

MAI-2017-09

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

**REPORT OF INVESTIGATION
Surface Facility
(Cement)**

**Fatal Falling, Rolling or Sliding Rock/Material Accident
September 20, 2017**

**Industrial Access
Contractor I.D. No. A6269**

at

**Argos Roberta Cement Plant
Calera, Shelby County, Alabama
Mine I.D. 01-00629**

Investigators

**Curtis Roth
Supervisory Mine Safety and Health Inspector**

**Jason Wakefield
Mine Safety and Health Inspector**

Originating Office

**Mine Safety and Health Administration
Southeastern District
1030 London Drive, Suite 400
Birmingham, AL 35211
Samuel K. Pierce, District Manager**

Table of Contents

OVERVIEW	1
GENERAL INFORMATION	2
DESCRIPTION OF THE ACCIDENT	2
INVESTIGATION OF THE ACCIDENT.....	3
DISCUSSION	4
Weather	4
Training and Experience	4
Downcomer Duct.....	4
Helmet.....	4
ROOT CAUSE ANALYSIS.....	5
CONCLUSION.....	5
ENFORCEMENT ACTIONS.....	6
APPENDIX A – Persons Participating in the Investigation	8
APPENDIX B – Photos	9
APPENDIX C – Victim Information.....	11



OVERVIEW

Zakery Schmidt, a 28-year old Rope Access Technician, died on September 20, 2017, while measuring wall thickness inside a downcomer duct. Schmidt was rappelling inside a 318-foot vertical duct tower when an object fell from above and struck him on the head. After first responders extricated Schmidt from the duct, they transported him to a hospital where he died of his injuries the following day. No one witnessed the accident.

The accident occurred because the mine operator and the contractor company did not provide oversight to ensure all parties utilized proper and safe work procedures for inspecting and working in the duct. In addition, the contractor company did not conduct adequate workplace examinations to identify hazards so appropriate corrective actions could be taken.

GENERAL INFORMATION

Argos Roberta Plant (Argos), a cement plant owned and operated by Argos USA LLC, is located in Calera, Shelby County, Alabama. The Plant Manager for the operation is Anthony Perry. Travis Reed is the Safety, Environmental & Public Affairs Manager. The facility operates seven days per week with two twelve-hour shifts per day. Total employment is 169 persons.

The plant processes materials into cement and loads it into trucks and railroad cars for shipment to customers. The cement plant has one kiln, two finish mills, and four cement silos. The Mine Safety and Health Administration (MSHA) completed the last regular inspection at this operation on August 29, 2017.

DESCRIPTION OF THE ACCIDENT

On September 20, 2017, Zakery Schmidt (victim), an employee of Industrial Access, reported to work at 7:00 a.m. Argos hired Industrial Access to measure the thickness of the vertical downcomer duct (duct) walls to determine if excessively worn areas could be repaired. On the day prior to the accident, Ryan Atkinson, an employee of Industrial Access, measured wall thicknesses to a point approximately 108 feet below the top of the duct.

The victim travelled to the top of the 10-foot diameter duct and prepared to enter at approximately 8:45 a.m. He used a Petzl I'D self-braking descender/belay device to rappel down the duct and a REED, TM-8811 Ultrasonic Thickness Gauge to make thickness measurements of the duct wall starting at approximately 118 feet from the top of the 318-foot high duct (10 feet below where Atkinson stopped measuring the previous day).

At approximately 11:25 a.m., Mike Rachels, plant operator with Argos, and Tony Wellington, employee of Industrial Access, heard a loud noise and saw dust rising through the duct. Wellington indicated he knew something had happened right away when he heard material falling in the duct. Wellington and Rachels tried to contact Schmidt with a handheld radio but did not receive a response. Wellington notified supervisor, Chris Ledbetter, the Project Manager for Industrial Access. Rachels notified his supervisor, Doug Fredericks, the Argos Maintenance Inspector.

Ledbetter walked to the bottom of the downcomer duct sludge bin portal. He noticed dust coming from the exit portal and attempted to contact Schmidt over the radio. Receiving no response, Ledbetter banged on the duct wall, called to Schmidt, and used a flashlight in an attempt to get a response. Ledbetter contacted Wellington and instructed him to go into the duct to rescue Schmidt.

Wellington entered the duct and rappelled down to Schmidt's location. At approximately 100 feet from the top of the duct, Wellington reported seeing nothing but dust. Wellington located the unconscious Schmidt, approximately 31 feet from the bottom of the duct hanging from his rope, wearing a bloody dust mask and covered in dust. Wellington hooked Schmidt to his rope and lowered Schmidt and himself to the bottom of the duct.

Ledbetter and Eric Jones, Argos First Responder Team Member, removed Schmidt from the duct through the opening of the sludge bin hopper. Ledbetter and Jones performed an initial assessment of Schmidt's condition. Schmidt was wearing a Petzl Vertex Best helmet. The helmet sustained damage during the accident, indicating material struck the helmet with significant overhead force. After regaining consciousness, Schmidt began complaining of a leg injury. Ledbetter noticed Schmidt's bloody dust mask and instructed Rachels to call 911.

