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# GENERAL INFORMATION

## Coal Mine Fatal Accident 2003-30



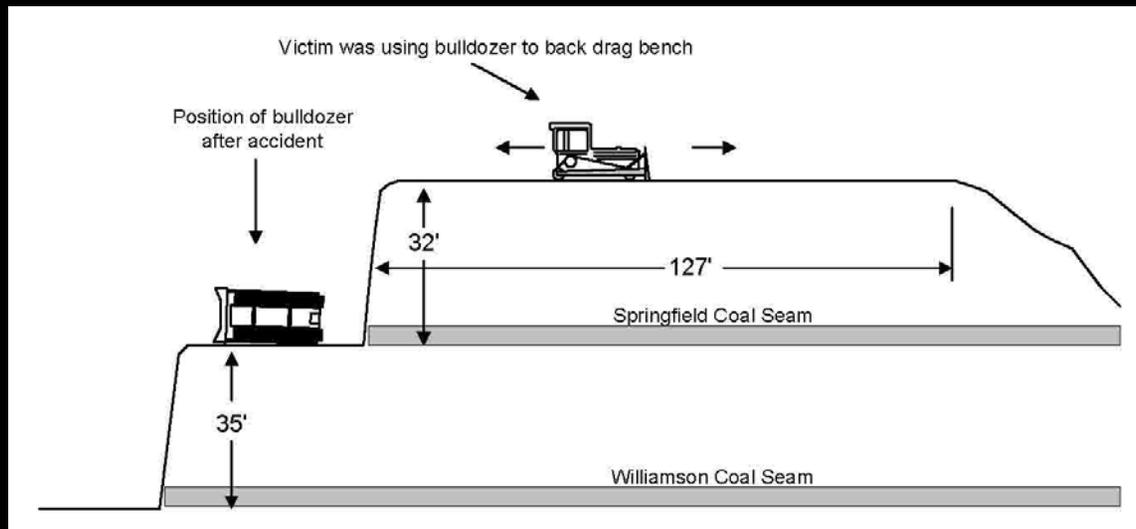
Operator:	T & W Enterprises, LLC
Mine:	No. 1
Accident Date:	September 09, 2003
Classification:	Machinery
Location:	District 6, Sitka, KY
Mine Type:	Surface
Employment:	3
Production	50 tons/day from 2 Coal Seams

# ACCIDENT DESCRIPTION

- On Tuesday, September 09, 2003, two miners, a bulldozer operator and the mine foreman, started their shift at approximately 6:45 a.m. and discussed plans for the day.
- No one else was working at the mine at that time.
- Amidst a very thick fog, the mine foreman left to get a front-end loader to clean the lower seam pit, while the other miner began tramming the bulldozer from the previous day's location toward the upper seam drill bench to clear away rocks and dirt in preparation for drilling operations.
- The mine foreman returned at approximately 8:15 a.m. and trammed the front end loader into the upper pit to begin cleanup work.

# ACCIDENT DESCRIPTION

- As he was turning the front end loader around, the mine foreman heard the backup alarm on the bulldozer continuously beeping. As he approached the location where the sound was originating, he saw the bulldozer lying on its side on the upper coal seam bench.
- The mine foreman ran to the bulldozer and checked the operator for vital signs and found none. He returned to his vehicle and called 911. He then called an agent for the operator, who notified MSHA and the Kentucky Department of Mines and Minerals at approximately 8:35 a.m.
- Shortly thereafter, personnel from the sheriff's office and the local ambulance service arrived at the mine. The County Coroner's office was contacted and the Coroner's presence was requested. The victim was recovered from the bulldozer and transported to the State Medical Examiner's Office.



# METHOD OF MINING

- The mine utilizes the contour method of strip mining with 2 front-end loaders, 2 trucks, 1 bulldozer and 1 highwall drill.
- After the bulldozer is used to prepare a drill bench, a pattern of 6 ¾" diameter holes are drilled with an Ingersoll DM-45 highwall drill. The holes are loaded with an Ammonium Nitrate/Fuel Oil Mixture (ANFO) and electric or non-electric detonators.
- Blasting is performed on a contract basis. The resulting highwall is limited by the ground control plan to a maximum of 60' in height and is required to be slanted away from the coal pit at an angle greater than 90° to prevent overhanging rock.
- The top of the highwall is cleaned and cleared of trees, debris, and hanging materials as it is taken.
- The operator was following the acknowledged ground control plan. Neither the method of mining nor mining practices appeared to have contributed to the accident.

