MAI-2010-02

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

REPORT OF INVESTIGATION

Surface Nonmetal Mine
(Cement)

Fatal Powered Haulage Accident
January 26, 2010

Tehachapi Plant
Lehigh Southwest Cement
Tehachapi, Kern County, California
Mine I.D. No. 04-00196

Investigators

Bart T. Wrobel
Supervisory Mine Safety and Health Inspector

Janet Ames
Mine Safety and Health Inspector

Jonathan O'Brien
Mine Safety and Health Specialist

Originating Office
Mine Safety and Health Administration
Western District
2060 Peabody Road, Suite 610
Vacaville, California 95687
Arthur L. Ellis, District Manager

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OVERVIEW

On January 26, 2010, Henry Stewart, Purchasing Agent, age 59, was fatally injured while standing on a haul road leading to a temporary dump site. This site was being used to receive material because the primary dump site was too wet and muddy for trucks to travel. Stewart was in the area inspecting the material being unloaded at the dump site. He apparently stepped between the trailers of an over-the-road tandem trailer truck to get out of the way of another tandem trailer truck exiting the temporary dump site. The truck had been waiting to unload and pulled forward. Stewart was caught under the left front wheels of the rear trailer. He was holding a cell phone at the time of the accident.

The accident occurred because management did not have policies and procedures that provided for the safe movement of mobile equipment in an area with pedestrian and vehicular traffic. Mine management also failed to ensure that mobile equipment operators sounded a warning that was audible above the surrounding noise level prior to moving to warn all persons who could be exposed to a hazard from the equipment.

Additionally, mine management did not ensure that the roadway in this area was maintained at a width sufficient to allow for safe operation. The site-specific hazard awareness training did not protect persons by addressing the appropriate subjects regarding the hazards associated with mobile equipment operating near pedestrians.

GENERAL INFORMATION

Tehachapi Plant, a surface quarry and cement plant owned and operated by Lehigh Southwest Cement, was located in Tehachapi, Kern County, California. The principal operating officer was Alan Rowley, Plant Manager. The mine normally operated two 12-hour shifts per day, seven days a week. Total employment was 90 persons.

Limestone was drilled and blasted from multiple benches. The broken rock was transported by haul trucks to a primary crusher, then conveyed to the plant where it was mixed and processed with other materials to produce cement. Finished products were sold in bulk and bag for use in the construction industry.

West Coast Bulk, located in Victorville, San Bernardino County, California, was contracted by Lehigh Southwest Cement to deliver bulk gypsum to the Tehachapi Plant. The principal operating official was James Conrad, Operations Manager. West Coast Bulk employed up to 7 drivers to deliver the gypsum to this location.

The last regular inspection at this operation was completed on September 4, 2009. A regular inspection was being conducted at the time of the accident.

DESCRIPTION OF THE ACCIDENT

On the day of the accident, Henry Stewart (victim,) started work at 7:00 a.m., his normal starting time. Between 7:00 a.m. and 10:45 a.m., Stewart was engaged in several different meetings and work tasks. At approximately 10:45 a.m., Stewart was seen walking in the temporary dump site area by a West Coast Bulk driver who was unloading material there.

About 11:10 a.m., a truck driven by Steve Purschner, and another, driven by Frank Carmonia, entered the temporary dump site. This circular dump was being used because the conditions at the adjacent primary dump site were wet and muddy. Purschner started unloading material while Carmonia parked and waited outside of the dump site. Rito Cervantes, Quarry Lube Man, drove past Stewart on his way to the shop. Cervantes noticed that Stewart was facing away from Carmonia's trailers, standing approximately three feet away from the gap between the front and rear trailers and was holding a cell phone.

About 11:17 a.m., as Purschner drove away from the dump site and began to pass Carmonia's truck, he saw Stewart standing between the trailers of Carmonia's unit as the truck pulled forward. Purschner tried to radio Carmonia to stop. By the time Carmonia stopped, Stewart had already been run over by the left front wheels of the rear trailer of the unit.

Emergency medical personnel were notified. The Kern County Sheriff and Coroner pronounced the victim dead at the scene. Death was attributed to blunt force trauma.

INVESTIGATION OF THE ACCIDENT

On the day of the accident, the Mine Safety and Health Administration (MSHA) was notified at 11:25 a.m. when Brian Bigley, Safety Manager, notified Janet Ames, Mine Safety and Health Inspector, who was conducting an inspection at the mine. At 11:37 a.m., MSHA was also notified by a telephone call from Timothy King, Safety Coordinator, to MSHA's emergency Hotline. Ronald Jacobsen, Supervisory Mine Safety and Health Inspector, was notified and 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 investigation team 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 and contractor management and employees and the state of California Occupational Safety and Health, Mining and Tunneling Unit (Cal/OSHA).

