

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

COAL MINE SAFETY AND HEALTH

REPORT OF INVESTIGATION

Surface Coal Mine

Fatal Machinery Accident
December 29, 2017

Black Jewell, LLC
S-7 Surface Mine
Fayette County West Virginia
I.D. No. 46-07491

Accident Investigator
Franklin E. Stover
Coal Mine Safety and Health Inspector

Originating Office
Mine Safety and Health Administration
District 4
100 Bluestone Road
Mount Hope, WV 25880-1000
David S. Mandeville District Manager

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OVERVIEW

On Friday, December 29, 2017, at approximately 12:57 a.m., Thurman Watts, a 34-year-old bulldozer operator with 10 years of mining experience, was fatally injured when the Caterpillar D-9T bulldozer he was operating traveled over a highwall. The bulldozer dropped approximately 100 feet and continued down the spoil bank, coming to rest approximately 400 feet from the top of the highwall. At the time of the accident, Thurman Watts was removing overburden from a coal seam.

The fatal accident occurred because safe work practices were not followed. The ground conditions were irregular. The bulldozer operated by Thurman Watts traveled onto an area of unstable spoil on the top of the highwall. Because of this, the bulldozer was not being operated a safe distance from the edge. The spoil slipped down the highwall face under the bulldozer, causing it to go over the highwall.

GENERAL INFORMATION

The S-7 Surface Mine, operated by Black Jewell, LLC produces bituminous coal and employs 22 people. The mine operates two 10-hour production shifts per day, six days per week. The coal is mined from two pits, identified as the Winifrede Ryder, and the Chilton Coal Seams, with front end loaders, haul trucks, and bulldozers. The bulldozers assist with both the production process and reclamation process. At the time of the accident, this mine was in the process of being reopened by a new operator and had not resumed coal production.

The principal officers for Black Jewell, LLC were:

| | |
|---------------------|--------------------------------------|
| Jeffrey Hoops | President/Owner |
| Dave Runyon | Chief Operating Officer |
| Larkin Hoskins..... | Vice President of Surface Operations |
| Joseph Jacobs..... | Safety Director |

The Mine Safety and Health Administration (MSHA) completed a regular (E01) safety and health inspection on July 21, 2017. The non-fatal days lost (NFDL) injury incidence rate for the mine operator in 2016 was 0, compared to a national NFDL rate of 0.74 for mines of this type.

DESCRIPTION OF ACCIDENT

On Thursday, December 28, 2017, Thurman Watts and Larry Dotson, Bulldozer Operators, arrived for work on the second shift which started at 5:00 p.m. Denver Calhoun, Second Shift Foreman, assigned them to work in the Winifrede Ryder Pit pushing overburden over the highwall to expose the coal seam. By 5:15 p.m., Thurman Watts was operating the Caterpillar D-9T bulldozer and Dotson was operating the Caterpillar D-11R bulldozer. Both operators were pushing overburden. They continued working until 10:50 p.m., when they backed out of the pit to fuel their bulldozers and eat lunch. At 11:20 p.m., Thurman Watts and Dotson resumed their work. At approximately 12:57 a.m., Dotson noticed that the D-9T bulldozer was missing. Dotson checked the area and realized that it had gone over the highwall.

Dotson contacted Calhoun, at 12:58 a.m. to report the accident. Calhoun then called Tyrone Watts, Mine Superintendent/Emergency Medical Technician (EMT), at home to

tell him what happened. Calhoun and Dotson began searching for a way to access the general area where the bulldozer travelled over the highwall.

Tyrone Watts arrived at the mine site at approximately 1:30 a.m., and met up with Dotson. Tyrone Watts was aware of an access road leading to the area where the bulldozer was suspected to be, and the two men traveled over the road to its end. They could see the bulldozer sitting on its tracks on the slope above the road. They walked to the bulldozer and at about 1:50 a.m., they found Thurman Watts. He was lying on the ground about 17 feet from the bulldozer, was alert and talking, but struggling to breathe.

At about 2:00 a.m., Dax Pennington, Rock Truck Driver; Ronald Neece, D-9 Bulldozer Operator; Frank Calfpgo, Rock Truck Driver; and Josh Evens, Fuel Truck Operator/EMT, arrived at Thurman Watts' location, carrying first aid boxes.

