

UNITED STATES  
DEPARTMENT OF LABOR  
MINE SAFETY AND HEALTH ADMINISTRATION

COAL MINE SAFETY AND HEALTH

REPORT OF INVESTIGATION

Surface Coal Facility

Powered Haulage Accident  
February 3, 2017

Stacy Equipment and Repairs, Inc. (K306)  
Gilbert, West Virginia

at

Elk Lick Tipple  
Greenbrier Minerals, LLC  
Lorado, Logan County, West Virginia  
ID No. 46-04315

Accident Investigator

Curtiss Vance III  
Coal Mine Safety and Health Surface Inspector

Originating Office  
Mine Safety and Health Administration  
District 12  
4499 Appalachian Highway  
Pineville, WV 24874  
Brian Dotson, District Manager

## TABLE OF CONTENTS

OVERVIEW .....	1
GENERAL INFORMATION .....	1
DESCRIPTION OF THE ACCIDENT .....	2
INVESTIGATION OF THE ACCIDENT .....	3
DISCUSSION .....	4
Equipment Involved .....	4
Examinations .....	6
Experience and Training .....	6
ROOT CAUSE ANALYSIS .....	7
CONCLUSION .....	8
ENFORCEMENT ACTIONS .....	9
APPENDIX A Persons Participating in the Investigation.....	10
APPENDIX B Photograph of Overturn Prevention.....	11
APPENDIX C Victim Information.....	12



## PHOTO OF ACCIDENT SCENE

### OVERVIEW

On February 3, 2017, at 7:25 a.m., Franklin L. Vannoy, Coal Truck Driver, sustained serious injuries while operating the 2005 Mack TT tractor and the 2000 East TL trailer to dump coal at the truck dump. Vannoy jumped from the tractor as the tractor and trailer overturned. On February 10, 2017, Mr. Vannoy passed away due to the injuries received during the accident.

The accident occurred because the manufacturer's warnings and cautions for the trailer were not followed.

### GENERAL INFORMATION

The Elk Lick Tipple is a surface facility owned by Greenbrier Minerals, LLC, which is a subsidiary of Coronado Coal, LLC. The facility is located two miles east of Lorado on State Route 16, Logan County, West Virginia. It is in operation seven days per week and employs 13 surface personnel working two production shifts and one maintenance shift per day. Approximately 10,000 tons of coal are processed each day. Coal is transported from a surface mine to the facility by trucks. Coal is also transported by conveyor system from a preparation plant.

The coal is then pushed by bulldozers and fed into an underground feeder where a conveyor system delivers it to the loadout. From there, the coal is dropped from the loadout into coal cars and transported by railroad. Stacy Equipment and Repairs, Inc. is contracted by Greenbrier Minerals, LLC, to haul coal to Elk Lick Tipple from the Toney Fork Surface Mine, which is also owned by Greenbrier Minerals, LLC.

The principal officers for the facility at the time of the accident were:

Billy McCoy..... General Manager  
Vergil Williamson..... Superintendent  
Tom Canterbury..... Safety Director

The principal officers for the contractor at the time of the accident were:

Gaven Smith..... Contractor/Owner  
John Stone..... Contractor/Manager  
Kenny Mitchell..... Contractor/Truck Boss/Coal Truck Driver

The last regular (E01) safety and health inspection conducted by the Mine Safety and Health Administration (MSHA) was completed on December 2, 2016. The non-fatal days lost (NFDL) injury incidence rate for the operator in 2016 was 0.00 compared to the National NFDL rate of 3.19 for the same period. Stacy Equipment and Repairs, Inc. Non-Fatal Days Lost (NFDL) injury incidence rate in 2016 was 0.00 compared to the National NFDL rate of 3.19 for the same period.

#### DESCRIPTION OF THE ACCIDENT

On February 3, 2017, at approximately 5:45 a.m., Vannoy arrived at the parking area at the Toney Fork Surface Mine, Greenbrier Minerals, LLC. Vannoy conducted a pre-operational examination of the truck. At approximately 6:00 a.m., Vannoy traveled to the Area 3 Stockpile to be loaded. Greg Evans, Front-End Loader Operator, loaded Vannoy's trailer from the Area 3 Stockpile. Vannoy's was the third truck to be loaded this shift. After being loaded, Vannoy traveled across the truck scale at 6:39 a.m. and proceeded to Elk Lick Tipple. After arriving at Elk Lick Tipple, Vannoy traveled to the upper end entrance of the facility because the railroad tracks were blocked by a train at the main access entrance.

