

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

REPORT OF INVESTIGATION

Underground
(Coal)

Fatal Electrical Accident
October 22, 2022

Acosta Deep Mine
Wilson Creek Energy LLC
Friedens, Somerset County, Pennsylvania
ID No. 36-09893

Accident Investigator

Richard Gindlesperger
Mine Safety and Health Inspector

Originating Office
Mine Safety and Health Administration
Mt. Pleasant District
Paladin Professional Center
631 Excel Drive, Suite 100
Mt. Pleasant, PA 15666
Michael Kelley, District Manager

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OVERVIEW

On October 22, 2022, at approximately 11:45 a.m., Sean Dennehy, a 46 year-old mine examiner with nearly fifteen years of mining experience, was fatally injured when he contacted energized components in a 480-Volt AC float switch electrical box (float switch box), while standing in a sump, in an outby area of the mine.

The accident occurred because the mine operator did not: 1) lock out and tag out electrical equipment before conducting work, and 2) conduct an examination of electrical equipment before it was returned to service.

GENERAL INFORMATION

Wilson Creek Energy LLC owns and operates the Acosta Deep Mine. This mine is an underground bituminous coal mine located in Somerset County, Pennsylvania. Acosta Deep Mine employs 90 miners and operates two, nine-hour production shifts, and one maintenance shift per day, five days per week. Acosta Deep Mine operates three mechanized mining units in the Middle Kittanning coal seam with an average mining height of 42 inches. A continuous mining machine extracts coal, and bridge conveyors and belt conveyors transport it to the surface.

The principal management officials at the Acosta Deep Mine at the time of the accident were:

Robert Bodenschatz
Shawn Petree
Michael Kimmel

Director of Safety
Superintendent
Mine Foreman

The Mine Safety and Health Administration (MSHA) completed the last regular safety and health inspection at this mine on September 23, 2022. The 2021 non-fatal days lost incident rate for Acosta Deep Mine was 4.58, compared to the national average of 3.63 for mines of this type.

DESCRIPTION OF THE ACCIDENT

The investigation revealed that on October 22, 2022, at 3:50 a.m., Dennehy began a pre-shift examination of the C Main active working section and outby areas of the mine. At 5:50 a.m., Dennehy returned to the surface to record the pre-shift examination in the record book. At approximately 6:00 a.m., Dennehy; Petree; Christopher Horner, Shift Foreman; Austin Matsko, Scoop Operator; and Mathew Alt, Laborer, traveled to the 3 Left area of the mine to complete a ventilation change and establish electrical power to that area of the mine. According to interviews, Horner and Dennehy went into the No. 6 Sump where they saw the bottom of the No. 6 Pump float switch box a few inches underwater. Horner waded into the water and suspended the box from the roof, out of the water.

According to interviews, at approximately 10:25 a.m., Horner, Matsko, and Alt finished hanging the high-voltage cable and plugged it into the No. 3 Power Center, establishing electrical power to the 3 Left area of the mine. Horner and Dennehy met near the No. 108 Pump. Dennehy told Horner that he could not keep the No. 108 Pump running. Horner turned the switch on the No. 108 Pump float switch box from the “float” position to the “hand/manual” position. The No. 108 pump started and continued to run. Dennehy left to start additional pumps while Horner traveled outby to retrieve fire extinguishers and other supplies. At approximately 11:10 a.m., Horner met Petree in the travelway and asked if Petree had seen Dennehy. Petree had not and traveled inby to look for Dennehy.

According to interviews, at approximately 11:30 a.m., Petree traveled to the No. 6 Sump where he saw Dennehy’s parked personnel carrier. Petree called out for Dennehy and noticed a cap lamp glowing in the water. Petree stated that he realized Dennehy was in the sump near the open No. 6 Pump float switch box. Petree went to the No. 1 Distribution Box (D-Box) and saw that two cable couplers were plugged into the D-Box and both circuit breakers for the cable couplers were down in the “off/reset” position. Petree pulled both cable couplers out of the D-Box, returned to the No. 6 Sump to retrieve Dennehy, and began cardiopulmonary resuscitation (CPR). Petree did not detect a pulse and put Dennehy on the personnel carrier to take him to the surface. As he traveled, Petree called outside to Patrick Roberts, Outside Attendant. At approximately 11:40 a.m., Roberts called 911 and retrieved the automated external defibrillator (AED). Petree also called Ronald Zufall, Maintenance Foreman, and said that he was on his way to the surface with Dennehy. Zufall, who was in the C Main section, traveled out of the mine to assist.

