FAI-6855110-2

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

REPORT OF INVESTIGATION

Underground
(Platinum Ore)

Fatal Powered Haulage Accident
June 9, 2021

Stillwater Mine
Stillwater Mining Company
Nye, Stillwater County, Montana
ID No. 24-01490

Accident Investigators

Thaddeus J. Sichmeller
Supervisory Mine Safety and Health Inspector

Lee A. Hughes
Staff Assistant

Fred T. Marshall
Mechanical Engineer

Originating Office
Mine Safety and Health Administration
West Region – Denver District
PO Box 25367
Denver, Colorado 80225-0367
Dustan Crelly, District Manager

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OVERVIEW

On June 9, 2021, Dale G. Ketola, a 65 year-old mine supervisor with 42 years of mining experience, and Jerry W. Ashlock, a 55 year-old mine supervisor with 39 years of mining experience, died when a 20-ton underground locomotive struck their personnel carrier.

The accident occurred because the mine operator did not assure that traffic rules governing communication, right of way, and direction of movement were followed for rail haulageways.

GENERAL INFORMATION

Sibanye Stillwater Limited is the parent company of Stillwater Mining Company. Stillwater Mining Company operates the Stillwater Mine, a platinum and palladium underground mine located in Nye, Stillwater County, Montana. Stillwater Mine employs approximately 1,200 miners and operates two, 12-hour production shifts seven days per week. The mine operator uses Load Haul Dump loaders, underground trucks, and underground rail haulage to transport the ore to the surface. The ore is crushed, processed, and sent to a smelter and base metal refinery facility located in Columbus, Montana.

The principal officers for Sibanye Stillwater Limited at the time of the accident were:

Wayne Robinson	Senior Vice President United States Region
Ryan Morris	Vice President of Human Resources
Ken Klucksdahl	Chief Operating Officer

The Mine Safety and Health Administration (MSHA) was conducting a regular safety and health inspection at this mine when the accident occurred. The 2020 non-fatal days lost (NFDL) incident rate for the Stillwater Mine was 1.61, compared to the national average of 1.29 for mines of this type.

DESCRIPTION OF THE ACCIDENT

On June 9, 2021, Ketola and Ashlock arrived at the mine and started their day by assigning various crews their work assignments. David Crabtree, Supervisor, assigned Landon Knight and Travis Rodenberger, Underground Locomotive Operators, to operate a locomotive on the 3500 level (35 level) of the mine. Rodenberger operated the locomotive and was in charge of radio communication. The rail haulageway on the 35 level is broken into two areas referred to as 35E and 35W. Knight and Rodenberger hauled muck, waste rock sorted out from the ore, from the 11800 area of 35W until around 1:15 p.m.

After 1:15 p.m., Knight took over operating the locomotive and began hauling muck from the loading chutes located in the 19600 area of 35W (see Appendix A). Rodenberger asked Knight to operate the locomotive from the loading chutes because he (Rodenberger) had never operated it on that section of the rail haulageway before.

At 1:55 p.m., Ketola and Ashlock went to the 35 level, entering on the 35W section of the rail haulageway in a Kubota personnel carrier (Kubota). Ketola called Rodenberger and asked for clearance to travel westward in the Kubota from the 10900 area of 35W along the rail haulageway to the 35W footwall, located beyond the loading chutes of the 19600 area of 35W. At first, according to Rodenberger, he did not hear the call, and Ketola called again, less than a minute later. From the radio recordings, Ketola stated that he and Ashlock were traveling from the 10900 area of 35W to the 35W footwall. Rodenberger acknowledged over the radio and the Kubota proceeded. Shortly after, Bobby Albert, Fuel Truck Operator, asked for clearance to drive on the track and Rodenberger said to "stay put."

Knight and Rodenberger finished loading the train and prepared to head down the rail haulageway from the 19600 loading chutes of 35W to the dump area. The investigation revealed the following. Rodenberger tried to communicate via radio with the Kubota but received no answer. Albert called again, and Rodenberger denied Albert permission to enter the rail haulageway. Rodenberger called Ketola and Ashlock in the Kubota again but received no answer. Albert radioed Rodenberger again and informed him that he (Albert) was now in the clear. Rodenberger thought that this radio transmission was from Ketola and that the Kubota was in the clear.
From radio recordings, Knight and Rodenberger left the 19600 loading chutes of 35W, traveling eastward, and started down the rail haulageway to the 18300 section of 35W when they observed

the approaching lights of the Kubota. Rodenberger called out on the radio to clear the rail haulageway, as Knight attempted to stop the train. The momentum of the train propelled Knight and Rodenberger down the tracks, and the locomotive struck the Kubota, with Ketola and Ashlock inside. The locomotive derailed and pinned the Kubota against the rib just east of the 17350 transformer bay area of 35W.

