

2023 Loveland Day #1 TEAM BRIEFING

Thank, you for responding to our continuing mine emergency. As you know, yesterday your teams accounted for 3 of the 7 missing miners. You are located at a new fresh air base established in 11 South development section. The drifts are numbered from left to right 1, 2 and 3. Fresh air is coming across the FAB from # 2 to # 1 then going out 1 drift. A command Center has been set up outby the FAB and is in constant communication with this FAB.

We are a single-level longwall Trona Mine that operates at the 500-foot level. We produce ore 24 hours a day 365 days a year. We are classified as a class 3 mine in which noncombustible ore is extracted which liberates a concentration of methane that is explosive or can form an explosive mixture with air or have the potential to do so based on the history of the mine. We have water issues in places throughout our mine. If your team encounters roofed water you are not to advance through it if pumped down until our engineers determine the condition of the back. Most of the time our back is competent, but we have some faults in this area. In this area the Trona is considered waste due to an incursion of sulfur. The sulfur in the strata when in contact with any water creates large amounts of hydrogen sulfide. Yesterday, we pumped the roofed water and our engineers had the back supported in 1 and 2 drifts but we ran into problems and could not finish pumping and re-supporting 3 drift. When attempting to continue exploration during the roof work, teams encountered H₂S and had to withdraw. Pay attention to the explosive range of hydrogen sulfide which is 4.3% - 45%. We have meters for your use capable of reading high concentrations of H₂S if needed.

The mine is accessed by shafts and ventilated by one large main shaft fan on the surface and several smaller return or upcast shafts which provide additional exhaust ventilation where necessary. The main mine fan is equipped with an airtight automatic closing door which closes when the fan is off. There are no upcast ventilation shafts inby this area. Our pillar sizes are 15 feet by 15 feet with 10-foot entries, and crosscuts. We use no explosives.

We still have had no contact with the 4 remaining unaccounted for miners.

This area also has a permanent refuge chamber. If you are unfamiliar with a RC it consists of 3 permanent stoppings with doors in 2 and a purge valve between the doors. The area between the doors is known as an airlock. A couple of team members enters the airlock and closes the outer door then opens the purge valve for about 5 seconds which purges any harmful gases from the airlock then can open the inner door to access any miners in the refuge. Any purge of air is not considered a ventilation change.

We have been taking atmospheric gas samples from our main shaft and all samples have been clear. All federal and state agencies have been briefed on our current conditions and have approved us to send teams underground.

All the mine maps are current and up to date.

Our main mine fan is currently running but can be turned on and off, if necessary, from the command center. The main fan cannot be stalled or reversed. All the power to the mine has been locked out and is being guarded. If power is required, switches are available in the command center. There is currently 2 back up teams stationed and ready to assist if needed.

Objective:

