FAI-6874690-1

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

REPORT OF INVESTIGATION

Underground
(Gold)

Fatal Machinery Accident
January 23, 2023

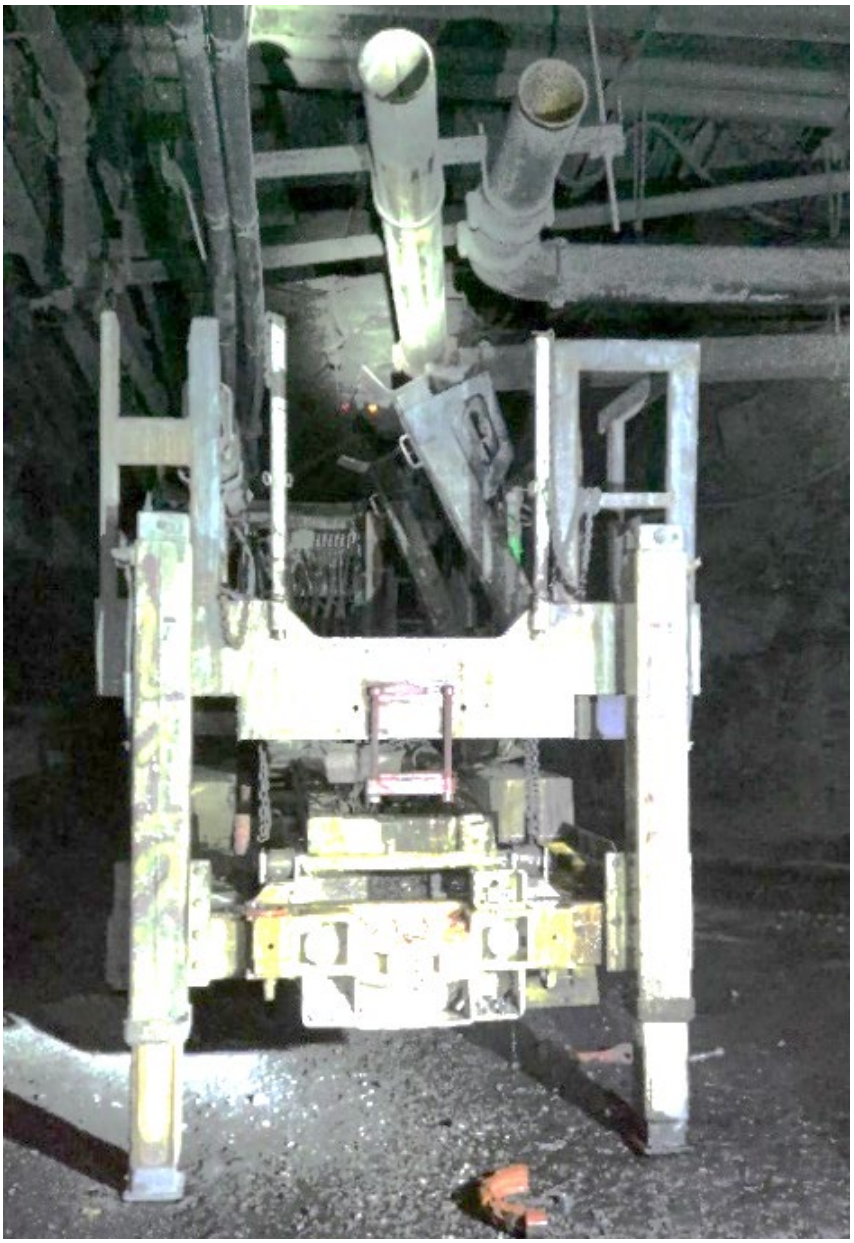
Meikle Mine
Nevada Gold Mines, LLC
Carlin, Eureka County, Nevada
ID No. 26-02246

Accident Investigator

Chad Hilde
Mine Safety and Health Inspector

Originating Office
Mine Safety and Health Administration
Vacaville District
991 Nut Tree Road
Vacaville, CA 95687
Gary Hebel, District Manager

TABLE OF CONTENTS



OVERVIEW

On January 23, 2023, at approximately 12:35 p.m., Alejandro Castaneda, a 49 year-old technician with over 19 years of experience, was killed while standing on a mobile work platform (scissor lift), along with another miner, to remove a chiller pipe suspended from a mine roof. As the other miner removed the pipe's coupling, the pipe forcefully came apart, and a rush of water pushed Castaneda off the scissor lift.

