MAI-2006-09

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

REPORT OF INVESTIGATION

Surface Nonmetal Mine
(Sand & Gravel)

Fatal Powered Haulage Accident
May 3, 2006

Hales Sand and Gravel Elsinore
Hales Sand & Gravel Inc.
Elsinore, Sevier County, Utah
Mine I.D. No. 42-00893

Investigators

Daniel C. Stevenson
Mine Safety and Health Inspector

Marc C. Shadden
Mine Safety and Health Inspector

Dale P. Ingold, P.E.
General Engineer

Kent L. Norton
Mine Safety and Health Specialist

Originating Office
Mine Safety and Health Administration
Rocky Mountain District
P.O. Box 25367, DFC
Denver, Colorado 80225-0367
Irvin T. Hooker, District Manager

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OVERVIEW

Cameron W. Dimmick, laborer, age 19, was fatally injured on May 3, 2006, when he became entangled between a conveyor belt and a return roller. He was underneath the feed conveyor belt adjusting a return roller while the belt was in motion.

The accident occurred because no procedures or controls had been established to protect miners adjusting rollers near a moving conveyor belt. The victim was an inexperienced miner who was not properly task-trained to recognize the hazards associated with the task he was assigned.

GENERAL INFORMATION

Hales Sand and Gravel Elsinore, a surface sand and gravel operation, owned and operated by Hales Sand & Gravel Inc. was located at 1400 South and Center Street in Elsinore, Sevier County, Utah. The principal operating official was John Hales, president. The mine was normally operated one 10-hour shift a day, six days a week. Total employment was 11 persons.

Sand and gravel was extracted from the pit with front-end loaders. The material was crushed, screened, and stockpiled. Finished products were sold for use in the construction industry.

The last regular inspection of this mine was completed on October 27, 2005.

DESCRIPTION OF THE ACCIDENT

On the day of the accident, Cameron Dimmick (victim), reported for work about 6:45 a.m., his normal starting time. At the start of the shift, he worked with Gil Nichols, foreman; Shelly Roberts, crusher operator; Donald Gregory, laborer; and Matt Newby, loader operator, adjusting the tracking on the feed conveyor belt. By 8:30 a.m., the initial adjustments on the feed conveyor belt were completed. Dimmick watched the conveyor belt and adjusted the tail pulley as necessary while materials were run through. Roberts went to the control van to operate the plant, Nichols left the area to operate the water truck, Gregory left to start equipment inspections in other areas of the plant and Newby fed the hopper with the front-end loader.

At approximately 11:00 a.m., Dimmick went to the control van and told Roberts that the feed conveyor belt was not tracking properly. Roberts shut down the plant and generator to install a return roller under the feed conveyor belt. Roberts, Newby, Gregory, and Dimmick installed the return roller. Roberts told Dimmick to adjust the return roller bracket from the east side of the hopper by hitting it with a hammer in addition to adjusting the tail pulley.

Roberts then traveled to the control van to start the generator and the plant, including the feed conveyor belt. After the conveyor belt started, Dimmick crawled under it to tap the west side return roller bracket with the hammer. The hammer slipped and Dimmick's arm became caught between the return roller and the conveyor belt.

Roberts returned from the control van and heard Dimmick yell to shut the belt off. He saw Dimmick's arm caught between the return roller and the conveyor belt. Roberts yelled at Newby and Gregory to remove the return roller as he ran to shut off the equipment. Dimmick's upper body was pulled in between the return roller and the conveyor belt before he could be freed. Roberts shut down the equipment and generator and returned to find Newby and Gregory had removed

the victim from the conveyor belt. Roberts used a radio on the front-end loader to call for emergency medical assistance. Mine personnel performed First Aid until local emergency medical services arrived.

The victim was transported to a local hospital where he was pronounced dead by the attending physician. The cause of death was compression and blunt force trauma.

INVESTIGATION OF THE ACCIDENT

MSHA was notified of the accident at 1:30 p.m., on May 3, 2006, by a telephone call from Gil Nichols, foreman, to Michael Okuniewicz, supervisory mine safety and health inspector. An investigation was started the same day. An order was issued under the provisions of Section 103(k) of the Mine Act to ensure the safety of miners. MSHA's accident investigators traveled to the mine, conducted a physical inspection of the accident scene, interviewed employees, and reviewed conditions and work procedures relevant to the accident. MSHA conducted the investigation with the assistance of mine management and employees.

DISCUSSION

Location of the Accident

The accident occurred at the west end of the plant area underneath the feed conveyor belt.

Location of the Plant Control Van

The control van was located approximately 200 feet east of the feed conveyor belt. The belt could not be seen from the plant control van.

