

Sand and Gravel Mining  
Safety Training  
Office of State Mine Inspector

Aug 21, 22, 2003

8 AM - 4 PM

1700 W Washington Street

Phoenix, Arizona

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**David Boggs - FCDX**

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**From:** Mary Jude Pickett [mpickett@mi.state.az.us]

**Sent:** Thursday, July 10, 2003 9:20 AM

**To:** dbb@mail.maricopa.gov

**Subject:** Mine Safety Training Part 46 Lesson Plans

Dear David,

Here are the Part 46 Training plans that we had talked about. Part 46 is in reference to the Sand and Gravel industry. Please read the direction and e-mail us back the completed forms so that we may have them on file for your New miner class on Thursday, August 21 and Friday, August 22. If you have ANY questions please feel free to call me at 602-542-7317.

<<A Directions for completion.doc>> <<B pt 46 1 to 11.doc>> <<A TABLE OF CONTENTS.xls>> <<B Lessons plans.doc>>

Be safe out there!

Mary Pickett C.M.S.P.  
Education and Training  
Arizona State Mine Inspector's Office  
602-542-7317

## Part 46 Lesson Plan 1

### Introduction to the Work Environment (30 Min. - 2 Hours)

#### Learning Objectives:

- 1) Employees will be able to describe the facility layout, work areas, traffic patterns, PPE requirements, and important safety and health issues in the active work areas.
- 2) Employees will explain and demonstrate how to carry out their personal responsibilities for safety and health within the active work areas.
- 3) Employees will identify and explain the regulations contained in 30 CFR Part 56 as they relate to potential hazards in the active work areas.
- 4) Employees will demonstrate how to take action for complying with the regulations and avoiding hazards within the active work areas.

#### Materials needed:

- 1) Mine Safety and Health Act of 1977.
- 2) A copy of 30 CFR Part 56 for each trainee.
- 3) Employee Handbook or Company Safety Manual/Rule Book.
- 4) Overheads, slides, or photo's showing the various active work areas within the facility.
- 5) A screen and overhead projector or slide projector
- 6) Copies of MSHA citations giving details of any safety and health violations for each trainee.
- 7) Pencil and paper for each trainee.

#### Allotted Time:

This training session is allotted 2 hours for completion as per the training plan. More time can be devoted to this subject if you desire to exceed the 24-hour training requirement for inexperienced miners.

#### Strategy

- 1) Introduce the lesson by using a video or slides to give a general overview of the facility and the various active work areas (quarry face, haul roads, crushing, screening, conveying, load- out, etc.).
- 2) Use slides or overheads to show examples of accidents that have occurred on access roads, at stockpiles, at highwalls and haul roads, at conveyors, screens, bins and hoppers and in electrical switch houses to illustrate why we have company procedures and rules and federal and state safety and health regulations.
- 3) Explain the site specific rules that the employee must obey and why. Cover personal protective equipment, lock out and tagout procedures, traffic patterns and traffic controls, general fall

protection requirements, and any specific safety and health issues that apply to each of the active work areas reviewed.

- 4) Take the employee on a walk around tour of all work areas using the show and tell approach to help the employee understand the hazards you previously reviewed and to emphasize the applicable safety and health requirements he or she will be responsible for following.

**Performance Assessment and Evaluation Methods:**

- 1) Get trainees to identify verbally the various active work areas.
- 2) Get trainees to describe the safety and health measures in each active work area.
- 3) Get miners to describe the procedures for reporting and correcting safety and health hazards in the active work areas.
- 4) Get trainees to explain their personal responsibilities and to repeat back to you what you expect them to do when working in or entering the areas they have seen.

## Lesson Plan 2

### Recognition and Avoidance of Hazards (30 Min.-2 Hours)

#### Learning Objectives:

- 1) Miners will demonstrate their ability to identify potential hazards in the mine environment including; electrical hazards, machinery hazards, fall hazards, engulfment hazards, hazardous energy, confined spaces, materials handling, water hazards, and ground control hazards.
- 2) Miners will demonstrate their knowledge of the proper procedure to correct and/or avoid identified hazards.

#### Materials needed:

- 1) Mine Safety and Health Act of 1977.
- 2) Title 30, Code of Federal Regulations, Parts 1 through 199.
- 3) Employee Handbook or Company Safety Manual/Rule Book.
- 4) Overheads or slides depicting various hazards found in the workplace.
- 5) Overheads or slides showing the best practice for avoidance or correction of various hazards found in the workplace
- 6) Selected videos pertinent to each hazard segment.
- 7) TV/VCR for video presentation.
- 8) White board or blackboard with markers or chalk.
- 9) A screen and overhead projector or slide projector.
- 10) Citations from a MSHA inspection for each class participant.
- 11) Pencil and paper for each trainee.
- 12) The company's workplace examination program and related materials.

#### Allotted Time:

This training session is allotted approximately 2 hours for completion as per the training plan. More time can be devoted to this subject if you desire to exceed the 24-hour training requirement for inexperienced miners.

#### Strategy:

- 1) Introduce this session by discussing various MSHA citations or accidents that have resulted from unsafe conditions or work practices. Use slides or overheads to show actual scenes in the workplace and get employees to evaluate and analyze the hazards by identifying how likely it is for an accident to occur and to predict the likely consequences. The goal is to get employees to be a better job at hazard recognition by fully evaluating what can go wrong. Discuss various corrective measures that can be taken to correct or avoid the hazard.

2) Explain:

- a) Electrical hazards at the mine
  - How electricity works and what causes shock.
  - Examples of electrical hazards – how to recognize.
  - How to avoid shock; principles of grounding and ground fault protection
  - What to do if someone gets shocked
- b) Moving machinery hazards; gears pulleys, belts, sprockets, idlers, and shafts.
  - Principles of guarding
  - Handrails and stop cords.
  - Replacing and securing guards.
  - Identifying and avoiding pinch points
- c) Hydraulic, pneumatic, and stored energy hazards
  - Lockout/Tagout procedures
  - Gravity
  - Compressed air or fluid injection
  - Securing against whipping action of hoses
- d) Confined space hazards
  - Ventilation and engulfment
  - Lifeline, attendant, communication and rescue
  - Lockout/Tagout, moving machine parts
  - Permit system
- e) Bin, Hopper and surge pile hazards
  - Bridged material, underground hazards
  - Bridged material, overhead hazards
  - Attendant and lifelines
  - Ground conditions and environmental factors, weather
- f) Fall hazards
  - Personal fall arrest systems  
(Harnesses, lifelines, lanyards, attachment points, shock absorbers)
  - Handrails, guardrails, toe boards, gates and chains
  - Ladders, portable and fixed
- g) Crane and rigging hazards
  - Electrical hazards
  - Stability, capacity, leverage, center of gravity
  - Load charts and calculations
  - Overhead, swing, and area hazards
  - Rigging, inspection and signaling

- h) Aerial Work Platform (Man-lifts)
    - Scissors, boom and bucket truck
    - Fall hazards and stability
  - i) Small tool hazards
    - Hand tool hazards
    - Electric power tool and portable light hazards
    - Hydraulic and air tool hazards
  - j) Welding and Cutting Hazards
    - Oxygen / Acetylene Hazards
    - Electric Welding Hazard
    - Storage Hazards
  - k) Ground control hazards
    - Highwalls, berms, scaling
    - Stockpiles, ramps
    - Banks and dumpsites
    - Haul Roads
  - l) Water hazards
    - Lifejackets and life-rings
    - Boats, floats, and barges
  - m) Drilling hazards
    - Rotating parts
    - Procedures for moving and placing drills
    - Noise, dust
    - Falls
    - Drill logs, drill hole problems and the impact on blasting
  - n) Explosives and blasting
    - Communication and signals
    - Caps, boosters and initiation systems
    - Transportation, handling, storage
- 3) Cover the appropriate MSHA regulations for each of the areas listed above. Use inspection history information to get the participants to identify where and how the conditions were permitted to exist. Discuss how to correct or have corrected identifiable hazardous conditions.
- 4) Review procedures in the company rule book or safety manual for reporting and correcting safety and health hazards.

**Performance Assessment and Evaluation Methods:**

- 1) Have class participants identify verbally or write down some potential hazards from each topic above.
- 2) Have class participants describe how the company workplace examination procedure for reporting and correcting safety and health hazards works.
- 3) Have class participants describe their personal experiences regarding hazards and their recognition.
- 4) Have class participants identify standard violations related to hazard recognition.
- 5) Have class participants identify various correction and avoidance techniques for dealing with hazards.

## Lesson Plan 3

### Escape and Emergency Evacuation Plans Fire Warning Signals and Fire Fighting Procedures (15-30 Minutes)

**Task:** Plan for, organize and safely control emergency fire situations to minimize the effects upon the employees, company and the community.

**Conditions:** Use a real life emergency incident such as an actual fire incident at an aggregate operation to emphasize the importance of planning and practicing a response to emergency situations. The case study include emergency medical situations, and emphasize the need for fire prevention, fire warning, fire fighting, and emergency evacuation.