The accident occurred because the mine operator did not: 1) ensure that the miner used fall protection while working where there was a danger of falling, and 2) conduct an adequate workplace examination which would have included ensuring that all systems and equipment were checked for stored energy and made safe prior to beginning any work.

GENERAL INFORMATION

Nevada Gold Mines LLC, owns and operates the Meikle Mine. This mine is an underground gold mine located near Carlin, Eureka County, Nevada. The mine employs 328 underground miners and 223 surface miners and operates two 12-hour shifts, seven days per week. Gold ore is extracted from the mine using a combination of cut and fill and stope mining methods. The gold ore is transported to the surface and processed into gold bars. The mine operator sells the gold to the public.

The principal management official at the Meikle Mine at the time of the accident was:

Gustave Friesen	Meikle Underground Mine Manager

The Mine Safety and Health Administration (MSHA) completed the last regular safety and health inspection at this mine on December 12, 2022. The 2022 non-fatal days lost incident rate for the Meikle Mine was 0.17, compared to the national average of 1.68 for mines of this type.

DESCRIPTION OF THE ACCIDENT

On January 23, 2023, at 6:00 a.m., Castaneda; Pedro Morquecho, Miner; and Michael Schuler, Miner, started their shift. Nick Cortez, General Supervisor, instructed Michael Kinzer, Paste Leadman, to send the construction crew to the Meikle side of the 1600 haulage travelway, just below the 3880 intersection to continue removing the unused ten-inch chiller pipes (pipes carrying chilled water for underground air cooling). At approximately 10:00 a.m., Schuler drove the scissor lift to the upper Rodeo intersection area of the mine. Castaneda and Morquecho traveled to this area in another vehicle and then got on the scissor lift. Schuler operated the scissor lift from the operator's compartment. Morquecho was on the scissor lift platform closest to Schuler, and Castaneda was located farther down the scissor lift platform toward the rear.

According to a written statement, Morquecho and Castaneda disconnected and removed a 20-foot section of the supply-side pipe without incident. When Morquecho loosened the Victaulic coupling on the return-side pipe with a hand-held impact wrench, the pipe's water pressure released forcefully. The rush of water pushed Castaneda off the scissor lift platform to the floor below. As Morquecho was being inundated with water, Schuler moved the scissor lift forward so he would be away from the flow of water. Morquecho got off the scissor lift, and Schuler got out of the cab to look for Castaneda and found him approximately ten feet down the travelway. John Rij, Miner, was tramming a mucker/loader through the 1600 haulage travelway when a cloud of dust enveloped him. Rij waited for the air to clear and traveled to the scissor lift. When he arrived, Morquecho ran to him and told him to call mine rescue. Rij called "mayday" over the mine communication system. At 12:40 p.m., Mine Emergency Medical Services (EMS) heard the mayday call over the radio, proceeded to the accident scene and began cardiopulmonary resuscitation on Castaneda. EMS transported Castaneda to the surface. A MedX AirOne flight crew arrived and took over care of Castaneda. The MedX AirOne flight crew contacted Anne Richter, MD who pronounced Castaneda dead at 1:52 p.m.

INVESTIGATION OF THE ACCIDENT

On January 23, 2023, at 1:32 p.m., Lance Steilman, Safety and Health Manager, called the Department of Labor National Contact Center (DOLNCC) to report the accident. At 1:48 p.m., the DOLNCC contacted Patrick Barney, Assistant District Manager, who called William Whitby, Supervisory Mine Safety and Health Inspector. Whitby contacted Mark Butterfield, Mine Safety & Health Inspector, who was at the mine. Butterfield issued an order under the provisions of Section 103(k) of the Mine Act to ensure the safety of the miners and preservation of evidence. Whitby traveled to the mine, met with Butterfield, and helped to secure the accident scene. Barney assigned Chad Hilde, Mine Safety and Health Inspector, as the accident investigator.

On January 25, 2023, at 7:00 a.m., Hilde arrived at the mine to continue the investigation. MSHA's accident investigator, along with the State of Nevada Department of Business & Industry Industrial Relations, conducted an examination of the accident scene, interviewed miners and mine management officials, and reviewed conditions and work procedures relevant to the accident. See Appendix A for a list of persons who participated in the investigation.

DISCUSSION

Location of the Accident

The accident occurred just below the intersection of the 1600 Rodeo haulage travelway and the 3830 intersection (see Appendix B).

