

**UNITED STATES  
DEPARTMENT OF LABOR  
MINE SAFETY AND HEALTH ADMINISTRATION  
Metal and Nonmetal Mine Safety and Health**

**REPORT OF INVESTIGATION**

**Surface Nonmetal Mine  
Limestone (crushed and broken)**

**Fatal Machinery Accident  
December 15, 2015**

**Ligori Auto Wrecking  
Contractor I.D. No. ZZZ**

**at**

**Continental Cement Company, LLC.  
Davenport Plant  
Buffalo, Scott County, Iowa  
Mine I.D. No. 13-00125**

**Investigators**

**Thaddeus J. Sichmeller  
Mine Safety and Health Inspector**

**Eugene D. Hennen,  
Mechanical Engineer Technical Support**

**Gary S. Rethage  
Mechanical Engineer Technical Support**

**Mine Safety and Health Administration  
North Central District  
515 West First Street, Room 323  
Duluth, MN 55802-1302  
Christopher A. Hensler, District Manager**



### **Overview**

Bernard L. Gehrts, a Laborer with Ligori Auto Wrecking, age 75, was fatally injured on December 15, 2015, while at the Davenport Plant. Gehrts was assisting with the towing of a disabled mine vacuum truck when the boom of the wrecker suddenly fell striking him.

The accident occurred because the boom was not deployed correctly or in accordance with manufacturer's instructions. The improper boom deployment caused an uneven weight distribution at the end of the mast, allowing the mast and boom assembly to tip over its pivot point position, striking and pinning the victim to the ground.

## **GENERAL INFORMATION**

The Davenport Plant, a surface limestone mine and cement facility, is operated by Continental Cement Company, LLC under the parent company Summit Materials LLC. It is located in Buffalo, Scott County, Iowa. The principal operating official is Joseph Pennings, Plant Manager. Limestone is drilled, blasted, and crushed. The material is transported by belt conveyors and processed in the plant facility to produce cement. The finished product is sold for use in the construction trade.

The Davenport Plant previously contacted FS Solutions/Vactor Manufacturing, located in Streator, IL, a week before the accident about maintenance problems with their vacuum truck. In turn, FS Solutions/Vactor Manufacturing contracted Ligori Auto Wrecking and Towing to tow the vacuum truck from the mine to their repair site, since the truck was not licensed for travel on public roadways.

Ligori Auto Wrecking is based in Streator, IL. The principal operating official is Mitchell Ligori, owner.

At the time of the accident, the Mine Safety and Health Administration was conducting a regular mandated safety inspection of the mine.

## **DESCRIPTION OF ACCIDENT**

On the day of the accident, Bernard L. Gehrts (victim) arrived at the Davenport Plant with Mitchell Ligori to tow the disabled vacuum truck from the mine. They arrived at the plant office at approximately 2:30 p.m.

Ligori and Gehrts were directed to the shop area across the road from the main plant facility. Ligori and Gehrts proceeded to the shop. When they arrived, Ligori stopped in the mine office but no one was there. Ligori then entered the adjacent shop and met with Douglas Burkhead, shop mechanic for Continental Cement Co, LLC, and discussed towing the vacuum truck. Burkhead showed Ligori the vacuum truck location, parked out behind the shop.

Ligori left the shop, but then returned to ask Burkhead if he could move the vacuum truck from a muddy location onto a cement pad for easier towing. Burkhead gave Ligori permission to move the vacuum truck. Ligori then left the shop and moved the vacuum truck into a better position, approximately 25 feet from the wrecker.

At approximately 2:54 p.m., Ligori and Gehrts prepared to deploy the wrecker's hitch. As Ligori began preparing, he saw Gehrts near the vacuum truck, approximately 25 feet away. Ligori continued to set the boom up for towing, focusing on the hand-held remote controls and deploying the boom, unaware that Gehrts had moved away from the vacuum truck and towards the wrecker's hitch. As Ligori raised the boom into position, the hitch suddenly fell. Ligori caught a glimpse of Gehrts and screamed out a warning.

