

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

COAL MINE SAFETY AND HEALTH

REPORT OF INVESTIGATION

Underground Coal Mine

Fatal Powered Haulage Accident
September 11, 2012

Shoal Creek Mine
Drummond Company, Inc.
Oakman, Walker County, Alabama
I.D. No. 01-02901

Accident Investigator

Timothy R. Stockman
Coal Mine Safety and Health Inspector

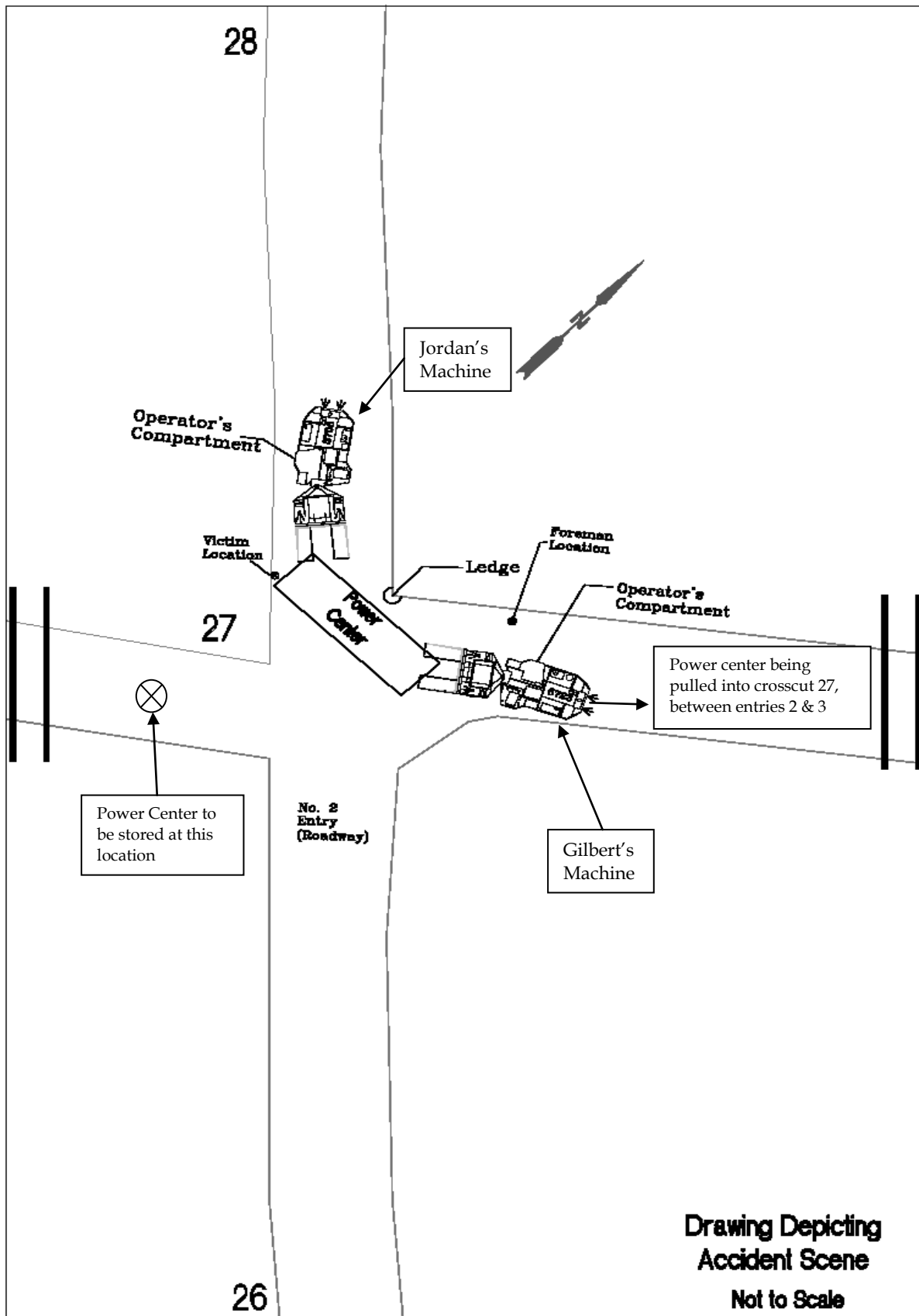
Originating Office
Mine Safety and Health Administration
District 11
135 Gemini Circle, Suite 213, Birmingham, Alabama 35209
Richard A. Gates, District Manager