DISCUSSION

Location of the Accident

The accident occurred at the south entrance to the temporary dump site located at the intersection east of the gypsum silos. This site was created on January 21, 2010, because the primary dump site area was too wet and muddy for trucks to travel. Rain from the previous week had caused as much as two feet of mud to accumulate at the site.

The temporary dump site was approximately 84 feet in diameter. Trucks entered the dump site from the south and traveled in a counter clockwise direction as material was emptied from their trailers. Trucks waiting to unload parked on the entry road just south of the dump site. This road was originally approximately 31 feet wide; however, as gypsum material was delivered and stockpiled (approximately 50 feet in diameter and 20 feet high,) the width of the road was reduced to about 15 feet where the accident occurred.

Roads entering the area were made of smooth concrete with packed dirt shoulders. Grades in the immediate area were approximately 4%. Road shoulder widths varied from 5 to 40 feet. At the time of the accident, the roads were dry but had dirt and mud on them. The surface of the dump site itself had approximately 2 to 8 inches of material built up on it.

Signage was posted at entrance gates notifying delivery drivers to contact the weighmaster via CB radio or to call on the intercom. Drivers would receive information about where to unload their material and instruction on who to contact for directions. Other signage posted at the entrance gates indicated that rail traffic had the right of way, the speed limit in the plant, that detectable levels of chemicals found to cause birth defects or cancer were found in the area, and instruction to contact the control room before entering the plant.

Tandem Trailer Truck

The tandem trailer truck involved in the accident was a 2006 Kenworth model T800B. The first trailer was a 1999 Advance Dry Bulk Single Axle Semi with a gross vehicle weight rating (GVWR) of 38,500 pounds. The second trailer was a 1999 Advance Dry Bulk Double Axle with a GVWR of 40,000 pounds. The truck and trailers were 66 ½ feet long and 8 feet wide. The distance between the rear of the tractor and the first trailer was 4 feet 10 inches, and the distance between the rear of the first trailer and the front of the second trailer was 12 ½ feet. The truck was equipped with a backup alarm and both city and highway horns. The truck and both trailers were inspected, including parking and service brakes, lights, tires, wheels, windshield, mirrors, cab interior, steering linkage, and frame were all inspected with no defects found.

Mirrors and Visibility

The truck had original equipment manufacturer (OEM) motor adjustment type mirrors mounted on the exterior of both right and left side doors. The mirrors were a two-piece type with a flat motor driven mirror 16 inches high x 7 inches wide at the top section and a manually operated convex mirror 7 inches in diameter mounted below. All four mirrors were clean and intact with no visible cracks or significant defects in the mirror glass.

Both the passenger and driver side windows were reported to be in the full up position at the time of the accident. The window glass for both doors had no visible cracks or significant defects.

The approximate visibility zones for the left side and left rear trailer areas of the truck are shown in Appendix D. The investigators determined that the victim had traveled within the viewing area of the left side mirror sections while walking to the area between the front and rear trailer but was not noticed by the driver.

At the time of the accident, the position of the truck and trailers prevented an accurate view of the left rear trailer area. The truck and trailers had pulled up at about 2-3 mph for approximately 3 to 5 feet prior to striking the victim.

Weather

The weather at the time of the accident was overcast and calm with a temperature of about 50 degrees Fahrenheit. No rain had fallen the morning of the accident. Weather was not considered to be a factor in the accident.

Training and Experience

Henry Stewart had 5 years of mining experience, all at this mine. He had received training in accordance with 30 CFR Part 46.

Frank Carmonia had been delivering material to this mine for approximately 8 years. He had received limited site specific and hazard awareness training from the scale house weighmaster.

ROOT CAUSE ANALYSIS

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

Root Cause: Management failed to ensure that truck drivers delivering material received proper site specific and hazard awareness training when they had to unload material at a temporary dump site due to adverse conditions.

Corrective Action: Management trained all truck drivers regarding changes in the mine's temporary dump site location, traffic patterns, and procedural changes due to adverse conditions.

Root Cause: Management failed to ensure that mobile equipment operators sounded an audible warning or used other effective means prior to moving to warn all persons who could be exposed to a hazard from the equipment.