Gehrts was struck by the boom portion of the hitch and pinned to the ground. Ligori grabbed a wooden block and positioned it to prevent the tow hitch from pressing down upon Gehrts. Ligori then ran into the shop for help. Burkhead immediately called Kyle Rose, Control Room Operator, Continental Cement Co., LLC and asked for an ambulance and first responders. Emergency responders arrived at approximately 3:08 p.m. and treated and freed Gehrts. He was transported to a local hospital at 3:22 p.m. where he later died. The cause of death was an acute myocardial infarction due to complications of multiple blunt force injuries to the head, neck and chest. The manner of death was deemed accidental.

## **INVESTIGATION OF THE ACCIDENT**

On December 15, 2015 at 3:20 p.m., Kamron Yousef, Alternative Fuels Manager, Continental Cement Co. LLC, called Anthony Runyon, Supervisory Mine Safety and Health Inspector, Fort Dodge, IA field office to notify MSHA of the accident. Runyon then notified Timothy McPherson, Mine Safety and Health Inspector, who was already on-site conducting a regular safety and health inspection of the mine, and directed him to the accident scene. Later that evening local authorities arrived at the mine to report that the victim had died. Jason Broyles, Night Shift Supervisor, Continental Cement Co., LLC, notified the Department of Labor's National Contact Center (DOLNCC) of the death on December 16, 2015, at 12:22 a.m. The DOLNCC notified James M. Hautamaki, Acting Supervisory Special Investigator, and a fatal accident investigation was initiated the same day. In order to ensure the safety of all persons, MSHA issued a 103(k) order of The Mine Act when the first Authorized Representative arrived at the mine.

MSHA's accident investigation team traveled to the mine, conducted a physical examination of the accident scene, interviewed personnel, and reviewed documents, equipment and work procedures relative to the accident. MSHA conducted the investigation with the assistance of mine management and Ligori Auto Wrecking.

## **DISCUSSION**

### **Location of the Accident**

The accident occurred outside the shop, on the north side of the building. The roadway surface was a flat, dry, concrete pad, approximately 20 feet from a series of shop bay doors. The wrecker was positioned perpendicular to the bay door entrances and parallel to the building's length.

### **Weather**

The weather on the day of the accident had ambient temperatures of approximately 40 degrees Fahrenheit. Weather is not considered to be a factor in the accident.

