Emergency Response Plan

Company Name	Mine Name or Number
MSHA ID Number	Mine Index Number

Detailed Description of Mine Location:

I. Mine Emergency Communications

1. An up-to-date list of emergency contact phone numbers will be posted in a conspicuous location in the mine office. The list, at a minimum, will contain telephone numbers for the Division of Mines, the Mine Safety and Health Administration, the mine rescue team or teams assigned to the mine, appropriate mine management personnel, pertinent emergency services such as rescue squads and fire departments, and local police agencies.

2. The Division of Mines will be contacted promptly (within 15 minutes) after it has been determined that an accident, as defined in § 45.1-161.8 of the Coal Mine Safety Laws of Virginia, has occurred.

3. Two independent communication systems from each working section to the surface will be maintained at all times. One of the communication systems will be located in the primary escapeway or may be a wireless communication system approved by the Chief.

4. Portable mine phones or other effective communication devices will be provided and maintained for the communication system at the end of the lifeline in the primary escapeway and at designated SCSR storage locations in the mine unless an approved wireless system is installed.

5. A functional test will be performed on all communication devices at least every seven (7) working days. Results of such tests will be recorded in a book maintained at the mine.

II. List of Next of Kin

1. A list of all employees including the employee's name, address, and telephone number, and the name, phone number, and relationship to the employee of the designated person to contact in case of emergency will be maintained at the mine site.
2. Such information will be obtained upon employment, updated periodically, and when personnel changes occur.

III. Waterlines

1. Waterlines will be installed parallel to the entire length of all belt conveyors. Waterlines may be installed in entries adjacent to the belt conveyor entry as long as outlets project into the belt conveyor entry.
2. The location of waterlines will be noted on a map maintained at the mine.
3. Fire fighting valves will be located at least every 300 feet and denoted by distinctive signs made of reflective material or other equally distinctive reflective indicators that are emphasized in all training exercises and drills.
4. Fire fighting valves will be substantially protected from damage to threads.
5. At least 500 feet of fire fighting hose will be located within one crosscut upwind of each belt drive installation and at the inby end of each belt. In the case of a belt conveyor storage unit or take-up, the fire fighting hose will be stored in an accessible location upwind and away from the storage unit or take-up. Water hose and connections will be protected from damage.
6. All fire fighting hose connections will be compatible with installed fire fighting valves. Nozzles will be compatible with fire fighting hose.

IV. Brattices

1. A numbering system beginning one crosscut inby the portal and extending to the loading point on the working sections will identify permanent stoppings installed adjacent to primary and alternate escapeways.
2. Adequately sized numbers that can be easily seen will be located on stoppings along the designated primary and alternate escapeways.
3. The location of all mandoors will be clearly marked with reflective signs or material that will be easily identified by anyone traveling in the primary and alternate escapeways and in the entries on either side of the doors.
4. Mandoors will be located at least every fifth crosscut but the distance between man-doors will not exceed 300 feet in seam heights less than 48 inches and not more than 600 feet in seam heights 48 inches or higher.

V. Escapeways

1. An up-to-date map of the entire mine showing designated primary and alternate escapeway routes, direction of airflow, stoppings, mandoors, overcasts,

regulators, bottom of coal seam contours, and SCSR storage locations will be posted in a conspicuous location on the surface so all miners may be shown and instructed in the use of the primary and alternate escapeway routes.

2. An up-to-date map of the mine will be maintained in a conspicuous location on each working section and areas where mechanized mining equipment is being installed or removed. The map will show the primary and alternate escapeway routes from the section to the surface (or bottom of shaft or slope), direction of airflow, stoppings, man-doors, overcasts, regulators, bottom of coal seam contours, and SCSR storage locations.

3. All miners will be instructed of any changes made in the mine involving the ventilation system and primary and alternate escapeway routes before entering the underground areas of the mine.

4. The designated escapeways will be reviewed with all newly employed miners. Each newly employed miner will travel the entire length of the primary escapeway within seven (7) days of employment.

5. A record of any instruction to miners regarding escapeway locations, changes to escapeway locations, and the ventilation system at the mine will be entered in a record book maintained at the mine.

VI. Lifelines

1. Continuous lifelines will be installed and maintained in each designated primary and alternate escapeway from the loading point of each producing section and from locations where mechanized mining equipment is being installed or removed to the surface or to the bottom of shafts or slopes.

2. Lifelines will be installed and maintained in such a manner as to facilitate safe walking or crawling and with the miners being able to maintain continuous contact with the lifeline.

3. Lifelines will be equipped with directional indicators, signifying the route of escape, placed at intervals not to exceed 100 feet.