**Standards:** Miners will identify each of the fire prevention and control standards that are covered in the Mine Safety and Health Act and the regulations in 30CFR, Parts 56/57, Subpart C and will explain emergency procedures.

#### Learning Objectives:

- 1) Employees will explain emergency evacuation procedures, understand the priority of emergency notification and demonstrate what to do in an emergency.
- 2) Employees will identify unsafe conditions that could cause fire and explosion-hazards and describe prevention procedures.
- 3) Employees will identify the features of a fire extinguisher, the types of fire extinguishers and their use and demonstrate the proper activation of the fire extinguisher.

#### Materials needed:

- 1) 30 CFR Part 56/57
- 2) Employee Handbook or Company Safety Manual/Rule Book
- 3) Handouts and visuals from the module
- 4) A screen and overhead projector or slide projector
- 5) Transparencies or slides
- 6) Pencil and paper for each trainee
- 7) Demonstration models of your mine's fire extinguishers
- 8) First aid kit of the type used at your mine
- 9) Copies of your mine's emergency response/evacuation plan

#### Allotted Time:

This training session is allotted 30 minutes for completion as per the training plan. More time can be devoted to this subject if you desire to exceed the 24-hour training requirement for inexperienced miners.

**Strategy:**

- 1) Introduce the lesson with a visual representation of a serious fire that occurred in one of your mining operations. Discuss the causes of fires typical to a mining operation, i.e.- poor housekeeping, electrical problems, poor maintenance of equipment, improper storage of flammables, sparks from welding and cutting, defective heaters, smoking in prohibited areas, etc. Explain that the miner can prevent fires by practicing safe work procedures, by exercising good judgment in determining potentially hazardous situations, by taking the time to correct those hazardous situations, and by acting promptly and properly to prevent small fires from becoming large, destructive fires.
- 2) Ask the miners to describe the surface mine areas or situations in which fires are more likely to occur. Have them list on sheets of paper the commonsense work procedures they should follow to prevent fires. Emphasize training, inspection, housekeeping and maintenance as effective prevention techniques. Relate the above incident to the operator's responsibility, the miner's responsibility and MSHA regulations.
- 3) Explain Federal law governing surface mine fire fighting equipment. While compliance with Federal regulations on fire prevention, such as posting "No Smoking" signs, is the mine operator's responsibility, it's equally important that you, as a miner, obey and support these regulations. You should stress that it is their life that's on the line.
- 4) Federal law is very specific about the location, capacities, sizes, types and maintenance of fire fighting equipment at surface mines. Ask the miners to identify where fire extinguishers may be found at their mine in compliance with Federal law.
- 5) When the fire does start, the action you take in the first few minutes could be the difference between minor and major damage, and the difference between life and death. What type of fire you are fighting determines what type of fire extinguisher you should use. Obtain a fire extinguisher for display. Review the MSHA regulations governing inspection with the class. Have a volunteer demonstrate the proper procedure for operating a fire extinguisher. Incorporate the acronym PASS:  
  
P - Pull the Pin  
A - Aim Low (at the base of the fire)  
S - Squeeze the Handle  
S - Sweep (from side to side)
- 6) Review procedures in the company rule book or safety manual for the actions to initiate when a fire starts. Explain that their safety and the safety of their fellow workers should always be their number one priority.
- 7) In the event of a fire or accident at a mine, the miners should be aware of the location of first aid supplies in case they must help injured miners. Describe to the miners what their first aid

kit looks like. If possible, show them a first aid kit so they will be able to identify it on sight. Tell the miners exactly where first aid supplies are located at the mine.

- 8) Get the participants to compare their workplace to the one described in the accident report. Begin exploring ways to correct any weaknesses that are identified while reviewing the accident case.
- 9) Review emergency operations plan and site evacuation procedures. If possible, distribute copies of the plan and explain the priority of notification. Stress the importance of keeping abreast of any changes in your emergency plan. Review emergency assignments at the mine and identify where the plan is posted at their site.

#### **Performance Assessment and Evaluation Methods:**

- 1) Get trainees to write down or identify verbally the areas or situations in which fires are more likely to occur in their location.
- 2) Get trainees to describe the procedures for preventing fire and explosion hazards.
- 3) Get trainees to describe their personal responsibilities in fire prevention; Have them identify the responsibilities of supervisors.
- 4) Get trainees to identify the location of fire fighting equipment and first aid supplies; Have them demonstrate the proper operation of the equipment.
- 5) Get trainees to describe their site evacuation procedures and specific responsibilities assigned.

## **Lesson Plan 4**

### **(Duration of Training Varies On Need)**

#### **Hazard Recognition for Assigned Tasks**

#### **Learning Objectives:**

- 1) Employees will identify the safety and health hazards of assigned tasks.
- 2) Employees will demonstrate and explain how to avoid the safety and health hazards.
- 3) Employees will identify safety and health standards from 30 CFR parts 1 through 199 for the assigned tasks and other applicable standards including company safety rules.

#### **Materials Needed:**

- 1) Company Safety and Health Rules
- 2) 30 CFR Parts 1 - 199
- 3) Applicable MSHA Hazard Alerts and Fatalgrams
- 4) Overheads or slides showing scenes of the assigned tasks.
- 5) MSDS's for chemicals to be used in assigned tasks.
- 6) MSHA On The Job Training Modules
- 7) A screen and overhead projector or slide projector
- 8) TV, VCR and applicable training videos addressing assigned tasks, which cover hazards and safety & health procedures.
- 9) Pencil and paper for each employee

#### **Allotted Time:**

The length of this training session varies depending on the employee's awareness of the hazards, but the hazards must be fully identified and safe procedures understood before the employee is permitted to try or practice the task under close observation by the competent person.

#### **Setting:**

This training will take place in the plant office or meeting room using slides, videos and visuals to emphasize the major hazards and preventive measures. It will be followed by a visit to active work areas where the show and tell method of training will be used to develop a clear understanding of the hazards and possible consequences if safety and health procedures are not followed when performing the assigned task.

## **Strategy:**

- 1) Introduce the lesson by describing the task and the hazards related to it. Use task training books or other hazard information to emphasize key points.
- 2) Give the employee a copy of the MSDS's for any chemicals that are used or handled in the task. Review the characteristics and hazards of the chemical and steps to prevent injury or unnecessary health exposure. Have employee identify the hazards, the signs and symptoms of overexposure, the work procedures and the necessary personal protective equipment that must be used. Make sure the employee understands how to read an MSDS and knows where to go for information.
- 3) Review MSHA's "On the Job Training Module" for the task if one has been developed. Make sure the employee understands each hazard and how to avoid it. Use pictures, sketches, or fatalgrams to explain the hazard and illustrate how it has caused accidents in the past.
- 4) Use MSHA hazard alert cards that address the task to illustrate and emphasize safety and health procedures.
- 5) Make use of a checklist, to verify that all pertinent hazards and safety practices have been covered. Have employee repeat back the hazards and the steps he or she must follow to prevent injury or illness.
- 6) During the show and tell portion of the training, observe others performing the task if possible. Reinforce what was previously discussed by showing the hazard or letting the employee identify any hazards that might be present. Ask questions to ensure understanding.
- 7) When this training is completed, the competent person trainer can begin the demonstration and practice under close observation in a safe area or under controlled conditions.

## **Evaluation**

Have the employee observe a scene showing the task and identify the hazards you reviewed with him or her. For each hazard, have the employee explain the safe procedures that apply. If the employee does not identify any major hazards, review them again until all hazards are fully understood.

## Lesson Plan 5

### Statutory Rights of Miners (15-30 Minutes)

#### Learning Objectives:

- 1) Employees will be able to explain their rights under the Mine Safety & Health Act of 1977 and the applicable regulations contained in 30 CFR Parts 1 - 199.
- 2) Employees will describe their personal responsibilities in safety and health.
- 3) Employees will practice using their miner's rights and personal responsibilities to proactively improve safety and health efforts.

#### Materials needed:

- 1) Mine Safety and Health Act of 1977
- 2) 30 CFR Parts 1 - 199
- 3) Employee Handbook or Company Safety Manual/Rule Book
- 4) Overheads or slides summarizing rights and responsibilities
- 5) A screen and overhead projector or slide projector
- 6) An MSHA fatality investigation report giving details of serious safety and health violations for each trainee.
- 7) Pencil and paper for each trainee
- 8) A Guide to Miner's Rights and Responsibilities under the Mine Safety and Health Act of 1977.

#### Allotted Time:

This training session is allotted 30 minutes for completion as per the training plan. More time can be devoted to this subject if you desire to exceed the 24-hour training requirement for inexperienced miners.

#### Strategy:

1. Introduce the lesson by telling a story about a serious accident in which the investigation revealed multiple alleged violations and resulted in the issuance of significant enforcement actions. Relate the incident to miners rights, the mine operator's responsibility, the miner's responsibility and MSHA's responsibility.
2. Explain the rights of all miners including the right to a safe and healthy workplace, the right to refuse to do unsafe work, to file a complaint about violations and dangers, the right for a representative to participate in inspections, the right to receive training and pay during training, the right to receive pay if affected by the issuance of a withdrawal order by MSHA, the right against discrimination because of exercising other rights under the MSHA Act, the right to

provide input into settlement of citations and contests and requests for modification of safety standards, and the right to see copies of new and revised standards which must be posted and to comment on proposed regulations.

