

**2024 NMRA  
POST 5  
MINE RESCUE  
CONTEST  
DAY 1**

2024 Post 5 Day 1 Written Exam

Contestant Name: \_\_\_\_\_ Team Name: \_\_\_\_\_ Working # \_\_\_\_\_

1. Under no circumstances should ventilation be \_\_\_\_\_ without orders to do so from the command center.
  - a. Changed
  - b. Altered
  - c. Disrupted
2. A fresh-air base is established at the point where conditions no longer permit \_\_\_\_\_ exploration.
  - a. Systematic
  - b. Barefaced
  - c. Recovery
3. An indication of an explosion may be a jump in the \_\_\_\_\_ chart for the main fan.
  - a. Pressure recording
  - b. Water gauge
  - c. Main Fan
4. Gas readings must be taken in the \_\_\_\_\_ near the fire area to determine if the mine atmosphere is potentially explosive.
  - a. Returns
  - b. Airways
  - c. Air splits
5. Specific gravity is the weight of a gas compared to an equal \_\_\_\_\_ of normal air under the same temperature and pressure.
  - a. Volume
  - b. Amount
  - c. Measurement
6. Your captain may order the team to \_\_\_\_\_ immediately to the fresh-air base if a team member's apparatus malfunctions.
  - a. Return
  - b. Retreat
  - c. Exit

7. The roof and ribs should be \_\_\_\_\_ before extinguishing a fire.
  - a. Checked
  - b. Examined
  - c. Tested
8. Rescue teams may encounter many \_\_\_\_\_ while fighting fires directly by hand.
  - a. Dangers
  - b. Issues
  - c. Hazards
9. Once \_\_\_\_\_, survivors should never be left alone.
  - a. Found
  - b. Recovered
  - c. Rescued
10. \_\_\_\_\_ exposure to hydrogen sulfide may dull the sense of smell.
  - a. Over
  - b. Extended
  - c. Continual

## Post 5 Day 1 Written Statement

Welcome to the Mountaineer #1 Mine, My name is \_\_\_\_\_ Superintendent of the Mine. Thank you for responding to our call for help.

We are a small mine that has just begun development. We have 3 sections working to set up for longwall production. Last night on Midnight shift we were scheduled to perform routine maintenance work and set dayshift up for production. Shortly after the shift started we had a spike in the fan readings and smoke was coming out of the exhaust fan on the surface. The smoke has stopped coming out and CO levels are below 10ppm .

All miners have been evacuated except the 4 miners that were sent to the 1A HG Section to perform routine maintenance work and set up dayshift to be ready to run. We have not been able to contact anyone on that section. We were able to send in one of our rescue teams and they were able to get within 5 blocks of the face but had to return to the surface due to a pack malfunction. A Fresh-Air base has been setup at that location.

Our mine is a newer development but we have run into high levels of methane during production and we have had some areas of bad top. The mine is ventilated by an exhaust fan here on the surface. The fan must remain on to continue to ventilate the rest of the coal mine.

In the 1A HG Section air normally intakes up the #1 Entry and Returns out the #3 entry. Entries are numbered left to right.

All state and federal agencies have been notified and back up teams are on site.

Please find our missing miners and bring them out. Good luck.



## Written Instructions

Account for all missing miners and bring survivors to the FAB

Explore all areas of the mine that can be explored safely.

The exhaust fan on the surface must remain on and cannot be stopped. The fan can be reversed with permission from the superintendent but cannot be shut off. <sup>or shut it.</sup>

You can only carry 3 Brattice Cloths at a time

You have 70 minutes to complete the problem.

