

**UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION**

COAL MINE SAFETY AND HEALTH

REPORT OF INVESTIGATION

Surface of Underground Mine

**Fatal Machinery Accident
February 3, 2004**

**Chas Coal, Inc.(Cont. I.D. J114)
Tyco Trucking Company, Inc. (Cont. I.D. J070)
Calvary Coal Company, Inc. (Cont. I.D. J115)**

at

**Calvary No. 80
Blue Diamond Coal Company, Inc.
Smilax, Leslie County, Kentucky
ID No. 15-16349**

Accident Investigators

**Arthur V. Smith
Mine Safety and Health Inspector**

**Eugene Hennen
Mechanical Engineer**

**Originating Office
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Joseph W. Pavlovich, District Manager

Report Release Date: May 10, 2004

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ACCIDENT SITE

This image shows the location where the accident occurred. The victim fell from the bucket to the concrete pad below. The post which was pulled, as described in this report, is lying on the cardboard box to the left.



OVERVIEW

At 4:30 p.m. on February 3, 2004, James E. Asher, a 46-year old Surface Maintenance Supervisor with 25 years of mining experience, was fatally injured at the surface area of Calvary Coal Company, Inc., Mine No. 4 underground mine. Asher was an employee of Chas Coal Inc., but had authorized access to the Calvary Coal Company, Inc. property. The accident occurred while the victim and two other persons were dismantling a surface maintenance shop building. Asher was operating a Simon-Telelect 42-foot aerial bucket truck from the elevated bucket, using a chain to remove a 4"x 6"x 12' wooden vertical post, that was imbedded in the concrete floor. A chain had been placed around the center shaft of the jib crane rope drum. The other end of the chain was fastened around the post. When Asher applied upward force on the chain to pull the post from the concrete, the post came free, causing the aerial bucket to move upward suddenly, throwing Asher backwards and out of the bucket. Asher was not wearing a safety belt or harness, and fell approximately 22 feet to the concrete floor causing fatal injuries.

GENERAL INFORMATION

Mine No. 4 is a bituminous underground coal mine located at Smilax, Leslie County, Kentucky. The mine is owned and operated by Calvary Coal Company, Inc. The principal-operating officer is Charles Collins, President.

This mine was placed in Active/Non-producing status on October 31, 2003. Prior to that date, coal was extracted from the underground mine and was transported by truck to Blue Diamond Coal Preparation Plant for processing. The finished product was then transported to the customer by rail or truck.

At the time of the accident, the legal identity for Mine No.4 listed the operator as Calvary Coal Company, Inc. (hereinafter Calvary). Calvary had operated this mine under a lease agreement with Leeco, Inc., an affiliate to Blue Diamond Coal Company (hereinafter Blue Diamond). Calvary had recently terminated its lease on the property at Polls Creek, Kentucky where Mine No. 4 was located, and the mine reverted back to Blue Diamond. On January 20, 2004, Charlie Collins, sole stockholder of Calvary, and part owner of Chas Coal, Inc. (hereinafter Chas), sent a letter to MSHA informing them that Calvary no longer had any interest in this mine. Equipment, parts, and supplies, owned by Collins and Chas, were still physically located on the surface of the property. Employees of Chas, including the victim, James Asher, were present at Mine No. 4 on a regular basis. These employees were in the process of moving this equipment to other mines in which Collins had interest. Asher was a salaried employee for Chas. Asher's job duties included general maintenance and installation of major electrical systems for the mines under Collins' control. According to Collins, Asher had assumed responsibility for the removal of the equipment and materials from the Calvary property. During the week prior and during the day of the fatal accident, Asher hauled equipment and supplies from this mine site to Free Dome Coal, a contract operator for Chas. A truck and trailer owned by Tyco Trucking Company was used for this purpose.

