

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

COAL MINE SAFETY AND HEALTH

REPORT OF INVESTIGATION

Underground Coal Mine

Fatal Machinery Accident
March 25, 2014

Gibson Mine
Gibson County Coal LLC
Princeton, Gibson County, Indiana
ID No. 12-02215

Accident Investigators

Dustin P. Galloway
Mine Safety and Health Inspector/Lead Investigator

Dave Brown
MSHA Educational Field Services Training Specialist

Terry Hudson
Mine Safety and Health Inspector (Electrical)

Originating Office
Mine Safety and Health Administration
District 8
2300 Willow Street
Vincennes, IN 47591
Robert Simms, District Manager

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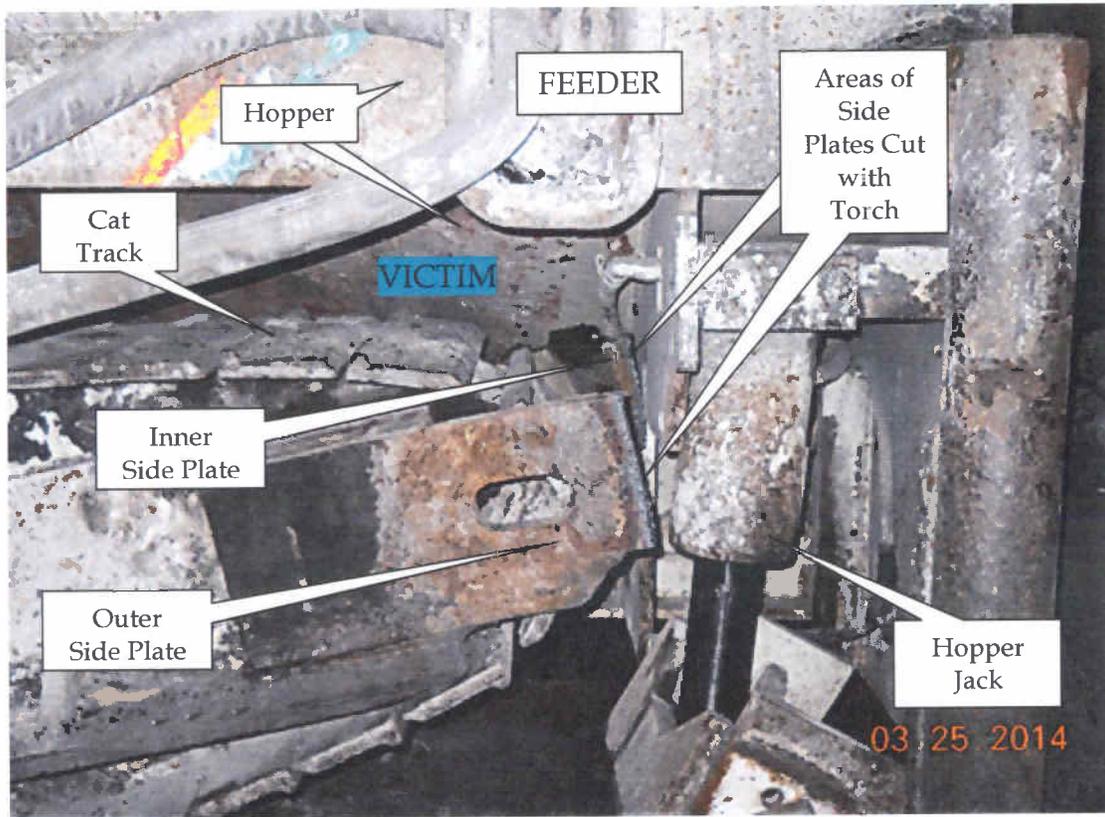
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OVERVIEW

On Tuesday, March 25, 2014, at approximately 1:45 a.m., a 41-year-old maintenance trainee with 23 weeks of mining experience was fatally injured while working on a belt feeder. The victim had cut through the inner offside side plate. When the cut was completed, the cat frame pivoted upward and pinned the victim between the top of the cat track and the underside of the hopper on the feeder.