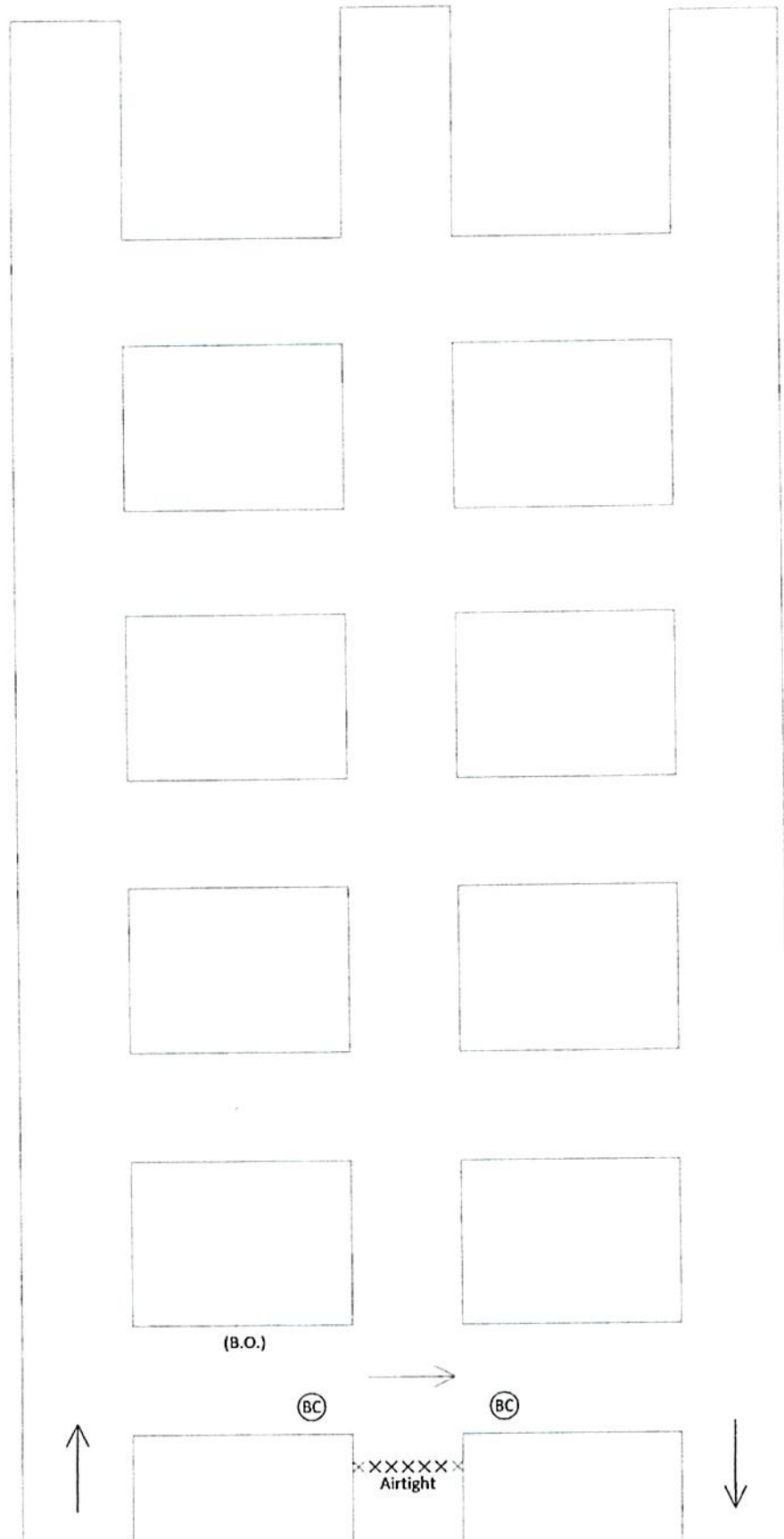
Give to Captain after  
he reached the 7  
timbers.

The Number 2 Man's  
Warning Whistle has  
Activated on his  
breathing apparatus.

This is a simulated event.

