

2020  
**PROBLEM 2**  
SOUTHERN WEST VIRGINIA  
MINE RESCUE ASSOCIATION  
MINE RESCUE CONTEST  
TUESDAY AUGUST 25<sup>th</sup> 2020  
JUDGE'S PACKET



**SWVA2020**

**Problem 2**

## **STATEMENT**

Welcome to the Mine Academy No. 2 Mine. We appreciate you answering our call for help. The No. 2 mine liberates over 1.5 million cubic feet of methane every 24 hours and has a history of adverse roof and rib conditions. It also makes a lot of water that requires pumping to keep it controlled. Last night a 3 man bull crew and 3 man maintenance crew went to the section to move belt and do maintenance on the equipment. According to one of the miners that made it to the surface he believes that while cleaning the feeder in preparation for a belt move an acetylene tank was accidentally scooped up and ran through the feeder. The pick breaker of the feeder ignited the tank and possibly a pocket of methane. Methane has been known to accumulate in high places in the roof that are created when draw rock falls out during the mining process. Stoppings were knocked out for several breaks out by the feeder disrupting ventilation. Three miners made it to the surface and three miners are still missing. State and federal mining agencies were notified and mine rescue teams were called in. All miners except for 3 made it safely out of the mine. Mine rescue teams have explored up to the section but still have not found the three missing miners. A new fresh air base has been established and you will start exploration of the rest of the mine from this location.

The fan is currently off but can be started whenever needed by asking the Superintendent. The fan is an exhausting fan that intakes up the #3 entry and returns down the #1 entry. Once running the fan can be stopped and reversed but cannot be stalled. The mine map is up to date. Power to the fresh air base pump switch is currently off due to the breaker for the pump circuit being replaced. The breaker is located on the surface. You will be notified when the breaker is replaced. After being repaired you can have the pump circuit energized and de-energized by asking the Superintendent. Thank you and good luck.

## **PROBLEM 2**

### **TEAM INSTRUCTIONS**

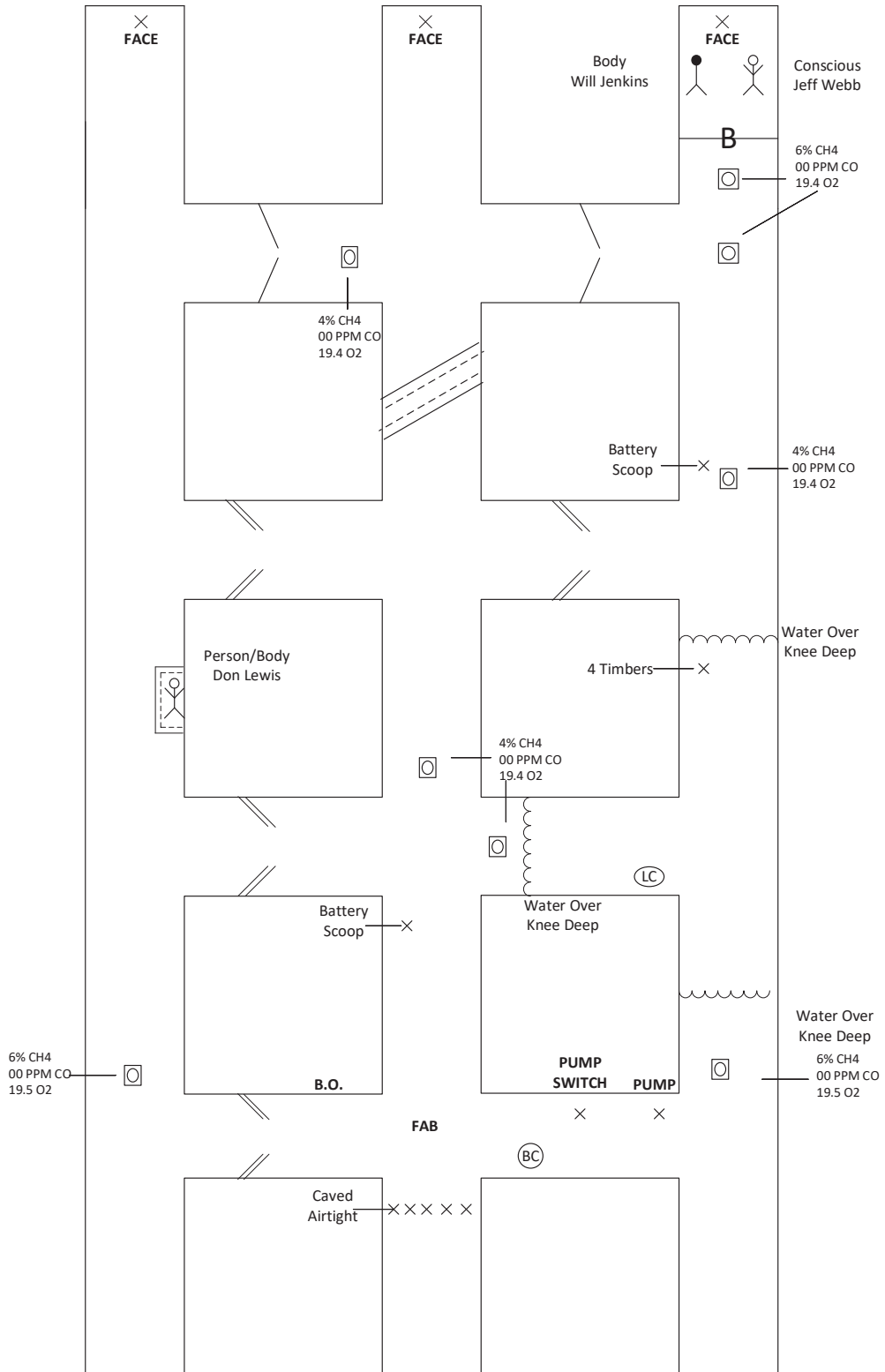
- Call out the names of all miners found.
- Explore all areas of the mine that can be safely explored.
- There will be a 70 minute time limit.
- You will be notified when you have 10 minutes remaining.
- No more than 2 building materials can be carried at one time.