At the time of the accident, Blue Diamond was in the process of reopening the mine and installing their equipment in the mine. Blue Diamond had hired Rick Sandlin, former Safety Director with Calvary, as Superintendent of the mine, which they intended to call Calvary No. 80. On January 21, 2004, Andy Fields, Safety Director for Blue Diamond, filed a notification with MSHA assuming the existing plans for Calvary's Mine No. 4 as the plans to be used for Calvary No. 80 Mine, for a 30-day time period.

A maintenance shop was constructed on the surface of the mine when it was operated by Calvary. Attached to this shop was a 20' x 40' metal bay which had been built and used by Silverado Trucking, Inc. (hereinafter Silverado), who had hauled coal under contract for Calvary.

In 2003, Ronnie Cunagin, the president of Tyco Trucking Company, leased Silverado's trucks and took over hauling coal for Calvary. Cunagin had attempted to obtain a contract with Blue Diamond to haul coal from this mine but was unsuccessful. Asher was aware of the addition to the shop building, because he was once part owner of Silverado, and had spoken with Cunagin on several occasions seeking consent to remove the structure. Reportedly, Asher intended to dismantle the structure and reassemble it near his home for private use. When Cunagin was unable to secure the coal haul contract, he told Asher he could have the structure.

The last regular safety and health inspection (AAA) was completed by MSHA on December 15, 2003. The Non-Fatal Days Lost (NFDL) injury incidence rate for the mine in 2003 was 7.58 compared to a National NFDL rate of 6.06.

DESCRIPTION OF ACCIDENT

Asher and his neighbor Pearl Belcher agreed to move the structure to Belcher's property and to share its use. Belcher was not employed by any of the above mentioned entities. On Saturday, January 24, 2004, Asher and Belcher traveled to the mine to examine the structure. On Wednesday, January 28, 2004, Belcher returned alone with his personal pickup truck and trailer and began dismantling the structure. On Friday, January 30, 2004, Belcher again returned to the site and worked alone on dismantling the structure. On Tuesday, February 3, 2004, Belcher returned to the site at around 10:00 a.m. and removed rafters and other materials until only the metal roll-up garage door and vertical wooden support posts remained. The posts could not be moved by hand as the concrete floor had been poured around the posts after their installation, embedding them in concrete about seven inches into the floor.

Belcher was about to leave for the day when he received a call from Asher who told him that he and his son, Eric, were coming to help remove the wooden posts. Eric Asher had been helping his father remove equipment from the site. Although Eric Asher was reportedly being paid by his father, he was driving a truck owned by Tyco. When James Asher and his son arrived at the mine site around 4:10 p.m., they spoke with Rick Sandlin at the mine office. James Asher asked if the dual aerial bucket truck (Simon- Telelect) was operational, and Sandlin told them there was nothing wrong with it. Sandlin also

showed them where the second Power Take-Off (PTO) control was located and explained the use of the control. This second PTO control was required to be activated before the controls in the bucket would operate. James Asher checked the controls on the outriggers and then drove the bucket truck to the location where Belcher was dismantling the structure. Eric Asher followed, driving his father's pick-up truck.

James Asher entered the left bucket of the truck while Belcher placed a 1/4" diameter chain loosely around the center shaft of the jib crane rope drum. Eric Asher taped the chain hook so it would not come loose. James Asher then raised the bucket of the truck and positioned it over the elevated garage door. He was not wearing a safety harness.

Belcher ascended a ladder, and hooked the chain to the garage door. James Asher hoisted the door and swung the boom and placed the door onto the trailer. Originally, they planned to remove the vertical posts by sawing them off at ground level. Belcher had brought a chainsaw to the site for this purpose, which was located in the back of his truck. While James Asher was in the bucket, he asked Belcher if the post nearest the building was loose. Belcher shook the post and confirmed that it was loose in the concrete. James Asher then instructed Belcher to wrap the chain around the post, so that he could pull it out with the boom. Belcher hooked the chain to the post and James Asher hoisted it out of the concrete floor and onto the trailer. James Asher swung the bucket over the next post and once again instructed Belcher to wrap the chain around the post so he could hoist it onto the trailer. Belcher and Eric Asher shook the post and determined that the post was loose. Belcher attached the chain to the second post then turned to walk away. At approximately 4:30 p.m., Eric Asher watched as his father pulled the post upward and wiggled the post back and forth with the aerial bucket trying to free it from the concrete. The post suddenly came loose from the concrete, causing the boom to catapult upward, throwing James Asher from the bucket. Belcher heard a loud noise and turned to see James Asher fall from the bucket to the concrete floor.