According to interviews, at approximately 11:55 a.m., Petree arrived on the surface with Dennehy, and Roberts began performing CPR. Roberts put the AED on Dennehy, and no shock was advised. Roberts and Petree continued performing CPR. Zufall arrived and assisted with the CPR. At 1:21 p.m., Alexis Lichty, Somerset County Deputy Coroner, pronounced Dennehy dead.

INVESTIGATION OF THE ACCIDENT

On October 22, 2022, at 12:20 p.m., Bodenschatz called the Department of Labor National Contact Center (DOLNCC). The DOLNCC called Randall Caramellino, Supervisory Mine Safety and Health Inspector, who contacted Michael Kelley, District Manager. Kelley sent Gary McCormick and Richard Gindlesperger, Mine Safety and Health Inspectors, to meet him at the mine. At approximately 3:00 p.m., Gindlesperger, the assigned accident investigator, arrived at the mine. At 3:15 p.m., McCormick and Kelly arrived at the mine, and Gindlesperger issued an order under the provisions of Section 103(k) of the Mine Act to ensure the safety of the miners and the preservation of evidence and began his investigation.

In conjunction with the Pennsylvania Bureau of Mine Safety, MSHA's accident investigator conducted an examination of the accident scene, interviewed miners and mine management, reviewed conditions, and work practices relevant to the accident, and gathered electrical equipment from the scene for testing by MSHA Technical Support. See Appendix A for a list of persons who participated in the investigation.

DISCUSSION

Location of the Accident

The accident occurred in the No. 6 Sump of the 3 Left area of the mine (see Appendix B). The No. 6 Sump area had an average height of 52 inches. Dennehy was found in approximately 24 inches of water.

Electrical Equipment

The No. 6 Pump, located in the No. 6 Sump, is controlled by a float switch box that energizes the pump when the water level in the sump reaches a pre-determined level. The float switch box receives electrical power through a cable that is plugged into the No. 1 D-Box. The No. 1 D-Box is powered by a cable from the No. 12 Belt Load Center. When the accident investigator arrived at the mine, the No. 6 Pump float switch box was open, and the No. 6 Pump cable coupler was unplugged from the No. 1 D-Box. The circuit breaker for the No. 6 Pump on the No. 1 D-Box was in the "off/reset" position.

This circuit breaker has three positions. When the circuit breaker handle is in the "up" position, the circuit breaker is on. When the handle is in the center, it is in the "tripped" and "off" position (e.g. a ground fault condition that caused the circuit breaker to trip). When the handle is down, it is in the off/reset position.

No lock out and tag out was in place on the No. 6 Pump circuit. The accident investigator tested the power cables, grounding circuits, and circuit breakers in place and found no defects. MSHA

transported the No. 1 D-Box, cables, No. 6 Pump float switch box, and No. 6 Pump for testing at the MSHA Technical Support Approval and Certification Center in Triadelphia, West Virginia. MSHA Technical Support found no problems in the operation or condition of the equipment. The accident investigator determined the mine operator did not have the No. 6 Pump circuit locked and tagged out of service.

Training and Experience

Dennehy had over 14 years of mining experience and worked at the Acosta Deep Mine for three years and 20 weeks. Dennehy worked as a mine examiner at this mine for three years and nine weeks. The accident investigator reviewed training records and found that Dennehy received all training in accordance with MSHA Part 48 training regulations.

Dennehy was not an MSHA-qualified electrician. The accident investigator determined the mine operator did not have a qualified electrician perform electrical work in the float switch box.

Examinations

Dennehy conducted and recorded the pre-shift examination of 3 Left from 3:50 a.m. to 5:50 a.m. Horner conducted and recorded the on-shift examination of 3 Left from 9:39 to 10:06 a.m. Dennehy and Horner did not record any hazardous conditions.

At approximately 6:00 a.m., the mine operator worked to advance and set up high voltage power to the 3 Left area equipment, including the No. 14 and No. 12 Belt Power Centers; No. 1 D-Box; and No. 108, No. 36, and No. 6 Pumps. The mine operator energized and placed in service the above-listed electrical equipment but did not perform a weekly examination or test any of this equipment. The last examination of the electrical equipment in the 3 Left area was conducted by Kyle Drenner, Chief Electrician, and recorded on October 9, 2022. The electrical examination record book for the week of October 16, 2022, states, “no power.” The accident investigator determined the mine operator did not examine the electrical equipment in the 3 Left area after this date, which contributed to the accident.

Chargeability Determination Process

When a miner’s death is not conclusively determined to be chargeable to the mine operator, MSHA submits the case, including facts and supporting information, to the MSHA Chargeability Review Committee (Committee). The Committee reviewed MSHA’s investigative report and associated supplementary materials.