# PROBLEM MAP

TEAM NAME \_\_\_\_\_

Team Working Order # \_\_\_\_\_

Problem 2



**HELP!! HELP!!**

**GET ME OUT**

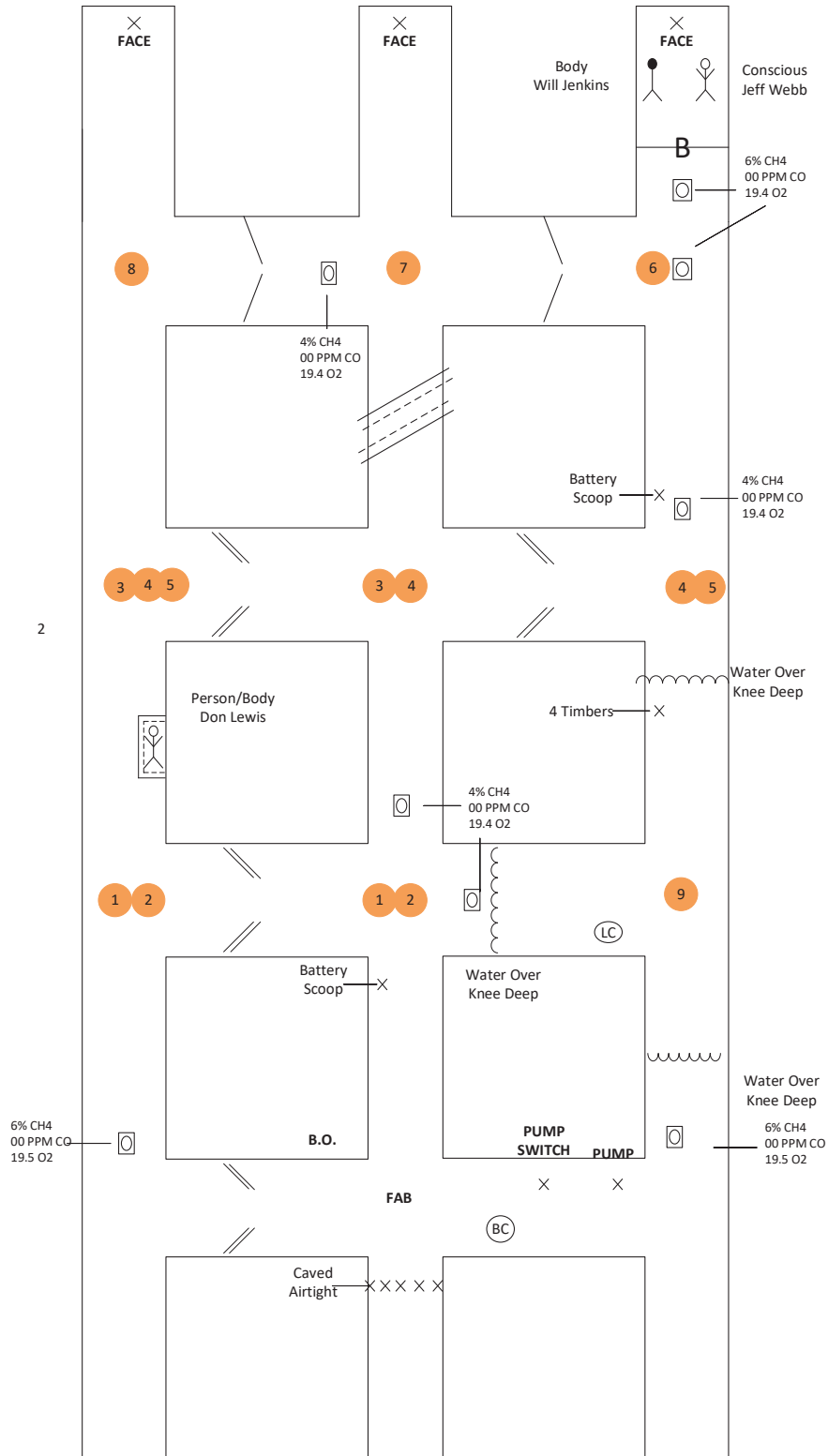
**OF HERE!!!!**

# PROBLEM MAP

TEAM NAME \_\_\_\_\_

Team Working Order # - \_\_\_\_\_

Problem 2



## PROBLEM 2

### TEAM STOPS

From the Fresh-air base the team will check the openings to the #1, 2 & 3 entries. No. 1 entry has 6% CH<sub>4</sub>, 0 PPM CO and 19.5% O<sub>2</sub>. No. 2 entry has a battery scoop, No.3 entry has 6% CH<sub>4</sub>, 0 PPM CO and 19.5% O<sub>2</sub>, Midway up the entry there is water over knee deep. The 6% CH<sub>4</sub> extends up to the water over knee deep but does not go into it.

**TS1:** The team can travel up either No.1 or 2 entries. If the team travels up the #1 entry the intersection, crosscut and inby the imaginary line of intersection traveling up 1 are clear. Inby the imaginary line up # 1 the team will find a person/body in elongated unsafe roof.

**TS2:** The team will travel across the A line of crosscuts from #1 to #2 entry. The intersection is clear, Up No. 2 and in 2 Right the team will find 4% CH<sub>4</sub>, 0PPM CO and 19.4% O<sub>2</sub>. In 2 Right the team will also find water over knee deep.

**TS3:** The team can travel up the # 1 or #2 entry. If they travel up #2 entry, the #2 intersection of the B line of crosscuts is clear, the 2 left and 2 right crosscuts are clear. Up # 2 entry the team will find diagonal unsafe roof.

**TS4:** The team can explore to #1 or #3 entry across the B line of crosscuts. If the team travels to #1 entry, the intersection, inby the intersection and outby the intersection are clear.

**TS5:** The team will travel across the B Line of Crosscuts from #1 to #3 entry. The intersection is clear. Outby the #3 intersection the team will find water over knee deep. Inby the intersection the team will find 4% CH<sub>4</sub> 0 PPM CO & 19.4%O<sub>2</sub>. Just inby the gas placard they will find a battery scoop.

**TS6:** The team is tied to the contaminants found in the # 3 entry. Travel up the adjacent entry is blocked by diagonal unsafe roof so the team has to travel up the #3 entry to the #3 intersection of the C line of crosscuts. When they enter the intersection the person behind the barricade will yell, Help, Help, get me out of here. No other information is given. In the intersection and up the #3 entry the team will find 6% CH<sub>4</sub>, 0 PPM CO and 19.4% O<sub>2</sub>.