The accident occurred because management had not established safe work procedures for the repair being made to the feeder. An additional contributing factor was that the feeder had not been properly blocked against motion.

GENERAL INFORMATION

The mine is located in Gibson County, Indiana, approximately two miles northwest of Princeton, Indiana. At the time of the accident, the mine employed 376 miners, of which 350 worked underground. The mine is accessed via two slopes and two shafts. The mine operates 3 shifts per day, 6 days per week in the Springfield No. 5 coal seam.

Bituminous coal is produced during two 9-hour shifts each day. There is also one 8-hour maintenance shift each day. The daily average coal production is 25,374 tons. A regular safety and health inspection (E01) was on going at the time of the accident. The

Non-Fatal Days Lost (NFDL) injury incidence rate for the mine in 2013 was 1.72, compared to a national NFDL rate of 3.23.

The principal officials for Gibson Mine were:

Jim Brown	Mine Superintendent
Chris Hopple	General Manager
Mark Kitchen	Safety Manager

DESCRIPTION OF THE ACCIDENT

On Tuesday, March 25, 2014, Timothy W. Memmer (victim), Maintenance Trainee, reported to work on the midnight shift for a normal workday. Jason Hosick, Maintenance Foreman, assigned Memmer and Chris Horton, Mechanic, to repair the No. 4 Unit feeder. The side plates that connected the offside cat track assembly to the hopper jack assembly were bent and needed to be replaced. Memmer and Horton left the surface at approximately 11:17 p.m. and traveled to the underground mechanics' shack, which was located at the No. 30 crosscut on the 5th West Parallel. Memmer helped gather the required tools needed for the job. Memmer drove a golf cart containing welding and cutting tools to the No. 4 Unit and arrived at approximately 11:53 p.m. Horton followed behind Memmer on a diesel mantrip containing the needed parts and other tools for the repair. Horton arrived on the unit at 12:37 a.m.

After arriving on the unit, Memmer prepared the welder and torch for the repair of the feeder. Memmer and Horton assessed the location of the feeder and decided to move the feeder to the inby intersection to better access the area of the feeder that needed repair. Horton positioned the feeder and actuated the hopper jacks to elevate the hopper end of the feeder. Memmer, Horton, and Steve Walden, Mechanic, constructed a crib underneath the center of the hopper end of the feeder to block the hopper (See Appendix A).

Horton actuated the feeder hopper jack control valve to relieve pressure from the hopper jack pin. Horton crawled under the hopper end of the feeder to remove the jack pin retaining bolt and jack pin bracket bolts using a cutting torch. Horton then handed the torch to Memmer to cut the jack pin retaining bolt and jack pin bracket bolts that were on the outside of the pin and bracket. From underneath the feeder, Horton then hit the jack pin with a hammer outward as far as he could, but he could not hammer the pin all the way out because his pin hammer was not long enough. Because of the close proximity of the feeder frame, there was not enough room to use a longer tool to knock the pin out. Horton crawled out from under the feeder. Horton and Memmer agreed that the two side plates should be cut in two and removed. Memmer used the torch to cut through the outside plate first. Horton crawled back under the feeder and attempted to hit the hopper jack end of the outside plate off with a sledgehammer, but was not successful. Horton was going to stay underneath the feeder to cut the inner plate, but Memmer said he would just cut it from his position on the outside. Memmer then leaned over the top of the cat track to access the inner side plate with the torch. Memmer was using the torch with his left hand and was facing inby. Horton went to

the opposite side of the feeder to gather parts from the diesel mantrip and bring them to the side of the feeder being repaired. Horton took one of the replacement plates to the side of the feeder where Memmer was working and watched him cut partially through the inner side plate. Horton then started walking back to the opposite side of the feeder to get the other replacement plate. As Horton was walking away, Memmer said he had almost cut through the plate. At approximately 1:45 a.m., Horton heard a loud "pop." Horton turned around and saw Memmer pinned between the top of the cat track and the bottom of the hopper. Horton tried to make contact with Memmer by shaking him and asking if he was okay. He did not get any response from Memmer. Horton then ran inby to the next intersection and yelled for help.

