

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

REPORT OF INVESTIGATION

**Surface Nonmetal Mine
Crushed/Broken Limestone**

**Fatal Powered Haulage Accident
November 3, 2018**

**O-N Minerals (Michigan) Company
O-N Minerals, Cedarville Operation
Cedarville, Mackinac County, Michigan
Mine I.D. 20-00061**

Investigators

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

**Originating Office
Mine Safety and Health Administration
North Central District
515 West First Street Room 323
Duluth Minnesota, 55802-1302**

Christopher A. Hensler, District Manager

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OVERVIEW

Jill M. Klein, a 44-year-old Supervisor with three years' experience, died on November 3, 2018, when a 150-ton haul truck ran over her parked pickup truck.

The accident occurred because the mine operator did not ensure policies, controls or procedures governing traffic control were adhered to.

GENERAL INFORMATION

O-N Minerals (Michigan) Company (O-N Minerals) operates the Cedarville Operation, a multi-bench, open pit, limestone mine, located near Cedarville, Mackinac County, Michigan. Mark Snyder, Site Operations Manager, is in charge of health and safety at the mine. The mine operates three eight-hour shifts, seven days per week, and employs 85 miners.

O-N Minerals drills and blasts limestone in the quarry and uses front-end loaders to load haul trucks, which feed the processing operation. At the time of the accident, O-N Minerals was using a portable crushing plant because the primary jaw crusher was undergoing maintenance. The portable plant had been in use since approximately October 1, 2018. After crushing, material is conveyed to a rail loading facility and transported to an onsite mill processing area where it is sized for various products used in the metallurgical, construction and agricultural industries.

O-N Minerals posted a warning sign on the access road approaching the portable crushing plant stockpile area prohibiting vehicular or foot traffic while the portable crusher was in operation. The sign was posted in early October 2018, just after O-N Minerals began using the portable crushing plant.

The Mine Safety and Health Administration (MSHA) completed its last regular inspection of this operation on August 15, 2018.

DESCRIPTION OF THE ACCIDENT

On November 2, 2018, Jill M. Klein (victim) started her shift at 11:00 p.m., supervising the milling and quarrying operations, including the portable crushing plant. At approximately 1:30 a.m., she drove a company Ford F-150 pickup truck to the area where the portable crusher was located.

Four miners were working in the area of the portable crushing plant. Garrett M. Mayer, Haul Truck Driver, hauled material from a blasted shot to a stockpile adjacent the portable crushing plant. Thomas Huff, Equipment Technician, operated the front-end loader to supply feed to the portable crushing plant. Brandon Spencer, Equipment Technician, operated the excavator/rock breaker at the portable crusher and Levi McDonald, Plant Technician, was conducting routine cleanup around the crusher.

Just before Klein arrived, Spencer began operating the front-end loader to allow Huff to take a break, and McDonald walked to his pickup truck parked south of the portable crushing plant to warm it up.

McDonald told inspectors that Klein drove up to his vehicle, briefly parked, and waved, and then drove into the stockpile area of the portable crusher. He said that Klein's truck's headlights were on but the strobe light on the roof of the pickup truck was not.

Spencer, who was operating the front-end loader, said he observed Klein drive into the stockpile area of the portable crusher with the headlights on and strobe light off and saw her park north of the excavator/rock breaker. Spencer noticed Mayer driving the haul truck into the area around the same time. He continued to work, dumping a bucket of stockpile material into the crusher and momentarily losing sight of Klein's pickup truck.

As Mayer drove into the crusher area, he felt a bump and suspected something was wrong. At the same time Spencer backed up the front-end loader and saw that Klein's pickup truck had been run over by the haul truck. Spencer exited the front-end loader and ran toward the pickup truck. Mayer exited his haul truck and saw Spencer running to the rear of the haul truck. Spencer called over the company radio for someone to call 911. McDonald placed the call to 911 and then went to assist Spencer and Mayer.

Clark Township Fire Department/EMS, and Michigan State Police arrived and began recovery efforts. The Mackinac County Medical Examiner was summoned to the scene and pronounced Klein dead at approximately 2:10 a.m.

INVESTIGATION OF THE ACCIDENT

Chad Cornwell, Production Manager, called the Department of Labor's National Contact Center (DOLNCC) at 2:08 a.m., on November 3, 2018, and notified MSHA of the accident. DOLNCC notified Scott Johnson, Assistant District Manager. MSHA issued an order under provisions of Section 103(k) of the Mine Act to ensure the safety of the miners and began the investigation.

MSHA's accident investigation team traveled to the mine, conducted a physical inspection of the accident site, interviewed miners, reviewed conditions and work procedures relevant to the accident, and conducted a re-creation of the incident. MSHA conducted the investigation with the assistance of mine management and miners. See Appendix A for persons participating in the investigation.

DISCUSSION

Location of Accident:

The accident occurred in a stockpile area, north of the portable crushing plant and west of the primary jaw crusher. The terrain at the accident scene was relatively level.
(See Appendix B)

A warning sign which read, "STOP No vehicular or foot traffic beyond this point while primary crusher is crushing material," was posted on the access road leading into the stock pile area.

Investigators determined the accident scene was sufficiently illuminated by two light plants.

Weather

Weather reports on the day of the accident indicated clear skies with an average temperature of 36°F. Weather was determined not to be a factor in the accident.