**TS7:** The team will travel across the C line of crosscuts to the intersection of #2 entry. The intersection, up to the face of #2 entry and outby the intersection to the backside of the diagonal unsafe roof are clear. In the 2 Left crosscut the team will find 4%CH<sub>4</sub>, 0 PPM CO and 19.4% O<sub>2</sub>. When the team makes the backside of the diagonal unsafe roof the #2 entry between the B & C line of crosscuts will be considered explored for ventilation purposes. The team still does not have the means to ventilate and will have to continue to explore.

**TS8:** The team will travel from the #2 entry intersection to the #1 entry intersection. The intersection is clear and the #1 entry to the #1 face is clear. All accessible areas are made and the team will have to explore the inaccessible areas.

Inform the team the breaker for the pump switch has been repaired and can be energized whenever they need it.

**TS9:** The team will have to ventilate to remove the Explosive mix in #3 outby the water over knee deep so they can pump the water. After the water is pumped down the team will then explore up the #3 entry to the #3 intersection in the A line of crosscuts. The intersection, 3 Left and up #3 entry are clear. They will find a line curtain in the crosscut between #2 & 3 entries and 4 timbers straight up # 3 entry.

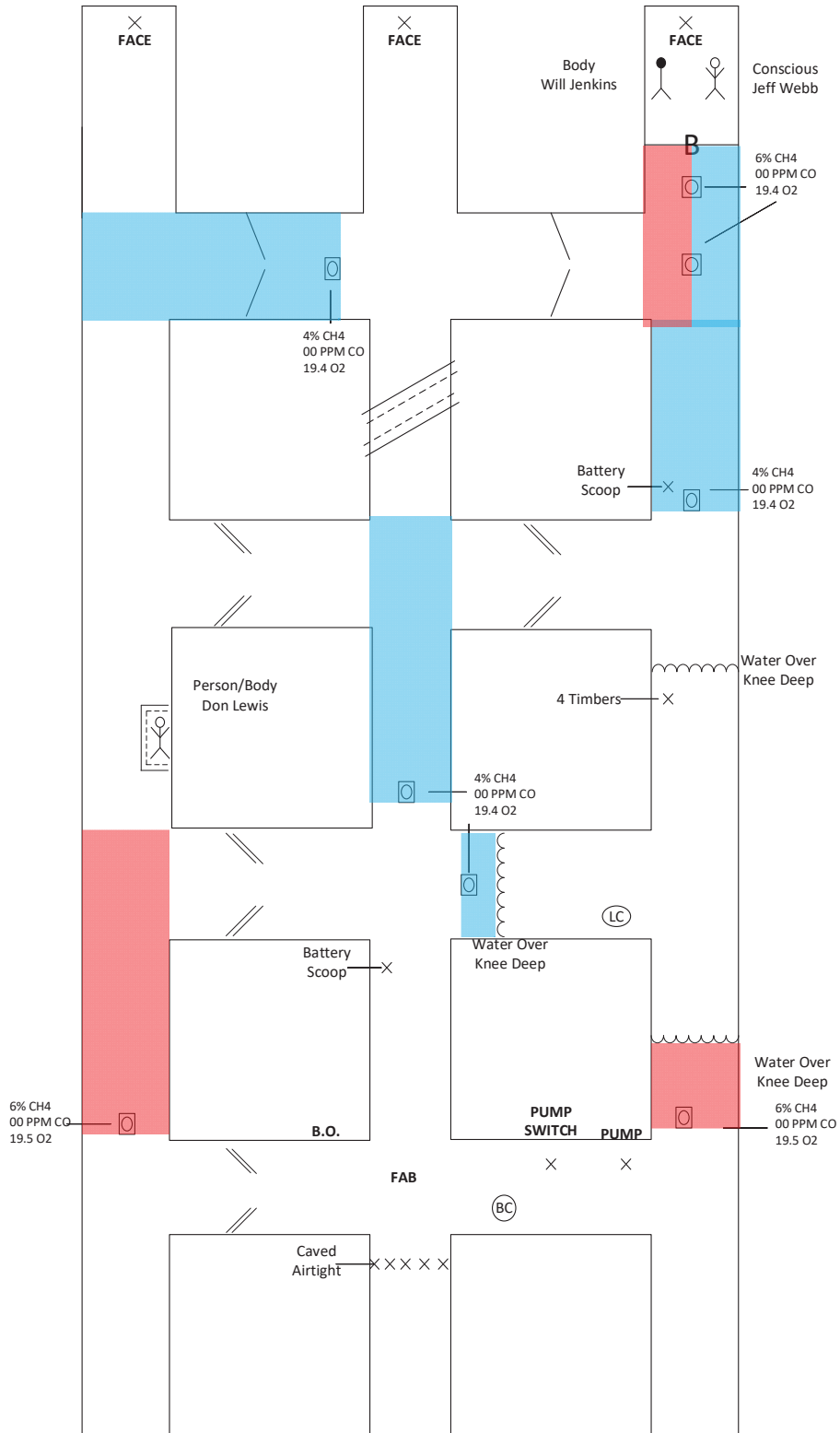


# PROBLEM MAP

TEAM NAME \_\_\_\_\_

Team Working Order # - \_\_\_\_\_

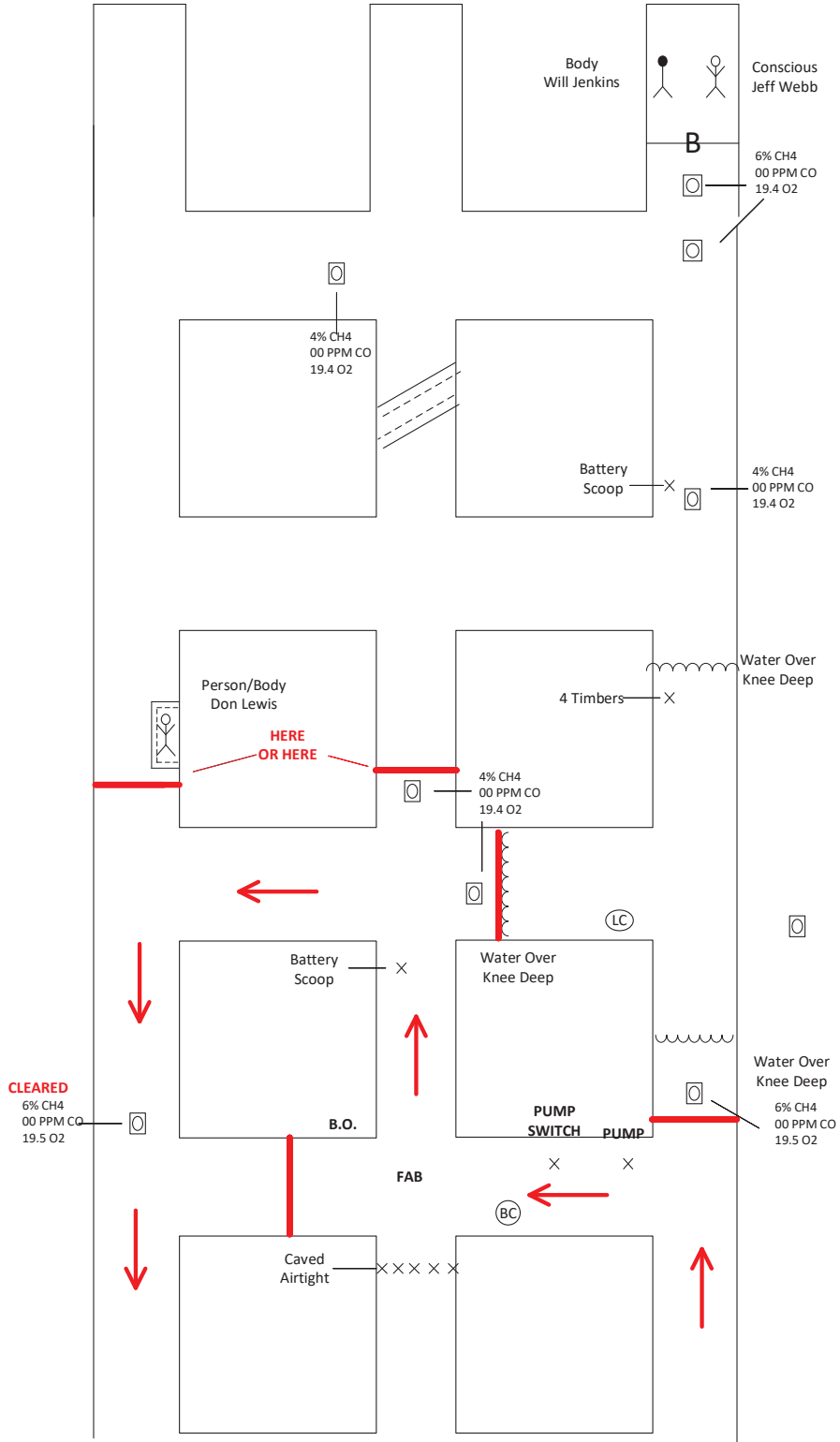
Problem 2



**PROBLEM 2**  
**1<sup>st</sup> VENT.**  
**Exhausting**

TEAM NAME \_\_\_\_\_

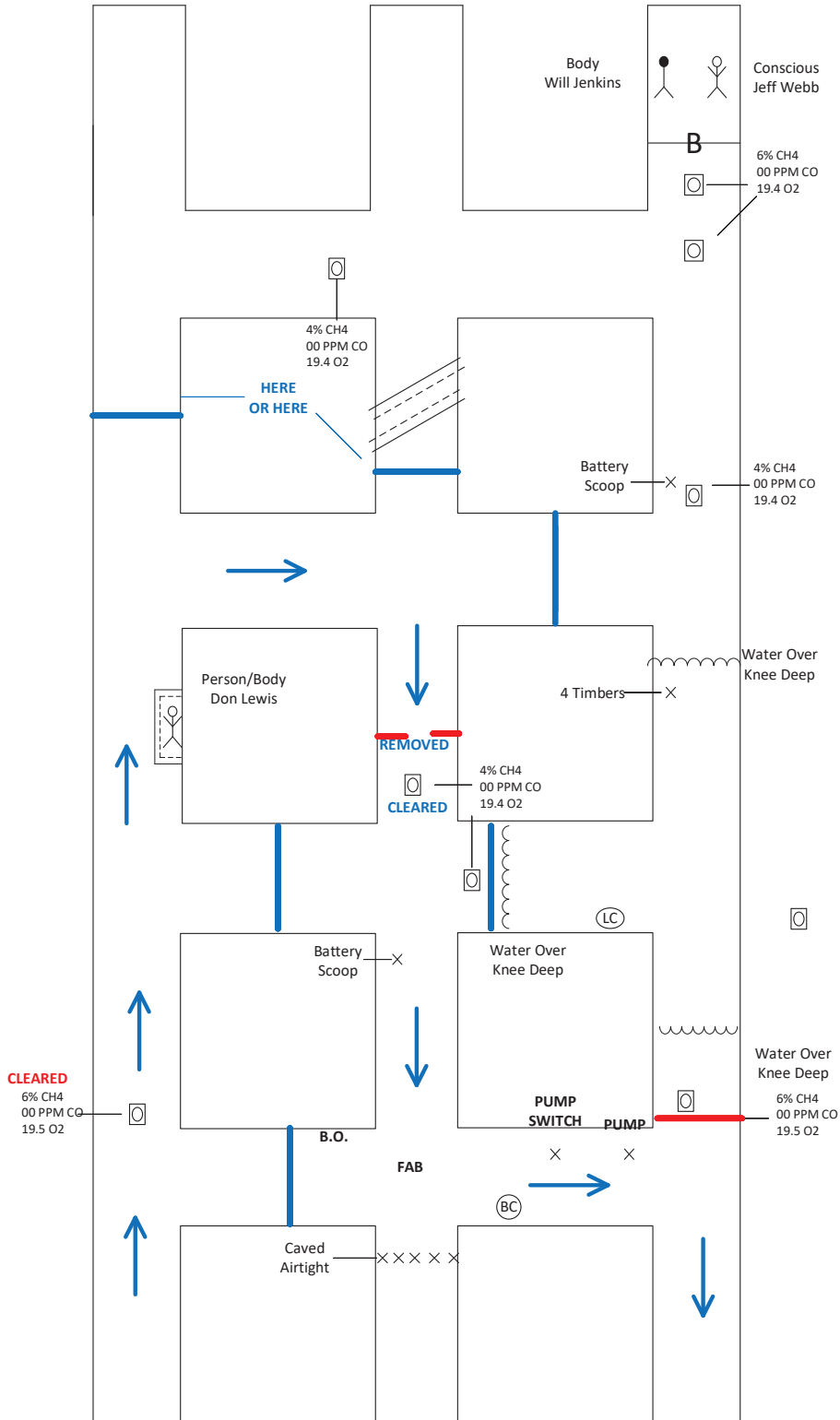
Team Working Order # - \_\_\_\_\_



**PROBLEM 2**  
**2<sup>nd</sup> VENT**  
**Blowing**

TEAM NAME \_\_\_\_\_