4. Lifelines will be designated with reflective material every 25 feet.

5. Lifelines will be provided with distinctive markings or indicators when aligned with mandoors in a stopping line.

6. Reflective signs or other as effective means will be securely attached to the lifeline where caches of SCSRs are stored along the escape route.

7. Where a SCSR storage location is not immediately adjacent to the continuous lifeline, a branch lifeline will lead from the escapeway lifeline to the SCSR storage location.

8. A tether line will be stored at the end of the lifeline, in the primary escapeway, on each working section. Each tether line will be long enough to connect all miners normally assigned to that work area.

VII. Detectors

1. A detection instrument capable of determining the amount of oxygen, methane, and carbon monoxide in the mine atmosphere will be provided and located on each working section.

2. Gas detection instruments will be calibrated at least monthly in accordance with manufacturers' recommendations.

VIII. Barricade Material

1. Each working section will have barricade material maintained in a substantially constructed storage box or an approved portable rescue chamber.

2. Each barricade storage box will contain, at a minimum:

a. Three substantial curtains 25 foot in length and at least one foot higher than the maximum seam height at the mine,

b. A supply of nails,

c. At least two non-sparking hammers,

d. Sealing material, and

e. Either two saws and nine timbers with wedges or nine adjustable supports such as pogo sticks to erect the three barricade curtains.

IX. SCSR Storage

1. Each miner working underground will have at least one additional SCSR (other than the SCSR worn on the belt) available on the working section and if miners travel on mantrips or other mobile equipment then the mantrips will be provided with enough SCSRs so that each miner is supplied one additional SCSR. SCSRs stored on mantrips or mobile equipment, which remains on the section, will suffice for the additional SCSR that must be supplied to each miner.

2. When the SCSRs otherwise required by paragraph one are not adequate to provide enough oxygen for all persons to safely evacuate the mine, additional SCSRs will be provided in the primary and alternate escapeways. The location and number of SCSRs stored will be sufficient for the maximum number of miners in the mine and will be provided at intervals to ensure that each miner has a sufficient supply of SCSRs to reach the surface or bottom of shaft or slope.

3. Storage caches will be provided at conspicuous, readily accessible, safe locations.

4. SCSR storage caches will be established such that the distance between caches is a maximum of 45 minutes of walking or crawling time.

5. SCSR storage caches will be established for both primary and alternate escapeways.

6. Each SCSR storage cache and mantrip station will be conspicuously designated with reflective signs indicating "SELF-RESCUERS" and direction signs made of reflective material will be posted in each entry leading to each storage location.

7. SCSR storage caches will be located in protected areas and/or containers according to manufacturer's recommendations.

8. The location of SCSR storage caches will be noted on the mine map maintained on the surface and mine emergency escapeway maps.

9. Each SCSR will provide one hour or more of protection and be approved by the Mine Safety and Health Administration.

X. SCSR Training

1. Prior to any newly employed miner or visitor, authorized by the operator, going underground, the operator shall instruct and train such persons in the use and location of self rescue devices. Visitors who make multiple visits within a one-year period are only required to receive such training on the first visit and annually thereafter.

2. The training shall include instruction and demonstration in the use, care, and maintenance of the self-rescue devices used at the mine.

3. The training in the use of the self- rescue devices shall include complete donning procedures in which:

a. Each person assumes a donning position,

b. Opens the device,

c. Activates the device,

d. Inserts the mouth piece (or simulates this task while explaining proper insertion of the mouth piece),

e. Applies the nose clip, and

f. Transfers from one unit to another.

4. A record of the training will be maintained at the mine with the date of the training, names of persons receiving the training, the name of the person conducting the training, and the model of the self-rescue device(s) used in the training.

Xl. Mine Emergency Evacuation and Fire Fighting Training

1. All miners on all shifts will be instructed in the following:

a. Procedures for evacuating the mine for mine emergencies that present an imminent danger to miners due to fire, explosion, or gas or water inundation;

b. Scenarios of the various mine emergencies (fires, explosions, gas or water inundations) and best options for evacuation under each type of

emergency condition. These options will include conditions in the mine that will require immediate donning of self-rescue devices;

c. Procedures for evacuating all miners not required for a mine emergency response;

d. Procedures for the rapid assembly and transportation of necessary miners, fire suppression equipment, and rescue apparatus to the scene of the mine emergency;

e. Operation of the fire suppression equipment available in the mine;

f. Location and use of firefighting equipment and materials;

g. Location of escapeways, exits, and routes of travel to the surface, including the location and use of the continuous directional lifeline or equivalent devices.

h. Locations, quantity, types, and use of stored SCSRs, if applicable;

2. The mine emergency evacuation instruction and drills will be conducted by a person who is designated by the mine operator and who has the ability, training, knowledge, or experience to provide training to miners in his or her area of expertise. Persons conducting donning and transferring training will be able to effectively train and evaluate whether miners can successfully don the SCSR and transfer to additional SCSR devices.