Vannoy proceeded to the truck dump and was followed by Cecil Bartram, Water Truck Driver. Once Vannoy was backed into position, he proceeded to dump. Roy Jude, Coal Truck Driver, observed Vannoy on the dump while waiting to dump his load. Jude stated the trailer's tailgate opened and coal came out. Jude stated Vannoy stopped dumping on the 2<sup>nd</sup> stage of the hydraulic lift cylinder, exited the truck and walked to the back of the trailer. Vannoy then got back into the truck and continued to dump. On

the 4<sup>th</sup> stage, Jude stated the trailer started rocking side to side and he called Vannoy on the CB radio and told him to “hold.” At that time, the tractor and trailer started turning over. Jude stated Vannoy opened the door and jumped out as it was turning over. This occurred at 7:25 a.m.

Jude and Bartram went over to Vannoy who was lying on the ground. Bartram contacted James Short, Safety Supervisor and Emergency Medical Technician (EMT), on the CB radio. Short contacted Vergil Williamson, Superintendent, instructing him to call 911 and notify MSHA. Short arrived on the scene and administered first aid. Buffalo Creek Fire Department was first to arrive on the scene with Logan Emergency Ambulance Service Authority (LEASA) EMS arriving shortly after at 7:52 a.m. Air Evac Lifeteam was requested by LEASA EMS and Vannoy was transported by ambulance to the landing zone area located near the facility’s warehouse. Air Evac Lifeteam arrived on site at 8:20 a.m. and departed at 8:50 a.m. Vannoy was transported by Air Evac Lifeteam to Charleston Area Medical Center (CAMC) General Hospital located in Charleston, West Virginia, arriving at 9:24 a.m. Due to complications resulting from injuries received during the accident, Vannoy passed away on February 10, 2017.

#### INVESTIGATION OF THE ACCIDENT

On February 3, 2017, at 7:44 a.m., Williamson called the Department of Labor National Call Center to report a truck driver with a possible broken leg. At 7:59 a.m., Katy Trent, District 12 Office Assistant, was contacted by the call center. Trent reported the incident to Larry E. Bailey, Assistant District Manager (Technical). Bailey contacted Kenny Butcher, Logan Field Office Supervisor, and informed him of the accident. Butcher dispatched Curtiss Vance III, Coal Mine Inspector/Accident Investigator, to the accident scene.

At 9:30 a.m., Vance arrived at the facility. He traveled to the truck dump and verbally issued a 103(k) order to Williamson to preserve the accident scene and issued a written 103(k) order at 9:45 a.m. Vance verified the accident scene was secure, photographed the area, and obtained a written statement from Bartram.

Vance traveled to the mine office where he received copies of records and obtained a statement from Jude, the sole eyewitness to the accident. Representatives of Greenbrier Minerals, LLC, Stacy Equipment and Repairs, Inc. and the West Virginia Office of Miners Health Safety and Training (WVOMHST) participated in the investigation (see Appendix A).

Formal interviews were conducted on February 14, 2017, at the MSHA Field Office located in Logan, West Virginia (see Appendix B).

On February 15, 2017, Educational Field and Small Mine Services (EFSMS) dispatched training specialist Bruce Linville to the facility to conduct a review of training records and training plans.

## DISCUSSION

The Elk Lick Tipple truck dump was constructed in 2009 to handle coal being hauled from the Toney Fork Surface Mine. This truck dump is an elevated, level concrete pad with concrete barriers to prevent overtravel. The barrier located at the back edge of the truck dump measures 18 inches in height. The outside barriers located on each side of the truck dump measure 26 inches in height. An additional metal railing is bolted to the top of the outside barriers measuring 19 inches in height. This truck dump has two parallel sides (lanes) numbered No.1 and No.2, and is designed to dump two trucks simultaneously. Adequate illumination is provided at the truck dump. Truck scale weight records for February 3, 2017, indicated that the tractor and trailer were not overloaded.

### Equipment Involved

The truck's tractor was manufactured by Mack Trucks, Inc. The tractor is a 2005 Mack TT (VIN 1M2AG10Y55M021935) tractor and it is a 10-wheeled, dual rear axle tractor. The truck's trailer was manufactured by East Manufacturing Corporation. The trailer is a 2000 East TL (VIN 1E1D2S386YRJ28120) trailer and it is an 8-wheeled, dual axle trailer, with a 4-stage hoist cylinder. The tractor and trailer were inspected by MSHA and WVOMHST during the investigation and no defects were found.

