nine-hour shifts, six days per week. The mine operates two MMUs using continuous mining machines to extract the coal. Shuttle cars transport the coal from the continuous mining machines to the coal feeder. Belt conveyors transport the coal to the stockpiles on the surface. Coal trucks transport the coal to an offsite processing facility approximately seven miles away in Rum Creek, Logan County, West Virginia.

The principal officers for Aracoma Coal Company, Inc. at the time of the accident were:

Johnny R. Jones
Roger L. Nicholson
Gary G. Goff
David Meade

President
Secretary
General Manager
Superintendent

The Mine Safety and Health Administration (MSHA) completed the last regular safety and health inspection at this mine on November 17, 2020, and a regular safety and health inspection was ongoing at the time of the accident. The 2020 non-fatal days lost (NFDL) incident rate for Davy Branch Mine was zero, compared to the national average of 2.95 for mines of this type.

DESCRIPTION OF THE ACCIDENT

On January 22, 2021, Lafferty arrived at the mine and attended a safety meeting on the surface with miners on his crew. At 6:10 a.m., Lafferty and his coworkers traveled underground to the No. 1 section. The miners arrived on the No. 1 section at approximately 6:30 a.m. and began conducting pre-operational examinations on their equipment and examining roadways. Shannon Etters and Michael Chaffin, Section Foremen, began conducting their on-shift examinations of the section.

At approximately 7:00 a.m., the section crew began producing coal. Lafferty was operating the No. 3 shuttle car from the No. 6 right crosscut, and Chad Spaulding, Shuttle Car Operator, was operating the No. 2 shuttle car from the No. 2 left crosscut. Both were traveling outby to the section feeder located in the No. 5 entry (belt entry). The two shuttle cars shared the No. 5 entry from the intersection at survey station (SS) 258 to the section coal feeder (see Appendix A).

The mine ventilates the No. 5 left crosscut idle face with flypads in conjunction with ventilation curtain. The line curtain was installed along the left rib and extended outby connecting to the flypads installed across the crosscut at SS 258. Spaulding traveled through the flypads to enter the belt entry.

At approximately 7:40 a.m., Lafferty was traveling outby in the No. 5 entry into the intersection at SS 258, while Spaulding traveled through the No. 5 left crosscut and flypads, entering the intersection at the same time (see Appendix A). The boom portion of Spaulding's shuttle car entered the operator's compartment of Lafferty's shuttle car, striking Lafferty's right hip and leg. Spaulding stated he heard Lafferty yell. Spaulding immediately stopped his shuttle car, walked through the flypads and saw his shuttle car on Lafferty. Lafferty told Spaulding his leg was hurt. Spaulding told Lafferty he was going to back the shuttle car off him. After backing the shuttle car away, Spaulding went back to check Lafferty again.

Eric Blankenship and Timothy Smith II, Roof Bolting Machine Operators, were sitting in the No. 5 right crosscut at SS 258 facing away from the accident scene when they heard Lafferty yell. Blankenship and Smith went to see what happened and saw Spaulding with Lafferty. Blankenship went to check on Lafferty and Smith went to inform Chaffin who was located between the No. 6 and No. 7 entries. Chaffin went to the accident scene, and Smith went to the mine phone to contact the mine office and inform management of the accident.

Chaffin assessed Lafferty and noticed a red area on his leg. Chaffin told Spaulding to go get help while he and Blankenship attended to Lafferty. Spaulding met Etters near the section power center and informed him of the accident. Etters went to the accident scene and told Chaffin he would call outside. Etters met Smith at the phone; Smith had already called the mine office and gave the phone to Etters. At approximately 8:00 a.m., Etters informed Scott Brown, General

Mine Foreman, of the accident and requested an ambulance. Brown informed David Meade, Superintendent, and Anthony Hudgins, Mine Clerk, of the accident and then drove a rubber-tired personnel carrier to the accident scene. Etters called Bobby Boehm, Outby Belt Examiner/Emergency Medical Technician (EMT), on the radio and told him to come to the section. Etters told other miners on the section to get the medical kits and told Smith to stay at the phone. Hudgins called 911 and Logan Emergency Ambulance Service Authority was dispatched to the mine.

