MAI-2017-08

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

# REPORT OF INVESTIGATION
## Surface Nonmetal Mine
## (Sand and Gravel)

**Fatal Powered Haulage Accident**
**September 5, 2017**

**Emery Pit**
**G S Materials Inc.**
**Candor, Montgomery County, North Carolina**
**Mine ID No. 31-02092**

**Investigators**

**Jeffrey Phillips**
**Supervisory Mine Safety and Health Inspector**

**Robert Ashley**
**Mine Safety and Health Special Investigator**

**Originating Office**

**Mine Safety and Health Administration**
**Southeastern District**
**1030 London Drive, Suite 400**
**Birmingham, AL 35211**
**Samuel K. Pierce, District Manager**

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## OVERVIEW

Dillon P. Chesney, a 20-year old plant operator, was fatally injured on September 5, 2017, while working near an operating belt conveyor. The victim was found beneath the hopper entangled in the tail pulley of the short feed conveyor.

The accident occurred because the mine operator did not: (1) have a guard secured in place prior to operating the conveyor; (2) provide appropriate task training to the victim so he understood the hazards associated with the work being performed; and (3) conduct adequate workplace examinations to identify hazards so appropriate corrective actions could be taken.

## GENERAL INFORMATION

Emery Pit, a surface construction sand and gravel mine owned and operated by G S Materials Inc., is located in Candor, Montgomery County, North Carolina. The principal operating official is Ronnie G. Kirkpatrick Sr., President. The mine regularly operates one 10-hour shift per day, five days per week. The mine typically operates a partial shift on Saturday and frequently operates on Sunday as well. Total employment is 17 persons.

Excavators extract material from the pit and load it into haul trucks for transport to two processing locations, the CDE and Kolberg plants. Machinery washes and screens the material and then conveys it into stockpiles. The operator sells the finished products for use in a variety of construction industries, including golf course development. The Mine Safety and Health Administration (MSHA) completed the last regular inspection at this operation on June 21, 2017.

## DESCRIPTION OF THE ACCIDENT

On September 5, 2017, Dillon P. Chesney (victim) reported to work at 7:00 a.m., his normal starting time. Mine manager Scott Kirkpatrick and mine superintendent Sammy Reagan talked with miners gathered in the parking lot about personnel issues and then discussed plans for the day.

Because the CDE plant was scheduled to be shut down for maintenance, Reagan told Kirkpatrick to make certain someone started the water pumps so the Kolberg plant could operate. Chesney was assigned that task, which he completed by 9:30 a.m. He then arrived at the Kolberg plant shortly before 10:00 a.m.

Michael Everett, floater, was operating a front-end loader in the Kolberg plant area, pushing up sand dumped by haul trucks from the pit into a stockpile. Everett planned to load the feed chute once Chesney arrived to start it. Around 10:00 a.m., Michael Bowden, a loader operator normally assigned to feed material, arrived to relieve Everett so he could load customer trucks by the CDE plant.

Bowden and Chesney installed screws in the skirt rubber on the short feed conveyor beneath the feed hopper. Chesney told Bowden he was going to the CDE plant to help with repairs after he made sure everything was running properly at the Kolberg plant. Chesney started the Kolberg plant from the control room, and Bowden dumped material in the feed hopper for approximately ten minutes until he was replaced by Gilbert Chavez, the loader operator normally assigned to the CDE plant. Bowden left the area at 10:30 a.m. to operate an excavator.

Bowden returned to the Kolberg plant at 11:17 a.m., and saw Chesney's pickup truck still parked by the plant. Chavez was still loading material in the feed hopper and the plant was producing material. Bowden started looking for Chesney and found him beneath the hopper entangled in the tail pulley of the short feed conveyor. Bowden called Kirkpatrick and was told to call Monica Bruce at the scale house. Bruce called 911 at 11:23 a.m. Kirkpatrick called Reagan at approximately 11:30 a.m. and told him Chesney "was in trouble". The first EMS responders arrived at 11:39 a.m. and medical examiner Andy Sanders pronounced Chesney dead at 11:41 a.m.

The medical examiner attributed the cause of death to multiple blunt force traumas to head and torso.

## INVESTIGATION OF THE ACCIDENT

Monica Bruce, Scale House Operator, called the Department of Labor's National Contact Center (DOLNCC) at 11:53 a.m. on September 5, 2017. The DOLNCC contacted Michael Evans, Safety Specialist, Southeastern District, and MSHA immediately began an investigation.

MSHA initially issued an order pursuant to Section 103(j) of the Federal Mine Safety & Health Act of 1977 (Mine Act), as amended. The agency subsequently modified the order to a Section 103(k) order upon arrival of an Authorized Representative.

MSHA's accident investigation team traveled to the mine, conducted a physical inspection of the accident scene, interviewed employees, and reviewed training and work procedures relevant to the accident. MSHA conducted the investigation with the assistance of North Carolina Department of Labor and mine management. There were no eye witnesses to the accident.

