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MINE SAFETY AND HEALTH ENFORCEMENT GENERAL INSPECTION PROCEDURES HANDBOOK

PREFACE

This handbook sets forth general procedures for conducting inspections of Coal and Metal and Nonmetal (M/NM) mines consistent with Section 103(a) of the Mine Act. Previously issued instructions included in separate Coal and M/MN handbooks are entirely superseded by this handbook. The guidance is general and persons should refer to the Federal Mine Safety and Health Act of 1977, as amended (Mine Act or the Act), the Mine Improvement and New Emergency Response Act of 2006 (MINER Act), and 30 Code of Federal Regulations (CFR).

The responsibilities set forth in this handbook provide guidance for a mine inspector when conducting mine inspections; all activities should take into account specific conditions at a mine.

Not all procedures and requirements are applicable for all mine types. Any deviation from the procedures outlined in this handbook should be based on the inspector's professional judgement, and discussion with the inspector's supervisor.

Any proposed future revisions to this handbook will be communicated to the National Council of Field Labor Locals (NCFLL) in accordance with the Collective Bargaining Agreement.

Approved:



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Chapter 1 INTRODUCTION

The objective of MSHA mine inspection and investigation activities is to promote a safe and healthful working environment for miners. MSHA personnel work to achieve this objective in three ways: (1) by enforcing the Federal Mine Safety and Health Act of 1977, (Mine Act or the Act) (PL 95-164) as amended (30 USC 801 et seq.), the Mine Improvement and New Emergency Response Act of 2006 (MINER Act) (PL 109-236), and 30 Code of Federal Regulations (CFR); (2) by conducting education and training activities; and (3) by providing technical assistance to the mining community.

A. Purpose

This handbook sets forth procedures for MSHA personnel to follow when conducting inspections of underground and surface mines, and mine facilities.

B. Authority

Section 103(a) of the Act provides Authorized Representatives (ARs; also referred to as inspectors) of the Secretary of Labor with the authority to conduct inspections of coal and other mines. Inspectors shall be issued proper credentials under the Act prior to conducting inspections. When requested, ARs shall present their credentials to interested parties before conducting an inspection.

C. Responsibility

The Administrator for Mine Safety and Health Enforcement has the primary responsibility for enforcing the Mine Act, MINER Act and the standards and regulations relating to mines. Shared responsibility rests with the inspectors, right of entry personnel, district and assistant district managers, specialists, and supervisors. Inspectors are responsible for conducting inspections and investigations. Inspectors should discuss safety and health practices with mine operators and miners during every inspection. Stakeholder participation is essential to achieving an effective safety and health program at each mine.

D. Inspectors-in-Training

The inspector-in-training (trainee) is to work under the direction of an inspector at all times and is not permitted to conduct any part of an inspection independently. However, trainees certified by the National Mine Health and Safety Academy to sample for respirable dust and noise may assist the inspector responsible for the inspection with sampling when the inspector is in the same general vicinity.

The AR should document the trainee's name in the inspection notes. The name shall not be documented on any other form required for submission in the inspection report.

E. MSHA Personnel - Former Employer Restrictions

At least two years shall elapse from the last date of employment at a mine before MSHA personnel may conduct inspections or investigations at such mine. At least one year shall elapse from the last date of employment by a mining company (operator) before MSHA personnel may conduct inspections or investigations at any mines or facilities owned by such mining company.

F. Health and Safety Rules

MSHA employees should comply with applicable state and company health and safety rules and regulations unless such compliance interferes with the performance of their duties.

G. Denial of Entry, Assault, or Harassment of Inspectors

In the event an inspector is refused entry to a mine, or is threatened or harassed while making an inspection, the inspector should leave the mine and promptly notify his/her immediate supervisor.

H. Inspection Equipment and Supplies

Inspection personnel will be provided equipment and supplies sufficient to safely and effectively complete the assigned inspection and will be properly trained in the use of such equipment.

The inspector should use equipment and supplies that are owned and properly maintained by MSHA (refer to the Inspector's Equipment List and Field Office Equipment and Supplies List in Chapter 5) or other specialized equipment as required.

I. Specialized Inspection Devices or Equipment

Inspectors may utilize a variety of specialized devices or equipment during their on-site activities. Some of these devices include, but are not limited to:

- electronic distance measuring devices;
- cameras;
- tablets;
- electrical circuit, voltage or amperage detectors (e.g., Tic-Tracers™, volt-ohm meters); and
- electronic Abney levels or range finders.

District Managers have the authority to determine the specialized equipment their inspectors need to conduct on-site activities. Inspectors will be provided

appropriate training before using such devices to prevent exposing themselves or others to potential hazards.

The use of electrical or battery-powered devices in mines or areas where ignition hazards, blasting hazards, and flammable materials exist may be prohibited. The use of such devices may also be prohibited in gilsonite mines and some areas of coal or other mines.

Electronic or mechanical devices used to reinforce or supplement facts contained in citations or orders need to be calibrated as required by the manufacturer or used according to MSHA's requirements.

J. Unique or Specialized Inspector Clothing or Equipment

Mine operators may require inspectors and other visitors to wear company-provided specialized clothing or equipment during on-site activities. MSHA may also provide inspectors with these items when they inspect sites requiring specialized clothing. Inspectors should leave company-provided clothing or equipment with the operator before exiting the mine site.

K. Mine Labor/Management Relations

MSHA employees are to remain impartial toward both labor and management and refrain from offering opinions on labor management relations matters which are not covered under the Act, regulations, or standards.

L. Picket Lines and Work Stoppages

Inspectors should discuss the purpose of their presence on mine property with the individuals on the picket line. If access to mine property is delayed or denied, then inspectors should contact their supervisor.

M. Interagency Agreements (IA) and Memorandums of Understanding (MOU)

MSHA will comply with applicable agreements and memoranda that facilitate the efficient use of government personnel, and directly affect the conduct of business by MSHA personnel. Refer to the directory of MSHA MOUs.

N. Jurisdiction

Questions regarding MSHA's jurisdiction are common situations encountered during an inspector's on-site activities. Determinations regarding jurisdiction rely on information initially supplied by inspectors. MSHA and the Occupational Safety and Health Administration (OSHA), for example, have a formal Interagency Agreement to address areas of mutual responsibility and resolve many of these issues. Inspectors should be aware that jurisdictional

issues may require the participation of several other agencies including the Office of the Solicitor or OSHA. These situations are normally decided on a case-by-case basis.

Chapter 2 GENERAL PROCEDURES AND INFORMATION

A. **Weekly Activity Data Form (MSHA Form 7000-36)**

The Weekly Activity Data Form is required to be completed for all inspectors, trainees, and technicians using the Inspection Application System (IAS).

Instructions for completing each item on the form are included in the IAS User's Guide available on MSHA's Intranet.

B. **Weekly Itinerary Form (MSHA Form 4000-126)**

Inspectors should complete and submit a Weekly Itinerary Form (or equivalent) normally when an inspector is in a travel status unless otherwise discussed with their supervisor.

C. **Mine Status**

The Mine Information Form (MSHA Form 2000-209) must be updated and submitted whenever a change or update in the mine status occurs. Any time information is updated, complete the first four items plus the information that is being changed. All other items on this form shall be reviewed for completeness and accuracy during each regular inspection of the mine and updated accordingly.

D. **New Mines, Facilities, and Other Sites**

The inspector should:

- make the mine operator aware of MSHA jurisdiction at the mine on the first visit to a new mining operation;
- notify them of their obligations under the Mine Act and other regulations, and explain MSHA's role in enforcing them;
- provide them with a contact phone number for the appropriate MSHA office and remind them that guidance documents are available on MSHA's website; and
- contact their supervisor and determine if a regular inspection is required.

E. **Electronic Mine File**

The Electronic Mine File (EMF) contains the mine information in two parts: (1) a Mine Overview Report, and (2) a Mine Plan section.