MSHA investigators obtained the East Manufacturing Corporation operation and service manual for dump equipment. This document contains warnings and cautions to be followed when dumping a load out of the trailer or dump body. The following warnings and cautions listed in the manual pertain to this fatal accident:

1. WARNING: TIP-OVER HAZARD. Do not keep a hung load elevated. Fully lower the dump body before trying to dislodge any material that is hanging up in the truck bed.
2. CAUTION: When hauling wet materials in freezing weather, the interior surfaces should be treated with a solution to prevent the material from freezing to the body.
3. WARNING: TIP-OVER HAZARD. Do not fully extend the hoist cylinder. Raising the load to its upper limit will jar the load and could cause the hoist cylinder to fail. Over-extending the hoist cylinder or jarring the raised load could cause the load to fall or tip.

4. WARNING: Shift the hoist control into the “lift” position. Raise the dump body to the lowest height for dumping. **DO NOT** raise the load to the lifting limit of the hoist cylinder.
5. WARNING: When the dump body is raised, shift the hoist control into the “hold” position until the load is dumped or material flow stops.

According to the manual, “personal injury or death may occur if the warning statements are not followed.” The manual also states, “equipment damage may occur if the caution statements are not followed.”

After the accident, coal was found in the trailer and over the side of the mountain where the truck dump was located. Because the trailer had been fully extended, the entire load should have fallen out of the trailer. However the material had stuck (hung load) to the trailer truck bed. The manufacturer’s procedures for a hung load include: (1) fully lower the trailer to not keep the hung load elevated, (2) do not fully extend the trailer (i.e. do not raise the trailer to the lifting limit of the hoist cylinder), and (3) only raise the trailer to the lowest height for dumping. These procedures were not followed.

Investigators determined that the hung load caused the trailer to be overweighted on one side and unbalanced. As the hoist cylinder was raised to its fully extended position, the unbalanced weight of the hung load caused the truck to fall over.

They also found the hoist cylinder fully extended indicating that the manufacturer’s warning against fully extending the hoist cylinder was not heeded. Investigators also found hoist control in the “lift” position as opposed to the “hold” position as stated in the manufacturer’s warning.

Following the accident, the mine operator built a structure on the truck dump to prevent overturning. It was constructed with metal I-beams that will support the trailers if they begin to overturn and prevent rollover (see Appendix C).

Mine management did not have policies requiring coal truck drivers to treat their trailers when temperatures were at freezing conditions and did not provide a means so that coal truck drivers would know the current temperatures. Mine management left it up to each driver’s discretion to treat their trailers with anti-freeze or not.

On the day of the accident, the coal was hauled from the Area 3 Stockpile. The coal was damp. It had been stockpiled for approximately two to four weeks. The recorded temperature at the closest weather station to Lorado, West Virginia, was 27 degrees Fahrenheit at 6:15 a.m. The solution provided by the mine operator to prevent the material from freezing and sticking to the trailer was a liquid anti-freeze product named SR-300 that is manufactured by Nalco Company. Nalco Company recommends using

this product when temperatures are at or below 32 degrees Fahrenheit. To prevent drivers from climbing on their trailers and risking a slip or fall injury; a metal scaffold was constructed by the operator to provide the drivers a safe means of access while treating their trailers. The scaffold stands approximately 12 feet high, has railing on all sides extending 3 ½ feet high and the landing measures 10 feet long x 3 feet wide. Drivers who wanted to treat their trailers would park alongside this scaffold, climb the steps to the top landing, and use the spray wand to treat the trailers with the SR-300.

Kenny Mitchell, Contractor, Truck Boss, and Coal Truck Driver stated Vannoy left the parking area without treating the trailer with the anti-freeze product provided by the mine operator. Therefore, the proper procedure for hauling wet load in freezing temperatures was not followed.

#### Examinations

On-shift examinations of the truck dump were conducted by mine management on each shift. The details of these examinations were listed in a record book kept in the mine office, and no hazardous conditions were recorded.

Pre-operational examinations were conducted on this tractor and trailer for each shift the truck operated prior to the accident, and no hazardous conditions were recorded. The contractor could not provide a copy of the pre-operational examination for February 3, 2017; however, according to Mitchell, Vannoy conducted a pre-operational examination with Mitchell's assistance prior to operating the tractor and trailer.

#### Experience and Training

Vannoy had 10 years of total mining experience and started working at Stacy Equipment and Repairs, Inc., on February 1, 2017. Vannoy received annual surface refresher training on December 10, 2016. He was task trained on how to operate the truck on February 1, 2017, and hazard trained for this mine on January 30, 2017. As a result of the training review conducted by EFSMS, MSHA issued three noncontributory citations for inadequate record keeping and training.