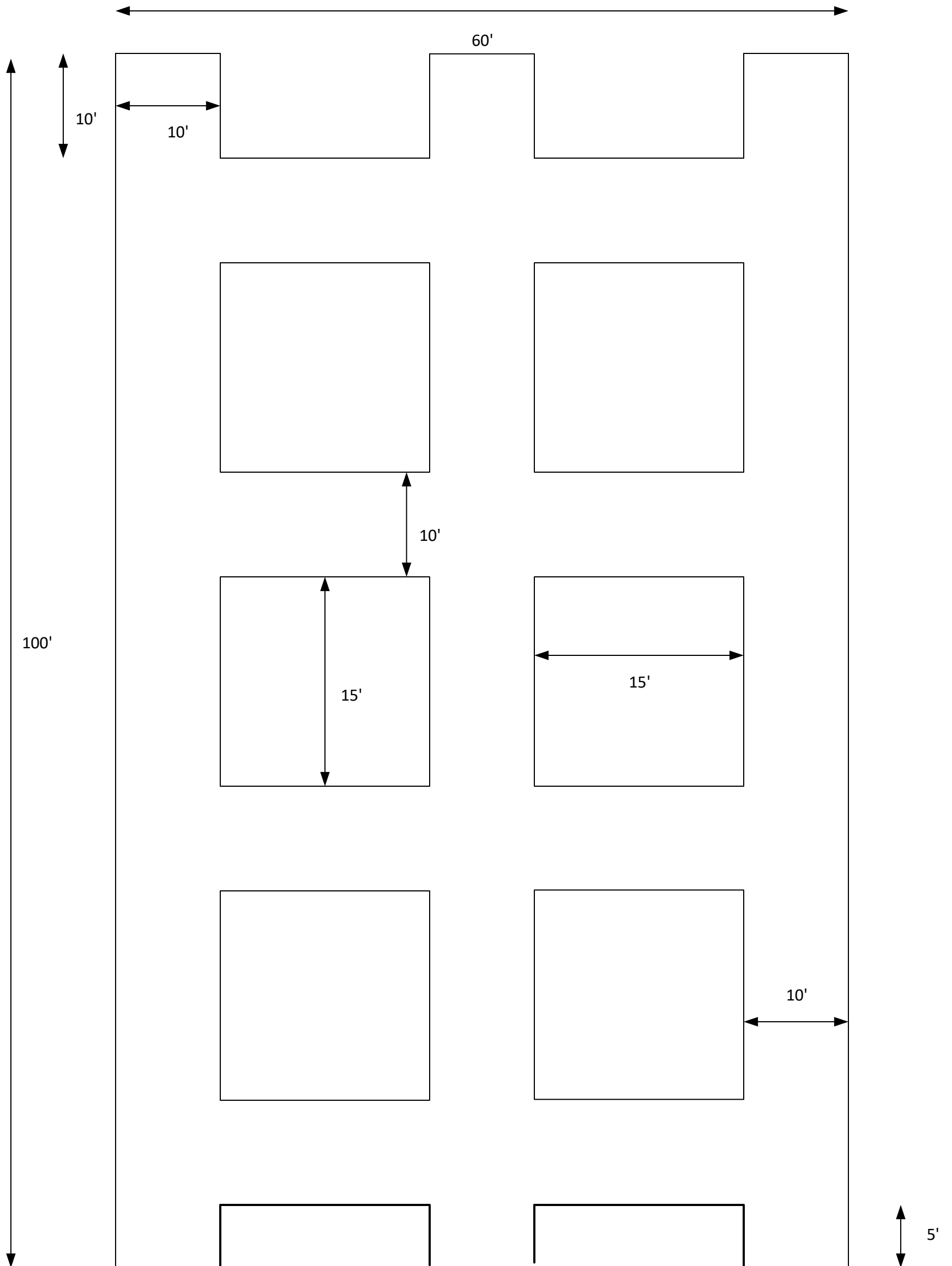
- Explore all accessible areas of the mine if it can be done safely
- Extinguish or seal any fires
- Locate all missing miners
- Bring all survivors to the surface
- Do not stall the main mine fan
- Water roofed areas must not be traveled through if you have means to pump.

Please be careful and good luck!!

This map NOT to scale

2023 Loveland CO
Day 2

Materials
BC/Stoppings: 10
Elongated objects: none
Unsafe roof/rib markers: Red-8, Blue - 5
Misc: 1 x 20' LC, 13 timbers



2023 Loveland Day 2 Field Judge's Problem

FAB

Communication cable can be strung out prior to starting the clock, if the team has a CCA, the Visio mapping device will be up and running with the SD card/thumb drive in place during this time. Teams should have the option to ask for 3 paper maps if they request. No other work is allowed at this time by the team until the clock is started.

The captain will line up with team and introduce himself along with the team.

After instructions, and the statement has been given by the mine manager, the captain must start the clock, and write correct month, day, year, and draw position on the date board. At this time the blank maps will be given to the team.

A statement needs to be made to the judges about having non sparking tools due to the mine being gassy.

2023 MINE RESCUE DISCOUNTS AND INTERPRETATIONS

Surface Discount Sheet Judge #1

Apparatus improperly assembled, each apparatus 10 x ____ = ____

2. Apparatus improperly adjusted to the wearer, each infraction 1 x ____ = ____

3. Apparatus part or parts worn or deteriorated so as to be dangerous to wearer, each person 8 x ____ = ____

4. Failure to follow prescribed procedures for going under oxygen, each person 3 x ____ = ____

5. Failure of team member to be clean shaven in the area that affects a good face-to-facepiece seal, each infraction 10 x ____ = ____

6. Failure of captain to examine each apparatus and have captains examined before entering the mine, each apparatus each infraction 2 x ____ = ____

7. Team member not wearing identification, protective clothing, including safety shoes, hard hat, permissible cap lamp, self-rescuer, each infraction 2 x ____ = ____

8. Failure of team captain to mark date and team position number on the check board at mine portal or fresh air base, or start timing device, each omission 4 x ____ = ____

9. No work will be done prior to starting the clock 4 (total) ____

10. Failure of team to "count off" before entering or leaving the mine 2 x ____ = ____

Underground Discount Sheet Judge #1

Discounts

1. Breathing external air while working the problem in by the fresh air base, each team member, each infraction 15 x = _____

