FAI-6463481-1

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

REPORT OF INVESTIGATION

Surface of Underground
(Coal)

Fatal Inundation Accident
August 1, 2021

Gentry Mine #3
Gentry Mountain Mining LLC
Huntington, Emery County, Utah
ID No. 42-02263

Accident Investigators

Gary Boyd
Mine Safety and Health Inspector

Kendell Whitman
Assistant District Manager

Originating Office
Mine Safety and Health Administration
Lakewood District
PO Box 25367, DFC
Denver, CO 80225-0367
Matthew Lemons, District Manager

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OVERVIEW

On August 1, 2021, at 10:08 p.m., Gary Nelson, a 48 year-old miner with almost 13 years of mining experience, drowned after a flash flood disabled Nelson's personnel carrier and swept him downstream.

The mine operator did not have procedures to monitor potentially dangerous weather conditions.

GENERAL INFORMATION

Gentry Mountain Mining LLC owns and operates Gentry Mine #3. Gentry Mine #3 is an underground bituminous coal mine located in Huntington, Emery County, Utah. Gentry Mine #3 employs 122 miners and operates two eight-hour production shifts and one maintenance shift, five days per week. The mine operates two continuous mining machine sections using the room and pillar mining method. Coal is taken via belt conveyor to the coal stockpile on the surface.

The principal management official for Gentry Mine #3 at the time of the accident was:

Patrick Peterson	Manager

The Mine Safety and Health Administration (MSHA) completed the last regular safety and health inspection at this mine on June 23, 2021. A regular safety and health inspection, started on July 2, 2021, was ongoing at the time of the accident. The 2020 non-fatal days lost incident rate for Gentry Mine #3 was 3.38, compared to the national average of 3.13 for mines of this type.

DESCRIPTION OF THE ACCIDENT

On August 1, 2021, around 10:00 p.m., William Fullmer, Fireboss, finished the underground examinations and left the Gentry Mine #3 portal in the No. 10 personnel carrier by himself. Also, at 10:00 p.m., the First Right and West Mains Section Crews, including Nelson, started their shift. At 10:01 p.m., the crews received their assignments and departed from the bathhouse in the No. 8 and No. 6 personnel carriers. The No. 6 personnel carrier followed closely behind the No. 8 personnel carrier. According to interviews, Alvin Ewell, Graveyard Shift Mine Foreman, said that both crews observed a light sprinkling of rain when they left the bathhouse. The miners traveling in the personnel carriers were:

No. 8 Personnel Carrier - First Right Section Crew	**No. 6 Personnel Carrier - West Mains Section Crew**
Adam Ewell, Section Foreman	Daren Ewell, Section Foreman
Stephen Black, Miner	Hunter Stoddard, Miner
Hernan Nunez, Miner	Elijah Boring, Miner
Jeff Hazel, Miner	Jesse Hofstetter, Miner
Braxton Lyons, Miner	Jim Cooper, Miner
Cole Stoddard, Miner	Gary Nelson, Miner

On the day of the accident, there were two flash floods that affected the travelway leading to the Gentry Mine #3 portal. See Appendix A for an aerial view of the area showing the following events during both flash floods. While both personnel carriers traveled up the mountain towards the Gentry Mine #3 portal, the miners were unaware that the first flash flood struck the No. 10 personnel carrier and was forcing it downhill. At 10:08 p.m., the No. 8 personnel carrier turned right onto the elevated mine access dirt road, which runs along a narrow slot canyon adjacent to a creek bed, located a quarter of a mile from the bathhouse.

The first flash flood hit the No. 8 personnel carrier head-on. The flash flood contained large boulders and broken pine trees and engulfed the narrow slot canyons. The first flash flood pushed the No. 8 personnel carrier downhill, causing it to flip over four times and become stuck on its side in the debris at the wye of the road and river bed (see Appendix B). The miners in the enclosed passenger's rear compartment worked to free themselves. Nunez kicked the back window out. B. Lyons helped remove the back door. The rest of the miners in the No. 8 personnel carrier were able to exit the passenger's rear compartment. At this point, the miners from the No. 8 personnel carrier battled the deep water. B. Lyons swam to solid ground and noticed that the lights at the coal load-out were off. This was because the mine lost power due to the flood.

