

**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
January 2, 2010**

**Bull Mountains Mine No. 1
Signal Peak Energy LLC
Roundup, Musselshell County, Montana
MSHA I.D. No. 24-01950**

Accident Investigators

**Art C. Gore
Coal Mine Safety and Health Inspector**

**Donald Durrant
Coal Mine Safety and Health Inspector**

**Kent Norton
Educational Field Services Training Specialist**

**Originating Office
Mine Safety and Health Administration
District 9
P.O. Box 25367, Denver, Colorado 80225
Allyn C. Davis, District Manager**

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VIEW OF ACCIDENT SCENE

TRUCK WITH FABRICATED MANTRIP COMPARTMENT



OVERVIEW

On Saturday, January 2, 2010, at approximately 11:35 p.m., Rudolph “Rudy” O. Lindstrom (victim), a 57-year old mechanic with 9 years mining experience and 17 years as a mechanic, was fatally injured in a powered haulage accident at the surface shop of the Bull Mountains Mine No. 1. The accident occurred as Lindstrom worked on a pickup truck with the bed modified to serve as a mantrip vehicle. At the time of the accident, the front wheels were removed and the front end of the truck was supported by jack stands. The rear wheels were on the shop floor. Lindstrom, who was lying on the shop floor under the front of the truck, asked another miner to assist in removing the old power steering fluid from the system. The miner entered the truck, depressed the clutch pedal and started the truck, which was in gear at the time. After starting the truck, the miner’s foot slipped off the clutch pedal, causing the truck to lurch forward and fall off the jack stands. The truck fell and struck Lindstrom, resulting in fatal crushing injuries.

The accident occurred due to the truck being left in gear when it was started and not being securely blocked in position while repair/maintenance work was being done under the truck. The rubber friction pad/anti-slip cover for the top of the clutch pedal was missing and created an unsafe condition which contributed to the miner’s foot slipping off the pedal. Management’s lack of safe procedures for supporting and securing elevated equipment during maintenance and repair work contributed to the cause of the accident. The lack of a service pit or service lift in the shop bay allowed Lindstrom to position himself in an unsafe location on the floor under the front of the truck.

GENERAL INFORMATION

The Bull Mountains Mine No. 1, an underground coal mine, is owned and operated by Signal Peak Energy LLC. The mine is located approximately 17 miles south of Roundup, Musselshell County, Montana. The mine began operations in 1991. Businesses with ownership interest are Musselshell Resources LLC of Greenwich, Connecticut, and Global Mining Group LLC of Roundup, Montana.

The mine operates a longwall and one continuous mining machine development section. Retreat mining on the first longwall panel began in December 2009. The mine produces approximately 3,650 tons of coal a day (775,532 tons in 2009) with 197 employees, of which 171 work underground. The average mining height is 108 inches. The seam being mined is the Mammoth coal seam, and the coal is sub-bituminous. The mine works two 12-hour shifts, seven days per week.

The principal officers for the mine at the time of the accident were John M. DeMichie, President/CEO; Robert Hall, Mine Manager; Robert R. Lowery, Mine Superintendent; Ray Peterson, Maintenance Manager; and Tom Rice, Safety Manager.

Prior to the accident, the last Mine Safety and Health Administration (MSHA) regular inspection was completed on December 17, 2009. The non-fatal days lost (NFDL) incidence rate for the mine for 2009 was 1.72. The national NFDL incidence rate for underground coal mines for 2009 was 4.24.

DESCRIPTION OF ACCIDENT

On Saturday, January 2, 2010, day shift mechanics Paul Hoiland and Dan Noy worked on company No. 9 pick-up truck at the surface maintenance shop. The truck was brought to the shop for a brake problem. They raised the rear dual wheels and found a loose brake line. The brake line was repaired and the park brake and rear brake shoes were replaced. After completing the rear brakes, Noy raised the front of the truck and placed metal stands under the frame approximately in line with the door hinge points. Noy placed a floor jack under the front bumper because he wasn't comfortable with the contact point of the stands with the truck frame in that he couldn't find a flat spot on the frame. He removed the front wheels, checked the front brakes and wheel bearings, and found that the passenger side tie-rod was bad. He then went under the truck and started cleaning mud and debris from the power steering unit to prepare to change out the tie-rod. Noy's shift ended with repair work on the truck not completed.

Hoiland and Noy talked with Lindstrom at the beginning of Lindstrom's shift at 7:00 p.m. They told him about the tie-rod on the truck and what was still left to be done in the shop. Lindstrom told Hoiland that the tie-rods were integral to the power steering unit and that in order to change out the tie-rods the entire power steering unit had to be replaced.