Vannoy held certifications in West Virginia which included:

- West Virginia Surface Coal Miner
- West Virginia Surface Mine Foreman
- West Virginia Commercial Driver's License



## ROOT CAUSE ANALYSIS

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

Listed below are the root causes identified during the analysis and the corresponding corrective actions implemented to prevent a reoccurrence.

1. Root Cause: The manufacturer's warnings and cautions for the trailer were not followed.

Corrective Actions: After the accident, the contractor stopped hauling material for the mining industry. The mine operator built a structure on the truck dump to prevent overturning. It is constructed with metal I-beams that will support the trailers if they begin to overturn and prevent rollover. All truck drivers have been trained on this structure.

2. Root Cause: The mine operator did not have a policy in place requiring coal truck trailers to be treated with antifreeze when temperatures are at freezing conditions.

Corrective Actions: The mine operator has installed signs requiring coal truck drivers to treat their trailers when temperatures are 32 degrees Fahrenheit or colder on each load hauled. The mine operator has installed a thermometer at the truck scale and trained all coal truck drivers on this process

## CONCLUSION

The 2005 Mack TT tractor and 2000 East TL trailer overturned on the truck dump while dumping. The hung load in the trailer caused the trailer to be over-weighted on one side and unbalanced. As the hoist cylinder was raised to its fully extended position, the unbalanced weight of the hung load caused the truck to fall over, injuring the victim who later died. The accident occurred because the manufacturer's warnings and cautions for the trailer were not followed.

Signed by:

Brian Dotson

Brian M. Dotson  
District Manager

6/29/2017

Date

## ENFORCEMENT ACTIONS

1. Section 103(k) Order No. 9062609 was issued on February 3, 2017, to Greenbrier Minerals, LLC, Elk Lick Tipple:

An accident has occurred at the operation on 02-03-2017 at 7:25 am. This order is issued under Section 103(k) of the Federal Mine Safety and Health Act of 1977, to assure the safety of all persons at this operation and prevent the destruction of any evidence which would assist in the investigation of the cause and or causes of this accident. It prohibits all activity on the Truck Dump Area and also the Red Mack Granite Coal Truck, Tractor VIN, 1M2AG10Y55M021935 Trailer VIN 1E1D2S386YRJ28120 until MSHA has determined that it is safe to resume normal mining operations in the area. The mine operator shall obtain prior approval from an authorized representative for all actions to recover and or restore operations to the affected areas.

2. A section 104(a) Citation was issued for violation of 30 CFR § 77.404(a) to Stacy Equipment and Repairs, Inc.:

The trailer (2000 East TL VIN IEID2S386YRJ28120) being operated at the Elk Lick Tipple Mine on February 3, 2017 was not maintained in safe operating condition. While being used to dump a load of material at the truck dump, the material became hung in the bed of the trailer. This caused the trailer to be over-weighted on one side and unbalanced and created a tip-over hazard. The trailer was not in a safe operating condition at that point to continue dumping. The manufacturer's Operation and Service Manual identify "hung loads" and "unbalanced loads" as conditions that contribute to a tip-over hazard. The driver continued the dumping process and raised the trailer bed to its fully extended position. After the trailer's hoist cylinder was fully extended, the trailer and the truck fell over on its side. The driver jumped from the tractor as the tractor and trailer overturned and sustained serious injuries. On February 10, 2017, the driver passed away due to complications resulting from the injuries received during the accident.

APPENDIX A  
Persons Participating in the Investigation  
(Persons interviewed are indicated by a \* next to their name)

Greenbrier Minerals, LLC

Billy McCoy.....General Manager  
\*Vergil Williamson..... Superintendent  
Tom Canterbury.....Safety Director  
\*James Short.....Safety Supervisor/EMT  
Max L. Corley.....Greenbrier Minerals, LLC, Lawyer  
\*Joe Daniels.....Mine Foreman  
\* Shannon Alger.....Mine Foreman  
\* Terry Murphy.....Chief Electrician  
\* Greg Evans.....Front-End Loader Operator  
\* Cecil Bartram.....Water Truck Driver

Stacy Equipment and Repairs, Inc

\*John Stone.....Manager  
\*Kenneth Mitchell..... Truck Boss/Coal Truck Driver  
\*Steve Lawrence.....Contractor/Mechanic