Tyrone Watts called 911 at 2:03 a.m., and Jan Care Ambulance from Beckley, West Virginia was dispatched to the mine site. Calhoun left the scene to meet the ambulance at the mine entrance. A few minutes later, Tyrone Watts called 911 again and requested a helicopter. Health Net Aeromedical services was dispatched at 2:23 a.m.

During this period, Tyrone Watts and the other miners on the scene placed a C-collar on Thurman Watts to stabilize his neck. They then placed him on a stretcher and transported him off the steep grade to the ambulance. The ambulance arrived on the scene at 2:38 a.m., and at 2:53 a.m., the EMTs from Jan Care took over Thurman Watts' treatment. Health Net Aeromedical service arrived at the scene at 2:54 a.m. and took control of Thurman Watts' care from Jan Care EMTs at 2:56 a.m. Health Net left the mine site with Thurman Watts at 3:12 a.m. and landed at Charleston Area Medical Center in Charleston, West Virginia 3:35 a.m. At 3:40 a.m., Health Net transferred care of Thurman Watts to a registered nurse. He was pronounced dead at 5:33 a.m. by Dr. C. Metin Savasman, Deputy Chief Medical Examiner.

INVESTIGATION OF ACCIDENT

The Department of Labor (DOL) National Contact Center was notified by Tyrone Watts, Mine Superintendent, of the accident on December 29, 2017, at 1:41 a.m. The Contact Center notified Kelly Acord, District 4 Special Investigations Supervisor, at 1:54 a.m. Acord contacted Franklin Stover, Coal Mine Safety and Health Inspector (CMI)/ Accident Investigator, and dispatched him to the accident site. Stover traveled to the mine site and issued a 103(k) order at 4:45 a.m. to ensure the safety of the miners and to preserve the accident scene.

The accident investigation was conducted jointly with West Virginia Office of Miners Health Safety and Training (WVOMHST), and Black Jewell, LLC.

While at the accident scene, Stover, along with Andrew Sedlock, CMI/Accident Investigator, gathered preliminary information from mine personnel and examined the site of the accident. They found that the bulldozer, which had not been moved, was on a steep slope and was unstable. Since it was not safe to investigate the bulldozer in that position, it was removed to a safe location. On March 13, 2018, the investigation team conducted an examination of the inside of the cab.

Interviews were conducted with mine personnel who were determined to have potential information related to the accident and the mechanical condition of the D-9T bulldozer (see Appendix A). On January 4, 2018, MSHA and WVOMHST conducted formal interviews at WVOMHST's office in Oak Hill, West Virginia.

DISCUSSION

Location of Accident

The Caterpillar D-9T bulldozer operated by Thurman Watts was working in the Winifrede Ryder Pit, pushing shot material over a crest of the highwall. After traveling over the highwall, the bulldozer dropped approximately 100 feet and continued down the spoil bank, coming to rest approximately 400 feet from the top of the highwall (see Appendix B).

General Machine Information

The bulldozer was built by Caterpillar and was a model D-9T. It was equipped with a rollover protective structure (ROPS). It also had an enclosed cab with a falling object protective structure (FOPS). The bulldozer had a power shift transmission with three forward gears and three reverse gears, with a maximum speed of 7.3 mph going forward and 8.9 mph in reverse. When investigators conducted an examination of the bulldozer, they found the transmission gear selector in reverse and the park brake was released.

The bulldozer has an approximate operating weight of 106,836 lbs including blade and counterweight. The bulldozer had an overall length of approximately 22 feet; height of 12.5 feet; the track width is 9.4 feet from outside to outside of track with 24 inch shoes.

Adrian Owsley, Day-shift D-9T Bulldozer Operator, reported that he had not experienced any mechanical issues with the brakes or steering.

The bulldozer lights were destroyed during the accident. A review of the operators' pre-operational examination records did not list any defective lighting on the day of the accident.

ROPS and Seat Belt

The rollover protective structure (ROPS) was not altered or damaged and the confines of the cab interior maintained its integrity. The outer plastic of the seat belt buckle or latch had broken off, exposing the seat belt inner mechanism (see Appendix B). The seat belt was tested and found to be functioning properly. Investigators found the seat belt unbuckled, however, they were not able to determine if the victim was wearing the seat belt at the time of the accident.