2. Team not following proper procedure in case of apparatus failure, each infraction 10 x = _____

3. Failure of team to stop within 50 feet of the fresh air base or at the shaft station to perform personnel and apparatus checks, upon their first entry into the mine 4 (total) _____

4. Team member(s) not making apparatus check after removing apparatus to traverse restricted clearance or after apparatus has sustained damage from impact (each person, each incident) 4 x = _____

5. Apparatus examination exceeding 20-minute intervals 5 x = _____

6. Failure to use posted hoisting signals, each infraction 1 x = _____

7. Failure to close shaft station gate 5 x = _____

8. a. Failure of the captain to indicate to the team he/she has recognized bad ground. b. Failure of the captain to verbally indicate he/she is checking the back or roof: 1. at intersections, shaft stations, rooms, faces, and mine openings.

2. at all points of farthest advance.

3. before building or erecting any structure.

4. upon passing through any barricade, stopping, bulkhead, air lock, door, check curtain, or similar barrier.

5. at the location of fire or intense heat.

c. Any team member performing work or moving into any part of an area during a team stop before the captain has visually checked the ground conditions in that part, each infraction 5 x = _____

9. Failure of the captain to mark the date and his/her initials at the point of farthest advance of the team in any direction such as at stoppings, faces of rooms and drifts, water over knee deep, impassable falls, barricades, fires out of control, and at the location of any live persons or bodies, each omission (maximum 10 discounts) 2 x = _____ (10 max.)

10. Captain or another team member doing anything to endanger himself/herself or other team members, 15 points each team member so endangered, each infraction, each occurrence 15 x = _____

11. Failure of team to explore or examine workings systematically and thoroughly, each infraction 25 x = _____

12. Teams must be checked immediately before entering smoke 5 x = _____

13. Failure to locate, seal, or extinguish fire, if possible, without undue delay 50 x = _____

14. Failure to notify the fresh air base when an air/gas mixture has reached its explosive range. 10 x = _____

15. Failure to bring live person to surface or fresh air base by the end of the problem, each omission 50 x =

16. Failure to locate bodies and/or live persons, each omission 50 x = _____

17. Transporting survivor in unexplored territory, leaving survivor unattended, and moving survivor in any direction except toward the fresh air base, each infraction 6 x = _____

18. The team performing an act that may result in the death or injury of survivor(s). Each infraction 50 x =

Surface Interpretation Judge #2

Discounts

1. Failure to make necessary gas tests where required, each gas, each omission 1 x = ____
2. Improper procedure when testing with gas detectors, each gas, each infraction 1 x = ____
3. Intentional causing of a test instrument to inflate faster than tests indicate that it should, each infraction 1 x = ____
4. Less than 5 members entering, working, or completing problem, each person 8 x = ____
5. Traveling at more than a normal walking speed - Team members running through problem (both feet have to be off the ground at same time. 8 (total)
6. Team member talking to an unauthorized person without permission of the judges or contest officials, each infraction 5 x = ____
7. Intentionally detaching/severing Lifeline while the team is advancing or retreating. 5 (total) ____
8. All team members must be connected or have hold of the team line when the team is traveling. When stopped, in air clear of smoke, at least one person must have hold of the team line. If tag lines are used between team members and the team line, they shall be no longer than 3 feet in length. 2 x = ____
9. Failure to erect temporary barricade, stopping or regulator, when necessary, each infraction 10 x = ____
10. Failure to erect temporary barricade, seal, or stopping reasonably airtight, each infraction 2 x = ____
11. Failure to make necessary ventilation changes or changing ventilation or electric power before the effects of such changes are known, each infraction 15 x = ____
12. Failure to properly secure survivor to stretcher; failure to cover survivor with blanket (unless first aid procedures indicate otherwise); or placing survivor on stretcher in such a way as to foul proper operation of apparatus, each omission 4 x = ____
13. Survivor care:
 - a. Failure to adequately examine and assess each person found in the mine for possible injury or illness, maximum for each survivor 4 x = ____
 - b. Failure to properly treat any injury or illness which is, or should have been, revealed by the examination, maximum for each survivor 4 x = ____
14. Failure to follow proper procedure when putting apparatus on survivor, each infraction 5 x = ____
15. Assistance given by supposedly unconscious person, each infraction 5 x = ____

Team Discount Summary Sheet

Team No.:

Company Name:

Team Name:

Judge #1 Surface:

Underground:

Judge #2 Surface:

Underground:

Written Test:

Map:

Working Time: Hours: Minutes: Seconds:

Total Discounts

Excluding average time:

Time Review Completed:

I certify that I have read and reviewed all discounts listed above:

Team Captain

Review Judge

Checking the openings

The number 1 is the leftmost drift, the number 3 is the rightmost drift, all 3 drifts need roof test RT and date and Initial DI. Team will count off and then proceed to check drift openings into the mine for team safety. Brattice building material and a line curtain is in the FAB.

