FAI-6490072-1

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

REPORT OF INVESTIGATION

Surface
(Common Sand)

Fatal Machinery Accident
March 12, 2021

Dredge Chesterfield
Gateway Dredging and Contracting LLC
St. Louis, Missouri
ID No. 23-00889

Accident Investigators

Nicholas P. Dunne
Mine Safety and Health Inspector

Shawn T. Pratt
Supervisory Mine Safety and Health Inspector

Randal W. Hill
Mine Safety and Health Inspector

Originating Office
Mine Safety and Health Administration
Central Region - Madisonville District
100 YMCA Drive Madisonville, KY 42431
Robert A. Simms, District Manager

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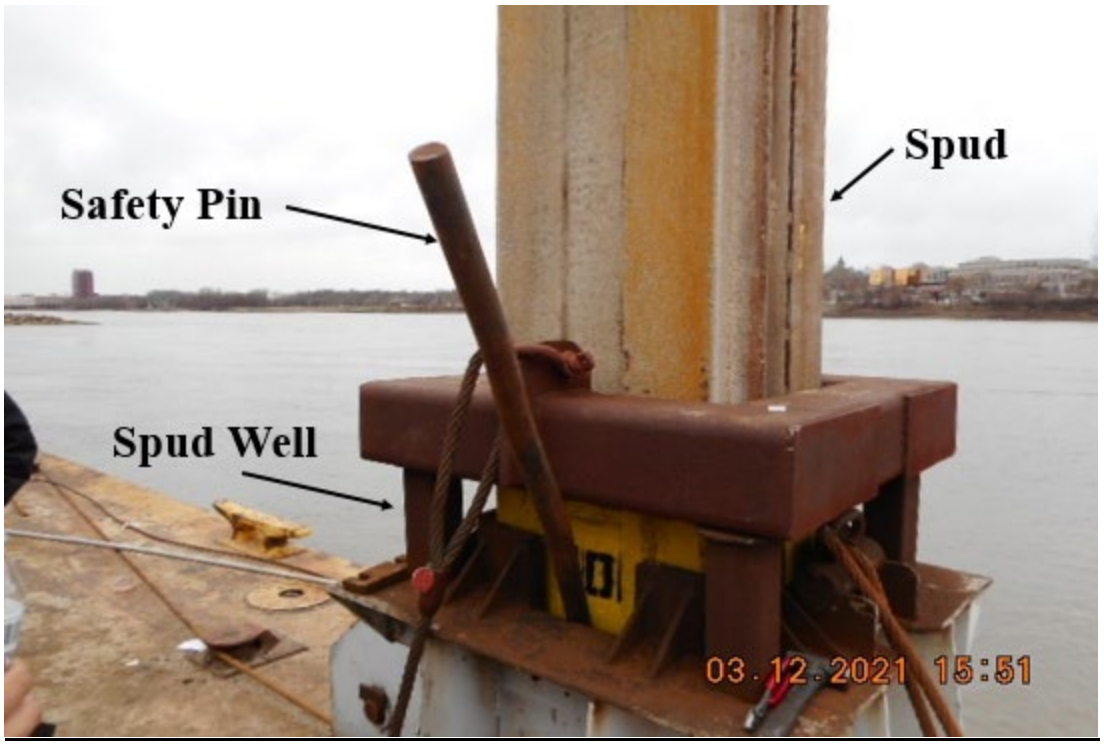


OVERVIEW

On March 12, 2021, at 11:53 a.m., Jonathan S. Castloo, a 35-year-old equipment operator with approximately eight years of mining experience, was fatally injured when a 43-pound safety pin struck him. Castloo attempted to insert the safety pin into a spud beam while the beam dropped into the spud well. Castloo was unable to place the entire safety pin into the spud beam, and as a result, the safety pin struck the spud well casing causing the pin to suddenly pivot upward and strike him.

The accident occurred because the mine operator did not have adequate policies or train miners on how to safely remove or install a spud beam, which includes ensuring that safety pins are securely in place.

GENERAL INFORMATION

Gateway Dredging and Contracting LLC owns and operates Dredge Chesterfield. Dredge Chesterfield employs four miners and operates one eight-hour shift, five days a week. The mine dredges river sand and places the sand onto barges. The loaded barges are moored to an anchored work barge on the river bank. On the work barge, an excavator equipped with a clamshell bucket unloads the sand onto the surface for customer purchase.

The principal officer for Gateway Dredging and Contracting LLC at the time of the accident was:

David J. Bangert	President

The Mine Safety and Health Administration (MSHA) completed the last regular safety and health inspection at this mine on December 16, 2020. The 2020 non-fatal days lost (NFDL) incident rate for Dredge Chesterfield was zero, compared to the national average of 0.8 for mines of this type.