Rowdy Demers, Supply Person, was assigned to help Lindstrom in the shop that night. During the shift, Lindstrom worked on removing the power steering unit intermittently between jobs on other equipment. Demers washed equipment in the wash bay and helped Lindstrom change various equipment tires. The shift progressed without incident, until approximately 11:30 p.m., when Lindstrom asked Demers to assist with the truck. Lindstrom had removed the power steering unit with the attached tie-rods and was in the process of flushing the old power steering fluid from the system. See Appendix B for a picture of the power steering unit that was removed from the truck. Lindstrom asked Demers to start the engine and immediately turn it off, which would flush the fluid. Demers filled the power steering pump reservoir with new fluid and got into the truck. Lindstrom was lying on the shop floor, under the truck near the front bumper, presumably to make sure the old fluid went into a container on the shop floor. Demers could not see Lindstrom, but could hear him. Demers asked Lindstrom if he was ready and Lindstrom said "yes." At approximately 11:35 p.m., Demers depressed the clutch pedal and started the engine. Just as the engine started, Demers' foot slipped off the clutch pedal and the truck lunged forward off the stands and onto the shop floor. Demers immediately depressed both the clutch and brake pedals, but the truck, which was left in gear, moved forward approximately 6 to 6.5 feet. Demers shut off the engine and got out of the truck. He saw Lindstrom pinned under the truck and not moving.

Demers ran to the office to ask someone to call an ambulance. Mark Clark, mine examiner was in the office and told Faryn Bonine, Dispatcher, to call for an ambulance and to notify officials of the accident. He then accompanied Demers back to the shop. Clark saw the truck on the floor, but didn't realize that Lindstrom was under the truck until he walked around and saw Lindstrom. Clark told Demers to get the forklift. Clark opened the shop door and guided the forks under the truck bumper and Demers lifted the truck off Lindstrom. Clark and Demers put jack stands under the truck.

Bonine called Ben Harcourt, Shift Foreman, who was underground, and notified him of the accident. Harcourt, an EMT, arrived at the scene and had crib blocks placed under the truck for

additional support. He then crawled under the truck to check on Lindstrom. He tapped on Lindstrom, checked for a pulse, and watched his chest for any breathing movements. There were no signs of life. Robert Lowery, Mine Manager, arrived with Musselshell County Sheriff deputies. The Musselshell County Ambulance arrived at 12:03 a.m., January 3, 2010. An automated external defibrillator (AED) was attached to Lindstrom, but it indicated that a shock should not be administered. Lindstrom was pronounced dead at 12:06 a.m. by Ronald Solberg, Deputy Coroner.

INVESTIGATION

The Mine Safety and Health Administration (MSHA) was notified of the accident at 11:46 p.m., January 2, 2009, when the mine operator called the MSHA Call Center. William Denning, Staff Assistant to the District Manager, was notified of the accident by the Call Center at 12:10 a.m., January 3, 2010. Denning called the mine at 12:20 a.m., but was only able to leave a message on the answering machine. Denning then notified Todd Jaqua, Gillette, Wyoming Field Office Supervisor, of the accident. Jaqua was able to contact the mine and was informed that the injured person had died. Jaqua notified Denning of the fatality at 12:49 a.m. and dispatched Inspector Scott Markve to the mine from the Gillette Field Office. Markve verbally issued a § 103(j) Order by telephone at 12:40 a.m. and modified it to a § 103(k) Order when he arrived at the mine. An MSHA investigation team was assembled and arrived at the mine on January 4, 2009, to start the investigation. The accident scene was documented with photographs, sketches, maps, and measurements. Interviews were conducted with persons known to have knowledge of the accident. A list of persons who participated in the investigation is contained in Appendix A. Other documents and records were collected from Signal Peak Energy LLC.

DISCUSSION

Location of Accident

The accident occurred at the surface maintenance shop in the small bay near the shop foreman's office.

Vehicle

The vehicle involved in the accident was a four-wheel drive, one-ton pick-up truck. The mine had installed a steel covered mantrip compartment where the regular pickup box would normally be located. The truck was identified as company vehicle No. 9. According to specifications, the base curb weight of the truck without the steel covered mantrip compartment was approximately 7,100 pounds. The weight distribution was 55.0% on the front axle and 45.0% on the rear. The standard payload capacity was 5,070 pounds. The truck was equipped with a manual transmission.

Accident Scene

Skid marks from the front brake assemblies contacting the mine floor indicate that the truck moved forward approximately 6 to 6.5 feet after it fell off the jack stands. After the accident, the truck was approximately 18 inches from the shop door. Prior to the accident, the truck was approximately 93 inches from the door. The truck was not securely blocked/chocked against motion. Evidence at the scene indicated that the park brake on the truck was not engaged at the time of the accident.

