CAI-2013-09

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
June 6, 2013

No.7 Mine
Jim Walter Resources, Inc.
Adger, Tuscaloosa County, Alabama
I.D. No. 0101401

Accident Investigator

Gregory D. Willis
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 Thursday, June 6, 2013, at approximately 6:15 p.m., a 36-year old belt foreman was fatally injured when he placed his hand on a guard rail that gave way, causing him to fall onto an operating conveyor belt. The moving conveyor pulled the foreman between the small space separating the conveyor belt from the ridged belt skirting, resulting in fatal, crushing injuries. (Refer to diagram #1 and #2)

Diagram #1 Depicting Location of Belt Crew and Victim Prior to Accident

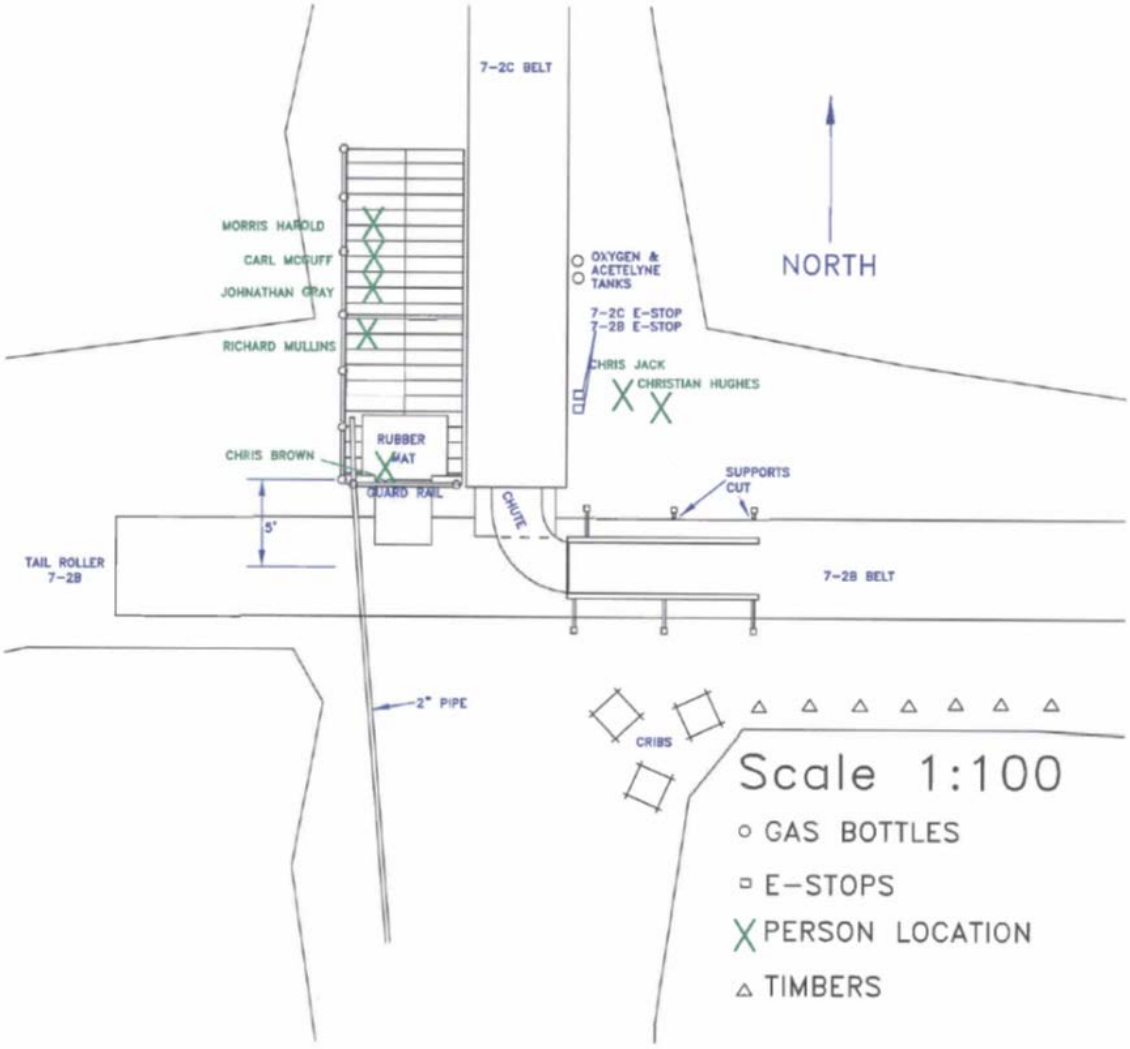
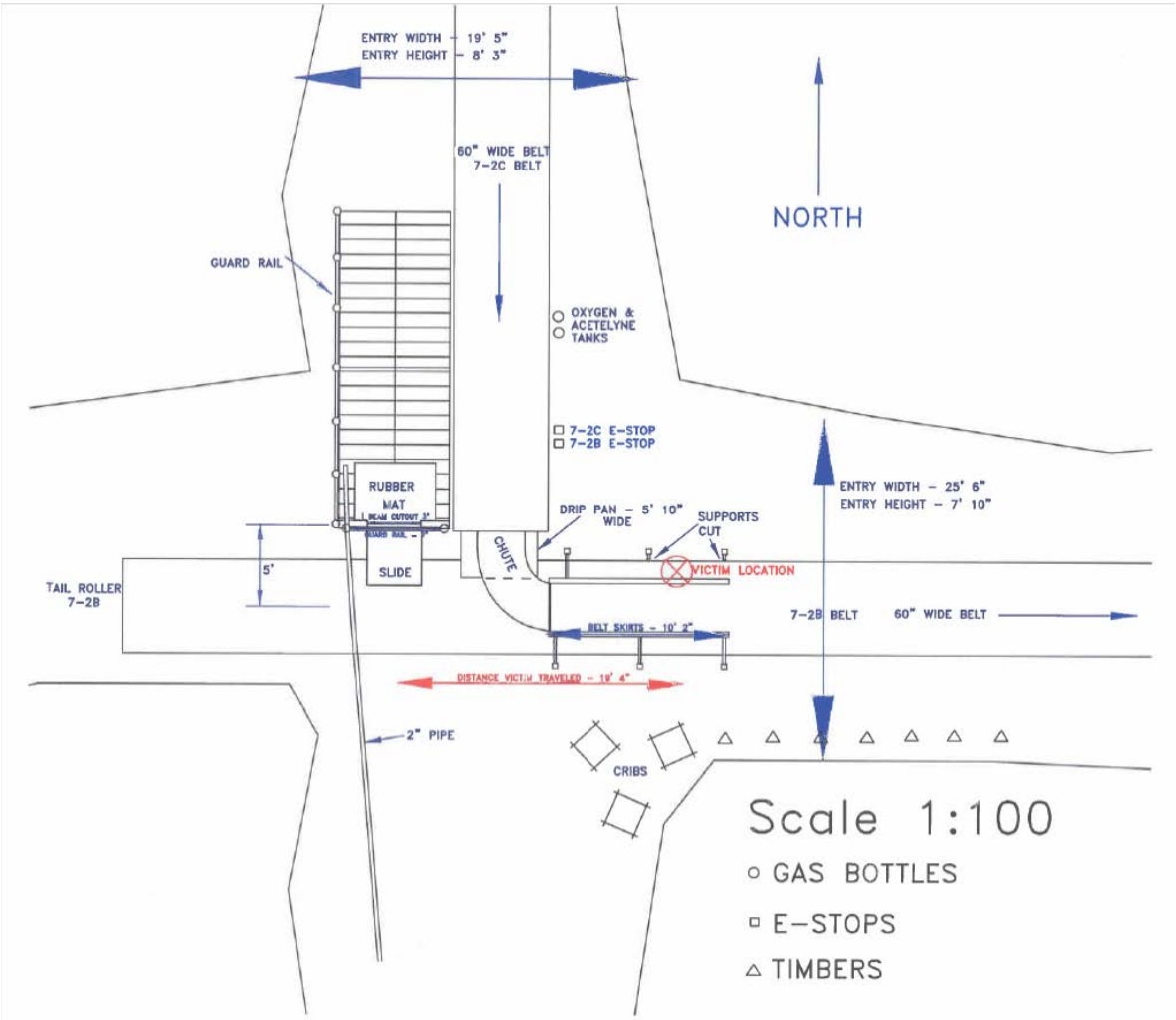


Diagram #2 Depicting Victim Location after Accident



Accident Investigation Photo Depicting Accident Scene

General Information

The #7 Mine is owned and operated by Jim Walter Resources, Inc. The mine is located in Tuscaloosa County, Alabama, near the community of Adger.

