Problem Statement

You are located on the surface of the M R Mine. This is a new 3 entry mine that is developing the main entries to turn left and right in the near future.

The 3rd shift foreman sent a 3 man crew up to the section to fix the continuous miner and finish the cut so it could be bolted.

A loud boom was heard about 2 hours ago and we tried to enter the slope but found low O2 and methane. The tracking system shows all 3 men are still on the section. Phone communication has been unsuccessful.

We have two split air shafts that are being used for ventilation. Each split shaft has a blowing fan on top of the intake side and air can return on the other side of each shaft. Power was knocked on both fans, but has been restored and either fan can be turned on or off by asking the superintendent.

There is a trained mine rescue team here to back you up and the power has been locked out and guarded. The maps were up to date as of yesterday and will show each air shaft.

Please be careful and find our miners.
ACCOUNT FOR ALL MISSING MINERS

BRIEFING OFFICER MUST GIVE EXPLOSIVE MIXTURES NUMBERS IN WRITING TO SUPERINTENDENT BEFORE MOVING TO NEXT TEAM STOP

THE BLOWING FANS CANNOT BE REVERSED

THE BRIEFING OFFICER HAS BEEN ISOLATED AND MUST REMAIN IN A RESPIRABLE ATMOSPHERE
TEAM MAP

[Diagram of a maze-like structure with two round obstacles and a central area labeled 'BO DI']
Vent 1 or 2

5.5% CH₄
10 PPM CO
19.0% O₂

PETITION WALL
BATTERY
COAL
HAULER

OVER KNEE DEEP
AIR SHAFT #1
4.5% CH₄
7 PPM CO
19.7% O₂

5.5% CH₄
8 PPM CO
19.7% O₂

PERSON BODY
UNCONSCIOUS
191.1% O₂

TEAM ASK SUPER TO TURN ON AIR SHAFT
NO. 2 BLOWING FAN

CUT INTO OLD MINE
CONTINUOUS MINER
PETITION WALL

AIR SHAFT #2
5.5% CH₄
5 PPM CO
19.7% O₂

BATTERY
MINING PHONE

BATTERY
COAL
HAULER

4 TIMBERS
SLOPE ENTRY

CLEAR
Team ask Super to turn on air shaft
No. 1 blowing fan
Vent 2 or 3

5.5% CH4
10 PPM CO
19.0% O2

PETITION WALL
CONTINUOUS MINER
PETITION WALL

FACE
FACE
FACE
FACE
FACE

AIR SHAFT #1
5.5% CH4
7 PPM CO
19.7% O2

OVER KNEE DEEP

FACE
FACE
FACE

BATTERY SCOOP
BATTERY COAL HAULER

PERSON BODY
UNCONSCIOUS

4.5% CH4
5 PPM CO
19.1% O2

BATTERY COAL HAULER

Person Body
4 TImbers

BO
SLOPE ENTRY

Team ask Super to turn on air shaft
No. 2 blowing fan

Clear
Clear

5.5% CH4
5 PPM CO
19.7% O2

5.5% CH4
5 PPM CO
19.1% O2
Team ask Super to turn on air shaft No. 1 blowing fan

Vent 4

5.5% CH4
10 PPM CO
19.0% O2

5.5% CH4
7 PPM CO
19.7% O2

5.5% CH4
8 PPM CO
19.7% O2

4.5% CH4
5 PPM CO
19.1% O2
Keys to Problem

• Team must enter the mine in the #3 entry (Slope)

• Team must not let explosive mixtures flow over batteries, caved areas and water over knee deep

• Team must not let irrespirable atmospheres flow over person in unsafe roof or over caved and water over knee deep

• To ventilate correctly, team must remove explosive mixtures before ventilating the barricade to rescue patient

• Team must timber to person after taking live unconscious to FAB