After escaping the first flash flood, the miners from the No. 8 personnel carrier worked together to move west towards the No. 2 coal load-out, as the second flash flood and debris from the left slot canyon headed towards them. The miners from the No. 8 personnel carrier ran straight towards the large coal stockpile and climbed as high as possible. At this location, the miners could see Fullmer in the No. 10 personnel carrier caught in the second flash flood.

The floodwaters pushed the No. 10 personnel carrier down the mountain towards the scale house. Fullmer pushed the driver's side door open and exited the personnel carrier. The No. 10 personnel carrier ended up stuck in a concrete culvert (see Appendix C). The second flash flood caused Fullmer to float on his back until he came to a stop. While on the side of the coal pile, the miners from the No. 8 personnel carrier waited until the floodwaters from the second flash flood subsided before moving towards the upper maintenance shops. The miners continued to move along the high ground towards the sediment pond and assisted in the rescue of Fullmer, who was holding onto a large rock.

The No. 6 personnel carrier, which had departed shortly after the No. 8 personnel carrier, encountered the first flash flood 0.16 miles from where they started at the road's junction leading to the upper maintenance shop. Stoddard was driving and D. Ewell was in the front passenger seat when it flipped on its side from the force of the first flash flood (see Appendix D). Nelson and D. Ewell exited the cab and started helping the rest of the crew exit out of the No. 6 personnel carrier. Each member of the crew sought higher ground to get out of the first flash flood. D. Ewell was standing on an elevated area next to Nelson, who was standing in knee-high water. D. Ewell turned to help other miners out of the No. 6 personnel carrier when the second flash flood hit the personnel carrier. D. Ewell turned to look for Nelson but could not locate him. When the floodwater receded, the remainder of the miners in the No. 6 personnel carrier safely traveled towards the bathhouse.

A. Ewell checked to make sure all miners made it safely back to the bathhouse. A. Ewell noticed that Nelson was missing, and notified Ashley Lyons, Surface Emergency Response Person. At 10:14 p.m., Lyons called the Emery County, Utah, Sheriff's Department. The Emery County Search and Rescue personnel arrived at 11:16 p.m. with multiple units, canine search teams, and the Sheriff's helicopter under the direction of Kyle Ekker, Sheriff Captain. On August 2, 2021, the rescue efforts for Nelson continued until 11:30 a.m., when the Emery County Search and Rescue team found Nelson's body 6.87 miles down the Huntington Canyon river bed, adjacent to State Highway 31. Jamie Kallan, M.D., Coroner, pronounced Nelson dead at 11:30 a.m. on August 2, 2021.

INVESTIGATION OF THE ACCIDENT

On August 2, 2021, at 12:59 a.m., Randy Defa, Safety Director, called Cord Cristando, Supervisory Mine Safety and Health Inspector, and reported the accident. Defa also called the Department of Labor National Contact Center (DOLNCC) at 1:14 a.m. The DOLNCC contacted Kendell Whitman, Assistant District Manager, at 1:36 a.m. Cristando also contacted Whitman, who then contacted Matthew Lemons, District Manager. Cristando then called Daniel Lyons, Mine Safety and Health Inspector, and sent him to the mine. At 2:05 a.m., D. Lyons arrived at the mine and 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. At 2:51 a.m., Whitman called Gary Boyd, Mine Safety and Health Inspector, to lead the investigation.

Cristando arrived at 8:15 a.m., Boyd arrived at 10:12 a.m., and Whitman arrived at 11:00 a.m. on August 2, 2021. MSHA investigators examined the accident scene and interviewed miners and other relevant personnel. See Appendix E for a list of persons who participated in the investigation.

