

# 2013 MTTC Pennsylvania Regional Skills Contest



**April 22-25, 2013**

# **Problem Statement**

**This morning a foreman and three crew members entered the section to continue the mining process.**

**Just a few minutes ago, an explosion was heard and the fan stopped. We haven't heard from the foreman and crew and the tracking system shows that they have not left the section.**

**Also after the explosion, the drift openings going into the mountain became blocked by water and unsafe roof. A mine examiner was able to make the no.2 drift opening and found no explosive gases, but he was blocked from further travel by unsafe roof. So a decision was made to enter the mine by using the escape elevator. You are located outside beside the escape elevator at this time. This elevator will drop you and your team down into the no.2 entry in by the last open crosscut. The mine was preparing for a 90 degree turn after hitting bad top, water and dangerous amounts of methane while driving a northerly direction.**

**Intake air was being pulled into the no.1 entry drift opening and across the last open to the no.3 entry air shaft with an exhaust fan on top of the shaft. The fan is off at this time. The escape elevator shaft in no. 2 entry can also be used as an intake if needed.**

**This mine was mining close to an old mine, but we believe our distance from the old mine is safe.**

**We have never had a problem before with our contract engineering company making mistakes.**

**The mine map should be very close to correct. You will receive two copies of the section map when you are ready to start. The Briefing Officer's map is identified.**

**Back up Mine Rescue teams are ready and available if you need assistance. You can begin when you are ready!**



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## Written Instructions

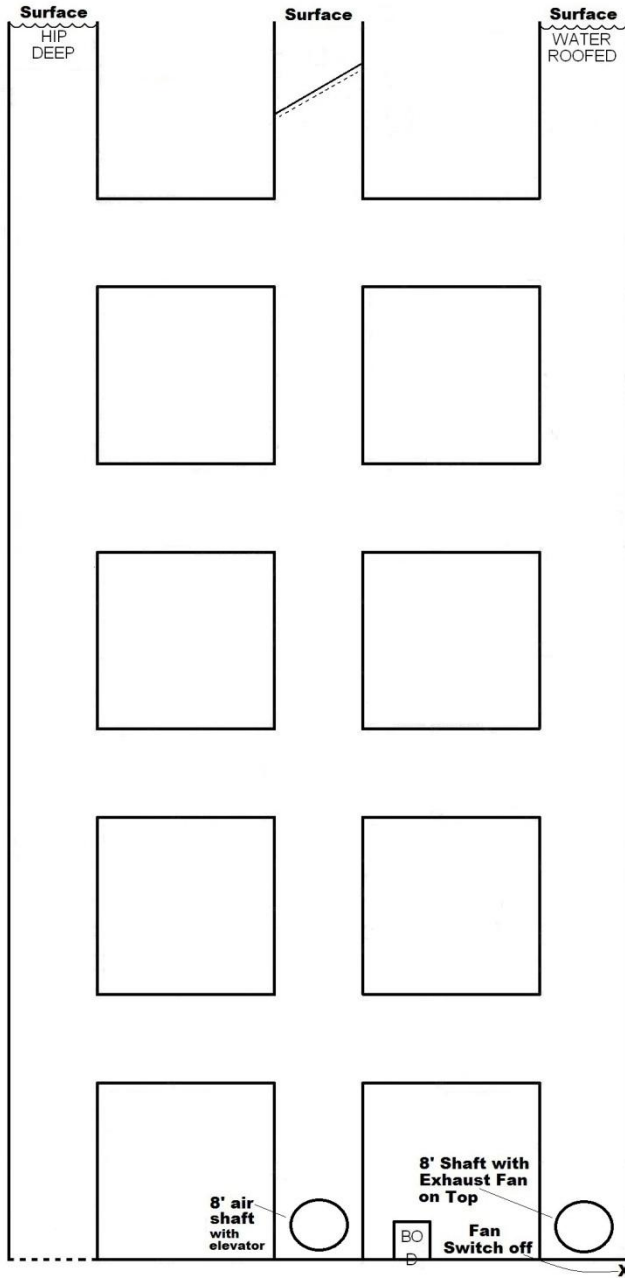
**BRING ALL SURVIVORS TO THE FRESH  
AIR BASE**

