

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

REPORT OF INVESTIGATION

Underground
(Bituminous Coal)

Fatal Machinery Accident
December 4, 2021

River View Mine
River View Coal LLC
Waverly, Union County, Kentucky
ID No. 15-19374

Accident Investigators

Philip Carlisle
Mine Safety and Health Specialist

Clint Rich
Mine Safety and Health Inspector

Originating Office
Mine Safety and Health Administration
Central Region - Madisonville District
100 YMCA Drive
Madisonville, KY 42431-9019
Robert Simms, District Manager

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OVERVIEW

On December 4, 2021, at approximately 1:10 a.m., Lester Daugherty, Jr., a 48 year-old mechanic, with 16 years of mining experience, died when he was crushed between the conveyor tail boom and the rear bumper of the continuous mining machine.

The accident occurred because the mine operator did not assure that the equipment was blocked against motion before performing maintenance on machinery.

GENERAL INFORMATION

River View Coal LLC, a subsidiary of Alliance Resource Partners LP, owns and operates River View Mine. This mine is an underground bituminous coal mine located near Waverly, Union County, Kentucky. River View Mine employs 726 miners and operates two ten-hour shifts, five days per week. The mine has been operating since 2009, and is currently mining in the Kentucky No. 9 seam with twenty mechanized mining units.

The principal officers for River View Coal LLC at the time of the accident were:

Joseph W. Craft III
R. E. Davis

President/Director/Chief Executive Officer
Senior Vice President – Law & Administrative – Secretary

The Mine Safety and Health Administration (MSHA) completed the last regular safety and health inspection at this mine on September 23, 2021. The 2020 non-fatal days lost incident rate for River View Coal LLC was 1.72, compared to the national average of 3.14 for mines of this type.

DESCRIPTION OF THE ACCIDENT

On December 3, 2021, Lester Daugherty, Jr. started his shift at 11:00 p.m. Daugherty and Elvis Poe, Jr., Mechanic, were to begin their night shift on the No. 15 Unit in the No. 9 seam. Before going underground, they received information from Andrew Vaught, Maintenance Foreman, stating the right-side continuous mining machine's stabilizer jack would raise but not lower. Vaught gave Daugherty and Poe orders to repair the stabilizer jack on the machine and provided them with a stem for the solenoid valve bank. Daugherty and Poe arrived on the No. 15 Unit at 12:13 a.m.

When Daugherty and Poe arrived, the second shift was still mining, so they proceeded to gather tools and equipment for the night shift repair work. The No. 15 Unit finished mining at 12:50 a.m., and Daugherty and Poe advanced to the right-side continuous mining machine to begin repairs. The continuous mining machine was positioned between the No. 7 and No. 8 entries, midway through a ventilation curtain.

At approximately 1:05 a.m., Daugherty was at the rear valve bank and Poe was positioned at the front of the continuous mining machine preparing to clean the sensor splash guard on the methane monitor. Daugherty informed Poe that he intended to start the continuous mining machine to raise the tail boom. From Poe's vantage point, he could not see Daugherty (see Appendix A). Poe moved away from the continuous mining machine and witnessed the machine energize. Poe heard the hydraulics engage for enough time to raise the conveyor tail boom and then the continuous mining machine de-energized. From interviews, investigators determined Daugherty raised the tail boom to have a better view of the hydraulic leak coming from the stabilizer jack. During interviews, Poe stated that Daugherty had taken the rear side cover off the continuous mining machine. Daugherty did this to access the valve bank to change out the stem and solenoid for the stabilizer jack prior to energizing the machine and raising the conveyor tail boom.

Poe traveled along the outby rib beside the continuous mining machine between the No. 7 and No. 8 entries and outby a crosscut and a half to the mechanic's golf cart to retrieve a gas kit for the methane monitor. He returned along the same route (see Appendix B). Poe was in position to start calibrating the methane monitor when Joey Mosely, No. 15 Unit Set-up Man, yelled for Poe to come to the rear of the continuous mining machine. At approximately 1:10 a.m., Mosely found Daugherty crushed between the conveyor tail boom and the rear bumper of the continuous mining machine.