DISCUSSION

Location of the Accident

The accident occurred in the narrow slot canyon on a haulage road between the bathhouse and the Gentry Mine #3 portal. The bathhouse and the portal are 6,758 feet apart. When the first flash flood struck, the No. 6 personnel carrier was 792 feet from the bathhouse and the No. 8 personnel carrier was 1,690 feet from the bathhouse. The floodwaters moved the No. 6 personnel carrier 370 feet and the No. 8 personnel carrier 581 feet back toward the bathhouse. The No. 10 personnel carrier was 3,062 feet from the portal when the first flash flood hit. The floodwaters moved the No. 10 personnel carrier 3,379 away from the portal and it ended up 317 feet from the bathhouse (see Appendix A).

Geologic Terrain Surrounding the Mine

The Gentry Mine #3 is located approximately 12 miles northwest of Huntington, Utah, just off State Highway 31 in Bear Canyon. The mine is located in the Plateau region of Eastern Utah, in the Manti-La Sal National Forest, directly below the Gentry Mountain, extending to the Wild Horse Ridge. This area consists of large plateaus with deeply incised canyons with five multiple-slot canyons that merge. The canyons rapidly descend in elevation, with numerous geological benches descending from the mesa at an elevation of 9,600 feet. The valley of the canyons is below at 6,400 feet in elevation. The geological terrain is conducive to accelerated water run-offs from weather conditions on the top of the mesa, which drain down to the plateaus. Normal drainage flows naturally occur in the ravines' contours and strategically placed culverts through the drainage field direct water flow to the valley below. The estimated watershed area for the Bear Canyon is 2,009 acres (see Appendix F).

Weather

The weather at the time of the accident was 66 degrees Fahrenheit with significant rainfall on top of the mesa, but light rainfall at the bathhouse. The Certified Weather Report indicated a maximum rainfall of 8.14 inches from August 1, 2021, at 8:09 a.m. to August 2, 2021, at 12:02 a.m. (see Appendix G). Investigators determined that weather was a contributing factor to the accident.

The atmospheric conditions over the Gentry Mountain and the Wild Horse Ridge can cause recurrent and significant rainfall, which at times creates flash floods. The storm deposited several inches of precipitation on top of the mesa, which saturated the ground and produced an abnormal amount of drainage down to the edge of the plateaus. The water on the plateaus converged and proceeded to the canyons below. Several low areas exist in the slot canyons, which caused water to impound, and allowed a build-up of debris that breached and released a

large amount of water. The sudden release of water created the flash flood, which generated a large amount of force, and collected debris as the flash flood water moved downhill into the canyons. Investigators were not able to review the history of flash floods because Emery County does not document flash floods in this area because of its seclusion and lack of a weather station.

Weather Monitoring and Warnings

The National Weather Service (NWS) had issued a Flash Flood Watch for Emery County, Utah, at 9:20 a.m. on the day of the accident. The Certified Weather Report states, "Flash flood watch remains in effect through this evening." Additionally, at the same time the National Oceanic Atmospheric Administration/National Weather Service (NOAA/NWS) issued a Precautionary/Preparedness Actions statement that stated, "You should monitor later forecasts and be prepared to take action should a Flash Flood Warning be issued." Based on interviews, the mine operator did not monitor the weather of Gentry Mountain and the surrounding areas, and therefore the mine operator was unaware of the flash flood watch.

The NOAA/NWS Forecast Office did not issue any Flash Flood Warnings. According to the NOAA/NWS, a Flash Flood Watch is issued when conditions are favorable for flash flooding. It does not mean that flash flooding will occur, but it is possible. A Flash Flood Warning is issued when flash flooding is imminent or occurring.

Equipment Involved

The personnel carriers used by the mine are Genco Geep personnel carriers (see Appendix H). Investigators were unable to examine the personnel carriers due to the damage caused by the flood.