The Mine Overview Report will contain the following:

- current Mine Information Form;
- violation history;

- a) total number of citations and orders issued;
- b) type;
- c) Significant and Substantial;
- d) top 10 citations by standard;
- health sampling date history;
- 103(g) Hazard Complaint Summary;
- accident history (including narratives);
- injury summary (quarterly/annual) including nonfatal days lost, no days lost, and total injury rate.

The Mine Plan Section will contain the following (as applicable):

- Ventilation Plan;
- Roof Control Plan;
- Ground Control Plan;
- Petitions for Modification;
- Safeguards;
- Emergency Response Plans;
- Evacuation Plans;
- Mine Rescue Coverage;
- Miscellaneous.

Inspectors shall review the parts of the EMF pertinent to the type of inspection. A review of the Overview Report and plans may be adequate to begin an inspection. However, the complete EMF should be reviewed as part of a regular inspection and documented in the notes.

Inspectors regularly assigned to a mine are not required to conduct additional reviews of the mine EMF when conducting other types of inspections during the same inspection period.

F. Advance Notice

Inspection personnel should take precautions not to inadvertently disclose their intentions to conduct an inspection at a mine or in a specific location at a mine.

G. Daily Inspection Review

Inspectors should have ongoing discussions with mine operators and miners' representatives (if applicable) to discuss pertinent safety and health issues and reinforce effective programs at the mine. Discussions should include a summary of all enforcement actions taken, accidents at the mine, and the available results of any samples or surveys taken during the inspection. The mine operator should formulate means to prevent recurrence of violations, hazards, and accidents and fully discuss them with all parties.

H. Inspection Summary Report

The inspector will generate an Inspection Summary Report to submit as a cover page for the inspection report once the event is closed. The report is maintained in the IAS system and may be updated as needed until the event is closed. The Inspection Summary Report will contain:

- activity code;
- event number;
- date event started;
- date event finished;
- mine ID;
- organization code (mine assignment);
- company name;
- mine name;
- number of samples collected;
- inspection results; and
- card number of AR(s).

I. Submission Times for Inspection Reports

Inspection reports should be submitted upon completion.

J. Hazardous Conditions or Areas

Inspectors should obtain information from miners and the mine operator to determine why hazardous conditions or areas are posted or barricaded to prevent unauthorized entry. Inspectors should document the reason an area should not or cannot be inspected in the general field notes.

Inspectors and the inspection party accompanying an inspector have the right of entry into any area in the performance of their duties, but should do so with caution considering obvious and potential safety or health hazards.

K. Multi-gas Detectors

MSHA-provided multi-gas detectors must be checked periodically to verify that the gas sensors are responding appropriately and the detector is maintained according to the manufacturer's specifications. Multi-gas detectors must be tested and maintained as follows:

1. *Bump Testing*

Multi-gas detectors used by enforcement personnel will be performance- ("bump") tested before use. Instruments that fail the "bump" test must be recalibrated prior to use in the field. "Bump" tests will be documented in the notes.

2. *Calibration*

Multi-gas detectors must be calibrated according to the manufacturer's specifications.

3. *Recordkeeping*

Documentation of "bump" tests and the calibration of each instrument will be retained for at least the year in which they were performed plus the following fiscal year. The documentation can consist of:

- the computer data files produced by the instrument and an automated calibration unit; or
- a copy of the printed test results that are stored in a central location; or
- records developed and maintained by district personnel.

L. Technical Support Requests

Requests for technical support will come from the District Manager through the Administrator, or designee, to the appropriate Technical Support Center Chief.

M. Electrical Testing

Tests that require the expertise of an electrical specialist shall not be performed by a regular inspector.

Chapter 3 INSPECTION PROCEDURES

This chapter provides guidelines for all inspections. All inspection activity will contribute to the inspection of a mine in its entirety. The inspectors should take every effort to ensure redundancy is minimized and time is used efficiently.

Problems encountered during inspection activities that could affect the health or safety of miners and are not a violation should be promptly communicated to miners, the mine operator and the inspector's immediate supervisor.

A. Arrival at the Mine

Inspectors should arrive at the mine in time for inspection contacts and a review of applicable examination records and mine map(s). The inspector will notify the operator and miner representatives of the type of inspection to be conducted and afford them the opportunity to exercise their rights under Section 103(f) of the Mine Act.

A physical inspection of the mine should begin immediately after a limited review of the most recent examination records pertinent to the planned inspection activity for the day. Inspectors should vary their inspection routes and starting points from one inspection to another to prevent predictability.

B. Inspection Notes

Inspection notes should be distinct and separate for each type of event. The inspection notes will consist of the following.

1. A Daily Cover Sheet (MSHA Form 7000-10I, or 7000-10II or equivalent) with the applicable sections completed for each day where time is reported on an inspection. The arrival time shall be entered on the Daily Cover Sheet. Inspectors may provide a summary of the areas physically inspected in the "Areas of Inspection Activity" section.
2. Inspectors may supplement the Daily Cover Sheet using any legible documentation including approved note keeping forms, checklists, and other preprinted forms. The inspector should date, initial, and sequentially number the front of each page of notes starting with the Daily Cover Sheet as Page 1. It is acceptable to initial, date, and number only the first page of large supplemental documents such as operators' inventories.
3. Documentation of samples, tests, and measurements should be included in the inspection notes.

4. The company number, serial number, approval number, or other identifying method should be used to identify equipment inspected.
5. The majority of general field notes, and citation and order information should be documented on-site during the inspection.
6. Inspectors should not document information on the backside of inspection notes. The completed notes should be submitted to the supervisor for review.
7. Inspectors should reference the applicable E01 event number on either the Mine Inspection Summary Report or on the Daily Cover Sheet when using other activities to complete the E01 inspection.

C. Regular Inspections

The Mine Act requires an inspection of each mine in its entirety at prescribed intervals. This applies to both producing and non-producing mines. A regular inspection requires an inspection of an entire mine, including contractors and their work areas. The inspection should encompass all active as well as expected work areas, including areas that may pose a health and safety risk or concern, regardless of the presence of miners.

In addition to determining compliance, an inspector should make general observations of mine conditions (e.g. ground control conditions, air readings, ventilation controls, evidence of required examinations, dust control practices, accumulations of combustible materials, housekeeping, etc.) each time they inspect a mine site.

The inspector should conduct inspection work on all shifts and days to the extent necessary to observe work practices and determine compliance.

Inspection of mines or facilities on idle shifts should focus on activities specific to that shift and on places or areas where miners are working.

The inspector should discuss health and safety, and work practices with miners including recent accidents, accident history, mine-specific hazards, and occupation-specific health and safety concerns. These talks should be noted including the location of the talk and number of miners.

The inspector should compare the results of examination records to actual observations in or at the mine to determine whether required examinations are performed at proper intervals, and violations and/or hazardous conditions are properly recorded and corrected in a timely manner. The

inspector should also accompany mine examiners during pre-shift, on-shift, and weekly examinations to determine if adequate examinations are being conducted.

The inspector should have discussions with miners concerning the type of training they have received. The inspector should review approximately 10 percent of training records. Additional records should be reviewed if deemed necessary.

The regular inspection at active, non-producing mines should address the areas where miners work and travel and should include, at a minimum, the following:

- a review of examination records;
- inspection of equipment being maintained, or routinely used;
- inspection of mine seals on intake air that passes over electrical installations;
- active impoundments; and
- any hazards, such as methane, inundations or geological conditions.

For example, there is no requirement that the inspector/specialist travel with the mine's examiners; however, if conditions indicate inadequate examinations, then the inspector can then choose to travel with the mine's examiners. Similarly, noise and/or dust sampling will occur as appropriate at active, non-producing coal mines, for example, when there is construction underground while excavating overcasts, or during reclamation where the mine operator is returning the surface to its original contour.

MSHA should inspect active, non-producing mines in their entirety as soon as possible after a mine operator provides notification they are resuming operations and/or production.