Walden, John Cooley, and Chris Cooper, Mechanics, heard Horton yelling for help. Horton told them that Memmer was hurt badly. At the feeder, Walden observed the victim pinned and informed Shawn Kelley, Third Shift Maintenance Foreman via mine phone. Cooley observed that the victim was pinned by the head and arm and he was severely injured. Upon arrival at the feeder, Victor Banet, Third Shift Unit Leadman, told Walden to phone for the underground ambulance. Banet brought the scoop to the hopper end of the feeder. Chris Burkett, Third Shift Foreman, and Ryan Carey, Laborer, arrived on the section. Carey, who was an experienced scoop operator, operated the scoop to lift the feeder hopper. Banet and Cooley removed Memmer from the feeder pinch point as Carey lifted the hopper end of the feeder with the battery scoop. Cooper laid Memmer down on the mine floor and Banet attempted resuscitation by starting chest compressions.

Jade Dozier, Third Shift Mine Manager, arrived on No. 4 Unit with the underground ambulance. Cooley and Chad Terrell, CO Technician, placed Memmer onto a backboard and then into the underground ambulance. Terrell took over chest compressions on Memmer at this time. At approximately 2:15 a.m., Dozier drove the underground ambulance to the man-shaft. The ambulance was hoisted out of the mine at approximately 2:28 a.m. to the surface, where Gibson County EMS crew and ambulance were waiting. Gibson County EMS assessed Memmer and loaded him into the ambulance. The victim was transported to the Gibson General Hospital, where he was pronounced dead by the emergency room physician, Dr. Keh Ganiyu, at 2:59 a.m.

INVESTIGATION OF THE ACCIDENT

On the day of the accident, Shawn Kelley called the MSHA Emergency Call Center at 1:53 a.m. to report that an accident had occurred. The MSHA Call Center then contacted Wilbur Deuel, Staff Assistant for MSHA District 8, at 2:09 a.m. to report the accident. Deuel called Kelley and issued a 103(j) order for the entire No. 4 working section at 2:14 a.m. George Heacock, Field Office Supervisor, was informed of the accident by Deuel. Heacock called Dustin Galloway, Accident Investigator, and directed him to investigate the accident. Galloway then traveled to the mine to begin the investigation.

Mary Jo Bishop, Assistant District Manager of Enforcement, and Terry Hudson, Mine Safety and Health Inspector (Electrical), traveled to the mine from the District 8 Office and arrived before Galloway. They gathered preliminary information. Galloway arrived at the mine and Heacock arrived shortly thereafter. Heacock, Bishop, Hudson, and Galloway conducted initial interviews of miners about the accident. Don McCorkle, Indiana State Mining Commissioner, Steve Riley, Indiana State Mine Inspector, and Robert Simms, District 8 District Manager, also participated in the interviews. Hudson, Bishop, and Galloway traveled to the accident scene to begin the investigation. Investigators photographed, measured, and sketched the accident scene.

Interviews were conducted at the District 8 District Office in Vincennes, Indiana on March 27, 2014. Nine persons were interviewed (see Appendix B). This investigation was conducted in conjunction with personnel from the Indiana Bureau of Mines.

DISCUSSION

Location of the Accident

The accident site was located in the intersection of crosscut No. 4 in entry No. 6 on the Third Northwest Panel. The inby and outby width of the No. 6 entry was 18 feet. The No. 4 Unit was advance mining coal in this panel. The average mining height in this area was approximately 75 to 80 inches. Mining conditions in this area were normal.

No. 4 Unit

The section had ten entries on 70-foot centers from entry to entry and 65-foot centers from crosscut to crosscut. The belt conveyor was advanced to crosscut No. 4 of the Third Northwest Panel entries.