Chiller System Piping

The two ten-inch metal pipes being removed were part of a closed loop chiller system that had been abandoned (see Appendix C). One pipe supplied chilled water underground (supply) and the other pipe returned water to the surface (return). The chiller pipe system ran from the chiller buildings on the surface to the 1600 foot underground level. At the bottom, the return line was anchored with a concrete thrust block and the supply line was anchored using mechanical supports.

Both the supply and return pipes had isolation valves. One set of isolation valves on the supply and return sides was located approximately sixty feet away from the accident location and was only reachable by a lift or ladder. The investigators found these valves closed. The closed valves on the return pipe near the thrust block, along with the closed isolation valve on the return line 60 feet away from the accident location, left water trapped in the return chiller pipe and pressurized by up to 1,600 feet of water column all the way back to the surface. If full, this entrapped water column pressurized the return chiller pipe with an estimated 700 pounds per square inch of water pressure due to gravity. The investigator was unable to determine how much water was in the pipe at the time of the accident.

The mine operator had an established procedure for hazardous energy isolation of air, water, and discharge lines. The procedure required miners to identify and isolate all energy sources, turn off and lock the main feed valves, and open relief valves to release stored energy. On the day of the accident, the miners did not follow these steps before removing the pipe. The accident investigator determined this contributed to the accident.

Equipment Involved

The scissor lift in use was a Getman A-64, Company No. 12 (see Appendix D). The scissor lift was equipped with two hydraulic pipe handlers. Examination of the scissor lift did not reveal mechanical deficiencies or defects that contributed to the accident. The battery powered impact wrench Morquecho used was found lying in the middle of the deck. The socket had been washed down the travelway.

Fall Protection

The mine operator's training guide for the scissor lift states that miners should "know and use fall protection procedures." Multiple tie-off posts for D-rings are located on the deck. The mine operator's job hazard analysis for Pipe Installation/Removal and Utility work at heights is rated as a medium level hazard when using a body harness and fall protection as standard personal protective equipment.

Castaneda had a fall protection harness on but was not tied off to anything. The investigator determined that this contributed to the accident.

Training and Experience

Alejandro Castaneda had nineteen years of mining experience. His last annual refresher training was January 4, 2022. Castaneda received task training on the established procedure for hazardous energy isolation of air, water, and discharge lines on August 2, 2014. There were additional task training records for multiple types of elevated lifts and platforms, including the scissor lift. All of Castaneda's training was conducted in accordance with MSHA Part 48 training regulations.

Examinations

All three miners conducted workplace examinations. The investigator found two examination records on the 1600 haulage travelway but were illegible due to exposure to water and mud. An adequate workplace examination would have identified the pressurized water in the return pipe. The mine operator did not ensure that all systems and equipment are checked for stored energy and made safe prior to beginning any work. The investigator determined that this contributed to the accident.

ROOT CAUSE ANALYSIS

The accident investigator conducted an analysis to identify the underlying causes of the accident. The investigator 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 ensure that the miner used fall protection while working where there was a danger of falling.

   Corrective Action: The mine operator retrained miners in their existing policy to know and use fall protection procedures while working from the scissor lift.

2. Root Cause: The mine operator did not conduct an adequate workplace examination which would have included ensuring that all systems and equipment are checked for stored energy and made safe prior to beginning any work.

   Corrective Action: The mine operator retrained miners in their existing procedure to check for all forms of stored energy in systems and equipment prior to beginning work and to ensure that proper lock out/tag out procedures are implemented before conducting any task.

CONCLUSION

On January 23, 2023, at approximately 12:35 p.m., Alejandro Castaneda, a 49 year-old technician with over 19 years of experience, was killed while standing on a mobile work platform (scissor lift), along with another miner, to remove a chiller pipe suspended from a mine roof. As the other miner removed the pipe's coupling, the pipe forcefully came apart, and a rush of water pushed Castaneda off the scissor lift.

The accident occurred because the mine operator did not: 1) ensure that the miner used fall protection while working where there was a danger of falling, and 2) conduct an adequate workplace examination which would have included ensuring that all systems and equipment were checked for stored energy and made safe prior to beginning any work.

Approved By:

_____ _____

Gary Hebel Date
District Manager

ENFORCEMENT ACTIONS

1. A 103(k) order was issued to Nevada Gold Mines, LLC

   A fatal accident occurred on January 23, 2023, at approximately 12:35 p.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 Nevada Gold Mines LLC for a violation of 30 CFR 57.15005.

   A fatal accident occurred at the mine on January 23, 2023, when a ten-inch water pipe violently came apart while the chiller system was being dismantled. One miner received fatal injuries as a result, and a second was seriously hurt. The fatally injured miner had a fall protection harness on but was not tied off to anything. The mine operator did not ensure that the miner used fall protection while working where there was a danger of falling.