3. Mine emergency evacuation drills will be held at periods of time so as to ensure that all miners participate in such evacuations at intervals of not more than 90 days.

4. During mine emergency evacuation drills, each miner shall travel the primary or alternate escapeway, from the working section or the miner's workstation, to the surface or the exits at the bottom of shaft or slope. An evacuation drill will not be conducted in the same escapeway as the immediately preceding drill. At a minimum this drill will include:

a. Physically locating the continuous directional lifelines or equivalent devices and stored SCSRs.

b. Hands-on training in the complete donning of all types of SCSRs used at the mine, which includes assuming a donning position, opening the device, activating the device, inserting the mouthpiece or simulating this task while explaining proper insertion of the mouthpiece, and putting on the nose clip.

c. Hands-on training in transferring from one SCSR to another.

d. Where miners ride transportation vehicles to travel the escapeway, the person conducting the drill will stop at the locations of SCSR storage caches or other appropriate locations and conduct drills consisting of actual travel on the lifeline and practice with the tether line connected to each miner.

5. A record of the training required in paragraph 4 (listed above) shall be recorded in a book maintained at the mine. The record will be maintained for one year and will include the names of the participants in such drill, the models of SCSRs used, and the type of emergency drill.

6. All miners on each working section will be familiar with the use of fire suppression equipment available and fire suppression devices installed on equipment and know the location of such fire suppression equipment and devices.

XII. Evacuation Procedures

1. Account for all miners on the section or located in that work area. Gather them at a strategic location.

2. Don the SCSRs at the first sign of smoke or indication of carbon monoxide. Miners should don a self-rescue device when smoke, odor, fire, or any contaminated atmosphere is encountered. Enough SCSRs will be available to ensure that all miners can safely reach the surface.

3. Prepare to evacuate to the surface:

a. Collect all available SCSRs;

b. Collect the escapeway map, if applicable;

c. Collect tether line, if applicable;

d. Call outside, if possible, report the number of miners in the group and the evacuation route to be traveled;

e. Explain to the miners what is known about the emergency situation and which route is to be taken;

f. Stress the importance of staying together during the evacuation.

4. Travel by mantrip or utilize other equipment for transportation if at all possible.

5. Select the safest and quickest route to the surface depending on the conditions that exist in the mine:

a. The first choice is generally the travelway used normally to enter and exit the mine (usually this is the primary or alternate escapeway).

b. The second choice is generally the other escapeway not used normally to enter and exit the mine.

c. The third choice would be any other entry not discussed above.

6. If walking or crawling, regulate travel speed to accommodate the slower personnel in the group. Maintain contact with the lifeline, if applicable. Stay together. Monitor the physical conditions of other miners in the group.

7. Continuously monitor the mine atmosphere for oxygen deficiency, methane content, and elevated carbon monoxide levels. Keep in mind that:

a. That 19.5 percent oxygen is the minimum required by law. Oxygen levels below 17 percent causes faster and deeper breathing and below 15 percent causes dizziness, buzzing noise, rapid pulse, headache, and blurred vision,

b. Methane is explosive from 5 percent to 15 percent, and

c. Carbon monoxide levels above 600 PPM will give noticeable effects after one hour of exposure, and levels above 1500 PPM are dangerous for a one-hour exposure.

8. Contact the surface when communication is available. Give regular updates of location, conditions encountered, status of miners, and transportation means being utilized.

9. When SCSR storage caches are encountered, collect one for each miner in the group. Do not take more, as miners evacuating from other areas of the mine may also require SCSRs to reach the surface. SCSR storage caches are strategically located in order to provide sufficient oxygen for all miners to reach the surface.

10. Continue traveling the selected route unless the way is blocked by water, fire, or other conditions. In this case, retreat to the closest mandoor that leads to the other escapeways and attempt to travel to the surface via other routes.

11. If traveling in smoke, maintain contact with the lifeline, attach tether line if available, and maintain communication with other miners. Check through mandoors on the evacuation route for smoke in the adjacent entries and, if clear, the miners should consider utilizing the alternate route.

12. Consider barricading or entering a refuge chamber only when all escape routes are physically blocked or too hazardous to travel. When barricading is the only alternative, then use all available resources to make the barricaded area airtight as possible. Keep in mind that one (1) cubic yard of air per person per hour is required for survival. Leave a note outside the barricade indicating the number of miners and time the barricade was built. Oxygen tanks, water, food, all available SCSRs, and a sounding device for striking roof supports to aid in seismic location from the surface should be taken into the barricade.