Daniel Hensley, Electrician/EMT, was at his toolbox when Etters walked over to him and told him to go to the accident scene. Upon arrival at the accident scene, Hensley observed Lafferty still sitting in the operator's compartment of the shuttle car and requested that someone bring the EMT box. Hensley assessed Lafferty's right leg and hip. As a precaution, Hensley placed a neck-stabilizing collar on Lafferty while other miners placed a leg splint on his right leg. Roach Mosley, Shuttle Car Operator, administered oxygen to Lafferty. Hensley stated Lafferty was not having trouble breathing and that the oxygen was just a protocol. After speaking with Etters and Brown, Boehm arrived at the accident scene as miners were placing Lafferty on a backboard. During Boehm's assessment, he noticed a bruise on Lafferty's right thigh. Boehm stated Lafferty would yell from the pain when touching his leg and hip.

Blankenship, Boehm, Hensley, and Brown transported Lafferty to the surface on the rubber-tired personnel carrier. Lafferty was conscious and talking during transport to the surface. Paramedics with Logan Emergency Ambulance Service Authority arrived at the mine at 8:13 a.m. Boehm discussed his assessment of Lafferty's injuries with the paramedics. Hensley and Boehm assisted the paramedics moving Lafferty onto a gurney and placing him into the ambulance. At 8:21 a.m., paramedics left the mine and transported Lafferty to Logan Regional Medical Center (LRMC) in Logan, West Virginia.

Medical records obtained from LRMC stated that on the day of the accident, Lafferty sustained a fracture to the right fibula. Lafferty was fitted with a walking boot, referred to outpatient orthopedics for further evaluation and treatment, and then discharged.

On January 26, 2021, Lafferty went to Scott Orthopedic Center (SOC) in Huntington, West Virginia and had two follow-up appointments with SOC on February 2 and 9, 2021. On February 21, 2021, at approximately 1:00 a.m., Logan County Emergency Ambulance Service was dispatched to Lafferty's residence due to sudden onset of chest pain. Paramedics performed cardiopulmonary resuscitation and transported Lafferty to the LRMC Emergency Room, where he died. The autopsy report noted the immediate cause of death was pulmonary thromboembolism as a direct consequence of the blunt impact injury of the right lower extremity.

INVESTIGATION OF THE ACCIDENT

On January 22, 2021, at 8:01 a.m., John Reed, Senior Safety Representative, called the Department of Labor National Contact Center (DOLNCC) to report the accident. At 8:13 a.m., the DOLNCC contacted Mark Muncy, Supervisory Mine Safety and Health Inspector. Muncy notified Nicholas Christian, Kenneth Butcher, and David Thacker Jr., Supervisory Mine Safety

and Health Inspectors. Christian then notified Clark Blackburn, Assistant District Manager, and Brian Dotson, District Manager. Butcher contacted Gordon L. Varney II, Mine Safety and Health Inspector.

At 8:55 a.m., Thacker Jr. and Blackburn arrived at the mine site and issued an order under the provisions of Section 103(k) of the Mine Act to assure the safety of the miners and preservation of evidence. Christian and Varney arrived at the mine site at 9:25 a.m. and 10:30 a.m., respectively.

Blackburn discussed the accident with Brown while Christian and Thacker Jr. acquired statements from miners who were on the section at the time of the accident. Christian, Blackburn and Thacker Jr. reviewed examination records before traveling underground to the accident scene.

Brown, Reed, Terrell Blankenship, Safety Director, Richard Williamson, Safety Supervisor, and Robert Ellis, Director of Maintenance, traveled with MSHA underground during the investigation. MSHA performed the investigation in conjunction with the West Virginia Office of Miners' Health Safety and Training. See Appendix B for a list of persons participating in investigation.

Chaffin and Eppers disconnected the electrical power on the section shortly after the accident occurred and were still on the section when MSHA arrived. Once arriving on the section, Blackburn and Thacker Jr. inspected and prepared a sketch of the section. They were later joined by Varney who began taking photographs and measurements of the accident scene with the assistance of Christian.

DISCUSSION

Location of the Accident

This accident occurred in the intersection of the No. 5 entry on the No. 1 Section at SS 258. (See Appendix A).