3. A 104(a) citation was issued to Nevada Gold Mines, LLC for a violation of 30 CFR 57.18002(a).

   A fatal accident occurred at this mine on January 23, 2023, when a ten-inch water pipe violently came apart while the chiller system was being dismantled. One miner received fatal injuries as a result, and a second was seriously hurt. Three miners that were assigned the task performed a workplace examination. However, the examination did not reveal that the discharge side of the pipe system had water in it. The mine operator did not conduct an adequate workplace examination which would have included ensuring that all systems and equipment are checked for stored energy and made safe prior to beginning any work.

APPENDIX A – Persons Participating in the Investigation

Nevada Gold Mines, LLC

Lance Steilman	Safety and Health Manager
Derek Dominguez	Operation Supervisor
Doug Johnson	Fixed Maintenance Supervisor
Nick Cortez	General Supervisor
James Smoke	General Supervisor
Michael Kinzer	Paste Leadman
Pedro Morquecho	Miner
John Rij	Miner
Michael Schuler	Miner

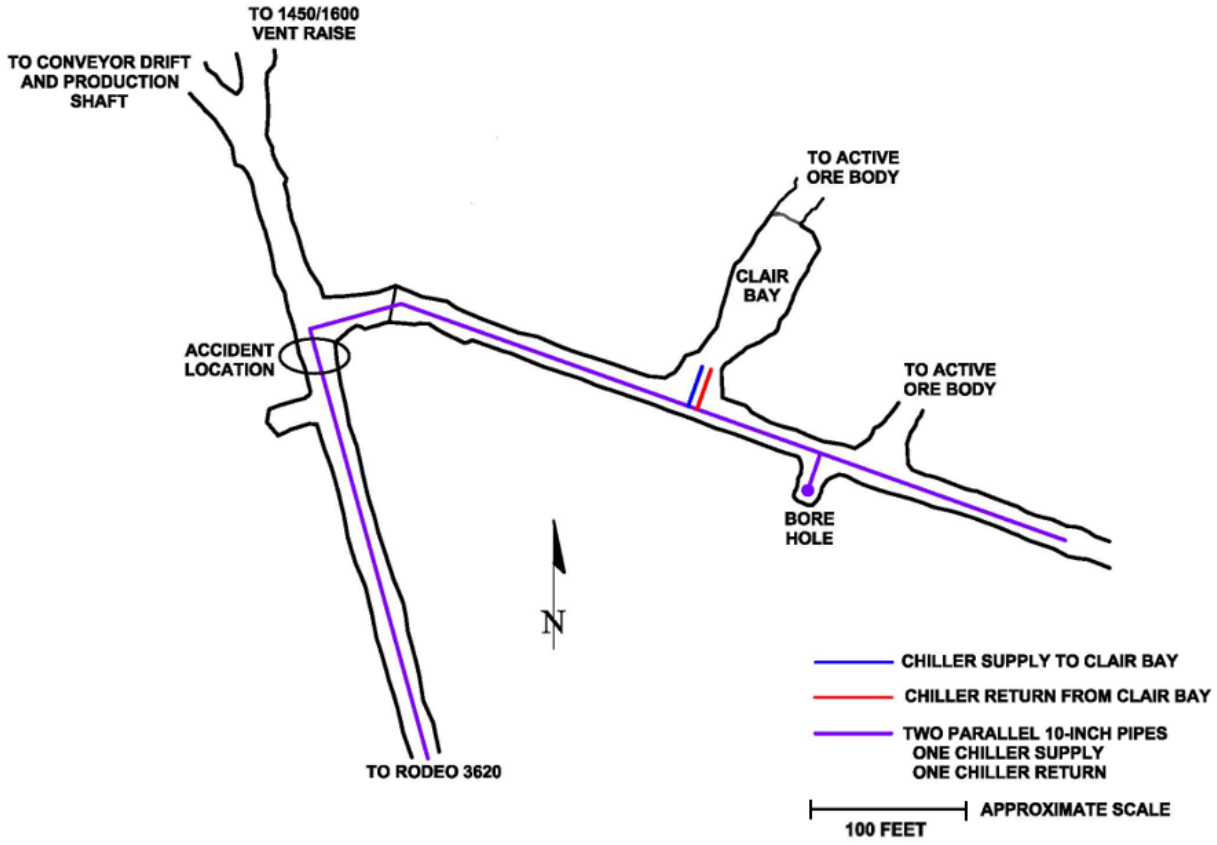
State of Nevada Department of Business & Industry Industrial Relations

