FAI-6915004-1

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

REPORT OF INVESTIGATION

Surface
(Dimensional Granite)

Fatal Falling, Rolling, or Sliding Rock or Material of Any Kind Accident
July 28, 2021

Boyd/Echols Mill North
Echols Mill Quarries LLC
Elberton, Elbert County, Georgia
ID No. 09-00057

Accident Investigators

Timothy Schmidt
Mine Safety and Health Inspector

Rory Smith
Staff Assistant

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

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OVERVIEW

On July 28, 2021, at 10:05 a.m., Alfredo Zavala, a 42 year-old ledge foreman with approximately 12 years of mining experience, died when the granite block he was working on broke and fell, causing Zavala to fall approximately 47 feet to a lower granite bench.

The accident occurred because the mine operator did not: 1) assure that the miner was wearing fall protection in an area where there was a danger of falling; 2) conduct adequate ground condition examinations, which caused hazardous conditions to remain uncorrected; and 3) task train designated miners in examining ground conditions and did not task train all miners in the use of fall protection, including safety belts and lanyards, where there is a danger of falling.

GENERAL INFORMATION

Echols Mill Quarries LLC owns and operates the Boyd/Echols Mill North mine. This mine is a surface dimensional granite mine located in Elberton, Elbert County, Georgia. Boyd/Echols Mill North employs eight miners and operates one ten-hour shift, five days per week. The mine blasts, drills, burns, and manually separates dimensional granite in an open pit and transports the rock by truck to an offsite finishing mill.

The principal officers for Echols Mill Quarries LLC at the time of the accident were:

David Dye	Partner
Randy Smith	Partner
Chapin Phillips	Partner

New ownership reopened this mine in April 2021 after it had been abandoned for three years and eight months. The non-fatal days lost (NFDL) incident rate for Boyd/Echols Mill North was zero, compared to the national average of 1.23 for mines of this type.

DESCRIPTION OF THE ACCIDENT

On July 28, 2021, Shawn Callaway, Mine Foreman; Tracy Harris, Crane Operator; Jorge Medellin, Drill Operator; Alfredo Zavala, Ledge Foreman; Juan Medellin, Ground Utility Man; Victor Ibarra, Utility Man; Zaul Ledezma Rnas, Utility Man; and Jose Rodriquez, Utility Man, reported for work at their normal start time of 6:00 a.m. Miners discovered the mine had no electrical power at the beginning of the shift. The mine operator called a contractor for repair. While waiting for electrical power to be restored, the miners performed site preparation work, which included gathering tools and equipment, and transporting them by crane to the working face. Miners also cleaned up and shoveled on top of the working face to prepare for production. At approximately 8:45 a.m., Callaway conducted a blast with a primer cord to separate a rectangular block 26 feet long, five feet wide, and 12 feet deep, in the initial phase of quarrying the granite block from the bench.

At approximately 9:00 a.m., the contractor restored the electrical power and miners were able to begin production work. Miners lowered the scaffold against the long side of the block being quarried by crane to act as a working platform (see Appendix A). Zavala, Ibarra, Rnas, and Rodriquez accessed the scaffold by ladder, and Zavala measured and marked the block for manual breaking by the three other miners.

At approximately 9:45 a.m., Harris conducted a workplace examination of the area, which included the area being drilled, with no safety hazards identified. Jorge Medellin identified a visible crack in the rock face of the block being quarried, near the free edge of the granite bench. Jorge Medellin discussed safety concerns related to the crack with the miners working on the scaffolding, including Zavala. After marking and instructing the miners to break the block, Zavala moved to the top of the granite bench at the end of the block being quarried and began drilling a hole (see Appendix B). Zavala was not wearing fall protection. The crack had created a wedge-shaped block approximately 57 inches long and 60 inches wide at the free end of the main block being quarried (see Appendix C). At 10:05 a.m., the wedge-shaped block broke and fell, causing Zavala to fall approximately 47 feet to a lower granite bench (see Appendix D).

Harris called Callaway and informed him of the accident. Harris then called 911 at 10:09 a.m. Jorge Medellin traveled to the lower level and checked Zavala. He returned to the bench above and reported to Harris and Callaway that Zavala appeared to be dead. Elbert County Emergency Medical Services, including Charles Almond, Coroner, arrived at the mine at 10:20 a.m. and pronounced Zavala dead at 10:30 a.m.