Corrective Action: Management trained all mobile equipment operators to sound an audible warning or use other effective means prior to moving to warn all persons who could be exposed to a hazard from the equipment. All persons working in the area were also trained regarding these procedures.

CONCLUSION

The accident occurred because management did not have policies and procedures that provided for the safe movement of mobile equipment in an area with pedestrian and vehicular traffic. Mine management also failed to ensure that mobile equipment operators sounded a warning that was audible above the surrounding noise level prior to moving to warn all persons who could be exposed to a hazard from the equipment.

Additionally, mine management did not ensure that the roadway in this area was maintained at a width sufficient to allow for safe operation. The site-specific hazard awareness training employed at this mine did not protect persons on site by addressing the appropriate subjects regarding the hazards associated with mobile equipment operating near pedestrians. The victim may also have been distracted by the cell phone he was holding when the accident occurred.

ENFORCEMENT ACTIONS

Issued to Lehigh Southwest Cement:

Order No. 6476633 was issued on January 26, 2010, under the provisions of Section 103(k) of the Mine Act:

> A fatal accident occurred at this operation on January 26, 2010, when a miner had been standing between the trailers of an over the road haul truck that was delivering gypsum clay to the mine. This order is issued to assure the safety of all persons at this operation. It prohibits all activity at the intersection west of the gypsum silos. The mine operator shall obtain prior approval from an authorized representative for all actions to recover and/or restore operation to the affected area.

This order was subsequently terminated on February 22, 2010. Conditions that contributed to the accident no longer existed.

Citation No. 6476634 was issued on March 23, 2010, under the provisions of Section 104(d) of the Mine Act, for a violation of 30 CFR 56.14200:

> A fatal accident occurred at this operation on January 26, 2010, when a miner was struck by the trailer of an over the road tandem trailer truck that was bringing material to the mine. The truck driver had stopped along the roadway and failed to sound an audible warning or provide an effective warning before moving the truck to the dump location. The mine operator engaged in aggravated conduct constituting more than ordinary negligence in that over-the-road trucks were allowed to move without providing a warning to persons exposed to hazards from moving mobile equipment. This violation is an unwarrantable failure to comply with a mandatory standard.

This citation was terminated on March 23, 2010. Truck drivers were provided training to sound a warning prior to moving mobile equipment.

Order No. 6476636 was issued on March 23, 2010, under the provisions of Section 104(g)(1) of the Mine Act, for a violation of 30 CFR 46.11(a):

> A fatal accident occurred at this operation on January 26, 2010, when a person was struck by the trailer of an over-the-road tandem trailer truck that was bringing material to the mine. The mine operator failed to provide over-the-road truck drivers site-specific hazard awareness training for the applicable hazards. The training did not adequately address traffic patterns and controls and warning signals. The over-the-road truck driver had stopped along the roadway and did not sound a warning or use other effective means to warn persons before moving the truck to the dump location.
> The Federal Mine Safety and Health Act of 1977 declares that untrained miners are a hazard to themselves and others.

This order was terminated on March 23, 2010. Over-the-road truck drivers were receiving site-specific hazard awareness training adequately addressing traffic patterns and controls and warning signals prior to the movement of mobile equipment.

Issued to West Coast Bulk:

Citation No. 6476635 was issued on March 23, 2010, under the provisions of Section 104(a) of the Mine Act, for a violation of 30 CFR 56.14200:

> A fatal accident occurred at this operation on January 26, 2010, when a person was struck by the trailer of an over-the-road tandem trailer truck that was bringing material to the mine. The truck driver had stopped along the roadway and failed to sound an audible warning or provide an effective warning to persons exposed to hazards from moving mobile equipment before moving his truck to the dump location.

This citation was terminated on March 23, 2010. Truck drivers were provided training to sound a warning prior to moving mobile equipment.

Approved By:

______________________________ ______________________

Arthur L. Ellis Date
District Manager

APPENDICES

A. Persons Participating in the Investigation
B. Victim Data
C. Plan View of Accident Scene
D. Truck Mirrors and Visibility Diagram

APPENDIX A

Persons Participating in the Investigation

<u>Lehigh Southwest Cement</u>

Brian Bigley	Safety Manager
Timothy King	Safety Coordinator
Terrence Tyson	Regional Safety Manager
Joseph Barrett	Senior Process Control Supervisor
Michael Rohmaller	Kiln Engineer
Jonathan Messer	Front End Loader Operator
Steven Cooley	Quality Manager
Rito Cervantez	Quarry Lube-man