BRIEFING OFFICER \_\_\_\_\_

TEAM MAP \_\_\_\_\_

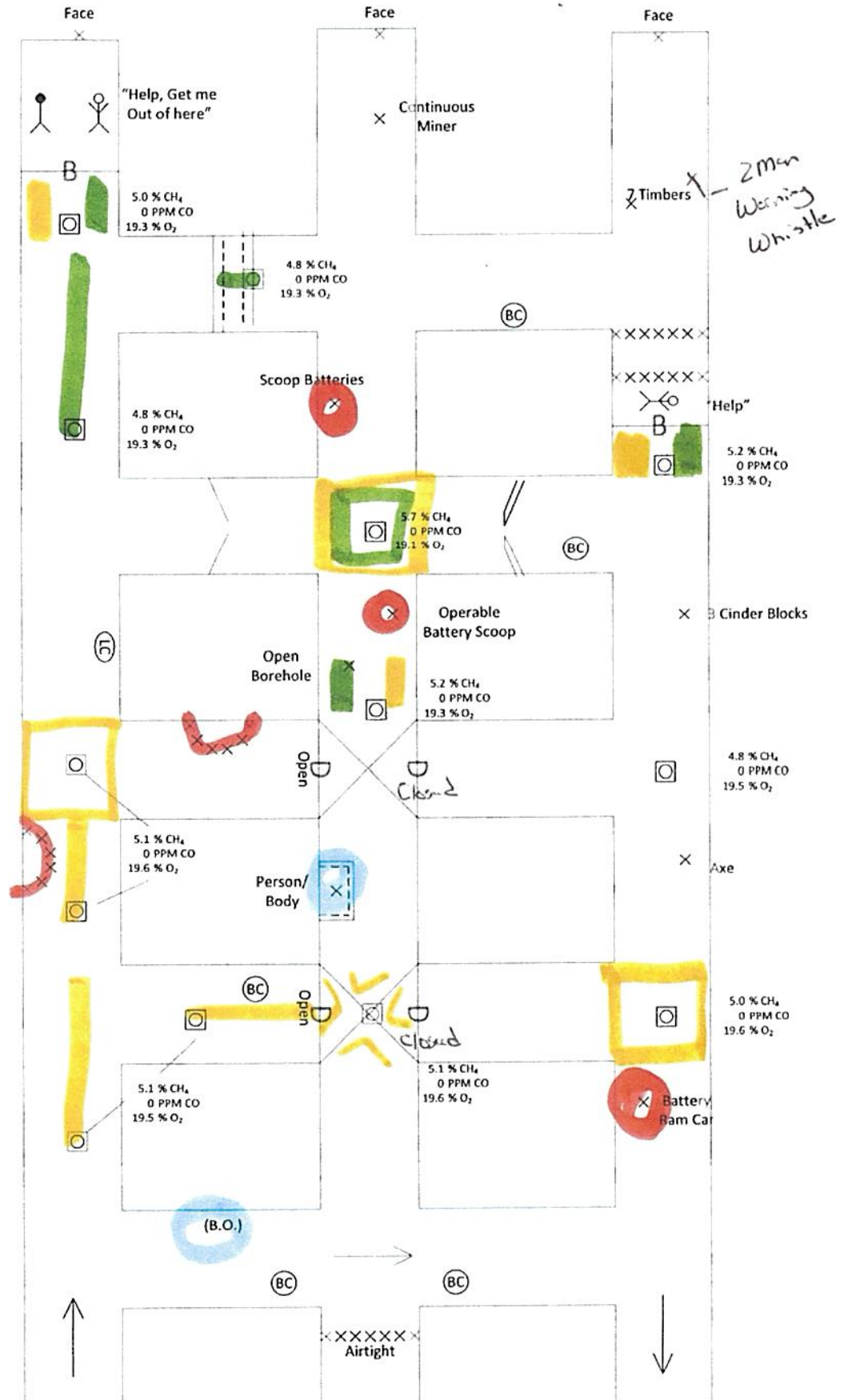




Face  
X

BRIEFING OFFICER \_\_\_\_\_

TEAM MAP \_\_\_\_\_



BRIEFING OFFICER \_\_\_\_\_

TEAM MAP \_\_\_\_\_

Team will have to explore  
This area before ending the  
problem. After recovering all  
patients.