The Paramedics arrived at 11:41 a.m. and transported Schmidt to UAB Hospital in Birmingham, Alabama. In addition to a broken left femur, Schmidt suffered skull and brain injuries, and surgeons performed emergency surgery. They were unable to stabilize Schmidt, who succumbed to his brain injuries the following day, September 21, 2017. Hospital personnel determined the cause of death to be multiple blunt force injuries.

INVESTIGATION OF THE ACCIDENT

Attorney Anthony Tilton called the Department of Labor's National Contact Center (DOLNCC) at 1:55 p.m. CST on September 20, 2017, to notify MSHA of the accident. The DOLNCC contacted David Allen, MSHA Southeast District Safety Specialist, and an investigation began. Upon arrival at the mine, an Authorized Representative of the Secretary of Labor, MSHA, issued an order pursuant to Section 103(k) of the Federal Mine Safety & Health Act of 1977. A non-contributory citation was issued to the contractor for failure to comply with 30 CFR § 50.10, which requires the operator to immediately contact MSHA at once without delay and within 15 minutes once the operator knows or should know that an accident has occurred.

MSHA's accident investigation team conducted a physical inspection of the accident scene, interviewed employees, reviewed training documentation, and examined work procedures relevant to the accident. MSHA conducted the investigation with the assistance of mine management and contractor management personnel. In the course of the investigation, MSHA interviewed employees of the mine, as well as contractor personnel. There were no eyewitnesses to the accident.

DISCUSSION

Weather

The temperature was 80° Fahrenheit with a clear sky at the time of the accident. Investigators did not consider weather to be a factor in the accident.

Training and Experience

Schmidt had experience climbing and rappelling at heights of over 370 feet and had more than 800 hours of “rope time” as a rappeller. He had 14 weeks and 4 days experience as a Rope Technician for Industrial Access. Investigators determined no one provided proper hazard recognition training to him for performing work inside the duct.

Downcomer Duct

The downcomer duct is 318 feet high and 10 feet in diameter. Dust enters the bag house system through ducts from the finish mill. The heavy dust drops to the sludge bin hopper. A screw system grinds and moves the heavy dust material. Leftover material drops to the ground for removal.

Investigators learned miners routinely heard material falling inside the duct. The size and weight of the falling material was not possible to measure because the material would breakup on contact. The investigation revealed large amounts of caked material along inside the duct near the top.

Helmet

Schmidt was wearing a Petzl Vertex Best helmet. The helmet was damaged during the accident, indicating material struck the helmet with significant overhead force. The helmet had two broken headliner clips and the shell of the helmet where the clips were attached was deformed (see Appendix B, Photo 2). Investigators found a large, elliptical-shaped, discolored area on the helmet (see Appendix B, Photo 3).

ROOT CAUSE ANALYSIS

Investigators conducted a root cause analysis and identified the following root causes.

- *Root Cause:* The mine operator and the contractor company did not provide oversight to ensure all parties utilized proper and safe work procedures for inspecting and working in the duct.

Corrective Action: The mine operator revised its procedures for working in a confined space and retrained all its employees in the revised procedures. The contractor used the operator's procedures and retrained its employees.

- *Root Cause:* The contractor company did not conduct adequate workplace examinations to identify hazards so appropriate corrective actions could be taken.

Corrective Action: The contractor company introduced comprehensive workplace examination policies related to identifying hazardous conditions and provided training to the miners.

CONCLUSION

Zakery Schmidt was fatally injured while measuring wall thickness inside a downcomer duct. Schmidt was rappelling inside a 318-foot vertical duct tower when an object fell from above and struck him on the head. The accident occurred because the mine operator and the contractor company did not provide oversight to ensure all parties utilized proper and safe work procedures for inspecting and working in the duct. In addition, the contractor company did not conduct adequate workplace examinations to identify hazards so appropriate corrective actions could be taken.

ENFORCEMENT ACTIONS

Issued to ARGOS USA LLC (Mine Operator)

Order No. 8904067 - issued September 20, 2017, pursuant to Section 103(k) of the Federal Mine Safety & Health Act of 1977:

A serious accident occurred at the mine that resulted in a contractor miner receiving critical injuries. Due to the nature of the accident, this order is issued to protect the miners from accessing the area, and preserve the scene. This order was issued verbally to the plant manager, Tony Perry, at 1912 on 20 September, 2017.

Citation No. 8912401 - issued pursuant to Section 104(a) of the Federal Mine Safety & Health Act of 1977 for a violation of 30 CFR § 56.11001 Safe Access:

On September 20, 2017, a serious accident occurred which resulted in a fatality when a miner succumbed to his injuries the following day. Safe means of access was not provided and maintained inside the Downcomer Duct while work was being performed.

Issued to Industrial Access (Independent Contractor - A6269)

Citation No. 8912404 – issued pursuant to Section 104(d)(1) of the Federal Mine Safety & Health Act of 1977 for a violation of 30 CFR § 56.11001 Safe Access:

On September 20, 2017, a serious accident occurred which resulted in a fatality when a miner succumbed to his injuries the following day. Safe means of access was not provided and maintained inside the Downcomer Duct while work was being performed. The Project Manager/Supervisor, Chris Ledbetter, engaged in aggravated conduct constituting more than ordinary negligence by not ensuring this location can be safely traveled through the Downcomer Duct. This is an unwarrantable failure to comply with a mandatory standard.

