CAI-2003-08

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION
Coal Mine Safety and Health

Report of Investigation

Surface Preparation Plant and Loadout Facility

Fatal Powered Haulage Accident
April 4, 2003

Driftwood Contracting Inc. (5RW)

at

Preparation Plant
Perry County Coal Corporation
Hazard, Perry County, Kentucky
Mine I.D. No. 15-05485

Accident Investigators

Charles L. Barton
Mine Safety and Health Inspector

Marvin Hoskins
Mine Safety and Health Inspector

Eugene D. Hennen
Mechanical Engineer

Originating Office
Mine Safety and Health Administration
District 7
3837 South Highway 25E
Barbourville, Kentucky 40906
Joseph W. Pavlovich, District Manager

Release Date: June 5, 2003

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Accident Site

This image shows the location where the truck came to rest, 43 feet below the bridge decking. The area where the truck fell through the guardrails is also visible.

OVERVIEW

On April 4, 2003, James G. Williams, truck driver, age 34, was fatally injured when the empty coal haulage truck he was operating failed to negotiate a 90 degree turn onto a bridge, causing it to roll off the right side of the bridge, landing on its top, resulting in fatal injuries. Williams was not wearing a seat belt at the time of the accident.

The accident occurred because the truck failed to negotiate the 90-degree turn onto the bridge. Contributing factors included: brakes on the haulage truck and guardrails leading to the bridge were not maintained, traffic signs were not posted, the tire on the left driver side steering axle front tire was labeled, not for highway use and brakes not being maintained. The truck was traveling at a speed inconsistent with terrain.

Williams had a total of 13 years mining experience, three weeks and four days as a CDL licensed truck driver and eight days driving at this mine.

GENERAL INFORMATION

Perry County Coal Corporation, surface preparations plant and loadout facility is owned and operated by Teco Energy in Hazard, Perry County, Kentucky. The principal operating officer is J. J. Shackleford, President. The operation normally operates two, nine-hour shifts per day, five days a week and a maintenance shift consisting of four days on and four days off, 12- hour shifts. Total employment is 37 persons.

Driftwood Contracting Inc. is an independent contractor with ten employees on two 10-hour shifts and is responsible for hauling coal from the Bear Branch deep mine to the Perry County Coal Corporation's preparation plant.

Coal is hauled to the plant by contract truckers. The coal is cleaned, sized, and transported to stockpiles by conveyor. The finished product is then transported to various customers by truck or rail haulage.

The last regular inspection of this operation was completed on February 2, 2003.

DESCRIPTION OF THE ACCIDENT

On the day of the accident, James G. Williams, (victim) reported for work at approximately 7:00 a.m., where he picked up a load of coal and transported it from the Bear Branch deep mine to the Perry County Coal Corporation preparation plant, dumping at 7:40 a.m. He continued to haul two more loads without incident. At 9:56 a.m., Williams dumped his fourth load and proceeded down the haul road to pick up another load. At approximately 1,960 feet from the bridge, Williams pulled over to allow a loaded truck coming up the hill to pass before continuing down the 8.3 percent grade toward the bridge. Paul Miller, another Driftwood Contracting Inc. driver, pulled over behind Williams to allow the loaded truck to pass. Williams and Miller were talking on the citizen band radio as they pulled out to continue down the hill. Williams pulled away and Miller lost sight of him as he rounded a curve. Miller heard Williams key his microphone, but nothing was said. Looking up as he rounded the curve, he saw Williams' truck strike the right guardrail preceding the bridge. The truck then rolled off the right side of the bridge. Miller called for help on the citizen band radio, stopped his truck, and ran over the hill looking for Williams.

The emergency medical assistance arrived and personnel were unable to detect a pulse. Williams was pronounced dead at the scene due to multiple crushing injuries.

INVESTIGATION OF THE ACCIDENT

John Linder, Mine Safety and Health Inspector was notified at approximately 10:00 a.m. on the day of the accident by a telephone call from Otis Mullins, Coordinator of Safety and Environmental Affairs, Perry County Coal Corporation. An investigation was started the same day. An order was issued pursuant to Section 103(k) of the Mine Act to ensure the safety of miners.

MSHA's accident investigation team included members from District 7, Office of Technical Support and Education Field Services. The team traveled to the mine, conducted a physical examination of the accident scene and equipment involved in the accident, interviewed persons, and reviewed training records, conditions, and procedures relative to the accident. MSHA conducted the investigation with the assistance of mine management and the Kentucky Department of Mines and Minerals. None of the person's interviewed desired their statements be kept confidential.

DISCUSSION

1. The accident occurred at approximately 10:00 a.m. on a cloudy day with temperatures in the mid 60's. The roadway surface was paved, dry, and visibility was good.

2. The machine involved in the accident was a 1980 Mack truck, model DM800, serial No. DM886SX2106. It was equipped with a 350 Mack diesel engine and an Eaton-Fuller

13-speed transmission. The truck measured approximately 142 inches high, 100 inches wide, 385 inches long, and the empty weight was 37,620 pounds.