Braking System

The service and parking brake systems consisted of spring-applied, hydraulic-released enclosed wet disc brakes on both the right and left side track drives. The service and parking brake systems are housed in the same unit as the track drives but are actuated by separate controls. The service brake is activated by a foot pedal and modulates the brake release pressure to both brakes according to the foot pedal position. The parking brake is actuated by a hand control lever, fully applying and releasing both brakes. When either of these two controls is used, both the left and right side brakes apply and release together. Due to the extensive damage the bulldozer received during the accident, investigators were unable to conduct a brake function test.

Maintenance Records

The Caterpillar D-9T was inspected by WVOMHST on December 18, 2017, and it issued five violations for the following conditions: 1) portable fire extinguisher was discharged; 2) lower windshield wiper on left side was bent; 3) four lights were not working; 4) the left boarding step was missing; and 5) the left handrail was bent.

Investigators discovered that the D-9T bulldozer was out of service during the day-shift of December 28, 2017, because of a ruptured hydraulic hose. The hydraulic hoses were replaced and the machine was put back in service on the evening shift. All of the defects were repaired, and the state inspector noted on December 28, 2017, that the conditions giving rise to the violations had been abated.

Push Practices

Dotson stated in his formal interview that before the accident, Thurman Watts was establishing a roadway into the previously blasted material to allow the loader and rock trucks access into the pit. He was pushing material into the push path of the D-11 bulldozer, and then Dotson would push the material over the highwall. Evidence

gathered at the accident site and interviews reveal that at the time of the accident, both bulldozers were operating perpendicular to the highwall, pushing the material out and over the highwall.

Statements gathered during interviews revealed that bulldozer operators were instructed by the company foreman to leave one blade of material on top of the highwall and push that material over with the next blade of material. This was called the two blade technique but this technique was not included in the ground control plan or any other written company policy or procedure. The equipment operators interviewed stated this was discussed regularly in safety meetings. Investigators could not determine if the victim was using the two blade technique at the time of the accident.

When ground conditions are irregular, pushed material can be continuously deposited in the push path of the bulldozer and/or at the edge of the highwall. The bulldozer can then travel on top of this material or spoil where this unconsolidated spoil can create unstable conditions near the highwall.

Investigators determined that the ground conditions where the victim was working were irregular. The bulldozer operated by Thurman Watts traveled onto an area of unstable spoil that had deposited on the top of the highwall. Because of this, the bulldozer was not being operated a safe distance from the edge. The spoil slipped down the highwall face under the bulldozer, causing it to go over the highwall.

Ground Control Plan

The ground control plan was acknowledged on August 14, 2008; a revision to the ground control plan was received on December 14, 2017, and acknowledged on January 4, 2018. This update added a highwall mining machine to the ground control plan. There were no safety precautions in the updated ground control plan that addressed bulldozers pushing material over highwalls. The mine operator was in compliance with the ground control plan at the time of the accident. Since the "two blade" technique was discussed with miners, a noncontributory citation was issued for a violation of § 77.1000 because the technique was not listed in the ground control plan.

Weather Conditions

Weather was not a factor in the accident. It was clear, with cold temperature, no fog or precipitation at time of accident. The snow shown in the accident photos fell after the accident had occurred.

Examinations

The pre-shift and on-shift examinations conducted on December 28, 2017, by Tyrone Watts indicated there were no hazards observed for the highwalls or working pits.

The pre-shift examination conducted by Calhoun indicated there were no hazards observed for the highwalls or working pits. Calhoun had not yet completed his on-shift examination at the time the accident.

The pre-operational examination conducted on the Caterpillar D-9T bulldozer on December 28, 2017, revealed no safety defects. The examinations conducted on December 26, 2017, indicated a manifold leak found on the evening shift, and the day shift exam indicated a right jack light out. Those defects were corrected prior to the accident.

Training and Experience

Thurman Watts received his miner certification on July 11, 2007, and his surface mine foreman card on May 26, 2010. He received experienced miner training on December 6, 2017, and Calhoun conducted this training. According to Calhoun, Thurman Watts was current with his annual refresher training. Calhoun also informed investigators that his experienced miner training consisted of discussions of health and safety aspects of the job, hazards that may be encountered on the job, tasks he would be assigned to perform, a tour of the mine property, communications, and first aid kit locations.