When the accident occurred, the front wheels had been removed from the truck and the front end was supported with two 6-ton AC Delco jack stands. At the end of dayshift, the mechanics left the front of the truck up on the two jack stands and had placed a heavy duty floor jack under the front bumper. The floor jack was not in place at the time of the accident. The two 6-ton AC Delco jack stands were considered adequate to support the truck in an elevated position, as long as the engine and drive wheels were not engaged.

During rescue activities, a Caterpillar forklift was used to raise the front end of the truck. Jack stands and wooden cribs were placed under the front of the truck to support it. During the investigation, the truck was lowered to the shop floor to re-enact the accident. The clearance between the bottom cross-member of the truck frame and the floor where Lindstrom was found was approximately 3 inches.

Clutch and Brake Pedals

The clutch pedal was examined during the investigation and the rubber friction pad/anti-slip cover for the top of the clutch pedal was missing, exposing the metal of the clutch pedal. The pedal had mud on it when it was examined, indicating that the cover was missing prior to the accident. The rubber friction pad/anti-slip cover for the top of the brake pedal was not on the pedal, but was found on the floor of the truck. It appeared that this cover was dislodged by Demers when he depressed the brake pedal with force after the truck started to lurch forward. The brake pedal was clean, indicating that the cover had been in place prior to the accident. See Appendix D for a picture of the clutch and brake pedals. Demers was wearing leather boots with rubber soles. He had worked in the wash bay earlier in the shift, washing mud off vehicles, but could not say whether his boots were wet/muddy at the time of the accident. He did state that “you are always wet and muddy when working at the mine.”

Training and Mining Experience

Lindstrom had approximately 9 years mining experience with approximately 9 months at Bull Mountains Mine No. 1. He had 17 years experience as a mechanic. A review of training records indicated that Lindstrom completed Newly Employed Experienced Miner Training on March 3, 2009. Lindstrom’s training complied with Title 30, Code of Federal Regulations (CFR) Part 48 training requirements. Lindstrom was certified by the State of Wyoming as an Underground Metal/Non-metal Foreman.

ROOT CAUSE ANALYSIS

A root cause analysis was conducted. Root causes were identified that could have mitigated the severity of the accident or prevented loss of life. Listed below are root causes identified during the analysis and their corresponding corrective actions to prevent a recurrence of the accident.

Root Cause: The mine operator did not have safe procedures for supporting and securing elevated equipment during maintenance/repair work.

Corrective Action: On January 5, 2010, the mine operator implemented procedures titled “Supporting Elevated Equipment” for the safe support of raised equipment when work is done under such equipment. Item 3.C. requires equipment to be blocked against movement using suitable chocks at wheels, tracks, etc. and that parking brakes and transmission locks be used

where applicable. Item 7.A. states that no work will be done on equipment while the engine is running, unless all drive wheels, tracks, etc. are off the ground. All affected miners were trained in the new procedures for “Supporting Elevated Equipment.” Signal Peak Energy purchased a 4-post runway 18,000 pound lift with a 68-inch rise for use in the surface shop to support raised equipment safely when work is done under the equipment.

Root Cause: Management did not maintain the truck in safe condition in that the rubber friction pad/anti-slip cover for the top of the clutch pedal was missing. This unsafe condition contributed to the assistant’s foot slipping off the depressed clutch pedal, causing the accident.

Corrective Action: The rubber friction pad/anti-slip cover for the clutch pedal was replaced and training was provided to equipment operators to check for such safety defects during pre-operational inspections.

CONCLUSION

The accident occurred when the victim, lying on the shop floor at the front of the truck, asked an assistant to start the truck to remove the old power steering fluid from the system. The assistant started the truck and his foot slipped off the depressed clutch pedal, causing the truck, which was left in gear, to lunge forward off the jack stands and fall on the victim. The accident occurred because the truck was left in gear when it was started and because of the truck not being securely blocked in position while repair/maintenance work was being done under the vehicle. The missing rubber friction pad/anti-slip cover for the top of the clutch pedal created an unsafe condition, which contributed to the assistant's foot slipping off the pedal. The mine operator did not have in place safe procedures to support elevated equipment during this type of maintenance and repair work.

Approved by:



Allyn C. Davis
District Manager

05-25-2010
Date

ENFORCEMENT ACTIONS

1. A 103(j) Order, Number 8463662, was issued to Signal Peak Energy LLC to ensure the safety of persons at the mine until an investigation could be conducted and operations could be safely resumed. The 103(j) Order was modified to a 103(k) Order after the MSHA inspector arrived at the mine.