XIII. Emergency Logistics (Complete with mine specific information)

1. The following plans for logistics in case of an emergency will be maintained at the mine site. The plans should include at a minimum:

a. Description of security measures that will be implemented to control emergencies at the mine site,

b. Designated location of a command and communication center,

c. Designated location for staging and briefing mine rescue teams,

d. Designated location for emergency medical services,

e. Designated location for shelter and briefing of families, and

f. Strategy for dissemination of information and press releases.

XIV. Mine Emergency Response Drill (MERD)

1. A Mine Emergency Response Drill will be conducted annually; preferably in conjunction with a 90-day mine emergency evacuation drill or at other times selected by the operator.

2. The drill will consist of:

a. A simulated mine emergency that causes a deployment (simulated) of mine rescue teams;

b. Simulated entrapment of miners in the mine;

c. A review of notification procedures required by this plan;

d. Review and simulation of activation of the Emergency Logistics Plan described in the previous section.

3. The Division of Mines will be notified prior to conducting the mine emergency response drill (MERD). A DM representative may monitor the simulated drill and give feed back regarding application of the pertinent aspects of this plan.

Attachments

Attachments are considered supplements to the plan to aid operators with compliance with communication and training requirements. The following attachments are not considered part of the plan and are not required for approval.

Attachment A

Title	Name of Person or Facility	Phone Number
Person with Overall Responsibility		
Person in Charge of Health and Safety		
Mine Foreman		
Chief, Division of Mines	Frank A. Linkous	
Supervisor, Division of Mines		
DMME Mine Inspector		
MSHA District Manager	Ed Morgan	
MSHA Supervisor		
MSHA Mine Inspector		
State Police		(800) 542-8716
County Sheriff		
Town/City Police		
Rescue Squad		
Hospital		
Fire Department		
Mine Rescue Team		

VA Division of Mines		**MSHA**	
Big Stone Gap	**(276) 523-8100**	**Norton**	**(276) 679-0230**
Keen Mountain	**(276) 498-4533**	**Oakwood**	**(276) 498-4533**

Attachment B

Fire Scenario Training

1) Any person discovering a fire and others in the immediate vicinity shall make a prompt effort to extinguish the fire. Those efforts would include activation of applicable fire suppression systems and/or direct application of water or fire extinguisher agents.

2) Insert AMS system warning/reaction guidelines and associated evacuation procedures, if applicable.

3) The type, location, and extent of the fire, if known, shall be reported immediately to the authorized person located on the surface. The authorized person located on the surface shall do the following immediately upon receiving information that a fire has occurred:

a. Contact the responsible person or designee at the mine, supervisors and/or personnel in all available areas of the mine;

b. Notify Division of Mines and MSHA officials immediately, at once without delay after confirming the incident and within 15 minutes;

c. Notify mine rescue teams and other support personnel as directed by the responsible person or designee.

Underground personnel evacuating should, if possible and time permitting, contact surface personnel from the first accessible telephone and provide the following information:

1. Location and extent of fire, if known, and conditions present at your location;
2. Any miners evacuating from the mine and their location, condition, etc;
3. Number of miners leaving a particular location;
4. Direction, entry, and method of evacuation (riding, walking, crawling, etc.)

4) The location and size of a fire area in conjunction with methane liberation and other mine specific conditions must dictate whether miners will attempt to extinguish a fire or withdraw to the surface immediately.

5) All underground personnel shall be accounted for, assembled to prepare for evacuation, and withdrawn to a location designated by the responsible person or his designee. Miners shall report changes in normal work areas to the responsible person or authorized person on the surface.

6) All mine personnel not required for a mine emergency response shall evacuate from the mine by the quickest, most practical means that varies, depending on the situation, post-fire conditions, availability of transportation equipment, etc. If the fire cannot be extinguished and conditions are such that emergency response

personnel are in imminent danger, then all personnel will be evacuated immediately to the surface.

7) All miners must know and understand the mine ventilation system and where smoke and toxic fire gases would travel from any fire location to your location in the mine. Mine fires create special dangers to all personnel located underground including: (1) restricted or zero visibility while attempting escape from the mine; (2) extreme heat that affects the body, lungs, and mine roof; (3) smoke; (4) carbon monoxide, carbon dioxide, and toxic smoke tars.

8) The electrical power to the affected equipment and/or area of the mine shall be de-energized as directed by the responsible person or his designee. Electrical power to other areas of the mine or equipment should be de-energized or disconnected as necessary, while considering evacuation of mine personnel.

9) All underground mine personnel should attempt evacuation from the mine – by identifying primary escapeway and alternate (secondary) escapeway entries and considering.