Equipment Involved

The shuttle cars involved in the accident were manufactured by Joy Mining Machinery. The shuttle cars were center drive, model 21SC. All shuttle cars at this mine are equipped with video cameras that are connected to video monitors in the operators' compartments.

Spaulding told investigators that he did not see Lafferty's shuttle car, directly or on the video monitor, because he was looking at the left rib. Spaulding trammed the shuttle car close to the left rib to assure he would not hit the anchor for his shuttle car's trailing cable. The shuttle car's trailing cable anchor was at the corner of the pillar where he was turning to enter the belt entry.

Testing, Observations, and Conclusions

MSHA investigators examined and evaluated the operational controls of Spaulding's shuttle car and Lafferty's shuttle car, and the condition of the roadway where the accident occurred. Investigators observed the visibility through the flypads from the operator's compartment of

Lafferty's shuttle car. Investigators did not find any violations on the shuttle cars, flypads, or roadway that would have contributed to the accident. Investigators determined that equipment operators are unable to determine if another shuttle car is arriving at the intersection at the same time where flypads are used. The flypads and intersections create line of sight restrictions.

Examinations

Adam Sizemore, Electrician, conducted the last weekly electrical examination of Spaulding's shuttle car on January 12, 2021. Sizemore conducted the last weekly electrical examination of Lafferty's shuttle car on January 13, 2021. No violations or hazards were observed or recorded during these examinations that would have contributed to the accident.

Chargeability Review Committee

When a miner's death is not conclusively determined to be chargeable to the mine operator, MSHA submits the facts of the case, including background and supporting information, to the MSHA Chargeability Review Committee (Committee) for a decision. The Committee reviewed the autopsy report and MSHA's investigation and concluded that Mr. Lafferty's death resulted from the injuries sustained during the accident at the mine and therefore, his death is chargeable to the mine operator.

Training and Experience

Lafferty had approximately 11 years of mining experience, 18 weeks experience at this mine, and over 7 years of experience as a shuttle car operator. Investigator's do not believe the victim's limited time at the mine was a factor in the accident. Lafferty received experienced miner training on September 25, 2020 and task training to operate a shuttle car at this mine site on September 28, 2020. Lafferty completed all training in accordance with MSHA Part 48 training standards.

ROOT CAUSE ANALYSIS

The accident investigation team conducted an analysis to identify the underlying causes of the accident. The team identified the following root cause, and the mine operator implemented the corresponding corrective actions to prevent a recurrence.

Root Cause: The mine operator did not have policies or procedures in place to assure safe underground haulage when: 1) mobile equipment traveled through flypads; and 2) shuttle cars from different MMUs share a common intersection where flypads are used.

Corrective Action: The mine operator revised their approved ventilation plan addressing haulage equipment traveling through flypads. The revision includes discontinuing the practice of shuttle cars from different MMUs sharing a common intersection where flypads are used. Mine management trained all miners on the revised policies and procedures which were incorporated in the Approved Ventilation Plan. Miners also received training on Safeguard No. 9291763 issued as a result of the investigation (see Enforcement Actions item 2).

CONCLUSION

On January 22, 2021, at 7:44 a.m., Justin L. Lafferty, a 38-year-old shuttle car operator with approximately 11 years of mining experience, was injured when another shuttle car struck the operator's compartment of the shuttle car he was operating. On February 21, 2021, Lafferty died as a result of the injuries sustained during the accident.

The accident occurred because the mine operator did not have policies or procedures in place to assure safe underground haulage when: 1) mobile equipment traveled through a flypad, and 2) shuttle cars from different mechanized mining units (MMU) shared a common intersection where flypads are used.