The mine provides employment for 784 persons and conducts work activities seven days per week, three shifts per day. Actual coal production is conducted on a schedule of five days one week and six days the next. The mine produces an average of 16,000 tons of raw 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 an average mining height of seven feet. When the accident occurred, the mine was operating eight mechanized mining units (MMUs) consisting of six continuous mining machine units and two longwall units.

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

Keith Shalvey…….General Manager
Keith Plylar…….Safety Manager

A Regular Safety and Health Inspection (E01) had been completed on March 28, 2013, 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 the calendar year 2012 was 2.30, compared to the national NFDL rate of 3.24.

DESCRIPTION OF ACCIDENT

On June 6, 2013, the evening shift began work at 3:00 p.m. Belt Foreman, Christopher Brown (victim), and his crew of six people traveled to the 7-2B belt entry to replace two rollers that had been reported by the belt attendant as defective, creating a hazard. After replacing the two rollers, the miners returned to the man bus in the track entry. At this time, Brown was asked by the belt attendant if he would examine the two belt wipers located at the 7-2C conveyor belt discharge.

Brown contacted Aaron Richards, Evening Shift Mine Foreman, by radio and asked Richards about the condition of the belt wipers. Richards instructed Brown to change the belt wiper showing the most wear.

The evening shift belt crew traveled along the 7-2C conveyor belt with Brown leading, followed by Richard Mullins, Christian Hughes, Chris Jack, Jonathan Gray, Carl McGuff, and Morris Harold.

When they reached the belt cross-under Hughes and Jack crossed to the opposite side of the belt and proceeded to the discharge while the remaining members of the crew traveled up the inclined walkway to the discharge area. Guard rails had been installed along the right side of the walkway, then on a 90 degree angle across the end of the ramp, which is elevated 3 feet above the 7-2B belt. The inclined walkway is made of metal grating. The guard rails consist of two-inch metal posts placed upright and welded to the inclined walkway, and two horizontal metal supports between each post, one on top and one half way down the post, forming a handrail similar to those seen in and around office buildings.

Mullins was approximately eight feet behind Brown as they proceeded up the inclined walkway. Brown reached the end of the walkway and placed his hand on the guard rail across the end, while looking under the belt to observe the

wiper. The guard rail gave way, and Brown fell approximately three feet onto the 7-2B conveyor belt, operating at approximately 600 feet per minute. Mullins witnessed Brown falling and yelled at Hughes and Jack to stop the belts (7-2C and 7-2B). Jack was located within arm's reach of the two stop switches and immediately shut both conveyor belts off.

Before the 7-2B belt stopped, it had pulled Brown into and behind the drip pan of the 7-2C conveyor belt discharge, and beneath the south side skirt structure of the 7-2B conveyor belt, a distance of 19 feet 4 inches from where he had fallen onto the moving conveyor.

At approximately 6:20 p.m., Gray called Darrell Key, CO (carbon monoxide) Operator/Responsible Person, and reported that Brown had been hurt and was caught between the belt and the skirting. Key called Tim Jenkins, Evening Shift Production Coordinator, who was located near the accident site. Richards also heard the call and both men responded. Cutting torches were brought to the site and used to sever two metal brackets holding the skirt structure in place. A chain hoist was used to raise the skirt off Brown. Chest compressions were immediately started on Brown and continued throughout the trip to the surface. Brown was never responsive during this time period.

Rescuers reached the surface with Brown between 6:40 and 6:45 p.m., and were met by two nurses employed by the mine. An automated external defibrillator (AED) was administered by the nurses and CPR continued until North Star Ambulance arrived at approximately 7:10 p.m. Life Saver personnel arrived by helicopter at approximately 7:15 p.m. Advance life-saving procedures were initiated with no response. Life Saver personnel called the Medical Control Physician at UAB West Hospital and the order was given to cease CPR at 7:35 p.m. The coroner arrived on mine property and pronounced Brown dead at 10:00 p.m.