The inspection requirements outlined in the following sections should be addressed in the inspection notes.

NOTE: The inspector may document "Not Applicable" or "NA" if the requirement does not apply. A short statement such as "No Violations Observed" or "NVO" may also be used when no hazards or violations are observed.

I. Underground (UG) Inspections

The underground portion of a mine should be inspected before any surface areas, and the working sections/areas should be inspected first. This does not

preclude inspecting other areas of the mine, either on the surface or underground, where a serious problem or condition needs immediate attention.

A tracking map will help ensure a mine is inspected in its entirety. Areas travelled should be documented on the tracking map using start/stop dates and inspector initials. A tracking map may not be necessary for all mines.

The surface facilities at an underground mine will be inspected using the inspection requirements for surface mines/surface facilities.

Inspection requirements for an underground mine in its entirety:

1. Working areas and sections in the mine.

Inspectors should:

- a) observe the complete mining cycle for all work areas;
- b) use a checklist provided in Chapter 5 as basic guidance on what should be inspected under this requirement;
- c) conduct a visual examination and functional test with a known methane air test mixture of the operator's machine mounted methane monitors to ensure that the monitors are operating properly. A plus or minus 10 percent error in the readings is acceptable.

2. Working area and section equipment.

3. Air courses, including active haulage ways.

Inspectors should:

- a) determine the quality, direction, quantity or velocity of airflow at the following locations:
 - where required on working sections or areas;
 - where air enters the mine at each main intake;
 - in each intake split that ventilates a working section;
 - in each return split of air that ventilates a working area or section, immediately before it enters the main returns;
 - where the air leaves the main returns;
 - where diesel equipment is operating; and
 - locations required by the ventilation plan.

- b) inspect at least one entry in each intake and return air course in its entirety;
- c) compare the mine operator's weekly examination records of air courses to the mine map to ensure that the mine operator is examining them in their entirety;
- d) consider the following guidelines when inspecting seals and seals being constructed, except gob isolation seals:
 - review sampling records to determine trends;
 - review construction records to ensure applicable plans and regulations are followed;
 - inspect seals for deterioration or damage. The entire seal must be kept clear to facilitate a reasonable visual examination;
 - verify that the seals are not impounding water or slurry;
 - if a seal includes a valve or water trap, then it should be opened as part of the inspection;
 - check to determine if the seals are in-gassing or outgassing; and
 - inspect sampling pipes and sample the atmosphere behind the seals.
- e) sample a minimum of one seal in each set for coal mines. If an area is totally sealed with 120 psi seals – no seal samples are required. The sampling equipment that may be needed includes:
 - permissible vacuum pump;
 - tubing, adapters, connectors;
 - high-range methane detector;
 - carbon dioxide (CO₂) detector, if an alternative method is approved under Section 75.336(d);
 - air sample bags;
 - double-pointed needle syringe; and
 - gas sample tubes.

NOTE: Vacuum pumping must continue long enough to purge the air sampling tube and line with six times the air volume needed in the sample prior to extracting the sample.

- 4. Accessible old workings and entrances to abandoned workings.**
- 5. Other places where miners work or travel.**
- 6. Outby electric installations and mobile equipment as encountered.**

Inspectors should determine if the non-permissible heavy-duty diesel equipment has a paper filter DPM after-treatment device by reviewing the

operator's diesel inventory. Inspectors should observe the operator testing the exhaust gas temperature on a minimum of 25 percent of applicable equipment.

7. Diesel fuel storage system.

8. Health hazards (refer to Health Handbook).

9. Self-rescue devices.

Inspectors should:

- a) conduct visual examinations of self-rescue devices following the manufacturer's inspection procedures, observe devices being worn or carried by miners and talk to the miners to explain the purpose of the inspection and check their understanding of the donning procedures;
- b) check filter-type rescue devices to ensure they are maintained and the service life dates are not exceeded;
- c) inspect approximately 25 percent of Self-Contained Self Rescuers (SCSRs) worn or carried by miners, stored on the section, or stored on the section transportation;
- d) inspect a representative number, but no less than 10 percent, of SCSRs stored in outby areas and/or on other mobile equipment. Additional SCSRs should be inspected if necessary.

10. Escape and emergency response.

Inspectors should talk to miners to determine if they are familiar with the designated escape routes and evacuation procedures.

11. Escape facilities in shafts, such as hoists and elevators.

One complete cycle of the hoisting equipment should be observed.

Inspectors should evaluate the availability of escape capsules to determine if all miners underground could be evacuated in a timely manner, including disabled miners.

An inspection should be conducted of all personnel hoisting equipment at least annually by an inspector trained in hoisting.

12. Communication and tracking installations.

Inspectors should inspect the post-accident two-way communication and electronic tracking systems for compliance with applicable standards and the Emergency Response Plan (ERP).

The inspector should evaluate whether:

- the system uniquely identifies miners underground and their locations;
- the system can send and receive messages;
- a responsible person is always on duty when miners are underground.

13. Ventilation fans and facilities.**14. Material haulage facilities.**

Inspectors should inspect conveyor belts from within the entry where the belt is located and travel the entire conveyor length and determine the direction, quantity or velocity of airflow at required locations on each belt flight.

National Fire Protection Association® (NFPA) consensus standards may also apply to conveyor belts.

15. Fire hazards, fire protection, smoking.

NFPA consensus standards may apply.

Atmospheric Monitoring System (AMS) and Automatic Fire Sensor and Warning Device Systems are similar in the following ways:

- the ability to measure atmospheric parameters;
- the measurements are transmitted to a designated surface location;
- alert/alarm and warning signals are provided; and
- atmospheric data is processed and reports are provided.

The two systems may share a common platform or operate on separate platforms. The installation/operational procedures, record keeping, and training requirements are unique to the type of system and the inspector must apply the appropriate regulation for the particular system in use.

A compliant AMS system would satisfy the requirements of an automatic fire sensor and warning device system. However, an automatic fire sensor and warning device system may not satisfy the

requirements of an AMS system. Compliance determination will depend on the purpose of the installation.

AMS system components used to provide early fire warning along belt conveyors in place of Automatic Fire Sensor and Warning Device System, must meet the requirements regarding automatic fire sensors (Sections 75.1103-1 through 75.1103-8).

16. First aid supplies and materials.

17. Potable water.

18. Sanitary facilities.

19. Blasting practices and explosives storage.

20. Records and postings.

Checklists in Chapter 5 provide a complete listing of the Mine Records and Postings that may be applicable at a mine.

21. Hazard communication.

II. Shaft or Slope Construction Inspections

Shaft and slope construction operations may be a combination of underground and/or surface operations. They should be inspected as part of the regular inspection or more often if necessary. The critical phases of the operation should be observed. Refer to the applicable regulations and approved plans for further guidance.

III. Surface Mines/ Surface Facilities/ Surface Areas of UG Mine Inspections

The surface pit and related mining operations should be inspected before any preparation facilities. This does not preclude inspecting other areas of the mine where a serious problem or condition needs immediate attention.

Inspection requirements for surface mines and surface facilities in their entirety:

1. Working areas at the mine, including active roadways.

The inspector should observe the complete mining cycle for all work areas.

2. Highwalls.

3. **Pit equipment.**
4. **Spoil banks.**
5. **Stockpiles.**
6. **Other places where miners work or travel.**
7. **Electric installations, machinery, and mobile equipment as encountered.**
8. **Drilling and blasting practices.**
9. **Hazard communication.**
10. **First aid supplies and materials.**
11. **Fire protection.**
12. **Potable water.**
13. **Sanitary facilities.**
14. **Health hazards (refer to Health Handbook).**
15. **Emergency response.**
16. **Impoundments/retaining dams.**

The downstream areas should be evaluated to confirm the hazard potential classification for an impoundment or retaining dam has not changed.
17. **Refuse piles.**
18. **Explosives storage.**
19. **Oil, gas and degasification Wells.**

The inspector should also evaluate surface facilities for the following:

- combustible dust accumulations;
- illumination;
- structural integrity;
- hazardous gas accumulations;

- thermal dryers;
- observe one complete cycle of personnel hoisting; and
- railroad equipment.