Approved By:

Brian M. Dotson
District Manager

Date

ENFORCEMENT ACTIONS

1. A 103(k) Order No. 9291756 was issued to Aracoma Coal Company on January 22, 2021:

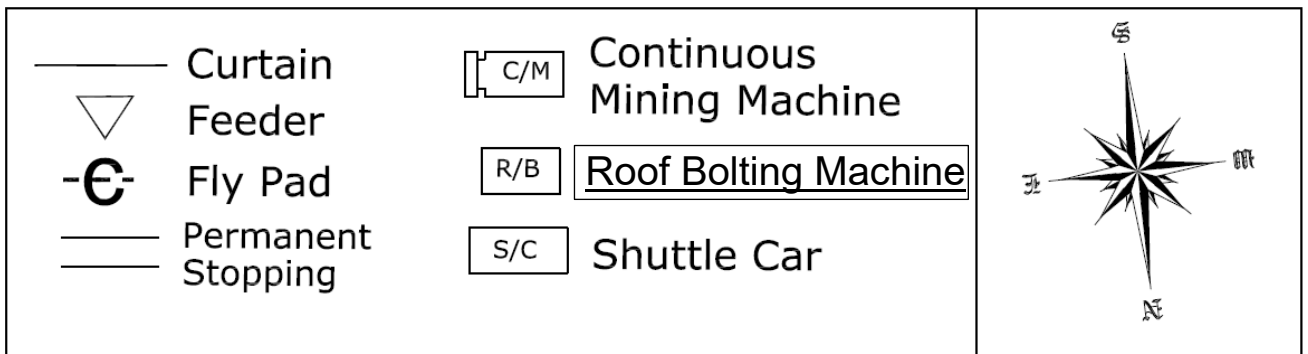
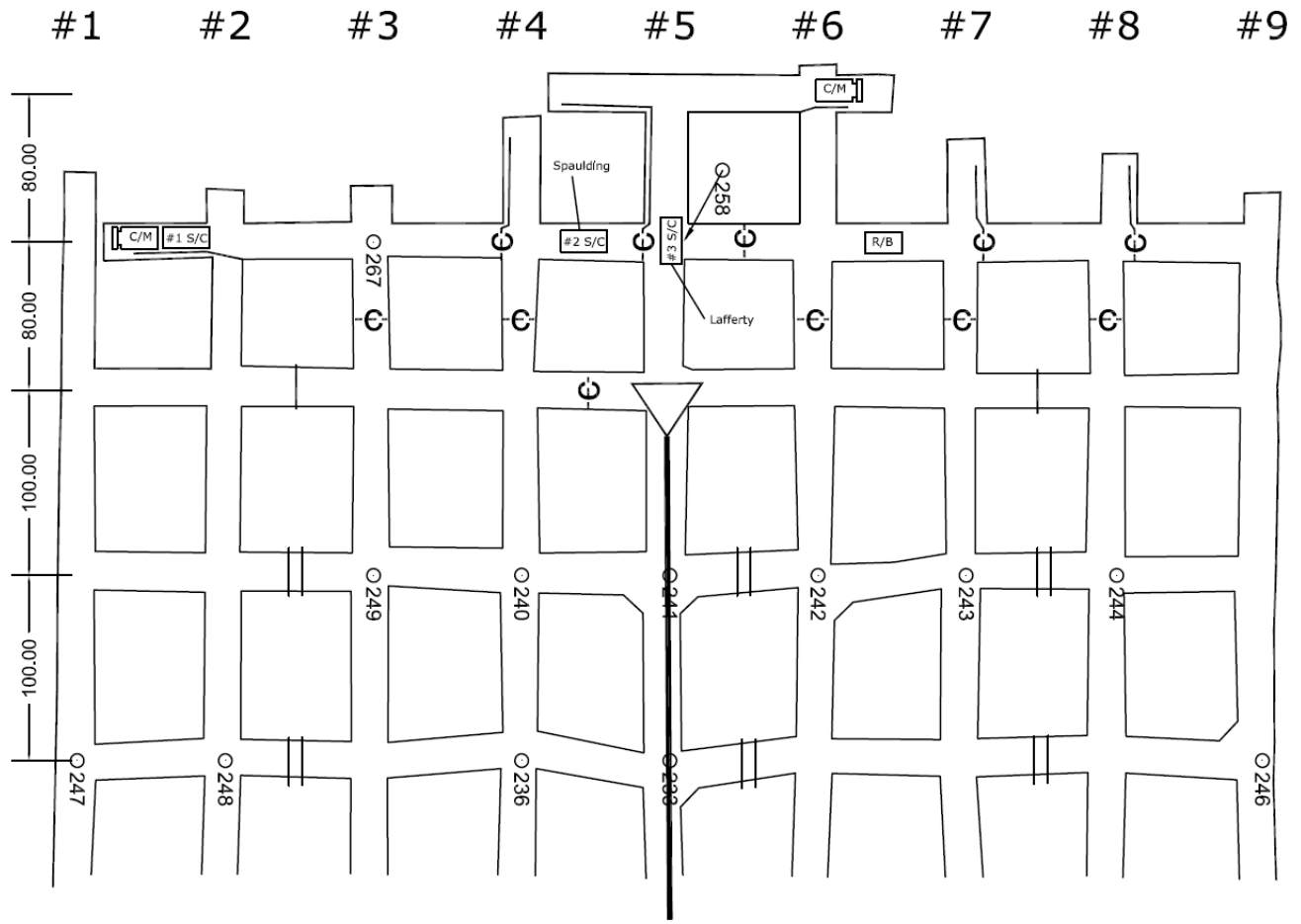
An accident occurred at this operation on January 22, 2021 at approximately 7:40 A.M. when the #2 Shuttle Car collided with the operator's compartment of the #3 Shuttle Car in the #5 Entry intersection at SS# 258 on the #1 Section injuring a miner. This order is issued under Section 103(k) of the Federal Mine Safety and Health Act of 1977 to assure the safety of all persons at this operation and to prevent the destruction of any evidence which would assist in the investigation of the cause and/or causes of this accident. It prohibits any activity on the #1 Section (001-0 MMU/002-0 MMU) until MSHA has determined that it is safe to resume normal mining operations in this area. The mine operator shall obtain prior approval from an authorized representative for all actions to recover and/or restore operations to the affected area.

