South Western Mine Rescue Contest

April 13 & 14, 2000

Southwestern Mine Rescue Contest
April 19 & 20, 2000
Solution

1. The mine rescue team will be briefed on the problem prior to moving to the fresh air base. The teams will receive the briefing by a taped version. They will watch the briefing tape and receive a narrative of the text which will include the Introduction, team briefing statement and the mine information sheet. They will also be given the information as to what will happen once they arrive at the fresh air base. After the taped information is given to the team they will be given a copy of the same information to study for 10 minutes. They will be able to take any notes they want for future reference.

2. On arriving at the fresh air base the team will be introduced to the judges and after the clock is started they will be given the mine information sheet and the team briefing statement. No questions will be answered as to the briefing information unless there is a term they do not understand. Questions will be answered only as required by the rules

3. The team will then check their equipment and the fresh air base including the #7 & #8 shafts. The 8 shaft is down cast and there is a fresh air base setup at the bottom of the shaft in 8 shaft drift. The fan on the surface has been shut down. At the # 7 shaft there will be black dense smoke. The air reading at the shaft will indicate O2-11.5 %, CO-10100ppm, NO2-200ppm, CH4-3.0%. THE 3% CH4 WILL REQUIRE THE TEAM CAPTAIN TO INFORM THE FRESH AIR BASE THAT THEY HAVE FOUND AN EXPLOSIVE GAS (SEE RULE #15 # 3 JUDGE) check of the shaft will indicate the shaft is hot the rag will feel very warm. With that the team should be prepared to go underground.

NUMBER 1 JUDGES INSTRUCTIONS

AFTER THE TEAM HAS COMPLETED THE SURFACE INSPECTION AND IS READY TO GO UNDERGROUND TELL THE TEAM CAPTAIN HE WILL ENTER THE MINE AND BE TAKEN TO THE FRESH AIR BASE, BARE FACED BY THE MINE MANAGER. (# 1 JUDGE) TELL THEM YOU ARE THE MINE MANAGER. TELL HIM THE AREA WAS CHECKED FOR LOOSE PRIOR TO SETTING UP THE FRESH AIR BASE.

TELL THEM YOU WILL BE AVAILABLE AT THE FRESH AIR BASE. TELL THEM YOU CAN BE REACHED BY PHONE AT ANY TIME OR IN PERSON. TELL THEM THEY ARE THE ONLY TEAM IN THE MINE AT THIS TIME.

5. NOTE SOME OF THE TEAMS WILL BE USING A PHONE SYSTEM FOR COMMUNICATIONS FROM THE FRESH AIR BASE TO THE TEAM ON THE FIELD. YOU WILL HAVE THE TEAMS FRESH AIR BASE COORDINATOR MAPPING THE TEAMS MOVEMENT FROM THE TIME THEY ARRIVE AT THE FRESH AIR BASE UNTIL THE PROBLEM IS OVER.

6. THE TEAM CAN THEN GO DOWN THE SHAFT TO THE FRESH AIR BASE. THEY WILL NOT HAVE TO CHECK FOR LOOSE UNTIL THEY ENTER THE AIR LOCK AT THE FRESH AIR BASE.

7. THE TEAM CAN GET OFF THE CAGE AND ENTER THE FRESH AIR BASE DRIFT. THEY WILL HAVE TO MAP THE FRESH AIR BASE AS THE BASE HAS JUST BEEN INSTALLED.

8. On completion of the checks the team can now go under oxygen and prepare to go through the air lock. The air lock has a window and a regulator in the door. On entering the cage they must count off. If they did this on top we will give them credit for counting off. While leaving the air lock the team captain must check for loose, conduct a team check in the intersection, and conduct a gas check of the intersection. Reading are O2=10%, CO=12000ppm, NO2=300ppm, CH4 =1.5% The explosive range of CO is from 12.5 to 74%. The gas is below the explosive range.

9. After completing the intersection check the team can spread out to the stopping north in 40 Xcut conduct a gas check and D & I the face. **(NOTICE) From here through the rest of the problem no further mention will be made of checking the intersections for gas and date and initialing will be indicated in this solution**. **Only where there are gas placards will the information be included.**

10. The team can the tie back towards the south towards the shop or stretch out to the east in H drift. If the go to 41 Xcut first they can tie the intersection of H drift and 41 Xcut there is a self rescuer that is hot, located just west of the 41 Xcut corner this unit has been used and was to hot to the touch making it uncomfortable to handle. The team can only tie 3 ft east of the 41Xcut intersection as the 2 intersection plus 3 ft rule is enforced at this point.