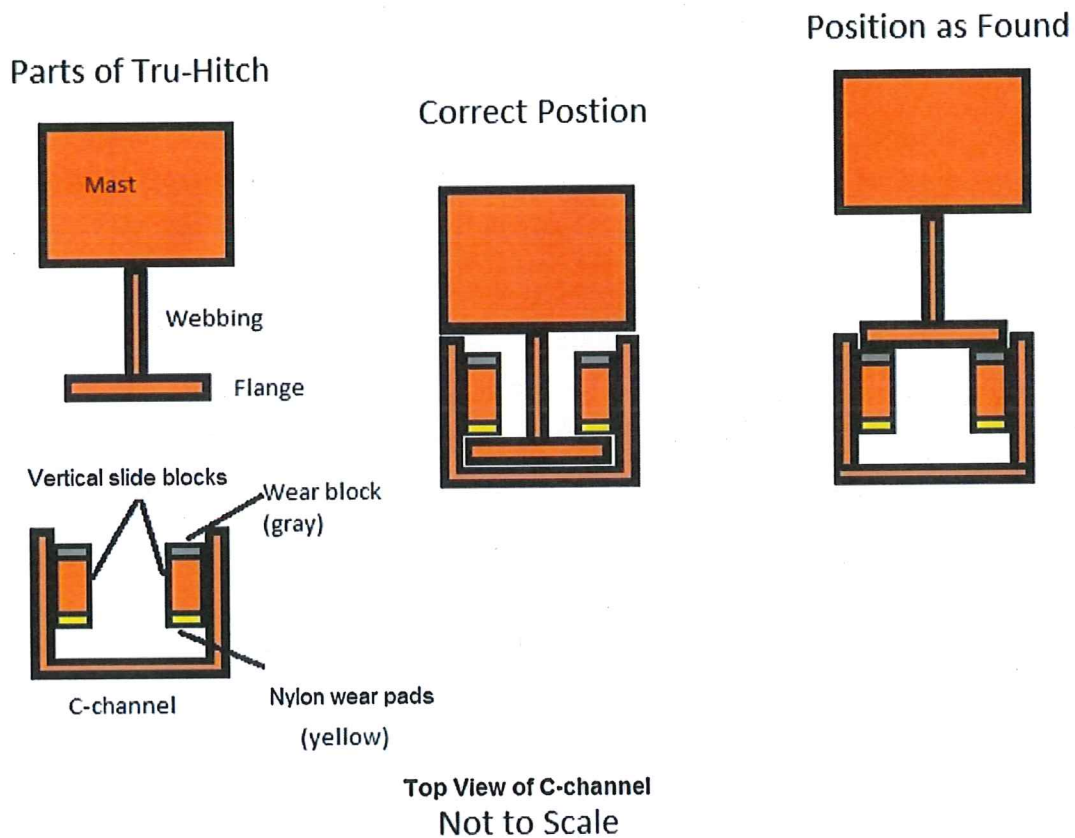
## Wrecker Truck

The 1994 Kenworth, model T600 truck, is an over-the-road semi-tractor, outfitted with a Tru-Hitch unit mounted to a fifth wheel. The truck provides battery power for the Tru-Hitch hydraulic pump.

## Hitch

Tru-Hitch fifth wheel towing assembly, model 250M, provided a gross lifting capacity of 25,000 lbs.; a trailering capacity of 80,000 lbs.; and operated at 3,000 lbs. hydraulic pressure, per the manufacturer's operator's manual.

The stationary sections of the Tru-Hitch consist of triangular shaped plates that are welded to the fifth wheel frame, with a set of plates on both sides. These plates along with the fifth wheel frame form a C-channel. This C-channel contains blocks through which the I-beam webbing of the vertical slide section of the mast raises/lowers. (See figure below)



The vertical slide blocks prevent the mast from rotating about the frame once the mast is in position (see Correct Position in figure above). With the mast's I-beam flange behind the blocks, it is impossible for the mast to be outside the C-channel but for a structural failure or an error in procedural deployment.

The visual inspection showed no signs of hydraulic failure (e.g. ruptured hose, puddle of fluid, or leaks at cylinders, valves, or manifolds). The lifting cylinders were intact and in well maintained condition – there was no rust, corrosion, or fluid present on any of the four cylinders. All hose connections were intact and showed no visible signs of leaking.

During functionality testing, as the Tru-Hitch unit was lowered into the towing position, the nylon wear pads, attached to the rear of the vertical slide blocks, were sheared off. The investigators found that the bottom bolts on both of the vertical slide blocks on the driver's side C-channel were sheared off as well, but they were unable to determine if the damage to the bottom bolts occurred during the functionality testing or if they were damaged previously. The top bolts remained intact in the holes. Because the nylon wear pads were not attached to the vertical slide blocks, this was the only functionality test the investigation team was able to perform. The functionality test of the Tru-Hitch presented no mechanical or hydraulic defects and no unexpected movements were observed.

After the accident occurred, and prior to functional testing, the mast was found outside the C-channel and vertical slide blocks. Since the investigation did not discover any equipment defects or structural damage, and the mast was outside the vertical slide blocks, it was determined that the accident occurred as a result of improper deployment of the equipment. Ligori deployed the boom first, which caused an uneven weight distribution at the end of the mast, causing the mast and boom assembly to tip off and over its pivot point position, striking the victim with a boom arm.

### **Procedure to Prepare the Tru-Hitch unit for towing**

Unfolding the hitch to prepare the unit for towing required the following steps:

1. Slide the unit towards the rear until the pivot holes line up with the bottom mast holes. Place pin in the pivot hole.
2. Extend mast cylinders until mast is vertical.
3. Align mast to be fully vertical and seated in C-channel.
4. Slightly adjust the mast to relieve pressure on the pin. Remove pin.
5. Lower mast to secure behind slide blocks. (*According to the operator's manual, safety clevises are to be re-attached at this time.*)
6. Extend boom cylinders to lower booms.
7. Lower boom until parallel with ground. Adjust mast until approximately 1 inch from the ground.

### Training and Experience

Bernard Gehrts was employed by Ligori Auto Wrecking for approximately 1 year and had assisted with towing operations in the past.

Mitchell Ligori, owner, Ligori Auto Wrecking, was trained in the use of the hitch upon purchase via the operator's manual. Ligori purchased the hitch unit in 2006 and had used the hitch in the past.

