

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

REPORT OF INVESTIGATION

Surface Metal Mine  
(Iron Ore)

Fatal Powered Haulage Accident  
February 1, 2014

Gilbert Development Corporation (GDC)  
Comstock / Mountain Lion  
Cedar City, Iron County, Utah  
ID No. 42-01927

Investigators

Michael L. Treloar  
Mine Safety and Health Inspector

Fred Sanchez  
Mine Safety and Health Specialist (Training)

Originating Office  
Mine Safety and Health Administration  
Rocky Mountain District  
P.O. Box 25367, DFC  
Denver, Colorado 80225  
Richard Laufenberg, District Manager



## **OVERVIEW**

Mark F. Rowley, Rahco Conveyor Operator, age 56, was killed on February 1, 2014. He was cleaning an unguarded return idler inside the frame of a mobile stacking belt conveyor that was five feet above the ground when he became entangled between the return idler and the belt.

The accident occurred due to management's failure to establish safe work procedures to be followed while persons performed work on the belt conveyor. The victim was using a tool to clean the unguarded return idler while the belt conveyor was in motion. The belt conveyor was not deenergized and blocked against motion before the victim attempted to remove the spillage on the return idler.

## **GENERAL INFORMATION**

Comstock / Mountain Lion, an iron ore mine owned by CML Metals, is located at 2708 S. Comstock Road, Cedar City, Iron County, Utah. CML Metals contracted Gilbert Development Corporation (GDC) to operate the mine and also to transfer the iron ore from the mill that is owned and operated by CML Metals. The principal operating official for GDC is Keith Gilbert, Vice-President. The mine operates two 12 hour shifts a day, 7 days a week. Total employment is 56 persons.

The material is drilled and blasted using a single bench. A front-end loader loads the material into haul trucks that transport the material to a primary crusher. Belt conveyors transport the material to the mill where it is processed and then sold as high grade iron ore. GDC transfers the reject iron ore material from the mill via several belt conveyors to a Rahco mobile stacking conveyor (belt conveyor) in the reject ore area where the material is stacked. The material is then hauled by truck back to the mill for further blending or hauled to the landfill.

The Mine Safety and Health Administration (MSHA) completed the last regular inspection at this operation on November 6, 2013.

## **DESCRIPTION OF ACCIDENT**

On the day of the accident, Mark F. Rowley (victim) arrived at the mine about 7:00 a.m. Bert Clegg, Shift Supervisor, provided an overview of the day's activities for the day shift crew. Clegg assigned Rowley to operate the Rahco during the shift.

Clegg transported Rowley and Brooks Leach, Laborer, to the belt conveyor. At 8:30 a.m., Clegg met with Rowley and they discussed housekeeping. At 3:00 p.m., Clegg checked in with Rowley and no problems were reported. At approximately 4:30 p.m., Jerry Webb, Miner, saw Rowley walk under the belt conveyor.

At 5:30 p.m., Clegg drove his truck to the southwest side of the belt conveyor and noticed it was tracking right on the upper tension drive pulley. Kelly Jones, Miner, was working on a skid steer loader south of the belt conveyor. Jones went to Clegg and they discussed the problem of the pulley not tracking properly.

At approximately 5:40 p.m., Clegg called out to Rowley. Clegg then noticed Rowley entangled in the belt and the return idler. Clegg and Jones immediately ran to the belt conveyor's trip cord and shut off the belt conveyor. Clegg called security for 911 and Jones went to get a bar to attempt to free Rowley. Leach came and helped Jones. Clegg immediately went to the belt conveyor's hydraulic tension lever and released the tension.

Clegg returned and helped Jones remove Rowley from the belt conveyor. Webb came to the accident site and performed cardiopulmonary resuscitation (CPR) on Rowley. Jason Chappell and Norm Sherratt, Miners, came to the accident site to assist Webb. Clegg called LaVoy Woolsey, GDC Safety Coordinator, to report the accident and again called for 911.

Jason Gillins, Miner, came to the accident site and Leach, Gillins, and Jones went to meet the first responders at the highway. Jones went to get an Automatic External Defibrillator (AED) and went back to the accident site. Clegg talked to emergency personnel on the phone and they assisted Webb and Chappelle to administer the AED until the Iron County Ambulance and Iron County Sheriff arrived at 6:07 p.m. and attended to the victim.

At 6:32 p.m., Iron County Emergency Medical Service pronounced the victim dead. The cause of the death was attributed to compressional/positional asphyxia.

## **INVESTIGATION OF ACCIDENT**

MSHA was notified of the accident at 5:57 p.m. (mst), on February 1, 2014, by a telephone call from LaVoy Woolsey, GDC Safety Coordinator, to MSHA's National Call Center. The National Call Center notified Melvin Lapin, Supervisory Mine Safety and Health Inspector, and an investigation started the same day. An order was issued under the provisions of Section 103(j) of the Mine Act to ensure the safety of the miners. This order was later modified to

Section 103(k) of the Mine Act when the first Authorized Representative arrived at the mine.

