FAI-6915008-1

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

REPORT OF INVESTIGATION

Underground
(Marble)

Fatal Machinery Accident
December 13, 2021

Imerys Carbonates USA, Inc
Whitestone Mine #4
Marble Hill, Pickens County, Georgia
ID No. 09-00047

Accident Investigators

Randall Dickerson
Mine Safety and Health Inspector

Kevin Hardester
Supervisory Mine Safety and Health Inspector

Originating Office
Mine Safety and Health Administration
Birmingham District
1030 London Drive, Suite 400
Birmingham, AL 35211
Mary Jo Bishop, District Manager

TABLE OF CONTENTS

OVERVIEW

On December 13, 2021, at approximately 8:45 a.m., William Dutton, a 49 year-old mine utility operator with over four years of mining experience, died when he became entangled in the rotating drill steel of a roof bolting machine.

The accident occurred because: 1) the equipment was not de-energized and blocked against hazardous motion before engaging in maintenance or repairs, and 2) the mine operator did not provide roof bolters with adequate task training in the safe operation of the equipment.

GENERAL INFORMATION

Imerys Carbonates USA, Inc owns and operates Whitestone Mine #4. This mine is an underground marble mine located in Whitestone, Pickens County, Georgia. The mine employs 40 miners and operates one twelve-hour shift, five days per week. Miners drill and blast marble, and load the blasted material onto haul trucks with a front-end loader. After loading, the material is transported to the processing facility located outside where the marble is crushed and processed before it is stockpiled/stored for sale.

The principal management officials for Whitestone Mine #4 at the time of the accident were:

Christopher Dibiase	Operations Manager
Sonny Pierce	Production Supervisor

The Mine Safety and Health Administration (MSHA) completed the last regular safety and health inspection at this mine on July 15, 2021. The 2020 non-fatal days lost incident rate for Imerys Carbonates USA, Inc was 1.59, compared to the national average of 1.37 for mines of this type.

DESCRIPTION OF THE ACCIDENT

On December 13, 2021, at 5:00 a.m., Dutton started his shift by attending the morning production meeting. After the meeting, Dutton traveled underground to operate the roof bolting machine that was parked in the 740-parking area. The 740-parking area is an area of the underground mine reserved for the parking, service, and repair of mining equipment. This was Dutton's first time using this roof bolting machine since he last operated it on October 18, 2021. During the pre-operational inspection of the roof bolting machine, Dutton discovered a leaking O-ring oil seal and replaced it. Dutton trammed the machine approximately 1,000 feet to a heading where he began installing roof bolts.

At approximately 7:00 a.m., as Adam Keener, Mechanic, was traveling near the 740-parking area, he noticed that the roof bolting machine was parked and stopped to see if there was a problem with it. Dutton told Keener that a hydraulic hose near the roof bolting machine's drill steel was leaking and needed repair. Keener replaced the leaking hose and left the 740-parking area at 7:45 a.m. While leaving, Keener saw Dutton inside the cab of the roof bolting machine. Keener noticed the boom was approximately 50 inches above the mine floor in the low horizontal position, used when tramming the machine between working places.

At 8:45 a.m., Joseph Towery, Mine Supervisor, and Kerry Dills, Maintenance Mechanic, drove by the 740-parking area and noticed the roof bolting machine was parked there. As Towery and Dills pulled into the shop area, they could see Dutton outside the cab of the roof bolting machine, standing near the drill steel. As Towery approached Dutton to see if there was a problem, he noticed that the roof bolting machine was running. He observed Dutton's shirt and safety vest entangled in the drill steel and found Dutton to be unresponsive. Towery alerted Dills, who rushed to the cab of the roof bolting machine and shut off the power by hitting the emergency stop button. Dills then went to Dutton and began untangling his clothing to free him from the drill steel as Towery went to the mine radio to call for help and to retrieve the automated external defibrillator (AED). When Towery returned, Dills had freed Dutton from the drill steel and was laying him on the ground.

Having heard the emergency call on the mine radio, Stephen Fritts, Mechanic; Patrick Tucker, Mine Planner; and Matthew Keener, Mechanic, traveled to the accident scene. At 8:57 a.m., Towery exited the mine to call 911 and to wait for the emergency responders to escort them to the accident scene upon arrival. Tucker and Keener began performing cardiopulmonary

resuscitation on Dutton and continued until emergency responders arrived. At 9:27 a.m., paramedics from Pickens County EMS arrived at the accident scene, connected the AED, and determined that Dutton could not be revived. At 10:26 a.m., Mark Godfrey, Coroner, arrived at the mine and declared Dutton deceased.

