

United States
Department of Labor
Mine Safety and Health Administration
Metal and Nonmetal Mine Safety and Health

Report of Investigation

Surface Nonmetal Mine
(Construction Sand and Gravel)

Fatal Powered Haulage Accident
May 9, 2014

Mississippi Sand, LLC
Mississippi Sand Seagraves, Gaines County, Texas
Mine ID #4105004

Investigators

Laurence M. Dunlap
Supervisory Mine Safety and Health Inspector

Lee B. Cruise
Mine Safety and Health Inspector

Elsa A. Montoya
Mine Safety and Health Specialist (Training)

Originating Office
Mine Safety and Health Administration
South Central District
1100 Commerce Street, Room 462
Dallas, Texas 75242
Michael Davis, District Manager



OVERVIEW

On May 9, 2014, Miguel Arenas Nino, Rail Load Out and Ground Worker, age 20, was killed when he fell onto a moving belt conveyor. Nino was operating a mobile articulating conveyor unloading sand from a rail car into a haul truck when he contacted the moving belt conveyor.

The accident occurred due to management's failure to provide emergency stop devices and/or railings on the conveyor that would have deactivated the conveyor and/or prevented the victim from falling onto the moving conveyor.

GENERAL INFORMATION

Mississippi Sand Seagraves, owned and operated by Mississippi Sand LLC, is a surface sand processing facility located near Seagraves, Texas. The principal operating official is Mike D. Cochran, Director of Operations. The mine operates three 8-hour shifts per day, seven days per week. Total employment is 19 persons.

The facility receives washed sand from several locations. The sand is unloaded and stockpiled. A front-end loader loads the material into a bin where it is then conveyed into a dryer. The dried sand is conveyed by bucket elevator to a single deck screen where oversized material is removed. The remaining sand is fed into two additional two deck screens, creating various sizes of material. The sand is then conveyed to a 2,000 ton storage building, two 1,500 ton silos, or a 75 ton silo where it is stored for sale. The products are loaded out of the three silos into customer trucks.

Enclosed rail cars, containing 100 mesh sand, are also delivered to the property. A mobile articulating conveyor is used to load the sand directly into customer trucks without any processing. The finished product is sold for use as silica sand or frac sand.

The Mine Safety and Health Administration (MSHA) completed the last regular inspection at this operation on March 10, 2014.

DESCRIPTION OF ACCIDENT

On the day of the accident, May 9, 2014, Miguel Arenas Nino (victim) started his shift at 3:53 p.m. He met briefly with Rusty R. Howard, Foreman, and four coworkers before going to perform his regularly assigned tasks as a ground worker.

At 4:10 p.m., Nino drove a pickup truck to the rail load out area to inventory the parked, enclosed rail cars containing 100 mesh frac sand. At approximately 4:39 p.m., preparations began to load the first over the road bulk tank truck for that shift. Nino maneuvered a Wilson 342 D Diesel Articulating Conveyor perpendicular to the rail car, positioning the tail portion of the belt conveyor under the rail car hopper. When the bulk tank truck was parked under the discharge chute of the belt conveyor, Nino opened the hopper and the material was conveyed from the railroad car to load the bulk tank truck.

At approximately 5:00 p.m., Nino returned to the main plant and began cleanup activities in the material storage area. At approximately 5:51 p.m., Nino returned to the rail load out area and loaded a second bulk tank truck. Nino returned to the main plant area where he performed various tasks.

At approximately 8:00 p.m., Marco Negrón, Load Out Operator, radioed Nino that two trucks were in route to the rail load out. Nino returned to the load out area and loaded the third truck for the shift. The fourth truck to be loaded weighed in at the scale at 8:12 p.m. and traveled to the load out area. Thomas Kulinga, Customer Truck Driver, arrived at the load out area, stepped out of his truck, and briefly spoke with Nino before positioning his tank truck under the conveyor chute for loading.

At 8:58 p.m., Kulinga exited the cab of his truck and found Nino entangled in the belt conveyor. He immediately called 911. Howard arrived as efforts began to extricate the victim. EMS arrived at 9:12 p.m. and assisted in the extrication. At approximately 9:31 p.m., the victim was transported to Seminole Memorial Hospital where he was pronounced dead at 10:20 p.m. The cause of death was attributed to traumatic asphyxia.

INVESTIGATION OF THE ACCIDENT

On May 9, 2014, Jason G. Bish, Vice-President of Safety, called the National Call Center at 9:46 p.m., to notify MSHA of the accident. The Call Center notified David Weaver, Assistant District Manager, and an investigation was started immediately. An order was issued under the provisions of section 103(j) of the Mine Act to ensure the safety of all persons. This order was later modified to section 103(k) of the Mine Act after the arrival of an Authorized Representative to the mine site.

MSHA's accident investigation team traveled to the mine, made a physical inspection of the accident scene, interviewed employees, reviewed documents and evaluated 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 a load out area on a rail spur owned by Mississippi Sand LLC. The area was flat and dry.

Mobile Articulating Conveyor

The mobile conveyor involved in the accident was a Wilson 342D Diesel articulating conveyor. The conveyor is a hydraulically driven, self-propelled, four wheel drive unit capable of 180 degree rotation for lateral movement. The valve body assembly that controls all motions and articulation is placed on one side of the conveyor, waist high near the tail end of the unit. The controls include steering (forward and reverse), two masts to raise and lower either or both ends of the conveyor, and articulation of the tail section. The conveyor is approximately 58 feet long, 42 inches wide, and has an operating speed of up to 700 feet per minute. Trucks are typically

loaded in four to eight minutes, depending on the speed at which the conveyor is operated.