Belcher and Eric Asher immediately ran to James Asher and checked his condition, finding him unconscious with no vital signs. Belcher administered Cardio-pulmonary Resuscitation (CPR) and sent Eric Asher into the shop to telephone for help. The Leslie County Emergency Operations Center was alerted, who contacted Transtar Ambulance Service and the local fire department. The Leslie County Emergency Operation Center returned the call for confirmation, and Rick Sandlin answered the telephone and learned of the accident. Sandlin, along with Pat Cornett and Larry Morgan, miners/Mine Emergency Technicians, traveled to the accident scene. Cornett and Morgan relieved Belcher and continued administering CPR. Janel Wooten, firefighter/EMT, overheard the ambulance call and arrived in her own vehicle to assist. The Transtar ambulance arrived at the scene at 4:51 p.m. J.D. Caudill, paramedic, and Silas White, First Responder, arrived in the ambulance, did an assessment of James Asher's condition, treated him for his injuries, and transported him from the mine at 5:15 p.m. The ambulance arrived at the Mary Breckinridge Hospital in Hyden, Kentucky at 5:34 p.m. James Asher was examined by attending physician Dr. Varghese and was pronounced dead by Leslie County Coroner Greg Walker at 5:52 p.m.

INVESTIGATION OF THE ACCIDENT

Darrell Turner, Coal Mine Safety and Health Inspector, was notified at 4:45 p.m. on the day of the accident by a telephone call from Andy Fields. An order was issued pursuant to section 103 (k) of the Mine Act to ensure the safety of miners and to preserve the accident scene. The investigation was started the same day.

MSHA's accident investigation team traveled to the mine, conducted a physical examination of the accident scene and equipment involved in the accident, interviewed persons, and reviewed conditions and procedures relative to the accident. MSHA conducted the investigation in conjunction with the Kentucky Department of Mines and Minerals and with the assistance of mine management and the miners.

DISCUSSION

Previous Accident

A similar fatal accident occurred at this mine on June 9, 2003, when the mine manager was thrown from this same aerial bucket truck (refer to MSHA's Report of Investigation, Catalog No. CAI-2003-14). The mine manager had attempted to lift excessive weight with the boom of the truck when the nylon rope on the jib crane winch failed, releasing the deflected upper boom arm and causing him to be thrown from the bucket. He was also not wearing a safety belt or harness.

Following the June 9, 2003 accident, Calvary Coal Company, Inc., took steps to prevent a similar occurrence by:

1. Removing the nylon winch rope to prevent miners from using the winch,
2. Instructing miners never to lift anything with the aerial bucket truck,
3. Training miners in the proper use of the aerial bucket truck,
4. Restricting the use of the aerial bucket truck to authorized miners only,
5. Placement of a new safety harness in the cab of the aerial bucket truck, and
6. Instructing the miners to always wear the safety harness when in the bucket.

MSHA monitored the training and verified that miners were wearing the safety harness while working in the aerial bucket truck on subsequent inspections.

The safety harness was in the bucket truck at the time of the second fatal accident, but was not used. The victims of both accidents were acquaintances, and James Asher had spoken of the June 9, 2003 accident with other miners who worked with him.