- **FIRST CHOICE** – The entry traveled during your normal mode of transportation into and out of the mine is usually the quickest and is usually the primary or alternate (secondary) escapeway. The entry traveled into and out of the mine should be traveled until conditions such as physical obstructions, smoke, fire, etc. prevent further evacuation in this entry. The decision to evacuate and ride in the primary OR alternate (secondary) escapeway depends on several factors including the mine ventilation, presence of smoke, fire, toxic fire/explosion gases, physical obstructions, etc. This decision should be based on the entry, which would provide the most practical, safest, and most expedient evacuation from the mine. REMEMBER: You can always ride faster than you can walk or crawl and with conditions permitting, ride as far as you possibly can.
- **SECOND CHOICE** – If at the beginning or during evacuation and you have no transportation equipment available to ride in the primary or alternate (secondary) escapeway, then with conditions permitting – walk or crawl the primary or secondary escapeway. The decision whether to travel the primary or secondary escapeway depends on many factors as previously described. If the escapeway being traveled becomes blocked with obstructions such as roof falls, water, smoke, fire, etc., then you have to consider further evacuation in a different escapeway entry.
- **THIRD CHOICE** – An alternate (secondary) or intake escapeway not selected as the second choice.

10) Each miner shall have an SCSR in their possession and an additional SCSR readily accessible or on the transportation equipment. The additional SCSR storage locations are shown on both the mine map (surface) and escapeway map. Identify locations of stored SCSRs, if applicable. Miners should don a self-rescue device when smoke, odor, fire, or any contaminated atmosphere is encountered. Miners are encouraged to don self-rescue devices whenever they believe they are

exposed to a toxic or irrespirable atmosphere. Mine operators are encouraged to provide air quality detectors so that miners will be able to better identify hazardous atmospheres.

11) During evacuation, the miners should get an escapeway map, if applicable, to take with them. The escapeway entry, primary or alternate (secondary), that will be traveled shall be explained to all miners. The authorized person located on the surface should be informed of the number of miners beginning evacuation and the escape route that will be used while exiting the mine.

12) If walking or crawling, the supervisor should travel in front with all persons using the lifeline to ensure no one is left behind. The miners should move fast but should never run even when coal heights allow. The miners should regulate their travel speed to accommodate the slower personnel in the group.

13) Mining personnel should consider the following if a decision is made to extinguish the fire:

- Ventilation to the fire area should be established, maintained, and evaluated periodically to provide access for fire-fighting efforts;
- Fire-fighting efforts should be conducted from the outby, fresh air ventilation side, of the fire area;
- Fire-fighting equipment should be assembled immediately and preparations made for fire-fighting efforts. Equipment would include water hose and nozzles, rock dust, fire extinguishers, saws, hammers, nails, ventilation curtain, etc.;
- Water and/or foam can be used for fire fighting when conditions prohibit a close-up, direct approach to the fire area. Always de-energize electrical power to affected equipment or areas of the mine prior to applying water and/or foam to a fire;
- Ventilation stoppings located inby or outby the fire area may have to be removed or altered to short-circuit the ventilation to allow close access necessary to extinguish the fire. Use extreme caution while traveling inby a fire area to perform this type ventilation work.

14) The miners should consider barricading or entering a refuge chamber only when all escape routes are blocked or too hazardous to travel. When all possible means of escape are exhausted and barricading is the only alternative, then barricade using all available resources to make the barricaded area airtight as possible while knowing that one (1) cubic yard of air per person per hour is required for survival. A note should be left outside the barricade indicating the number of miners and time the barricade was built. Oxygen tanks, water, food, all available SCSRs, and a sounding device for striking roof supports for seismic location from the surface must be taken into the barricade.

Attachment C

Explosion Scenario Training

1) The location and extent of the explosion, if known, shall be reported immediately to the authorized person located on the surface. The authorized person located on the surface shall do the following immediately upon receiving information that an explosion has occurred:

a. Contact the responsible person or designee at the mine, supervisors, and/or personnel in all available areas of the mine;

b. Notify Division of Mines and MSHA officials immediately, at once without delay after confirming the incident and within 15 minutes;

c. Notify mine rescue teams and other support personnel as directed by the responsible person or his designee.

Underground personnel evacuating should, if possible and time permitting, contact surface personnel from the first accessible telephone and provide the following information:

1. Location and extent of explosion, if known, and conditions present at your location;
2. Any miners evacuating from the mine and their location, condition, etc;
3. Number of miners leaving a particular location;
4. Direction, entry, and method of evacuation (riding, walking, crawling, etc.)

2) All mine personnel not required for a mine emergency response shall evacuate from the mine by the quickest, most practical means that varies, depending on the situation, post-explosion conditions, availability of transportation equipment, etc.

3) All underground personnel shall be accounted for, assembled to prepare for evacuation and withdrawn to a location designated by the responsible person or his designee. Miners shall report changes in normal work areas to the responsible person or authorized person on the surface.