Examinations

The mine operator examines all travelways and haulage roads during daily on-shift examinations in areas where miners work or travel. The mine operator maintains the haulage roads with a road grader. The examination included observation of the culverts' entrance and exit. If necessary, the mine operator clears miscellaneous materials, such as boulders and other naturally occurring debris, as needed. MSHA investigators did not find any deficiencies with the mine operator's examination.

Training

Gary Nelson had almost 13 years of mining experience and worked at the Gentry Mine #3 for nearly ten years. William Fullmer had over 42 years of mining experience and worked at the Gentry Mine #3 for over ten years. MSHA investigators reviewed Nelson's and Fullmer's training records and found that all training was in accordance with MSHA's 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 have procedures to monitor potentially dangerous weather conditions.

Corrective Action: The mine operator developed a written procedure to direct the bathhouse person to use available weather forecasts from weather services to monitor for weather that has the potential to cause flooding. The weather services that are monitored shall include, but may not be limited to, the National Oceanic and Atmospheric Administration.

The mine operator installed a weather monitoring station manufactured by Davis Instruments Corporation. This weather monitoring station was installed at the Gentry Mine #3 portal to monitor rain, temperature, humidity, wind, and barometric pressure. The mine operator also petitioned the state of Utah for a Doppler weather station.

Additionally, the mine operator will:
1. Check current weather conditions and weather forecasts during preshift examinations, and more often as weather conditions warrant, and
2. Post current weather conditions and any weather advisory or warning in a clear conspicuous manner where miners can review at the start of each shift.

A surface foreman will always be on duty when miners are working and in a position to evaluate and quickly respond to weather watches and warnings. During precipitation, a surface foreman will use data from the weather monitoring station to determine whether to close the access road from the Gentry Mine #3 due to any potential weather that could affect the miners' safety. A surface foreman will immediately notify the miners of any closures and notify, via radio, all miners on the surface who are not near the bathhouse. Miners in the underground mine will also be notified and the responsible person will take charge during emergencies in the underground mine. The mine operator trained all managers and miners in this new procedure.

CONCLUSION

On August 1, 2021, at 10:08 p.m., Gary Nelson, a 48 year-old miner with almost 13 years of mining experience, drowned after a flash flood disabled Nelson's personnel carrier and swept him downstream.

The mine operator did not have procedures to monitor potentially dangerous weather conditions.

Approved By:

_____ _____

Matthew Lemons Date
District Manager

ENFORCEMENT ACTIONS

1. A 103(k) order was issued to Gentry Mountain Mining LLC.

   A fatal accident occurred on August 1, 2021, at 10:08 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 314(b) safeguard was issued to Gentry Mountain Mining LLC.

   On August 1, 2021, a fatal injury occurred at the mine due to a flash flood. This is a notice to provide safeguard requiring the mine operator to:

   1. Use available weather forecasts from weather services to monitor for weather that has the potential to cause flooding. The weather services that are monitored shall include, but may not be limited to, the National Oceanic and Atmospheric Administration.
   2. Install a weather monitoring station at the Gentry Mine #3 portal to monitor rain, temperature, humidity, wind, and barometric pressure.
   3. Petition the state of Utah for a Doppler weather station.
   4. Check current weather conditions and weather forecasts during preshift examinations, and more often as weather conditions warrant.
   5. Post current weather conditions and any weather advisory or warning in a clear conspicuous manner where miners can review at the start of each shift.

   Additionally, a surface foreman will always be on duty when miners are working and in a position to quickly evaluate and quickly respond to weather watches and warnings. During precipitation, a surface foreman will use data from the weather monitoring station to determine whether to close the access road from the Gentry Mine #3 due to any potential weather that could affect the miners' safety. A surface foreman will immediately notify the miners of any closures and notify, via radio, all miners on the surface who are not near the bathhouse. Miners in the underground mine will also be notified and the responsible person will take charge during emergencies in the underground mine.