Simon-Telelect Bucket Truck

General Specifications: The Aerial bucket consisted of a Model T-4042 Simon-Telelect aerial device with Serial Number T 4000-1006-CY and a Model F800 Ford truck chassis with Vehicle Identification Number 1FDPF82J3MVA22368. Both the aerial device and the truck chassis were manufactured in 1991. Calvary Coal Co., Inc. purchased the aerial bucket truck from Jackson County Co-op on September 9, 2000. The aerial device was designed to be used around energized electric lines. The aerial device had two-man baskets at the end of the top boom arm, with a jib crane between them. The boom on the aerial device had a reach of 42 feet. The maximum lifting capacity of the jib crane was 2000 pounds. Controls to operate the boom and the jib crane were located on the left basket when looking toward the rear of the boom truck. The GVW for the truck chassis listed on the VIN plate was 27,080 pounds. The truck had a 7.0-liter electronic fuel injected gasoline engine, a five speed manual transmission and a two-speed differential, with the control on the side of the transmission shifter. The truck chassis had a PTO that drove the hydraulic pump operated the aerial device. The control for the hydraulic PTO was located under the dash to the left of the steering wheel. The truck had a winch located on the front bumper of the chassis. The control for the winch was located on the floor of the cab to the right of the transmission shifter.

Jib Crane: The jib crane, which was located between the two baskets, was not designed to lift heavy loads, but was designed to be an implement crane. The upper boom arm on the aerial bucket truck was made out of fiberglass, causing it to deflect under the large force that was applied to the upper boom. When the force was released suddenly, the boom arm moved rapidly in the direction of the force being applied. According to the load chart for the aerial device, the jib crane was designed for a maximum load of 2000 pounds, depending on the orientation of the boom. The operator's manual for the aerial boom truck revealed the manufacturer makes boom lifting attachments for the lower boom arm, which can be used to lift loads heavier than the loads recommended for the upper jib crane. The lower boom arm could support heavier loads than the upper boom because it was made out of steel. Although lifting devices were available for the lower boom arm, the operator's manual stated no one should be in the bucket when heavy loads are being lifted. The operator's manual also stated that the lower controls, operated from the bed of the truck, should be used to operate the boom when the lower boom arm lifting devices are being used.

After the June 09, 2003 accident, the rope on the jib crane was removed to discourage misuse of the jib crane. At the time of the February 03, 2004 accident, a chain was placed around the center shaft of the jib crane rope drum. The angle of the upper boom arm with respect to the lower boom arm was less than 30 degrees. According to the load chart the maximum load for the jib crane at that angle was 1,300 pounds. The load chart was based on the load being attached to the jib crane rope extending from the jib crane head sheave; therefore the load chart would not be applicable since the chain was attached to the center shaft of the jib rope drum. Since the chain was attached to a concrete embedded post, an undetermined amount of force was applied to the chain.

Information received from the manufacturer revealed a hydraulic post puller is available to remove posts for applications such as the application the boom truck was being used for at the time of the accident. The hydraulic post puller rests on the ground beside the post when the post is being removed. Since the post puller rests on the ground, the force required to remove the post is transferred to the ground instead of the aerial bucket truck. The hydraulic pressure to operate the post puller comes from a hydraulic PTO on the aerial bucket truck.

Boom Deflection: The upright wooden post being removed at the time of the February 3, 2004 accident was 3 ½" x 5 ½" wide by 145 ⅝" long and was embedded in the concrete floor of the building. Three 2" x 4" boards (actual dimensions 1 ½" x 3 ½") were attached to the outside of the post. Two of the 2" x 4" boards were 30" long and the other was 7 ¼" long. The combined weight of the post and three 2" x 4" boards was approximately 90 pounds. As referenced above, the actual load on the boom would have been greater than the weight of the post and board assembly, since the post was imbedded in concrete. Black electrical tape had been wrapped around the hook on the end placed around the drum to prevent it from coming unhooked while the posts were being removed. The other end of the chain made imprints in the post indicating where it had been fastened around the post, under the middle 2" x 4" board. Belcher and Eric Asher, who attached the chain around the post, stated it was wrapped around the post and hooked as close as possible to the post. Electrical tape was not placed around the hook on the end of the chain attached to the post.