DESCRIPTION OF THE ACCIDENT

On March 12, 2021, Castloo started his shift at 7:00 a.m. Ryan Bangert, Superintendent, assigned Castloo, Sam Grove, Eric Miller, and Brian Prosser, Dredge Operators, the task of replacing the stern spud beam on moored work barge BV-1. The spud beam penetrates the deck of the barge and anchors the barge into the river bottom to provide stability with the changing tides and water levels. The spud beam slides through a spud well on the barge, and is fitted with holes at different intervals for the dredge operator to insert a safety pin to prevent the spud from dropping or slipping. Replacing the spud beam involves removing the old beam and placing a new, 64-foot tall, steel beam measuring 22 inches wide by 22.5 inches in depth, with a spud hoist. The weight of the spud is approximately 13,600 lbs. The spud hoist is a winch with a cable that runs along the floor of the barge deck, through guide sheaves on the floor of the barge deck, to the spud well.

Grove was operating the crane on barge BB-1. Miller was operating the spud hoist mounted on the bow and port side of work barge BV-1. Prosser was the spotter, and Castloo was tasked with securing the 43-pound safety pin, measuring two inches in diameter and 49 inches in length. Grove used the crane to lift and swing the new spud beam from barge BB-1onto work barge BV-1. Castloo, Prosser, and Miller were on the deck of work barge BV-1installing the spud cable through the sheave of the spud beam. Grove lowered the spud beam into the spud well until the spud cable took the weight. From his location at the controls of the spud hoist, Miller could not see Castloo. Prosser was 33 feet from Miller and 95 feet from Castloo where Prosser could see both Miller and Castloo and communicate with them (see Appendix A for sketch of work barge BV-1).

Prosser signaled to Miller to raise the spud beam so Castloo could insert the safety pin. Castloo signaled Prosser that the hole in the spud beam was positioned too high above the spud well and signaled Prosser to lower the spud beam into the spud well. Prosser then directed Miller to begin lowering the spud beam. According to Prosser, Castloo did not signal him to stop the motion of the spud beam when the hole was properly aligned to insert the safety pin. While Miller was lowering the spud beam into the spud well, Castloo attempted to insert the safety pin through the spud beam. Castloo did not fully insert the safety pin through the spud beam, and the safety pin struck the spud well casing causing the pin to pivot upward (see Overview picture). As the safety pin pivoted upward, it struck Castloo.

Prosser witnessed the safety pin strike Castloo and immediately went to his location. Miller set the brake on the hoist after Prosser left his position as spotter (see Appendix B and C for spotter's location and view of accident). Miller then went to Castloo's location with Prosser. Grove heard Prosser shouting and also went to Castloo's location. Miller told Prosser and Grove to call 911. Prosser called 911 at 11:45 a.m. and went to the front gate to meet Emergency

Medical Services. Grove retrieved the first aid kit as Miller assessed Castloo's injuries. Miller checked Castloo for responsiveness, but could not detect a pulse. Miller then performed cardiopulmonary resuscitation until Jeffery Piant, Bridgeton Police Detective, arrived at 11:49 a.m. and relieved him. Stephanie Buck, Kenneth Hughes, and Robert Sievers, Robertson Fire Protection District Emergency Medical Technicians (EMTs), arrived and continued treatment. The EMTs immobilized Castloo to a backboard, secured him to a stretcher, and then transported him to Sisters of St. Mary Health DePaul Hospital. Dr. Justin F. Grady, Doctor of Osteopathic Medicine, pronounced Castloo dead from his injuries at 10:19 p.m. on March 12, 2021.

INVESTIGATION OF THE ACCIDENT

On March 12, 2021, at 12:19 p.m., Brian Viemann, Chief Executive Officer, called the Department of Labor National Contact Center (DOLNCC). The DOLNCC contacted Alan Frederick, Supervisory Mine Safety and Health Inspector who contacted Robert Simms, District Manager. Simms dispatched Shawn T. Pratt, Supervisory Mine Safety and Health Inspector; Nicholas P. Dunne, and Randal W. Hill, Mine Safety and Health Inspectors, to the mine. Dunne and Hill arrived at the mine site at 3:30 p.m. to conduct the investigation. Dunne issued an order under the provisions of Section 103(k) of the Mine Act to assure the safety of the miners and preservation of evidence. Pratt arrived at the site at 5:00 p.m. See Appendix D for a list of persons who participated in the investigation.