11. They can enter 41 Xcut to the North where they will find a second self rescuer the is very hot and uncomfortable to hold. Advancing further they will find the curtain in the Xcut open. Passing through the curtain they will find the electric substation. The transformer station control is on, The main fan control is off, the shop fan is off, the face fan is off and the face drill is on. They cannot touch these controls until they know the conditions in the mine. Passing into I drift and 41 Xcut they will find a gas placard that reads O2=11.5%, CO=10100 ppm, NO2=200ppm and CH4=3%. This reading is the same as they found on the surface at # 7 shaft. The 2 Xcut plus 3 ft rule will be violated if the team captain goes past the 3ft mark east in I drift. **IF THE TEAM HAS SHUT THE FIRE DOORS AT THE SHOP THERE WILL BE A NOTICEABLE DROP IN THE HEAT IN THE MINE. WITH HOT AIR STILL RISING UP THE SHAFT COOLER AIR COMING DOWN THE SHAFT IS REPLACING THE AIR ON THE STATION. THE GAS LEVEL HAVE DROPPED THE NEW READINGS ARE O2=14.5% , CO=6OOOPPM, NO2=90PPM AND CH4 HAS DROPPED TO 1.5%.**

12. Turning west into I drift they can reach the shaft station and tie this area along with the stopping in 40Xcut back to the south. On completing these tests they can return to the fresh air base and go to the surface and tie in the #7 shaft by riding the cage to the bottom checking the shaft as they go. Once this has been completed the should return to the surface and descend # 8 shaft again returning to 40Xcut and the H drift intersection.

13. The team can then go south towards the shop finding the fan which is off and then to the entrance to the shop where they will find a vent bag and the shop doors open in 40 Xcut. There is an intense heat placard located about 4 ft into the 40 Xcut once they find this they can come back and close the shop fire door there is a regulator in the door that must be left open. . Then they can advance to 41 Xcut in G drift where they will find another intense heat placard again they will have to close the shop fire door. There is a regulator in the door this must be left open.

14. The team can then advance back past 41 Xcut to H drift and tie that drift. Then they have a choice as to what direction they will go If the team should go east in G drift before thy tie back to H drift in 41 Xcut they cannot advance into I drift more then the 25 ft stretch in their line. If the # 5 man advances past the line on the east side of 41 Xcut and G drift intersection they will leave unexplored territory behind them. They should stretch out and tie over to the 41 Xcut and H drift intersection then they have covered all of the west end of the mine.

15 Assuming they advance East into G drift they will find the **WELDER** lying along side the drift past 41Xcut about 5 ft. The team must do an initial assessment on the miner to determine his condition. The #3 judge will tell them he is **DEAD** once the initial assessment is completed. There is a gas placard located at the toe that reads O2 9.5%, CO=7,000PPM, NO2=80PPM, CH4=1.5%.

16. The team then has a choice to advance to the intersection of 42 Xcut where they will find a placard that reads lite smoke. The air is moving towards #7 shaft through 41Xcut as the team

moves East they will find the smoke thinning out. On entering the 42 Xcut intersection they can tie the intersection and must must tie the stopping on the south the Xcut extends 3ft to the south. They can then enter 42 Xcut and tie the 42 Xcut and H drift intersection. Then they can turn and tie 41 Xcut intersection

17. If they advance to 43 Xcut and tie that intersection they have only 3 ft that they can go towards the east as 42 Xcut is blocked and the 2 Xcut plus 3 ft. Rule is again in effect that's all the way across the 43 Xcut drift. If the team had stretched out to H drift and 42 Xcut and tied that intersection when they tied G drift and 42 Xcut intersection they can proceed North in 43 Xcut and tie 43 Xcut and H drift intersection. The 2 Xcut plus 3ft. Rule is in effect towards the stopping in the east side of 43 drift. If they enter this drift they will be docked for violation of # 1 judge rule # 9.

18. Then the team must tie back to the west to 42 Xcut in H drift and they can do this from the 43 xcut H drift intersection as they could have previously tied 42 Xcut and H drift intersection. At this point they would be smart to return to 43Xcut and H drift and follow there route of travel back to 40 Xcut and H drift as that is the way they came in. If they don't sooner or later they will have to.

19. As they have tied everything on the South side of the mine to the tail drifts in G and H drifts they have only the north drifts to look at if they straighten out their life line they can move to 41 Xcut and I drift and move to the timber yard where they will find a placard reading lite smoke. Past that on the north side of I drift they will find some loose roof. The team captain must identify this to the team then they can enter the timber yard.

20. On the left as they enter they will find some stopping material and a lunch bucket there will be a note in the lunch bucket that reads I have barricaded my self in the face of H drift past 43 Xcut. I have water and a compressed air line in there. Have a little headache otherwise I'm OK. Come get me out.