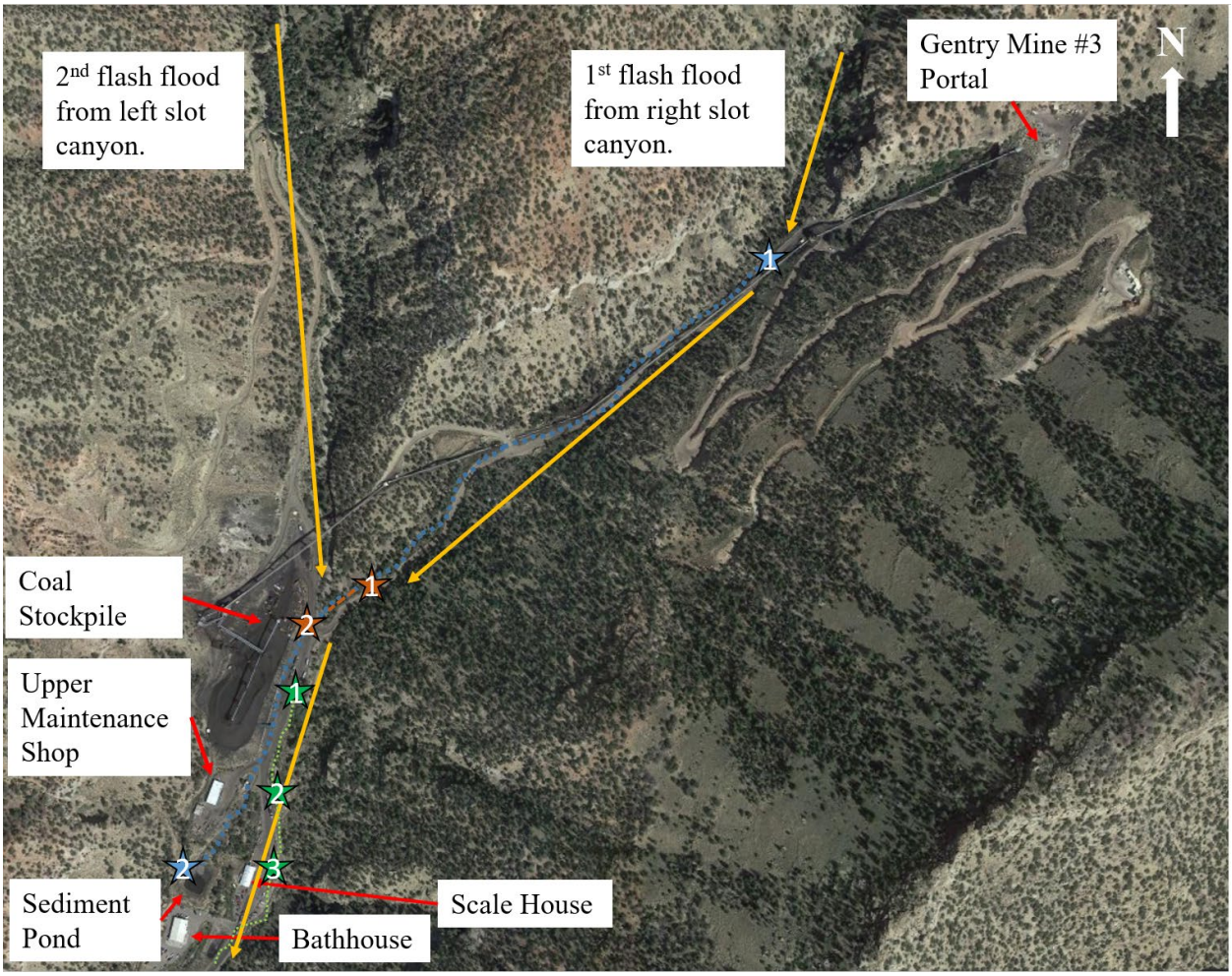
3. A 104(a) citation was issued to Gentry Mountain Mining LLC for a violation of 30 CFR § 75.1502.

   On August 1, 2021, a fatal injury occurred at the mine due to a flash flood.