D. 103(i) Spot Inspections

Section 103(i) of the Act defines the mine conditions under which spot inspections are to be conducted. Section 103(i) inspections shall be directed specifically to the problems, hazards, or conditions which determine the mine classification as a Section 103(i) mine. This does not prevent another category of inspection or investigation from being conducted during the same visit to the mine.

Section 103(i) inspection status changes shall be implemented immediately upon determination of necessity, and the initial inspection in the new inspection interval period shall not be delayed until the start of a new inspection quarter.

Section 103(i) spot inspections are required to be conducted within a consecutive five working day block of time. More than five working days could pass between inspections as long as one inspection occurs within each block. This block principle ensures irregularity as well as meeting the frequency requirement. This block principle also applies to mines in 10-day and 15-day spot status as a result of methane liberation.

E. Explosives Storage at All Mines

All areas where explosives are stored on mine property should be inspected. This inspection includes storage security, presence of combustible materials, handling of explosives, and recordkeeping.

The inspector will inform the mine operator of observed violations of the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) regulations under 27 CFR Part 555, subpart K, Storage. The inspector will document these violations on ATF Form 5030.5, Report of Violations. Within 10 days of inspection completion, the form must be sent to ATF by email to MSHA@ATF.gov and a copy sent to the mine operator.

The MSHA-ATF MOU provides additional guidance.

F. Documentation of Enforcement Actions

Pursuant to Section 104(a) of the Mine Act, each citation or order must be issued in writing, describing in detail the nature of the violation, including a

reference to the provision of the Mine Act, standard, rule, regulation, or order alleged to have been violated.

The names of individuals shall not be included in the Condition or Practice section of the Mine Citation/Order Form, but may be included in the inspection notes.

The citation must assign a reasonable time for the abatement of the violation. Facts that substantiate enforcement actions should be documented at the time the information is obtained.

The record/examination books should be reviewed before citation/order(s) are issued in part to ascertain the level of negligence associated with the violation.

Inspectors should document the following information in their inspection notes where applicable:

1. Basic violation documentation.

- a) The date and time (24 hr. clock) the inspector observed the violation.
- b) A description of the conditions and practices that constitute a violation of a specific regulation, standard, or section of the Mine Act. They must be precisely identified and described, including:
 - the specific location where the violation or hazard exists;
 - measurements to quantify the size and extent of the cited condition or practice (such as dimensions, periods of time, sampling results, ventilation rates, and number of occurrences);
 - equipment serial and/or model numbers (where applicable).
- c) A copy of the current approval letter and/or pertinent page(s) (date stamped) when an enforcement action results from an operator's failure to comply with an approved plan, permit, or petition.
- d) Sample analysis report(s) when enforcement or subsequent action(s) are taken based upon the results of sampling.

2. Gravity documentation.

- a) Factors used to determine likelihood of injury or illness, including duration and frequency of the exposure under continued normal mining practices.
- b) The facts and reasoning used to determine the type of injury or illness that resulted or that would reasonably be expected to result; this determination is independent of the likelihood.
- c) The facts and reasoning used to determine the number of persons who could be affected if the anticipated event occurred, or the number of persons who were actually injured or became ill as a result of the hazard caused by the violation.

3. Negligence documentation.

- a) The length of time the violation existed and the basis for this determination, including record books, physical factors or statements.
- b) The obviousness of the condition.
- c) Evidence indicating operator presence in the area where the violative condition or practice may have existed, including the name and title of witnesses and how the evidence was determined, including dates and times.
- d) Any information regarding action(s) or effort taken by the operator to prevent or correct the hazardous conditions or practices.

4. Aggravated conduct.

Inspectors should review citations marked as “high” or “reckless disregard” for aggravated conduct using the following factors. The inspector’s decision and reason(s) should be indicated in the notes.

- a) The violative condition or practice posed a high degree of danger to miners, warranting increased attention from the operator to prevent or correct the hazards created by the violation.
- b) The violative condition or practice was obvious and/or extensive.
- c) The violative condition or practice existed for an extended period of time.
- d) Repeated similar violations were cited at the mine or to the contractor in the recent past.
- e) An agent of the operator or contractor was in the area, or was aware of the existence of the hazard.

- f) The operator knew or had reason to know the action(s) violated a mandatory standard.
- g) The violative condition or practice was reported to the operator or contractor who then failed to correct the problem, for an extended period of time.
- h) The violative condition was a result of deliberate activity by the operator.
- i) The individual who committed or allowed the condition or practice to exist was a supervisor or an agent of the operator or contractor.
- j) Reasonable efforts were not made by the mine operator or contractor to prevent or correct the hazard.
- k) Other factors, not identified above, that resulted in a negligence evaluation by the inspector of “high” or “reckless” disregard.

Refer to the Citation and Order Writing Handbook for further guidance and additional information.

G. Photographs

All photographs taken as part of an inspection or citation shall be associated with the citation or event. Photographs should clearly and accurately depict the nature of the violation or condition.

Inspectors should ensure the device is set to the correct date and time. No more than two to three good photographs are necessary to illustrate a violation.

Inspectors should exercise caution when taking photographs and never expose themselves, or allow others involved with the picture to be exposed, to potential safety hazards.

Inspectors should document in their notes the name and affiliation of persons other than inspectors who are taking photographs during an inspection.

H. Litigation Involvement

MSHA personnel asked to participate, or expect to be called as a witness in litigation or asked to assist in litigation, should notify their supervisor.

I. Interconnected Mines

If any imminent dangers are found in one mine that is connected to another mine underground, inspectors shall issue an order to each mine, even if considered separate mines, when the safety of the miners in the other underground mine may be affected. The inspector shall implement this procedure regardless of whether these mines are controlled by the same or different operators.

Chapter 4 - SAMPLING PROCEDURES

A. Air Measurements

There are several methods to calculate air velocity.

Pitot tube - The Pitot tube used with a differential pressure gauge is a primary standard instrument for determining velocities of 750 to 10,000 feet-per-minute (fpm). The pressure gauge provides a reading in inches of water (inches water gauge.) The reading is used to determine the velocity and air quantity by calculation or by using conversion tables.

The following formula is used to convert inches of water to velocity:

$$V = 4005 \sqrt{VP}$$

Where V = velocity in fpm

VP = velocity pressure in inches of water (inches water gauge)

NOTE: Centerline measurements require correction. Velocity (V) should be multiplied by a method factor of 0.9.

Anemometer - A properly calibrated anemometer can be used to measure the air velocity. Take a traverse reading or a centerline reading of the area where the velocity is to be measured. Use correction factors for the individual anemometers to determine the actual air velocity. Do not use anemometers to determine air velocity if the indicated velocity falls below the minimum shown on the anemometer's correction chart.

Smoke Clouds - The use of chemical smoke may be necessary when measuring air velocities less than 100 fpm. Timed smoke clouds are commonly used to determine air velocities too low to be measured with anemometers. Below are the proper procedures for making timed smoke cloud measurements.

Location and Calculation of the Measurement - The location should be a representative section of the airway. (Refer to Figure 4-1.)

Distance (d) should be measured from the selected beginning point to the end point. This measured distance will be determined by the degree to which the smoke cloud remains intact, how well it can be seen, and the airflow rate over the measured area. Greater distances increase accuracy if the smoke cloud can be seen clearly. Ten feet is usually adequate. At low flow rates, the distance may be reduced to five feet.