The autopsy diagnosis included drowning and pulmonary embolism (PE). However, autopsy photos show evidence of a burn, likely electrical, on the left hand. Less clear from the photos is a discoloration, possibly consistent with an electrical burn on the right foot. A photograph of Dennehy's boots shows substantial damage to the right boot, while the left boot appears to be in good condition.

There was no description of this evidence in the autopsy report. Further, the diagnosis of death by drowning is not well supported by the evidence, and an antemortem embolism found in the left pulmonary artery does not have the anatomic characteristics of a fatal PE. The totality of the above evidence suggests that Dennehy likely died from contact with hazardous electrical energy,

i.e. electrocution. Accordingly, the Committee determined Dennehy's death to be chargeable to the mine operator.

ROOT CAUSE ANALYSIS

The accident investigator conducted an analysis to identify the underlying causes of the accident. The accident 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 lock out and tag out electrical equipment before conducting work.

Corrective Action: The mine operator trained the miners on the procedure requiring miners to lock out and tag out electrical equipment before conducting work.

2. Root Cause: The mine operator did not conduct an examination of electrical equipment before it was returned to service.

Corrective Action: The mine operator trained the miners on the procedure to conduct weekly electrical examinations and electrical examinations on out-of-service electrical equipment before it is returned to service. Additionally, the mine operator conducted electrical examinations of the remaining electrical equipment in the 3 Left area.

3. Root Cause: The mine operator did not ensure a qualified electrician performed electrical work.

Corrective Action: The mine operator trained the miners on the procedure to ensure a qualified electrician performs all electrical work.

CONCLUSION

On October 22, 2022, at approximately 11:45 a.m., Sean Dennehy, a 46 year-old mine examiner with nearly fifteen years of mining experience, was fatally injured when he contacted energized components in a 480-Volt AC float switch box, while standing in a sump, in an outby area of the mine.

The accident occurred because the mine operator did not: 1) lock out and tag out electrical equipment before conducting work, and 2) conduct an examination of electrical equipment before it was returned to service.

Approved By:

Michael Kelley
District Manager

Date

ENFORCEMENT ACTIONS

1. A 103(k) order was issued to Wilson Creek Energy LLC.

A fatal accident occurred on October 22nd, 2022, at approximately 11:45 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 for 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 Wilson Creek Energy LLC for a violation of 30 CFR 75.511.

On October 22, 2022, the operator did not properly lock out and suitably tag the disconnecting device for the 6 Pump prior to performing electrical work on the pump's float switch electrical box. The float switch electrical box door was in the fully open position, the terminal block screws were loosened, and the 480 VAC phase leads were removed from the terminal block. Also, two screwdrivers were found lying on the ground in the area near the float switch electrical box. The Company Number 6 Pump was located in the area of the 3 Left Sump.

3. A 104(d)(1) order was issued to Wilson Creek Energy LLC for a violation of 30 CFR 75.512.

On October 22, 2022, the operator worked to advance and set up high voltage power to the 3 Left section equipment including, 3 Left Belt Power Center (Company Number 14), 3 Left Belt Power Center (Company Number 12), Company Number 1 Distribution Box (s/n 342-79), Company Number 108 Pump, Company Number 36 Pump, and Company Number 6 Pump. The operator did not perform a weekly examination and test any of the above-listed electrical equipment that was energized and placed in service in the 3 Left area of the mine. The last examination of this equipment was conducted on the week of October 9, 2022. This violation is an unwarrantable failure to comply with a mandatory standard.

APPENDIX A – Persons Participating in the Investigation

Wilson Creek Energy LLC

Robert Bodenschatz	Director of Safety
Shawn Petree	Superintendent
Christopher Horner	Shift Foreman
Ronald Zufall	Maintenance Foreman
Kyle Drenner	Chief Electrician
Austin Matsko	Scoop Operator
Mathew Alt	Laborer
Patrick Roberts	Outside Attendant

Pennsylvania Bureau of Mine Safety

Richard Murphy	Underground Bituminous Program Manager
Chas Washlack	Underground Bituminous Program Manager
Mark Gindlesperger	Underground Bituminous Mine Inspector Supervisor
Gary Barkley	Underground Bituminous Electrical Supervisor
Lance Noel	Underground Bituminous Electrical Inspector

Mine Safety and Health Administration

Michael Kelley	District Manager
Todd Anderson	Assistant District Manager
Richard Gray	Supervisory Mine Safety and Health Inspector
Richard Gindlesperger	Mine Safety and Health Inspector
Gary McCormick	Mine Safety and Health Inspector
David McDonald	Mine Safety and Health Inspector
Michael Wess	Mine Safety and Health Inspector

3 Left Sump Area