4) The electrical power to the affected area of the mine shall be de-energized as directed by the responsible person or his designee. Electrical power to other areas of the mine should be de-energized as necessary, while considering evacuation of mine personnel.

5) All underground personnel not required for emergency response shall evacuate by traveling the primary or alternate (secondary) escapeway as directed by the mine responsible person or his designee, taking into consideration:

- **FIRST CHOICE** – The entry traveled using the normal mode of transportation into and out of the mine is usually the quickest and is usually the primary or alternate (secondary) escapeway. The entry traveled into and out of the mine should be traveled until conditions such as physical

obstructions, smoke, fire, etc. prevent further evacuation in this entry. The decision to evacuate and ride in the primary or alternate (secondary) escapeway depends on several factors including the mine ventilation, presence of smoke, fire, toxic fire/explosion gases, physical obstructions, etc. This decision should be based on the entry, which would provide the most practical, safest and most expedient evacuation from the mine. REMEMBER: You can always ride faster than you can walk or crawl and with conditions permitting, ride as far as you possibly can.

- **SECOND CHOICE** – If at the beginning or during evacuation and you have no transportation equipment available to ride in the primary or alternate (secondary) escapeway, then with conditions permitting – walk or crawl the primary or secondary escapeway. The decision whether to travel the primary or secondary escapeway depends on many factors as previously described. If the escapeway being traveled becomes blocked with obstructions such as roof falls, water, smoke, fire, etc., then you have to consider further evacuation in a different escapeway entry.
- **THIRD CHOICE** – An alternate (secondary) or intake escapeway not selected as the second choice.

6) Each miner shall have an SCSR in their possession and an additional SCSR readily accessible or on the transportation equipment. The additional SCSR storage locations are shown on both the mine map (surface) and escapeway map. Identify locations of stored SCSRs, if applicable. Miners should don a self-rescue device when smoke, odor, fire, or any contaminated atmosphere is encountered. Miners are encouraged to don self-rescue devices whenever they believe they are exposed to a toxic or irrespirable atmosphere. Mine operators are encouraged to provide air quality detectors so that miners will be able to better identify hazardous atmospheres.

7) Lifelines or equivalent devices are provided in both the primary and secondary (alternate) escapeway entries.

8) Additional SCSRs are stored on active working sections; sections being installed or removed; at rehabilitation sites; located at crosscut no.(s) ___ ___; and are physically attached to the lifelines or equivalent devices. Reflective, direction signs are conspicuously posted in each entry that identifies each storage location.

9) During evacuation, the miners should get an escapeway map, if applicable, to take with them. The escapeway entry, primary or alternate (secondary), that will be traveled shall be explained to all miners. The authorized person located on the surface should be informed of the number of miners beginning evacuation and the escape route that will be used while exiting the mine.

10) If walking or crawling, the supervisor should travel in front with all persons using the lifeline to ensure no one is left behind. The miners should move fast but should never run even when coal heights allow. The miners should regulate their travel speed to accommodate the slower personnel in the group.

11) The miners should consider barricading or entering a refuge chamber only when all escape routes are physically blocked or too hazardous to travel. When all possible means of escape are exhausted and barricading is the only alternative, then barricade using all available resources to make the barricaded area airtight as possible while knowing that one (1) cubic yard of air per person per hour is required for survival. A note should be left outside the barricade indicating the number of miners and time the barricade was built. Oxygen tanks, water, food, all available SCSRs and a sounding device for striking roof supports for seismic location from the surface must be taken into the barricade.

Attachment D

Gas Inundation Scenario Training

1) The location and extent of the gas inundation, if known, shall be reported immediately to the authorized person located on the surface. The authorized person located on the surface shall do the following immediately upon receiving information that a gas inundation has occurred:

a. Contact the responsible person or designee at the mine, supervisors and/or personnel in all available areas of the mine;

b. Notify Division of Mines and MSHA officials immediately, at once without delay after confirming the incident and within 15 minutes;

c. Notify mine rescue teams and other support personnel as directed by the responsible person or designee.

Underground personnel evacuating should, if possible and time permitting, contact surface personnel from the first accessible telephone and provide the following information:

1. Location and extent of gas inundation, if known, and conditions present at your location;
2. Any miners evacuating from the mine and their location, condition, etc;
3. Number of miners leaving a particular location;
4. Direction, entry, and method of evacuation (riding, walking, crawling, etc.)

2) All mine personnel not required for a mine emergency response shall evacuate from the mine by the quickest, most practical means that varies, depending on the situation, post-inundation conditions, availability of transportation equipment, etc.

3) All underground personnel shall be accounted for, assembled to prepare for evacuation, and withdrawn to a location designated by the responsible person or his designee. Miners shall report changes in normal work areas to the responsible person or authorized person on the surface.