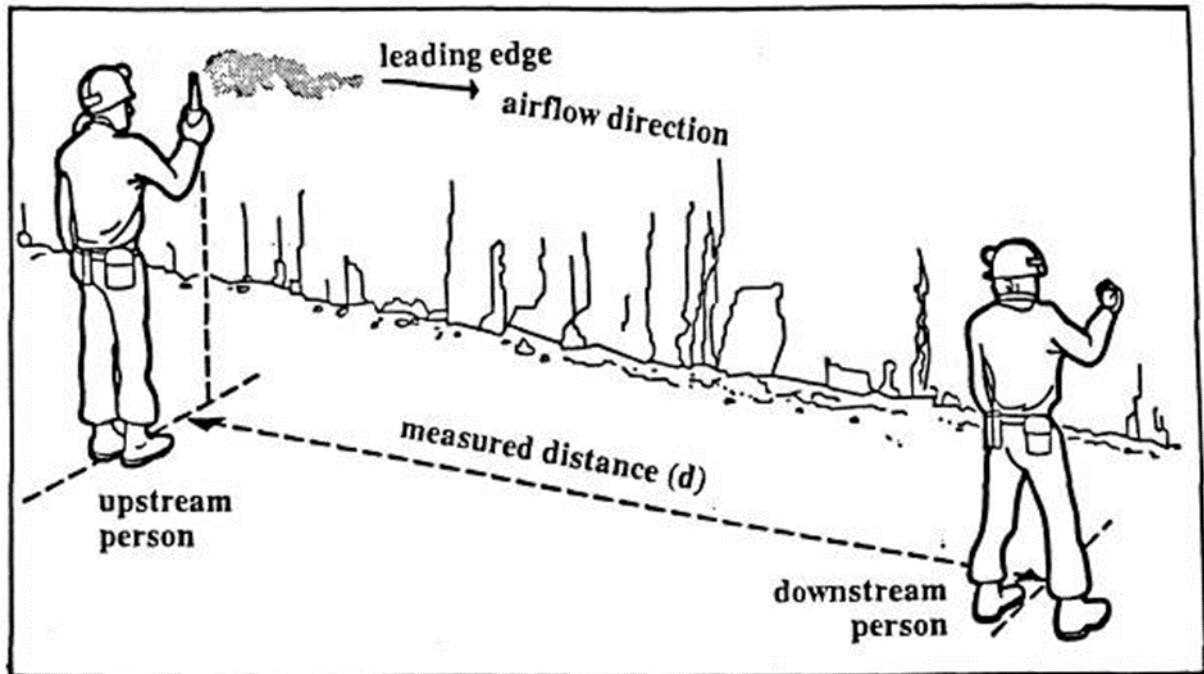


Figure 4-1: Taking Timed Smoke Cloud Readings

Taking Readings - For best results, two people should work together (one at each end of the measured distance):

- a) The upstream person breaks off both ends of the chemical smoke tube and inserts one end into the rubber tubing of the aspirator bulb.

NOTE: Gloves and eye protection should be worn when breaking off the tube ends and using smoke tubes to prevent serious cuts and eye injuries. Provisions are usually provided in the box or container to break tube ends cleanly. Used tubes should not be disposed of in travelways.

- b) The upstream person holds the aspirator bulb and smoke tube away from his/her body. They squeeze the aspirator bulb to force air through the glass tube which contains the smoke-generating chemical (only a small puff of smoke is necessary).
- c) The upstream person releases the smoke perpendicular to the airstream (facing the mine rib) and signals the release of the smoke cloud; the downstream person starts timing, with a stopwatch, how long the smoke cloud takes to travel over the specified distance.
- d) If a stopwatch is not available, a watch with a sweep-second hand may be used. In this case, the downstream person should signal for release of the smoke cloud when the second hand reaches a reference point.

- e) The downstream person records the time interval from the release of the smoke until the leading edge (front) of the smoke cloud reaches them. The leading edge is used because the first part of the smoke should just be leaving the tube and starting to travel downstream in the air current when the timing begins.

Calculating air velocity - The average smoke cloud travel time and the measured distance are used to compute the air velocity by using the formula:

$$V = \frac{d}{t} \times 60 \text{ sec}$$

Where V = calculated air velocity in fpm
 d = measured distance in feet (ft)
 t = travel time to cover the distance in seconds (sec)

Example:

If the measured distance used to determine velocity is 10 feet, and the travel time is 6.6 seconds, then:

$$V = \frac{10 \text{ ft}}{6.6 \text{ sec}} \times 60 \text{ sec}$$

$$V = 91 \text{ fpm}$$

The method factor for smoke cloud measurements is equal to 0.9. This factor, when multiplied by the calculated velocity, yields the true velocity.

$$\begin{aligned} \text{True Velocity} &= \text{Calculated Velocity} \times \text{Method Factor} \\ \text{True Velocity} &= 91.0 \text{ fpm} \times 0.9 = 82 \text{ fpm} \end{aligned}$$

Air Velocity Table - The Air Velocity Table (Figure 4-2, MSHA Form 7000-10F) can be used as an alternative for calculating air velocity. When the final average time has been calculated (6.6 seconds in Step 1 above), locate the air velocity on the table.

Example:

Find 6.6 seconds in the "TIME SEC" column. For a measured distance of 10 feet, the air velocity equals 82 fpm.

Calculating air quantity - Once velocity is determined, air quantity can be determined by using the formula:

$$Q = VA$$

Where Q = air quantity in cubic feet per minute(cfm).

V = air velocity in fpm

A = cross sectional area measured in square feet (sq ft)

Figure 4-2: Velocity Table for Smoke Cloud Measurements

MSHA Form 7000-10F, Oct 2012

SMOKE TUBE DATA CONVERTED TO VELOCITY BASED ON

$$V = \frac{\text{distance (feet)}}{\text{time (seconds)}} \times 60 \times 0.9 \text{ FROM BULLETIN 589}$$

TIME SEC	VELOCITY			TIME SEC	VELOCITY		
	10 ft.	15 ft.	20 ft.		10 ft.	15 ft.	20 ft.
5.0	108	162	216	15.0	36	54	72
5.2	104	156	208	15.2	36	53	71
5.4	100	150	200	15.4	35	53	70
5.6	96	145	193	15.6	35	52	69
5.8	93	140	186	15.8	34	51	68
6.0	90	135	180	16.0	34	51	68
6.2	87	131	174	16.2	33	50	67
6.4	84	127	169	16.4	33	49	66
6.6	82	123	164	16.6	33	49	65
6.8	79	119	159	16.8	32	48	64
7.0	77	115	154	17.0	32	48	64
7.2	75	113	150	17.2	31	47	63
7.4	73	109	146	17.4	31	47	62
7.6	71	107	142	17.6	31	46	61
7.8	69	104	138	17.8	30	46	61
8.0	68	101	135	18.0	30	45	60
8.2	66	99	132	18.2	30	45	59
8.4	64	96	129	18.4	29	44	59
8.6	63	94	126	18.6	29	44	58
8.8	61	92	123	18.8	29	43	57
9.0	60	90	120	19.0	28	43	57
9.2	59	88	117	19.2	28	42	56
9.4	57	86	115	19.4	28	42	56
9.6	56	84	113	19.6	28	41	55
9.8	55	83	110	19.8	27	41	55
10.0	54	81	108	20.0	27	41	54
10.2	53	79	106	20.2	27	40	53
10.4	52	78	104	20.4	27	40	53
10.6	51	76	102	20.6	26	39	52
10.8	50	75	100	20.8	26	39	52
11.0	49	74	98	21.0	26	39	51
11.2	48	72	96	21.2	25	38	51
11.4	47	71	95	21.4	25	38	50
11.6	47	70	93	21.6	25	38	50
11.8	46	69	92	21.8	25	37	50
12.0	45	68	90	22.0	25	37	49
12.2	44	66	89	22.2	24	36	49
12.4	44	65	87	22.4	24	36	48
12.6	43	64	86	22.6	24	36	48
12.8	42	63	84	22.8	24	36	47
13.0	42	62	83	23.0	23	35	47
13.2	41	61	82	23.2	23	35	47
13.4	40	60	81	23.4	23	35	46
13.6	40	60	79	23.6	23	34	46
13.8	39	59	78	23.8	23	34	45
14.0	39	58	77	24.0	23	34	45
14.2	38	57	76	24.2	22	33	45
14.4	38	56	75	24.4	22	33	44
14.6	37	55	74	24.6	22	33	44
14.8	36	55	73	24.8	22	33	44

B. Air Samples

Air samples collected during inspection activities are normally analyzed for five basic gases: carbon dioxide (CO₂), oxygen (O₂), methane (CH₄), ethane (C₂H₆), and nitrogen (N₂). Sampling procedures and analysis for other gases are covered in the Health Inspection Procedures Handbook.