3. Explain the responsibilities of miners, operators and MSHA. Use the accident case history to get the participants to identify where the system broke down and to discuss what should be done to correct the problems identified. Structure this by using a group exercise if possible to get employees analyze a serious accident case to identify where rights and responsibilities were ignored.
4. Get the participants to compare their workplace to the one described in the accident report. Have them explore ways to correct any weaknesses that are identified.
5. Review procedures in the company rule book or safety manual for reporting and correcting safety and health hazards. Review responsibilities of employees and supervisors as outlined in the manual.
6. Get the participants to identify a strategy for using their rights under the act to positively influence the safety and health program. Get them to focus on ways to build trust and show the employer that their involvement and empowerment in building an effective safety and health program has benefits.

**Performance Assessment and Evaluation Methods:**

- 1) Get trainees to write down or identify verbally at least one example of a miner's rights in each of the following areas: Safe workplace; freedom from discrimination; to report hazards; to participate in inspections;
- 2) Get trainees to describe the procedures for reporting and correcting safety and health hazards.
- 3) Have trainees describe their personal responsibilities in safety and health; have them identify the responsibilities of supervisors.

## **Lesson Plan 6**

### **Line of Authority and Responsibilities of Supervisors and Miners (15-30 Minutes)**

#### **Learning Objectives:**

- 1) Miners (includes supervisors) will explain their personal responsibility to examine their work areas for hazardous conditions and to perform inspections on equipment to identify defects affecting safety and health.
- 2) Miners (includes supervisors) will explain individual and supervisory responsibilities for reporting hazards in accordance with the company structure and policy, the Mine Safety & Health Act of 1977 and the applicable regulations in title 30, Code of Federal Regulations.
- 3) Miners (includes supervisors) will be able to follow the required steps for reporting and resolving workplace hazards and defects on equipment that affect safety and health.
- 4) Miners (includes supervisors) will demonstrate how to perform as a member of a team in setting the right example and being proactive in improving safety and health for all employees.

#### **Materials needed:**

- 1) Mine Safety and Health Act of 1977.
- 2) Title 30, Code of Federal Regulations, Parts 1 through 199.
- 3) Employee Handbook or Company Safety Manual/Rule Book.
- 4) Overheads or slides depicting the company organizational chart.
- 5) Overheads summarizing the employees individual responsibilities regarding reporting
- 6) Examples of safety & health discrepancies in the workplace.
- 7) A screen and overhead projector or slide projector.
- 8) Citations from an MSHA inspection for each class participant.
- 9) Pencil and paper for each trainee.
- 10) The company's workplace examination program and related materials.

#### **Allotted Time:**

This training session is allotted approximately 30 minutes for completion as per the training plan. More time can be devoted to this subject if you desire to exceed the 24-hour training requirement for inexperienced miners.

## **Strategy:**

- 1) Introduce this lesson by discussing an MSHA inspection where there were serious alleged violations and the inspection resulted in the issuance of citations. Relate the finding of the inspection to the company's commitment to providing a safe work environment, to the individual's personal responsibilities and to the supervisor's personal responsibilities in correcting hazardous conditions and work practices.
- 2) Explain:
  - The responsibility of the miner.
  - The responsibility of the supervisor.
  - The responsibility of the company.
  - Disciplinary actions.
  - MSHA's responsibilities. The right of the "miner" to report unsafe conditions to MSHA.
  - MSHA's responsibility to investigate the "miners" complaint.
  - State regulatory agency responsibilities.
  - The right to refuse to work in an unsafe environment or be party to an unsafe practice.
  - The right to speak with company management about violations and workplace dangers.
  - Relate these to the citation information discussed in this session.
- 3) Use inspection history information to get the participants to identify where and how the conditions were permitted to exist. Discuss what should be done to correct identifiable hazardous conditions.
- 4) Have the class participants analyze a citation related to defects on mobile equipment, and review procedures for inspecting and reporting defects. Have them identify weakness and recommend what needs to change.
- 5) Review a citation that resulted from someone failing to identify a plant hazard during a daily workplace inspection. Have employees identify any breakdowns that occurred in the workplace examination program and recommend improvements.
- 6) Review procedures in the company rule book or safety manual for reporting and correcting safety and health hazards. Review responsibilities of employees and supervisors as outlined in the manual.
- 7) Have the participants to positively influence the safety and health program by feeling comfortable in reporting observed unsafe conditions without the fear of reprisal. Have them focus on ways to build trust and show their employer that their involvement and empowerment in building an effective safety and health program has many benefits.

## **Performance Assessment and Evaluation Methods:**

- 1) Have the class participants write down their individual "chain of command" or identify verbally their "chain of command" and give a brief description of each of their responsibilities.

- 2) Have the class participants describe how the company workplace examination procedure for reporting and correcting safety and health hazards works.
- 3) Have the class participants describe their personal responsibilities regarding safety and health issues.
- 4) Have the class participant identify the responsibilities of their individual supervisor.
  - Supervisors must protect all employees.
  - Supervisors must realize that they cannot take chances. They are responsible for their personal safety as well as others.
  - Supervisors must know and obey safety rules and regulations and enforce the company's policies and procedures regarding safety.
  - Supervisors should actively participate in proper training of employees.

*Supervisors that don't do the above could be:*

- *Held personally liable for accidents and injuries.*
  - *Criminally prosecuted.*
  - *Be held civilly liable.*
- 5) Have the class participant briefly describe the responsibilities of the company.
  - 6) Have the class participants briefly describe MSHA's role in:
    - Miners complaints.
    - Inspections.
    - Special Investigations
    - Issuing citations.

## Definitions and Terms

**Operator** Any owner, lessee, or other person who operates, controls, or supervises a coal or other mine or any independent contractor performing services or construction at such mine.

**Agent** Any person charged with responsibility for the operation of all or a part of a coal or other mine or the supervision of the miners in a coal or other mine.

**Miner** Any individual working in a coal or other mine.

**Coal or Other Mine** Means an area of land from which minerals are extracted in non-liquid form or, if in liquid form, are extracted with workers underground.

Private ways and roads appurtenant to such area, and

Lands, excavations, underground passageways, shafts, slopes, tunnels and workings, structures, facilities, equipment, machines, tools, or other property including impoundments, retention dams, and tailings ponds, on the surface or underground, used in, or to be used in, or resulting from, the work of extracting such minerals from their natural deposits in non-liquid form, or if in liquid form, with workers underground, or used in, or to be used in, the milling of such minerals, or the work of preparing coal or other minerals, and includes custom coal preparation facilities. In making a determination of what constitutes mineral milling for purposes of this Act, the Secretary shall give due consideration to the convenience of administration resulting from the delegation to one Assistant Secretary of all authority with respect to the health and safety of miners employed at one physical establishment.

For purposes of titles II, III, and IV, "coal mine" means an area of land and all structures, facilities, machinery tools, equipment, shafts, slopes, tunnels, excavations, and other property, real or personal, placed upon, under, or above the surface of such land by any person, used in, or to be used in, or resulting from, the work of extracting in such area bituminous coal, lignite, or anthracite from its natural deposits in the earth by any means or method, and the work of preparing the coal so extracted, and includes custom coal preparation facilities;

**Imminent Danger** The existence of any condition or practice in a coal or other mine, which could reasonably be expected to cause death or serious physical harm before such condition or practice can be abated.

**Accident** Includes a mine explosion, mine ignition, mine fire, or mine inundation, or injury to, or death of, any person.

**Mandatory Health or Safety Standard**

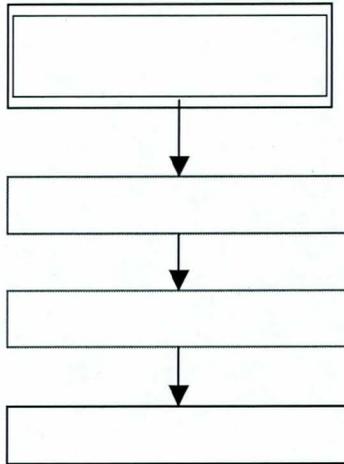
The interim mandatory health or safety standards established by titles II and III of this Act and the standards promulgated pursuant to title I of this Act.