INVESTIGATION OF THE ACCIDENT

On July 28, 2021, at 10:53 a.m., Robert Rutherford, Co-owner, called the Department of Labor National Contact Center (DOLNCC). The DOLNCC contacted Brian Thompson, Assistant District Manager, who sent Robert Ashley, Supervisory Mine Safety and Health Inspector, and Cody Minor, Mine Safety and Health Inspector, to the mine. At 1:21 p.m., Ashley issued a 103(k) order to assure the safety of the miners and preservation of evidence. Rory Smith, Staff Assistant, contacted Timothy Schmidt, Mine Safety and Health Inspector, and assigned him as the lead accident investigator.

Schmidt arrived at the mine site at 8:17 p.m. to begin the investigation. MSHA's accident investigation team conducted an examination of the accident scene, interviewed miners and mine management, and reviewed conditions and work procedures relevant to the accident. Norberto Ortiz, Mine Safety and Health Training Specialist, served as a Spanish translator for those interviewed that did not speak English. See Appendix E for a list of persons who participated in the investigation.

DISCUSSION

Location of the Accident

The accident occurred on the top granite bench in the pit area, which is an area of cleared granite rock approximately 100 feet long, 26 to 30 feet wide, and 12 feet deep. At the time of the accident, work was occurring to quarry a block of granite on the western end of the bench that was 26 feet long, five feet wide, and 12 feet deep.

Equipment Involved

Prior to the accident, Zavala was operating a Harper pneumatic hammer drill. Investigators determined that the drill did not contribute to the accident. As Zavala drilled into a granite block, a wedge-shaped block broke and fell.

Weather

The weather at the time of the accident was 83 degrees Fahrenheit with fair skies and a breeze of six miles per hour. Investigators determined that weather was not a contributing factor to the accident.

Training and Experience

Alfredo Zavala had approximately 12 years of mining experience, the last year of which was with Echols Mill Quarries LLC. Zavala worked as a ledge foreman for the four months since Boyd/Echols Mill North had been back in production. Brett Calzaretta, Mine Safety and Health Training Specialist, examined the mine's training plan, including Zavala's training records, and found he had received four and a half hours of newly hired experienced miner training on September 1, 2020.

A review of task training records indicated the mine operator did not task train designated miners in examining ground conditions and did not task train all miners in the use of fall protection, including safety belts and lanyards, where there is a danger of falling. Interviews with miners

indicated that Zavala, as a ledge foreman, was responsible for ground condition examinations and assuring miners were wearing fall protection when needed. Miners stated that Zavala performed ground condition examinations and ensured miners wore fall protection on a frequent basis. Investigators determined that the mine operator did not have adequate task training, which contributed to the accident.

Examinations

At approximately 8:45 a.m., Callaway performed a blast by inserting a detonating cord into a row of drilled holes in the top surface of the granite bench. The blast was intended to break 26 feet long by five feet wide by 12 feet deep block from the bench. After the blast, Callaway conducted only a post-blast examination to determine if all the cord had fired. Callaway did not examine the separated block after blasting for hazardous conditions and did not notice or address the visible crack in the block that other miners identified after the blast. Callaway did not use the scaffold after it was placed beside the separated block and was not in a location to identify any hazards that would be visible on the west side of the separated block.

At approximately 9:45 a.m., Harris conducted a workplace examination of the pit area, over three hours after work had begun. Harris' examination route did not put him in position to see the crack in the granite bench, so Harris did not identify and address the hazard. In addition, the mine operator did not have a procedure on when or how to conduct adequate ground condition examinations and testing. Investigators determined that inadequate examinations of ground conditions were contributing factors in the accident.

Work Practices

Zavala was not observed wearing fall protection at any time during the shift. At the time of the accident, Zavala was within six feet of the highwall edge, and was beyond the visible crack that the other miners identified. During an examination of the site, investigators could not identify any proper tie-off points for fall protection in the area Zavala was working. Fall protection in serviceable condition was present and available for use at the work site. The mine operator did not have procedures on wearing and using fall protection. Investigators determined that improper work practices in the use of fall protection was a contributing factor in 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 miner was wearing fall protection in an area where there was a danger of falling.

   Corrective Action: The mine operator developed and implemented written procedures regarding the proper type of fall protection to be used, when to use fall protection, how to don, and how to tie off/anchor the safety line. The mine operator trained all miners in the new procedures.

2. Root Cause: The mine operator did not conduct adequate ground condition and workplace examinations, which caused hazardous conditions to remain uncorrected.