Task training was conducted by Calhoun on December 6, 2017, on both the Caterpillar D-9T and the Caterpillar D-11. At the training, Calhoun asked Thurman Watts about his past experience, and was told he had been operating bulldozers for several years at other surface mines. Calhoun observed Thurman Watts conducting a pre-operational check and operating the machines. Calhoun also observed Thurman Watts using the two blade technique in the Winifrede Ryder pit. Additionally, Calhoun discussed the two blade technique with Watts and Dotson during prior shifts at this mine. Investigators found that the training was completed in accordance with the requirements of 30 CFR Part 48.

As previously stated, the mine operator regularly discussed the two-blade technique in safety meetings. The victim would have attended these safety meetings. Also, Dotson stated that the victim worked in this area of the mine along with him for several shifts.

ROOT CAUSE ANALYSIS

MSHA conducted an analysis to identify the most basic causes of the accident that were correctable through reasonable management controls. A root cause was identified that, if eliminated, would have either prevented the accident or mitigated its consequences.

Listed below is the root cause identified during the investigation and the operator's implemented corrective action to prevent a recurrence of this type of accident:

Root Cause: The policies and procedures used by the mine operator did not ensure that safe working conditions were provided for the employees at all times. The ground conditions were irregular and caused the bulldozer to travel onto an area of unstable spoil that had deposited on the top of the highwall. Because of this, the bulldozer was not being operated a safe distance from the edge. The spoil slipped down the highwall face under the bulldozer, causing it to go over the highwall.

Corrective Action: The mine operator developed a procedure and added it as a revision to its ground control plan to prevent a similar occurrence of this accident. The ground control plan was revised to require that equipment used to push material over elevated highwalls employ the "two blade" method of pushing (one blade of material will be left at the edge and pushed over with the following blade of material).

Additionally, the company added a procedure to address irregular ground conditions and/or highwalls. The mine operator will conduct a pre-shift examination and an on-shift examination every four hours. The examination will include observations and evaluations of the ground conditions and highwall edge. Any hazardous condition, such as a highwall overhang, broken highwall edge, or unconsolidated material, that could fail and cause equipment to travel over the highwall, will be reported. All hazardous areas found will be dangered off to prevent exposure to the hazard. No bulldozers will be allowed to push material in those areas until the hazards are eliminated.

All bulldozer operators were trained in the revised ground control plan. The plan also requires training to be provided to new employees concerning the revised ground control plan and hazards associated with operating equipment while pushing materials over the edge of highwalls.

CONCLUSION

On Friday, December 29, 2017, at approximately 12:57 a.m., Thurman Watts, a 34-year-old bulldozer operator with 10 years of mining experience, was fatally injured when the Caterpillar D-9T bulldozer he was operating traveled over a highwall. The bulldozer dropped approximately 100 feet and continued down the spoil bank, coming to rest approximately 400 feet from the top of the highwall. At the time of the accident, Thurman Watts was removing overburden from a coal seam.

The fatal accident occurred because safe work practices were not followed. The ground conditions where the victim was working were irregular. The bulldozer operated by Thurman Watts traveled onto an area of unstable spoil on the top of the highwall. Because of this, the bulldozer was not being operated a safe distance from the edge. The spoil slipped down the highwall face under the bulldozer, causing it to go over the highwall.

Approved by:

Scott Mandeville
District Manager

Date

ENFORCEMENT ACTIONS

1. A section 103(k) order no. 9118501 was issued on December 29, 2017, to Black Jewell, LLC.

A fatal accident occurred at this operation on December 29, 2017, at 12:57 a.m., when a miner went over a highwall in a Caterpillar D-9 bulldozer. This 103k order is issued to assure the safety of all persons at this operation and to preserve any evidence to aid in the investigation. It prohibits all work activity on the mine site, until MSHA determines it is safe to resume normal mining operations. The mine operator shall obtain prior approval from an authorized representative for all action in the affected area.

2. A 104(a) citation no. 9165823 was issued to Black Jewell, LLC because of a violation of 77.1607(b).

The mine operator did not ensure that the bulldozer operator maintained full control of his machine while it was in motion and working in close proximity to the edge of an existing highwall. While removing overburden from the Winifrede Ryder pit on December 29, 2017, the operator of the Caterpillar D-9T bulldozer did not have full control. The bulldozer travelled over the edge of the highwall and fell 100 feet to the spoil bank and continued down the spoil bank. It came to rest on its tracks 400 feet from the top of the highwall causing fatal injuries.