21 . They can then advance to 42 Xcut and I drift. On leaving the timber yard the team captain must again address the loose roof on the left to the team arriving at the 42 Xcut intersection they must tie the intersection and the stopping in 42 Xcut to the South. Then the can move towards 43 Xcut and I drift where they will find 2 miners spread out on the ground. They will find that the helper and the foreman are comatose. The loose roof ends close to the helpers feet.

22. In conducting the initial assessment on the helper they will find he is incoherent breathing at 80 breaths per minute with a pulse of 180 beats per minute the rest of the assessment will only show some blisters on his lips. In checking the foreman they will find his breathing at 100 breaths per minute and a pulse of 200 beats per minute. The # 3 judge will take care of the helper as he is checked and the # 3 judge will take care of the foreman as he is checked. Again they must do a complete initial assessment when the shake each of them and try to arouse them you will tell them there is no reaction they must check the pulse the breathing You will give them

the placard which indicates their breathing rate and their heart rate.

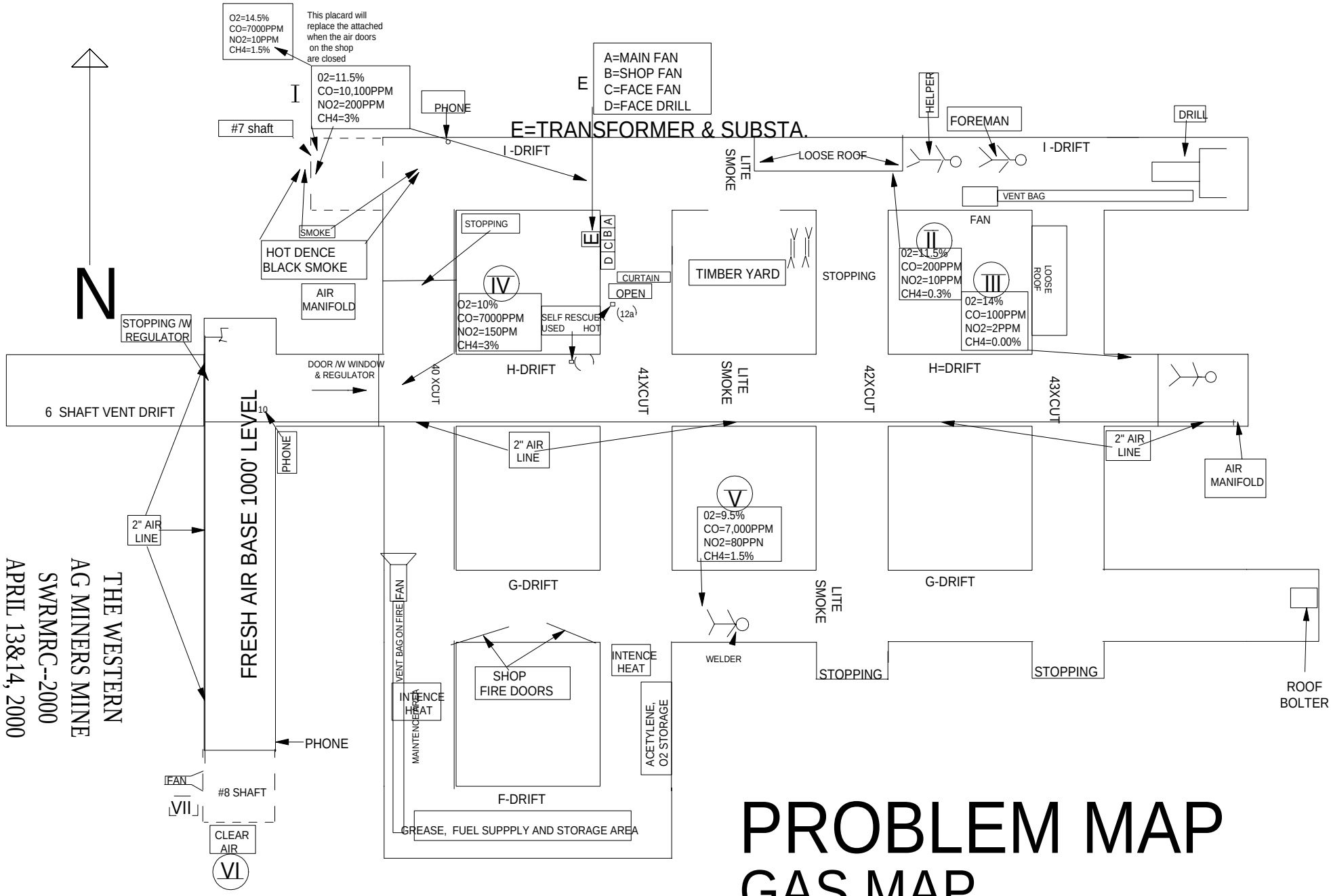
23. Once the have this information they can finish the assessment however they should determine that the fireman is in dire need of some oxygen as the triage will tell them that the foreman is in worse condition then the helper. They should immediately put him under oxygen. Then they can conduct the secondary assessment while the foreman is being put under oxygen. At the same time they can be assessing the condition of the helper. Once they have the foreman under oxygen and have finished the assessment they can load him in the stretcher and move him in behind the barricade or what ever they want to do with him.