4) The electrical power to the affected area of the mine shall be de-energized as directed by the responsible person or his designee. Electrical power to other areas of the mine should be de-energized as necessary, while considering evacuation of mine personnel.

5) All underground mine personnel should attempt evacuation from the mine - identifying primary escapeway and alternate (secondary) escapeway entries, taking into consideration:

- **FIRST CHOICE** – The entry traveled during your normal mode of transportation into and out of the mine is usually the quickest and is usually

the primary or alternate (secondary) escapeway. The entry traveled into and out of the mine should be traveled until conditions such as physical obstructions prevent further evacuation in this entry. The decision to evacuate and ride in the primary OR alternate (secondary) escapeway depends on several factors including the mine ventilation, presence of explosive gases, physical obstructions, irrespirable atmosphere, etc. Diesel-powered equipment is inoperative in high concentrations of methane and in irrespirable atmospheres. Battery-powered equipment must not be operated in explosive atmospheres. This decision should be based on the entry, which would provide the most practical, safest and most expedient evacuation from the mine.

    - REMEMBER: You can always ride faster than you can walk or crawl and with conditions permitting, ride as far as you possibly can.

- **SECOND CHOICE** – If at the beginning or during evacuation and you have no transportation equipment available to ride in the primary or alternate (secondary) escapeway, then with conditions permitting – walk or crawl the primary or secondary escapeway. The decision whether to travel the primary or secondary escapeway depends on many factors as previously described. If the escapeway being traveled becomes blocked with obstructions, then you have to consider further evacuation in a different escapeway entry.
- **THIRD CHOICE** – An alternate (secondary) or intake escapeway not selected as the second choice.

6) Each miner shall have an SCSR in their possession and an additional SCSR readily accessible or on the transportation equipment. The additional SCSR storage locations are shown on both the mine map (surface) and escapeway map. Identify locations of stored SCSRs, if applicable. Miners should don a self-rescue device when smoke, odor, fire, or any contaminated atmosphere is encountered. Miners are encouraged to don self-rescue devices whenever they believe they are exposed to a toxic or irrespirable atmosphere. Mine operators are encouraged to provide air quality detectors so that miners will be able to better identify hazardous atmospheres.

7) Lifelines or equivalent devices are provided in both the primary and secondary (alternate) escapeway entries.

8) Additional SCSRs are stored on active working sections; sections being installed or removed; at rehabilitation sites; located at crosscut no.(s) ___ ___; and are physically attached to the lifelines or equivalent devices. Reflective, direction signs are conspicuously posted in each entry that identifies each storage location.

9) During evacuation, the miners should get an escapeway map, if applicable, to take with them. The escapeway entry, primary or alternate (secondary), that will be traveled shall be explained to all miners. The authorized person located on the surface should be informed of the number of miners beginning evacuation and the escape route that will be used while exiting the mine.

10) If walking or crawling, the supervisor should travel in front with all persons using the lifeline to ensure no one is left behind. The miners should move fast but should never run even when coal heights allow. The miners should regulate their travel speed to accommodate the slower personnel in the group.

11) All miners should know and understand the following:

- Mine gases including methane, low oxygen, blackdamp, carbon dioxide, etc. could enter your mine from another mine or from underlying, overlying, or adjacent strata;
- The rate of flow of gases into your mine depend on your ventilation system, elevations of other mines, if applicable, in relation to your mine and whether or not the mine gases are pressurized;
- Mine gases will have a tendency to be drawn into your mine from underlying/overlying strata, old mines, etc. if your mine fan is exhausting;
- Mine ventilation associated with a blowing fan will have a tendency to apply some pressure against the inundating mine gases but pressurized gases entering your mine could override your mine ventilation system.

12) The miners should consider barricading or entering a refuge chamber only when all escape routes are physically blocked or too hazardous to travel. When all possible means of escape are exhausted and barricading is the only alternative, then barricade using all available resources to make the barricaded area airtight as possible while knowing that one (1) cubic yard of air per person per hour is required for survival. A note should be left outside the barricade indicating the number of miners and time the barricade was built. Oxygen tanks, water, food, all available SCSRs and a sounding device for striking roof supports for seismic location from the surface must be taken into the barricade.

Attachment E

Water Inundation Training Scenario

1) The location and extent of the water inundation, if known, shall be reported immediately to the authorized person located on the surface. The authorized person located on the surface shall do the following immediately upon receiving information that a water inundation has occurred:

a. Contact the responsible person or designee at the mine, supervisors, and/or personnel in all available areas of the mine;

b. Notify Division of Mines and MSHA officials immediately, at once without delay after confirming the incident and within 15 minutes;

c. Notify mine rescue teams and other support personnel as directed by the responsible person or designee.