Lumber Sales, Inc

\* Roy Jude.....Coal Truck Driver

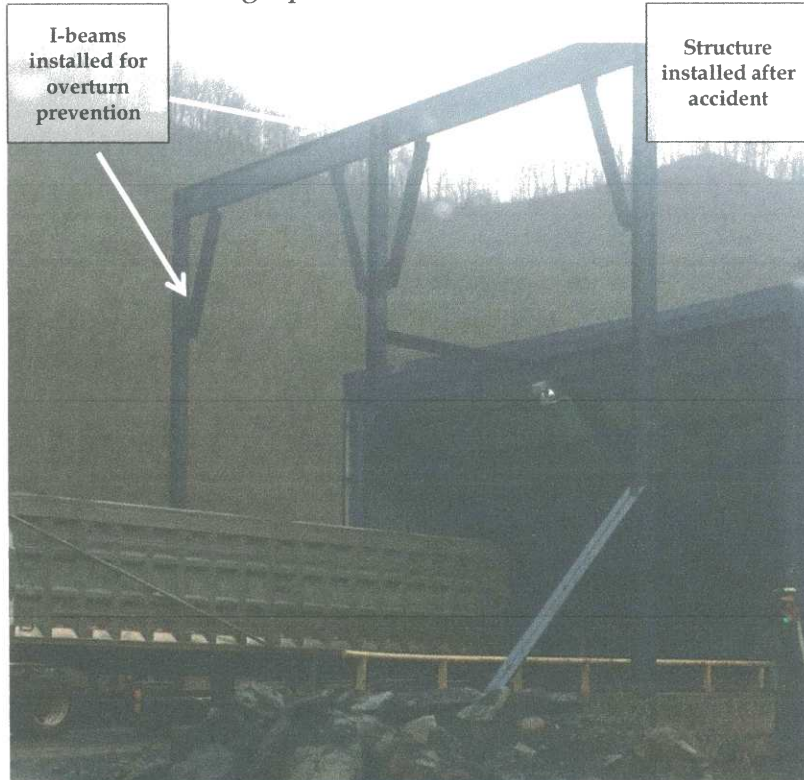
West Virginia Office of Miners Health Safety and Training

Eugene White.....Deputy Director  
John Kinder.....Inspector at Large  
Wayne Pauley.....Assistant Inspector at Large  
Jack Rife.....Assistant Attorney General  
Mike Pack.....Surface Inspector/ Accident Investigator

Mine Safety and Health Administration

Curtiss Vance III..... Surface Specialist/ Accident Investigator  
Bruce Linville..... Educational Field and Small Mine Service Specialist  
Todd Hatfield.....Mine Safety and Health Inspector

APPENDIX B  
Photograph of Overturn Prevention



APPENDIX C  
Victim Information

Accident Investigation Data - Victim Information

U.S. Department of Labor



Event Number: 6 3 0 8 0 4 8

Mine Safety and Health Administration

Victim Information: 1

1. Name of Injured/Ill Employee: <i>Franklin L. Vannoy</i>		2. Sex <i>M</i>	3. Victim's Age <i>54</i>	4. Degree of Injury: <i>01 Fatal</i>	
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death: <i>a. Date: 02/10/2017 b. Time: 12:45</i>			6. Date and Time Started: <i>a. Date: 02/03/2017 b. Time: 6:00</i>		
7. Regular Job Title: <i>176 Coal Truck Driver</i>		8. Work Activity when Injured: <i>055 Coal Truck Driver</i>		9. Was this work activity part of regular job? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
10. Experience a. This Work Activity: <i>10 0 3</i>		b. Regular Job Title: <i>10 0 3</i>		c. This Mining: <i>0 0 3</i>	
11. What Directly Inflicted Injury or Illness? <i>117 Ground</i>		12. Nature of Injury or Illness: <i>220 Fracture</i>			
13. Training Deficiencies: Hazard: <input type="checkbox"/> New/Newly-Employed <input type="checkbox"/> Experienced Miner: <input type="checkbox"/> Annual: <input type="checkbox"/> Task: <input type="checkbox"/>					
14. Company of Employment: (If different from production operator) <i>Stacy Equipment and Repairs, Inc.</i>				Independent Contractor ID: (if applicable) <i>K306</i>	
15. On-site Emergency Medical Treatment: Not Applicable: <input type="checkbox"/> First-Aid: <input checked="" type="checkbox"/> CPR: <input type="checkbox"/> EMT: <input type="checkbox"/> Medical Professional: <input type="checkbox"/> None: <input type="checkbox"/>					
16. Part 50 Document Control Number: (form 7000-1)			17. Union Affiliation of Victim: <i>9999 None (No Union Affiliation)</i>		