2. A 104(a) Citation, Number 8468059, was issued to Signal Peak Energy LLC for a violation of 30 CFR § 77.405(b). On January 2, 2010, a fatal accident occurred in the surface shop while maintenance work was being performed under Company Number 9 truck/mantrip, with the manual transmission in forward gear and the truck not securely blocked in position. The truck's rear drive wheels were resting on the shop floor. The two front tires had been removed and two jack stands were used to support the front of the truck. The accident occurred when the truck's engine was started and the operator's foot slipped off the depressed clutch peddle, which caused the truck to move forward. Due to the truck not being securely blocked, the forward motion caused the truck to fall off the metal jack stands, lurch forward, and fatally injure a mechanic who was lying on the shop floor under the front of the truck. This condition also constitutes a violation of 30 CFR § 77.404(c).

3. A 104(a) Citation, Number 8468060, was issued to Signal Peak Energy LLC for a violation of 30 CFR § 75.1914(a). On January 2, 2010, a fatal accident occurred in the surface shop while maintenance was being performed on Company Number 9 truck/mantrip. The truck was not maintained in safe condition in that the rubber friction pad/anti-slip cover for the top of the clutch pedal was missing, exposing the metal of the clutch pedal. The accident occurred when the truck's engine was started and the operator's foot slipped off the depressed clutch peddle, which caused the truck to move forward. The forward motion caused the truck to fall off the supporting metal jack stands, lurch forward, and fatally injure a mechanic who was lying on the shop floor under the front of the truck.

Appendix A

List of persons participating in the investigation:

* Persons Interviewed

SIGNAL PEAK ENERGY LLC OFFICIALS

John M. DeMichiei	President/CEO
Robert Hall	Mine Manager
Robert R. Lowery	Mine Superintendent
Roy Jensen	General Mine Foreman
*Ben B. Harcourt	CM Foreman
Tom Rice	Safety Manager
*John M. Zugaza	Shop Foreman

SIGNAL PEAK ENERGY LLC EMPLOYEES

*Rowdy Demers	Supply Person
*Paul Hoiland	Mechanic
*Mark Clark	Mine Examiner
*Dan Noy	Mechanic
*Shane Recor	Warehouse Technician
*Kenneth Scott Homer	Beltman

C & J CONTRACTORS

Tristin Howman	Longwall Support Crew Member
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MONTANA DEPARTMENT OF LABOR AND INDUSTRY

Bill Schwarzkoph	Coal Mine Inspector
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MINE SAFETY AND HEALTH ADMINISTRATION

Allyn C. Davis	District Manager
Art C. Gore	Coal Mine Safety and Health Inspector
Donald Durrant	Coal Mine Safety and Health Inspector
Kent Norton	Training Specialist, Educational Field Services
Scott Markve	Coal Mine Safety and Health Inspector

Appendix B

View of Truck and Power Steering Unit



POWER STEERING UNIT TAKEN OFF TRUCK

Appendix C

View of AC Delco Jack Stand



Appendix D

View of Clutch Pedal (left) and Brake Pedal (right)



Appendix E

Victim Information

Accident Investigation Data - Victim Information

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



Event Number:

Victim Information:

1. Name of Injured/Ill Employee: <i>Rudolph O. Lindstrom</i>			2. Sex: <i>M</i>	3. Victim's Age: <i>57</i>			4. Degree of Injury: <i>01 Fatal</i>														
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death: <i>a. Date: 01/02/2010 b. Time: 23:35</i>							6. Date and Time Started: <i>a. Date: 01/02/2010 b. Time: 19:00</i>														
7. Regular Job Title: <i>004 Mechanic</i>				8. Work Activity when Injured: <i>039 Maintenance on Dodge truck</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>17</i>	<i>0</i>	<i>0</i>	Job Title:	<i>17</i>	<i>0</i>	<i>0</i>	Mine:	<i>0</i>	<i>36</i>	<i>0</i>	Mining:	<i>9</i>	<i>0</i>	<i>0</i>				
11. What Directly Inflicted Injury or Illness? <i>110 Vehicle NEC, Dodge Ram 3500 truck</i>										12. Nature of Injury or Illness: <i>170 Crushing head and chest injuries</i>											
13. Training Deficiencies: Hazard: <input type="checkbox"/> New/Newly-Employed Experienced Miner: <input type="checkbox"/> Annual: <input type="checkbox"/> Task: <input 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 type="checkbox"/> EMT: <input checked="" type="checkbox"/> Medical Professional: <input type="checkbox"/> None: <input type="checkbox"/>																					
16. Part 50 Document Control Number: (form 7000-1) <i>220100110016</i>										17. Union Affiliation of Victim: <i>9999 None (No Union Affiliation)</i>											