# EQUIPMENT

- Examination of the equipment on site did not reveal any defects that could have contributed to the accident.
- The Caterpillar Model D8L bulldozer was manufactured in 1986. It was equipped with a 335 hp Caterpillar Model 3408 turbocharged diesel engine and had an operating weight of approximately 84,000 lb.
- A push test revealed the service brakes were holding the machine.
- Pulling each steering control lever all the way back moved each spool in the valve that applies the service brake on that side. Application of the service brake pedal moved the spool in the valve, which applies the service brake on both sides of the bulldozer.
- Moving the operator's transmission control to each position resulted in a corresponding movement of the transmission controls attached to the transmission.
- Both the ROPS and FOPS met SAE criteria.
- The safety glass that was installed in the rear of the cab when the machine was shipped from the manufacturer had been replaced with glass that was not safety glass.
- All of the running lights on the bulldozer worked except the right rear light, which had been destroyed in the accident.

# HUMAN FACTORS

- The seat belt was functional, but reportedly was not being used by the victim at the time of the accident. The operator's envelope inside of the cab was not compromised during the accident.
- A lack of records for experienced miner training and task training for the victim was cited during the investigation. Although other deficiencies relating to training for this mine were found, they were cited as part of a separate inspection because they were determined not to be contributing factors to the accident. The victim had 42 years of total mining experience, most of which was operating bulldozers, and 16 weeks experience at this mine.
- It is possible that the physical condition of the victim may have contributed to the accident. The victim suffered from diabetes and was 73 years of age. Although the victim was known to be a severe diabetic, the autopsy report did not identify this as a contributing factor to the accident. The cause of death was listed as "Blunt impacts and crushing injuries of head, trunk and extremities with multiple skeletal and visceral injuries."

# OTHER FACTORS

- Examinations - According to testimony, workplace examinations were performed routinely by the mine foreman, but examination records were not being kept as required by 30 CFR 77.1713. An examination of the accident scene and work site did not reveal any hazards. Failure to record the results of workplace examinations was not a contributing factor to the accident.
- Weather - On the day of the accident, the weather was dry, but visibility was impaired by moderate to heavy fog that was present until approximately 9:15 a.m. After returning to the upper pit area, the mine foreman heard the bulldozer's backup alarm, but due to the fog, he did not see the bulldozer until he was within 40' of the machine.

# ROOT CAUSE ANALYSIS

*Causal Factor:* The victim may have misjudged the distance to the edge of the highwall.

*Corrective Actions:* Continual focus on work activities, and adherence to all safety factors related to the task being performed. A procedure should be established to prohibit activities when visibility is inadequate to permit safe operation.

# ROOT CAUSE ANALYSIS

*Causal Factor:* The victim may not have been able to see the edge of the highwall due to heavy/thick fog conditions.

*Corrective Actions:* Adequately marking the edge of the highwall, or performing other, less hazardous duties until weather conditions/visibility improve. A procedure should be established to prohibit activities when visibility is inadequate to permit safe operation.

# ROOT CAUSE ANALYSIS

*Causal Factor:* The victim was not wearing a seat belt where there was a danger of overturning and where ROPS were provided.

*Corrective Actions:* Management must enforce all safety regulations and safety practices.

# CONCLUSION

At approximately 8:15 a.m. on September 9, 2003, a 73-year old bulldozer operator with 42 years of mining experience traveled off a highwall in heavy fog while back-dragging the bench. The bulldozer operator was fatally injured during the 32-foot fall from the highwall. Based on information gathered during the investigation, the most likely cause of the accident was a misjudgment or inability to see the edge of the highwall due to heavy fog. The fog made visibility difficult. This misjudgment or inability to see the highwall edge may have been aggravated by a lack of any visible point of reference.

Additionally, the operator failed to meet the requirement for wearing a seat belt where there is a danger of overturning. The failure to wear a seat belt likely contributed to the severity of the victim's injuries.

# ENFORCEMENT ACTIONS

## 104(a) Citation (Moderate Negligence) for a violation of 30 CFR 77.403a(g)

Evidence obtained at the scene of the accident indicated that seat belts provided in the cab of the Caterpillar D8L bulldozer were not in use when the accident occurred.

## 104(a) Citation (Moderate Negligence) for a violation of 30 CFR 48. 26

Testimony taken during the investigation along with evidence obtained at the mine site revealed that the victim had not received the required training prescribed by 30 CFR, Part 48. There were no records to indicate that the victim received experienced miner training for the specifics of this operation, nor had task training for this particular occupation been given by an approved instructor.

# BEST PRACTICES

- Be familiar with your work environment at all times.
- Implement safety precautions to address adverse weather, lighting, and visibility conditions (provide light towers and ensure wipers, washers, and defrosters are working properly and that window cleaning supplies are readily available).
- Ensure that mobile equipment operators wear seatbelts when moving equipment.
- When operating in close proximity to drop offs/edges, always keep the blade between you and the edge.