3. James G. Williams had 13 years experience as a miner. Williams held a Class A, CDL endorsement on driver's license issued March 7, 2003. Williams had 8 days experience as a truck driver for Driftwood Contracting Inc.

4. All required 30 CFR Part 48 training was completed. He was given newly employed experienced miner training, completed on March 26, 2003. The contractor who conducted the training checked the wrong box on the 5000-23 form, he checked the inexperienced miner training. The training was not done by an MSHA certified instructor.

5. Williams normally worked the second shift, starting at 4:00 p.m. and finishing at 2:00 a.m. Williams worked his normal shift on April 3, 2003. Records indicate that Williams dumped his first load at 7:40 a.m., indicating that he started work at approximately 7:00 a.m. on April 4, 2003.

6. Williams was talking on the citizen band radio at the time of the accident. Paul Miller stated during his interview that he and Williams were talking on the radio, and just before the accident, Williams keyed up his microphone but failed to say another word.

7. Paul Miller stated that Williams shifted three times when he started down the hill toward the bridge. This created some distance between Williams and Miller's trucks.

8. Paul Miller observed no brake lights as Williams approached the bridge guardrail. Rear lights were checked by Technical Support and worked when tested. Lights were found to be clean and visible.

9. Tire marks on roadway were yaw marks gravitating toward the outside of the curve onto bridge. No skid marks were found.

10. An evaluation of the operator's visibility was conducted in the area of the accident. The operator had an unobstructed view of the roadway and upcoming bridge for a distance of approximately 750 feet.

11. The accident occurred in an area of the descending haul road that was 41 feet wide and that turned 90 degrees onto a 14-foot wide bridge.

12. The orange guardrail preceding the bridge was nine feet long, 27 inches high, constructed of six inch I-beam posts with channel steel side rails and a four inch round top rail. The I-beam was deteriorated at ground level.

13. The bridge guardrail measured 72 feet long and 25 inches high was in good repair prior to the accident. Forty-nine feet of the guardrail was torn out when the accident occurred.

14. In accordance with the North American Out-of-Service Criteria, the haul truck should have been taken out-of-service because of the following brake system defects:

    a) A truck is to be taken out-of-service if 20 percent of the brakes are defective. All but one of the brakes were defective, making 83 percent of the brakes defective. The defects included three brakes that were out of adjustment, two brake chambers that had audible air leaks, and two brakes that had linings less than 1/4 inch thick.

    b) A truck is to be taken out-of-service if one of the brakes on the steering axle is defective. The brake on the right side of the steering axle did not function.

    c) A truck is to be taken out-of-service if the sizes of the brake chambers do not match on the steering axle. The right side on the truck's steering axle had a Type 30 chamber and the left side had a Type 24 chamber.

    d) A truck is to be taken out-of-service if a tire on the steering axle is labeled not for highway use. The driver side front steering axle tire was labeled not for highway use.

15. The transmission was found in the neutral position. No defects in the transmission were found.

16. The investigation revealed that pre-operational checks were being conducted.

17. Emergency response personnel cut the cab to free the victim. Personnel stated that no seat belt was used.

ROOT CAUSE ANALYSIS

A root cause analysis was conducted. The following causal factors were identified.

Causal Factor: The right front brake was inoperative and several of the other brakes were out of adjustment.

Corrective Action: Establish procedures requiring periodic examinations of mobile equipment brakes and the repair of all brake defects.

Causal Factor: The guardrail preceding the bridge was deteriorated at its base and was not maintained.

Corrective Action: Mine Management should issue policy that all guardrails be constructed and maintained on elevated roadways.

Causal Factor: The victim attempted to use the radio immediately before the accident and may have been inattentive to the road conditions.

Corrective Action: Policies and procedures should be enforced to ensure that employees use radios for intended use.

Causal Factor: Records show that the victim had only 3 hours off work between shifts preceding the accident, which may have resulted in fatigue.

Corrective Action: Company policies should be reviewed to ensure employees have enough time between shifts to rest.

Causal Factor: No traffic signs on the right side of the roadway to indicate a descending grade and approaching bridge.

Corrective Action: Mine Management should ensure that all haul roads be marked with warning signs and traffic rules.

CONCLUSION

The cause of the accident was failure to negotiate the 90-degree turn onto the bridge. The contributing factors were: the defective brake system on the truck, lack of structural integrity of guardrail, the inexperienced, fatigued, and possible inattentive driver and failure to maintain control of the vehicle.

It is the consensus of the investigating team that James G. Williams received fatal injuries on April 4, 2003 after a Mack truck he was operating plunged 43 feet off the side of a bridge. Interviews revealed that Williams had worked until 2:00 a.m. the previous evening before starting to work at approximately 7:00 a.m. the following morning. Williams dumped his fourth load of coal, and on his way back to the Bear Branch deep mine, he had to stop his truck to allow a loaded truck to pass. Interviews revealed that Williams pulled away from the truck behind him quickly, shifting three times. No brake lights were observed on Williams' truck as it approached the guardrail. Williams was licensed three weeks and four days prior to the accident and had eight days driving for this company. The brakes on the machine were not being maintained and the guardrail was deteriorated at ground level.