The 10-milliliter air sample bottles or 'vac-u-tainers[®]' shall be used to collect air samples. A plunger (needle) shall be used to prevent contamination when collecting air samples.

Total Methane Liberation (TL)

Inspectors should determine the number of samples necessary to calculate total methane liberation for a mine. They must measure air quantity at each sample location.

TL samples should be collected during normal production times so an accurate TL calculation can be conducted. If major air changes are planned in the early part of the inspection that may seriously affect the TL calculation, the inspector may wait until those changes are made, as long as the TL samples can be collected in a timely fashion.

Inspectors must send all air samples to the MSHA Gas Laboratory Dust Analysis Section within three working days (postmarked) of collection. Samples collected from more than one mine may be mailed in the same holder/mailler. A copy of the completed MSHA Form 2000-43 shall be included in the shipment holder/mailler, a second copy submitted to the Mine Safety and Health Assistant for the appropriate field office, and a third copy retained by the inspector until the analysis report is received.

The results of all air samples sent to the MSHA laboratory for analysis will be emailed to the appropriate field and district office supervisor and assistant. The results shall be included with the inspection report.

Special collection media may be required to sample for the presence of dusts, fumes, mists, and vapors. The Pittsburgh Safety and Health Technology Center (PSHTC) should be contacted for guidance on special collection media.

When special samples are collected due to a problem at a mine or to substantiate a violation, inspectors will write a conspicuous red "S" on the upper left corner of the MSHA Form 2000-43 and on the outside of the shipment holder/mailler; they will also note the citation or order number and the date and time of

issuance in the “Remarks” section on the form.

C. Coal Mine Dust Sampling

The incombustible content of coal mine dust will be evaluated during regular and/or spot inspections. Mine dust samples shall be collected from a variety of accessible locations within the coal mine. Sample locations should be chosen based on visual identification of areas with potentially non-compliant conditions.

Sampling near advancing mining sections, retreat mining sections, belt transfers, and any other locations where coal dust is generated or accumulates should be emphasized. Accessible areas encompass travelable portions of the coal mine, including bleeders and worked-out areas where pillars have not been removed.

When samples are collected, sufficient information to complete MSHA Form 2000-156 must be included in the inspection notes.

Guidelines

The inspector should take a full band sample when collecting mine dust samples if possible. A full band sample is defined as a sample of the mine dust from the roof, ribs, and floor. It may be collected from crosscuts or entries. Partial samples may be collected at any location where coal dust is visible on the roof, ribs, structures or suspended items, or conditions prohibit a full band from being collected. A citation may be issued based on partial sample results.

If areas are too wet to collect a sample, then if possible choose another location. If the entire air course is too wet to sample, then this should be documented in the notes.

A rock dust sample is not required if a citation is issued for violation of Section 75.400 based on visual observation.

Tests for methane must be conducted and recorded at each rock dust sample location with a properly calibrated hand-held methane detector. The methane percentage measured is needed to determine compliance with Section 75.403.

1. Continuous Mining Machine and Conventional Working Sections

Inspectors should collect at least four samples per air course between 40 feet outby and 1,000 feet outby the working faces during a regular inspection. At least one sample per air course shall be collected inby the section loading point including air courses separated by temporary ventilation controls. If the section has advanced less than 1,000 feet from the mouth of the section,

samples may be collected from the portion of the main or sub-main air course within 1,000 feet of the working faces.

2. Longwall Working Sections

Inspectors should collect at least two samples per air course within 1,000 feet of the longwall face during a regular inspection. Inspectors shall collect at least four samples from the longwall tailgate within 1,000 feet of the longwall face.

3. Main and Sub-main Conveyor Belts

Inspectors should collect at least one sample per belt flight during a regular inspection.

4. Sampling Method.

Inspectors should collect mine dust from a band approximately six inches wide around the perimeter of the mine entry or crosscut collecting the uppermost $\frac{1}{8}$ -inch (approximate depth) of mine dust from the surface of the band to obtain a representative sample of potentially explosive mine dust. The sample will be collected by gently brushing the surface mine dust into the pan. See Figure 4-3 below.

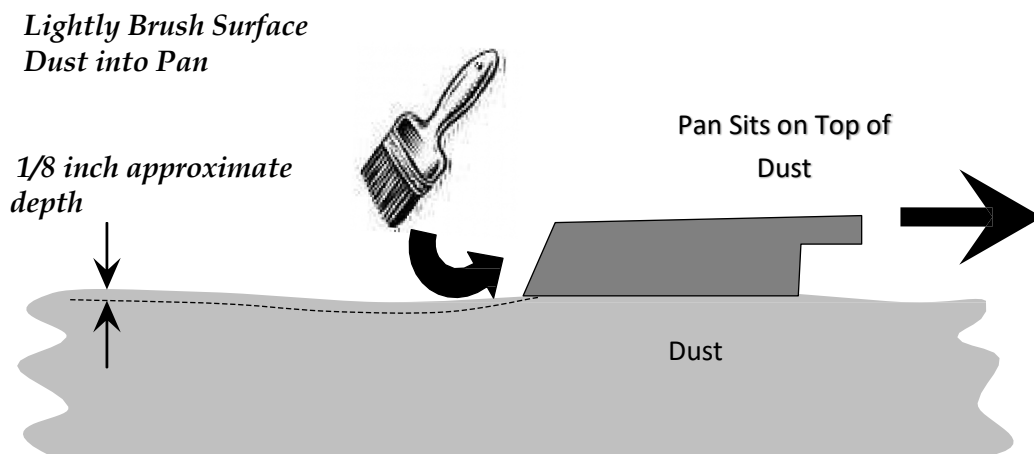


Figure 4-3: Mine Dust Sample Collection

Inspectors should:

- take the collected dust sample from the dust pan and/or scoop;
- shake the sample through the 20 mesh sieve;
- discard any oversize materials;
- if the amount of the sample is greater than one-half of a sample bag, reduce the sample volume by the coning and quartering method below.

5. Coning and Quartering

To get a representative sample, inspectors should:

- place all of the sample on a piece of brattice cloth and mix thoroughly by alternately lifting opposite corners of the cloth;
- gather the dust in a cone-shaped pile in the center of the cloth and use the dust pan to divide the cone into four quarters;
- use the dust from two diagonally opposite quarters for the sample;
- repeat this process until the remaining sample is the volume required to fill a sample bag about one-half full or approximately three ounces;
- carefully transfer this dust to a plastic sample bag.

If the mine dust collected from the roof, ribs and suspended items is insufficient in quantity, a second six-inch wide sample should be taken adjacent to the first band. If a partial sample is split between the floor and the roof/ribs, only the roof/ribs and suspended items portion of the sample should be doubled.

A specialized tool may be used to collect dust samples from the roof, ribs and suspended items in areas that are difficult to reach. An example of such a tool is shown in Figure 4-4 below.