After the locomotive came to a stop, Knight exited the train and immediately called central dispatch to get mine paramedics and emergency crews to the accident scene. The mine operator dispatched the mine emergency crews and rescue to the accident scene and called the Stillwater County Sherriff, Nye Fire and Rescue, and Life Flight. The miners and emergency crews worked to move the locomotive and rail cars that pinned the Kubota. Emergency crews recovered Ketola and Ashlock, and Randy Smith, Stillwater Undersheriff/Deputy Coroner, pronounced both miners dead at the scene.

INVESTIGATION OF THE ACCIDENT

On June 9, 2021, at 2:27 p.m., Peter Onoszko, Safety and Health Manager, called the Department of Labor National Contact Center (DOLNCC). The DOLNCC contacted Herbert Bacon, Industrial Hygienist. Bacon contacted Peter Del Duca, Assistant District Manager, who contacted Brad Breland, Assistant District Manager, about the accident. Breland sent Thaddeus J. Sichmeller, Supervisory Mine Safety and Health Inspector, and Lee A. Hughes, Staff Assistant, to the mine. The mine operator notified Peter Crites and Matthew Jaynes, the Mine Safety and Health Inspectors conducting a regular inspection at the Stillwater Mine, and they went to the accident scene. Jaynes 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.

On June 10, 2021, Sichmeller and Hughes arrived at Stillwater Mine to conduct an examination of the accident scene, interview management, miners' representatives, miners, and other relevant personnel, and review conditions and work practices relevant to the accident. The miners are represented by United Steelworkers Local 11-0001. MSHA sent Fred T. Marshall, Mechanical Engineer, from MSHA Technical Support to assist with the accident investigation. Marshall arrived at the mine site on June 14, 2021. See Appendix B for a list of persons who participated in the investigation.

DISCUSSION

Location of the Accident

The accident occurred on the 35 level of the underground mine on the section of the rail haulageway referred to as the 17350 transformer bay area of 35W.

Equipment Involved

The equipment involved in the accident were: (1) a Kubota Utility Vehicle Model RTV-X1140 four-passenger personnel carrier (see Appendix C), (2) a leading Brookville 20-ton locomotive Model 20T200D-FR (see Appendix D), (3) 16 fully loaded 15-ton rail cars, and (4) a trailing Brookville 20-ton locomotive Model 20T200D-FR. The two locomotives operate together through a Control Chief radio remote control linking system. This system allows the locomotive

operator to control the locomotive at the back of the train (without an operator), by applying the throttle and brakes.

MSHA could not conduct an inspection of the Kubota personnel carrier due to the physical damage sustained in the accident.

Operational and mechanical checks of the two locomotives revealed the equipment was within manufacturer's specifications.

Communication Practices in Rail Haulageways

The locomotive operators are responsible for dispatch activities at the 35 level of the mine, and had their own radio channel for communication regarding access to the rail haulageway on the 35 level. At the time of the accident, the mine operator had Standard Operating Procedures for Rail Operations on Rail 35 (Rail 35 SOP) that required clear and confirmed communication between the miners wanting to enter the rail haulageway and the locomotive operators. After reviewing conversations from the radio tracking system of miners working on the 35W rail haulageway, investigators determined that the mine operator did not assure miners followed the Rail 35 SOP. Additionally, the mine operator did not assure miners followed any traffic rules for communication of right of way and direction of movement in any of the mine's rail haulageways.

On June 30, 2020, the mine operator revised communication procedures for rail haulageways on the 2000 and 5000 levels of the mine to require miners to state their name, equipment, and where they were going when asking for clearance to travel on rail haulageways. Because the 35 level was intermittently used for rail haulage, the communication procedures had not been revised like those on the 2000 and 5000 levels, where rail haulage occurred frequently. At the time of the accident, revised rail haulageway communication procedures for the 35 level did not exist because the mine operator was working on implementing one rail haulageway communication procedures document for all levels.

Examinations

MSHA reviewed records of the last workplace examinations for the 35W rail haulageway area, as well as pre-operational inspection logs of the two locomotives involved in the accident, and both items were in compliance.

Training and Experience

Ketola had 42 years of mining experience with over 12 years as a mine supervisor. Ashlock had approximately 39 years of mining experience and became a mine supervisor on March 29, 2021.