ENFORCEMENT

Order No. 7274766 was issued on April 4, 2003, under the provisions of section 103(k) of the Mine Act.

> This mine has experienced a fatal truck haulage accident along the coal haulage road to the preparation plant. This order is issued to ensure the safety of any person along the haulage road. Until an examination or investigation is made to determine that the road is safe. Only those persons selected from company officials, state, the miners representative and other persons who are determined by MSHA to have information relevant to the investigation may remain in the affected area.

Citation No. 7499435 was issued to Driftwood Contracting Inc., citing a violation of 30 CFR 77.1605 (b):

> The service brakes on the DM 800 Mack truck, serial number DM886SX2106, were not adequately maintained. All but one of the brakes were defective, making 83 percent of the brakes defective. The defects included three brakes that were out of adjustment, two brake chambers that had audible air leaks, and two brakes that had linings less than 1/4 inch thick. This truck is used on haul roads in traffic patterns with other haulage vehicles, parts vehicles and personal vehicles. This vehicle is used on public highways. A fatal accident occurred when this truck failed to negotiate a 90-degree turn onto a bridge.

Citation No. 7499437 was issued to Driftwood Contracting Inc., citing a violation of 30 CFR 77.1607 (c):

> The DM800 Mack haulage truck was not being operated in a manner prudent and consistent with conditions of roadway, grades, and the type of equipment used. Interviews indicate that the victim increased the distance between himself and the vehicle behind him by increasing his speed. The victim shifted three times as he pulled away descending down the haul road. Operators stated that low gear on the high side was used to descend the hill. This road is one lane in some areas and has a descending grade of 8.3-9.6 percent with blind curves. Haulage trucks, parts trucks, contractors, visitors and employees utilize this road daily. A fatal accident occurred when this truck failed to negotiate a 90-degree turn onto a bridge.

Citation No. 7499438 was issued to Driftwood Contracting Inc., citing a violation of 30 CFR 77.404 (a):

> The DM 800 Mack coal haulage truck, serial number DM886SX2106, was not being maintained in safe operating condition. The left driver-side steering axle front tire is labeled Not for Highway Use. The North American Uniform Vehicle Out of Service Criteria excludes tires labeled A not for highway use @ on the steering axle. The tires on the steering axle affect steering and braking. This road narrows to one lane in some areas and has a descending grade of 8.3-9.6 percent with blind curves. Haulage trucks, parts trucks, contractors, visitors and employees utilize this road daily. A fatal accident occurred when this truck failed to negotiate a 90-degree turn onto a bridge.

Citation No. 7499440 was issued to Perry County Coal Corporation, citing a violation of 30 CFR 77.1600 (b):

> Traffic signs and warning signs were not posted on the descending haulage road from the raw coal dump to the bridge. This road narrows to one lane in some areas and has a descending grade of 8.3 - 9.6 percent with blind curves. Haulage trucks, parts trucks, contractors, visitors, and employees utilize this road daily. A fatal accident occurred when this truck failed to negotiate a 90-degree turn onto a bridge.

Citation No. 7499441 was issued to Perry County Coal Corporation, citing a violation of 77.1605 (k):

> Guardrails were not being maintained on the outer banks of a coal haulage roadway bridge that was elevated 43 feet above a railway. The post supporting the guardrail onto the bridge was deteriorated at ground level. The six-inch I-Beam post was rusted through in the webbing. This reduced the structural strength of the guardrail. Haulage trucks, parts trucks, contractors, visitors, and employees utilize this road daily. A fatal accident occurred when a truck passed through this guardrail.

APPENDIX A
Persons Participating in the Investigation

Perry County Coal Corporation
Craig Mullins.....Operations Manager
Leonard Davis.....Manager Safety and Environmental Affairs
Otis Mullins.....Coordinator Safety and Environmental Affairs

Kentucky State Police
Trooper John Napier

Kentucky Department of Mines and Minerals
Tracy Stumbo.....Chief Accident Investigator
Johnny Green.....Deputy Chief Accident Investigator
Neil Honeycutt.....Surface Mine Analyst
Bob Banks.....Mine Inspector
Bobby Ashworth.....Mine Inspector
Randy Campbell.....Electrical Inspector
Martin Holbrook III.....Electrical Inspector

Mine Safety and Health Administration
Jim Langley…….Mine Safety and Health Supervisor
Charles L. Barton.....Mine Safety and Health Inspector
Marvin Hoskins.....Mine Safety and Health Inspector
Eugene D. Hennen.....Mechanical Engineer (Technical Support)
Deborah B. Combs.....Educational Field Services

APPENDIX B
Persons Interviewed

Driftwood Contracting Inc.
Darrell Condiff.....Superintendent
Paul Miller.....Truck Driver
Paul Kennedy.....Truck Driver
Kenneth Arrowood.....Mechanic
Dwight Phillips.....Mechanic
Harold Moore.....Mechanic
Lannie Combs.....Attorney

Shell Processing Company
Andrew Sword.....Truck Driver

Kentucky Department of Mines and Minerals
Martin Holbrook III.....Electrical Inspector