<u>West Coast Bulk</u>

James Conrad	Operation Director Victorville
Frank Cutter	Training Director
Andrew Woods	Director of Governmental Affairs

<u>State of California</u>

Matthew Switzer	Cal/OSHA
Clifford Davidson	Cal/OSHA

<u>Mine Safety and Health Administration</u>

Bart Wrobel	Supervisory Mine Safety and Health Inspector
Janet Ames	Mine Safety and Health Inspector
Jonathan O’Brien	Mine Safety and Health Specialist

APPENDIX B

Victim Data

Accident Investigation Data - Victim Information

Event Number: 1 1 3 7 9 1 6

U.S. Department of Labor

Mine Safety and Health Administration

Victim Information: 1

1. Name of Injured/Ill Employee:	2. Sex	3. Victim's Age	4. Degree of Injury:
Henry Stewart	M	59	01 Fatal

5. Date(MM/DD/YY) and Time(24 Hr.) Of Death:	6. Date and Time Started:
a. Date: 01/26/2010 b.Time: 11:20	a. Date: 01/26/2010 b.Time: 7:00

7. Regular Job Title:	8. Work Activity when Injured:	9. Was this work activity part of regular job?
149 Purchasing Agent / Maintenance Foreman	092 Traveling in dump site area	Yes X No

10. Experience

	Years	Weeks	Days
a. This Work Activity:	1	19	2
b. Regular Job Title:	1	19	2
c: This Mine:	5	19	2
d. Total Mining:	5	19	2

11. What Directly Inflicted Injury or Illness?	12. Nature of Injury or Illness:
110 Tandem Bulk Trailer	170 Crushed by trailer tires

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:

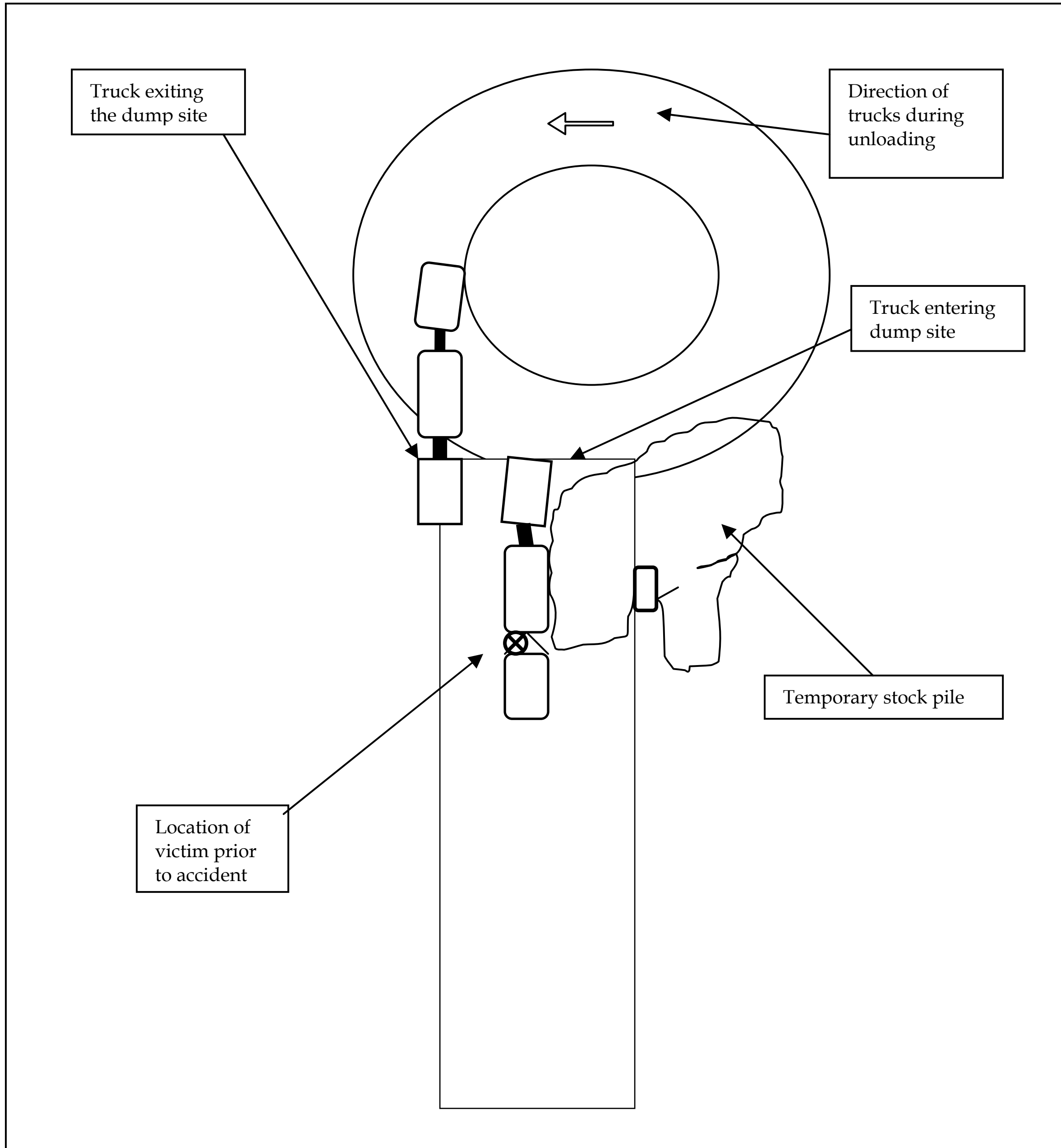
Not Applicable: First-Aid: CPR: EMT: Medical Professional: None: X