Appendix A
 Persons Participating in the Investigation
 (Persons interviewed are identified by a * next to their name)

Black Jewell LLC

| <u>Name</u> | <u>Title</u> |
|-------------------------|--------------------------------------|
| Larkin Hoskins..... | Vice President of Surface Operations |
| Joseph G. Jacobs..... | Safety Director |
| *Tyrone Watts | Mine Superintendent/EMT |
| *Denver D. Calhoun..... | Second Shift Foreman |
| Bob Blevins | Surface Foreman |
| Travis Fisher | Professional Engineer |
| *Larry Dotson..... | D-11R Bulldozer Operator |
| *Dax Pennington..... | Rock Truck Driver |
| *Ronald Neece..... | D-9 Bulldozer Operator |
| *Frank Calfpgo..... | Rock Truck Driver |
| *Steven Back | 992 Front End Loader Operator |
| *Josh Evens | Fuel Truck Operator/EMT |
| *Adrian Owsley | Day Shift D-9T Bulldozer Operator |

West Virginia Office of Miners' Health Safety and Training

| <u>Name</u> | <u>Title</u> |
|----------------------------|------------------------|
| McKennis P. Browning..... | Inspector at Large |
| Thomas Fitzwater, Jr | Surface Mine Inspector |
| John Szoke | Surface Mine Inspector |

Mine Safety and Health Administration

| <u>Name</u> | <u>Title</u> |
|--------------------------|--|
| Franklin E. Stover | Coal Mine Safety and Health Inspector/ Accident Investigator |
| Andrew J. Sedlock | Coal Mine Safety and Health Inspector/ Accident Investigator |
| William B. Nichols..... | Coal Mine Safety and Health Inspector/ Accident Investigator |
| Warren Stover | Coal Mine Safety and Health Inspector/ Accident Investigator |

Appendix B
Photos



Bulldozer after it fell



Broken Seat Belt Latch

Appendix C Victim Information

Accident Investigation Data - Victim Information

U.S. Department of Labor
Mine Safety and Health Administration



Event Number: 6 3 1 3 2 3 0

| | | | | | | | | | | | | | |
|--|--|-----------|-----------|--|------------|-------------------------------|--|---|----------|----------|-----------------------|------------------------------------|--|
| Victim Information: 1 | | | | | | | | | | | | | |
| 1. Name of Injured/Ill Employee: <i>Thurman A. Watts</i> | | | | 2. Sex: <i>M</i> | | 3. Victim's Age: <i>34</i> | | 4. Degree of Injury: <i>01 Fatal</i> | | | | | |
| 5. Date(MM/DD/YY) and Time(24 Hr.) Of Death: a. Date: <i>12/29/2017</i> b. Time: <i>5:30</i> | | | | | | | | 6. Date and Time Started: a. Date: <i>12/29/2017</i> b. Time: <i>0:57</i> | | | | | |
| 7. Regular Job Title: <i>168 Bulldozer</i> | | | | 8. Work Activity when Injured: <i>047 Bulldozer</i> | | | | 9. Was this work activity part of regular job? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | | |
| 10. Experience | | Years | Weeks | Days | b. Regular | | | Years | Weeks | Days | c. This | | |
| a. This | | | | | | | | Mine: | | | d. Total | | |
| Work Activity: | | <i>10</i> | <i>23</i> | <i>0</i> | Job Title: | | | <i>10</i> | <i>0</i> | <i>0</i> | Mining: <i>10 0 0</i> | | |
| 11. What Directly Inflicted Injury or Illness? <i>076 Bulldozer roll over</i> | | | | | | | | 12. Nature of Injury or Illness: <i>370 Multiple injuries</i> | | | | | |
| 13. Training Deficiencies: Hazard: _____ New/Newly-Employed Experienced Miner: _____ Annual: _____ Task: _____ | | | | | | | | | | | | | |
| 14. Company of Employment: (If different from production operator) <i>Operator</i> Independent Contractor ID: (if applicable) | | | | | | | | | | | | | |
| 15. On-site Emergency Medical Treatment: Not Applicable: _____ First-Aid: <input checked="" type="checkbox"/> CPR: _____ EMT: <input checked="" type="checkbox"/> Medical Professional: _____ None: _____ | | | | | | | | | | | | | |
| 16. Part 50 Document Control Number: (form 7000-1) | | | | | | | | 17. Union Affiliation of Victim: <i>9999</i> | | | | <i>None (No Union Affiliation)</i> | |