Drift 1 has low O₂ and H₂S and is blocked with a cave .

Drift 2 is blocked with a temporary stopping.

Drift 3 is blocked with a temporary stopping.

Teams can choose to enter the section by airlocking into drift 2 or drift 3 but if 3 is chosen, the team will encounter high H₂S, low O₂ and unsafe roof just inby the temporary stopping. If the team begins by advancing into drift 2 they must return and explore into drift 3 before advancing inby XC B more than 3 feet (Team Stop 3 or 4).

Team Stop #1 – in drift 2 at XC A

Airlock required to be built to breach temporary stopping between the FAB and XC A. 50-foot check will need to be conducted (may be conducted any time entire team in inby openings). Explosive H₂S mixture with low O₂ in intersection. Permanent Refuge Chamber (RC) open outer door on right side of intersection with response “Help, get me out” from miner inside. Captain will break both other openings in the intersection. DI, GT, and RT are needed at all these locations, DI and RT are verbally stated by the captain though out the problem. Captain can enter RC outer door and with one other team member can close outer door, open purge valve for 5 seconds, close purge valve and open inner RC door to assess miner. Respiratory protection is required to be placed on miner and can be walked out to FAB but airlock required to be rebuilt in drift # 2. Team will return to Stop 1 and tie across to 1 drift.

Team Stop #2 – in drift 1 at XC A

The team traveled through clear air in XC A and finds an ignition source, battery mucker, in intersection, PC outby and the inby side of the cave in drift 1 and another cave inby the intersection in drift 1. Both the openings need to be broken by the captain and followed up with RT, GT, and a DI. Team will need to retreat to drift 2 at XC A. Team must advance in drift 2 to XC B.

Team Stop #3 – in drift 2 at XC B

Captain will break all 3 openings in the intersection. DI, GT, and RT are needed at all these locations. Caved found to right of intersection, explosive H₂S and low O₂ inby intersection and water over knee deep. Teams must report the explosive gas to the FAB. Team must tie across to 1 drift.

Team Stop #4 – in drift 1 at XC B

Teams find ignition source, battery mine phone, in intersection, inby side of cave outby intersection, explosive H₂S and low O₂ inby intersection and knee deep water. RT, GT and DI required at both openings before team advances in drift 1. Teams must report the explosive gas to the FAB. Teams must advance in drift 1 to XC C.

Team Stop #5 – in drift 1 at XC C

Team locates a barricade on plane of intersection with no response and brattice materials in XC C to right of intersection. Right side opening will be examined by the captain and proper RT, DI and gas test GT will

be done. Team does not have enough information to vent low O2 from barricade and breach and must continue advancing across XC C.

Team Stop #6 – in drift 2 at XC C

RT, GT and DI required at all openings before team advances. Team finds inby side of over knee deep water outby in drift 2, a jumbo inby intersection and water ankle deep in XC C towards 3 drift. Team does not have enough information to vent low O2 from barricade in drift 1 and breach and must continue advancing across XC C.

Team Stop #7 in drift 3 at XC C

Team finds explosive H2S and low O2 in XC C. RT, GT and DI required at both openings before team advances. 13 timbers found inby intersection. Team does not have enough information to vent low O2 from barricade in drift 1 and breach and must continue advancing across outby in 3 drift.

Teams find high H2S, low O2 outby intersection and unsafe roof in outby intersection, rib to rib, with a verbal response from a missing miner in XC B “Help, my leg is broken”. proper RT, GT and DI must be made at location. Team has timbers to set in unsafe roof to gain access to miner with broken leg. Refer to Fig 3 page 31 for required timbers set to access intersection and XC B. (10 timbers required to be set through intersection and into XC B to rescue miner).

Team Stop 8 – in drift # 3 in XC B

A body is found in the center of 3 drift and XC B intersection which must be assessed and Captain must DI. Clear air is found to left of intersection in XC B. Miner with broken leg found and cave in XC B. Teams must place missing miner on stretcher after treating and provide respiratory protection and remove to FAB.

Teams must return to XC B in 3 drift and continue advancing outby to XC A as still not enough information to vent low O2 from barricade and breach.