INVESTIGATION OF THE ACCIDENT

MSHA was notified of the accident through the National Call Center Hotline at 6:48 p.m., on June 6, 2013. A 103(j) order was issued and MSHA accident investigators dispatched to the mine site. Upon arrival at the mine, the 103(j) order was reduced to writing and modified to a 103(k) order to preserve evidence at the accident scene, and to protect the health and safety of the persons at the mine. MSHA conducted an investigation with the assistance of the Alabama Department of Industrial Relations, Mine Management, UMWA Safety Representatives, and Tuscaloosa County Sheriff's Deputies. Formal interviews were conducted with those having knowledge of the accident, and mine examination records were obtained.

A 104(a) citation that did not contribute to the accident was issued to the mine for a violation of 30 CFR § 50.10(a). The operator or his agent failed to immediately, without delay and within 15 minutes, notify MSHA of the accident. The fatality occurred at approximately 6:15 p.m., and MSHA was not notified through the National Call Center Hotline until 6:48 p.m.

DISCUSSION

Accident Location

The accident occurred where the 7-2C conveyor belt transfers coal onto the 7-2B conveyor belt. The inclined walkway installed alongside the 7-2C beltline is made of metal grating and had originally been installed so that spillage from the 7-2C belt could be scooped by mobile equipment and dumped onto the 7-2B belt, but has not been used for this purpose for a number of years. However, the end of the walkway is still used on occasion to dump material out of a wheelbarrow. Guard rails had been installed along the right side of the inclined walkway, then on a 90 degree angle across the end of the walkway. A metal post was initially installed on each side where the inclined walkway ended, with hollow tubes welded in place to accept pins attached to the guard rail. This allowed the guard rail to be secured, but removable when necessary to dump material.

The investigation revealed that the post on the conveyor belt side of the walkway was missing. With the post missing, there was no longer a means to secure the removable guard rail. A horseshoe shaped wire hanger, normally used to suspend electrical cables from the mine roof, was being used to secure the guard rail to the frame of the belt drive head roller structure. The hanger had been damaged and would no longer lock closed as designed. The hanger was being used to hold the guard rail in a manner so that only a slight amount of pressure would cause it to give way and swing outward over the 7-2B conveyor operating below.

Examinations and Testing

An inspection was made of the accident site, as well as the entire length of the 7-2C, 7-2B, and 7-2A conveyor belts. Gas tests were conducted and air bottle samples were taken. The accident scene was then reconstructed to emulate pre-accident conditions. This was based on information gathered during interviews, specifically the manner in which the guard rail was positioned.

Work History and Training

Brown had a total of 4 years, 24 weeks of mining experience, all at Jim Walter Resources, Inc., No. 7 Mine. Brown had worked 17 weeks as the Evening Shift Belt Foreman.

A review of the training records for the Evening Shift Belt Crew and a review of the Part 48 Training Plan for the No. 7 Mine were conducted by MSHA Educational Field Services (EFS). Brown's training records were up-to-date.

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: The guard rail installed at the end of the elevated ramp alongside the 7-2C belt discharge was not maintained and secured in a manner which would prevent persons from coming in contact with operating conveyor belts and conveyor belt components. The guard rail gave way when contacted by a belt foreman, allowing him to fall onto the 7-2B conveyor. The moving conveyor pulled the foreman between the small space separating the conveyor from the rigid belt skirting, resulting in fatal crushing injuries. The accident occurred because the guard rail was not properly secured. It was held in place by an unsecured, deformed, cable hanger.

In addition, the mine operator failed to correct or post the hazardous condition located at the discharge of the 7-2C conveyor belt. This condition had been present for an extensive period of time and posed a fall hazard to anyone working in the area of this guard rail.

Corrective Action: Mine management initiated an examination of all belt guarding installed at required locations throughout the mine. New guarding was built at the accident site, and installed in a manner that prevents persons from coming into contact with the operating conveyor belt.