Mosely examined the situation and determined that Daugherty was trapped with the continuous mining machine's remote-control transmitter in his hands (see Appendix C). Mosely got the remote-control transmitter from Daugherty, started the continuous mining machine, and raised the conveyor tail boom. Poe immediately went to the other side of the mechanized mining unit (MMU) to notify Matthew Whittaker, No. 15 Unit Lead Man. When Poe returned with Whittaker, Mosely had already retrieved Daugherty and was in the process of assessing his injuries. Mosely ran to get the automated external defibrillator (AED) and first aid kit while Poe and Whittaker continued to assess his injuries.

Mosely returned with the AED and first aid kit. Poe and Mosely started cardiopulmonary resuscitation (CPR) and placed the AED on Daugherty while waiting for the ambulance to arrive on the No. 15 Unit. Kaleb West, Carbon Monoxide Department, drove the underground ambulance. West arrived on No. 15 Unit at 1:31 a.m. to transport Daugherty to the surface. Mosely rode on the ambulance and continued to administer CPR throughout the entire trip to mine bottom. The AED was read several times while administering CPR and each time it stated that a shock was not advised. The mine's underground ambulance arrived on the bottom at 1:42 a.m. Daugherty was transported to the surface at 1:45 a.m. and was pronounced dead by Lee Baird, Deputy Coroner for the Union County Coroner's Office, at 2:13 a.m.

INVESTIGATION OF THE ACCIDENT

On December 4, 2021, at 1:29 a.m., William O'Daniel, Mine Foreman, called the Department of Labor National Contact Center (DOLNCC). The DOLNCC contacted Irvin Wright, Supervisory Mine Safety and Health Specialist. Wright contacted Robert Simms, District Manager, who sent Philip Carlisle, Mine Safety and Health Specialist; Clint Rich, Mine Safety and Health Inspector; and Curtis Hardison, Staff Assistant, to the mine. Carlisle, Rich, and Hardison arrived at the mine site at 3:55 a.m. to interview witnesses and gather preliminary information. At 4:00 a.m., Carlisle 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. Afterward, Carlisle and Rich went underground and investigated the accident scene and equipment. Carlisle was assigned as the lead accident investigator and Rich was assigned to assist in the accident investigation. Joe Fritz, Mine Safety and Health Training Specialist, traveled to the mine site to review all training records involving the accident. MSHA's accident investigation team conducted an examination of the accident scene, interviewed miners, and reviewed conditions and work practices relevant to the accident. See Appendix D for a list of persons who participated in the investigation.

DISCUSSION

Location of the Accident

The accident occurred on the right side of No. 15 Unit, MMU 016-0. Daugherty was performing maintenance work on the right-side continuous mining machine No. 5761. The No. 15 Unit is a split air ventilation unit comprised of two separate MMUs, 015-0 on the left side and 016-0 on the right side. Intake air feeds the unit from the middle entries and splits at the face to ventilate both sides of the unit simultaneously. The mining height at the continuous mining machine's conveyor tail boom was five feet seven inches. The entries are numbered from the left side of the unit to the right side. The continuous mining machine was in the last open crosscut on No. 15 Unit between the No. 7 and No. 8 entries at spad No. 44+10 (see Appendix B).

Equipment Involved

The Komatsu 14CM15-11BX continuous mining machine is a 995-volt alternating current machine. It is operated from a remote-control transmitter that is powered from the continuous mining machine operator's battery pack. The remote-control transmitter is attached to a harness that is placed over the operator's shoulders and held with both hands to operate. It is attached to the battery through an intrinsically safe cable. The continuous mining machine is approximately forty feet long and twelve feet wide.

