

2013 Southeast Region Mine Rescue Contest

June 18th – 20th

Judge's Packet for Field Competition



FIELD ASSIGNMENTS

Field No. 1

Field Manager:

Kevin Abel (NE)

Field 1 Judging Crew A:

1. Jeff Phillips (SE)
2. Bob Andrews (NE)

Field 1 Judging Crew B:

1. Dave Smith (SE)
2. Kevin Hardester (NE)

Mine Attendants/Lifeline:

1. Shawn Sharp (SE)
2. Mark Schroeder (TS)
(Students)

Chief Judges: (review)

Mike Davis (SE)
Don Foster (NE)
Mike Hancher (HQ)

Contest Director

Marvin Lichtenfels

Field No. 2

Field Manager

Sam Pierce (SE)

Field 2 Judging Crew A:

1. Curtis Roth (SE)
2. Tom Galbreath (SE)

Field 2 Judging Crew B:

1. Brian Thompson (NE)
2. Mike Hollis (SE)

Mine Attendants/Lifeline:

1. Randy Skaggs (ETD)
2. Sonia Conway (SE)
(Students)

Debriefing/Appeals:

Doniece Schlick (SE)
Joe Denk (NE)
Jeff Kravitz (HQ)

Map Judge

Scott Johnson (SE)

Field No. 3

Field Manager

Jim Croft (SE)

Field 3 Judging Crew A:

1. Joe Bosley (SE)
2. Joe Norwood (SE)

Field 3 Judging Crew B:

1. Mike Evans (SE)
2. Leroy Lockett(SE)

Mine Attendants/Lifeline:

1. Walter Deloach (SE)
2. Vance Rumbaugh (TS)
(Students)

Scorecard/Testing Judges:

Mary Wagner (SE)
Louise Santoro (NE)
Kelly Krause (CKMR)

Film Crew: Eddie Walker,
Jason Cox, Carol Richmond

Isolation/Escorts:

1. Oscar Fredrick (TN)
2. Michael Giddens (SE)
3. Students/Teachers

Video Team Briefing

Thank you for responding to our call for help. My name is Nick Saban and I am in charge of the Crimson Tide National Championship Mine. There has been an event at the mine and at this time a crew of miners are unaccounted for. We are preparing plans to send Mine Rescue Teams underground to locate these miners. Federal and State Officials are on site working with us on these plans. We will keep you updated on these activities.

I want to give you some information about the Crimson Tide National Championship Mine. We have had Production and Safety records back to back for the past two years and have received National recognition for this Championship accomplishment 15 times! We are very proud of our Safety record! This is a multi-level mine accessed by vertical shafts and a drive-in slope. The main shaft is constructed with steel sets and is equipped with a 5 ton ore skip below the man cage. The mine phones and utilities are run down the shaft. The slope is the primary way out for miners. The man hoist has a certified hoist man on duty and has been inspected by State and Federal inspectors recently.

The zinc ore is mined by room and pillar method and the pillars are 40 feet x 40 feet with heading widths of 50 feet. The initial heading heights are normally 25 feet. Benching is done in the ore body areas of the mine and the height in those areas is much higher. The geology in this mine has some weak bedding plains and we have recently experienced some adverse conditions in the Southeast area of the mine.

Ground control is maintained using 8 foot expansion shell bolts and 8 to 10 foot steel mats where needed. Shot Crete and chain link wire are used to control loose ground on the ribs and in some shop areas. A combination of timber, Shot Crete and steel is used in some areas where the office and shop is located.

The mine works 7 days a week; day and evening shifts only. Production shifts work Monday through Friday with maintenance performed on the weekends. The average crew is 4 miners and a mechanic, but this varies with production demands and schedules.

Fresh air is forced into the mine with a 300 HP Joy single pitch non reversible blowing fan creating approximately 250,000 cubic feet of air per minute. After fresh air ventilates the headings exhaust air travels out several upcasting shafts located in different areas in the mine.

Explosives are stored and transported underground, usually just enough for a one week period. Damaged explosives are stored in the powder magazine and taken out of the mine once a week or when necessary.

All underground repairs of drills, pumps and maintenance of mobile equipment are done in the underground shop. The shop is fully equipped to handle any kind of equipment overhaul. It has an overhead 15 ton crane, welding and cutting supplies, lube bay, and small ware house with needed equipment and supplies. The shop is equipped with fire doors in both entrances and has ample fire fighting equipment inside the shop. The shop is ventilated by leaving shop doors open during working hours.

Power centers underground are identified and power sources range from 7200/480 volt, AC, three phase. Some 110 volt single phase current is available in the shops and office and shaft stations.

All underground mobile equipment is rubber tire and diesel powered. The underground mine has two CAT Front End Loaders, two CAT haul trucks, two pick up trucks, one CAT Excavator with a rotary head scaler, Oldenburg Cannon drill, and a Powder truck. Bolting is done by a hydraulic carousel Fletcher rock bolting machine using 8 foot expansion shell bolts.

The mine map is up to date and should be accurate.

The local sheriffs department is providing security. A guard is posted at the front gate and a site has been designated for family and press. The only people allowed on the mine site are authorized and screened by the sheriffs department.

The mine is very wet and produces a lot of water. Eight 480 volt 50 HP submergible pumps are located throughout the mine that pump water to the main sump located near the slope bottom. Two 150 HP Johnson centrifugal vertical pumps are located in the main sump and pump water to the surface.

We will keep you updated on the plan approval process and let you know when mine rescue teams are approved to go underground. Once again, thanks for your help!