At the time of the accident, the boom was being rotated to the left of the post, causing the fiberglass boom to be deflected downward and to the right. When the post came loose the boom holding the two baskets moved rapidly upward and to the left, throwing the victim from the basket. At the start of the accident investigation, the chain was still attached to the jib rope drum. The boom on the aerial bucket was still in the position it was after the accident. Considering the boom controls were self-centering and the victim would have been immediately ejected when the post came loose, the position of the boom after the accident was in the approximate position of the boom when the post came loose. Measurements between the boom's final position, and the post's original location indicated that the 21'-2" long chain was approximately 27" too short to be placed around the post. This indicated the fiberglass boom was deflected approximately 27" down and to the right when the post came loose from the concrete.

Hydraulic System: The functions of the aerial bucket assembly were hydraulically driven. The hydraulic pressure was supplied by a single section gear pump driven by the PTO on the truck chassis. All of the hydraulic functions were controlled by manually operated hydraulic control valves with the activating handles attached directly to the valves. Hydraulic controls were located in four separate locations on the aerial bucket assembly. Controls that operate the boom and the jib crane were located at the left basket (when looking toward the rear of the boom truck). Additional boom controls were located where the boom attaches to the bed of the aerial bucket truck, so the boom could be operated from the bed level. The aerial bucket assembly had four outriggers, two located on each side. There were two sets of ground level controls for the outriggers on

the aerial bucket assembly. These controls were located so the operator could see the outriggers while they were being extended.

All of the hydraulic functions on the aerial bucket assembly were checked by operating the controls at all four control locations. No defects were found in the operation of the hydraulic functions. A check of the hydraulic pressure relief valve revealed it was set at the 2,400 PSI, which was the recommended pressure listed in the maintenance manual.

There were two pairs of hydraulic cylinders for raising and lowering the boom assemblies. One pair of cylinders controlled the lower boom arm and the other pair controlled the upper boom arm. Each of the cylinders had load holding valves to prevent the boom from dropping in case of the failure of a hydraulic valve or hose. The load holding valves were tested by raising the boom and operating the boom control valves located at the bottom of the boom with the truck engine shut off. The boom did not lower, showing that the load holding valves were holding the cylinders in place.

Safety Harness

The operator was not wearing a safety harness at the time of the accident. There was a safety harness on the seat in the cab of the truck. The operator's manual stated that a safety harness should be used at all times when operating the bucket truck from the basket. The operator's manual was not in the truck at the time of the accident.

ROOT CAUSE ANALYSIS

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

Listed below are causal factors identified during the analysis and their corresponding corrective actions implemented to prevent a recurrence of the accident:

1. *Causal Factor:* Written procedures for safe operation of boom truck were not being followed. The operator's manual stated: no one should be in the bucket when heavy loads are being lifted; and the lower controls, located in the bed of the truck, should be used to operate the boom when the lower boom arm lifting devices are being used.

Corrective Action: Mine management should establish and enforce a policy that equipment be used only in a manner consistent with the manufacturer's suggested recommendations.

2. *Causal Factor:* The available safety harness was not used while operating the aerial bucket.

Corrective Action: Mine management should establish and enforce policies and procedures to ensure that employees use safety equipment.

CONCLUSION

The fatal accident occurred because the aerial bucket truck was used improperly to lift a load. Failure to wear a safety belt or safety harness when working from a location where there was a danger of falling contributed to the severity of the accident.

Approved By:

Joseph W. Pavlovich
District Manager for District 7

Date

ENFORCEMENT ACTIONS

Order No. 7519062 was issued on February 3, 2004, under the provisions of section 103(k) of the Mine Act.

A fatal machinery accident has occurred at this operation on 02/03/2004. A person fell from the bucket of a boom truck, while dismantling the mine shop. This order is issued to assure the safety of all persons at the mine shop, until an investigation can be made by MSHA to determine that it is safe for normal operations to continue. The mine operator shall obtain prior approval from an authorized representative for all actions to recover and/or restore operations to the affected area

104(a) Citation No. 7542886 citing 30 C.F.R. 77.404(a) was issued to Calvary Coal Co., Inc. This citation is marked significant and substantial with moderate negligence.