The Komatsu 14CM15-11BX continuous mining machine is equipped with an IntelliZone Proximity Detection System (PDS), which is manufactured by Matrix Design Group. Each miner working on the No. 15 Unit was provided a Miner Wearable Component (MWC) that is part of the PDS. The PDS has four integrated drivers that are located on top of each corner of the continuous mining machine, which creates a customizable electronic safety zone around its perimeter. These four drivers will detect the MWC worn by a miner near the continuous mining machine. As the miner enters the outer caution zone, a visual and audible alert will sound. If the miner moves closer to the continuous mining machine and enters the shutdown zone, the visual and audible alert makes a different sound and stops the machine. When a miner enters the shutdown zone, the continuous mining machine will not tram forward or reverse or swing the conveyor tail boom to the left or right. However, when a miner is in the shutdown zone, the conveyor tail boom and the cutting head of the continuous mining machine can be raised and lowered. Investigators determined that this fatality was not a result of PDS/ MWC failure or malfunction. Carlisle and Rich performed extensive tests and measurements on the PDS and MWCs that were associated with the continuous mining machine and determined that all the components operated as designed.

Based on interviews and evidence at the accident scene, investigators believe the following: Daugherty positioned himself between the conveyor tail boom and the rear bumper of the continuous mining machine to view a hydraulic leak on the stabilizer jack. Daugherty accidentally engaged the conveyor down switch instead of the stabilizer jack function on the remote-control transmitter. When the conveyor down switch was activated, the conveyor tail boom was lowered until the bottom made contact with the remote-control transmitter's emergency stop switch, thereby de-energizing the continuous mining machine.

Training and Experience

Daugherty had 16 years of underground mining experience. He had been a mechanic for 12 years, which included working as a mechanic at River View Coal LLC for three years. Daugherty's Commonwealth of Kentucky Division of Mine Safety Electrical Worker and US Department of Labor Mine Safety and Health Administration electrical cards were up to date. Daugherty's electrical refresher and annual refresher training were also current. Daugherty had received task training on the operation of the Komatsu 14CM15-11BX continuous mining machine, and the remote-control transmitter is what he was familiar with and had worked with in the past. Fritz examined the mine's training plan and found no training deficiencies among the miners working on the No. 15 Unit.

Examinations

After a review of the No. 15 Unit pre-shift examination records, the investigation team found no hazards that were listed on the second shift of December 3, 2021, that would have contributed to the accident. Investigators determined that inadequate workplace examinations were not a contributing factor in the accident. During the second production shift, it was found that the stabilizer jack on the right-side continuous mining machine (company No. 5761) was not operating properly, and therefore reported to the maintenance department. This was listed on the third shift mechanic's notes for Poe and Daugherty to repair during the following shift.

Work Practices

Based on interviews, investigators learned that the mechanics had been trained to block the continuous mining machine's tail boom against motion before performing work under it. Blocking material was available on the No. 15 Unit at the time of the accident. Poe testified that in the past they had blocked the continuous mining machine's conveyor tail boom when performing repairs under it from a raised position.

ROOT CAUSE ANALYSIS

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

Root Cause: The mine operator did not assure that the equipment was blocked against motion before performing maintenance on machinery.

Corrective Action: The mine operator developed a new written procedure for performing work under the continuous mining machine tail boom. The procedure requires the power to be off except where machinery motion is necessary to make adjustments, or for troubleshooting. In cases where machinery motion is necessary, cribbing will be used as a buffer to prevent a miner from being struck by the continuous mining machine's tail boom. The continuous mining machine's tail boom must be blocked against motion by using cribbing that is installed on a level/stable ground and will consist of: "one-hole pin boards," with three (3) boards per layer; or "solid wooden crib blocks," with two (2) blocks per layer. All miners have been trained on this new procedure.

CONCLUSION

On December 4, 2021, at approximately 1:10 a.m., Lester Daugherty, Jr., a 48 year-old mechanic, with 16 years of mining experience, died when he was crushed between the conveyor tail boom and the rear bumper of the continuous mining machine.

The accident occurred because the mine operator did not assure that the equipment was blocked against motion before performing maintenance on machinery.