Mine Manager Statement

Hello, my name is Paul Bryant, and I am the mine manager of the Crimson Tide National Championship Mine. Your judges are _____ (introduces Judges)

Thank you for answering our call for assistance. You are located underground at the Fresh Air Base established by the previous mine rescue team.

Last night 8 men entered the mine on the night shift to do maintenance and repair work. Four men went to the underground shop and a 4 man maintenance crew went to the Southeast area of the mine to work on equipment and setup a water pump. Around 4:00 a.m., Joe Namath, the outside shop man, heard a loud noise coming from underground and the blowing fan stalled for a short period and recovered. Joe tried to contact the miners underground and did not get a response.

All State and Federal authorities have been notified and have representatives on site.

The previous mine rescue teams have explored and ventilated up to this area, setting up this Fresh Air Base. The teams have confirmed that there are still 4 miners missing. The rest of the mine outby this location has been explored.

This mine has a history of hydrogen sulfide concentrations, water accumulations, and challenging geological conditions. The mine fan is on and is being monitored and guarded. Air quality samples are being taken every 15 minutes at locations where air exits the mine. Ventilation to this point has fresh air coming from the east of the (#3 Heading) and exiting west across the (#1 Heading.) The Fan cannot be stopped or reversed.

Electrical power has been restored to the pump switch at the fresh air base, but all electrical power inby the fresh air base is off.

Back-up mine rescue teams are available should you require their assistance. A life-line person is provided to receive your signals.

Good Luck!

**2013 Southeast Region
Mine Rescue Contest**

Problem/Written Instructions

Account for all missing miners if it can be done safely.

Explore all areas of the mine that can be safely accessed and bring survivors to the Fresh Air Base.

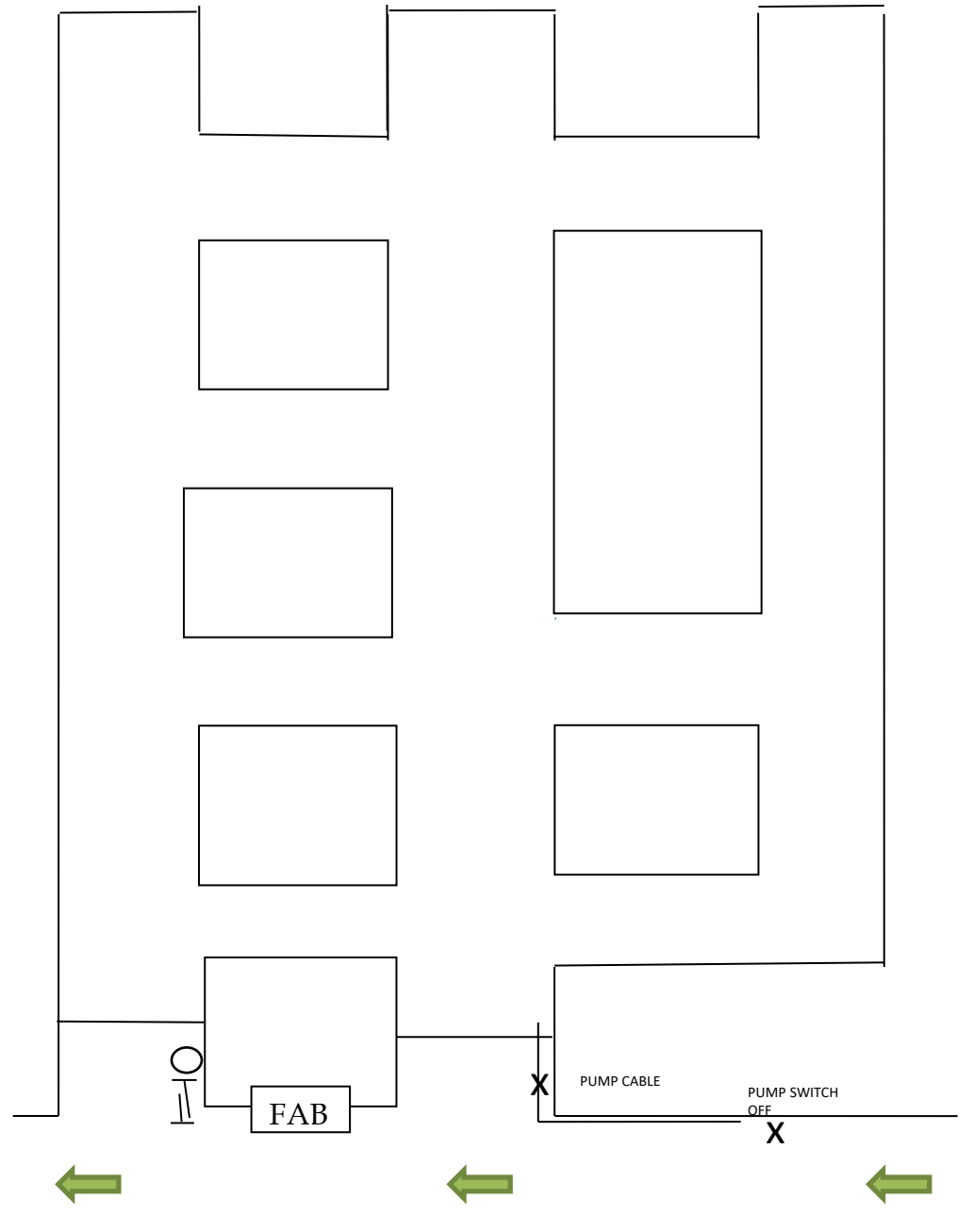
Map all conditions found in the mine and any changes you make.

The Fan cannot be stopped or reversed.