   Corrective Action: The mine operator developed and implemented written procedures regarding proper examinations of ground conditions, when to conduct them, what to look for, and actions to take when hazards are identified. The mine operator trained all designated miners in the new procedures.

3. Root Cause: The mine operator did not task train designated miners in examining ground conditions and did not task train all miners in the use of fall protection, including safety belts and lanyards, where there is a danger of falling.

   Corrective Action: The mine operator developed and implemented a written procedure to assure designated miners receive training in accordance with MSHA Part 46 training regulations regarding specific tasks miners perform related to conducting ground/hazardous condition examinations. This new procedure also addressed training of all miners in the use of fall protection. The mine operator trained designated miners in the new procedure and specifically in conducting ground/hazardous condition examinations and all miners in the use of fall protection.

CONCLUSION

On July 28, 2021, at 10:05 a.m., Alfredo Zavala, a 42 year-old ledge foreman with approximately 12 years of mining experience, died when the granite block he was working on broke and fell, causing Zavala to fall approximately 47 feet to a lower granite bench.

The accident occurred because the mine operator did not: 1) assure that the miner was wearing fall protection in an area where there was a danger of falling; 2) conduct adequate ground condition examinations, which caused hazardous conditions to remain uncorrected; and 3) task train designated miners in examining ground conditions and did not task train all miners in the use of fall protection, including safety belts and lanyards, where there is a danger of falling.

Approved By:

_____ _____

Mary Jo Bishop Date
District Manager

ENFORCEMENT ACTIONS

1. A 103(k) order was issued to Echols Mill Quarries LLC on July 28, 2021.

   A fatal accident occurred on July 28, 2021, at 10:05 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(d)(1) citation was issued to Echols Mill Quarries LLC for violation of 30 CFR § 56.15005.

   A fatal accident occurred at this operation on July 28, 2021, when a miner fell from a rock ledge in the pit area. The miner was not wearing fall protection while working where there was a danger of falling. A section of rock broke in the area the miner was working and fell out, causing the miner to fall approximately 47 feet to the granite surface, resulting in his death.

   The mine operator engaged in aggravated conduct constituting more than ordinary negligence in that they did not assure miners wore fall protection where there was a danger of falling.

3. A 104(d)(1) order was issued to Echols Mill Quarries LLC for violation of 30 CFR § 56.3401.

   A fatal accident occurred at this operation on July 28, 2021, when a miner fell from a rock ledge in the pit area. A blast was conducted by the mine operator after which a crack formed in the working face of the pit. After blasting, adequate examinations of ground conditions were not conducted by an appropriate supervisor or other designated person experienced in examining and testing for loose ground conditions prior to work commencing, after blasting, and as conditions warrant during the work shift, to identify and correct hazardous ground conditions. A section of the quarry bench broke in the area the miner was working and fell out, causing the miner to fall approximately 47 feet to the granite surface below, resulting in his death.

   The mine operator engaged in aggravated conduct constituting more than ordinary negligence in that they did not assure an examination of ground conditions to identify and address hazards to miners was conducted after blasting and prior to work commencing. This is an unwarrantable failure to comply with a mandatory standard.