24. There's a number of ways to complete this problem In order to do that they may have to move the foreman through un explored territory. They may want to leave the helper where he is and take him out to the fresh air base. They could use the firemans drag and 2 men could drag him into the barricaded area. If you happen to carry 2 machines you can move bothof the patients to the fresh air base by calling for the backup team to assist them. If they do not have 2 machines and call for a backup team they will be told that it will take 15 minutes for them to respond. The helper will expire before the back up team can get there.

25. They can move the foreman into the fresh air behind the barricade and come back and get the Helper and move him to the fresh air base, move to the fresh air base and pick up another breathing apparatus, and come back and get the 2 members behind the barricade. Remembering that the driller can walk out and the driller can also remain with the foreman while the team takes care of the helper. There are other solutions among them the can put them all behind the barricade go to the fresh air base or phone and ask for a backup team to come and get one of the incoherent miners. Either way will be ok. If they move the Helper 1st and leave the foreman for last when they return the foreman will be dead. They have only to map his body . If the team enters the barricade and have not tied all of 43 Xcut they will be docked for unsystematic exploration. They can explore all of 43Xcut and reach the 2 downed miners when this is accomplished They have only to explore the area to the barricade and the team captain can stretch out and reach that far to keep from being docked for taking the patient through un explored territory. If they don't they are to be docked for any of the violations that commit.

25. After they have all of the patients out they can come back and continue to explore the face of G drift H drift and I drift, then they can return to the fresh air base and go to the surface and clock out.

26. One thing if a team chooses to use the telephone system they will have direct communications with the fresh air base they can call for a back up team when they determine they need one. All of the teams have the opportunity to use the phone system. Those that do will have an advantage as in being able to communicate with the fresh air base can certainly save some time. The Radio (phone) system will be used in the National Mine rescue Contest in July. This will be optional. Any team wanting to can still use the horn. **THE END**



PROBLEM MAP
GAS MAP

PROBLEM ORIENTATION
MANAGER STATEMENT
SOUTH WESTERN MINE RESCUE CONTEST
CARLSBAD, NEW MEXICO
APRIL 13 & 14, 2000

1. The team briefing judge will Introduce himself to the team.

2. The briefing judge will provide the team with the following instructions.

   (a) Prior to arriving at the fresh air base you will review a taped narrative on the problem. After which you will be given a copy of the team briefing information and mine information sheet to study for 10 minutes prior to moving to the fresh air base. This briefing will contain the instructions on the conditions at the mine. The briefing team will answer no questions except those connected to the showing of the tape. I will collect the briefing information after 10 minutes. The team can take notes.

3. (a) On arrival at the fresh air base the # 1 Judge will introduce himself to the team as the mine manager and #1 judge. Then introduce the No 2 & 3 judges to the team.

   (b) No work can be done before the clock is started. This includes unloading the stretcher. After the clock is started the team captain and fresh air base attendant will each be give a copy of a team briefing statement, mine information sheet and team map. While the team is underground. The fresh air base attendant and alternate can study the problem map and documents. When the team comes to the surface or calls for assistance from the mine the fresh air base attendant and attendant may communicate with the team and assist in decision making.

   (c) The fresh air base attendant and team alternate stationed at the fresh air base can communicate with the team when they are on the surface. Only the team alternate stationed at fresh air base can assist the team once the clock is started or travel with the team when he becomes a member of the team when someone drops out.

   (d) Tell the team you will answer questions only as the rules require, during the working of the problem . Then the #1 Judge will answer questions only as required by the rules. The #1 judge will answer questions dealing with obvious conditions. No one but the # 1 judge is allowed to communicate with the team after they leave the surface.

3. Caution - Fresh Air Base Attendant and Mine Rescue Team Alternates are not to speak to anyone during the working of the problem except the team members or judging staff.

   After the clock is started only the 5 team members and the fresh air base attendant will be allowed to work at the fresh air base. (See page 14 contest rules 2nd paragraph)

TEAM BRIEFING STATEMENT
B-04 PANEL

THIS PROGRAM IS DEDICATED TO OUR FORMER TEAM MEMBERS FROM THE WESTERN AG MINE. OVER THE YEARS WE GOT USE TO HAVING THEM AROUND, THEY WERE COMPETITIVE, A HARD WORKING GROUP THAT DEVELOPED INTO A TOP MINE RESCUE TEAM. THEY SERVED THIS AREA WELL AND SHOULD THE NEED ARISE THEY WOULD HAVE BEEN READY TO DO WHAT THEY TRAINED FOR. WE ARE PROUD TO HAVE HAD THEM AROUND US. WE WILL MISS THEM ON THE FIELD. WE INVITE THEM TO PARTICIPATE TODAY. MAYBE NOT AS TEAM MEMBERS BUT AS HELPERS ON THE COURSES. WE HAVE ENOUGH WORK TO GO AROUND.