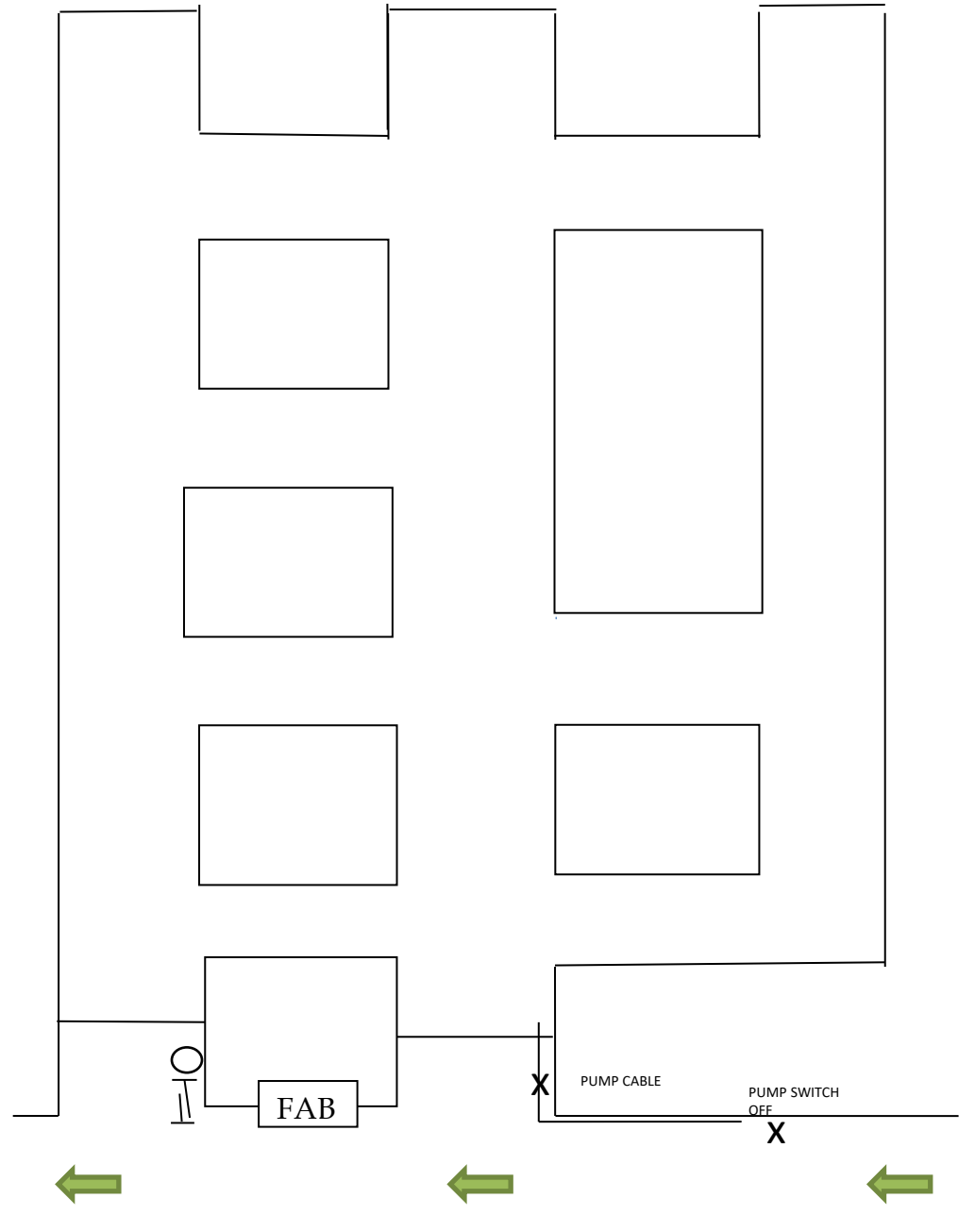
Seal or extinguish all fires.

You have 110 minutes to work the problem (after the clock has been started).