Approved By:

Robert Simms
District Manager

Date

ENFORCEMENT ACTIONS

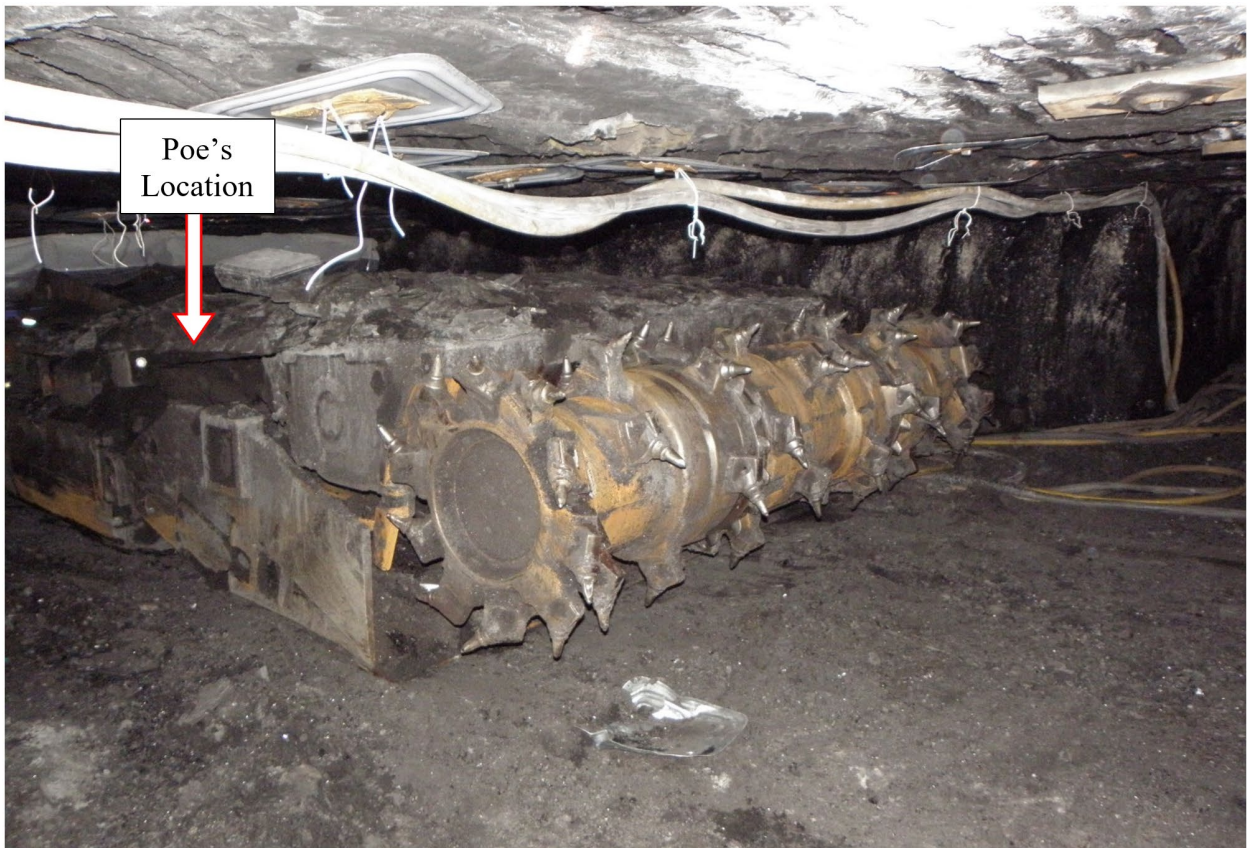