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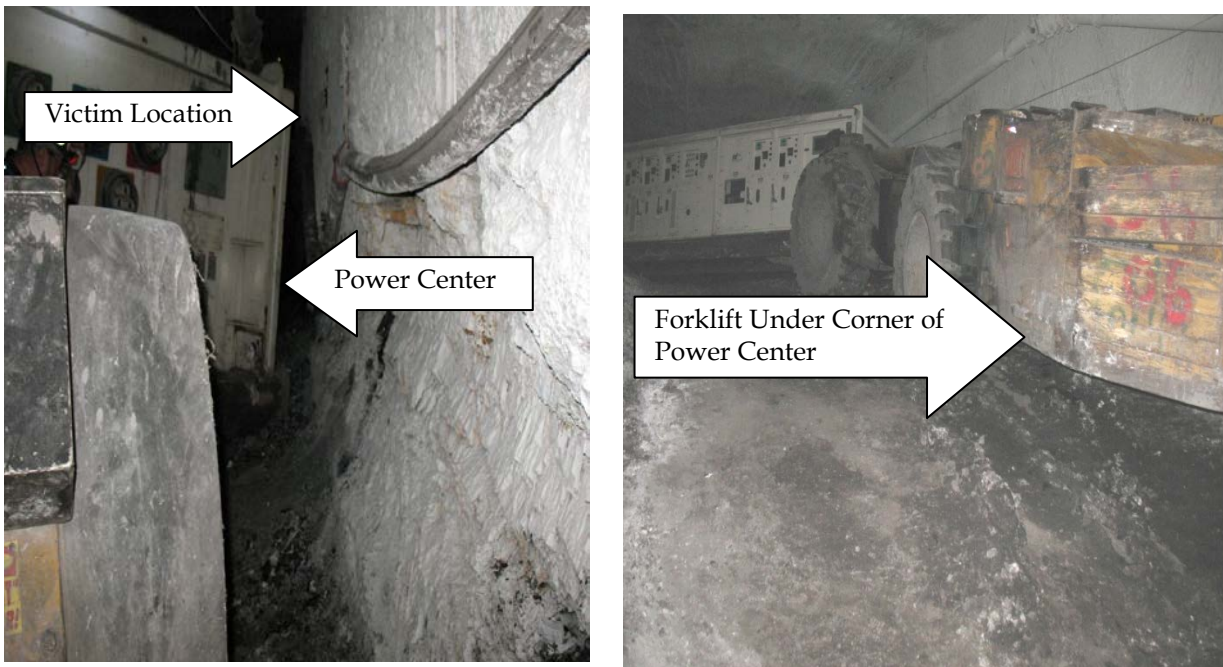
OVERVIEW

On Tuesday, September 11, 2012, at approximately 10:23 a.m., a 28-year-old miner was fatally injured when he was crushed between a large power center and the coal rib. The power center was being moved by two large, articulating diesel forklifts, one pulling and the other pushing. While the lead forklift was being repositioned with the use of hydraulic lifting and steering controls, the victim was located between the power center and the coal rib. This process caused unexpected sliding movement of the power center, pinning the victim against the coal rib. The size of the power center prevented the fork lift operators and a foreman, positioned near the operator's compartment of one of the forklifts, from seeing the victim's location. Verbal communication was also hampered by noise from the diesel engines on the forklifts. Mine management had a General Equipment Operation Procedure in place at the time of the accident to follow when moving large mining equipment/components in the mine.



SKETCH OF THE ACCIDENT

Accident Investigation Photos Depicting Accident Scene



GENERAL INFORMATION

The Shoal Creek Mine is owned and operated by Drummond Company, Inc. The mine is located in Walker County, Alabama, near the community of Oakman.

The mine provides employment for 661 persons and operates seven days per week, three shifts per day. Production is conducted on an alternating schedule of five days one week and six days the next. The mine produces an average of 3,410 clean tons of coal per day. The miners are represented by the United Mine Workers of America (UMWA).

The mine operates in the Blue Creek coal seam, with a mining height that ranges from seven to twelve feet. When the accident occurred, the mine was operating five mechanized mining units (MMUs) which were four continuous mining machine units and one longwall unit.