   The Gentry #3 Mine Emergency Evacuation and Fire Fighting Program of Instruction (MEE) Plan is insufficient. The plan does not address the potential adverse weather conditions that can occur due to the prevailing weather patterns surrounding the mine and the geological conditions present on the access road to the mine's portal. The responsible person on duty

during the flash flood (inundation) event, did not have sufficient training or foresight to identify the potential hazards before the event occurred. The weather monitoring infrastructure and forecasting information on potential weather warnings and precautions was not incorporated into the MEE Plan. The mine operator must submit a revised MEE Plan to the district manager that covers the precautions and training for monitoring adverse weather conditions and the actions that must be taken by the responsible person on duty to provide ample warning in advance weather conditions for the safety of the miners.

APPENDIX A – Aerial View of the Area Showing the Events during the Flash Floods



LEGEND

- Fullmer's location when the 1st flash flood impacted his personnel carrier.
- Fullmer's final location.
- No. 8 personnel carrier's location when the 1st flash flood impacted it.
- The No. 8 personnel carrier rolled to this location when the 2nd flash flood impacted it and it remained at this location after 2nd impact.
- No. 6 Personnel Carrier's location when the 1st flash flood impacted it.
- Location of where the crew exited the No. 6 Personnel Carrier. Nelson was last seen here before he was swept away by the 2nd flash flood.
- No. 6 Personnel Carrier's final resting spot.
- Direction of the flash flood.

APPENDIX B – No. 8 Personnel Carrier Final Location

APPENDIX C – No. 10 Personnel Carrier Final Location in the Concrete Culvert

APPENDIX D – No. 6 Personnel Carrier Final Location and Debris Field

APPENDIX E – Persons Participating in the Investigation

Gentry Mountain Mining LLC

Shane Stoddard	Chief Executive Officer
Patrick Peterson	Manager
Randy Defa	Safety Director
Tony Welch	Mine Manager
Ashley Lyons	Surface Emergency Response Person
Adam Ewell	Section Foreman
Daren Ewell	Section Foreman
Alvin Ewell	Graveyard Shift Mine Foreman
William Fullmer	Fireboss
Stephen Black	Miner
Elijah Boring	Miner
Jim Cooper	Miner
Jeff Hazel	Miner
Jesse Hofstetter	Miner
Braxton Lyons	Miner
Hernan Nunez	Miner
Cole Stoddard	Miner
Hunter Stoddard	Miner

Emery County, Utah Sheriff's Department

Kyle Ekker	Sheriff Captain
Jeff Thomas	Sheriff Captain
Greg Funk	Sheriff
Tyson Ray Huntington	Detective
Shawn Roper	Detective
Shaun Bell	Deputy
Dallon Cologie	Deputy
Michael Ray Grange	Deputy
Joel Michael Howes	Deputy
Jeremy Lake	Deputy
Michael Vanwagoner	Deputy
Roddy Riley	Jail Sergeant
Jared Anderson	IG Communications
Jeff Guyman	IG Communications
Wade Allinson	Search and Rescue
McKlane Jesse Allred	Search and Rescue
James Byars	Search and Rescue
Zachary Crawford	Search and Rescue
Dal Gray	Search and Rescue
Larry Johansen	Search and Rescue
Douglas Johnson	Search and Rescue

Jerry Price	Search and Rescue

Emery County Ambulance

Stacy McElpran	Emergency Medical Technician
Leonard Norton	Emergency Medical Technician
Rebecca Norton	Emergency Medical Technician
Boyd Wilson	Emergency Medical Technician