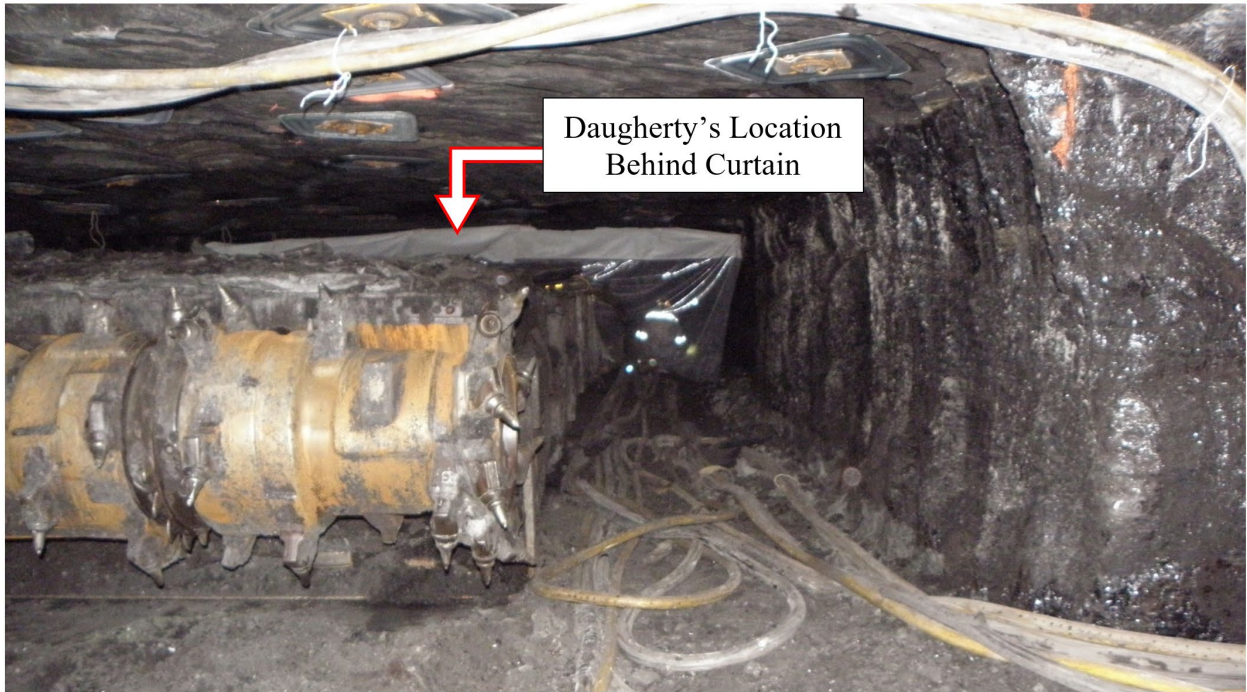
1. 103(k) order was issued to River View Coal LLC on December 4, 2021:

A fatal accident occurred at this operation on December 4, at approximately 1:10 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.

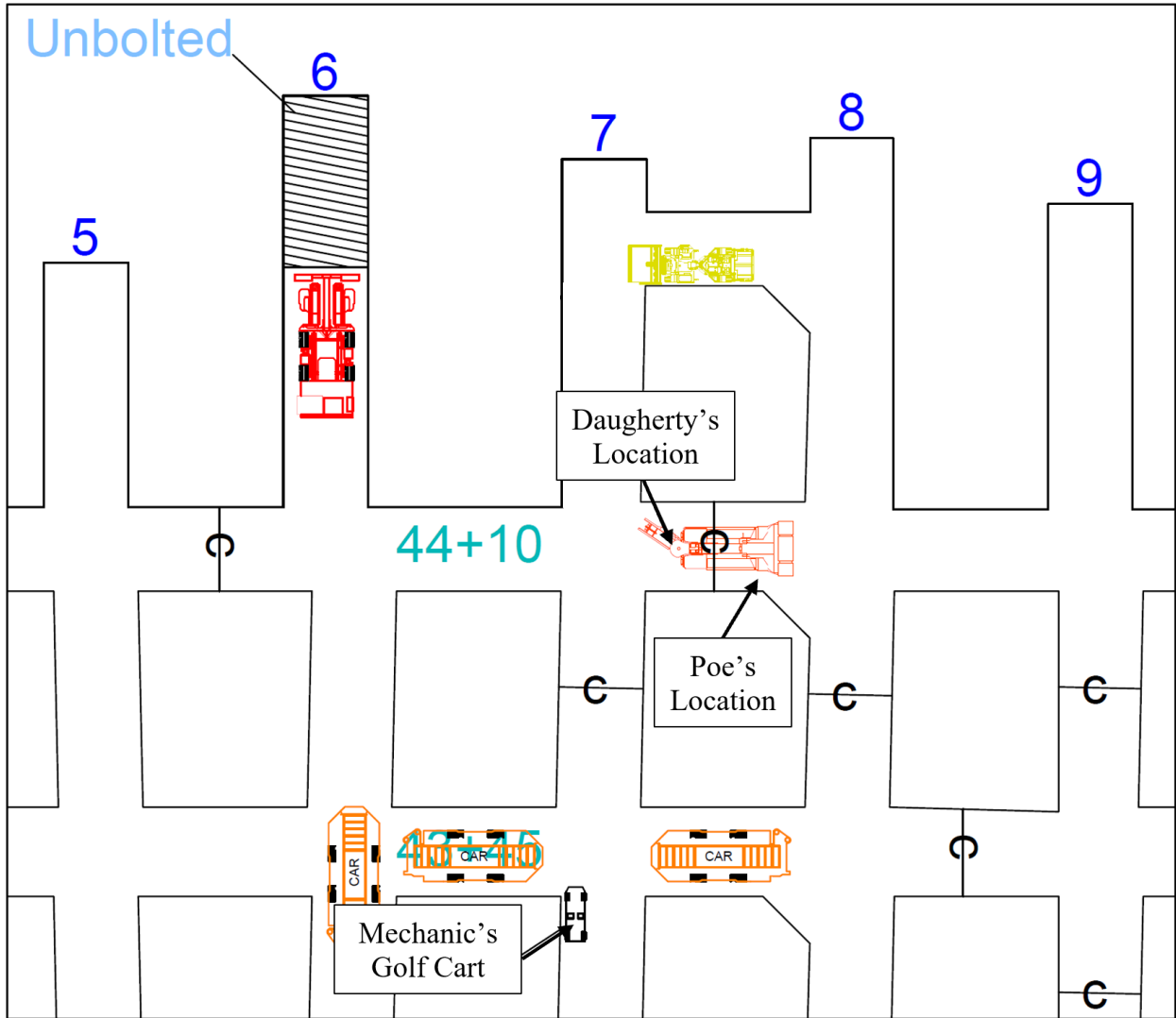
2. 104(a) citation was issued to River View Coal LLC for a violation of 30 CFR 75.1725(c).

The operator did not assure the Komatsu 14CM-15 continuous mining machine, company number 5761, located on the No. 15 Unit, was blocked against motion, while performing maintenance. A fatality occurred on December 4, 2021, when a 48 year-old mechanic was in the process of repairing a stabilizer jack in the area between the conveyor tail boom and the continuous mining machine frame. The unblocked conveyor tail boom lowered onto the mechanic.

APPENDIX A – Daugherty’s and Poe’s Locations



APPENDIX B – Drawing of the Accident Location



APPENDIX C – Photograph of Remote-Control Transmitter



APPENDIX D – Persons Participating in the Investigation

River View Coal LLC

William O’Daniel
Andrew Vaught
Elvis, Poe Jr.
Matthew Whittaker
Joey Mosely
Kaleb West

Mine Foreman
Maintenance Foreman
Mechanic
No. 15 Unit Lead Man
No. 15 Unit Set-up Man
Carbon Monoxide Department

Union County Coroner’s Office

Lee Baird

Deputy Coroner

Mine Safety and Health Administration

Curtis Hardison
Philip Carlisle
Clint Rich
Joe Fritz

Staff Assistant
Mine Safety and Health Specialist
Mine Safety and Health Inspector
Mine Safety and Health Training Specialist