4. A 104(d)(1) order was issued to Echols Mill Quarries LLC for violation of 30 CFR § 46.7(a).

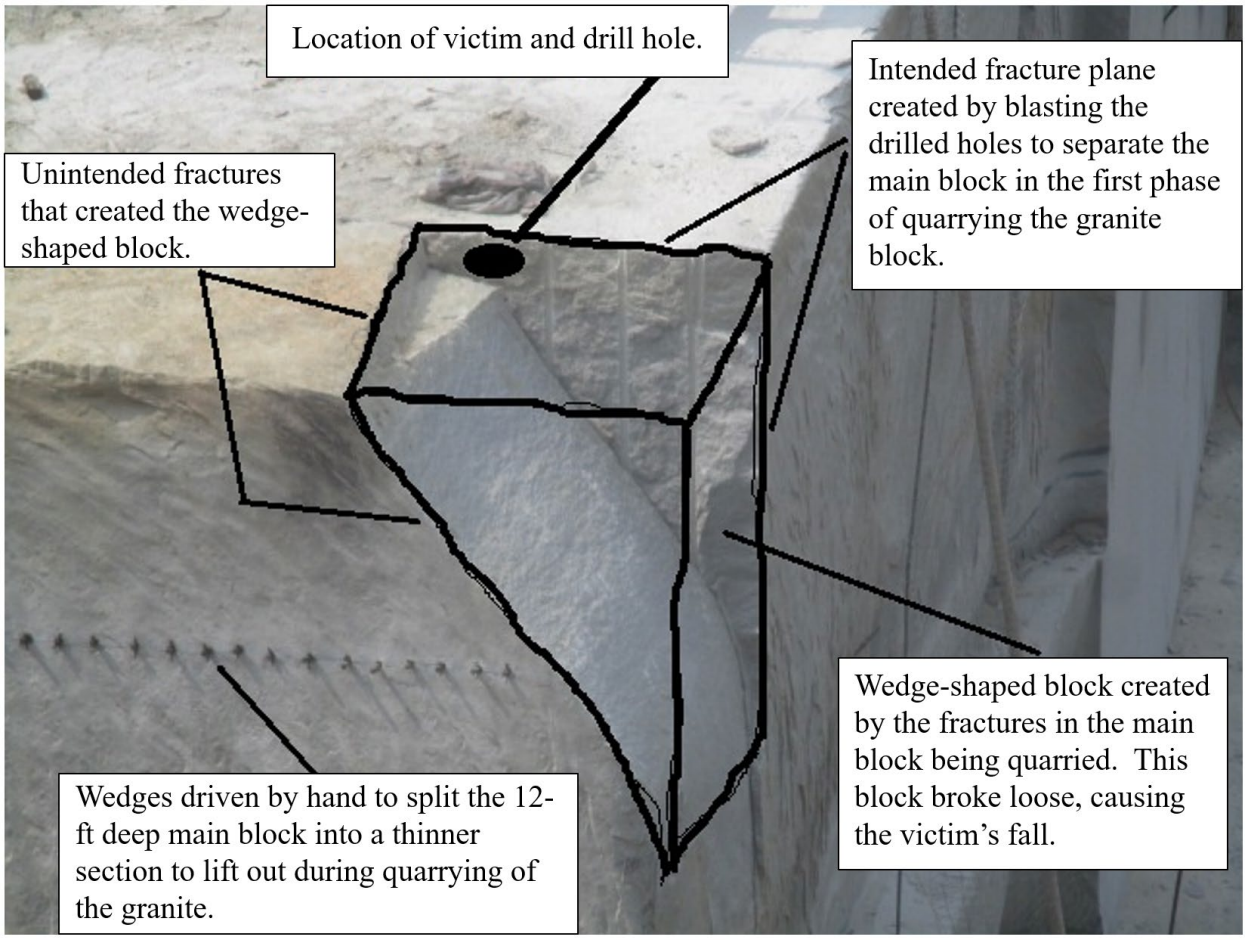
   A fatal accident occurred at this operation on July 28, 2021, when a miner fell from a rock ledge in the pit area. Designated miners were not provided MSHA required task training in the examination of ground conditions. Miners were not trained in the use of fall protection. Miners working on the elevated quarry bench were exposed to fall hazards and ground condition hazards on a frequent and regular basis. The mine operator did not conduct training to assure safe work practices while doing these tasks. While working without fall protection, ground condition hazards caused a miner to fall approximately 47 feet to granite surface below, resulting in his death.

   The mine operator engaged in aggravated conduct constituting more than ordinary negligence in that they did not provide adequate training in examining ground conditions for identification and correction of hazards and in the appropriate use of fall protection. This is an unwarrantable failure to comply with a mandatory standard.

