Illinois State Mine Rescue Contest

2017

I am (Your Name), Superintendent of the Saluki #1 Mine. Thank you for responding to our emergency. Last night a 6 person crew entered the 1st Right Panel to perform work. Halfway through the shift the section foreman called outside and stated that he had high levels of methane coming from the face. While talking, the tracking operator heard what sounded like an explosion and there has been no communication since.

The mine manager tried to make it into the panel but encountered high levels of methane, elevated carbon monoxide, and low oxygen. He was forced to exit the mine. He notified the agencies and the mine rescue teams.

The mine is ventilated by an exhausting fan that is on at the present time. The fan cannot be stopped but may be reversed by a switch in the command center. Once reversed, the fan cannot be changed back. The intake air travels up the #3 Entry and returns out the #1 Entry. All power has been disconnected in the mine. This mine is noted for poor roof, high liberations of methane, and high levels of water.

The map was up to date as of yesterday.

A fresh air base has been established at the mouth of the panel and there is a fully equipped back up mine rescue team stationed there. The backup team will not be able to perform any work in your area. Thank you and good luck!!
Illinois State
Mine Rescue
Written Instructions

• Account for all missing persons
• Bring Survivors to the fresh air base
• You may only transport 2 curtains at a time. The curtains may not be kicked or thrown to another location.
• Explore the mine in its entirety where safe to do so.
Help! It's airtight behind me.

Battery Scoop

Water Knee Deep

Hammer

3 Timbers

Person/Unconscious

Help! Help! It's airtight behind me.

Axe

Cut Into Old Works

Continuous Miner

Battery Ram Car

3% CH4 9 PPM CO 17.1% O2

Person/Conscious

Help! Help! It's airtight behind me.

Airtight

Battery Scoop

Hard Hat

Water Ankle Deep

5.3% CH4 7 PPM CO 19.1% O2

Cut Into Old Works

Lunch Box With Note "BOOM"

5% CH4 8 PPM CO 18% O2

CPDM 5.8% CH4 8 PPM CO 17.1% O2

3 Timbers

Proximity Device

Battery Phone

Open Borehole

3.5% CH4 5 PPM CO 19.3% O2

3 Timbers

5.6% CH4 8 PPM CO 18.8% O2

RamCar

Used SCSR

Battery Scoop

Cap Light Battery

5.9% CH4 8 PPM CO 17.9% O2

Hard Hat

Battery Scoop

5.8% CH4 8 PPM CO 17.1% O2

Water Knee Deep

3 Timbers

5.6% CH4 8 PPM CO 17.1% O2

Used SCSR

Battery Scoop

5.6% CH4 8 PPM CO 18.8% O2

Roof Bolter Cable

5.8% CH4 8 PPM CO 17.1% O2

Lunch Box

With Note "BOOM"

5% CH4 8 PPM CO 18% O2

CPDM 5.8% CH4 8 PPM CO 17.1% O2

3 Timbers

Proximity Device

Battery Ram Car

3% CH4 9 PPM CO 17.1% O2

5.6% CH4 8 PPM CO 18.8% O2

Ram Car

Battery Scoop

3 Timbers

5.6% CH4 8 PPM CO 18.8% O2

Hard Hat

Battery Scoop

5.8% CH4 8 PPM CO 17.1% O2

Water Ankle Deep

5.3% CH4 7 PPM CO 19.1% O2

Cut Into Old Works
Help! It's airtight behind me.

Battery Scoop

Water Knee Deep

5.6% CH4 8 PPM CO 18.8% O2

3 Timbers

5.6% CH4 5 PPM CO 18.0% O2

Battery Scoop

Used SCSR

5.6% CH4 8 PPM CO 18.8% O2

Ramcar

Person/Unconscious

Water Ankle Deep

5.3% CH4 7 PPM CO 19.1% O2

Cut Into Old Works

Continuous Miner

Battery Ram Car

3% CH4 9 PPM CO 17.1% O2

Hard Hat

Battery Phone

Open Borehole

3.5% CH4 5 PPM CO 19.3% O2

Extent of Gas Map
Help! It's airtight Behind me.

Battery Scoop

Water Knee Deep

Hammer

3 Timbers

Caved Airtight

Person/Unconscious

Help! Help! It's airtight Behind me.

Axe

Cut Into Old Works

Continuous Miner

Battery Ram Car

3% CH4 9 PPM CO 17.1% O2

Hard Hat

Battery Phone

Open Borehole

3.5% CH4 5 PPM CO 19.3% O2

Face

Face

Roof Bolter

CPDM

5.8% CH4

8 PPM CO

17.1% O2

Proximity Device

3 Timers

5% CH4

8 PPM CO

18% O2

Mine Tracker

Person/Conscious

Help! Help! It's airtight Behind me.

Axe

Used SRLD

Battery Scoop

Cap Light Battery

Used Scoop

Mine Tracker

Battery Scoop

Cap Light Battery

Scoop

Battery

CPDM

5.8% CH4

8 PPM CO

17.1% O2

Person/Conscious

Help! Help! It's airtight Behind me.

Axe

5.6% CH4

8 PPM CO

18.8% O2

CLEARED

3 Timbers

5.6% CH4

5 PPM CO

18.0% O2

CLEARED

Used SCSR

5.3% CH4

7 PPM CO

19.1% O2

Person/Unconscious

Cut Into Old Works

5.6% CH4

8 PPM CO

18.8% O2

CLEARED

3 Timbers

5.6% CH4

5 PPM CO

18.0% O2

CLEARED

5.6% CH4

8 PPM CO

18.8% O2

CLEARED

3 Timbers

5.6% CH4

5 PPM CO

18.0% O2

CLEARED

5.6% CH4

8 PPM CO

18.8% O2

CLEARED

5.6% CH4

5 PPM CO

18.0% O2

CLEARED
Keys to the Problem

1. The unconscious person in the unsafe in the B crosscut will be the first person brought out after the team finds the timbers at team stop 3. The unconscious person must be protected by an approved breathing apparatus or device with a full face piece.

2. The team will have to follow the team stops as indicated. If team travels up number 1 to team stop 6 it will be unsystematic. The team must find the end to the gas in the #3 Entry at caved.

3. At team stop 7, the team will encounter three timbers at which point they have the means to get the patient out of the Barricade in the #2 Entry. The teams will timber the unsafe in the #1 Entry, then see ventilation 1 and ventilation 2. Due to the statement reading once fan is reversed it cannot be switched back, I am hoping vent 1 and 2 are completed. If not there is a combined vent that can be done. (See combined vent)
4. After all team stops have been made the teams can ventilate the barricade in the 1 Entry. The team will have to move the battery phone in the #3 Entry, timber the unsafe in the #3 Entry, timber the unsafe in between the #2 and #3 Entries, and reverse the fan. See vent 3 and 4.

5. When team enters barricade in the #3 Entry there is an FPA when the explosive mixture and evidence of a fire (smoke) combine. There is a lunch box with a note in it just inby the smoke. The note says “BOOM”.