The Simon-Telelect aerial bucket, S/N T4000-1006CY, was used in a manner that created an unsafe operating condition. The maintenance supervisor, an employee of Chas Coal, Inc. used the upper boom to lift wooden posts out of the concrete floor while riding in the attached aerial bucket. The maintenance supervisor was pulling up and rotating the boom left and right to loosen and remove a post that was embedded in concrete. When the post came loose, the boom moved rapidly away from the post, throwing him out of the bucket. As a result, the victim fell to his death. The operator had established safety precautions and procedures for the safe use of this bucket that no loads shall be lifted with the boom. The rope had been removed from the JIB crane in an attempt to stop the use of the boom to lift loads.

104(a) Citation No. 7542885 citing 30 C.F.R. 77.1710(g) was issued to Calvary Coal Co. Inc. This citation is marked significant and substantial with moderate negligence.

On February 3, 2004, a maintenance supervisor employed by Chas Coal, Inc., failed to wear a safety belt or harness when he was working in the Simon-Telelect aerial bucket, S/N T4000-1006CY, while it was elevated 22 feet above the ground. The maintenance supervisor was thrown from the bucket when the concrete imbedded wooden post he was pulling with the aerial boom, which was attached to the bucket, suddenly came out of the concrete floor and released the deflected aerial boom. As a result, the victim fell to his death. A previous, similar accident involving this truck, which also resulted in fatal injuries to the bucket operator, demonstrated that using the truck in this manner posed a danger of falling.

104(d)(1) Citation No. 7542870 citing 30 C.F.R. 77.404(a) was issued to Blue Diamond Coal Co. This citation is marked significant and substantial with high negligence.

The Simon-Telect aerial bucket, S/N T4000-1006CY, was used improperly and for a purpose for which it was not designed. The maintenance supervisor, an employee of Chas Coal, Inc., while riding in the aerial bucket, attempted to use the upper boom on which the bucket is attached to pull a wooden post out of the concrete floor wherein it was imbedded. The maintenance supervisor was pulling up and rotating the boom left and right to loosen and remove the post when the post came loose causing the boom to move violently throwing him out of the bucket. As a result the victim fell to his death. The Superintendent of Calvary No. 80 Mine had knowledge of the victim's use of the truck and failed to ensure that the aerial bucket was used properly.

104(a) Citation No. 7542869 citing 30 C.F.R. 77.1710(g) was issued to Blue Diamond Coal Co. This citation is marked significant and substantial with moderate negligence.

The maintenance supervisor, an employee of Chas Coal, Inc., failed to wear a safety belt or harness when on February 3, 2004, he was in the Simon-Telect aerial bucket, S/N T4000-1006CY. The maintenance supervisor was thrown from the bucket from approximately 22 feet in height when the concrete imbedded wooden post he was pulling suddenly came out of the concrete floor releasing the deflected aerial boom. As a result the victim fell to his death. The Superintendent of Calvary No. 80 Mine had knowledge of the victim's use of the truck, but was not present at the worksite to ensure proper use of the safety harness.

104(d)(1) Citation No. 7542891 citing 30 C.F.R. 77.404(a) was issued to Chas Coal, Inc. This citation is marked significant and substantial with high negligence.

The Simon-Telect aerial bucket, S/N T4000-1006CY, was used improperly and for a purpose for which it was not designed. The maintenance supervisor, an employee of Chas Coal, Inc., while riding in the aerial bucket, attempted to use the upper boom on which the bucket is attached to pull a wooden post out of the concrete floor wherein it was imbedded. The maintenance supervisor was pulling up and rotating the boom left and right to loosen and remove the post when the post came loose causing the boom to move violently throwing him out of the bucket. As a result the victim fell to his death. As a management employee of Chas Coal, Inc., he was responsible for the safe operation of the aerial bucket truck.