The entries are numbered from right to left. Mining is normally conducted with two radio remote-controlled continuous mining machines, which operate independently on two separate air splits for face ventilation. The mechanized mining unit on the right side (MMU 004) of the section normally mines entries No. 1 to No. 5. The mechanized mining unit on the left side (MMU 008) of the section normally mines entries No. 6 to No. 10.

No. 7024 Feeder

The feeder was an Auxier Welding Inc. feeder, Model No. AF41-50DD-GIB-950V, and Serial No. 13524. When the side plates were being cut with a torch, the hopper end of the feeder was raised and blocked with a crib block. The dump end of the feeder was not blocked against motion, and no blocking was provided between the cat track and the hopper of the feeder. When the inner side plate was cut through with the torch, the track assembly pivoted upward at the hopper jack end, pinning the victim. This was because the front end of the cat track assembly acted as a fulcrum, and the mine floor under the cat track assembly was uneven. The resulting distribution of forces caused the hopper jack end of the cat track assembly to pivot upward.

Examinations

The required pre-shift examination for the No. 4 Unit had been conducted on the previous shift and no hazards were identified.

Training and Experience

Memmer completed his new miner training on October 14, 2013, and had his last annual refresher training on February 15, 2014. Memmer had 23 weeks of experience in underground coal mines.

Previously, Memmer had received training and had cut and welded on shuttle cars at the mine. Prior to the accident, he had been a journeyman millwright with Millwright's Local 1080 in Owensboro, KY. His experience included working on rotary crushers at power plants, building scaffolding, and structural beam work at a large auto manufacturing facility. His training consisted of a 4-year degree in maintenance from Ivy Tech Community College. In addition, he had completed six weeks of a 10-week maintenance course that Alliance Coal, LLC provided. During this 6-week period, Memmer received electrical training as part of the maintenance course. He worked at the Central Region shop for one week. While at the central shop, he received training for preparing continuous mining machines for rebuild.

Horton had his last annual refresher training on February 1, 2014. Horton had eight years and nine months of underground mining experience. Six years and four months were with a previous employer. His experience includes laborer, belt maintenance, and equipment maintenance.

Horton attended the 10-week maintenance course that Alliance Coal, LLC provided. Additionally, Horton attended a one-week welding class taught by Henderson Community College. He also received four days of hydraulic training from Fluid Power Services, Inc. in Madisonville, KY, and two weeks of training in the Alliance Central Shop in Madisonville, KY. A portion of the training Horton received at the Alliance Central Shop involved preparing continuous mining machines for rebuild. Horton was employed at Five Star Mining, Inc. as a mechanic from 2005 to 2011. Horton stated that he had never performed this type of repair on an Auxier Welding Inc. feeder before.

ROOT CAUSE ANALYSIS

An analysis was conducted to identify the most basic causes of the accident that were correctable through reasonable management controls. During the analysis, a root cause was identified that, if eliminated, would have either prevented the accident or mitigated its consequences.

The root cause listed below was identified to prevent a recurrence of the accident. Mine management implemented the corresponding corrective action:

Root cause: The mine operator did not establish and employ safe work procedures for repairing the feeder before repair work was commenced on the feeder. The mine operator did not have a procedure developed for blocking the feeder securely against all hazardous motion, at all times, while repair work was performed.

Corrective action: The mine operator developed and submitted a written action plan for completion of the repair work on the feeder, as well as provisions for blocking other feeders for repair. The action plan includes provisions for blocking under the frame on the dump end (outby) of the feeder, between the cat track and the frame of the feeder, and the inby end of the feeder. Other provisions related to rock dusting, lock-out, tag-out, gas checks, etc., are included in the action plan. All maintenance workers were trained on the action plan for repairing feeders.

CONCLUSION

The accident occurred because mine management did not ensure that safe work procedures were established for the repair being performed. As a result, the feeder was not securely blocked in position to protect all miners from the hazards of stored energy sources, and the victim was positioned in a hazardous location for the work he was performing.