The principal officials for the mine at the time of the accident were:

Don Hendrickson..... General Manager
Randy Clements..... Safety Superintendent

A Regular Safety and Health Inspection (E01) had been completed on June 27, 2012, and an E01 inspection was ongoing at the time of the accident. The Non-Fatal Days Lost (NFDL) injury incidence rate for the mine for calendar year 2011 was 6.00, compared to the national NFDL rate of 3.36.

DESCRIPTION OF THE ACCIDENT

On September 11, 2012, the day shift began at 7:00 a.m. Julius Walker III (victim), the production crew, and other personnel assigned to the I-0 Longwall section entered the mine. Walker, Ray Jordan, Outby Utility Man, and Paul Gilbert, Outby Utility Man boarded a personnel carrier operated by Frank Benson, Outby Foreman, and proceeded toward the I-0 Longwall section. Prior to arriving on the longwall section, Jordan and Gilbert were dropped off at two diesel forklifts, which were utilized to lift and move heavy components in the mine. They were instructed to conduct pre-operational checks and prepare the forklifts for the assignments of the day. Benson and Walker continued inby to the longwall section. Walker, Gilbert, and Jordan were commonly assigned to move large components in the mine on the day shift.

The I-0 Longwall section is a three entry mining section (headgate), numbered left to right. The #1 entry is an isolated intake belt entry and the secondary escapeway. The #2 entry is a roadway and the primary intake escapeway. The #3 entry is an intake entry, common with the #2 entry.

Mining operations on the I-0 Longwall section proceeded normally, and other outby work was performed by Walker, Gilbert, and Jordan under Benson's supervision. At approximately 10:00 a.m., Gilbert and Jordan traveled to crosscut #33 in the I-0 Longwall section roadway to prepare to move a spare power center to crosscut #27. Benson and Walker also arrived to assist in the hook-up and initial movement of the power center into the roadway. This power center is a large longwall component measuring approximately 30 feet in length, 9 feet in width, 6 ½ feet in height, and weighing approximately 30 tons. After hooking Gilbert's forklift (company number 5723) to the power center with a single large pull chain, Walker backed out of the way. Gilbert pulled the power center into the roadway and Jordan moved his forklift (company number 5706) behind the power center to assist in the moving process primarily by lifting the power center to reduce the drag on the outby forklift. Gilbert and Jordan began moving toward crosscut #27 with the power center.

Benson instructed Walker to check with the longwall face crew to see if anyone needed to be relieved for lunch. Walker walked up the roadway toward the longwall face area, a few crosscuts inby his location. Benson, driving his personnel carrier, followed the forklifts moving the power center toward crosscut #27.

After Walker checked with the crew, he determined that he was not needed to relieve anyone for lunch. He walked back down the roadway toward the area where the power center would be placed. Walker joined Gilbert, Jordan, and Benson at crosscut #28, where they had stopped to observe a hill over which the power center had to be moved. Walker then proceeded up the hill to crosscut #27.

At approximately 10:15 a.m., Gilbert's machine began pulling the power center to the final location, being assisted by Jordan's machine. As Gilbert reached crosscut #27, he turned left toward the #3 entry. This presented a problem because the designated location was near the

crest of a hill, and a step-up in the mine floor approximately 10 inches in height was present at the inby corner of the intersection entering the crosscut. As Gilbert pulled into the crosscut, his forklift became wedged in a fully articulated left turn against the outby coal rib. Attempts to straighten the machine with the hydraulic steering were unsuccessful. Gilbert attempted to move his machine toward the power center to produce slack in order to unhook the chain. Benson walked up the hill and into the crosscut beside the operator's compartment of Gilbert's forklift. Walker approached on the outby side of the power center and attempted to unhook the pull chain to allow Gilbert to straighten his machine and get a better pull on the power center. After attempts by Walker to unhook the chain were unsuccessful, Walker proceeded back toward the roadway, out of sight of all other personnel at this location. Benson, Gilbert, and Jordan stated they could see the light from Walker's cap lamp (though not the actual beam), which indicated to them that Walker was on the outby side of the power center.

Jordan had shifted his machine to the neutral position with the parking brake set waiting for Gilbert to resume pulling the power center. Jordan's forklift had the power center lifted approximately 10 inches off the mine floor, resting on the forks of the machine. He was sitting in the operator's compartment, looking toward the back of the machine at the water scrubber. The corner of the power center closest to the left side of the roadway was approximately 18 inches from the coal rib.