**Thank You and
Good Luck!**

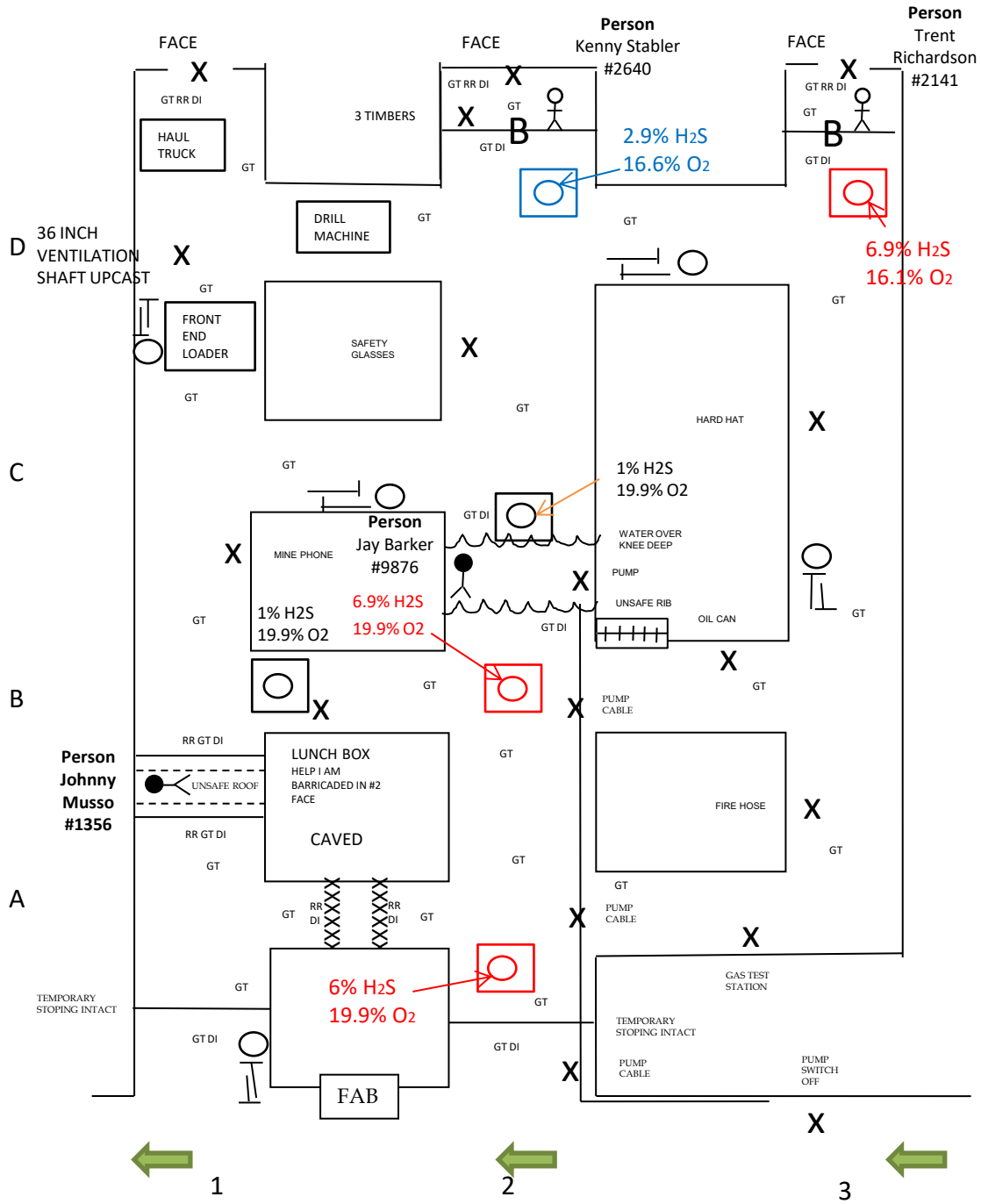


FAB MAP



TEAM MAP

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FIELD MAP

TEAM # _____

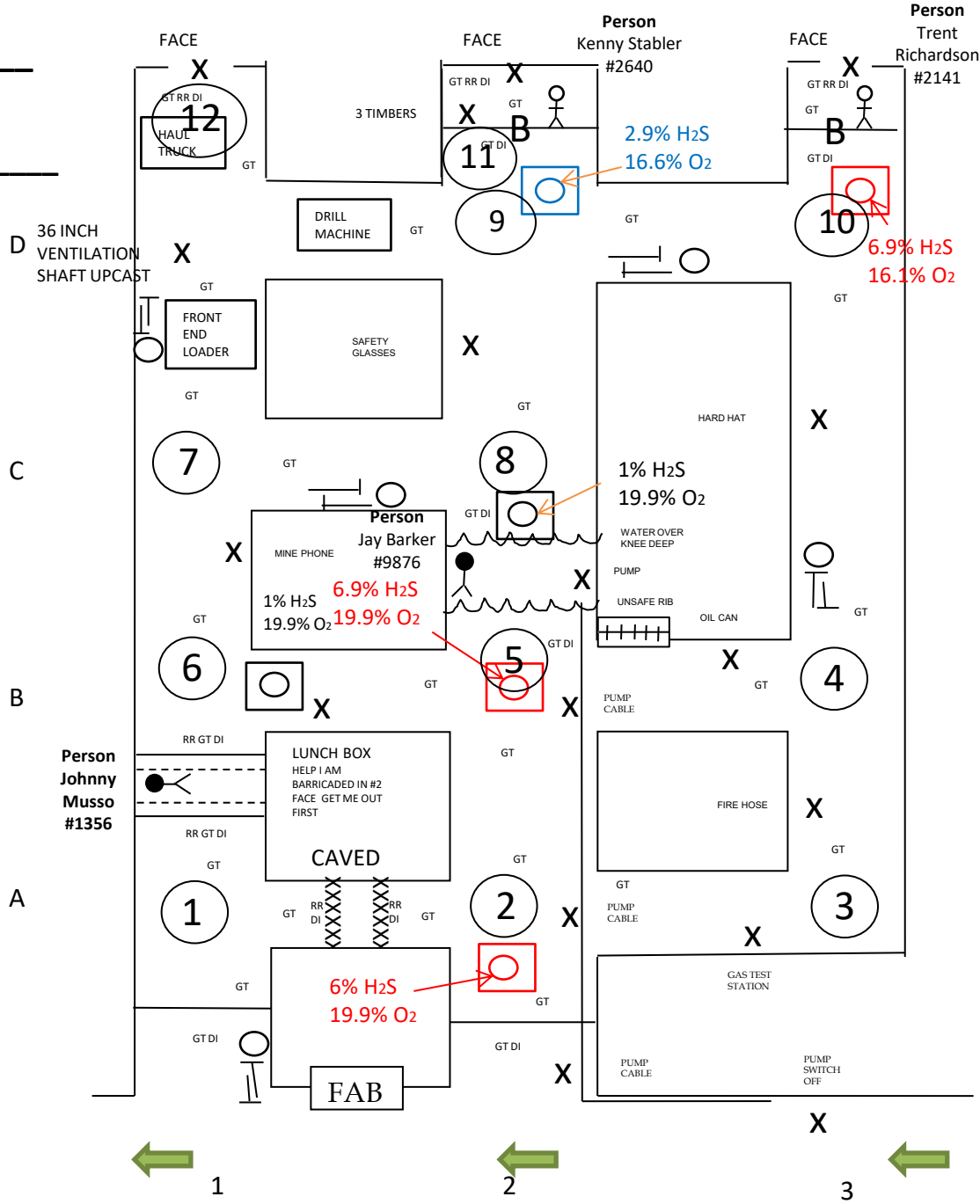
JUDGE NAME _____

GAS TEST READINGS

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DURING EXPLORATION THE TEAM MUST TIE ACROSS INTO #3 HEADING WHEN IN THE D CROSSCUTS TO AVOID BREAKING THE 2 X 3 RULE IN HEADING #1 AND #2.

HEADING #3 AT BARRICADE WILL NOT FALL UNDER THE 2 X 3 RULE DUE TO LONG PILLAR CONFIGURATION



	TIME
Clock Start	_____
50ft. AP Check	_____
2 nd AP Check	_____
3 rd AP Check	_____
4 th AP Check	_____
5 th AP Check	_____
6 th AP Check	_____
7 th AP Check	_____
8 th AP Check	_____
Clock Stop	_____



TEAM STOP

SOUTHEAST REGION MINE RESCUE CONTEST

JUNE 18th thru the 20th

JUDGE'S BRIEFING

Exploration

The mine manager will read statement and give it to the team. When the captain is ready, he will start the clock. Judges must give him the maps.

Exploration of Mine Openings:

Teams will examine both openings, conduct gas tests (GT), the captain will date & initial (D&I) the temporary stopping in both headings built by previous mine rescue team.

The team can travel in by the fresh air base in the entry of their choice.

Team must build an airlock into mine to travel to team stop #1.

This solution assumes that the teams will begin their exploration in the #1 entry.

Exploration

Team Stop #1

After team breaches airlock, a gas test inby the temporary stopping must be made.

If no gas test is made, dock them 1 x each gas, each omission, under Underground Judge #2, Item 1.

If team does not make a 50' apparatus check, dock them 4 total, under Underground Judge #1, Item 3.

The team will advance to 1A intersection. The 50' apparatus check (AP) must be conducted at team stop #1.

The team will find a caved area in the crosscut to the east, and unsafe roof in the heading to the north. The captain will do a RR test and must DI at both areas, and a GT must be made inby each of the two openings.

If the captain does not verbally indicate - checking the back, or roof dock them 5 x each omission, under Underground Judge #1, Item 8(b).

If the captain does not DI the caved area and unsafe roof, dock them 2 docks x each omission, under Underground Judge #1, Item 9.

If no gas test is made, dock them 1 dock x each gas, each omission, under Underground Judge #2, Item 1.

Exploration

Team Stop #2

Teams must retreat and airlock back out to the FAB, and air-lock into the #2 heading. Once the temporary stopping is breached, the captain must take a GT. The team will advance to 2A intersection. The team will find an explosive mixture in the intersection, and caved area to the west.

If they don't notify the FAB of the explosive mixture, dock them under Underground Judge 1, Item 14.