Yvonne Petersen	Mine Inspector
Alexandria Camden	Mine Inspector

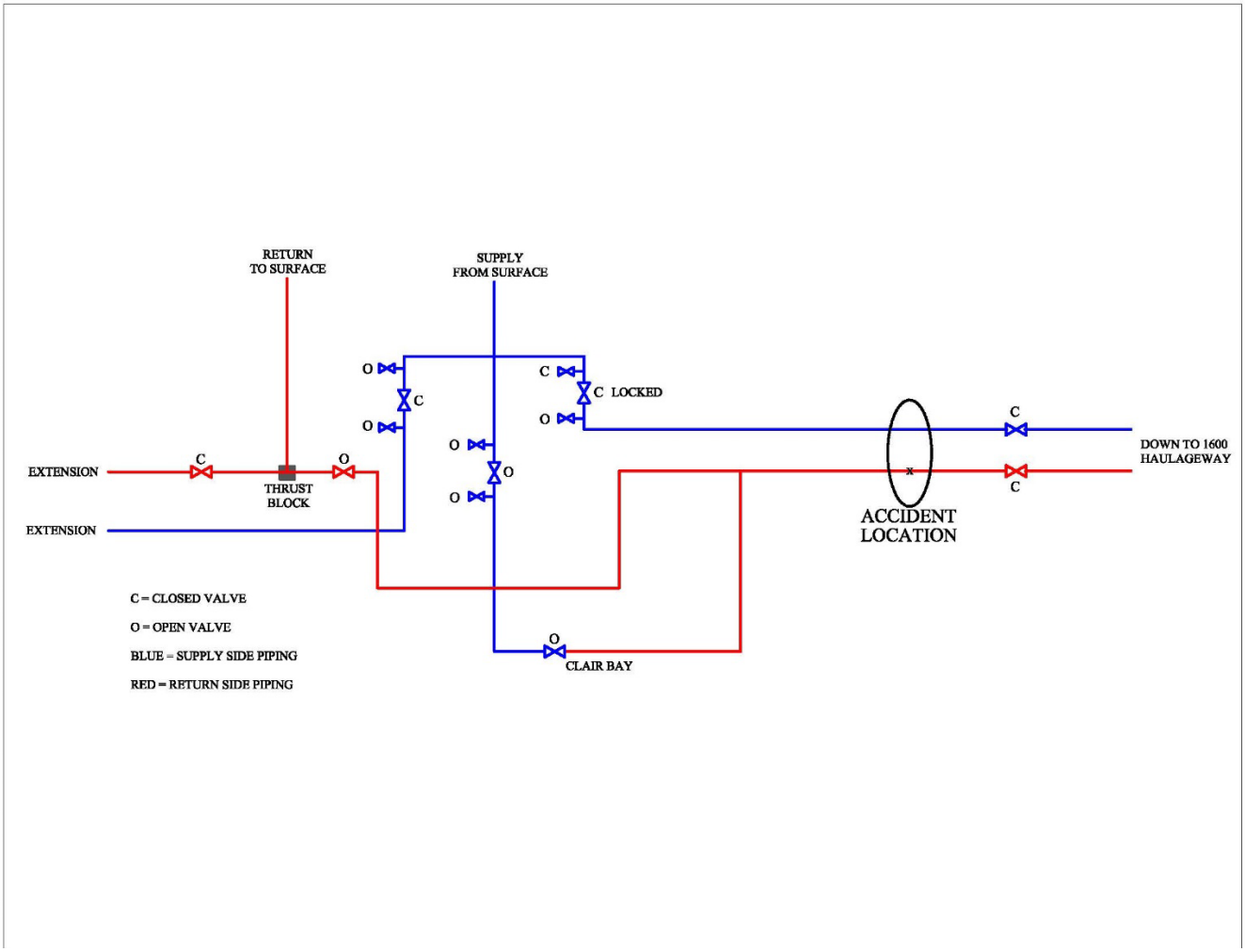
Mine Safety and Health Administration

William Whitby	Supervisory Mine Safety and Health Inspector
Mark Butterfield	Mine Safety and Health Inspector
Chad Hilde	Mine Safety and Health Inspector

APPENDIX B – Location of the Accident Scene



APPENDIX C – Schematic of Chiller Pipes



APPENDIX D – Getman A-64 Scissor Lift