DISCUSSION

Location of the Accident

The accident occurred on the deck of work barge BV-1. The barge was moored in the Missouri River in Bridgeton, Missouri.

Equipment Involved

Work barge BV-1 measures 140 feet bow to stern and 40 feet port to starboard. Work barge BV-1 is designed to be towed as it does not have its own means of mechanical propulsion. A tug boat is used to move the barge to locations where it is used as a work barge.

Weather

The weather at the time of the accident was mostly clear, with a temperature of 55 degrees Fahrenheit and winds of 14 mph. Investigators determined weather was not a factor in the accident.

Spotter Location

The spotter was located 33 feet from the hoist operator and 95 feet from the victim's location. This is the only location where the spotter could see both the hoist operator and the victim. The company uses American National Standards Institute hand signals that are used across several industries.

Training and Experience

Jonathan Castloo had approximately eight years of mining experience, all with Dredge Chesterfield. Investigators determined Castloo's annual refresher training was completed in

accordance with Part 46 training regulations. Castloo was not task trained on the activity he was performing at the time of the accident because the mine had no specific training requirements on replacing spud beams or how to safely insert safety pins through the beams.

Examinations
Based on interview statements and a review of records, Miller conducted daily workplace examinations of the barges. Miller completed the required workplace examinations on the day of the accident, but due to the accident did not document the examinations.

ROOT CAUSE ANALYSIS

The accident investigation team conducted an analysis to identify the underlying causes of the accident. The team identified the following root cause and the mine operator implemented the corresponding corrective action to prevent a recurrence.

1. Root Cause: The mine operator's policies and procedures were not adequate to assure that the spud beam was safely removed or replaced, which includes ensuring that safety pins are securely in place.

   Corrective Action: The mine operator implemented written policies and procedures for installing, repositioning, and removing the spud beam and safety pin. The mine operator has trained all management and miners on these written policies and procedures.

CONCLUSION

On March 12, 2021, at 11:53 a.m., Jonathan S. Castloo, a 35-year-old equipment operator with approximately eight years of mining experience, was fatally injured when a 43-pound safety pin struck him. Castloo attempted to insert the safety pin into a spud beam while the beam dropped into the spud well. Castloo was unable to place the entire safety pin into the spud beam, and as a result, the safety pin struck the spud well casing causing the pin to suddenly pivot upward and strike him.

The accident occurred because the mine operator did not have adequate policies or train miners on how to safely remove or install a spud beam, which includes ensuring that safety pins are securely in place.

Approved By:

_____ _____

Robert A. Simms Date
District Manager

ENFORCEMENT ACTIONS

1. A 103(k) order was issued to Gateway Dredging and Contracting LLC on March 12, 2021.

   An accident occurred at this operation on 03/12/2021 at approximately 11:53 a.m., when an operator was struck by a spud safety pin while trying to insert it into a spud beam hole on the BV-1 barge. It prohibits all activity on the entire BV-1 barge until MSHA has determined that it is safe to resume normal mining operations in this area. This order applies to all persons engaged in the rescue and recovery operation and any other persons on-site.