CONCLUSION

The accident occurred because the guard rail installed at the end of the elevated ramp alongside the 7-2C belt discharge was not maintained and secured in a manner which would prevent persons from coming in contact with operating conveyor belts and conveyor belt components. The guard rail gave way when the belt foreman placed his hand on it, resulting in the foreman falling onto the 7-2B moving conveyor below, causing fatal crushing injuries. The accident occurred because the guard rail, instead of being properly secured, was kept in place by an unsecured, deformed, cable hanger in which the hand rail was sitting loosely. In addition, the mine operator failed to correct or post the hazardous condition located at the discharge of the 7-2C conveyor belt which posed a fall hazard to anyone working in the area of this guard rail.

Approved by:

Richard A. Gates
District Manager

10/29/13
Date

ENFORCEMENT ACTIONS

1. A 103(k) Order was issued to Jim Walter Resources, Inc., No. 7 Mine on June 6, 2013, to prevent the destruction of any evidence that would assist in investigating the cause or causes of the accident, and to ensure the health and safety of persons who are employed at this mine until an investigation of the accident can be completed.

2. A 104(a) Citation was issued to Jim Walter Resources, Inc., No. 7 Mine for a Significant and Substantial violation of 30 CFR § 75.363(a). The operator or his agent failed to correct or post a hazardous condition located at the discharge of the 7-2C conveyor belt. The guard rail across the end of the elevated walkway was not properly secured to prevent persons from falling onto or contacting the 7-2B conveyor belt. The ridged post once used to securely latch the guard rail had been removed. The guard rail, instead of being properly secured, was retained in place by an unsecured, deformed, cable hanger in which the hand rail was loosely sitting. The guard rail gave way when contacted by a belt foreman, causing him to fall onto the 7-2B conveyor belt operating below. The moving conveyor pulled the foreman between the small space separating the conveyor belt from the ridged belt skirting, resulting in fatal crushing injuries. This condition had been present for an extensive period of time and posed a fall hazard to anyone working in the area of this guard rail.

3. A 104(a) Citation was issued to Jim Walter Resources, Inc., No. 7 Mine for a Significant and Substantial violation of 30 CFR § 75.1722(c). The guard rail installed across the end of the elevated walkway at the discharge of the 7-2C conveyor belt was not securely in place to prevent persons from falling onto or contacting the operating 7-2B conveyor belt which travels at 600 feet per minute. The rigid steel post once used to secure the guard rail had been removed. The guard rail was retained in place by an unsecured, deformed, cable hanger, not designed for the purpose of securing the guard rail. The guard rail was loosely sitting in the cable hanger and when contacted by the belt foreman (victim), gave way, causing him to fall onto the 7-2B conveyor belt operating below. The moving conveyor pulled the foreman between the small space separating the conveyor belt from the ridged belt skirting, resulting in fatal crushing injuries.

APPENDIX

Persons providing information and/or present during the investigation

Jim Walter Resources Incorporated

Dale Byram…….Senior Safety Supervisor

John Aldrich……...Walter Energy Training Center Director

Keith Plylar…….No. 7 Mine Safety Manager

Ricky Parker……...Safety Supervisor

Aaron Richardson…….Evening Shift Mine Foreman

Tim Jenkins……Evening Shift Production Coordinator

Darrell Key…….CO Operator/Responsible Person

United Mine Workers of America

Chuck Reed……UMWA Safety Committee Chairman

Morris Harold……Belt Crew

Carl McGuff……....Belt Crew

Jonathan Gray…….....Belt Crew

Richard Mullins…….Belt Crew

Chris Jack…….Belt Crew

Christian Hughes……Belt Crew

Delma Battle……Belt Attendant

Al Mize…….Belt Attendant

Margaret Martin……..Belt Attendant

Terry Jones…….....Bunker Operator

Alabama Department of Industrial Relations

Dale Johnson……..State Inspector/Investigator

James Rivers……..Chief Supervisor

Mine Safety and Health Administration

Gregory Willis……Inspector/Investigator

Timothy Stockman……..Inspector/Investigator

Rodney Williams……Ventilation Supervisor

Steven Womack……...Assistant District Manager

Terry Lingenfelter……EFS, Training Specialist