**THE EXHAUST FAN CANNOT BE  
STOPPED OR STALLED AFTER  
STARTING. THE EXHAUST FAN CAN  
NEVER BE REVERSED**

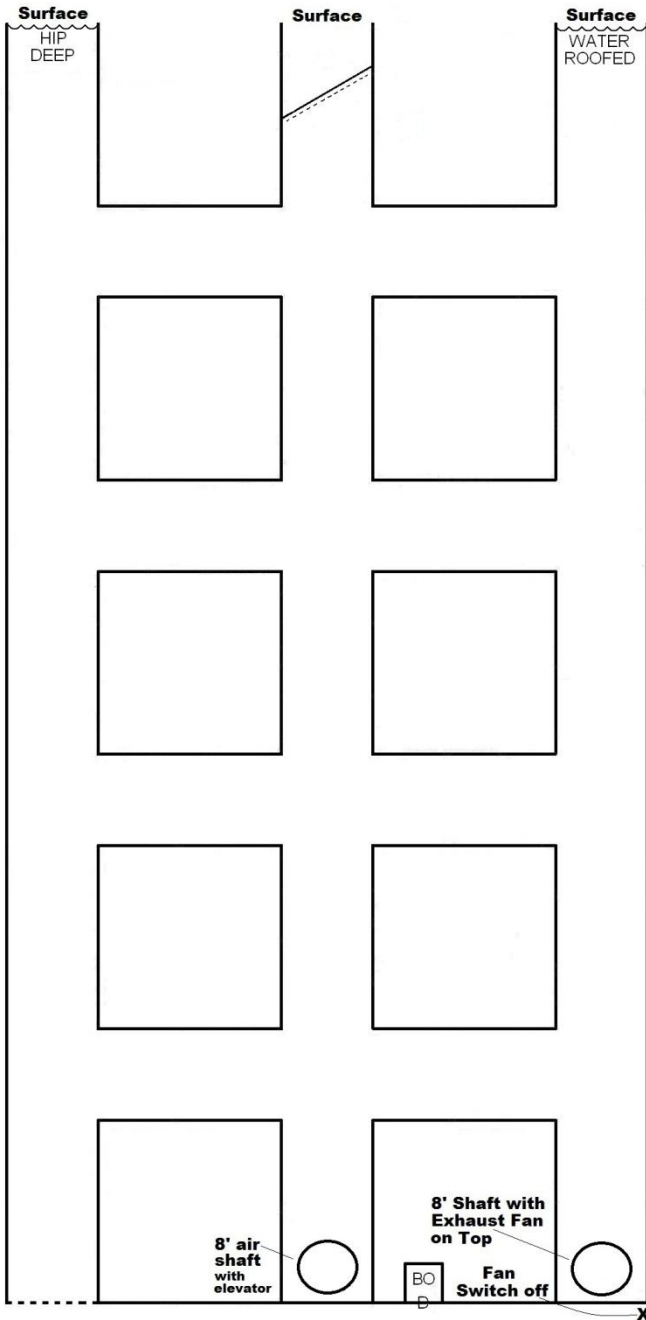
**THE BRIEFING OFFICER HAS BEEN  
ISOLATED AND MUST REMAIN IN A  
RESPIRABLE ATMOSPHERE**

**UP OR DOWN ON THE ELEVATOR WILL  
HAPPEN IMMEDIATELY WHEN THE  
CAPTAIN TELLS THE CHAIRMAN OF  
JUDGES "TEAM IS READY TO GO  
UP / DOWN"**