INVESTIGATION OF THE ACCIDENT

On December 13, 2021, at 9:12 a.m., Steven Stillsmith, Safety Manager for Imerys Carbonates USA, Inc., called the Department of Labor National Contact Center (DOLNCC) to report the accident. At 9:25 a.m., DOLNCC contacted David Allen, Assistant District Manager. Allen contacted Brian Thompson, Assistant District Manager, who sent Robert Ashley, Supervisory Mine Safety and Health Inspector, and Cody Miner, Mine Safety and Health Inspector, to the mine.

At 12:00 p.m., Ashley issued an order under the provisions of Section 103(k) of the Mine Act to assure the safety of the miners and preservation of evidence. Thompson then contacted Kevin Hardester, Supervisory Mine Safety and Health Inspector, and assigned him as the lead accident investigator. Thompson also contacted Randall Dickerson, Mine Safety and Health Inspector, to assist in the accident investigation. Brett Calzaretta, Mine Safety and Health Training Specialist, reviewed training records.

On December 14, 2021, at 9:00 a.m., the accident investigation team arrived at the mine site to conduct the investigation. MSHA's accident investigation team examined the accident scene, interviewed management, the miners' representative, miners, and other relevant personnel, and reviewed conditions and work practices relevant to the accident. The miners are represented by the United Steelworkers. Douglas Harper, Haul Truck Operator, served as the miners' representative during the investigation. See Appendix A for a list of persons who participated in the investigation.

DISCUSSION

Location of the Accident

The accident occurred at the 740-parking area in front of the underground maintenance shop. At the time of the accident, the roof bolting machine was the only piece of equipment parked in the 740-parking area (see Appendix B). Soon after the accident, a puddle existed on the ground near where the hydraulic hose had been replaced and where Dutton was found (see Appendix C). Investigators were unable to evaluate the fluid in the puddle because it had evaporated and/or seeped into the ground by the time they arrived.

Equipment Involved

The roof bolting machine involved in the accident was an Oldenberg model DPI1HD-RB3-8 Mechanical Roof Bolter purchased in 2015. The roof bolting machine consists of a diesel engine-powered main body, and a hydraulically manipulated articulating boom that houses the rock drill and roof bolt installation machinery. From within the enclosed operator's cab, the roof bolting machine operator can remotely drill holes and install bolts into the mine's roof and pillars to stabilize the mine's tunnels.

The investigators and David Middleton, Service Technician with Lakeshore Systems, Inc., examined the roof bolting machine and did not find any defects that may have contributed to the accident.

Events Leading Up to the Accident

Between 7:45 a.m., when Keener left Dutton in the 740-parking area, and 8:45 a.m., when Towery discovered Dutton, no other miners observed Dutton in the 740-parking area. Based on their review of the accident scene and interviews, investigators believe that Dutton exited the cab of the roof bolting machine, with the equipment running, to assure that all of the leaks had been repaired because:

1) He stopped bolting and trammed the roof bolting machine approximately 1,000 feet back to the 740-parking area, where equipment repairs are normally made, and where no roof bolts needed to be installed,
2) He had reported that a hydraulic hose near the drill steel was leaking,
3) A mechanic had just replaced one of the hydraulic hoses,
4) A puddle existed below several hydraulic hoses near the drill steel,
5) Based on interviews, he was known to make repairs to the machine by himself,
6) Based on interviews and past experience, if the repairs had been completed, he would have been expected to tram the machine back to the working place (without getting out of the cab), and
7) With the drill steel in the horizontal position, and with no roof bolting necessary in that area, there was no reason to rotate the drill steel except to expose leaks.

Additionally, leaks were found on the roof bolting machine when it was examined after the accident.

As Dutton approached the rotating drill steel, it entangled his shirt and safety vest and pulled him tightly against the roof bolting machine, causing asphyxiation. To safely evaluate the repairs, the power should have been de-energized and the equipment should have been blocked against hazardous motion.

Training and Experience

Investigators reviewed the training records and determined that Dutton received training as required in MSHA Part 48 training regulations; however, investigators concluded that the task training provided to Dutton was inadequate.

The task training provided by the mine operator did not incorporate the manufacturer's manual for the Oldenberg roof bolting machine, which specifically addresses the hazards to miners when exiting the cab while the equipment is running. The manufacturer's manual states, "Stay clear of rotating drivelines. Be alert when working around rotating drivelines. Entanglement in rotating driveline can cause serious injury or death. Stop engine and be sure driveline is stopped before performing maintenance. Keep hands, feet, hair, and clothing clear of rotating parts."

Additionally, approved training plan had a matrix of tasks that included safe operating procedures, descriptions of the training for all equipment in the mine, and a requirement that manufacturer's manuals be incorporated into the training. However, this written matrix of tasks did not include the roof bolting machine. Investigators concluded that inadequate task training contributed to the accident.