Knight had over two years of experience, all at Stillwater Mine. Knight had been operating locomotives for nearly two years and was recently promoted to a locomotive trainer. Rodenberger had approximately 15 weeks of experience as a muck haul operator, operating locomotives, all at Stillwater Mine.

After reviewing the mine operator's training records, investigators determined that all of the miners received training in accordance with MSHA Part 48 training regulations.

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 action to prevent a recurrence.

Root Cause: The mine operator did not assure that traffic rules governing communication, right of way, and direction of movement were followed in rail haulageways.

Corrective Action: The mine operator revised the 35 Rail SOP and incorporated it into a new written policy for all rail haulageways, which prohibits the use of rubber-tired equipment and foot traffic when locomotives are operating. The new policy also establishes and designates a rail haulageway controller, which is not the locomotive operator, and a communication protocol. The mine operator trained all miners on this new policy.

CONCLUSION

On June 9, 2021, Dale G. Ketola a 65 year-old mine supervisor with 42 years of mining experience, and Jerry W. Ashlock a 55 year-old mine supervisor with 39 years of mining experience, died when a 20-ton underground locomotive struck their personnel carrier.

The accident occurred because the mine operator did not assure that traffic rules governing communication, right of way, and direction of movement were followed for rail haulageways.

Approved By:

_____ _____

Dustan Crelly Date
District Manager

ENFORCEMENT ACTIONS

1. 103(k) order was issued to Stillwater Mining Company, on June 9, 2021.

   A fatal accident occurred on June 9, 2021, at approximately 2:15 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(d)(1) citation was issued to Stillwater Mining Company, for a violation of 30 CFR § 57.9100(a).

   A fatal accident occurred June 9, 2021, when two miners traveling westward in the 35W rail section of the mine in a Kubota personnel carrier, were struck by a 20-ton locomotive traveling eastward. The locomotive pushed the Kubota backwards into the north rib at the 17350 transformer bay. The momentum of the locomotive caused it to derail, pinning and crushing the Kubota against the rib. The mine operator did not assure that traffic rules governing communication, right of way, and direction of movement were followed for rail haulageways. This is an unwarrantable failure constituting more than ordinary negligence.