Benson instructed Gilbert to set his machine over. This is a commonly used maneuver conducted by lifting the front wheels off the ground by lowering the forks of the machine, and then using the hydraulic steering jacks to straighten the machine. Unknown to the other members of the move, Walker had positioned himself between the power center and the coal rib. As Gilbert performed this maneuver, he was able to straighten his machine in line with the power center. While straightening the forklift, the power center shifted on the forks of Jordan's machine causing it to slide toward the left coal rib. Jordan, looking toward the back of his machine, felt the machine shake as a result of the power center moving on his forks. At approximately, 10:22 a.m., he looked back toward the power center and recognized that it had shifted on his forks, and was shocked to see Walker pinned against the coal rib with the corner of the power center against his chest. Jordan immediately yelled, "We got Julius!" and steered his machine to the left, moving the power center away from the coal rib. Jordan was the first to get to Walker's location, immediately followed by Benson and Gilbert. Walker was unresponsive and did not have a pulse. Cardiopulmonary resuscitation (CPR) was immediately started. Benson instructed Gilbert to turn both machines off and to call the Control Room Operator for help.

At approximately 10:25 a.m., Gilbert turned the machines off and called the Control Room Operator (Justin Sherer) from his handheld radio. He informed Sherer of the accident and requested help. At approximately 10:26 a.m., Sherer notified Life Saver Air Ambulance and Regional Paramedical Services requesting their assistance.

Hearing Gilbert's call for help over the radio, other personnel traveled to the accident scene with First Aid equipment. Recognizing Walker had obvious and extensive trauma from the accident

and was in cardiac arrest, he was moved to a backboard and loaded onto a personnel carrier. Walker was transported to Camp Creek portal with CPR being performed during transit.

At approximately 10:43 a.m., Walker and the rescuers arrived on the surface. They were met immediately by a flight nurse and flight paramedic from the air ambulance. Advanced life-saving procedures were initiated. Additional paramedics from the ground units arrived a short time later, and after extensive efforts to revive Walker failed, orders to stop were given by the Medical Control Physician. A Walker County Deputy Coroner arrived and pronounced Walker dead at 12:28 p.m.

INVESTIGATION OF THE ACCIDENT

MSHA was notified of the accident through the National Call Center Hotline at 10:33 a.m., on September 11, 2012. An MSHA inspector was at the mine site conducting an E01 quarterly inspection when the accident occurred. Additionally, MSHA accident investigators were dispatched to the mine site. A 103(k) order was issued to prevent the destruction of evidence and to ensure the safety of all persons at the mine. MSHA conducted an investigation with the assistance of the Alabama Department of Industrial Relations, mine management, and mine employees. Formal interviews were conducted with four mine employees. Additional information was received from other mine personnel during the investigation.

DISCUSSION

Accident Location

The accident occurred on the I-0 Longwall section roadway (#2 entry) at crosscut #27. The accident location was near the crest of a hill with an uneven mine floor at the entrance to the crosscut from the roadway. The roadway and crosscut floor was relatively dry, with no areas of water or mud which would reduce the traction of the forklifts. (Refer to Drawing, pg. 3)

MSHA Examinations and Testing

Examinations for permissibility and operational functions of the diesel forklifts were conducted including examining each machine's braking systems, hydraulic systems, steering controls, tires, and lighting.

Company number 5723 fork lift – No violations associated with tests/examinations were observed.

Company number 5706 fork lift – No violations associated with tests/examinations were observed.

Equipment Move Procedures

Mine Management had a General Equipment Operation Procedure in place at the time of the accident. The procedures included provisions that applied to moving large mining equipment/components in the mine. The procedures provided for pre-operation testing and examination to determine that equipment is in safe operating condition. Also included was a requirement that operators shall see that other persons are in the clear before tramming or operating equipment.

Work History and Training

Julius Walker III had a total of five years of mining experience at the Shoal Creek Mine. Walker had been performing the duties assigned to him as a Longwall Utility Man for a total of three years at this mine. During this three year period as a Longwall Utility Man, Walker operated the diesel powered forklifts during large equipment moves, and assisted the other two operators in performing large equipment moves, and other assigned tasks.

A review of training records for Walker, Benson, Gilbert, and Jordan was conducted by MSHA Educational Field Services (EFS). The records indicate these personnel received all required training.