Equipment Involved

Haul Truck: A functionality check on the Caterpillar 785B haul truck involved in the accident showed seven of eight headlights were functional. The inner operator side headlight located nearest to the ground did not illuminate. Pre-shift examination records from the day of the accident did not indicate this condition. Investigators could not determine whether the accident caused the damage to the headlight but concluded one nonfunctioning headlight of eight would not negatively affect the haul truck operator's visibility. The haul truck's communication system, horn, wipers, defroster, reverse alarm, tail lights, reverse lights, and 4-way flashers were functioning properly. The windows and mirrors were free from defects.

Investigators conducted a re-creation of the incident using similar makes and models of mining equipment to determine whether the pickup truck was visible from the haul truck cab. The first simulation, with the pickup truck strobe light off, indicated the pickup truck was visible from the operator's compartment of the haul truck. During the second simulation with the strobe light on, the pickup truck was visible from the operator's compartment of the haul truck at a greater distance. In both simulated recreations, visibility of the pickup truck was briefly lost behind the haul truck's right front cab pillar as the haul truck rounded the stock pile.

Pickup Truck: The victim was operating a Ford F-150 pickup truck. Based on investigative interviews, the pickup truck's headlights were functional prior to the accident and the vehicle's strobe light was not on. Due to the damage from the accident, investigators were unable to determine whether the strobe light was off or nonfunctional.

TRAINING AND EXPERIENCE

Jill M. Klein worked at the Cedarville Operation for over three years. Her duties involved overseeing the milling operations, but also included occasional weekend supervision of both the mill and quarry. MSHA determined she completed all required training, including annual refresher pursuant to Part 46.

Garrett M. Mayer worked at Cedarville Operation for over a year. He performed a variety of tasks at this operation and was task trained as a haul truck driver prior to the accident. MSHA determined his new miner training certificate was not signed. Investigative interviews with mine management, trainers and the miner determined Mayer completed the new miner training and the missing signature was an oversight. MSHA issued a non-contributory citation for failure to sign the training certificate.

ROOT CAUSE ANALYSIS

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

Root Cause: The accident occurred because the mine operator did not ensure policies, controls or procedures governing traffic control were adhered to. A posted sign restricting access to the

dump area by small vehicular equipment when large off-road haulage trucks were in operation was not followed.

Corrective Action: Mine management retrained the workforce regarding policies and procedures governing traffic control. The importance of following directions in posted signs and the importance of using a vehicle's strobe light were emphasized during the retraining.

CONCLUSION

Jill M. Klein died when a 150-ton haul truck ran over the pickup truck she was operating. The accident occurred because the mine operator did not ensure policies, controls and procedures governing traffic control were adhered to.

ENFORCEMENT ACTIONS

Order No. 8958136 – Issued November 3, 2018, to O-N Minerals under the provisions of Section 103(k) of The Mine Act:

A fatal accident occurred at this operation on 11/03/2018 when the driver of a pickup truck was accidentally driven over by a Caterpillar 785B Haulage Truck. This order is issued to assure the safety of persons at this operation until the affected areas of the mine can be returned to normal operations as determined by an authorized representative of the Secretary. The affected area is around the crushing operations, including the Caterpillar 785B Haulage Truck Co. #03, the Ford F-150 pickup truck Co. #43, the Caterpillar 235B Excavator Co. #563, the 980K Co. #103 and the Caterpillar 993K Co. #682. The mine operator shall obtain approval from an authorized representative to remove any of the named equipment from the accident site.

Citation No. 9384200- Issued February 26, 2019, to O-N Minerals under the provisions of Section 104(a) of The Mine Act for a violation of 30 CFR, Part 56.9100(a):

A fatal accident occurred on the night shift of November 3, 2018, when a mine supervisor, inside a Ford pickup truck, was run over by a Caterpillar, model 785B, Haul Truck. The supervisor was at the stockpile area of the portable crusher, where the haul truck was to dump. A sign had been posted at the access point indicating to persons to stop and no vehicular or foot traffic was permitted beyond the sign while the primary crusher is crushing material. Rules governing traffic were not being adhered to.

Approved By: _____ Date: _____
Christopher A. Hensler
District Manager

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

O-N Minerals (Michigan) Company

Raymond LeClair	Director of Operation – Great Lakes Region
Joseph Bourdage	Corporate Health and Safety Manager
Mark Snyder*	Site Operations Manager
Levi Weathermon*	Great Lakes Area Health and Safety Manager
Sarah Barr	Senior Human Resource
William Saly	Maintenance Manager
Chad Cornwell*	Production Manager
Garrett M. Mayer*	Haul Truck Driver
Brandon Spencer*	Equipment Technician
Levi McDonald*	Plant Technician
Thomas Huff*	Equipment Technician
Jesse Goudreau*	Electrician
Brian Hill*	Plant Technician Crew Leader
Dennis Achtabowski*	Production Supervisor
Steven J. Storey*	Equipment Technician / Truck Trainer

United Steelworkers Union, Local 182

Thomas McDonald	Union President/ Miners' Representative
William T. Gough	Union Safety Chairman/ Miners' Representative

Jackson Kelly Attorneys at Law

Arthur M. Wolfson	Counsel
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Clark Township Fire Department/EMS

Steven Honnila	Chief
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Mackinac County Medical Examiner:

Carl W. Hawkins MD

Great Lakes Surveying

Jeffery M. Davis, P.S.

Mine Safety and Health Administration

Thaddeus J. Sichmeller	Mine Safety and Health Inspector
Duane Hongisto	Mine Safety and Health Inspector
Scott Johnson	Assistant District Manager
Brittany Wilson	Mechanical Engineer
Matthew Wharry	Mechanical Engineer
Nicholas Fallova	Mechanical Engineer