Workplace Examinations

The investigators reviewed the mine operator's workplace examination records and did not find any deficiencies that contributed to the accident.

ROOT CAUSE ANALYSIS

The accident investigation team conducted an analysis to identify the underlying causes of the accident. The team identified the following root causes, and the mine operator implemented the corresponding corrective actions to prevent a recurrence.

1. Root Cause: The mine operator did not assure that the equipment was de-energized and blocked against hazardous motion, before engaging in maintenance or repairs.

   Corrective Action: The mine operator developed and implemented written procedures that included de-energizing, locking-out and tagging-out, and blocking equipment against hazardous motion, before engaging in maintenance or repairs. The mine operator trained all affected miners in the new procedures.

2. Root Cause: The mine operator did not provide roof bolting machine operators with adequate task training in the safe operation of the equipment.

   Corrective Action

   The mine operator revised the training plan to include the roof bolting machine by adding: 1) a revised matrix of tasks that included the roof bolting machine, 2) safe operating procedures for the roof bolting machine, 3) a description of how the task training will be conducted, 4) a description of the information to be covered in the task training, and 5) a requirement that the manufacturer's manual be incorporated into the training. MSHA approved the revised training plan and the mine operator provided the revised task training to all affected miners.

CONCLUSION

On December 13, 2021, at approximately 8:45 a.m., William Dutton, a 49 year-old mine utility operator with over four years of mining experience, died when he became entangled in the rotating drill steel of a roof bolting machine.

The accident occurred because: 1) the equipment was not de-energized and blocked against hazardous motion before engaging in maintenance or repairs, and 2) the mine operator did not provide roof bolters with adequate task training in the safe operation of the equipment.

Approved By:

_____ _____

Mary Jo Bishop Date
District Manager

ENFORCEMENT ACTIONS

1. A 103(k) order was issued to Imerys Carbonates USA, Inc.

   A fatal accident occurred on December 13, 2021, at approximately 8:45 a.m. This order is being issued under the authority of the Federal Mine Safety and Health Act of 1977, under Section 103(k) to insure the safety of all persons at the mine, and requires the operator to obtain the approval of an authorized representative of MSHA of any plan to recover any person in the mine or to recover the mine or affected area. This order prohibits any activity in the affected area. The operator is reminded of the obligation to preserve all evidence that would aid in investigating the cause or causes of the accident in accordance with 30 CFR 50.12.

2. A 104(a) citation was issued to Imerys Carbonates USA, Inc. for a violation of 30 CFR 57.14105.

   A fatal accident occurred at this operation on December 13, 2021, when a mine utility operator became entangled in a rotating drill steel on the Oldenberg model DPI1HD-RB3-8 roof bolting machine, serial number 203210, located in the 740-parking area. The roof bolting machine was not powered off and blocked against hazardous motion before repairs or maintenance was performed.

3. A 104(d)(1) citation was issued to Imerys Carbonates USA, Inc. for a violation of 30 CFR 48.7(a)(1).

   A fatal accident occurred at this operation on December 13, 2021, when a mine utility operator became entangled in a rotating drill steel on the Oldenberg model DPI1HD-RB3-8 roof bolting machine, serial number 203210, located in the 740-parking area. The hazard of a rotating drill steel presented an imminent danger to any persons who were close enough to contact it. The mine operator did not provide sufficient training to the mine utility operator, resulting in fatal injuries. The task training provided by the mine operator did not incorporate the manufacturer's manual which specifically addresses the hazards to miners exiting the cab while the roof bolting machine is in motion. The manufacturer's manual states, "Stay clear of rotating drivelines. Be alert when working around rotating drivelines. Entanglement in rotating driveline can cause serious injury or death. Stop engine and be sure driveline is stopped before performing maintenance. Keep hands, feet, hair, and clothing clear of rotating parts." The mine operator had a written matrix of tasks that included safe operating procedures, descriptions of the training for all equipment in the mine, and a requirement that manufacturer's manuals be incorporated in the training. However, this written matrix of tasks did not include the roof bolting machine. The mine operator engaged in aggravated conduct constituting more than ordinary negligence in that the mine operator did not assure that sufficient task training was provided. This violation is an unwarrantable failure to comply with a mandatory standard.