The captain will RR test and must DI at the caved area, and a GT must be made in all three openings from the intersection. Team will tie across to the 3A intersection and will find the gas testing station and test the equipment. The team must have the "hood" for the detector and put the gas on the detector. The captain will give the readings from the detector to the head judge who will write the readings down on the judge's map.

If team does not make the "hooded" gas check on the detector, dock them under Underground Judge #2, Item 4 for each incorrect reading. 15 docks X 4 = 60 docks.

Exploration

Team Stop #3

The team will advance to 3A intersection, a GT must be made north of the intersection.

If no gas test is made, dock them 1 x each gas, each omission, under Underground Judge #2, Item 1.

Team Stop #4

The team will probably advance up the #3 heading to the 3B intersection. Team must take a GT to the west and north of the intersection.

If no gas test is made, dock them 1 x each gas, each omission, under Underground Judge #2, Item 1.

Team will travel by unsafe rib.

If team members contact/cross the unsafe rib, dock them 15 docks each member endangered, under Underground Judge #1, Item 10(a)(1).

Team Stop #5

The team will travel across to the 2B intersection. Team will find an explosive mixture in the intersection, and water over knee deep to the north. The captain must DI the water over knee deep. A gas check must be made north, west and south of intersection.

If the team does not notify the fresh air base of the explosive mixture, dock them 10 x each omission, under Underground Judge #1, Item 14.

If the captain does not DI the water over knee deep, dock them 2 docks x each omission, under Underground Judge #1, Item 9.

If no gas test is made, dock them 1 dock x each gas, each omission, under Underground Judge #2, Item 1.

If team members travels beyond the "water knee deep", dock them 15 docks each member endangered, under Underground Judge #1, Item 10(a)(2).

Exploration

Team Stop #6

Team will travel/tie across to the 1B intersection.

The team will find a lunch box and inside a note (HELP I AM BARRICADED IN #2 FACE, GET ME OUT FIRST).

Team will find the unsafe roof south of the intersection. Captain will do a RR and must DI at the unsafe roof and a GT must be made north and south. NOTE: The placard for the body will be facedown.

The team cannot consider the location of the body in the unsafe roof as being known, since the captain has not explored into the unsafe roof yet.

If the captain does not verbally indicate – checking the back, or roof dock them 5 x each omission, under Underground Judge #1, Item 8(b).

If the captain does not DI the caved area and unsafe roof, dock them 2 docks x each omission, under Underground Judge #1, Item 9.