Underground personnel evacuating should, if possible and time permitting, contact surface personnel from the first accessible telephone and provide the following information:

1. Location and extent of water inundation, if known, and conditions present at your location;
2. Any miners evacuating from the mine and their location, condition, etc;
3. Number of miners leaving a particular location;
4. Direction, entry, and method of evacuation (riding, walking, crawling, etc.)

2) All mine personnel shall evacuate from the mine by the quickest, most practical means that varies, depending on the situation, post-inundation conditions, availability of transportation equipment, etc.

3) All underground personnel shall be accounted for, assembled to prepare for evacuation, and withdrawn to a location designated by the responsible person or his designee. Miners shall report changes in normal work areas to the responsible person or authorized person on the surface.

4) The electrical power to the affected area of the mine shall be de-energized as directed by the responsible person or his designee. Electrical power to other areas of the mine should be de-energized as necessary, while considering evacuation of mine personnel.

5) All underground mine personnel should attempt evacuation from the mine - identifying primary escapeway and alternate (secondary) escapeway entries, taking into consideration:

- **FIRST CHOICE** – The entry traveled during your normal mode of transportation into and out of the mine is usually the quickest and is usually

the primary or alternate (secondary) escapeway. The entry traveled into and out of the mine should be traveled until conditions such as physical obstructions prevent further evacuation in this entry. The decision to evacuate and ride in the primary or alternate (secondary) escapeway depends on several factors including the mine ventilation, irrespirable atmospheres, physical obstructions, etc. This decision should be based on the entry, which would provide the most practical, safest, and most expedient evacuation from the mine.

- **REMEMBER: You can always ride faster than you can walk or crawl and with conditions permitting, ride as far as you possibly can.**

- **SECOND CHOICE** – If at the beginning or during evacuation and you have no transportation equipment available to ride in the primary or alternate (secondary) escapeway, then with conditions permitting – walk or crawl the primary or secondary escapeway. The decision whether to travel the primary or secondary escapeway depends on many factors as previously described. If the escapeway being traveled becomes blocked with obstructions such as water, then you have to consider further evacuation in a different escapeway entry.
- **THIRD CHOICE** – An alternate (secondary) or intake escapeway not selected as the second choice.

6) Each miner shall have an SCSR in their possession and an additional SCSR readily accessible or on the transportation equipment. The additional SCSR storage locations are shown on both the mine map (surface) and escapeway map. Identify locations of stored SCSRs, if applicable. Miners should don a self-rescue device when smoke, odor, fire, or any contaminated atmosphere is encountered. Miners are encouraged to don self-rescue devices whenever they believe they are exposed to a toxic or irrespirable atmosphere. Mine operators are encouraged to provide air quality detectors so that miners will be able to better identify hazardous atmospheres.

7) Lifelines or equivalent devices are provided in both the primary and secondary (alternate) escapeway entries.

8) Additional SCSRs are stored on active working sections; sections being installed or removed; at rehabilitation sites; located at crosscut no.(s) ___ ___; and are physically attached to the lifelines or equivalent devices. Reflective, direction signs are conspicuously posted in each entry that identifies each storage location.

9) During evacuation, the miners should get an escapeway map, if applicable, to take with them. The escapeway entry, primary or alternate (secondary), that will be traveled shall be explained to all miners. The authorized person located on the surface should be informed of the number of miners beginning evacuation and the escape route that will be used while exiting the mine.

10) If walking or crawling, the supervisor should travel in front with all persons using the lifeline to ensure no one is left behind. The miners should move fast but

should never run even when coal heights allow. The miners should regulate their travel speed to accommodate the slower personnel in the group.

11) All miners should know and understand the following:

- The mine emergency escapeways;
- The mine ventilation system;
- Mine elevations (coal contour lines) and all low places, dips, etc. in your mine – water and blackdamp (carbon dioxide) will flow to low-lying areas;
- Where and how water drains in your mine and how water accumulations affect the mine ventilation system, especially in escapeway entries;
- The mine water drainage system and pumps located in the emergency escapeway entries and the result when such pumps are de-energized.

12) The miners should consider traveling to the highest, most accessible area of the mine and/or barricading or entering a refuge chamber only when all escape routes are blocked. These two options should only be considered as a last resort and only when all escape routes are physically blocked or too hazardous to travel. When all possible means of escape are exhausted and moving to higher ground and/or barricading are the only alternatives, then barricade using all available resources to make the barricaded area airtight as possible while knowing that one (1) cubic yard of air per person per hour is required for survival. A note should be left outside the barricade indicating the number of miners and time the barricade was built. Oxygen tanks, water, food, all available SCSRs and a sounding device for striking roof supports for seismic location from the surface must be taken into the barricade.