ROOT CAUSE ANALYSIS

An analysis was conducted to identify the most basic causes of the accident that were correctable through reasonable management controls. The following root cause was identified:

Root Cause: Mine management had a General Equipment Operation Procedure in place at the time of the accident to follow when moving large mining equipment/components in the mine. Management did not consider that the large equipment/components being moved prevented the forklift operator(s) from seeing ground personnel in close proximity to the object being moved. Additionally, noise produced by operating engines of the equipment normally used to move these objects limited verbal communications. Because mine management did not consider these visibility and communication hazards, persons in close proximity to large equipment were not properly trained.

Corrective Action: Mine management developed and implemented a new procedure to be used when moving large pieces of equipment in the mine. A safeguard, which lists these new procedures, was issued by MSHA to require certain procedures to be followed when moving large pieces of equipment from, or to, any location in the mine. All mine personnel were trained in the new procedure and requirements of the safeguard. A record of the training was made and provided to MSHA.

CONCLUSION

The accident occurred because mine management did not assure that all persons were clear before initiating movement of a large power center with diesel forklifts. The victim received fatal injuries when he was crushed between the power center and the coal rib. A contributing factor was that the size of the power center being moved, blocked vision, and did not allow for visual observation of all sides prior to movement. In addition, the noise produced by the engines of the machines moving the large power center hampered verbal communications. Employees were not properly trained in all hazards associated with moving large equipment.

Approved by:



Richard A. Gates
District Manager



Date

ENFORCEMENT ACTIONS

1. A 103(k) Order, No. 8524935, was issued to Shoal Creek Mine, on September 11, 2012, to prevent the destruction of any evidence that would assist in investigating the cause or causes of the accident, and to ensure the safety of all persons until an investigation of the accident could be completed.

2. A 314(b) Notice to Provide Safeguard, No. 8524239 for 30 C.F.R. section 75.1403 was issued to Shoal Creek Mine, on October 4, 2012. This Notice to Provide Safeguard requires the following procedures be put in place and followed when any large piece of mining equipment is moved from or to locations in this mine;

- Management will conduct a pre-shift or supplemental examination of the move route prior to commencing the operation. Extraneous material will be removed from the area prior to the move;
- Chains, wire rope, or other pulling devices including tools used for the move will be examined for damage before use;
- All personnel will remain a safe distance away while the equipment is in motion;
- Communication will be through visual and/or audible (above ambient noise level) commands during the move. Management will assign a person to be in charge of the equipment move, and such person shall direct the move and ensure that both the audible or visual communication requirement is being adhered to throughout the move;
- No action to begin the move shall be taken before the person in charge of the move has instructed all miners who will participate in the move of all required procedures and safe practices required during the move, and has confirmed that the miners understand the instructions;
- Prior to a 25-X forklift, or other large self-propelled piece of equipment used for moving large mining equipment, is connected or disconnected from the piece of equipment being moved, the operators will set the parking brake. The person in charge of the equipment move will supervise this task to assure that no person is placed in a position or area which will compromise their safety;
- The person in charge of the equipment move will not be the person performing the connecting/disconnecting functions;
- Personnel on foot will not be within the turning radius of the equipment being moved or any equipment being used in the equipment move, while such equipment is in motion. Motion is defined as movement of any kind, vertical or horizontal, while the equipment is rolling or standing still;

- Until confirmation is obtained from the person in charge of the equipment move, no equipment movement of any kind will be made by any 25-X forklift operator.

APPENDIX A

List of persons providing information and/or present during the investigation

Drummond Company, Inc.

Don Hendrickson	General Manager
Mark Stanley	Mine Manager
Randy Clements	Safety Superintendent
Frank Benson	Outby Foreman
Gene Castleman.....	Longwall Superintendent
Joe Edwards	Safety Department
Amy Benson	Outby Foreman
Gary Toxey	Mine Trainer
Mike Butts	Corporate Representative
Gary Fields	Safety Department
Noel Hayhurst	Engineering
Connie Cox	Corporate Counsel

United Mine Workers of America

Ray Jordan	Equipment Operator (Outby Utility)
Paul Gilbert	Equipment Operator (Outby Utility)
Joe Weldon	U.M.W.A. Safety Representative
Fred England	U.M.W.A. Safety Representative
Edward Busby	U.M.W.A. Safety Committee
Wendell Rigsby	U.M.W.A. District 20 Representative


Alabama Department of Industrial Relations

Dale Johnson	State Investigator/Inspector
Leon Herron	Supervisor
James Rivers	Chief Supervisor