## SECTION 110 of the "Act"

- (a) The operator of a coal or other mine in which a violation occurs of a mandatory health or safety standard or who violates any other provision of this Act, shall be assessed a civil penalty by the Secretary which penalty shall not be more than \$10,000 for each such violation. Each occurrence of a violation of a mandatory health or safety standard may constitute a separate offense.
- (b) Any operator who fails to correct a violation for which a citation has been issued under section 104(a) within the period permitted for its correction may be assessed a civil penalty of not more than \$1,000 for each day during which such failure or violation continues.
- (c) Whenever a corporate operator violates a mandatory health or safety standard or knowingly violates or fails or refuses to comply with any order issued under this Act or any order incorporated in a final decision issued under this Act, except an order incorporated in a decision issued under subsection (a) or section 105(c), any director, officer, or agent of such corporation who knowingly authorized, ordered, or carried out such violation, failure, or refusal shall be subject to the same civil penalties, fines, and imprisonment that may be imposed upon a person under subsections (a) and (d).
- (d) Any operator who willfully violates a mandatory health or safety standard, or knowingly violates or fails or refuses to comply with any order issued under section 104 and section 107, or any order incorporated in a final decision issued under this title, except an order incorporated in a decision under subsection (a) or section 105(c), shall, upon conviction, be punished by a fine of not more than \$25,000, or by imprisonment for not more than one year, or by both, except that if the conviction is for a violation committed after the first conviction of such operator under this Act, punishment shall be by a fine of not more than \$50,000, or by imprisonment for not more than five years, or both.
- (e) Unless otherwise authorized by this Act, any person who gives advance notice of any inspection to be conducted under this Act shall, upon conviction, be punished by a fine of not more than \$1,000 or by imprisonment for not more than six months, or both.
- (f) Whoever knowingly makes any false statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained pursuant to this Act shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than five years, or both.
- (g) Any miner who willfully violates the mandatory safety standards relating to smoking or the carrying of smoking materials, matches, or lighters shall be subject to a civil penalty assessed by the Commission, which penalty shall not be more than \$250 for each occurrence of such violation.
- (h) Whoever knowingly distributes, sells, offers for sale, introduces, or delivers in commerce any equipment for use in a coal or other mine, including, but not limited to, components and accessories of such equipment, which is represented as complying with the provisions of this Act, or with any specification or regulation of the Secretary applicable to such equipment, and which does not so comply, shall, upon conviction, be subject to the same fine and imprisonment that may be imposed upon a person under subsection (f) of this section.

- (i) The Commission shall have authority to assess all civil penalties provided in this Act. In assessing civil monetary penalties, the Commission shall consider the operator's history of previous violations, the appropriateness of such penalty to the size of the business of the operator charged, whether the operator was negligent, the effect on the operator's ability to continue in business, the gravity of the violation, and the demonstrated good faith of the person charged in attempting to achieve rapid compliance after notification of a violation. In proposing civil penalties under this Act, the Secretary may rely upon a summary review of the information available to him and shall not be required to make findings of fact concerning the above factors.
- (j) Civil penalties owed under this Act shall be paid to the Secretary for deposit into the Treasury of the United States and shall accrue to the United States and may be recovered in a civil action in the name of the United States brought in the United States district court for the district where the violation occurred or where the operator has its principal office. Interest at the rate of 8 percent per annum shall be charged against a person on any final order of the Commission, or the court. Interest shall begin to accrue 30 days after the issuance of such order.
- (k) No proposed penalty, which has been contested before the Commission under section 105(a) shall be compromised, mitigated, or settled except with the approval of the Commission. No penalty assessment, which has become a final order of the Commission shall be compromised, mitigated, or settled except with the approval of the court.
- (l) The provisions of this section shall not be applicable with respect to title IV of this Act.

## Company Organization Chart



Note: There are many variations in organizational charts and lines of reporting at each location. Accordingly, your “chain of command is dependent on your facility’s organizational structure.

Check with your immediate Supervisor or Department Manager and make sure you know your reporting lines.

## Lesson Plan 7

### Introduction to Company Safety Rules and the Procedures for Reporting Hazards (15-30 Minutes)

**Task:** Become familiar with the company's Employee Safety Rules and the MSHA regulations and know the procedure for reporting hazards.

**Conditions:** Use the Employee Safety Rules or Safety Manual to understand the procedure for reporting hazardous conditions. Locate standards in 30 CFR to become familiar with MSHA regulations.

**Standards:** Trainees will understand the following MSHA standards, which describe the procedures for identification of hazardous conditions:

- 1) Part 56.3200, Correction of hazardous conditions
- 2) Part 56.14100, Safety defects; examination, correction and records
- 3) Part 56.18002, Examination of working places

**Company Rules:** Trainees will identify the following company safety rules, which describe the reporting of hazardous conditions:

- ★ Report hazardous working conditions, defective tools or equipment, or unsafe acts to your supervisor promptly.
- ★ All equipment operators are required to conduct a pre-shift inspection and complete the "Operator's Daily Report".

9) Quiz Answer Key

10) Pencil and paper for each trainee

#### Allotted Time:

This training session is allotted 30 minutes for completion as per the training plan. More time can be devoted to this subject if you desire to exceed the 24-hour training requirement for inexperienced miners.

#### Strategy:

- 1) Introduce the lesson by discussing a fatalgram in which the investigation revealed a failure to obey an established safety rule or which shows how an uncorrected hazardous condition resulted in the death of a miner. Relate the incident to your workplace.
- 2) Explain imminent danger conditions and the need to report these conditions to supervision immediately and to withdraw from the area. Relate these conditions to the fatalities or serious disabling injuries that occur in our industry each year.

- 3) Explain the responsibilities of miners to report unsafe conditions or practices in their work area to protect their safety and health and that of their coworkers. Discuss how no workplace is immune from serious injuries occurring if employees and supervisors fail to work together to report and correct dangerous conditions.
- 4) Get the participants to compare their workplace to the one described in the fatalgram. Ask them how they can improve their own workplace.
- 5) Review procedures in the company rule book or safety manual for reporting and correcting safety and health hazards. Review the responsibilities of both employees and supervisors to report and correct identified hazards.
- 6) Ask the participants to identify several unsafe conditions or practices that they believe are the most serious.
- 7) Explain the function of the Employee Safety Committee if there is one and show how unsafe conditions can be included on the Committee safety report.

**Performance Assessment and Evaluation Methods:**

- 1) Have trainees define an imminent danger condition.
- 2) Get trainees to verbally describe the procedures for reporting and correcting safety and health hazards.
- 3) Trainees will take a quiz to demonstrate that they understand the employee safety rules and the regulations in 30 CFR. A passing grade of 80 is required.

## Lesson Plan 8

### Instruction and Demonstration on Use, Care, and Maintenance of Respiratory Devices (30 Min.-1 Hour)

#### Learning Objectives:

- 1) Miners will explain the different respiratory hazards present at the mine site and where they are located.
- 2) Miners will correctly identify the proper respirator for the different hazards.
- 3) Miners will demonstrate how each respirator type is to be worn, fit tested, inspected, maintained and stored.

#### Materials needed:

- 1) Chart or Slide of human respiratory system.
- 2) Overheads, slides or video summarizing the health hazards for respirable dust and silica, welding fumes, paints and solvents
- 3) A screen and overhead projector, slide projector or TV/VCR
- 4) Sufficient quantities of the different respirator types to allow miners to wear.
- 5) Respirator manufacturer's employee handbooks, posters and/or videos on respirators used.
- 6) Cleaning solution and paper towels
- 7) Qualitative fit testing kit for particulate and organic vapor masks
- 8) Copies of Mine Respiratory Protection Plan for each miner
- 9) Pencil and paper for each miner

#### Allotted Time:

This training session is allotted 60 minutes for completion as per the training plan. More time can be devoted to this subject if you desire to exceed the 24-hour training requirement for inexperienced miners.

#### Strategy:

- 1) Introduce the lesson by describing how the respiratory system works.
- 2) Describe the different respiratory hazards that are potentially present at the mine site (e.g. silica, welding fumes, paint, solvents, etc.). Tell them where these hazards may exist.
- 3) Show them the different respirators used at the mine site to address the different respiratory hazards. Explain the differences and limitations among the respirators (explain where the respirators can and cannot be used and which type is acceptable for specific uses).

- 4) Get the participants to try on the different respirators for proper fitting techniques and randomly fit test several miners using the fit test kit. Emphasize the problems with facial hair and glasses with getting a proper seal.
- 5) Identify what parts of the respirators need to be inspected and how and what to look for.
- 6) For non-disposable respirators, show miners how to clean the respirators and properly store them. Let the miners clean the non-disposable respirators that have been handed out previously.
- 7) Identify special respirator use circumstances such as abrasive blasting and confined space entry and what procedures need to be followed.
- 8) Review the mine respiratory protection plan

**Performance Assessment and Evaluation Methods:**

- 1) Get trainees to write down or identify verbally each of the respiratory protection devices and what hazards they protect against.
- 2) Get trainees to describe the procedures for proper fitting, inspecting, cleaning and storage of respirators.
- 3) Have trainees describe their personal responsibilities under the mine's written respiratory protection plan.

**Lesson Plan 9**  
**Review of First Aid Procedures**  
**(30 Min.-1 Hour)**

**Learning Objectives:**

- 1) Employees will demonstrate and explain basic lifesaving techniques.
  - ABC's of basic first aid treatment
  - First Aid - Breathing
  - First Aid - Control Bleeding
  - First Aid - Shock/Fainting
  - First Aid - Wounds/Burns
  - First Aid - Fractures/Dislocations
  - Assess and evaluate an emergency situation
  - Demonstrate steps to protect yourself from Bloodborne pathogens
- 2) Employees will demonstrate and explain steps to follow if a medical emergency occurs:
  - How to summon help during an emergency
  - The location of emergency medical telephone numbers
  - Emergency equipment that is available and its location
  - Plant maps and directions to provide emergency personnel
  - Emergency assignment personnel (who does what) - escort, notify plant personnel, get emergency equipment
  - Controlling the medical emergency situation
- 3) Employees will apply their knowledge of basic lifesaving techniques in a mock emergency medical situation by identifying what steps to take.