Approved By:

Mary Jo Bishop

for - Robert Simms
District Manager

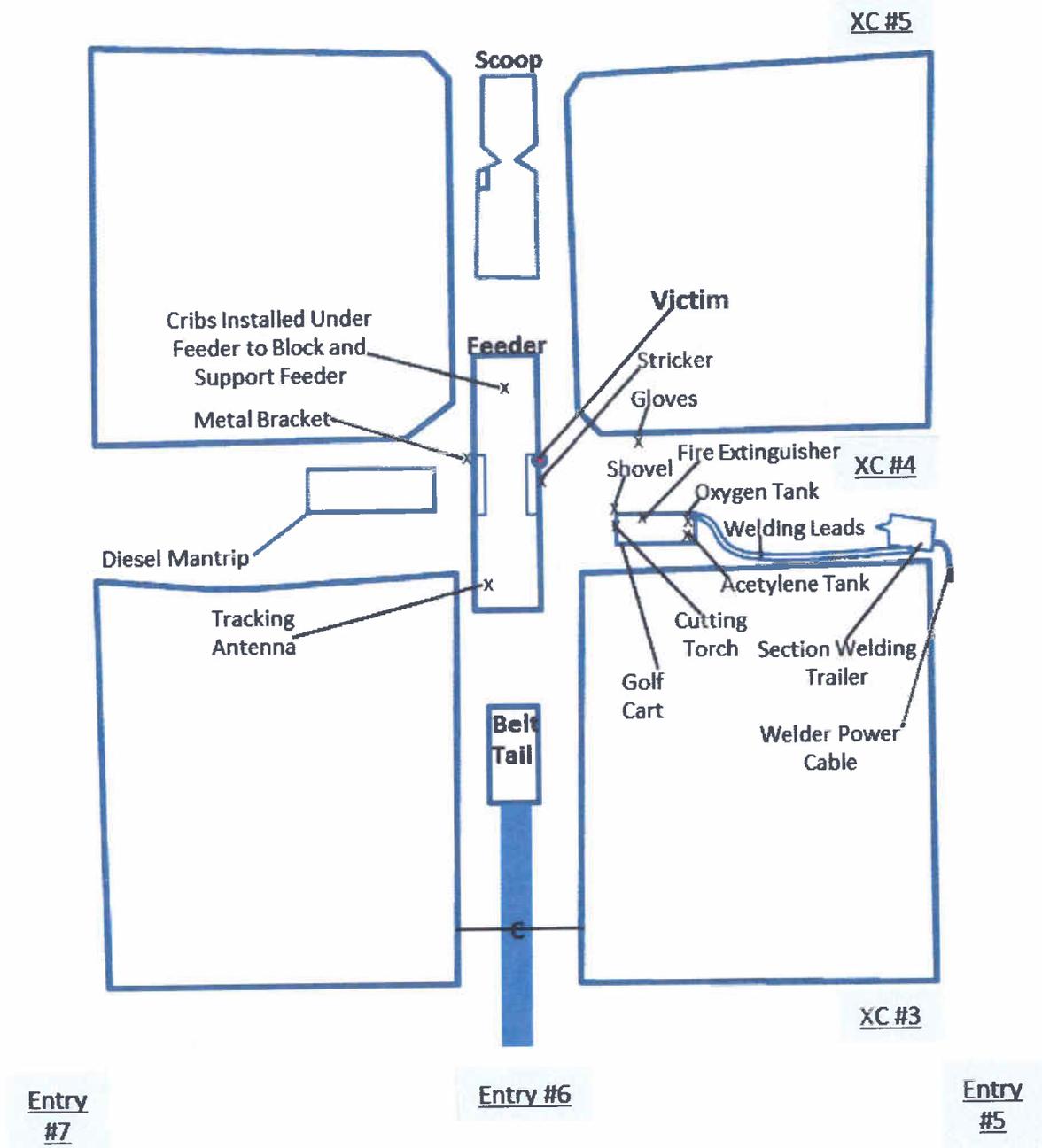
07/21/2014

Date

ENFORCEMENT ACTIONS

1. A §103 (j) order was issued to protect the miners and to help preserve the accident scene. It affected everything inby the No. 4 Unit loading point. Dustin Galloway modified it to a 103(k) order upon his arrival at the mine site.
2. A significant and substantial 104 (a) citation, No. 9033202, was issued for a violation of 30 CFR § 75.1725(c). The company No. 7024 feeder was not securely blocked in position to prevent movement, while repair work was being performed on the offside-track side plates. A maintenance trainee was cutting the inner side plate in two, and when it was cut free, the inby end of the cat track pivoted upward and pinned the victim between the bottom of the hopper frame and the top of the cat track.

APPENDIX A - Sketch of Accident Scene



Not to Scale

APPENDIX B - Persons Participating in the Investigation

Gibson Mine Management

Gary Nally.....Head of Maintenance
Mark Kitchen..... Safety Manager

Miners from Gibson Mine

Victor Banet* Third Shift Unit Leadman
Chris Horton*Mechanic
Chris Cooper*Mechanic
Jade Dozier* Third Shift Mine Foreman
John Cooley*Mechanic
Steve Walden*Mechanic
Chad Terrell*CO Technician
Chris Schwinghammer*Back-Up Lead Man
Ryan Carey* Laborer

Mine Safety and Health Administration

Dustin Galloway Mine Safety and Health Inspector
George Heacock Supervisory Mine Safety and Health Inspector
Mary Jo Bishop Assistant District Manager, Enforcement
Terry Hudson Mine Safety and Health Inspector (Electrical)
Dave Brown Educational Field Services

Indiana State Bureau of Mines

Don McCorkleDeputy Commissioner
Steve Riley..... Indiana State Mine Inspector

* Miners interviewed

APPENDIX D - Victim Information

Accident Investigation Data - Victim Information

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