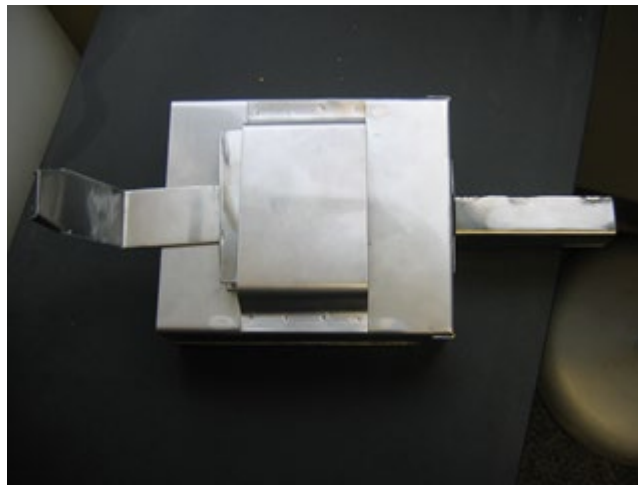


Figure 4-4: Tool for Collecting Dust Samples from Roof, Ribs, and Suspended Items

6. Processing Samples.

Sample bags are long enough to permit tying a knot in the open ends. The string of the identifying tag should be tied securely within the formed knot of the sample bag. Each tag is pre-printed with a unique alphanumeric code that will be used to identify the sample. Inspectors may include additional

handwritten information on the tag, provided it does not obscure the pre-printed identifier.

7. Data Submittal and Mailing of Samples.

Rock dust sample data must be entered using the Dust Sampling Lab Report (MSHA Form 2000-156 – Rock Dust Sample Submission Form) and submitted using the Inspectors Application System (IAS).

Rock dust samples should be mailed to the National Air and Dust Laboratory (NADL) within three working days from the sample collection date. A copy of MSHA Form 2000-156 must be printed and shipped with the bagged sample(s). Proper packaging includes:

- securely sealed shipping boxes to prevent loss of samples in transit;
- the return address of the office from which the samples are being mailed placed on the outside of the shipment box;
- a regular corrugated pasteboard carton with all voids around the bags filled with packing material to keep the bags from breaking open during shipping and handling.

The NADL will provide the sample results to the inspector and supervisor for evaluation. All rock dust analysis reports shall be included within the appropriate inspection report, and locations of non-compliant samples should be noted on the quarterly tracking map.

8. Enforcement Actions for Non-Compliant Samples.

A citation or order must be promptly issued for non-compliant rock dust samples. Inspectors should re-sample non-compliant locations before terminating any enforcement actions if visual compliance cannot be determined. A coal dust explosibility meter (CDEM) may be used as a basis for terminating a citation or order.

Chapter 5 - APPENDICES

A. Miscellaneous Forms and Related Information

Miscellaneous forms and related information are listed in this handbook on the next two pages of this chapter. They can be accessed electronically through the handbook shortcut on your computers or IAS. Some forms may help with inspection procedures and may also be used as notes in the inspection file.

MSHA Form 2000 and 7000 series include note pages to assist inspectors with their notetaking during inspections and investigations; they are listed below:

- Form 2000-169 Coal Mining Occupations
- Form 2000-208 (revised 2010)
- Form 2000-222 Deluge-Type Water Spray Systems
- Form 2000-225 Dry Powder Chemical Systems
- Form 2000-234 Water Sprinkler Systems
- Form 4000-49A Regular Inspection Information
- Form 4000-49B (Part 56) Recordkeeping
- Form 4000-49B (Part 57) Recordkeeping
- Form 4000-49C Closeout Conference
- Form 4000-49D Miscellaneous Inspection Information
- Form 4000-125 Photo Mounting Worksheet
- Form 4000-127 Tailings & Water Impoundment Inspection Form
- Form 4000-127a Water, Sediment, or Tailings Dam Inspection Checklist
- Form 4000-49E Citation/Order Documentation
- Form 4000-49G Citation/Order Documentation
- Form 4000-49H General Field Notes
- Form 4000-51 CAV-Nonpenalty
- Form 7000-10C Record and Training List (Partial)
- Form 7000-10D Electrical Breaker Settings
- Form 7000-10E Electrical Magnetic Trip Range
- Form 7000-10F Smoke Tube Data Converted to Velocity
- Form 7000-10G Ventilation Qavg for Tubing Size
- Form 7000-10I; 7000-10II Daily Cover Sheet
- Form 7000-10J; 7000-10JJ Pre-printed Grid Pages
- Form 7000-10K; 7000-10KK Pre-printed Line Pages
- Form 7000-10M; 7000-10MM Air Reading
- Form 7000-10N; 7000-10NN Respirable Dust

Form 7000-10P; 7000-10PP Noise
Form 7000-10R Glossary for Electrical Equipment
Form 7000-10S Glossary for Diesel Equipment
Form 7000-10T Roof Bolt Head Mks-ASTM F432-95 (two pages)
Form 7000-10U Seal Recordkeeping Requirements Section 75.339(a)
Form 7000-10V Static Force Req to Open a Mandoor (two pages)
Form 7000-10W Area of Circular Ducts
Form 7000-59 Pitot Card (two pages)

B. Inspection Equipment and Supplies

The following lists of inspection equipment and supplies that are either provided to each inspector or available at the field office. Not all items on the list may be applicable to all inspectors or all types of mines they inspect.

1. Equipment and supplies provided to each underground inspector and each surface inspector (including trainees), as needed, and depending upon the type of mine being inspected:

- Credentials, business cards and identification check tag (brass)
- Lamp belt with attached identification check (brass)
- Self-contained self-rescuer (SCSR)
- Permissible cap lamp & charger
- Protective (hard) hat with reflective material
- Knee pads
- Eye protection (safety glasses with side shields)
- Hearing protection (ear plugs or ear muffs)
- Safety harness and lanyard
- Gloves
- Leg bands
- Footwear (safety shoes or boots)
- Coveralls with reflective material
- Clothes bag
- Respirator with appropriate cartridge/filter
- Carrying case for equipment
- Copies of the Act, 30 CFR, Inspection Procedures Handbooks, and Program Policy Manual
- Citation/order and continuation forms (7000-3 & 7000-3a)

- Appropriate notebook (with informational inserts as needed), pencil, and ballpoint pen
- Tablet/printer
- Digital camera with batteries/memory card
- Field equipment bag
- Permissible multi-gas detector
- Dust collecting equipment and sample containers - incombustible (bituminous coal and lignite mines)
- Hammer
- 6 Foot wooden rule
- Magnehelic gauge(s) and pitot tube, anemometer, a watch with a second hand or a stop watch, measuring tape, measuring rule, smoke tubes, and aspirator bulb
- Air sample bottles plunger needle assembly
- Feeler gauges - flat/radial (appropriate sizes)
- 1/8-inch Precision Key Stock for packing gland gap measurement
- Roof testing device (required for underground inspections)

2. Equipment available to each inspector as needed in each field office:

- Noise dosimeters and calibrator range finder
- Health sampling equipment such as: approved respirable dust sampling pumps, battery chargers, volt meter, sampling head assemblies, and filter cassettes
- Water pressure gauge(s)
- In-line water flow meter
- Roof bolt torque wrench and roof bolt finishing bit gauge
- Permissible high range methane multi-gas detector for seal air quality sampling (and pump as needed)
- High speed anemometer
- 10-inch magnehelic gage
- Fire hose outlet, 50/50 gauge, and appropriate adapters
- Air sample bottles (10cc & 50cc)
- Air sample bags
- Extendable probes for permissible multi-gas detector
- Light meter (photometer)
- Electronic handheld thermocouple instrument (diesel exhaust temperatures)

- Coal Dust Explosibility Meter (CDEM)
- Gas Detector Docking Station

C. Working Section or Working Area Checklist

This procedural guidance will help document items that should be inspected. It can be printed and used as notes where applicable. (Blank spaces are provided below to add items not listed)

LOCATION: _____

- N/A EQUIPMENT
- N/A COMMUNICATIONS
- N/A DUST CONTROL PARAMETERS
- N/A ESCAPEWAY MAP
- N/A FIRST AID EQUIPMENT AND SUPPLIES
- N/A FIRE PROTECTION
- N/A OBSERVE WORK CYCLE
- N/A POTABLE WATER
- N/A ROCK DUST SAMPLES INBY TAILPIECE
- N/A ROOF AND RIB CONDITIONS
- N/A SUPPLEMENTAL ROOF SUPPORT
- N/A VENTILATION
- N/A SANITARY FACILITIES
- N/A SELF RESCUE DEVICES (STORED AND CARRIED)
- N/A POST ACCIDENT TRACKING
- N/A HEALTH AND SAFETY DISCUSSIONS (TRAINING)
- N/A METHANE MONITOR CALIBRATION
- N/A OBSERVE BLASTING PRACTICES
- _____
- _____
- _____
- _____

INSPECTORS INITIALS _____

PAGE No. _____

D. Forms and Information Needed in an E01 Inspection Report

All forms may or may not be applicable to all E01 inspection reports. Reports do not need to be maintained in any particular order.