Utah State Medical Examiner

Jamie Kallan, M.D.	Coroner

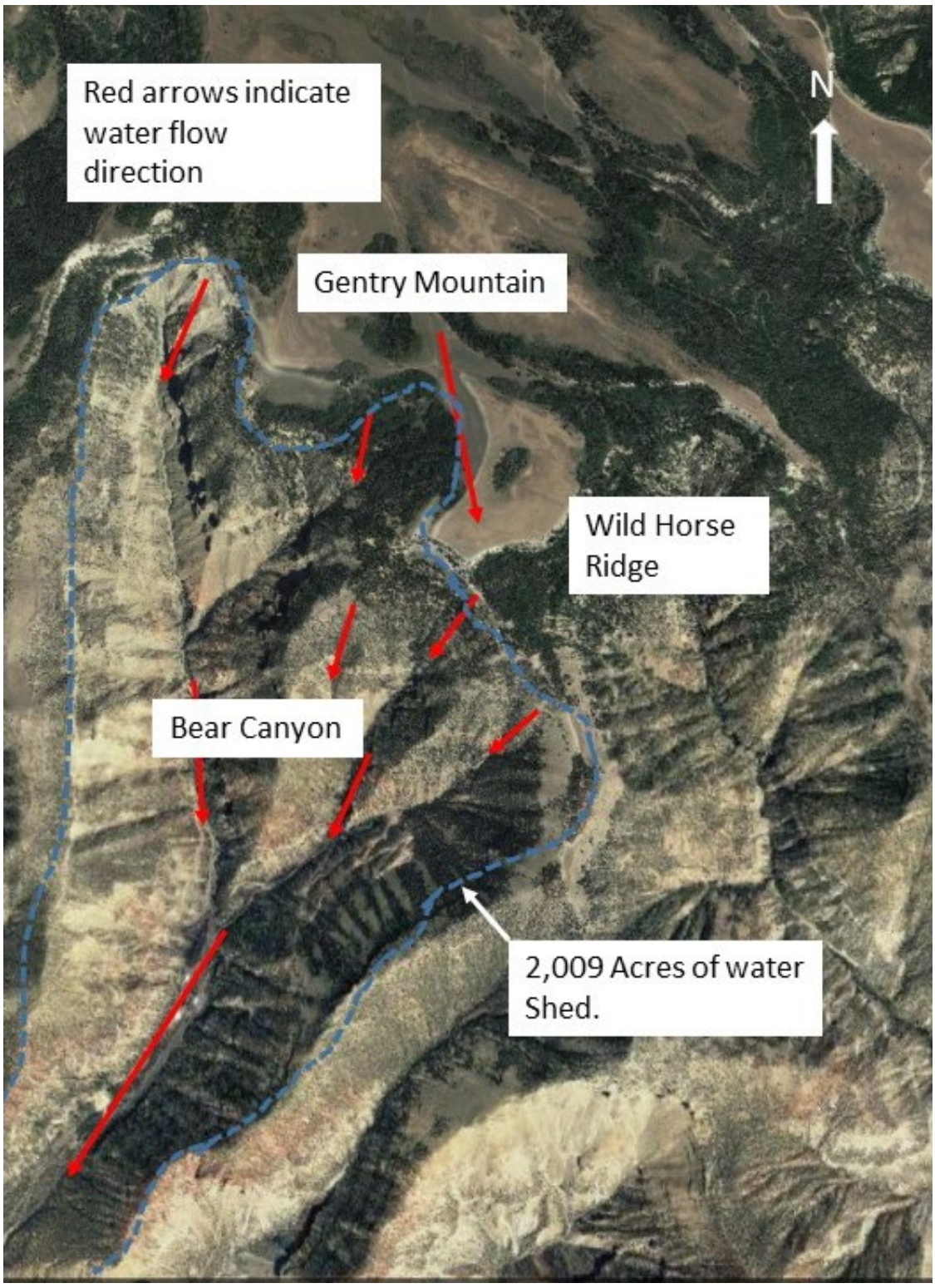
National Oceanic Atmospheric Administration/National Weather Service