APPENDIX A – Plan Views of the 35W Rail Haulageway

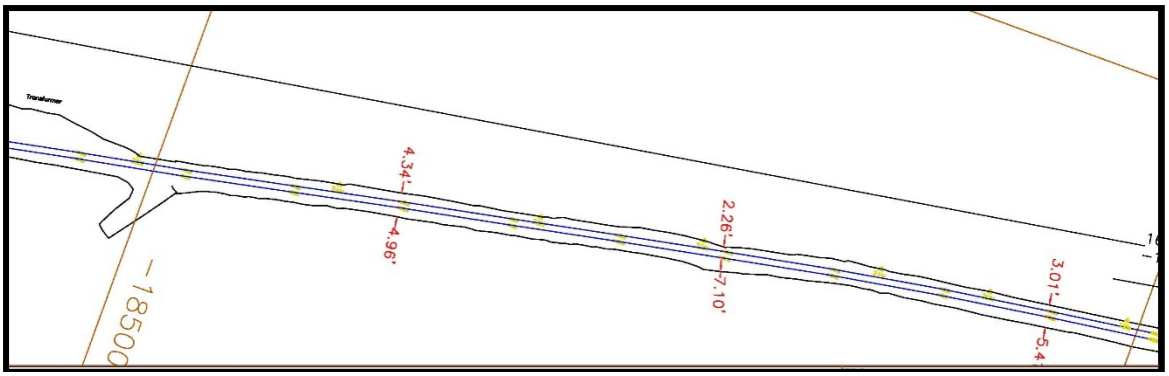

Illustration No. 1: Plan View of 18500 Area to 18000 Area

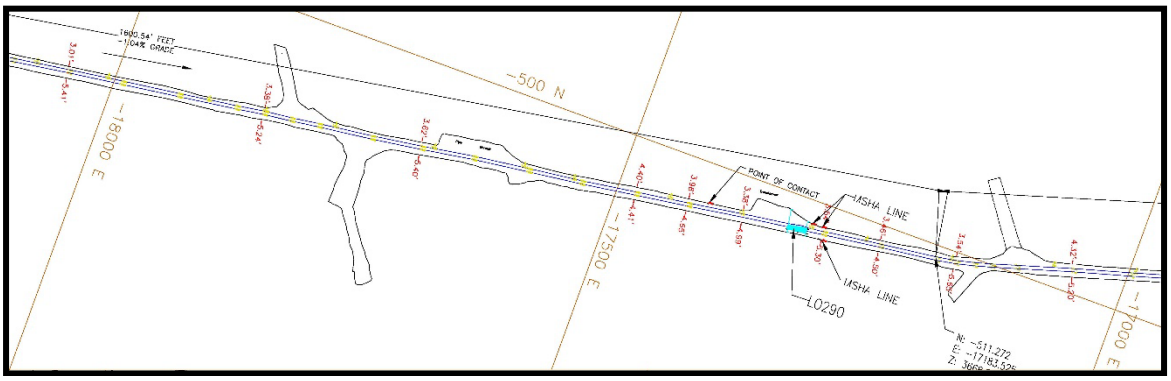

Illustration No. 2: Plan View of 18000 Area to 17000 Area

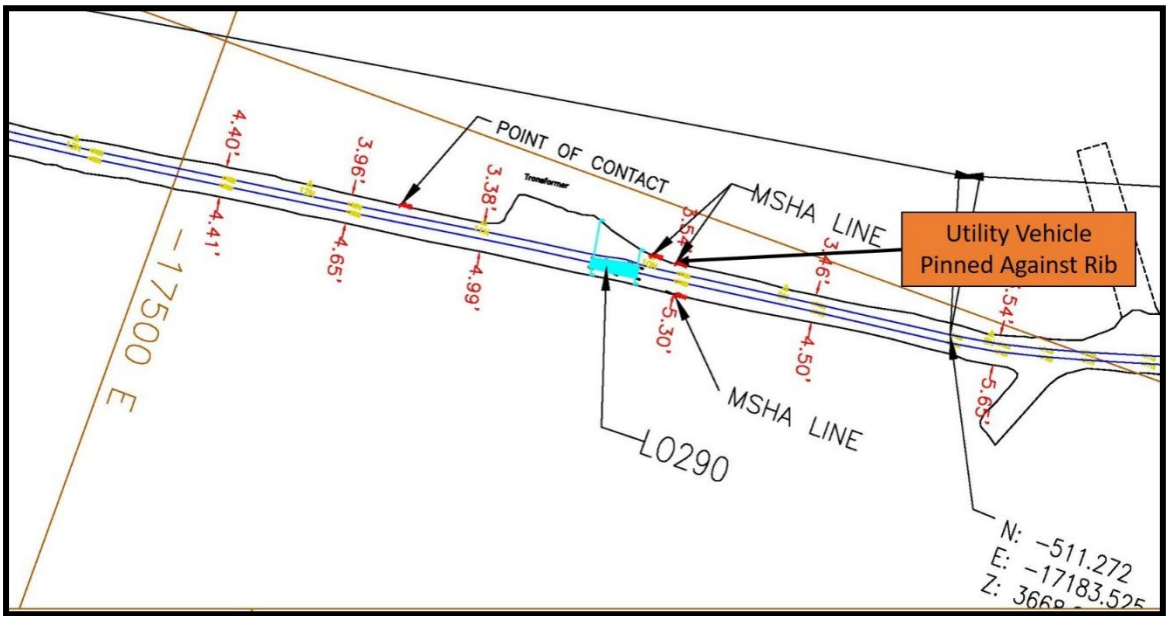

Illustration No. 3: Plan View of Immediate Accident Area

APPENDIX B – Persons Participating in the Investigation

Stillwater Mining Company

Peter Onoszko	Safety and Health Manager
Dan Christensten	Safety Coordinator
Cole Deringer	Engineering Tech Representative
David Crabtree	Supervisor
Dan Markle	General Foreman
Rachelle Kavon	Stillwater Industrial Hygienist
Mick Zugaza	Maintenance Superintendent
Landon Knight	Underground Locomotive Operator
Travis Rodenberger	Underground Locomotive Operator

United Steelworkers Local 11-0001

Ed Lorash	President
Kyle Sandlin	Joint Health and Safety Committee Representative
Jerry Philhower	Joint Health and Safety Committee Representative

United Steelworkers District 11

John Kesler	International USW Representative for Montana

Stillwater County Sheriff/Coroner's Office

Randy Smith	Undersheriff/Deputy Coroner

Mine Safety and Health Administration

Lee A. Hughes	Staff Assistant
Thaddeus J. Sichmeller	Supervisory Mine Safety and Health Inspector
Fred T. Marshall	Mechanical Engineer
Peter Crites	Mine Safety and Health Inspector
Matthew Jaynes	Mine Safety and Health Inspector

APPENDIX C – Kubota Utility Vehicle Similar to One Involved in Accident

APPENDIX D – Brookville 20-ton Locomotive