Equipment

The belt feeder involved in the accident was a Reuters Equipment Company Model RM-8570. The belt feeder was comprised of a head pulley, a tail pulley, 18 top rollers, and one bottom roller. The belt feeder was approximately 13.5 feet in length and was driven by a 20 horsepower, 460-volt, 3-phase current, 1755-RPM motor. The belt speed was measured at approximately 32.5 feet per minute The conveyor belt was 36 inches wide, approximately 28.5 feet long, and was installed horizontally, about 46 inches above ground level.

Hammer

The hammer used by the victim weighed four pounds with a ten-inch handle. There were no other marks or numbers on the hammer. The hammer was in average condition and there was no evidence that it went through the feed conveyor belt.

Weather

The weather at the time of the accident was clear and dry with the temperature of approximately 70 degrees Fahrenheit.

Training and Experience

Cameron W. Dimmick had four weeks mining experience, all at this mine. He had received four hours of new miner training in accordance with 30 CFR, Part 46. However, he was assigned to work as a laborer with no additional task training.

ROOT CAUSE ANALYSIS

A root cause analysis was conducted and the following root cause was identified:

Root Cause: Management policies and controls were inadequate. Task training was not completed for the miner assigned to adjust the tracking on the conveyor belt. Procedures and controls were not established to ensure that the miner could safely complete the task he was assigned.

Corrective Actions: Management should conduct a risk assessment to identify hazards and develop and implement procedures to ensure that miners can safely adjust conveyor belts to track properly.

CONCLUSION

The accident occurred because no procedures or controls had been established to protect miners adjusting rollers near a moving conveyor belt. The victim was an inexperienced miner who was not properly task-trained to recognize the hazards associated with the task he was assigned.

ENFORCEMENT ACTIONS

Order No. 6313635 was issued on May 3, 2006, under the provisions of Section 103(k) of the Mine Act:

> A fatal accident occurred at this operation on May 3, 2006, when a miner was attempting to adjust the tracking of the feeder belt when he became entangled between the belt and the return roller. This order is issued to ensure the safety of all persons at this operation. It prohibits all activity at the crushing and screening areas until MSHA has determined that it is safe to resume normal operations in the affected areas. The mine operator shall obtain prior approval from an authorized representative for all actions to recover and/or restore operations in the affected area.

This order was terminated on May 9, 2006. Conditions that contributed to the accident no longer exist and normal operations can resume.

Citation No. 6304668 was issued on June 13, 2006, under the provisions of Section 104(d)(1) of the Mine Act for violation of 56.14105:

> A fatal accident occurred on May 3, 2006, when a newly employed plant laborer's arm was drawn into a conveyor belt return roller. The victim, who was positioned underneath the conveyor was using a hammer to adjust the return roller. The maintenance work was being performed with the conveyor running. No steps were taken to ensure the victim was protected from the hazardous motion of the conveyor. Management engaged in aggravated conduct constituting more than ordinary negligence in that the victim, who had four weeks total mining experience, was not protected from hazardous motion of the equipment. This violation is an unwarrantable failure to comply with a mandatory standard.

This citation was terminated on June 28, 2006. The company has developed a standard operating procedure for the task of adjusting and maintenance of their conveyor belts. Employees have been instructed in the proper method of this task to ensure they are aware and protected from the hazards involved.

Order No. 6304672 was issued on June 13, 2006, under the provisions of section 104(d)(1) of the Mine Act for violations of 46.7(a):

> A fatal accident occurred on May 3, 2006, when a plant laborer's arm was drawn into a conveyor belt return roller. The victim, who had four weeks total mining experience, had not received

instruction on the health and safety aspects of the task he was assigned. The victim was positioned underneath the conveyor belt using a hammer to adjust a return idler roller by tapping on the mounting bracket. A formal safe work procedure for this task had not been developed. Management engaged in aggravated conduct constituting more than ordinary negligence in that miners did not receive training on the health and safety aspects of the tasks they are assigned. This violation is an unwarrantable failure to comply with a mandatory standard.

This order was terminated on June 28, 2006. The company has developed an operating procedure for maintenance on conveyor belts and tasked trained all their employees on the hazards.

Approved by, Date: June 29, 2006

Irvin T. Hooker
District Manager

APPENDIX A
Persons Participating in the Investigation

Hales Sand and Gravel Elsinore

John Hales	president
Gil Nichols	foreman

Mine Safety and Health Administration

Daniel C. Stevenson	mine safety and health inspector
Marc C. Shadden	mine safety and health inspector
Dale P. Ingold, P.E.	general engineer
Kent L. Norton	mine safety and health specialist