2. A 104(a) citation was issued to Dredge Chesterfield for violation of 30 CFR § 56.14105

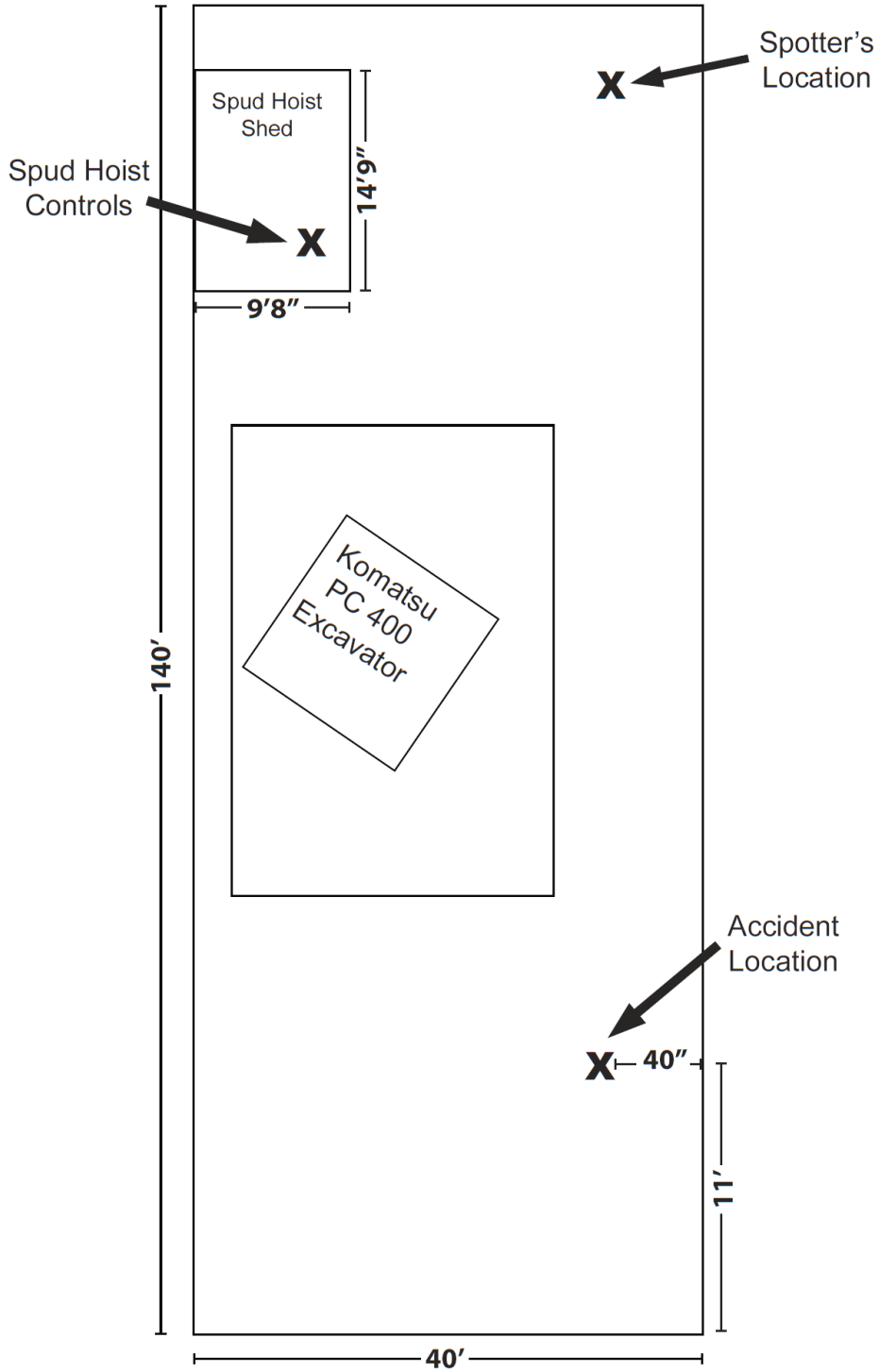
   A fatal accident occurred at this mine on March 12, 2021 at approximately 11:53 a.m., when an equipment operator was struck by a spud's safety pin while trying to insert it into a spud beam on work barge BV-1. The spud beam was still in motion when the miner attempted to insert the spud's safety pin. The partially inserted spud's safety pin contacted the spud well casing causing the pin to pivot upward, striking the miner, and resulting in fatal injuries.

3. A 104(a) citation was issued to Dredge Chesterfield for violation of 30 CFR § 46.7

   A fatal accident occurred at this mine on March 12, 2021 at approximately 11:53 a.m., when an equipment operator was struck by a spud's safety pin while trying to insert it into a spud beam on work barge BV-1. The spud beam was still in motion when the miner attempted to insert the spud's safety pin. The partially inserted spud's safety pin contacted the spud well casing causing the pin to pivot upward, striking the miner, and resulting in fatal injuries. The miner was not task trained on the activity he was performing at the time of the accident because the mine had no specific training requirements on replacing spud beams or how to safely insert safety pins through the beams.

APPENDIX A – Sketch of Work Barge BV-1

Not to scale



APPENDIX B – Spotter's View of Hoist Operator

APPENDIX C – Spotter's View of Spud Beam

APPENDIX D – Persons Participating in the Investigation

Dredge Chesterfield

Brian Viemann	Chief Executive Officer
Ryan Bangert	Superintendent
Sam Grove	Dredge Operator
Eric Miller	Dredge Operator
Brian Prosser	Dredge Operator

Bridgeton Police Department

Jeffery Piant	Bridgeton Police Detective

Robertson Fire Protection District

Stephanie Buck	Emergency Medical Technician
Kenneth Hughes	Emergency Medical Technician
Robert Sievers	Emergency Medical Technician

Mine Safety and Health Administration

Shawn T. Pratt	Supervisory Mine Safety and Health Inspector
Nicholas P. Dunne	Mine Safety and Health Inspector
Randal W. Hill	Mine Safety and Health Inspector