Team Stop #7

Team can advance any heading but will probably travel up the # 1 heading to the 1C intersection. A GT must be made both north and east of the intersection.

Team Stop #8

Team will tie across to the 2C intersection. The team will find the water over knee deep south of the intersection. The captain must DI at the water over knee deep. A GT must be made north and south.

NOTE: The placard for the body will be facedown. The team cannot consider the location of the body in the water over knee deep as being known, since the captain has not explored the area yet.

Exploration

Team Stop #9

Team will advance to the 2D intersection. The team will find an irrespirable mixture in the intersection outby the barricade. A GT must be made in all three openings north, east and west. The team must not go more than three feet inby the intersection because of the 2 by 3 rule. (Barricade is located 5 foot inby intersection.

If captain or team member goes 3 feet beyond x-cut without being tied in, dock them 4 under Underground Judge #1, Item 11. (Make sure team ties back in #3 heading)

Team stop 10

Team will tie across to the intersection in the 3D intersection. Team will find an explosive mixture in the intersection. A GT must be made north and south.

If the team does not notify the fresh air base of the explosive mixture, dock them 10 x each omission, under Underground Judge #1, Item 14.

Note: Team can advance all the way to the barricade because the 2 by 3 rule does not apply in this heading. When the barricade is knocked on, there is no response from behind the barricade and must DI the barricade. The team will tie back in the #3 heading by traveling south in this heading.

Exploration

Team Stop #11

The team can now travel to the barricade inby 2D intersection.

When the barricade is knocked on the conscious live person inside the barricade will start yelling (HELP, HELP, GET ME OUT, ITS GETTING HARD TO BREATHE, I HAVE A SOLID FACE BEHIND ME).

The captain must DI at the barricade and a GT must be made at the barricade. (Make sure the (3 TIMBERS) placard is turned over so the team can't read until barricade is breached.

Team Stop #12

The team will advance / tie across to the 1D intersection. A GT must be made north and south of the intersection. The team will find a 36 INCH VENTILATION SHAFT some equipment and a face the captain must DI at the face and a GT must be made at the face.

Note: If team advances to the 1D intersection from team stop #7. The team will find a 36 INCH VENTILATION SHAFT some equipment. The team must not go more than three feet inby the intersection because of the 2 by 3 rule.

If captain or team member goes 3 feet beyond x-cut without being tied in, dock them 4 under Underground Judge #1, Item 11. (Make sure team ties back in #3 heading)

Exploration is done.

Ventilation #1

Note: The team must be careful not to push the explosive mixture over the equipment.

At this time, if the team has explored as discussed, the barricade in #2 heading can be ventilated (See Ventilation #1).

NOTE: Team must build temporary stoppings: 1.) between #1 and #2 heading in Crosscut A; 2.) between #1 and #2 heading in Crosscut B; and 3.) in #1 heading between Crosscuts C and D. After these ventilation controls are completed, the team can open the temporary stopping in #1 heading immediately in by the FAB. Then the team will build temporary stopping west of FAB. To direct air toward the barricade, the team must also erect a “wing curtain” in Crosscut D.

After the team has ventilated the barricade, the barricade can be breached. No air lock is required since the live person provided adequate information. The captain must make a GT after the barricade is breached. Inside the barricade, the team will find a conscious live person, three timbers, and a face.

The captain must DI at the patient. A patient assessment must be conducted on the conscious live person.

If the team fails to adequately examine and assess patient. Dock 4 , Underground Judge #2, Item 14b.

The captain must do a RR at the face and DI at the face, and GT must be made at the face. The team must now bring the patient to the FAB.

Ventilation #2

The team will have to ventilate the explosive/irrespirable atmosphere in front of the barricade in #3 heading. The team will have to set timbers through the unsafe roof in the #1 heading. Here the team will find a body. The captain must DI at the body, then finish timbering through the area. (See Ventilation #2).

NOTE: Team must build additional temporary stoppings: 1.) between #1 and #2 heading in Crosscut D; and 2.) build south of the “water over knee deep” in #2 heading and 3.) between #1 and #2 heading immediately to the west of the FAB (build Last).