**Materials needed:**

- 1) First Aid Safety Manual No. 3 (Revised 1995) U.S. Department of Labor Mine Safety & Health Administration -National Mine Health and Safety Academy
- 2) Facilities Site Specific Emergency Plan (including)
  - Establishes evacuation procedures
  - Assigns responsibilities to specific individuals
  - Provides for notification of outside agencies
  - Establishes means of communication
  - Emergency Telephone Number
  - Site Map of Emergency Equipment
  - Emergency procedures for who does what during a medical emergency
- 3) Overheads or slides summarizing the emergency plan
- 4) A screen and overhead projector or slide projector
- 5) Video and/or Visual aids on the ABC's of Medical Emergencies
- 6) Pencil and paper for each trainee

**Allotted Time:**

This training session is allotted 60 minutes for completion as per the new miner training plan. More time can be devoted to this subject if you desire to exceed the 24 hours training requirement.

**Strategy:**

- 1) Begin the meeting by welcoming the participants. Introduce yourself and give each person the opportunity to become acquainted if there are new miners joining the training session.
- 2) Explain how employees can reduce the causes and consequences of injuries from hazards by following safety rules, procedures, and practices, and by applying the proper first aid techniques when injuries occur.
- 3) Explain that the primary purpose of the training session is to provide an understanding of proper basic first aid techniques.
- 4) Review the program content by presenting the information in the program outline, and lead discussions about the benefits of applying first aid techniques properly.
- 5) Develop a list of questions that follow the program outline to check how well program participants understand the information.

**Performance Assessment and Evaluation Methods:**

- 1) Develop a list of questions that follow the program outline to check how well program participants understand the information.
- 2) Get trainees to write down or identify verbally some of the ABC's of Basic Lifesaving Techniques.

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## PART II

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**TRAINING PLAN FOR TRAINING AND RETRAINING OF SURFACE MINERS  
PART 46**

DATE of Completion: \_\_\_\_\_

1. COMPANY NAME \_\_\_\_\_ MINE NAME \_\_\_\_\_  
\_\_\_\_\_ MSHA ID NUMBER \_\_\_\_\_  
\_\_\_\_\_ MAILING ADDRESS \_\_\_\_\_

2. PERSON RESPONSIBLE FOR HEALTH AND SAFETY TRAINING OF MINERS:

NAME	POSITION	PHONE
		<i>Fax</i> _____
		<i>e-mail</i> _____

3. PERSONS OR ORGANIZATIONS PROVIDING TRAINING	SUBJECT AREAS COMPETENT TO INSTRUCT
<u>Arizona State Mine Inspector's Office</u>	NMI, AR FA _____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

**TRAINING PLAN -- NEW MINER**  
**24 HOURS REQUIRED**

Lesson	Est. Hrs	Subject	Objectives	Teaching Methods	Course Material	Evaluation Method
L-1	30min - 2 Hrs.	<p>INTRODUCTION TO THE WORK ENVIRONMENT</p> <p><i>Note: Must be done before miner begins work. Will be done when reporting to mine.</i></p>	<p>Employee will recognize potential hazards in drilling, blasting, hauling, crushing, conveying, and stockpiling. Employee will demonstrate knowledge of plant layout, traffic patterns, PPE requirements, and important safety and health issues in all active work areas.</p>	<p>May include lecture and discussion, visual aids plus walk around</p>	<p>May include audiovisuals, handouts, safety manual, work rules.</p>	<p>Oral response</p>
L-2	30min - 2 Hrs.	<p>RECOGNITION AND AVOIDANCE OF HAZARDS</p> <p>PROTECTIVE MEASURES A MINER CAN TAKE AGAINST CHEMICAL HAZARDS</p> <p><i>Note: Must be done before miner begins work.</i></p>	<p>Employee will identify potential hazards in the mine environment including electrical hazards, machinery hazards, fall hazards, engulfment hazards, hazardous energy, confined spaces, materials handling, water hazards, ground control hazards, hazardous chemicals.</p>	<p>May include lecture and discussion, visual aids plus walk around.</p> <p>Training will address typical accidents and best practices. and will teach hazard recognition specific to tasks to be assigned.</p>	<p>May include:</p> <ul style="list-style-type: none"> <li>Overheads</li> <li>Slides</li> <li>Handouts</li> <li>Hazard Analysis</li> <li>Videos</li> <li>Lockout devices</li> <li>Hazard Assessment</li> <li>Hazard Communication</li> <li>PPE</li> </ul> <p>Protective equipment, copies of MSDSs used at the mine</p>	<p>Oral response citing various hazards and preventive measures. Demonstration of knowledge of hazards.</p>

Lesson	Est. Hrs	Subject	Objectives	Teaching Methods	Course Material	Evaluation Method
L-3	15-30 minutes	EMERGENCY MEDICAL PROCEDURES, ESCAPE AND EMERGENCY EVACUATION PLANS AND INSTRUCTION ON THE FIRE WARNING SIGNALS AND FIRE FIGHTING PROCEDURES CONTENTS OF THE MINE'S HAZCOM PROGRAM <i>Note: Must be done before miner begins work. First Day.</i>	Employee will explain/identify emergency evacuation procedures and alarms. Demonstrate how to select, use and maintain fire-fighting equipment. Identify fire and explosion hazards. Demonstrate steps to prevent fire and explosion. Demonstrate what to do in an emergency. Demonstrate knowledge of alarms and signals.	May include lecture and discussion, visual aids plus demonstration	May include: Audio visuals Fire extinguishers Safe practice procedures. Site specific emergency plans Company policy, information on where to find HazCom information.	Oral response Demonstration Observation
L-4	1 hr-9 Hrs..	HAZARD RECOGNITION TRAINING SPECIFIC TO THE TASKS TO BE ASSIGNED <i>NOTE: This must be done before conducting the instruction and practice under the close observation of a competent person.</i> SUPERVISED PRACTICE IN HEALTH AND SAFETY ASPECTS OF THE TASKS ASSIGNED <i>Note: Start on day 2, finish on day 3 so all of the 24 hours training will be finished.</i> INFORMATION ABOUT THE PHYSICAL AND HEALTH HAZARDS OF CHEMICALS IN THE MINER'S WORK AREA	Employee will be able to explain the safety and health hazards of assigned tasks and how to avoid them before actually performing the tasks.  Employee will demonstrate correct job performance and perform tasks in accordance with the safety and health standards outlined in the training.	May include lecture, discussion, practical demonstration, or show and tell at work sites  On the job training, observation, correction, and practice Audio/video	MSDS' Handouts Job Hazard Analysis PPE  May include checklists, job training books and guides, and operating manuals  MSHA training modules, company safety rules, MSDSs used at the mine or other	Oral response and observation Correct job performance  Observation of job performance  Oral and/or written questions.
L-5	15-30 minutes	STATUTORY RIGHTS OF MINERS AND REPRESENTATIVES <i>Note: Must be done before miner begins work. First Day.</i>	Employees will identify their rights under Mine Safety & Health Act of 1977 and 30 CFR	Lecture and discussion	May include handout material.	Oral review and discussion.

Lesson	Est. Hrs	Subject	Objectives	Teaching Methods	Course Material	Evaluation Method
L-6	15-30 minutes	LINE OF AUTHORITY AND RESPONSIBILITIES OF SUPERVISORS AND MINERS AND THEIR REPRESENTATIVES. <i>Note: Must be done before miner begins work. First day.</i>	Employee will be able to explain MSHA's role and responsibility, personal responsibility of every employee including supervisors, and who has responsibility and authority to correct hazards.	Lecture and discussion.	May include: Handouts Visuals	Oral review and discussion.
L-7	15-30 minutes	RULES AND PROCEDURES FOR REPORTING HAZARDS <i>Note: Must be done before miner begins work. First day.</i>	Employee will be able to explain steps to get issues addressed and what to do if corrective action is not taken.	Lecture and discussion	May include handouts and visual aids	Oral response
L-8	30 min- 1 Hr.	USE, CARE AND MAINTENANCE OF RESPIRATORY DEVICES <i>Note: Must be completed within 60 days, will be done on the first day.</i>	Employee will demonstrate how to select, use, care, and maintain respirators. Employee will explain limitations of respirators. Employee will identify respiratory hazards and precautions.	Lecture and discussion  Demonstration using respiratory devices	Visuals and handouts  Respiratory devices	Oral response  Demonstration
L-9	1 hr- 8 Hrs.	FIRST AID METHODS <i>Note: Must be completed within 60 days.</i>	Employee will explain basic life saving methods, steps to protect from bloodborne pathogens, emergency response plan, where equipment is located, how to control the situation.	Lecture and demonstration Discussion Visual aids	Handouts Audio visuals	Oral response Demonstration Observation