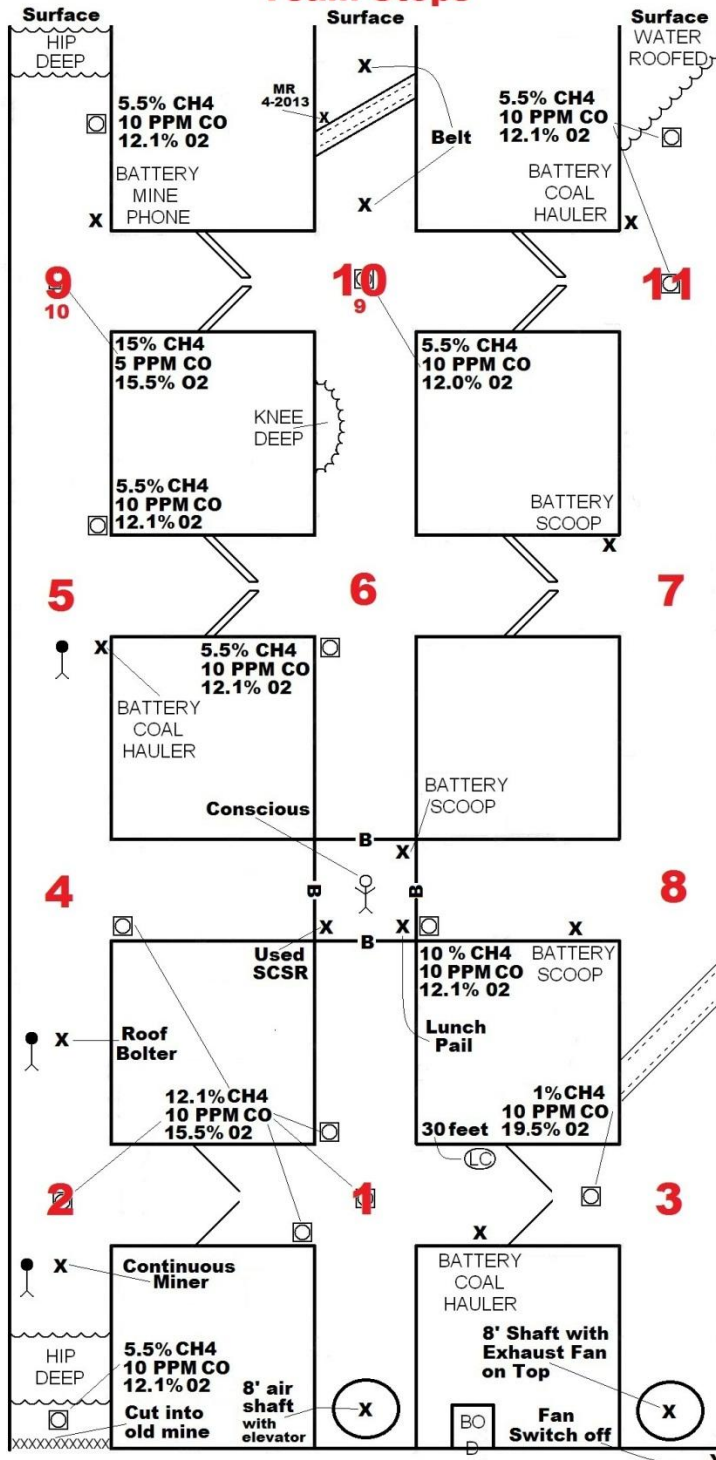
# BO Map



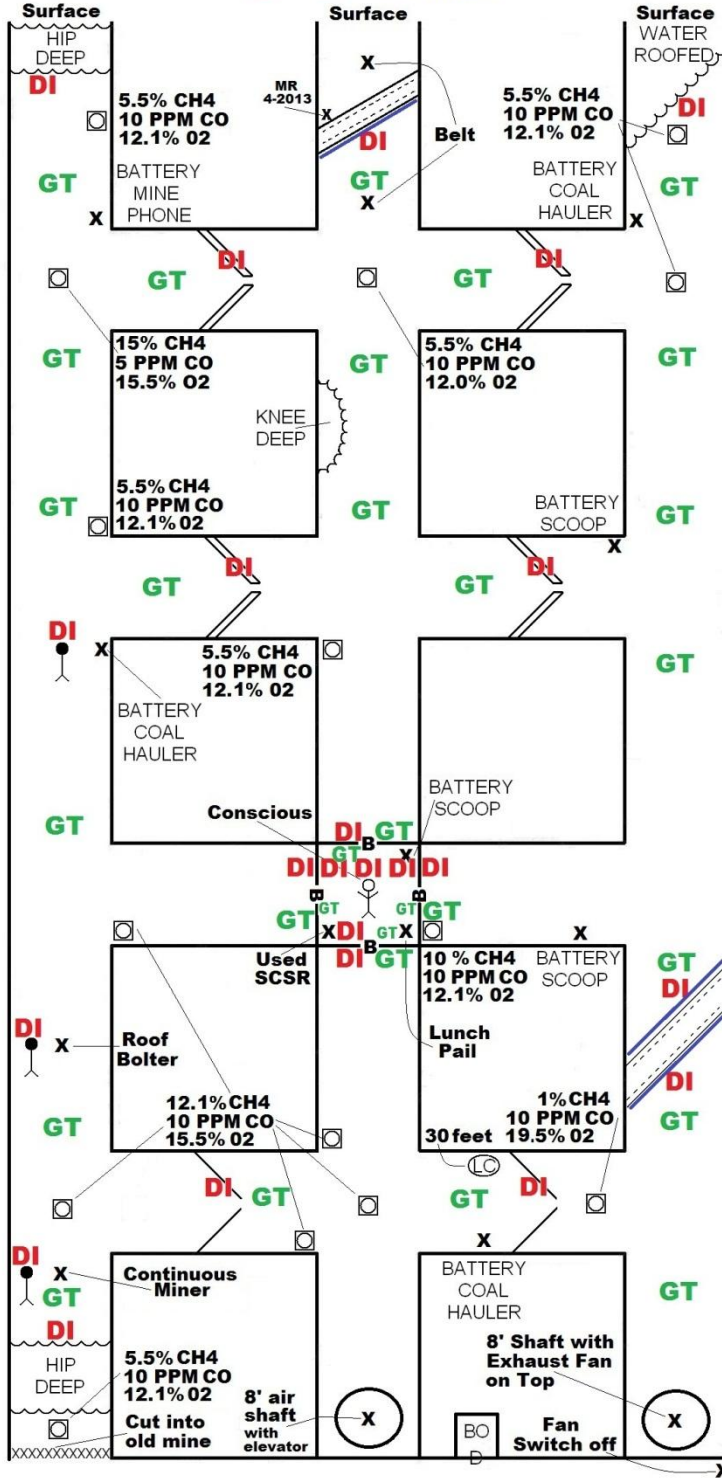
# Team Map



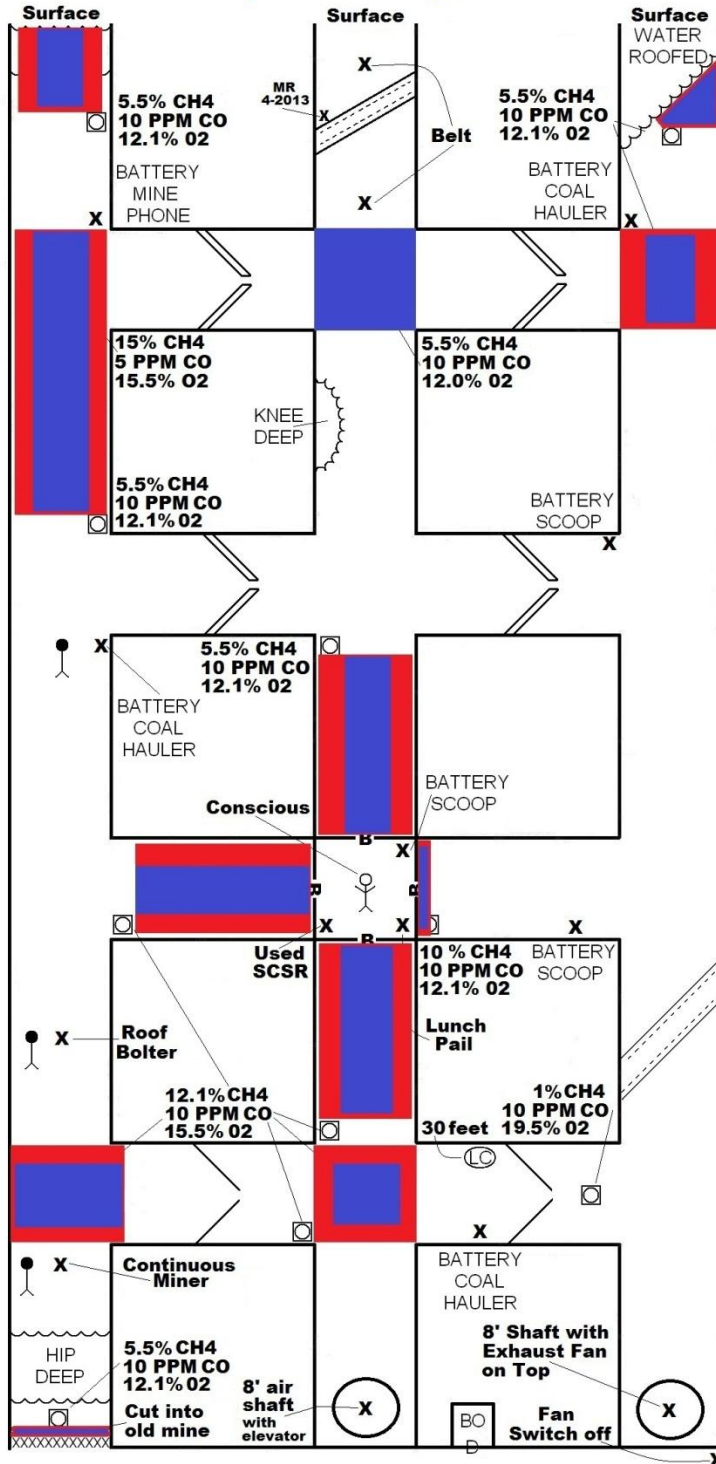
## Team Stops



**DI GT Roof,Rib**



## Explosive - Irrespirable

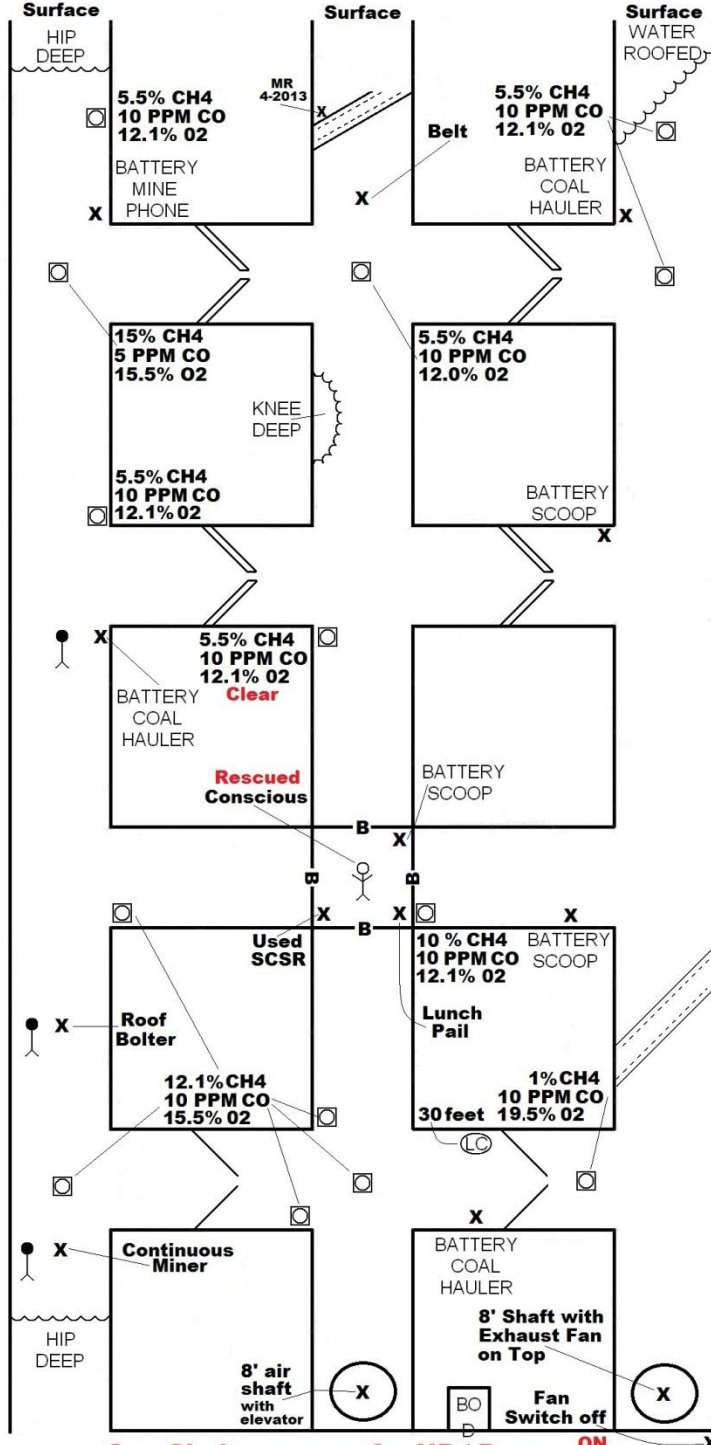




PATIENT STATEMENT  
FROM BEHIND ALL 4  
BARRICADES

**HELP! I AM  
SURROUNDED  
BY AIRTIGHT  
BARRICADES!**

### Key for Map Judges



**See Chairman map for UP / Down stoppings left in the mine**

# Keys to Problem

- **Team must not move battery mine phone in no.1 entry. Explosive mixture is in the intersection**
- **Team must keep explosive mixtures from being moved over all batteries and unexplored areas before turning on the fan**
- **Fan cannot be stopped, stalled or reversed after starting**
- **Team must keep caved area in no.1 entry and elevator shaft in no. 2 entry blocked after fan has been started. Team can airlock back to elevator**
- **Team must protect patient from low O2 while retreating back to FAB**
- **Team must explore entire mine**