APPENDIX A – Scaffold Used to Access the Working Face

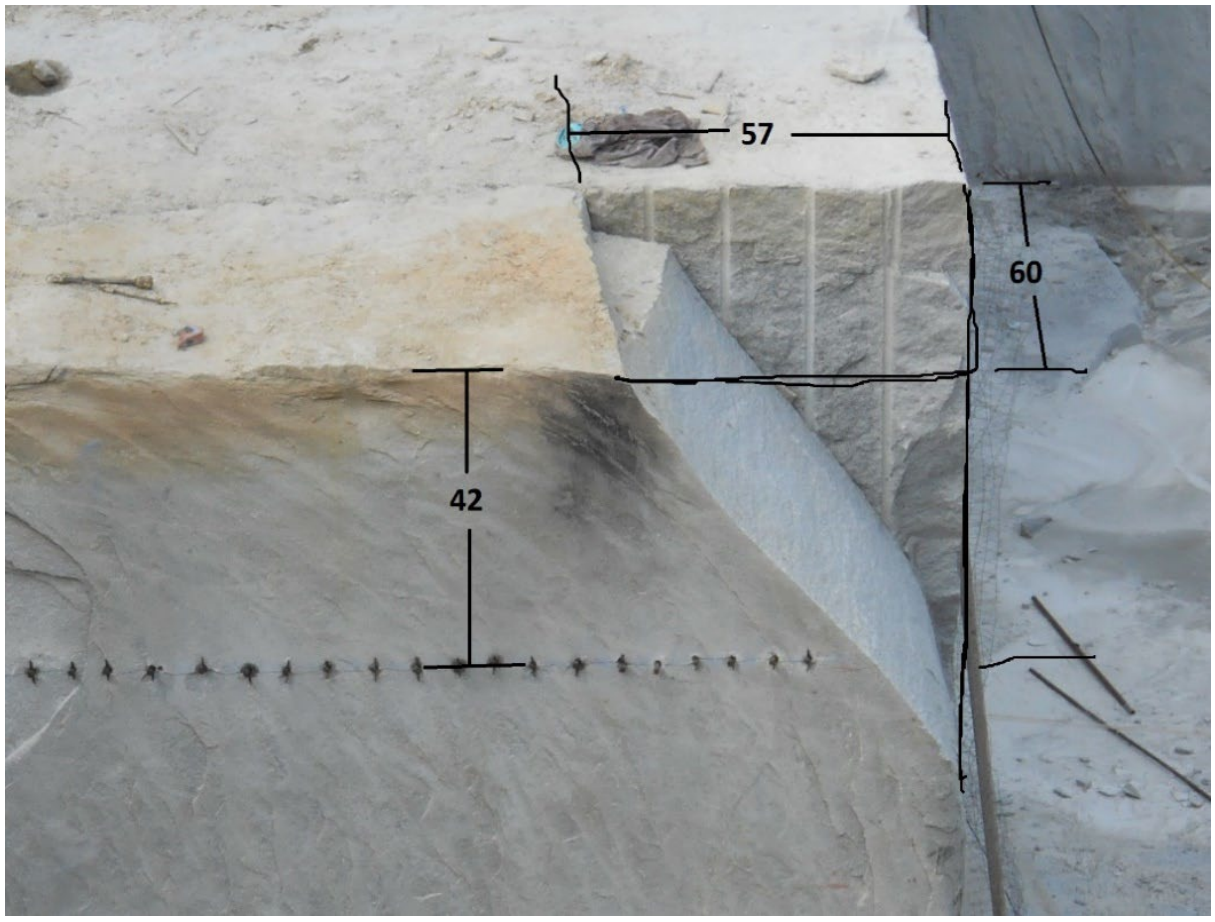
This scaffold was used to access the working face of the mining bench. A crane suspends the scaffold along the face of the mining bench.

APPENDIX B – Location of the Victim while Drilling



Zavala's location as he was drilling on the surface of the block in the wedge that was created by the crack. Annotations in the photograph indicate the drill hole location was within six feet of an edge where a fall would be significant.

APPENDIX C – Block Wedge Dimensions



Dimensions, shown in inches, of the wedge-shaped block that broke and fell, causing Zavala to fall.

APPENDIX D – View of Accident Scene

APPENDIX E – Persons Participating in the Investigation

Echols Mill Quarries LLC

David Dye	Partner
Robert Rutherford	Co-owner
Shawn Callaway	Mine Foreman
Tracy Harris	Crane Operator
Jorge Medellin	Drill Operator
Juan Medellin	Ground Utility Man
Victor Ibarra	Utility Man
Zaul Ledezma Rnas	Utility Man
Jose Rodriquez	Utility Man

Elbert County Coroner's Office

Charles Almond	Coroner

Elbert County Sheriff

Justin Greene	Officer

Elberton Granite Association

Mathew Pruitt	Association Safety Consultant

Mine Safety and Health Administration

Brian Thompson	Assistant District Manager
Rory Smith	Staff Assistant
Robert Ashley	Supervisory Mine Safety and Health Inspector
Cody Minor	Mine Safety and Health Inspector
Timothy Schmidt	Mine Safety and Health Inspector
Brett Calzaretta	Mine Safety and Health Training Specialist
Norberto Ortiz	Mine Safety and Health Training Specialist