**Note: HAZCOM TRAINING WILL BE PROVIDED WHEN A NEW CHEMICAL HAZARD IS INTRODUCED INTO A MINERS WORK AREA AND WHEN AN EXISTING CHEMICAL IS FOUND TO POSSESS A NEW HAZARD.**

## TRAINING PLAN -- NEWLY EMPLOYED EXPERIENCED MINER

Lesson	Est. Hrs	Subject	Objectives	Teaching Methods	Course Material	Evaluation Method
L-1	30 min to 2 Hrs.	INTRODUCTION TO THE WORK ENVIRONMENT  <i>Note: Must be done before miner begins work. First day.</i>	Employee will identify potential hazards in drilling, blasting, hauling, crushing, conveying, and stockpiling. Employee will demonstrate knowledge of plant layout, traffic patterns, PPE requirements, and important safety and health issues in all active work areas.	May include lecture and discussion, visual aids plus walk around	May include audio visuals, handouts, safety manual, work rules	Oral response
L-2	30 min to 2 Hrs.	RECOGNITION AND AVOIDANCE OF HAZARDS  PROTECTIVE MEASURES A MINER CAN TAKE AGAINST HAZARD CHEMICALS  <i>Note: Must be done before miner begins work. First day.</i>	Employee will identify potential hazards in the quarry environment including electrical hazards, machinery hazards, fall hazards, engulfment hazards, hazardous energy, confined spaces, materials handling, water hazards, ground control hazards. Training will address typical accidents and best practices. and will teach hazard recognition specific to tasks to be assigned.	May include lecture and discussion, visual aids plus walk around	May include: Overheads Slides Handouts Hazard Assessment Videos Lockout devices  Protective equipment, copies of MSDSs used at the mine.	May include oral response, written tests, or demonstration and observation.
L-3	15 min.- 30 minutes	EMERGENCY MEDICAL PROCEDURES, ESCAPE AND EMERGENCY EVACUATION PLANS AND INSTRUCTION ON THE FIRE WARNING SIGNALS AND FIRE FIGHTING PROCEDURES  CONTENCTS OF THE MINE'S HAZCOM PROGRAM  <i>Note: Must be done before miner begins work. First day.</i>	Employee will be able to explain proper emergency evacuation procedures and alarms; explain how to select, use and maintain fire-fighting equipment; identify fire and explosion hazards; identify steps to prevent fire and explosion.	May include lecture and discussion, visual aids plus demonstration	May include audio visuals fire extinguishers, safe practice procedures or site specific emergency plans  Company policy, information on where to find HazCom information.	May include oral response, written tests, or demonstration and observation.

Lesson	Est. Hrs	Subject	Objectives	Teaching Methods	Course Material	Evaluation Method
L-4	30 min. - 1 hr.	INSTRUCTION IN HAZARD RECOGNITION OF ASSIGNED TASKS AND PERFORMANCE EVALUATION OF TASKS PREVIOUSLY PERFORMED TO DETERMINE IF ADDITIONAL TRAINING SPECIFIC TO THE TASKS IS NEEDED.  INFORMATION ABOUT THE PHYSICAL AND HEALTH HAZARDS OF CHEMICALS IN THE MINER'S WORK AREA  <i>NOTE: This must be done before conducting the instruction and practice under the close observation of a competent person</i>	Employee will be able to identify the safety and health hazards of assigned tasks and how to avoid them before actually performing the tasks.  Employee will demonstrate that he or she can safely perform assigned duties.	May include review and discussion or show and tell approach.  On the job observation by a competent person.	May include Job Hazard Analysis, MSDS's, checklists, job training books and guides, operating manuals  MSHA training modules, company safety rules, MSDSs used at the mine.	May include oral response, written tests, demonstration and observation.  On the job performance evaluation.
L-5	15 min.- 30 minutes	STATUTORY RIGHTS OF MINERS AND REPRESENTATIVES  <i>Note: Must be done before miner begins work. First day.</i>	Employees will identify their rights under the Mine Safety & Health Act of 1977 and 30 CFR	May include lecture, discussion and classroom exercises.	May include handouts or visuals.	Oral review and discussion.
L-6	15 min.- 30 minutes	LINE OF AUTHORITY AND RESPONSIBILITIES OF SUPERVISORS AND MINERS AND THEIR REPRESENTATIVES.  <i>Note: Must be done before miner begins work. First day.</i>	Employee will explain MSHA's role and responsibility, personal responsibility of every employee including supervisors, who has responsibility and authority to do what in reporting and correcting hazards.	May include lecture, discussion and classroom exercises.	May include handouts or visuals	Oral review and discussion.
L-7	15 min.- 30 minutes	RULES AND PROCEDURES FOR REPORTING HAZARDS  <i>Note: Must be done before miner begins work. First day.</i>	Employee will explain steps to get issues addressed and what to do if corrective action is not taken.	May include lecture and discussion.	May include handouts and visual aids	Oral response

Lesson	Est. Hrs	Subject	Objectives	Teaching Methods	Course Material	Evaluation Method
L-8	30 min. - 1 hr.	USE, CARE AND MAINTENANCE OF RESPIRATORY DEVICES <i>Note: Must be completed within 60 day suggest on the first day.</i>	Demonstrate/explain how to select, use, care, and maintain respirators. Employee will explain limitations of respirators. Employee will identify respiratory hazards and precautions.	May include lecture and discussion or practical demonstration using respiratory devices	May include visuals and handouts or respiratory devices.	Oral response Demonstration

**TRAINING PLAN -- ANNUAL REFRESHER TRAINING  
8 HOURS IS REQUIRED**

<b>Lesson</b>	<b>Est. Hrs</b>	<b>Subject</b>	<b>Objectives</b>	<b>Teaching Methods</b>	<b>Course Material</b>	<b>Evaluation Method</b>
L-1	15 min.- 30 minutes	TRANSPORTATION AND COMMUNICATIONS TO INCLUDE TRAFFIC PATTERNS AND CONTROLS	Employee will demonstrate/explain safe procedures for entering or leaving plant and traveling pit or plant roads; communication system.	May include lecture, discussion, or practical Demonstration	May include audio visuals, or written material	Oral response
L-2	30 Min. - 1 Hr.	INSTRUCTION ON CHANGES AT MINE THAT COULD ADVERSELY AFFECT HEALTH OR SAFETY	Employee will be able to explain any changes affecting safety and health and appropriate safeguards.	May include lecture and discussion, or show and tell approach.	May include handouts, slides, overheads or other visuals.	May include written test, oral response, actual hazard identification.
L-2	30 Min. - 1 Hr.	GROUND CONTROL, WORKING IN AREAS OF HIGHWALLS, WATER HAZARDS, PITS AND SPOIL BANKS	Employee will review and identify pit and plant ground hazards; safe work procedures; water hazards.	May include lecture, discussion or practical Demonstration	May include audiovisuals or written materials.	Oral response
L-2	30 Min.- 2 Hrs.	PREVENTION OF ACCIDENTS TO INCLUDE ILLUMINATION AND NIGHT WORK, ELECTRICAL HAZARDS, MAINTENANCE AND REPAIR, MATERIALS HANDLING, FALL PREVENTION, MOVING MACHINERY, MOBILE EQUIPMENT, CRUSHERS, CONVEYORS, DREDGES, MANDATORY HEALTH AND SAFETY STANDARDS AND A REVIEW OF ACCIDENT TRENDS.	Employee will identify hazards common to quarry and safe procedures to reduce accidents.	May include lecture, Discussion, or practical demonstration.	May include: Audio visuals CFR Title 30, Safety Manual Handouts, Job Hazard Analysis, Hazard Assessment, and MSDS's.	May include oral response or practical demonstration
L-3	15-30 minutes	EMERGENCY MEDICAL PROCEDURES , EVACUATION AND FIRE FIGHTING	Employee will identify correct procedures in event of serious injury, fire or other emergency.	May include lecture, discussion or demonstration	May include audio visuals, written emergency plans, table top exercise	May include oral response, performance in a mock exercise

Lesson	Est. Hrs	Subject	Objectives	Teaching Methods	Course Material	Evaluation Method
L-7	30 Min.- 1 Hr.	HEALTH AND USE, CARE AND MAINTENANCE OF RESPIRATORY DEVICES	Demonstrate/explain how to select, use, care, and maintain respirators. Employee will explain limitations of respirators. Employee will identify respiratory hazards and precautions.	May include lecture and discussion or practical demonstration using respiratory devices	May include visuals and handouts or respiratory devices.	May include oral response or practical demonstration
L-9	30 Min.- 2 Hrs.	REVIEW OF FIRST AID PROCEDURE		May include lecture, discussion, demonstration, visual aids	May include: Audio visuals, CFR Title 30, Safety Manual, MSDS's, Job Hazard Analysis, Handouts, etc.	Oral response