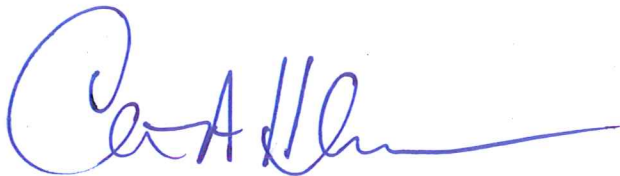
Based on the investigation, MSHA determined that Gehrts and Ligori had not received site specific hazard awareness training from the mine operator prior to the accident. The mine's existing Part 46 training plan did have site specific hazard awareness training provisions listed. The lack of site specific hazard awareness training was not deemed a contributing factor in the accident since mine conditions were not a casual factor. MSHA issued a non-contributory violation to the mine operator.

### **CONCLUSION**

The accident occurred due to a failure in deploying the boom correctly in accordance with manufacturer's instructions. The boom being deployed first, caused an uneven weight distribution at the end of the mast, causing the mast and boom assembly to tip off and over its pivot point position, striking the victim with a boom arm.

Approved by:

Date:



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Christopher A. Hensler  
District Manager  
North Central District



## APPENDIX A

### Persons Participating in the Investigation

#### CONTINENTAL CEMENT CO., LLC

Joseph Pennings	Plant Manager
Douglas Burkhead	Maintenance and Miners' Representative
Douglas Buchanan	1 <sup>ST</sup> Responder
Kamron Yousef	Alternative Fuels Manager
Kevin Taylor	Quarry Supervisor
Nicholas Scala	Attorney at Law

#### LIGORI AUTO WRECKING

Mitchell Ligori	Owner
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#### BUFFALO POLICE DEPARTMENT

Richard Aleksiejczyk	Corporal
Alexander Gries	Sergeant

#### IOWA STATE MEDICAL EXAMINER

Camilla Fredrick	MD, DME
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#### MINE SAFETY AND HEALTH ADMINISTRATION

Thaddeus Sichmeller	Mine Safety and Health Inspector
Timothy McPherson	Mine Safety and Health Inspector
Eugene Hennen	Mechanical Engineer
Gary Rethage	Mechanical Engineer



## APPENDIX B

Victim Information: 1

1. Name of Injured/III Employee: <i>Bernard L. Gehrts</i>			2. Sex <i>M</i>	3. Victim's Age <i>75</i>			4. Degree of Injury: <i>01 Fatal</i>				
5. Date (MM/DD/YY) and Time (24 Hr.) Of Death: <i>a. Date: 12/15/2015      b. Time: 16:59</i>				6. Date and Time Started: <i>a. Date: 12/15/2015      b. Time: 11:00</i>							
7. Regular Job Title: <i>116 Laborer</i>			8. Work Activity when Injured: <i>041 Moving Equipment</i>			9. Was this work activity part of regular job? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>					
10. Experience      Years   Weeks   Days			Years   Weeks   Days			Years   Weeks   Days			Years   Weeks   Days		
a. This Work Activity <i>0      46      2</i>			b. Regular Job Title <i>0      46      2</i>			c. This Mine <i>0      0      0</i>			d. Total Mining <i>0      0      0</i>		
11. What Directly Inflicted Injury or Illness? <i>105 Powered Carrier</i>				12. Nature of Injury or Illness: <i>370 Multiple Injuries</i>							
13. Training Deficiencies: Hazard: <input type="checkbox"/> New/Newly-Employed Experienced Miner: <input type="checkbox"/> Annual: <input type="checkbox"/> Task: <input type="checkbox"/>											
14. Company of Employment: (If different from production operator) <i>Ligori Auto Wrecking &amp; Towing</i>					Independent Contractor ID: (if applicable)						
15. On-site Emergency Medical Treatment: Not Applicable: <input type="checkbox"/> First-Aid: <input checked="" type="checkbox"/> CPR: <input type="checkbox"/> EMT: <input checked="" type="checkbox"/> Medical Professional: <input type="checkbox"/> None: <input type="checkbox"/>											
16. Part 50 Document Control Number: (form 7000-1) <i>220153570022</i>					17. Union Affiliation of Victim: <i>9999 No Union Affiliation</i>						