Order No. 8912405 – issued pursuant to Section 104(d)(1) of the Federal Mine Safety & Health Act of 1977 for a violation of 30 CFR § 56.18002(a) Examination of Working Places:

On September 20, 2017, a serious accident occurred which resulted in a fatality when the miner succumbed to his injuries the following day. The contractor work area was not examined for conditions which may adversely affect safety or health. Chris Ledbetter engaged in aggravated conduct constituting more than ordinary negligence by not conducting a work place exam in the area or in the Downcomer Duct. This violation is an unwarrantable failure to comply with a mandatory standard.

Order No. 8912406 – issued pursuant to Section 104(d)(1) of the Federal Mine Safety & Health Act of 1977 for a violation of 30 CFR § 46.7(a) Task Training:

On September 20, 2017, a serious accident occurred which resulted in a fatality when the miner succumbed to his injuries the following day. The victim, a contractor rope technician, entered into the Downcomer Duct and did not identify the hazard of loose material that had built up on the walls inside the Downcomer Duct. A piece of material fell off the wall and struck the miner, resulting in a fatal injury. The Project Manager/Supervisor Chris Ledbetter engaged in aggravated conduct constituting more than ordinary negligence by allowing the victim to enter the duct without the Task Training required to identify serious safety hazards that may be encountered during the course of the job. This violation is an unwarrantable failure to comply with a mandatory standard.

Approved: _____ Date: _____

Samuel K. Pierce

Southeastern District Manager

APPENDIX A – Persons Participating in the Investigation
(Persons interviewed are indicated by a * next to their name)

Argos USA LLC

Travis Reed	Safety, Environmental & Public Affairs Manager
Nick Trout*	Maintenance Manager
Shawn Wythe*	Production Manager
Earl Bamberg	Miners' Representative
Eric Jones*	Production Operator / 1 st Responder Team
Rocky Johnson*	Production Assistant / 1 st Responder Team
Justin Mims*	Production Assistant / 1 st Responder Team
Doug Fredericks*	Maintenance Inspector
Chris Golden*	Process Assistant
Mike Rachels*	Plant Operator / 1 st Level Inspector

Industrial Access

Steve Green	Production Manager
Chris Ledbetter*	Project Manager
John Susong	Business Development
Tony Wellington*	Rope Technician
Ryan Atkinson*	Rope Technician

Regional Paramedical Services

Christopher Fenley	EMT
Michael Barnes	EMT

Calera Fire & Rescue

Renan Conte	Fire Medic
Jason Edmondson	Apparatus Operator
William Johnstone	Lieutenant

Mine Safety and Health Administration

Curtis Roth	Supervisory Mine Safety and Health Inspector
Jason Wakefield	Mine Safety and Health Inspector
Alan Coburn	Supervisory Mine Safety and Health Specialist

APPENDIX B – Photos



Photo 1 – Material caked on duct walls



Photo 2 – Broken headliner clips and helmet deformities



Photo 3 – Location of apparent impact

APPENDIX C – Victim Information

Accident Investigation Data - Victim Information

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



Event Number:

6	7	9	4	4	1	2
---	---	---	---	---	---	---

Victim Information: 1															
1. Name of Injured/Ill Employee: <i>Zakery Schmidt</i>				2. Sex: <i>M</i>		3. Victim's Age: <i>28</i>		4. Degree of Injury: <i>01 Fatal</i>							
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death: <i>a. Date: 09/21/2017 b. Time: 10:39</i>								6. Date and Time Started: <i>a. Date: 09/20/2017 b. Time: 7:00</i>							
7. Regular Job Title: <i>199 Rope Access Technician</i>				8. Work Activity when Injured: <i>098 Measuring duct wall thickness</i>				9. Was this work activity part of regular job? <table style="width: 100%;"><tr><td style="width: 50%; text-align: center;">Yes</td><td style="width: 50%; text-align: center;"><input checked="" type="checkbox"/> No</td></tr></table>						Yes	<input checked="" type="checkbox"/> No
Yes	<input checked="" type="checkbox"/> No														
10. Experience		Years		Weeks		Days		b. Regular		Years		Weeks		Days	
a. This								c. This		Years		Weeks		Days	
Work Activity:		<i>0</i>		<i>14</i>		<i>4</i>		Job Title:		<i>0</i>		<i>14</i>		<i>4</i>	
11. What Directly Inflicted Injury or Illness? <i>127 Falling material</i>								12. Nature of Injury or Illness: <i>370 Multiple blunt force injuries</i>							
13. Training Deficiencies:															
Hazard:		<input checked="" type="checkbox"/>		New/Newly-Employed Experienced Miner:				Annual:				Task:		<input checked="" type="checkbox"/>	
14. Company of Employment: (If different from production operator) <i>Industrial Access</i>										Independent Contractor ID: (if applicable) <i>A6269</i>					
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 None (No Union Affiliation)</i>							