MSHA's accident investigation team traveled to the mine, conducted a physical inspection of the accident scene, interviewed employees, and reviewed documents 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 Rahco belt conveyor where reject waste ore is transferred from the plant to the reclamation area. The area is relatively flat. The return idler pulley where the victim was entangled was approximately 10 feet from the drive pulley on the belt conveyor.

### Reject Ore Area

The reject ore area consists of three belt conveyors. The first conveyor is an overland conveyor that receives waste ore from the mill's waste discharge belt conveyors. It transports the material up a steep grade to an 85-foot stacking conveyor. The stacking conveyor transfers the ore to the south end of the Rahco belt conveyor.

### Belt Conveyor

The belt conveyor involved in the accident is a Rahco Model M30x1500 that is 30 inches wide and 1,000 feet long. The mobile stacking conveyor receives waste ore from the mill's waste discharge conveyor belts in the reject ore area. The unit is supported on a series of truss frames and crawler tracks. The trusses are connected by a specially developed joint that allows the machine to follow uneven ground conditions and relieve stresses that could damage the structure.

A single belt conveyor runs along the top chord of the trusses for the length of the mobile conveyor. The mobile conveyor tripper travels along the top chords of the mobile stacking conveyor. The tripper places ore onto the cross conveyor belt and discharges the material onto a stack. The cross conveyor is long enough so the stack can be built to the design height while keeping the crawler track back from the advancing toe of the pad.

The mobile conveyor's control system is a combination of operator interface and automatic controls for various functions. The operator can override the

automatic controls if needed as well as control the upstream equipment. Manual controls, such as the tripper speed and cross conveyor position, can also be used. Automatic controls typically monitor frame alignment and leveling. Material handling does not stop when the tripper or the entire machine moves.

The material travels north on the belt conveyor, where a tower on the conveyor travels the entire length and distributes the waste ore off the main belt conveyor. The tower places it on a small side belt conveyor throughout the length of the belt, stacking the waste ore. A front-end loader loads the material in a haul truck for transportation to the reclamation or recycle area.

### **Scraping Tool**

The tool used by Rowley was a scraping tool with a 5-foot long wood handle and a steel scraper attached on the end. It was manufactured by Ames-True Temper Landscaping Products. The tool had been bent between the handle and the scraper end to create a slight angle.

### **Weather**

The weather conditions on the day of the accident were overcast with temperatures below freezing. The ground conditions were frozen with ice and snow. Weather was not considered to be a factor in the accident.

## **TRAINING AND EXPERIENCE**

Mark Rowley (victim) had approximately 10 months of mining experience all at this mine. A representative of MSHA's Educational Field Services staff conducted an in-depth review of the mine operator's training records. The training records for Rowley were reviewed. All of his required MSHA New Miner Training, Annual Refresher Training, Task Training and Toolbox Training, were found to be up-to-date and in compliance with MSHA requirements.

## **ROOT CAUSE ANALYSIS**

The investigators conducted a root cause analysis of this accident and the following root cause was identified and the corresponding corrective action implemented to prevent a recurrence of the accident:

**Root Cause:** Management did not ensure that appropriate safe work procedures were established for persons to safely clean and maintain the belt conveyor. The belt conveyor was not deenergized and locked out and tagged out before the victim performed work.

**Corrective Action:** Management developed a standard operating policy (SOP) regarding the belt conveyor's cleanup and maintenance, as well as a detailed lock-out/tag-out policy that requires persons to deenergize the equipment and ensure the equipment is locked out and tagged out. The SOP was explained and miners who work in the reclamation area were trained on the procedures.

Additionally, management required that all of the bottom return idlers under the belt conveyor be guarded the entire length of the belt.

## CONCLUSION

The accident occurred due to management's failure to establish safe work procedures to be followed while persons performed work on the belt conveyor. The victim was using a tool to clean the unguarded return idler while the belt conveyor was in motion. The belt conveyor was not deenergized and blocked against motion before the victim attempted to remove the spillage on the return idler.

## ENFORCEMENT ACTIONS

### **Issued to Gilbert Development Corporation (GDC)**

**Order No. 8754501** – Issued under the provisions of Section 103(j) of the Mine Act:

*An accident occurred at this operation on February 1, 2014, at approximately 3:40 p.m. As rescue and recovery work is necessary, this order is being issued under Section 103(j) of the Federal Mine Safety and Health Act of 1977, to ensure the safety of all persons at this operation. This order is also being issued to prevent the destruction of any evidence which would assist in investigating the cause or causes of the accident. It prohibits all activity at this operation until MSHA has determined it is safe to resume normal mining operations in this area. This order applies to all persons engaged in the rescue and recovery operation and any other persons onsite. This order was initially issued verbally to the mine operator on February 1, 2014, at 5:32 p.m., and has now been reduced to writing.*

The order was terminated on February 6, 2014, after conditions that contributed to the accident no longer existed.