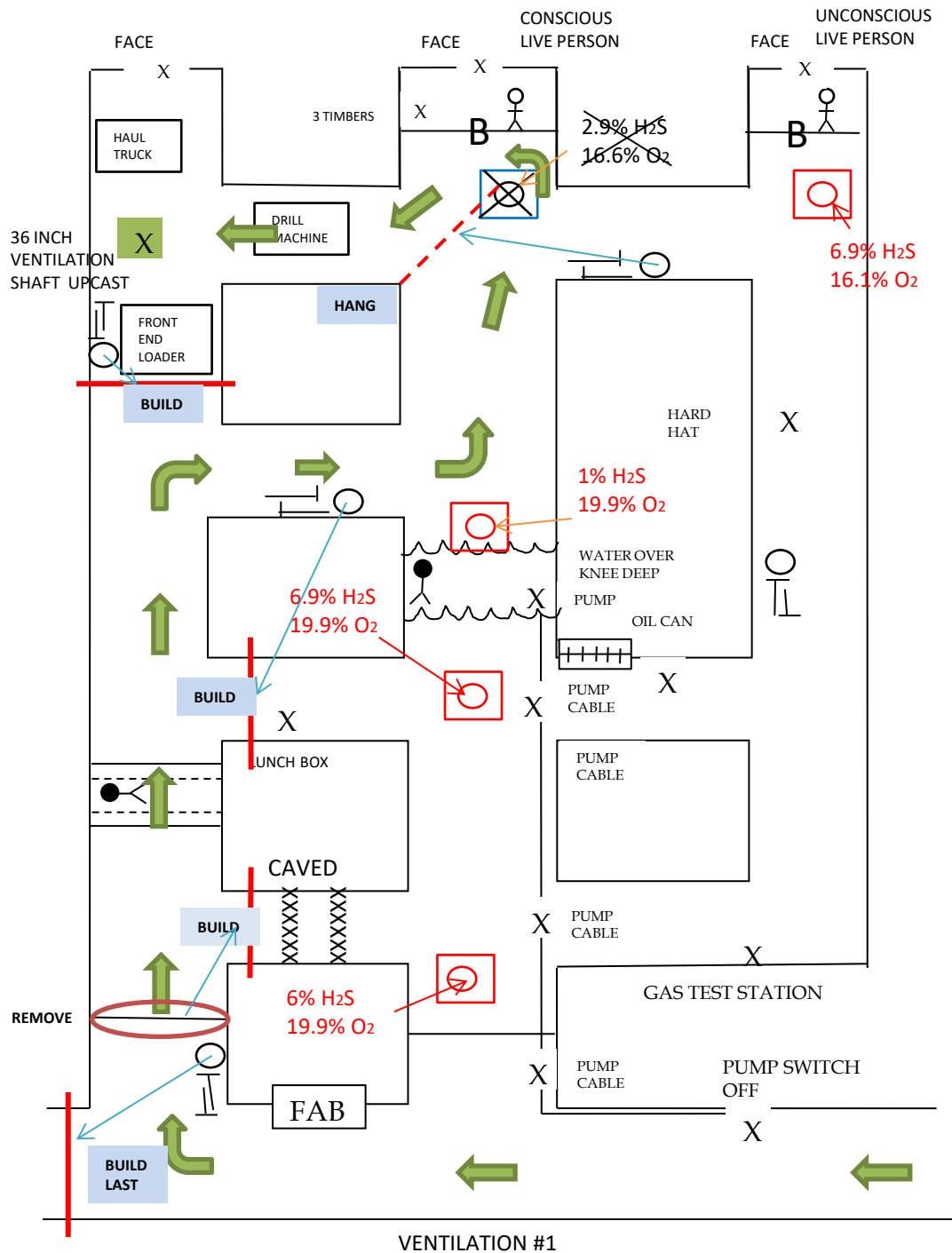
After these ventilation controls are completed, the team can open the temporary stopping in the #2 heading immediately in by the FAB. To direct air toward the barricade, The team must also erect a “wing curtain” in Crosscut D.

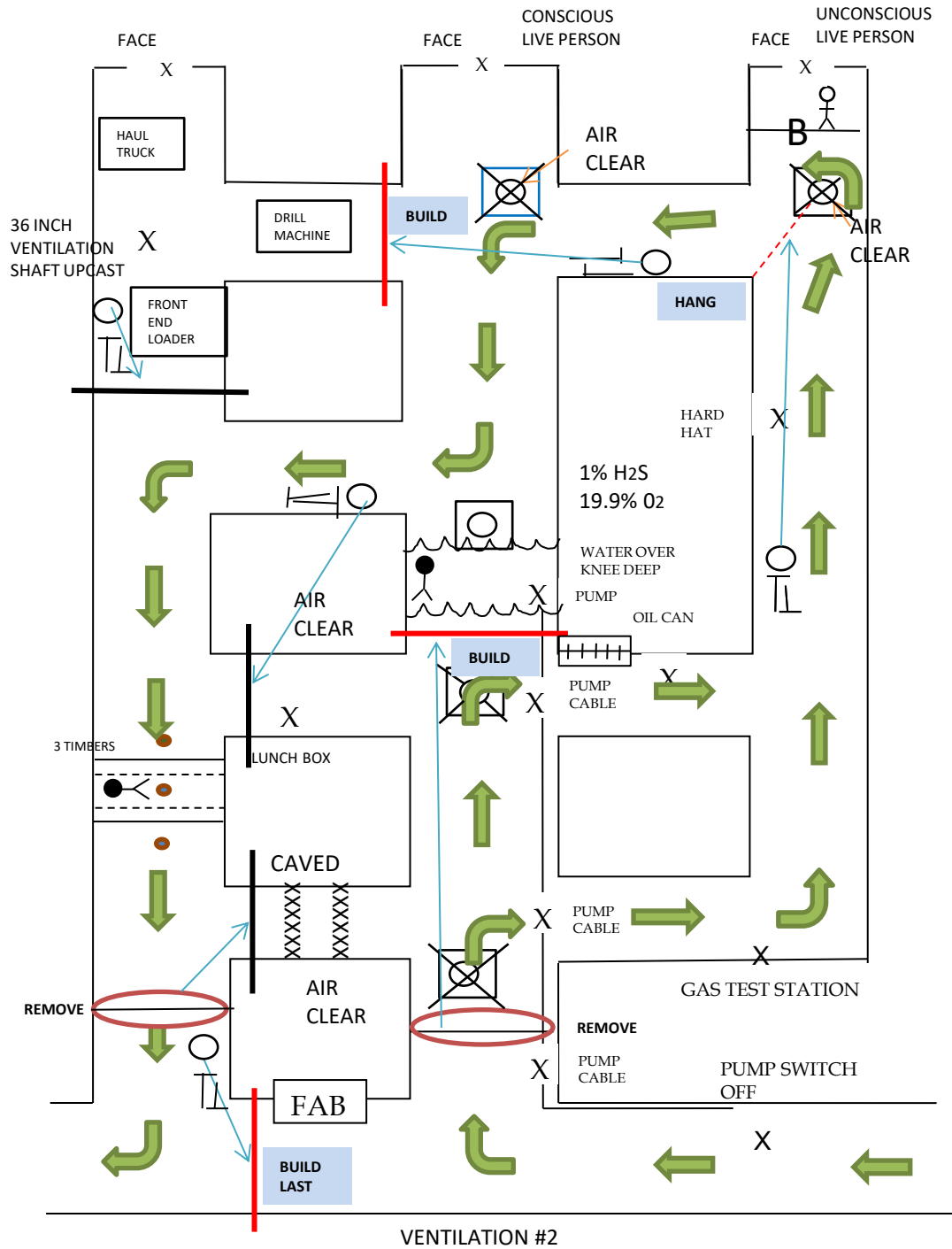
After the team has ventilated the barricade in #3 heading, before breaching the barricade, an air lock must be constructed since there was no response behind the barricade. The captain must make a GT after the barricade is breached. Inside the barricade, the team will find a unconscious live person and a face. The captain must DI at the unconscious person. A patient assessment must be conducted on the unconscious live person. The unconscious person must be placed on a stretcher and brought to the FAB that way.

