

Missouri Mine Rescue Contest
Rolla, MO
10/3 – 10/6/2016

MINE INFORMATION

Welcome to the Phelps Mine, the Phelps Mine is a single level underground limestone mine that's owned and operated by Taylor Industries. This room and pillar mine was developed in the late 1800's and was the largest limestone producing mine west of the Mississippi. The mine was closed and abandoned in the late 1900's after a failed impoundment inundated the mine with water and took the lives of seven miners. The mine was reopened 6 months ago and for the exception of the dewatering process the mine has not had any issues.

The Phelps Mine has been rehabilitating portions of the mine and 2 months ago installed a portable crushing unit underground, where material is crushed and then extracted to surface by haul truck. All mining development is taking place in the northwest direction at this time. The mine currently operates two 10 hour shift which runs from 6:00 a.m. to 4:00 p.m. and 6:00 p.m. to 4:00 a.m. Each shift contains 1 foreman, 3 development miners, and a 2 man powder crew that use explosives at the end of each shift.

BACKUP TEAM(S)	A second backup team has arrived on mine site.
EXPLOSIVES	Explosives are used and stored underground.
UG ELECTRICITY	A 4160 Volt power line enters the mine by way of a lined bore hole, which supplies power to a transformer underground.
GAS	Non Gassy mine, rumor has it that in the 1900's miners drilled a bore hole through a coal seam that liberated methane into old workings.
GUARDS	Guards have been placed at all ventilation shafts and air quality is being monitored.
MATERIALS	All materials to work the problem are located in the field problem and are identified by placards.
MINE MAPS	The mine map was last updated on September 1, 2016.
MINING METHOD	Room and pillar method accomplished by jack leg drilling and explosive blasting. Utility (water & air) lines run in various areas of the mine.

MINING EQUIPMENT	The mine utilizes diesel powered LHD's, Haul Trucks, Jack Leg Drills, and a Powder Truck for explosives. The mine recently located a small portable crusher underground.
NOTIFICATION	All federal, state, and local officials have been notified.
OPENINGS	The miners enter by way of the main portal and the mine is in the process of installing a diesel powered auxiliary hoist over the #1 Air Shaft. The project is in its early stages and will not be complete for 6 months. All other air shafts do not provide access to the underground.
PHONES	All communication is achieved via two way hand-held radios.
ROOF SUPPORT	Point-anchor resin bolts are used in varying lengths for primary roof support. Wooden posts are used for secondary support.
FIRE PROTECTION	The mine utilizes hand-held fire extinguisher of various sizes and recently placed water powered portable foam generators in areas of the mine for use. All necessary accessories are located with the units.
VENTILATION	<p>The mine ventilates by way of 3 separate air shafts and the main portal entry. All fan controls are located on surface.</p> <ul style="list-style-type: none"> • #3 Air Shaft – 8' in diameter Exhaust Fan, 84-inch diameter Joy axi-vane permissible fan, exhausting approximately 50,000 cfm and is not reversible. Fan is not currently running. • #2 Air Shaft - 8' in diameter shaft with an 84-inch diameter Joy axi-vane permissible fan, blowing approximately 50,000 cfm and is not reversible. Fan is not currently running. • #1 Air Shaft – 8' in diameter shaft and the fan has been removed but is still used for ventilation purposes.
WATER	The mine is still in a dewatering process from the past disaster that took place. Also, natural springs create a buildup of water in the west side of the mine. There are four sumps in the mine and each sump has a 1,000 gallon capacity except for the #2 Sump which has a 5,000 gallon capacity. Each Sump is equipped with a high pressure submersible pump. The mine pumps approximately 1,500 gallons of water daily.