16. Part 50 Document Control Number: (form 7000-1) 220100270026

17. Union Affiliation of Victim: 9999 None (No Union Affiliation)

APPENDIX C

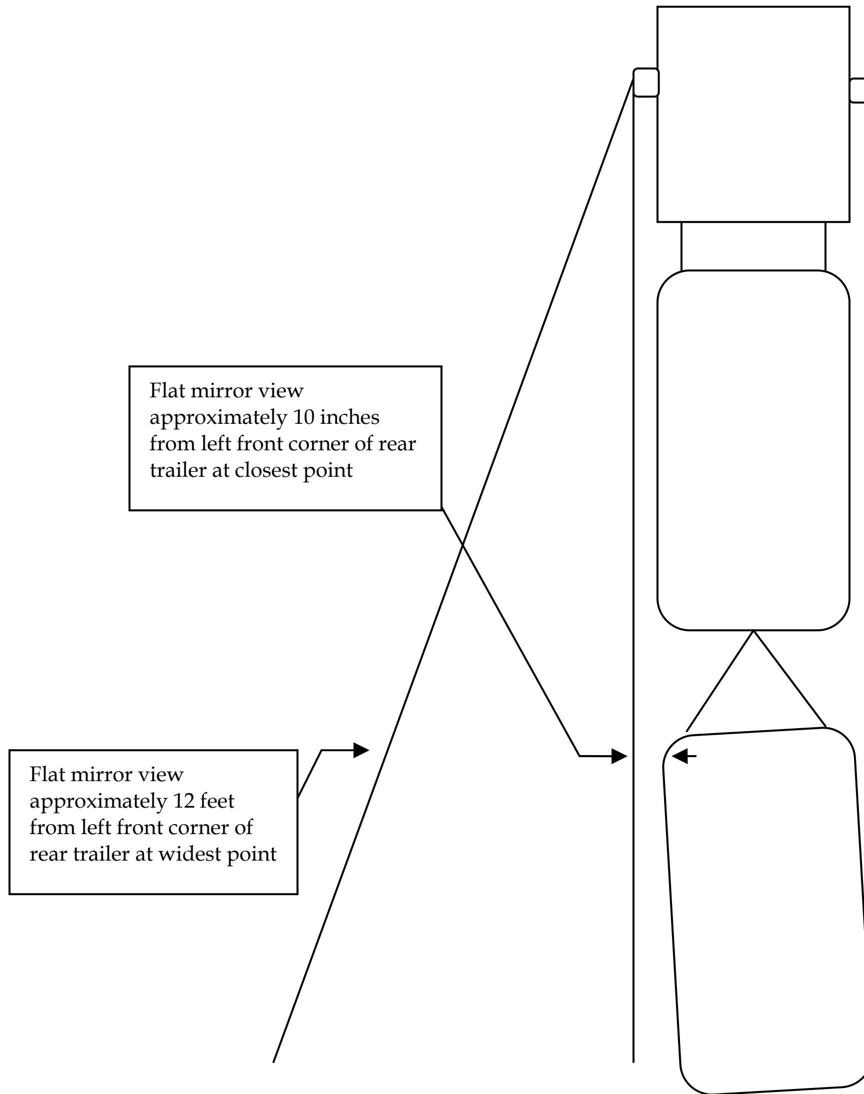
Plan View of Accident Scene



NOT TO SCALE

APPENDIX D

Truck Mirrors and Visibility



NOT TO SCALE