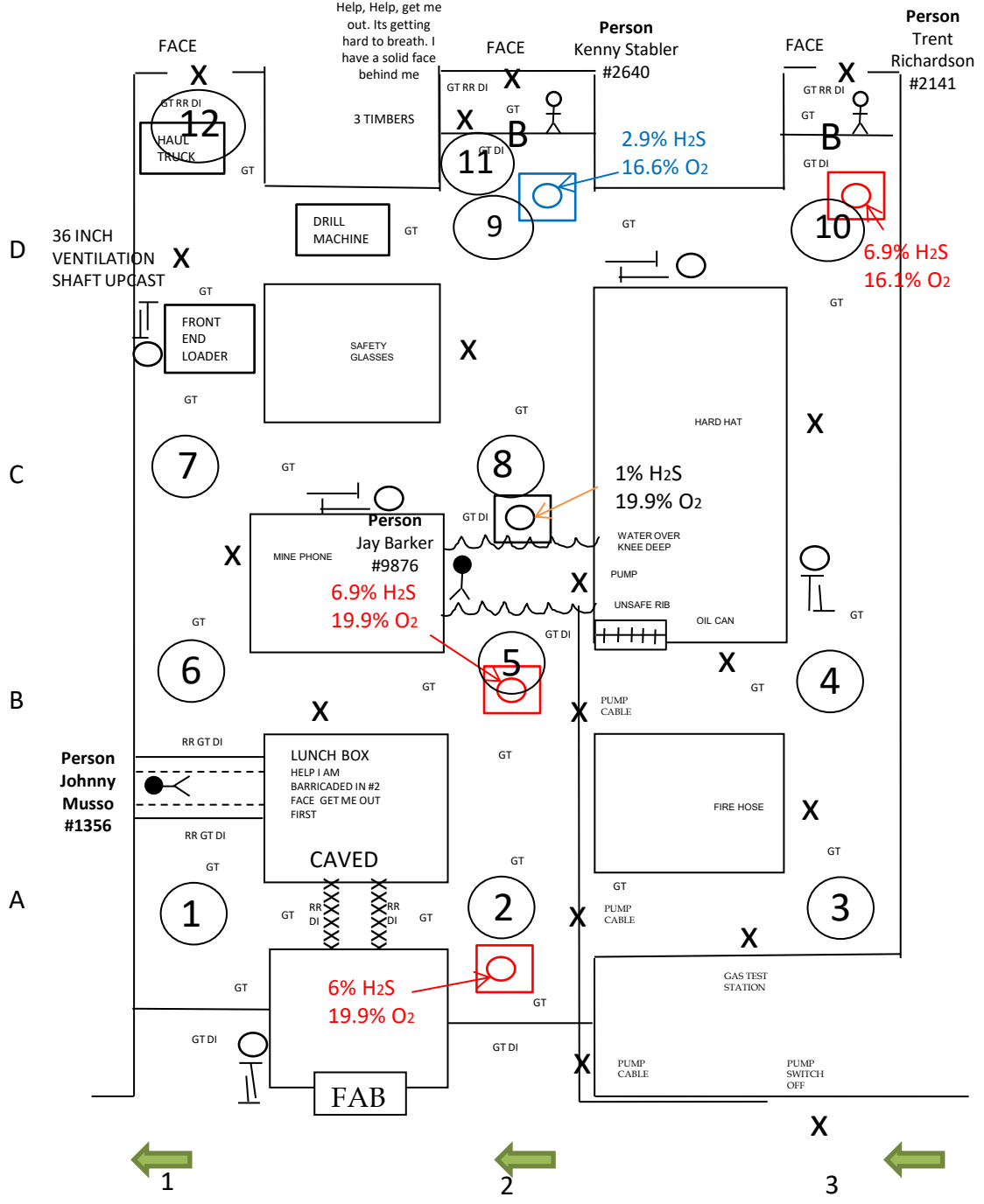
If the team does not properly secure the survivor to stretcher; failure to cover survivor with blanket. Dock 4, Underground Judge #2, Item 13.

Once the team is at the FAB. The team must insure the explosive mixture is cleared and then the pump can be energized. After the water over knee deep is pumped down, the captain must explore through the area. Here they will find a body. The captain must DI at the body. The team can now return to the FAB and the captain can stop the clock.

If the team does locate the body, dock 50, Underground Judge #1, Item 16.







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Field Map