Team Stop # 9 - in drift # 3 at XC A

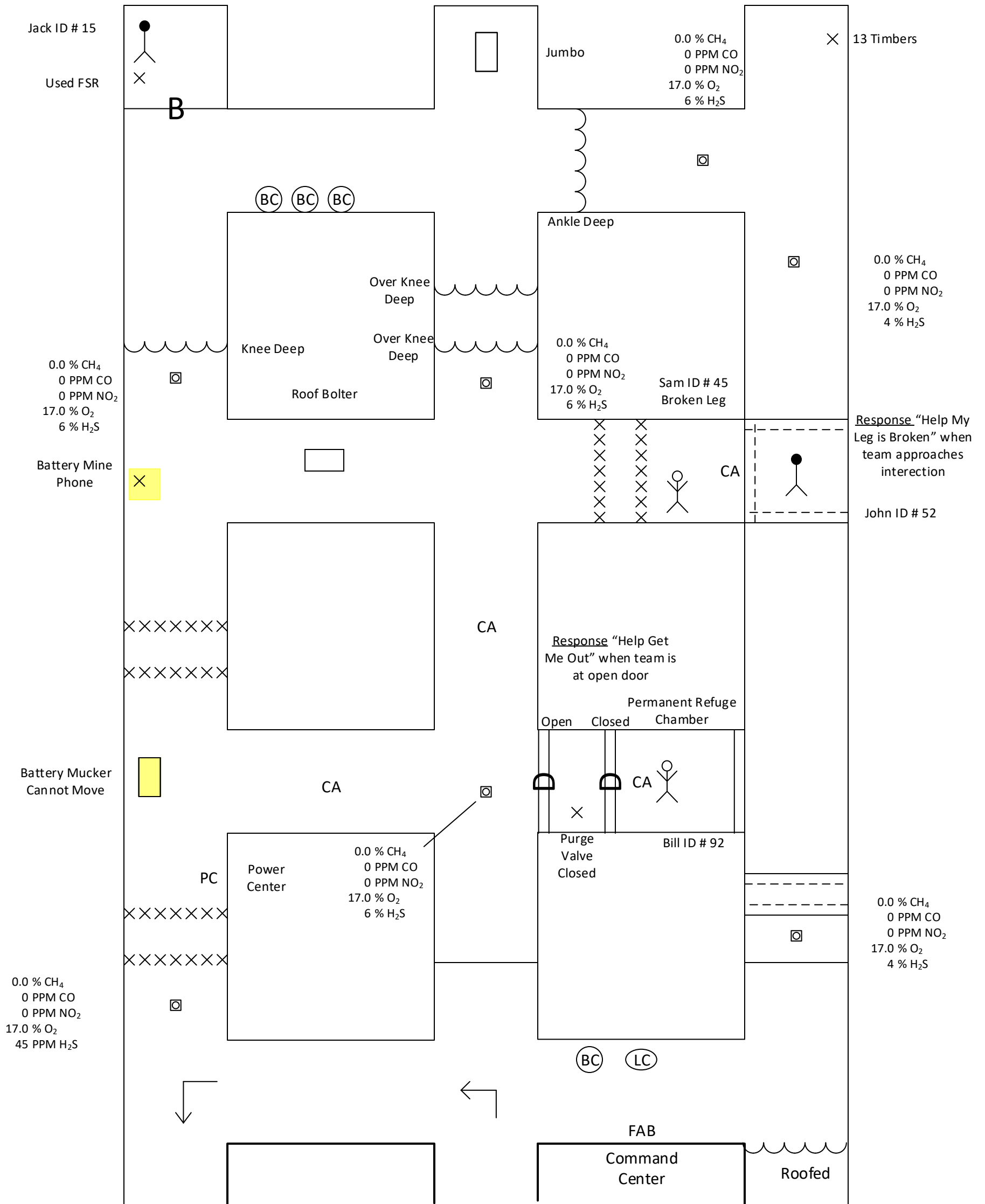
All accessible areas have been explored and now team has enough information and materials to safely vent low O2 and explosive H2S from barricade and breach. Two airlocks required prior to breaching (one in 1 drift and one in XC C).

See ventilation solution 1 to vent the low O2 and explosive gas from in front of barricade safely. An airlock is required to enter the barricade. One missing miners found, however they are deceased. Team can return to FAB and prepare to stop the clock. Proper gas checks must be conducted along their route of travel from rib to rib.

Once the team reaches the surface they will need to count off, stop the clock, and turn in their maps, and SD card/ thumb drive if using a CCA.

THE END!!

No Response



VENT 1

No Response