The mine is a large potash mine located in South Western New Mexico. 135 miners are employed working 2 shifts a day 5 days a week.

The mine is a single level mine opened by 8 shafts extending to the 1000 ft. level. At 10am smoke was noted coming up # 6 and #7 shafts which is the normal exhaust system for the East side of the mine a common drift connects the 8 shaft air way system to ventilate the area between 8 shaft drift area from the 6 shaft exhaust system. This is the main exhaust area for this side of the mine. Regulators located in stopping's are used to control air flow throughout the mine. Five shaft is a down cast airway and 7 shaft is an upcast airway. There is a fan located on the surface at 8 shaft the fan operates on positive pressure.

On discovery of the smoke, a mine evacuation was ordered and 65 of the 70 man crew have been accounted for on the surface. The 5 missing miners were assigned to work in B04 panel. Two were assigned to drill out a round in the face of I drift past 43 Xcut, one was doing some welding in the shop. One was servicing (refueling) haulage equipment for the next shift. A mine foreman from an adjoining panel was supervising this area and along with the assigned miners among the missing miners.

Mine Rescue teams have completed checking the 3 and 4 shaft areas and checking of the # 5 and 6 shaft areas at this time is almost complete. They indicate the smoke is coming out of B04 panel and have erected stopping's underground to control the smoke from B04 panel to the 6 shaft area. The stopping's were located to prevent air from exhausting from the B04 area through the exhaust drift into the other parts of the mine.

Seven shaft has became the total exhaust and the only opening from the B04 panel. A fresh air base was established underground in 8 shaft drift at the intersection of H drift. A compressed air line is furnishing fresh air to the area. An airlock was installed in H drift. Natural ventilation is the only ventilation underground. Compressed air is available for miners barricaded underground. The line runs down H drift to the face regions past 43 Xcut.

The exhaust air from the B04 panel was diverted entirely to 7 shaft . There is hot black smoke coming out of 7 shaft at this time. All of the ventilation from this area is natural and any fresh air reaching the mine fire is being drawn down 7 shaft as the rest of the area is sealed. Our escape and evacuation plan for any miners trapped in this area call for the miners to barricade themselves in one of the dead end drifts and use the compressed air lines for a source of oxygen this -*would pressurize the sealed area and keep any gasses from entering the seal.

We have barricade material stored in a timber yard past 41 Xcut. We think the 5 missing miners are still in this area and more then likely are barricaded in one of the dead-end drifts or possibly the timber yard.
B04 panel is in the early stages of development a shop has been developed at 40 Xcut out of G drift extending to F drift and exiting 41 Xcut and G drift. All of the mine has been inspected to the eastern edge of the formation. The No. 8 shaft is for men and supplies. The No. 7 shaft is the production shaft. Both shaft have man hoisting capability.

If you are ready and willing the service of your mine rescue team is needed. It is now 3: 30 PM your team will be the 4th team to enter the mine. We want you to give us a damage report of the B04 area, extinguish or seal all fires, account for all missing miners and map all accessible areas of this panel.

MINE INFORMATION SHEET

Geology: The mine is located in the potash basin. The formation is from 8 to 10 ft in depth. The ore body contain a rich concentration of potash formed within the a body of salt. The ore body is from the tertiary and recent intermontane basins about 60 million years old and has gone through several periods where the potash minerals were formed in the salt water basins**.** The formation moves above and below the 1000 ft level at an unpredictable rate. The mining follows the dip of the ore horizon.

Gas The mine does not have a history of methane. The mine is not classified as gassy.

Water The mine 1000 foot level is dry no water to speak of in the formation.

Waterlines There is a 2-inch waterline that runs down the shaft to the shaft stations. And face regions.

Airlines There is a 4-inch diameter air line down # 2 and No. 8 shafts. The air is used to operate drills. There are air manifolds at the in the face regions The air lines are charged by a surface compressor that produces 1000 cubic feet of air per minute at 120 pounds per square inch.