**TRAINING PLAN - NEW TASK TRAINING FOR REASSIGNED EMPLOYEES  
PART 46**

Lesson	Est. Hrs	Subject	Objectives	Teaching Methods	Course Material	Evaluation Method
N/A		<p>HAZARD RECOGNITION TRAINING SPECIFIC TO THE TASKS TO BE ASSIGNED</p> <p>CONTENT OF THE MINE'S HAZCOM PROGRAM</p> <p>INFORMATION ABOUT THE PHYSICAL AND HEALTH HAZARDS OF CHEMICALS IN THE MINER'S WORK AREA</p> <p><i>NOTE: This must be done before conducting the instruction and practice under the close observation of a competent person.</i></p>	Employee will be able to explain the safety and health hazards of assigned tasks and how to avoid them before actually performing the tasks.	May include lecture, discussion, practical demonstration, or show and tell at work sites	<p>Job Hazard Analysis; MSDS's, and Handouts</p> <p>Company policy, information on where to find HazCom information.</p>	Oral response and observation
N/A		<p>SUPERVISED PRACTICE IN HEALTH AND SAFETY ASPECTS OF THE TASKS ASSIGNED</p> <p>PROTECTIVE MEASURES A MINER CAN TAKE AGAINST HAZARDOUS CHEMICALS</p>	Employee will demonstrate correct job performance and perform tasks in accordance with the safety and health standards outlined in the training.	On the job training, observation, correction, and practice	<p>May include checklists, job training books and guides, and operating manuals</p> <p>Protective equipment, copies of MSDSs used at the mine.</p>	<p>Observation of job performance.</p> <p>Correct job performance</p>

Note: List all tasks and time required for training.

**TRAINING PLAN - SITE SPECIFIC HAZARD TRAINING  
PART 46**

<b>PERSONS TO RECEIVE TRAINING</b>	<b>TEACHING OR INSTRUCTIONAL METHODS</b>	<b>TRAINING MATERIALS</b>	<b>EVALUATION METHODS</b>
VENDORS, VISITORS, OFFICE STAFF OR OTHER SUPPORT PERSONNEL	Use signage, hazard training handouts or accompany these visitors with an experienced miner to show, explain and inform of site specific hazards,safety and health requirements and HazCom training .	Signs Handouts, other printed material company MSDSs	Oral response and observation while on site.
CUSTOMER TRUCK DRIVERS	Signs or hazard training handouts or verbal instructions.	Signs Handouts and other printed material	Oral response
MAINTENANCE OR SERVICE WORKERS	Signs, verbal instructions or accompanied by experienced miner.	Signs Handouts and other printed material	Oral response
CONSTRUCTION WORKERS OR EMPLOYEES OF INDEPENDENT CONTRACTORS	Site specific hazard training information will be given to contractors who will be responsible for conducting the training and verifying that it has been done.	Handouts and printed hazard information.	Safety performance at site.

# COMPLETING THIS TRAINING PLAN

This package contains three parts,  
The "Table of Contents"  
The "outline" of the actual training  
The Lesson Plan descriptions.

If the plan meets with your needs then the following pages will need your actual input:

**PAGE 1 "TRAINING PLAN FOR TRAINING AND RETRAINING OF SURFACE MINERS PART 46" form.**

- LINE 1 Company name, Mine name (if contractor do not complete), MSHA ID number if available & Company mailing address and location
- LINE 2 Provide name of the person in your company that is responsible for health and safety training of miners
- LINE 3 If the Arizona State Mine Inspector's Office is to provide your MSHA safety training, leave the name as entered with AR (Annual Refresher) NMI (New Miner Inexperienced) and/or FA (First Aide) *as Subject Areas Competent to Instruct.*  
-Also list persons doing safety-health, HazCom, and on-site or task training, for your company. Enter the type of training they will provide.  
-Suggest inclusion of National Safety Council and/or the American Red Cross as a competent First Aide Instructor.

**Page 20 COMPANY ORGANIZATION CHART** . Your company's chain of command - who the injured employee reports to and then who that person reports to, etc.

**If your company is a mine ( that is not a contractor working at a mine site) and If there is more than one mining site, please list on the Plant Listing sheet the locations and MSHA #s as applicable.**

When completed and reviewed you will send the following pages back to us using e-mail, fax, or standard mail methods.

pages 1 through 11.

page 20

Plant Site listing(s) IF APPLICABLE

The entire plan is to be posted for two weeks where your employees can see/read it.

If you have any questions please do not hesitate to contact this office.

Arizona State Mine Inspector  
Education & Training Department  
1700 West Washington, Ste 400  
Phoenix Arizona 85007-2805  
602 542 7317. Fax 602 542 7318 e-mail education@mi.state.az.us

## TEST YOUR UNDERSTANDING OF PART 46

1. True False A group of school children on a field trip spend the day learning about the mining industry in the conference room at the mine office, which is located inside the main gate away from mining operations. They do not have to receive hazard awareness training.
2. True False This same group of school children is given a tour of the mine that takes them to active mining operations. They still do not have to be given hazard awareness training.
3. Yes No A new miner is given 21 hours of instruction during his first 60 days of employment. Before he receives his final three hours of mandatory training, he is assigned to drive a haul truck unaccompanied and unsupervised between the pit and the crusher, two miles away. After review of the situation, an MSHA inspector cites the operator for a training violation. Is the inspector justified in taking this action?
4. Yes No An operator submits the training plan to MSHA for approval. The implementation date arrives, but the plan has not yet been approved by MSHA. Because an inspector is on-site, the operator presents the plan to the inspector, and states he has implemented it. Has a violation occurred?
5. Yes No An operator hires an experienced miner who presents documented evidence that he is a skilled crusher operator. After carefully reviewing the documentation and calling references supplied by the miner to confirm the miner's ability, the operator, without any further evaluation, assigns the miner to the job. An MSHA inspector reviews the situation and determines no violation occurred. Is the inspector correct?
6. Yes No An operator works out an arrangement with a long-term contractor whereby the operator will provide instruction on site-specific hazards at the mine to the contractor's supervisory personnel who in turn will provide it to the contractor's employees. The deal is struck because the contractor is experiencing high turnover, and the operator is finding it burdensome to keep training the contractor's employees directly. Is this arrangement acceptable under Part 46?
7. Yes No An operator learns from a colleague that Part 46 requires newly hired experienced miners to receive four hours of training before they start work. The operator takes his friend's word for it. Is he well advised to do so?
8. Yes No A competent person provides task training to a miner, and counts it toward completion of both task training and refresher training requirements under Part 46. Is she correct in doing so?
9. Yes No During a morning inspection, an MSHA inspector asks to see an operator's new miner training records. The operator explains that his office help is sick and, therefore, he won't be able to provide them until the next day. Does this represent a violation of Part 46?

10. Yes No To meet TEA-21 demand, an operator goes to a Monday through Saturday work week. Four months into the new schedule, the operator schedules refresher training on a Saturday two weeks hence. The miners complain, arguing that scheduling training on a Saturday violates Part 46. Are they correct?
11. The following persons are defined as miners in the final rule:
- a. Construction workers building a new crusher at an active mine.
  - b. Independent contractors removing overburden in an area of an active mine that is being developed.
  - c. Independent contractor removing overburden at a site where a mine is being constructed.
  - d. Engineer surveying land for a new mine.
  - e. a, b, and c.
12. The official Implementation date is:
- a. October 1, 2000
  - b. March 31, 2000
  - c. March 31, 2001
  - d. October 2, 2000
13. Which of the following meets the definition of an experienced miner?
- a. began work at a mine on April 12, 1999
  - b. began work as a miner on June 30, 1999 and has never received new miner training
  - c. began work at a mine on August 2, 2000 and previously worked at a mine for 7 months in 1998 and 5 months in 1999
  - d. began work on October 1, 2000 as a haul truck operator, and previously worked for a construction company as a truck driver for 16 months
14. MSHA will accept which of the following methods of the effectiveness of training by a competent person:
- a. oral or written
  - b. demonstration
  - c. evaluation work practices
  - d. all of the above
15. T or F – Manufacturer’s representatives would never fit the definition of a miner under part 46.
16. T or F – Operators who are in compliance with part 48 automatically are exempt from citations under part 46.
17. Maintenance and service employees who do not work at a mine for frequent or extended periods do not fall under the definition of a minor. How does MSHA define “extended”?
18. The rule mandates worker involvement in the training plan approval process by requiring operators to make available a copy of the training plan to the miner or miner’s representative within

- a. 30 days before implementation
  - b. not later than 30 days after implementation
  - c. 2 weeks before implementation
  - d. not later than 2 weeks after implementation
19. Training plans must be prepared no later than
- a. October 2, 2000
  - b. October 1, 2000
  - c. September 18, 2000
  - d. March 31, 2001
  - e. None of the above
20. T or F – Site-specific hazard awareness training will likely differ depending on the tasks performed at the mine by the person receiving the training?
21. T or F – A training plan that states instruction in first-aid will take from 1-2 hours and which lists 6 possible competent persons when only 2 of them will actually provide the training is not acceptable to MSHA?
22. MSHA inspectors, in evaluating training plans, will try to determine:
- a. if one exists at all
  - b. if its contents meet the requirements of the rule
  - c. if it is being implemented consistent with the plan's specifications
  - d. if it is being updated periodically to account for changes that occur at the mine
  - e. a, b, and c
23. Joe Baker, an experienced miner, was laid off for 4 months but was called back to work at the same mine. What training must he be given?
- a. training in the 9 subjects required for new miners within 60 days and refresher training within 90 days
  - b. training in the 7 subjects required for new miners before he begins work and refresher training within 90 days
  - c. the equivalent of new miner training only during his first full year back from the layoff
  - d. training, before he begins work, on any changes at the mine that could affect his health and safety and all aspects of refresher training he missed during his absence, all within 90 days
24. T or F – newly hired experienced miners returning to work after an absence of more than 12 months must receive a 4 hour block of instruction before beginning work?
25. Circle the letter of each situation below that will require task training
- a. to the loader operator after the cab of her loader is retrofitted with controls that reduce noise and or dust exposure
  - b. to a crusher operator whose duties have now been expanded to include maintenance
  - c. to a haul truck driver whose truck has undergone an overhaul of the engine and modification or the operating controls

d. to an office worker at the mine who has been assigned new duties that include being up in charge of the storage room

26. Yes or No – The Rock – On Mine shuts down each spring for annual maintenance. Would the operator be permitted to provide an 8 hour block of refresher training instruction during this time even though it may mean such training is given 12 ½ months after it was last given to the miners?