## DISCUSSION

### Location

The accident occurred beneath the Kolberg plant feed hopper at the tail section of the short feed conveyor.

Investigators found the tail pulley guard on the floor underneath the conveyor, approximately 6 feet in front of the tail pulley. Someone had removed both the tail pulley and head pulley guards. Investigators learned the guarding had been removed to replace the belt and rollers six days prior to the accident and that the operator used the conveyor for production for three days without replacing the guarding. The tail pulley guard was equipped with slots cut out on the back so

belt tracking adjustments could be performed with the guard secured in place and therefore there was no reason to remove the guard to make an adjustment.

Investigators found a light weight, portable, aluminum work platform below and slightly behind the victim; tipped over backwards with the standing surface facing the opposite direction of the conveyor. The platform was 39½ inches long and 12 inches wide, and, when upright, measured 20 inches tall. Investigators noted that Chesney appeared to have been standing on the platform when the accident occurred, based upon the height of the conveyor from the ground. Investigators believe Chesney was working by the right side of the conveyor in front of the tail pulley. When EMS arrived, they found his feet suspended above the floor approximately 6 inches, and observed a crescent wrench on the floor beneath the conveyor; the tool was bent to the curvature of the drum.

The right side pillow block bearing that supports the shaft to the frame rail was completely removed and the left side was loosened from the frame. The conveyor belt was slack but intact and not separated. EMS responders had to disconnect the pulley shaft from the right side and shift it off of the frame rail in order to extract the victim's body.

**Conveyor**

The investigation team was unable to determine the manufacturer of the short feed conveyor. The feed conveyor is powered by a Baldor Reliance 230/460 volt, 15 HP, 1765 RPM motor and uses 460-volt, 3-phase power and a variable speed control to maintain optimal flow of material from the hopper.

**Weather**

The weather condition around the time of the accident was partly cloudy with a temperature of 79 degrees Fahrenheit and light winds. Investigators did not consider weather to be a factor in the accident.

**Training and Experience**

Dillon P. Chesney had 23 weeks of mining experience at this operation with no prior mining experience. A representative from MSHA's Educational Field and Small Mine Services conducted an in-depth review of the mine operator's training records and Part 46 Training Plan. The victim did not receive task training for performing maintenance or repairs, and investigators found no documentation indicating he received training as a plant operator. The victim received only task training as a laborer and mobile equipment operator. The Part 46 Training Plan did not include procedures or training methods for performing maintenance and repairs and plant operation.

## ROOT CAUSE ANALYSIS

Investigators conducted a root cause analysis and identified the following root causes:

- *Root Cause*: Management did not have a guard secured in place prior to operating the conveyor

  *Corrective Action*: Management revised the Training Plan and incorporated policies with respect to the use of guarding, and provided miners with appropriate training. Additional guarding was also installed.

- *Root Cause:* Management did not provide appropriate task training to the victim so he understood the hazards associated with the work being performed.

  *Corrective Action:* Management provided miners with task training in proper workplace examinations, conveyor safety, conveyor guarding, plant operator guidelines, and locking and tagging out requirements and procedures.

- *Root Cause:* Management did not conduct adequate workplace examinations to identify hazards so appropriate corrective actions could be taken.

  *Corrective Action:* Management introduced comprehensive workplace examination policies related to identifying hazardous conditions and provided training to the miners.

## CONCLUSION

Dillon P. Chesney died after becoming entangled in the unguarded tail pulley of a belt conveyor. The accident occurred because the mine operator did not make sure that guarding was in place prior to placing the belt conveyor into operation; and did not have a competent person conduct adequate workplace examinations and correct hazards.

## ENFORCEMENT ACTIONS

**Issued to G S Materials Inc.**

**Order No. 8910878** -- issued September 5, 2017, pursuant to Section 103(j) of the Federal Mine Safety & Health Act of 1977 (originally issued verbally and reduced to writing upon arrival of an inspector and subsequently modified to an order pursuant to Section 103(k)):

*A fatal accident occurred at this operation on 09/05/2017, at approximately 11:17 when a Plant Operator became entangled in a tail pulley. This order is being issued, under Section 103(j) of the Federal Mine Safety and Health Act of 1977, to prevent the destruction of any evidence which would assist in investigating the cause or causes of the accident. It prohibits all activity at the Old Kolberg Plant until MSHA has determined that it is safe to resume normal mining operations in this area. This order was initially issued orally to Karen Hilliard, CEO, at 12:25 on 09/05/2017 and has now been reduced to writing.*

**Citation No. 8816534** -- issued pursuant to Section 104(d)(1) of the Federal Mine Safety & Health Act of 1977 for a violation of 30 CFR § 56.14107(a):

*On September 5, 2017, a fatal accident occurred at this operation when a miner was working around a conveyor with an exposed tail pulley. The victim was standing on a portable aluminum work platform positioned in front of the tail pulley on the right side of the Kolberg short feed conveyor. The 36 inch conveyor was in operation with the guarding removed and the victim became entangled between the belt and the tail pulley.*
*Management engaged in aggravated conduct, constituting more than ordinary negligence by not ensuring that a conveyor belt guards was put back in place after it had been removed six days earlier. The conveyor was used for three days in production after the guard was removed. This violation is an unwarrantable failure to comply with a mandatory standard.*