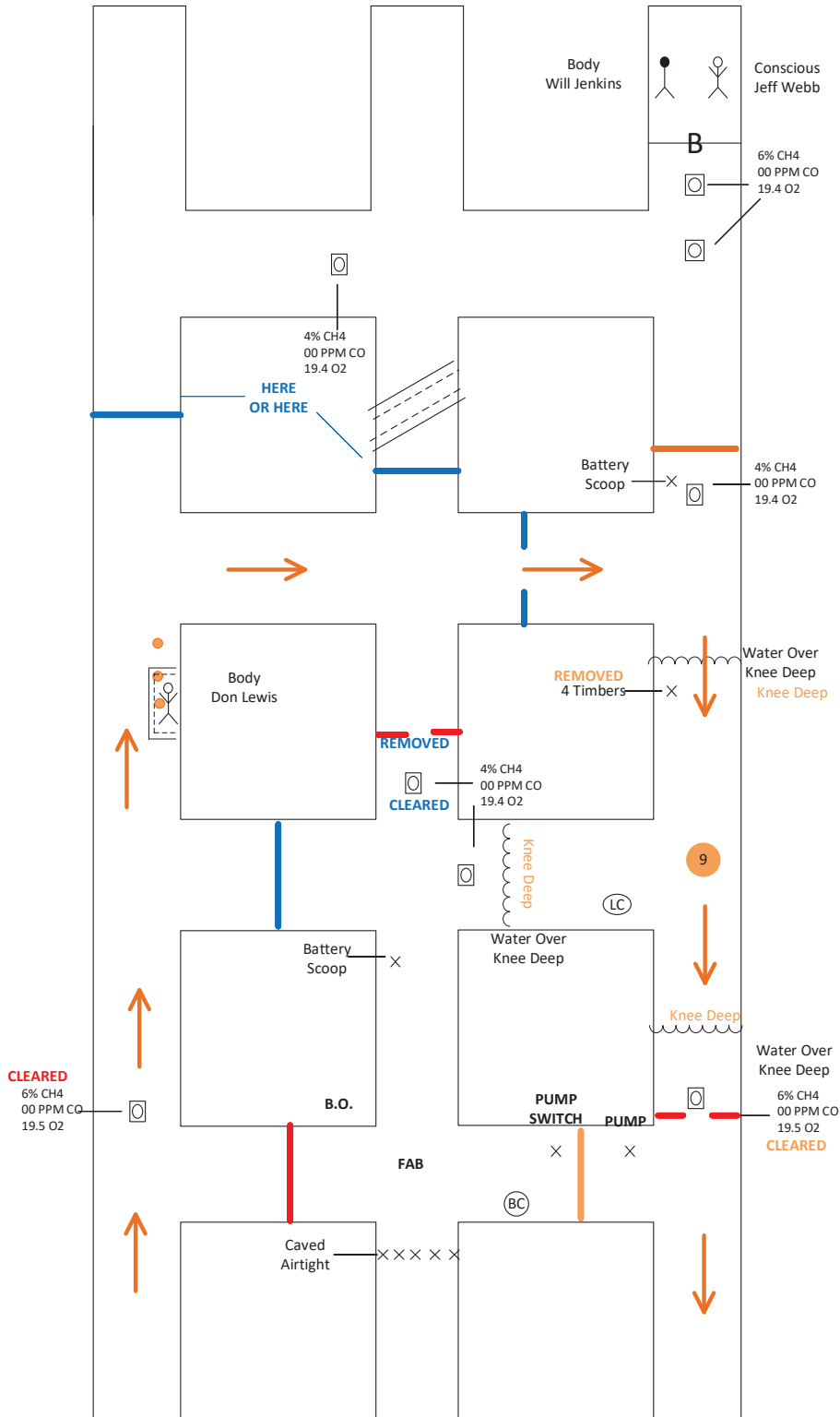
Team Working Order # - \_\_\_\_\_



**PROBLEM MAP** Day 2  
**3<sup>rd</sup> VENT.**  
**Blowing**

TEAM NAME \_\_\_\_\_

Team Working Order # - \_\_\_\_\_

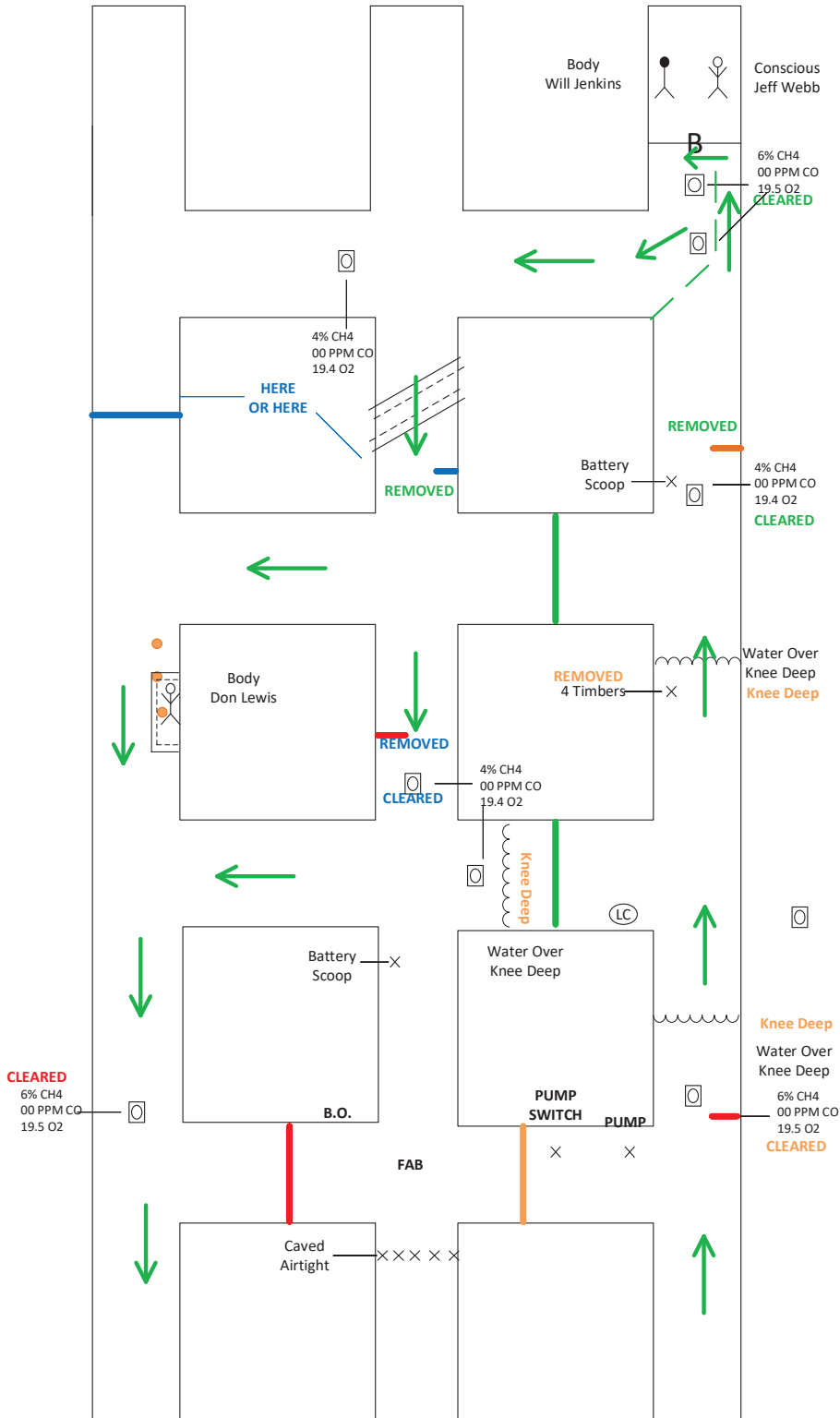


**PROBLEM 2**  
**4<sup>TH</sup> VENT.**  
**Exhausting**

Day 2

TEAM NAME \_\_\_\_\_

Team Working Order # - \_\_\_\_\_



# Final Vent Map

TEAM NAME \_\_\_\_\_

Team Working Order # - \_\_\_\_\_

Problem 2