2. A 314(b) Safeguard Notice was issued to Aracoma Coal Company under the provisions of 75.1403-10.

On January 22, 2021, a miner was injured on the #1 section (001/002 MMU) when the No. 2 shuttle car struck the No. 3 shuttle car while traveling through an intersection in the #5 entry. On February 21, 2021, the miner died as a result of the injuries sustained during the accident. This is a Notice to Provide Safeguard(s) requiring all rubber-tired mobile equipment operated on working sections to adhere to the following:

1. Haulage equipment from different MMUs will not share the same intersection where flypads are used.
2. All rubber-tired mobile equipment on the working section will come to a complete stop and sound the audible warning device three times prior to proceeding through any flypads or ventilation curtains.
3. Audible warning devices shall be maintained in a functional condition and checked during the pre-operational examination on each shift. Audible warning devices shall be loud enough to be heard above any surrounding noise.
4. Shuttle car anchors will be positioned in a manner that will not alter the operator's ability to travel the haulageways in a safe manner. No anchors will be installed on the corners of pillars.
5. All rubber-tired mobile equipment operators are to position their equipment so as to prevent the deck from being struck by other equipment if they have to stop or park in an intersection beside or behind ventilation curtains.

Appendix A – Drawing of the No. 1 Section



Appendix B – Persons Participating in the Investigation

Aracoma Coal Company Davy Branch Mine

Terreall Blankenship	Safety Director
Robert Ellis	Director of Maintenance
Scott Brown	General Mine Foreman
Richard Williamson	Safety Supervisor
John Reed	Senior Safety Representative
Michael Chaffin	Section Foreman
Shannon Etters	Section Foreman
Kevin Bates	Shuttle Car Operator
Roach Mosley	Shuttle Car Operator
Chad Spaulding	Shuttle Car Operator
Eric Blankenship	Roof Bolting Machine Operator
Timothy Smith II	Roof Bolting Machine Operator
Daniel Hensley	Electrician/Emergency Medical Technician
Bobby Boehm	Outby Belt Examiner/Emergency Medical Technician
Jonathan Ellis	Step toe & Johnson, PLLC, Aracoma Coal Company Attorney
Eric L. Silkwood	Assistant General Counsel

West Virginia Office of Miners' Health Safety and Training

Michael Pack	Assistant Inspector-at-Large/Investigator
Randy Carter	District Inspector/Investigator
Steve Evans	District Inspector/Investigator

Mine Safety and Health Administration

Nicholas Christian	Supervisory Mine Safety and Health Inspector
David Thacker, Jr.	Supervisory Mine Safety and Health Inspector
Gordon L. Varney II	Mine Safety and Health Inspector