Kevin Barjenbruch	Warning Coordination Meteorologist

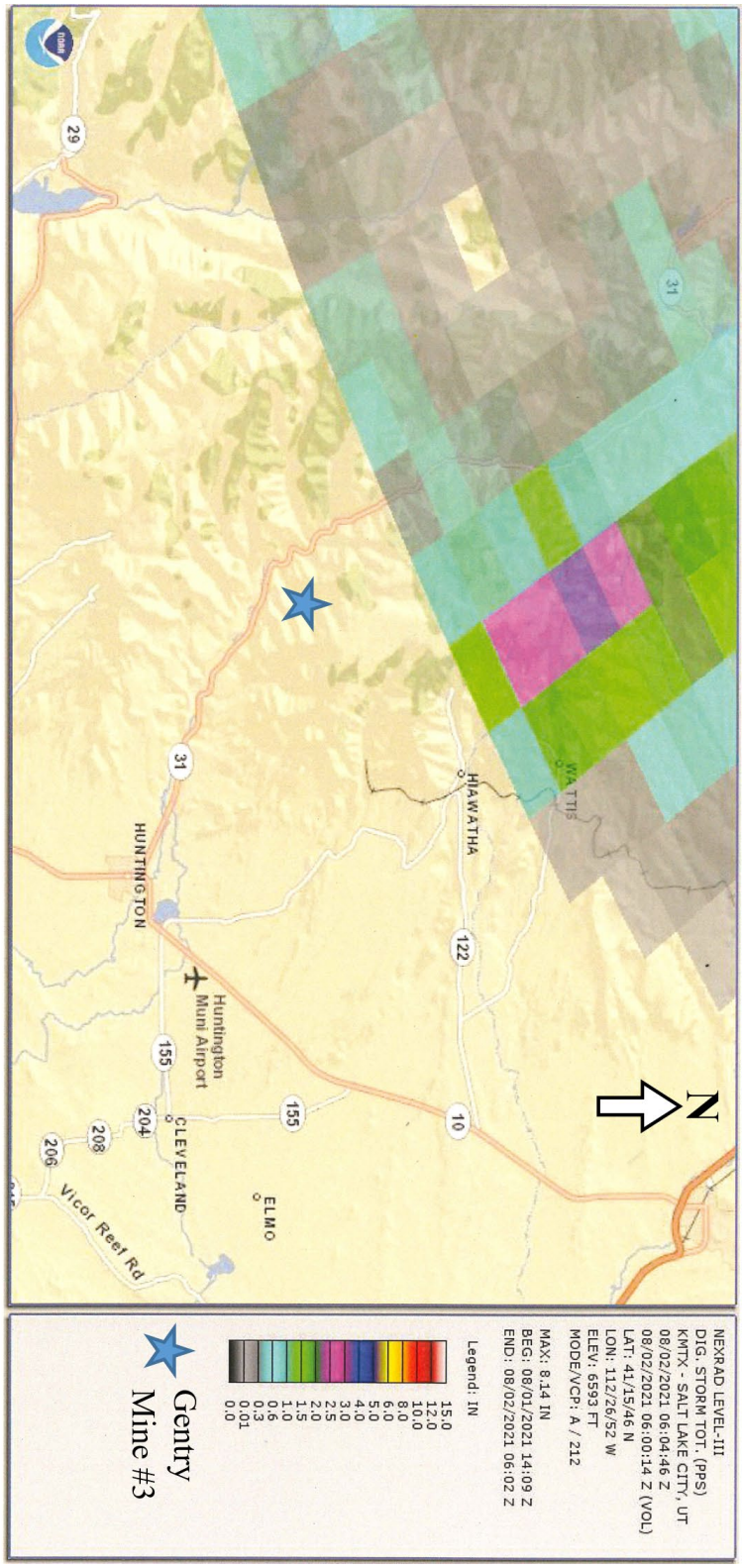
Mine Safety and Health Administration

Matthew Lemons	District Manager
Kendell Whitman	Assistant District Manager
Cord Cristando	Supervisory Mine Safety and Health Inspector
Gary Boyd	Mine Safety and Health Inspector
Daniel Lyons	Mine Safety and Health Inspector

APPENDIX F – Aerial View of Bear Canyon and Water Flow through the Watershed



APPENDIX G – Precipitation Contour Map from the Certified National Weather Report



APPENDIX H – Genco Geep Personnel Carrier