**Citation No. 8754503** - Issued under provisions of Section 104(a) of the Mine Act for a violation of 30 CFR 56.14105:

*A fatal accident occurred at this operation on February 1, 2014. A conveyor belt operator was using a long handled scraper to clean a buildup of material off of a belt return idler pulley on the 1,000 feet long Rahco M30X1500 conveyor belt. The victim was positioned on top of the lower section of the conveyor frame and under the return side of the belt. The belt conveyor did not have the power off and it was not blocked against hazardous motion.*

This citation was terminated on March 11, 2014. The operator has retrained the employees that work on or around the Rahco conveyor belt and equipment similar to the belt on the proper procedures to access and clean return idler pulleys safely.

**Citation No. 8754504** - Issued under provisions of Section 104(a) of the Mine Act for a violation of 30 CFR 56.14202:

*A fatal accident occurred at this operation on February 1, 2014. A belt operator was using a long handled scraper to clean a buildup of material off of a belt return idler pulley on the 1,000 feet long Rahco M30X1500 conveyor belt. The victim was positioned on top of the lower section of the conveyor frame and under the return side of the belt. The belt conveyor was in operation and did not have the power off and it was not blocked against hazardous motion.*

This citation was terminated on March 11, 2014. The operator has retrained the employees that work on or around the Rahco conveyor belt and equipment similar to the belt on the proper procedures to access and clean return idler pulleys safely.

**Citation No. 8754505**- Issued under provisions of Section 104(a) of the Mine Act for a violation of 30 CFR 56.14107(a):

*A fatal accident occurred at this operation on February 1, 2014. A belt operator was using a long handled scraper to clean a buildup of material off of a belt return roller on the 1,000 feet long Rahco M30X1500 conveyor belt. The victim was positioned on top of the lower section of the conveyor frame and under the return side of the belt. The belt conveyor did not have the power off and it was not blocked against hazardous motion. The return idler pulley was not guarded to protect persons from contacting or becoming entangled in the in-running point between the belt and the return idler pulley.*



This citation was terminated on March 11,2014. The Rahco conveyor belt had the return idler pulleys adequately guarded to protect miners accessing under the conveyor at the in-running point of the belt and pulley.

Approved By:  
Richard Laufenberg  
District Manager

Date: May 27, 2014

## **LIST OF APPENDICES**

Appendix A-Persons Participating in the Investigation  
Appendix B-Victim Data Information

## APPENDIX A

### Persons Participating in the Investigation

#### Gilbert Development Corporation (GDC)

Keith Gilbert	Vice President
LaVoy Woolsey	Safety Coordinator
Cory Moulden	Operations Superintendent
Peter Gould	Legal Representative
Bert Clegg	Shift Supervisor
Brooks Leach	Laborer
Jerry Webb	Heavy Equipment Operator
Kelly Jones	Miner
Jason Chappell	Miner
Jason Gillins	Miner
Norm Sherratt	Miner

#### Mine Safety and Health Administration

Michael Treloar	Mine Safety and Health Inspector
Fred Sanchez	Mine Safety and Health Specialist (Training)

# Appendix B

## Victim Data Information

### Accident Investigation Data - Victim Information

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



Event Number: 6 6 1 9 9 7 2

Victim Information: 1

1. Name of Injured/Ill Employee: <i>Mark F. Rowley</i>		2. Sex <i>M</i>	3. Victim's Age <i>56</i>	4. Degree of Injury: <i>01 Fatal</i>	
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death: <i>a. Date: 02/01/2014 b. Time: 19:51</i>			6. Date and Time Started: <i>a. Date: 02/01/2014 b. Time: 7:00</i>		
7. Regular Job Title: <i>101 Rahco Belt Operator</i>		8. Work Activity when Injured: <i>039 Cleaning a belt return idler pulley</i>		9. Was this work activity part of regular job? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
10. Experience a. This Work Activity: <i>0</i> Years <i>16</i> Weeks <i>0</i> Days		b. Regular Job Title: <i>0</i> Years <i>16</i> Weeks <i>0</i> Days		c. This Mine: <i>0</i> Years <i>44</i> Weeks <i>0</i> Days	
11. What Directly Inflicted Injury or Illness? <i>035 belt return idler pulley and conveyor be</i>		12. Nature of Injury or Illness: <i>370 Trauma due to 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 checked="" 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)			17. Union Affiliation of Victim: <i>9999 None (No Union Affiliation)</i>		