27. Yes or No – An NSA/MSHA noise and dust workshop is held at the mine site. The middle day of this three-day event requires students to enter the mine site and place monitoring equipment on working miners. A day after it concludes, an MSHA inspector shows up and asks to see proof that each of these students, by name, received site-specific hazard awareness training. Is this request appropriate under the final rule?

28. Yes or No – An operator insists on providing site-specific hazard awareness training to an MSHA inspector before the inspector leaves the mine office, insisting he's required to do so under the new rule. Is the operator correct?

29. Yes or No – An operator and independent contractor work out an arrangement whereby the operator provides the independent contractor with site-specific hazard awareness information at the mine, and the independent contractor presents this information to his or her employees who will be working at the mine. Is this situation acceptable or not?

30. Identify, by circling the appropriate letter, where record keeping violations of the final rule have occurred.

a. Missy Snyder quits her job at the mine to take another job. She is not given her training records/certificates by the operator when she leaves

b. A miner completes annual refresher training and is not given his records/certifications by the operator

c. As a housekeeping activity, an operator throws out refresher training records that are more than 2 years old

d. A miner asks for his task training record and is told that he has to wait until the end of the calendar year for it

31. T or F – Miners are required to sign their training certificates.

32. An operator experiences an emergency shutdown, which requires miners to work on Saturdays, a nonscheduled workday. This same operation schedules 8 hours of refresher training for the following Saturday. The miners complain, saying that scheduling the session on Saturday violates the part 46 rule. Who is right? The operator or the miners?

## ANSWERS TO PART 46 TEST

1. True They do not have to have hazard awareness training as long as they stay clear of mining operations.
2. False Once they enter the area of the mine engaged in mining operations, they must be given hazard awareness training.
3. Yes New miners must work under the close observation of an experienced miner until they receive the full 24 hours of mandatory instruction. That is clearly not what happened in this example, hence a citation is warranted.
4. Yes A training plan submitted to MSHA for approval cannot be implemented until it is approved by MSHA.
5. No A violation has occurred because Part 46 requires that the experienced miner actually demonstrate his ability to operate the crusher safely.
6. Yes MSHA allows an operator to ensure site-specific hazard awareness training is given to employees of independent contractors without requiring that operators actually give this training.
7. No MSHA sets no time limits on newly hired experienced miner training. While four hours may be sufficient to cover all the required subjects, it also may not be. The operator is advised to personally acquaint himself with the rule.
8. No Task training may not be counted toward completion of refresher training.
9. Yes MSHA states such training records must be provided on the same business day they ask for them.
10. No Training must be provided during normal working hours. Saturday has been a normally scheduled work day for four months at this mine, and hence time on-the-job that day qualifies as "normal working hours."
11. e. (a, b, and c) a. "construction workers who are at an active mine site will be exposed to significant hazards of mining" and "are also typically at the mine site for extended periods because of the nature of their work..." For these reasons, the final rule now provides that construction workers who are exposed to hazards of mining operations are considered "miners" under the final rule. This means that construction workers who work in an active mine site are considered "miners" and must receive comprehensive training..."  
b. and c. "Mining operations" is a slightly broader definition that includes mine development, drilling, blasting, extraction, milling, crushing, screening, or sizing of mineral at a mine; "The definition of "mining operations" includes "mine development", to make clear that certain activities preliminary to extraction would be included."

12. d. October 2, 2000. "The final rule takes effect one year after the rule's publication in the **Federal Register**, giving the mining community an adequate period of time in which to come into compliance with the rule's requirements."

13. e. (a and c) a. "A person who is employed as a miner on April 14, 1999."

c. "A person who has at least 12 months of cumulative surface mining or equivalent experience on or before October 2, 2000."

14. d. all of the above. "Possible evaluation methods include administering written or oral tests to miners, or a demonstration by a miner that he or she can perform all required duties or tasks in a safe and healthful manner. You could also evaluate work practices to ensure that the miner retains and uses the skills, knowledge and ability to perform his or her duties safely."

15. False. "A manufacturers representative is a "miner" if he or she is engaged in mining operations at mine sites – such as maintaining or repairing equipment – for frequent or extended periods."

16. False. The final rule does not allow operators the option of complying with part 48 in lieu of the requirements of part 46. "We have concluded that providing such an option would provide less effective training and protection for the miners working at your mines. Part 46 requires training for construction workers and it takes a proactive approach toward the training of independent contractor employees that come onto mine property."

17. "Extended" exposure means exposure to mine hazards of more than five consecutive work days. Consequently, maintenance or service workers who are not at a mine site for frequent or extended periods would not be "miners" under the final rule.

18. c. 2 weeks before implementation.

19. c. September 18, 2000

20. True. MSHA "also intends that hazard awareness training be appropriate for the individual who is receiving it and that the breadth and depth of training vary depending on the skills, background, and job duties of the recipient."

21. False. "It would be acceptable under the final rule for the operator to include names of all potential instructors in a particular subject, even though the course will ultimately be taught by only one of the instructors listed."

22. e. (a, b, and c) Inspectors and other MSHA personnel who review your plan would simply determine –

(1) That you in fact have developed a plan;

(2) That the written plan contains at a minimum the information specified in this section; and

(3) That the plan is being implemented consistent with the plan specifications.

23. d. "if the newly hired experienced miner returns to your mine after an absence of 12 months or less, the final rule requires, that, before the miner begins work, a competent person

inform the miner of changes at the mine that occurred during the miner's absence that could endanger his or her safety or health."

"Consistent with this approach, the returning miner must receive any annual refresher training that was missed during his or her absence, no later than 90 days after the miner starts work."

24. False. The final rule does require that any experienced miner returning to the same mine after an absence greater than 12 months receive newly hired experienced miner training.

25. b and c. "Task training is intended to ensure that miners receive new training before they are exposed to new health and safety hazards, so that they can avoid, control, or eliminate potential hazards as they perform their job. Such a change could involve a modification to a piece of equipment that introduces new potential safety hazards for the miner that operates the equipment."

26. No. The Mine Act is very specific in its requirement that miners receive no less than eight hours of refresher training **at least every twelve months**.

27. No. "you are not required to make a record of site-specific hazard awareness training under 46.11 for persons who are not miners under 46.2. However, you must be able to provide evidence to us, upon request, that the training was provided, such as by producing the training materials that are used, the written information distributed to persons upon their arrival at the mine, or a visitor log book that reflects that site-specific hazard awareness training has been given."

28. No. "Although an argument could be made in the favor of requiring government officials to receive hazard awareness training, (MSHA) believes that these factors are outweighed by the need for these officials to be unimpeded in the exercise of their duties at the mine site."

29. Yes. "The final rule provides that production-operators are primarily responsible for "ensuring" that independent contractor employees receive required site-specific hazard awareness training. This is intended to clarify the production-operators do not need to provide the training themselves but must ensure that the training has been given."..."production operators may provide independent contractors with site specific information or training materials and arrange for the contractor to provide training to the contractors' employees."

30. b and d. b. "The final rule specifies that certifications and distribution of certificates to miners is required-(4) upon completion of 8 hours of annual refresher training;"

d. "operators may provide miners with copies of their task training certificates at 12 month intervals. However, in the event that a miner wishes a copy of the certificate of the task training that he or she has received before the 12 month period has elapsed, the final rule provides that operators must provide a miner with a copy of the task training certificate upon request."

31. False. "You must record and certify on MSHA Form 5000-23, or on a form that contains the information listed in paragraph (b) of this section, that each miner has received training required under this part.

- (b) The form must include
- (5) A statement signed by the person designated in the MSHA approved training plan for the mine as responsible for health and safety training, that states, 'I certify that the above training has been completed'."

32. **The miners.** "Training must be conducted **during normal working hours.**"