Mine Safety and Health Administration

Timothy Stockman	MSHA Investigator/Inspector
Greg Willis	MSHA Inspector
Russel Weekly	Staff Assistant, District 11
Terry Lingenfelter	EFS, Training Specialist

Appendix B Victim Information

Accident Investigation Data - Victim Information										U.S. Department of Labor																																					
Event Number: 4 4 9 5 8 3 6										Mine Safety and Health Administration																																					
Victim Information: 1																																															
1. Name of Injured/Ill Employee: Julius Walker			2. Sex: M		3. Victim's Age: 28		4. Degree of Injury: 01 Fatal																																								
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death: a. Date: 09/11/2012 b. Time: 10:23						6. Date and Time Started: a. Date: 09/11/2012 b. Time: 7:00																																									
7. Regular Job Title: 099 Longwall outby utility				8. Work Activity when Injured: 041 Assisting in moving equipment				9. Was this work activity part of regular job? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																																							
10. Experience a. This			Years			Weeks			Days			b. Regular			Years			Weeks			Days			c. This			Years			Weeks			Days			d. Total			Years			Weeks			Days		
Work Activity:			3			0			0			Job Title:			3			0			0			Mine:			5			0			0			Mining:			5			0			0		
11. What Directly Inflicted Injury or Illness? 109 Inadvertent movement of large component						12. Nature of Injury or Illness: 170 Traumatic crushing injuries																																									
13. Training Deficiencies: Hazard: _____ New/Newly-Employed Experienced Miner: _____ Annual: _____ Task: _____																																															
14. Company of Employment: (If different from production operator) Operator _____ Independent Contractor ID: (If applicable) _____																																															
15. On-site Emergency Medical Treatment: Not Applicable: _____ First-Aid: <input checked="" type="checkbox"/> CPR: <input checked="" type="checkbox"/> EMT: <input checked="" type="checkbox"/> Medical Professional: <input checked="" type="checkbox"/> None: _____																																															
16. Part 50 Document Control Number: (form 7000-1)						17. Union Affiliation of Victim: 2555 United Mine Workers of Amer.																																									
Victim Information:																																															
1. Name of Injured/Ill Employee:			2. Sex:		3. Victim's Age:		4. Degree of Injury:																																								
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death:						6. Date and Time Started:																																									
7. Regular Job Title:				8. Work Activity when Injured:				9. Was this work activity part of regular job? Yes <input type="checkbox"/> No <input type="checkbox"/>																																							
10. Experience a. This			Years			Weeks			Days			b. Regular			Years			Weeks			Days			c. This			Years			Weeks			Days			d. Total			Years			Weeks			Days		
Work Activity:									Job Title:									Mine:						Mining:																							
11. What Directly Inflicted Injury or Illness?						12. Nature of Injury or Illness:																																									
13. Training Deficiencies: Hazard: _____ New/Newly-Employed Experienced Miner: _____ Annual: _____ Task: _____																																															
14. Company of Employment: (If different from production operator) _____ Independent Contractor ID: (If applicable) _____																																															
15. On-site Emergency Medical Treatment: Not Applicable: _____ First-Aid: _____ CPR: _____ EMT: _____ Medical Professional: _____ None: _____																																															
16. Part 50 Document Control Number: (form 7000-1)						17. Union Affiliation of Victim:																																									
Victim Information:																																															
1. Name of Injured/Ill Employee:			2. Sex:		3. Victim's Age:		4. Degree of Injury:																																								
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death:						6. Date and Time Started:																																									
7. Regular Job Title:				8. Work Activity when Injured:				9. Was this work activity part of regular job? Yes <input type="checkbox"/> No <input type="checkbox"/>																																							
10. Experience a. This			Years			Weeks			Days			b. Regular			Years			Weeks			Days			c. This			Years			Weeks			Days			d. Total			Years			Weeks			Days		
Work Activity:									Job Title:									Mine:						Mining:																							
11. What Directly Inflicted Injury or Illness?						12. Nature of Injury or Illness:																																									
13. Training Deficiencies: Hazard: _____ New/Newly-Employed Experienced Miner: _____ Annual: _____ Task: _____																																															
14. Company of Employment: (If different from production operator) _____ Independent Contractor ID: (If applicable) _____																																															
15. On-site Emergency Medical Treatment: Not Applicable: _____ First-Aid: _____ CPR: _____ EMT: _____ Medical Professional: _____ None: _____																																															
16. Part 50 Document Control Number: (form 7000-1)						17. Union Affiliation of Victim:																																									