Electricity A 4160 volt power feeder cable runs down the # 7 shaft to a portable transformer and feeder Sub-station located in the I drift at 41Xcut . It services the entire B04 mining panel **The power is on.**

Ventilation The # 8 shaft is down cast and is the man/supply shaft (#7 shaft) is up cast. The mine ventilation system operates on positive pressure. The fan is located in an air lock on the surface at # 8 shaft . We shut the main fan off , we have controls on both the surface and underground. The surface fan controls are locked out and guarded. The fan can be reversed from the surface only. **THE FAN AT 8 SHAFT WAS OPERATED UNTIL THE FRESH AIR BASE WAS INSTALLED IN THE 8 SHAFT DRIFT. THEN THE FAN WAS SHUT**

OFF THERE IS ONLY NATURAL VENTILATION IN THE MINE AT THIS TIME. There are auxiliary fans in use for ventilation of the shop area and for face ventilation.

Mining Mining equipment is air, electric and diesel powered.

Fuel We have fuel storage tanks located in the shop. There is a fuel dispensing **station** at the storage facility**.**

Notification All federal, state and local officials have been notified.

Backup Team A backup team has been called out and should be available shortly.

Mine Map The mine map was up-to-date as of the first of a April.

Other Mines This mine does not connect to any other mines.

Explosives Explosives are available and are stored on the surface.

Materials All available equipment and materials to work the problem are located in the mine and identified by placards.

Maintenance Work is preformed in the shop area. Welding material, both electric and gas are stored in the east side of the shop.

Hoist The man hoists have been checked out and are working OK. To expedite movement in the shaft travel from the surface to the mine level will take 5 seconds. The # 1 Judge will time the travel.

Guards Guards have been posted at all mine entrances. **THE ELECTRIC POWER TO THE MINE IS IN THE ON POSITION AND IS GUARDED.**

Roof Most roof support is by roof bolts.

Support Timber, Timber Yard There is a timber storage area locate in I drift past 41 Xcut. There is some 2 by 4 timber, brattice cloth, support timber, and cribbing material available underground.

Phone's There are phones located at each of the shafts and the shop. During any emergency the phones have a direct line to the manager's office on the surface. You may contact him at any time from any one of the mine phones.

The End.

Welder

FIRST AID DISCOUNT SHEET

#3 JUDGE

AS THE WELDER IS DORMANT PERFORM THE HEAD TO TOE SURVEY. THE SURVEY WILL SHOW THE WELDER DEAD. THE TEAM MUST PREFORM A PRIMARY SURVEY THE YOU WILL TELL THEM HE IS DEAD. IF THEY MISS ANY PART OF THE SURVEY THEY WILL BE DISCOUNTED 4 POINTS

PRIMARY SURVEY

___1. Establish responsiveness.
___2. Position victim.
___3. Check Breathing.
___4. Check Pulse.
___5. Visually check for bleeding.

SECONDARY SURVEY

___1. Neck - Gently feel and look for any abnormalities. Check for medical alert necklace.

___2. Head - Without moving the head, check for blood in the hair, scalp lacerations, and contusions. Gently feel for possible bone fragments or depressions in the skull.

___3. Chest - Check the chest for cuts, impaled objects, fractures, and penetrations (sucking) wounds by observing chest movement.

___4. Abdomen - Gently feel the abdominal area for cuts, penetrations, and impaled objects, observing for spasms and tenderness.

___5. Lower back - Feel for deformity and tenderness.

___6. Pelvis - Check for grating, tenderness, bony protrusions, and depressions in the pelvic area.

___7. Genital region - Check for any obvious injury.

___8. Lower extremities - Check for discoloration, swelling, tenderness and deformities which are sometimes present with fractures and dislocations. Stroke soles of feet for paralysis.

__(9) Upper extremities - Check for discoloration, swelling, tenderness, and deformities which are sometimes present with fractures and dislocations. Stroke palms for paralysis. Check for medical alert bracelet.

___(10) Back surfaces - Injuries underneath the victim are often overlooked. Examine for bony protrusions, bleeding, and obvious injuries.

___(11) Secure victim to the stretcher with bandages or straps one on body and one around legs (minimum) cover with blanket.

Driller

FIRST AID DISCOUNT SHEET

#3 JUDGE

The driller is locked in the barricade has the compressed air line open and is ok. He was previosly exposed to some high CARBON MONOXIDE. Still has a head ack.

PRIMARY SURVEY

___1. Establish responsiveness.
___2. Position victim.
___3. Check Breathing.
___4. Check Pulse.
___5. Visually check for bleeding.

SECONDARY SURVEY

___1. Neck - Gently feel and look for any abnormalities. Check for medical alert necklace.

___2. Head - Without moving the head, check for blood in the hair, scalp lacerations, and contusions. Gently feel for possible bone fragments or depressions in the skull.

___3. Chest - Check the chest for cuts, impaled objects, fractures, and penetrations (sucking) wounds by observing chest movement.

___4. Abdomen - Gently feel the abdominal area for cuts, penetrations, and impaled objects, observing for spasms and tenderness.