Event Number: 6 4 5 6 4 3 7

Victim Information: 1																																															
1. Name of Injured/ill Employee: <i>Timothy W. Memmer</i>				2. Sex: <i>M</i>		3. Victim's Age: <i>41</i>		4. Degree of Injury: <i>01 Fatal</i>																																							
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death: <i>a. Date: 03/25/2014 b. Time: 2:50</i>								6. Date and Time Started: <i>a. Date: 03/24/2014 b. Time: 11:00</i>																																							
7. Regular Job Title: <i>004 Maintenance Trainee</i>						8. Work Activity when Injured: <i>039 Feeder Crawler repair</i>						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:			<i>0</i>			<i>23</i>			<i>3</i>			Job Title:			<i>0</i>			<i>23</i>			<i>3</i>			Mine:			<i>0</i>			<i>23</i>			<i>3</i>			Mining:			<i>0</i>			<i>23</i>			<i>3</i>		
11. What Directly Inflicted Injury or Illness? <i>075 Ratio Feeder</i>								12. Nature of Injury or Illness: <i>170 Head crushing</i>																																							
13. Training Deficiencies: Hazard: <input type="checkbox"/> New/Newly-Employed <input type="checkbox"/> Experienced Miner: <input type="checkbox"/> Annual: <input type="checkbox"/> Task: <input checked="" type="checkbox"/>																																															
14. Company of Employment: (if different from production operator) <i>Operator</i>										Independent Contractor ID: (if applicable)																																					
15. On-site Emergency Medical Treatment: Not Applicable: <input type="checkbox"/> First-Aid: <input type="checkbox"/> CPR: <input checked="" type="checkbox"/> EMT: <input type="checkbox"/> Medical Professional: <input type="checkbox"/> None: <input type="checkbox"/>																																															
16. Part 50 Document Control Number: (form 7000-1)										17. Union Affiliation of Victim:																																					