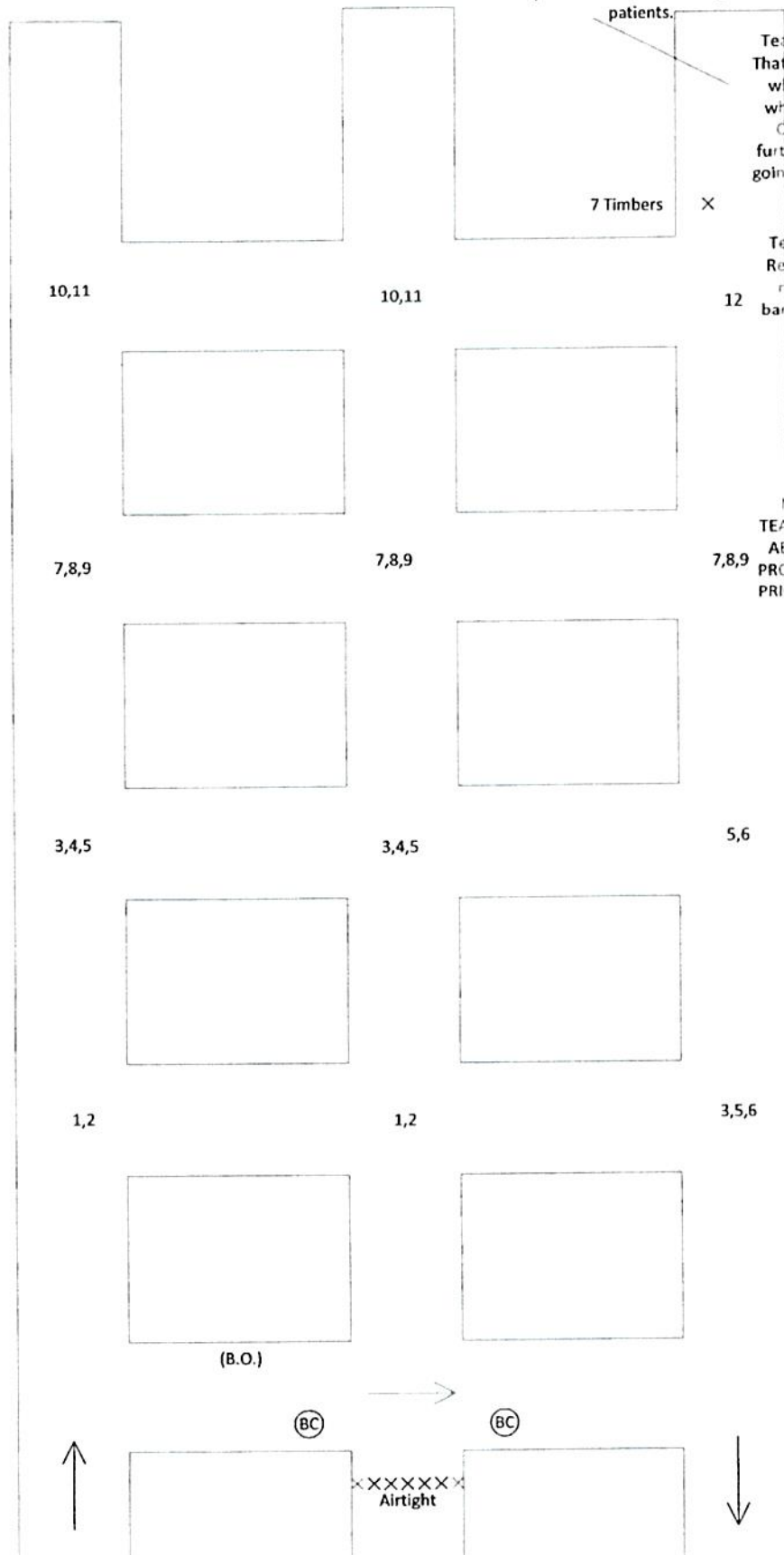
Team Captain will get note  
That the #2 man has warning  
whistle going off on pack  
when he reaches timbers.  
Captain, cannot go any  
further on that stop prior to  
going back to FAB. Rule 30 D.

7 Timbers

X

Team will have means to  
Recover patient in unsafe  
roof and the patient in  
barricade in #1 at this time.

MUST VENT PRIOR TO  
TEAM STOP 10, TEAMS HAS  
ABILITY TO VENT. IF THEY  
PROCEED TO TEAM STOP 10  
PRIOR TO VENTING TEAM IS  
IN DELAY: RULE 41



#### Team Stops No.1,2

Team can make first team stop in either the #1 or #2 entry. Contaminant is in the Number 1 entry. Team will find a Contaminant explosive mixture in the #1 entry that goes into a semi circle of caved. Team will also find a contaminant between 1 and 2 entry. Team will find an overcast in the #2 intersection with Door towards #1 open and a door toward #3 closed with an explosive mixture in the intersection. Up the straight they will find an elongated unsafe roof with a person inside.

#### Team Stop No. 3,4,5

Team has option to Airlock through the overcast door in number 2 to go to 3 or they can take the 2 block limit and go inby in either 1 or 2 entries. If they airlock They will find an explosive mixture in the #3 intersection. If team goes inby instead of air locking they will find an overcast in the number 2 entry 2<sup>nd</sup> break with a door toward #1 open and a door toward #3 closed. Up the straight they find an explosive mixture that is stopped by an open borehole then an operable battery scoop. Between 1 and 2 they will find a semicircle of caved. In #1 entry they will find an explosive mixture in the intersection and a line curtain up the straight.

#### Team Top No. 5,6

If team took the 2 block limit instead of air locking through the first overcast teams must now airlock through one of the overcast toward #3 entry to tie across and behind. After tying in #3 entry the teams have choice of which entry to travel inby. There is no contaminate to follow.

#### Team Stop No 7,8,9

If team travels up number 3 they will find a Barricade up the straight of 3 with a response of "Help". Infront of the barricade is an explosive and irrespirable gas. They will find a brattice cloth and a Permanent stopping down in the crosscut between 1 and 2. In number 2 intersection they will find an explosive mixture and a set of scoop batteries up the straight of #2 and a temporary stopping down between 1 and 2. In number 1 they will find an irrespirable up the straight. **Once tied across to #1 the team will now have means to ventilate and must do so to avoid delay of patient. It will take 2 Vents to get into barricade.**

Once ventilated the team must airlock into the barricade. The Tail captain must remain in the intersection due to contaminant being in the number 1 entry. If tail captain enters airlock with team. They will be discounted for being unsystematic.