___5. Lower back - Feel for deformity and tenderness.

___6. Pelvis - Check for grating, tenderness, bony protrusions, and depressions in the pelvic area.

___7. Genital region - Check for any obvious injury.

___8. Lower extremities - Check for discoloration, swelling, tenderness and deformities which are sometimes present with fractures and dislocations. Stroke soles of feet for paralysis.

___9. Upper extremities - Check for discoloration, swelling, tenderness, and deformities which are sometimes present with fractures and dislocations. Stroke palms for paralysis. Check for medical alert bracelet.

___10. Back surfaces - Injuries underneath the victim are often overlooked. Examine for bony protrusions, bleeding, and obvious injuries.

___11 Secure victim to the stretcher with bandages or straps one on body and one around legs (minimum) cover with blanket.

FOREMAN

FIRST AID DISCOUNT SHEET

#3 JUDGE

AS THE FOREMAN'S INCOHERENT, breathing will be shallow and rapid. His heart beat will be fast. When they check the foreman's breathing, his respiration is 100 breaths per minute and his pulse reads, 200 beats per minute you will give the person doing the checking the card that indicates this. They must do the secondary survey as listed below. They will have 1 spare machine they must make a decision as to who they will put the unit on. They must do the secondary survey as listed below. Any check mark will require a 4 point discount in each of the 2 sections below for a maximum of 8 discounts for the complete program. Except that if they do not take care of the foreman first the foreman will die.

PRIMARY SURVEY

___1. Establish responsiveness.
___2. Position victim.
___3. Check Breathing.
___4. Check Pulse.
___5. Visually check for bleeding.

SECONDARY SURVEY

___1. Neck - Gently feel and look for any abnormalities. Check for medical alert necklace.

___2. Head - Without moving the head, check for blood in the hair, scalp lacerations, and contusions. Gently feel for possible bone fragments or depressions in the skull.

___3. Chest - Check the chest for cuts, impaled objects, fractures, and penetrations (sucking) wounds by observing chest movement.

___4. Abdomen - Gently feel the abdominal area for cuts, penetrations, and impaled objects, observing for spasms and tenderness.

___5. Lower back - Feel for deformity and tenderness.

___6. Pelvis - Check for grating, tenderness, bony protrusions, and depressions in the pelvic area.

___7. Genital region - Check for any obvious injury.

__8. Lower extremities - Check for discoloration, swelling, tenderness and deformities which are sometimes present with fractures and dislocations. Stroke soles of feet for paralysis.

__9. Upper extremities - Check for discoloration, swelling, tenderness, and deformities which are sometimes present with fractures and dislocations. Stroke palms for paralysis. Check for medical alert bracelet.
the pad.

___10. Back surfaces - Injuries underneath the victim are often overlooked. Examine for bony protrusions, bleeding, and obvious injuries.

__11. Secure victim to the stretcher with bandages or straps one on body and one around legs (minimum) cover with blanket.

AS THE VICTIM IS incoherent PERFORM THE HEAD TO TOE SURVEY. When they check the FOREMAN'S breathing you will hand him a card that reads, respiration 100 breaths per minute. When they check his pulse you will give him a card that reads, pulse 200 beats per minute. The complete primary survey must be conducted as indicated below. They must do the secondary survey as listed below. Any check mark will require a 4 point discount in each of the 2 sections below for a maximum of 8 discounts for the complete program.

As the patient is 1 of 2 miners in a low oxygen atmosphere with some CARBON MONOXIDE present, breathing rapidly with a fast pulse the TRIAGE SYSTEM must be used to determine which survivor to give the OXYGEN . They should put him under oxygen post hast.They need **to move the foreman who is in worst condition to fresh air so they can help the other survivor before he expires.**

They can only handle one of the survivors at a time as they only have 1 stretcher and 1 apparatus. There is only one place where they can put the patient that's in the barricaded area. Then they can go and get the other patient and bring him into the barricaded area. Then they can render 1st aid and make arrangements to get them out of the mine.

The foreman is in worse shape then the helper and must be the 1st one into the barricaded area. If they take the helper first we will let the foreman die. There will be a 50 point dock for not taking the patient in the worst condition into the fresh air area first.

FOREMAN **RESPIRATION**

PATIENT IS INCOHERENT

RESPIRATION PANTING

- 100 BREATHS PER MINUTE

HEART RATE 200 BEATS PER MINUTE

FOREMAN

RESPIRATION

PATIENT IS INCOHERENT

RESPIRATION PANTING

100 BREATHS PER MINUTE

HEART RATE 200 BEATS PER MINUTE

HELPER

FIRST AID DISCOUNT SHEET

#3 JUDGE

AS THE HELPER'S breathing will be shallow and rapid AND HE IS INCOHERENT, PERFORM THE HEAD TO TOE SURVEY. When they check the helpers breathing during the primary survey, respiration 80 breaths per minute then check his pulse 180 beats per minute. (NOTE: by rule they must check breathing before they check the pulse.) You will hand him a card that reads the same. They must do the secondary survey as listed below. Any check mark will require a 4 point discount in each of the 2 sections below for a maximum of 8 discounts for the complete program.