**Order No. 8816535** -- issued pursuant to Section 104(d)(1) of the Federal Mine Safety & Health Act of 1977 for a violation of 30 CFR § 46.7(a):

*On September 5, 2017, a fatal accident occurred at this operation when a miner was working around a conveyor with an exposed tail pulley. The victim was standing on a portable aluminum work platform positioned in front of the tail pulley on the right side of the Kolberg short feed conveyor. The 36 inch conveyor was in operation with the guarding removed and the victim became entangled between the belt and the tail pulley.*
*Management engaged in aggravated conduct, constituting more than ordinary negligence by not ensuring that the victim had been properly task trained on the health and safety aspects involved with working on or around a conveyor system.*

*The victim worked at the mine for 23 weeks and had no prior mining experience. This violation is an unwarrantable failure to comply with a mandatory standard.*

**Order No. 8816536** -- issued pursuant to Section 104(d)(1) of the Federal Mine Safety & Health Act of 1977 for a violation of 30 CFR § 56.18002(a):

*On September 5, 2017, a fatal accident occurred at this operation when a miner was working around a conveyor with an exposed tail pulley. The victim was standing on a portable aluminum work platform positioned in front of the tail pulley on the right side of the Kolberg short feed conveyor. The 36 inch conveyor was in operation with the guarding removed and the victim became entangled between the belt and the tail pulley.*
*Management engaged in aggravated conduct, constituting more than ordinary negligence by not ensuring that adequate work place examinations were being conducted by a competent person to properly identify and report hazards, such as guarding of moving machine parts, so that appropriate action could have promptly been initiated to correct the condition. This violation is an unwarrantable failure to comply with a mandatory standard.*

Approved: _____ Date_____
Samuel K. Pierce
Southeastern District Manager

## Appendix A - Persons Participating in Investigation

**G S Materials Inc.**

| | |
|---|---|
| Karen Hilliard | Chief Executive Officer |

**Law Office of Adele L. Abrams P.C.**

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|---|---|
| Diana Schroeher | Attorney |

**Yates, McLamb and Wether, LLP**

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| Sean Partrick | Attorney |

**NCDOL**

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| Carl Burton | Mine and Quarry Bureau |

**Mine Safety and Health Administration**

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| Jeffrey Phillips | Supervisory Mine Safety and Health Inspector |
| Robert Ashley | Mine Safety and Health Special Investigator |
| Fred Martin | Mine Safety and Health Training Specialist |

**Persons Interviewed**

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|---|---|
| Karen Hilliard | CEO |
| Randall Kirkpatrick | Manager |
| Sammy Reagan | Manager |
| Richard Batts | Mechanic |
| Marco Bernal | Laborer |
| Jerry Bowden | Loader Operator |
| Michael Bowden | Loader Operator |
| Gilberto Chaves | Loader Operator |
| Michael Everett | Floater |
| William Jordan | Floater |
| Steven Loflin | Excavator Operator |

# Appendix B - Victim Information

Accident Investigation Data - Victim Information

Event Number: 6 7 1 4 6 1 6

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

**Victim Information:** 1

| 1. Name of Injured/Ill Employee: | 2. Sex | 3. Victim's Age | 4. Degree of Injury: |
|---|---|---|---|
| *Dillon P. Chesney* | *M* | *20* | *01 Fatal* |

| 5. Date(MM/DD/YY) and Time(24 Hr.) Of Death: | 6. Date and Time Started: |
|---|---|
| *a. Date: 09/05/2017 b.Time: 11:17* | *a. Date: 09/05/2017 b.Time: 7:00* |

| 7. Regular Job Title: | 8. Work Activity when Injured: | 9. Was this work activity part of regular job? |
|---|---|---|
| *145 Plant Operator* | *039 Conveyor belt maintenance* | Yes X No |

| 10. Experience | Years | Weeks | Days | | Years | Weeks | Days | | Years | Weeks | Days | | Years | Weeks | Days |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a. This Work Activity: | *0* | *23* | *2* | b. Regular Job Title: | *0* | *23* | *2* | c: This Mine: | *0* | *23* | *2* | d. Total Mining: | *0* | *23* | *2* |

| 11. What Directly Inflicted Injury or Illness? | 12. Nature of Injury or Illness: |
|---|---|
| *035 Entangled between belt and tail pulley* | *370 Trauma to head and torso* |

13. Training Deficiencies:

Hazard: | New/Newly-Employed Experienced Miner: | Annual: | Task: X

14. Company of Employment: (If different from production operator)

*Operator*

Independent Contractor ID: (if applicable)

15. On-site Emergency Medical Treatment:

Not Applicable: | First-Aid: | CPR: | EMT: | Medical Professional: | None: X