Operation Procedures

West Texas & Lubbock Railway delivers enclosed rail cars that contain a fine frac sand of 100 mesh to the north side of the property. The cars are dropped off and left to be unloaded by plant employees. Rail cars found on site have two or three hoppers and contain approximately 2230 cubic feet of material which loads three to four bulk tank trucks. The conveyor transfers the sand from the rail car hoppers into the over the road bulk tank trucks.

The self-propelled conveyor is positioned perpendicular to the rail car with the tail end of the unit under a hopper of the rail car. The conveyor can be moved laterally to adjust its position before loading operations begin. The location of the cranking mechanism, for opening and closing the hopper doors on the rail cars, can be on either side of the hopper. This may cause the cranking mechanism to be on the opposite side of the conveyor controls as was the case when the accident occurred. When the conveyor is properly positioned for the bulk tanker truck, parked under the chute of the conveyor, the operator opens the rail car hopper and energizes the conveyor.

Weather

The weather on the day of the accident consisted of clear skies with a temperature of 72 degrees Fahrenheit. Weather was not considered a factor in the accident.

TRAINING AND EXPERIENCE

Miguel Arenas Nino (victim) had approximately 9 weeks of mining experience all at this plant. A representative of MSHA's Educational Field Services staff conducted a review of the mine operator's training plan and records. The required training for Nino and all other training records reviewed were up to date and in compliance with 30 CFR Part 46 requirements.

ROOT CAUSE ANALYSIS

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

Root Cause: Management failed to provide emergency stop devices or railings on the conveyor that would have deactivated the conveyor and/or prevented the victim from falling onto the moving conveyor. Management also failed to provide safe work procedures to persons working near conveyors.

Corrective Action: Management installed handrails on the conveyor to prevent persons from contacting the moving conveyor. Safe work procedures for working near conveyors were also established and all persons were trained regarding these new procedures. Additionally, emergency stops, with panic bars, have been positioned at the throat of the conveyors.

CONCLUSION

The accident occurred due to management's failure to provide emergency stop devices and/or railings on the conveyor that would have deactivated the conveyor and/or prevented the victim from falling onto the moving conveyor.

ENFORCEMENT ACTIONS

Order No. 8628571 -- issued on May 9, 2014, under the provisions of sections 103(j) of the Mine Act:


An accident occurred at the Mississippi Sand operation mine ID# 41-05004 on May 9, 2014 at approximately 2130 hours MST. This order is being issued, under section 103(j) of the Federal Mine Safety and Health Act of 1977, to prevent the destruction of any evidence which would assist in investigating the cause or causes of the accident. It prohibits all activity at Mississippi Sand Seagraves and the rail head until MSHA has determined that it is safe to resume normal operations in this area. This order was initially issued orally to the mine operator at 2230 hour on May 9, 2014 and has now been reduced to writing.

The order was terminated on May 29, 2014 after the condition that contributed to the accident no longer existed.

Citation No. 6315039 -- issued on under the provisions of Section 104(a) of the mine Act for a violation of 56.14109:

A fatal accident occurred at this operation on May 9, 2014 when a miner fell onto a moving conveyor belt. An emergency stop device or railings had not been provided on the Wilson 342D diesel belt articulating conveyor that would have deactivated the belt and/or prevented the operator from falling onto the moving conveyor. The operator controls were immediately adjacent to the opening.

Approved: _____


Michael D. Davis
District Manager

Date: _____

9/19/14

Appendix A

Persons Participating in the Investigation

Mississippi Sand, LLC

Jason G. Bish	Vice-President of Safety
Mike D. Cochran	Director of Operations
Kent A. Conlon	General Manager

Mine Safety and Health Administration

Laurence M. Dunlap	Supervisory Mine Safety and Health Inspector
Lee B. Cruise	Mine Safety and Health Inspector
Elsa A. Montoya	Mine Safety and Health Specialist (Training)

Accident Investigation Data - Victim Information

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



Event Number: 4 1 0 5 0 0 4

Victim Information: 1											
1. Name of Injured/Ill Employee: <i>Miguel A. Nino</i>				2. Sex <i>M</i>		3. Victim's Age <i>20</i>		4. Degree of Injury: <i>01 Fatal</i>			
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death: <i>a. Date: 05/09/2014 b. Time: 22:20</i>						6. Date and Time Started: <i>a. Date: 05/09/2014 b. Time: 15:53</i>					
7. Regular Job Title: <i>159 Ground Person / Rail Load Out</i>				8. Work Activity when Injured: <i>050 Operating conveyor</i>				9. Was this work activity part of regular job? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
10. Experience a. This			b. Regular			c. This			d. Total		
Years	Weeks	Days	Years	Weeks	Days	Years	Weeks	Days	Years	Weeks	Days
Work Activity: <i>0</i>	<i>9</i>	<i>4</i>	Job Title: <i>0</i>	<i>9</i>	<i>4</i>	Mine: <i>0</i>	<i>9</i>	<i>4</i>	Mining: <i>0</i>	<i>9</i>	<i>4</i>
11. What Directly Inflicted Injury or Illness? <i>038 Conveyors</i>						12. Nature of Injury or Illness: <i>110 Traumatic Asphyxia</i>					
13. Training Deficiencies: Hazard: New/Newly-Employed Experienced Miner: Annual: Task:											
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: First-Aid: CPR: EMT: <input checked="" type="checkbox"/> Medical Professional: None:											
16. Part 50 Document Control Number: (form 7000-1)						17. Union Affiliation of Victim: <i>9999</i> None (No Union Affiliation)					