PRIMARY SURVEY

__1. Establish responsiveness.
__2. Position victim.
__3. Check Breathing.
__4. Check Pulse.
__5. Visually check for bleeding.

SECONDARY SURVEY

__1. Neck - Gently feel and look for any abnormalities. Check for medical alert necklace.

__2. Head - Without moving the head, check for blood in the hair, scalp lacerations, and contusions. Gently feel for possible bone fragments or depressions in the skull.

__3. Chest - Check the chest for cuts, impaled objects, fractures, and penetrations (sucking) wounds by observing chest movement.

__4. Abdomen - Gently feel the abdominal area for cuts, penetrations, and impaled objects, observing for spasms and tenderness.

__5. Lower back - Feel for deformity and tenderness.

__6. Pelvis - Check for grating, tenderness, bony protrusions, and depressions in the pelvic area.
__7. Genital region - Check for any obvious injury.

__8. Lower extremities - Check for discoloration, swelling, tenderness and deformities which are sometimes present with fractures and dislocations. Stroke soles of feet for paralysis.

__9. Upper extremities - Check for discoloration, swelling, tenderness, and deformities which are sometimes present with fractures and dislocations. Stroke palms for paralysis. Check for medical alert bracelet.

__10. Back surfaces - Injuries underneath the victim are often overlooked. Examine for bony protrusions, bleeding, and obvious injuries.

__11. Secure victim to the stretcher with bandages or straps one on body and one around legs (minimum) cover with blanket.

As the patient is 1 of 2 miners in a low oxygen atmosphere with some CARBON MONOXIDE present, breathing rapidly with a fast pulse the TRIAGE SYSTEM must be used to determine which survivor to give the OXYGEN . Where to put the survivor in

worst condition to receive fresh air so they can help the other survivor before he expires.

They can only handle one of the survivors at a time as they only have 1 stretcher and 1 apparatus. There is only one place where they can put the patient that's in the barricaded area. Then they can go and get the other patient and bring him into the barricaded area. Then they can render 1st aid and make arrangements to get them out of the mine.

The FOREMAN is in worse shape then the helper and must be the 1st one into the barricaded area. If they take the HELPER first we will let the FOREMAN die. There will be a 50 point dock for not taking the patient in the worst condition into the fresh air area first.

HELPER

HELPER

PATIENT IS <u>INCOHERENT</u>

RESPIRATION PANTING
80 BREATHS PER MINUTE

HEART RATE IS 180
BEATS PER MINUTE

HELPER

PATIENT IS INCOHERENT
RESPIRATION PANTING
. 80 BREATHS PER MINUTE

HEART RATE IS 180
BEATS PER MINUTE

PLACARDS FOR NM2000

I

O2=11.5%

C0=10,100PPM

NO2=200PPM

CH4=3%

REPLCEMENT PLACARD FOR THE 7 SHAFT STATION ON THE SURFACE AND 1000FT LEVEL tHIS CHANGE IS MADE TO REFLECT THE CLOSING OF THE FIRE DOORS AT THE SHOP.

1a

02=9.5%

CO=7,000PPM

NO2=80PPM

CH4=1.5%

II

O2＝10.5%

CO＝200PPM

NO2＝10PPM

CH4＝0.3%

III

O2＝14%

CO＝100PPM

NO2＝2PPM

CH4＝0.03%

IV

$O2 = 10\%$

$CO = 12{,}500PPM$

$NO2 = 250PPM$

$CH4 = 4\%$

V

02＝9.5%

CO＝7,000PPM

NO2＝78PPM

CH4＝1.5%

VI

CLEAR AIR

A

MAIN FAN

B

SH0P FAN

C

FACE FAN

D

FACE DRILL

E

TRANSFORMER

& SUBSTATI0N

1

#8 SHAFT

2

PH0NE

3

2 INCH DIA.
AIR LINE
& 1" DIA. WATER LINE

3

2 INCH DIA. AIR LINE & 1" DIA. WATER LINE

4

STOPPING/W REGULATOR CLOSED

5

AIR MANIFOLD

6

AIR LOCK
WITH WINDOW

7

MAN DOOR/W
REGULATOR
& WINDOW

8

#7 SHAFT

9

H0T DENSE

SM0KE

10
PHONE

11
STOPPING

12
CURTAIN
OPEN

12a

SELF RESCUER

H0T

12A

SELFRESCUER

H0T

13

40 XCUT

13

41 XCUT

13

42 XCUT

13

43XCUT

26
LOOSE
ROOF

26
LOOSE
ROOF