APPENDIX A – Persons Participating in the Investigation

Imerys Carbonates USA, Inc

John Brooker	Operations Manager
Tommy Loudermilk	Underground Operations Manager
Christopher England	Director Employee Safety and Health
Steven Stillsmith	Safety Manager
Joseph Towery	Mine Supervisor
Patrick Tucker	Mine Planner
Kerry Dills	Maintenance Mechanic
Stephen Fritts	Mechanic
Adam Keener	Mechanic
Matthew Keener	Mechanic

United Steelworkers Miners' Representative

Douglas Harper	Haul Truck Operator

Pickens County Sheriff's Office

John Cagle	Captain
Taylor Cantrell	Detective

Pickens County Coroner's Office

Mark Godfrey	Coroner

Pickens County EMS

Jody Collis	Chief
Scott Hoke	Paramedic
Robert Krummert	Paramedic

Lakeshore Systems, Inc.

David Middleton	Service Technician

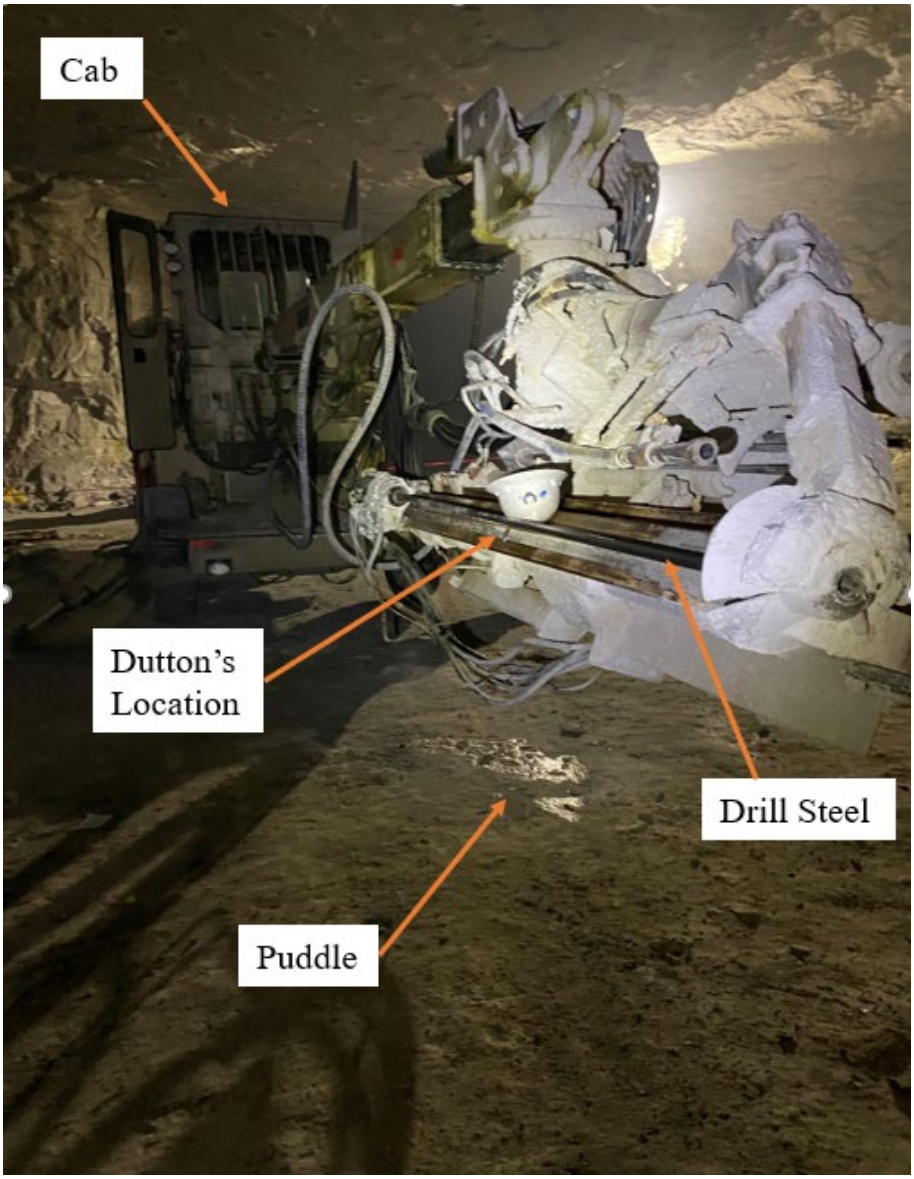
Mine Safety and Health Administration

David Allen	Assistant District Manager
Brian Thompson	Assistant District Manager
Robert Ashley	Supervisory Mine Safety and Health Inspector
Kevin Hardester	Supervisory Mine Safety and Health Inspector
Randall Dickerson	Mine Safety and Health Inspector
Cody Miner	Mine Safety and Health Inspector
Brett Calzaretta	Mine Safety and Health Training Specialist

APPENDIX B – Accident Scene

Photograph of the rear of the roof bolting machine, parked in the 740-parking area.

APPENDIX C – Equipment Involved



Photograph of the roof bolting machine boom, from the front.