104(d)(1) Order of withdrawal No. 7542892 citing 30 C.F.R. 77.1710(g) was issued to Chas Coal, Inc. This order is marked significant and substantial with high negligence.

The maintenance supervisor, an employee of Chas Coal, Inc., failed to wear a safety belt or harness when on February 3, 2004, he was in the Simon-Telelect aerial bucket, S/N T4000-1006CY. The maintenance supervisor was thrown from the bucket from approximately 22 feet in height when the concrete imbedded wooden post he was pulling suddenly came out of the concrete floor releasing the deflected aerial boom. As a result the victim fell to his death. As a management employee of Chas Coal, Inc., he was responsible to ensure that safety harnesses are used.

104(a) Citation No. 7542887 citing 30 C.F.R. 77.404(a) was issued to Tyco Trucking Co. This citation is marked significant and substantial with moderate negligence.

The Simon-Telelect aerial bucket, S/N T4000-1006CY, was used improperly and for a purpose for which it was not designed. The maintenance supervisor, an employee of Chas Coal, Inc., while riding in the aerial bucket, attempted to use the upper boom on which the bucket is attached to pull a wooden post out of the concrete floor wherein it was imbedded. The maintenance supervisor was pulling up and rotating the boom left and right to loosen and remove the post when the post came loose causing the boom to move violently throwing him out of the bucket. As a result the victim fell to his death. The president of Tyco Trucking Company authorized the dismantling of the structure, but was not present at the site during any of the activities.

104(a) Citation No. 7542888 citing 30 C.F.R. 77.1710(g) was issued to Tyco Trucking Co. This citation is marked significant and substantial with moderate negligence.

The maintenance supervisor, an employee of Chas Coal, Inc., failed to wear a safety belt or harness when on February 3, 2004, he was in the Simon-Telelect aerial bucket, S/N T4000-1006CY. The maintenance supervisor was thrown from the bucket from approximately 22 feet in height when the concrete imbedded wooden post he was pulling suddenly came out of the concrete floor releasing the deflected aerial boom. As a result the victim fell to his death. The president of Tyco Trucking Company authorized the dismantling of the structure, but was not present at the site during any of the activities.

APPENDIX A

Persons participating in the Investigation

Blue Diamond Coal Company, Inc.

<u>Name</u>	<u>Title</u>
Ricky Sandlin.....	Superintendent
Andy Fields.....	Safety Director

Kentucky Department of Mines and Minerals

<u>Name</u>	<u>Title</u>
Tracy Stumbo.....	Chief Accident Investigator
Johnny Green.....	Deputy Accident Investigator
Dill Finley.....	Mine Inspector
Gene Adams.....	Surface Mine Safety Analyst
Rick Johnson.....	Mine Inspector

Mine Safety and Health Administration

<u>Name</u>	<u>Title</u>
William B. Johnson.....	Supervisory Coal Mine Safety and Health Inspector
Arthur V. Smith.....	Coal Mine Safety and Health Inspector
Freddie N. Fugate.....	Coal Mine Safety and Health Inspector
Kevin Doan.....	Coal Mine Safety and Health Inspector
Tom Morgan.....	Specialist, Educational Field Services
Eugene D. Hennen.....	Mechanical Engineer (Technical Support)
Mary Sue Taylor.....	Attorney— Regional Solicitor's Office (Nashville)

APPENDIX B

List of Principal Persons Interviewed

<u>Name</u>	<u>Title</u>
Charles Collins.....	President, Calvary Coal Company, Inc.
Andy Fields.....	Safety Director, Blue Diamond Coal Company, Inc.
Pearl Belcher.....	Witness
Ricky Sandlin.....	Superintendent, Blue Diamond Coal Company, Inc.
Eric Asher.....	Witness
Floyd Collins.....	Superintendent, Chas Coal, Inc.
Ronnie Cunagin.....	President, Tyco Trucking Company