The following checklists will provide guidance as to what forms may be needed to complete an E01 inspection report:

- Underground Inspection Forms Checklist
- Surface/ Facility Inspection Forms Checklist

Underground Inspection Forms Checklist **Event Number** _____

- N/A Mine Inspection Summary Report
- N/A 2000-223 Emergency Response Plan Review Form
- N/A 2000-86 Respirable Dust Form
- N/A Health Survey Results
- N/A Results of Air Samples
- N/A Rock Analysis Report
- N/A Impoundment Inspection Forms (MSHA Form 2000-241, MSHA Form 4000-127 or MSHA form 4000-127a)
- N/A 2000-34 Coal Refuse Pile Periodic Inspection Form
- N/A ATF 5030.5 and/or ATF 5400.5 ATF Inspection Form
- N/A Part 49 Checklist (Mine Rescue Station)
- N/A Mine Tracking Map(s)
- N/A Daily Cover Sheets (7000-10I, 7000-10II or equivalent) with all notes including any preprinted listings documented as notes taken on the event
- N/A Citations, Orders, and Safeguards (7000-3) with any photo mounting worksheets (4000-125), with all subsequent actions (7000-3a) including any vacated issuances and vacate memorandums if applicable, elevated enforcement actions paperwork (7000-32 SAR). Citations and orders organized by issue date beginning with the first day of the quarter. Previous issued citations, orders, and safeguard subsequent actions shall be maintained in the event that the original enforcement action was generated from

Surface/ Facility Inspection Forms Checklist **Event Number** _____

- N/A Mine Inspection Summary Report
- N/A Health Survey Results
- N/A Impoundment Inspection Forms (MSHA Form 2000-241, MSHA Form 4000-127 or MSHA form 4000-127a)
- N/A Coal Refuse Pile Periodic Inspection Form 2000-34
- N/A ATF 5030.5 and/or ATF 5400.5 ATF Inspection Form
- N/A Daily Cover Sheets (7000-10I, 7000-10II or equivalent) with all notes including any preprinted listings documented as notes taken on the event
- N/A Citations, Orders, and Safeguards (7000-3) with any photo mounting worksheets (4000-125), with all subsequent actions (7000-3a) including any vacated issuances and vacate memorandums if applicable, elevated enforcement actions paperwork (7000-32 SAR). Citations and orders organized by issue date beginning with the first day of the quarter. Previous issued citations, orders, and safeguard subsequent actions shall be maintained in the event that the original enforcement action was generated from

E. Records and Postings

The following pages are designed to provide a complete listing and documentation of the Mine Records and Postings and the Inspection Procedures that may apply at a mine. The records and postings listed below may be used by the inspector as a checklist and included in their notes. The use of these pages will lessen the chance of inspection or documentation error.

The following checklists are included:

Underground and Surface Area of Underground Mine Records – Coal

Underground and Surface Area of Underground Mine Records – M/NM

Underground Mine Postings - Coal

Underground Mine Postings – M/NM

Surface Facility and Surface Mine Records – Coal

Surface Facility and Surface Mine Records – M/NM

Surface Facility and Surface Mine Postings – Coal

Surface Facility and Surface Mine Postings – M/NM

Coal Underground and Surface Area of Underground Mine Records**Event No. _____ Page No. _____**

- N/A AMS Alert/ Alarm Signals, Malfunctions, Tests, Calibrations, and Maintenance- § 75.351(o)
- N/A Annual AMS Operator Training - § 75.351(q)(i) - (iv)
- N/A Annual Expectations Training for Donning and Transferring SCSRs - § 75.1504(c)
- N/A Annual Tests of Fire Hydrants and Fire Hoses - § 75.1103-11
- N/A Annual Training for Certified and Qualified Persons - §75.161(a) - (b)
- N/A Annual Mine Rescue Physical - § 49.17(c)
- N/A ATRS Certification - § 75.209(f)
- N/A Audiometric Test Records - § 62.171(c)
- N/A Bi-Monthly Tests of Hoist Safety Catches - § 75.1400-2
- N/A 14-Day Hoist Rope Examinations - § 75.1433(d)
- N/A Certification of Canopies or Cabs - § 75.1710-1(e)
- N/A Certification of ROPS & FOPS - § 77.403-1(d)
- N/A Certification of Certified Person Sampling - § 71.202
- N/A Certification of Certified Person Maintenance and Calibration - §71.203
- N/A Check-In/Check-Out System and Belt Identification - § 75.1715
- N/A Cleanup Program - § 75.400-2
- N/A Contractor Register - § 45.4(a) - (b)
- N/A Daily and Monthly Main Mine Fan Examinations - § 75.312(g)(1) and (h)
- N/A Daily Hoisting Equipment Examinations - § 77.1404
- N/A Daily Hoisting Equipment Examinations - § 75.1400-4
- N/A Daily Inspection of Active Surface Working Areas - § 77.1713(c)
- N/A Daily Examination of Slope and Shaft Projects - § 77.1901(f)
- N/A Daily Inspection of Man-Hoists for Slope and Shaft Sinking - §77.1906(c)

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- N/A Diesel Exhaust Gas Samples Exceeding TLV® Action Levels for CO & NO₂ (including hazards as per §§ 75.321, 75.322 and required to be recorded as per §§ 75.363(c) and 70.1900(d))
- N/A Diesel Equipment Inventory (updated within 7 days of changes) - § 72.520(a) - (b)
- N/A Diesel Fuel Evidence - § 75.1901(a)
- N/A Diesel Training and Qualifications - § 75.1915(c)
- N/A Diesel-Powered Equipment, Weekly Tests and Examinations - §75.1914(h)(1)
- N/A Diesel-Powered Generators (Moving Equipment) - §75.901(b)(12)
- N/A Examinations of Trolley Systems for Off-Track Equipment Moves § 75.1003-2(b)
- N/A First-Aid Training of Surface Supervisory Employees - §77.1703
- N/A First-Aid Training of Underground Supervisors (Initial Training) - § 75.1713-3
- N/A First-Aid Training of Underground Supervisors (Retraining) - §75.1713-5
- N/A HazCom Program - § 47.31
- N/A Hearing Conservation Program Training - § 62.180(b)
- N/A High-Voltage Power Centers and Transformers; Records as per §75.812 and 75.812-2
- N/A High-Voltage Continuous Mining Machines - § 75.832(g)
- N/A Impoundment Examinations - § 77.216-3(c)
- N/A Initial Hoist Rope Stretch Measurements - § 75.1432
- N/A Initial Hoist Rope Stretch Measurements - § 77.1432
- N/A Inspections and Tests of Fire Suppression for Diesel-Powered Equipment-§ 75.1911(j)
- N/A Inspections and Tests of Fire Suppression for UG Permanent Diesel Storage - § 75.1912(i)
- N/A Legal Identity Changes Within 30 Days - § 41.12
- N/A List of Certified and Qualified Person for Part 75 Duties - §75.159
- N/A List of Certified and Qualified Person for Part 77 Duties - §77.106

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- N/A Main Mine Fan Pressure Recordings – § 75.310(a)(4)
- N/A Map of Electrical System – § 75.508
- N/A Map of Electrical System (Change Made by End of Next Workday) – § 75.508-2
- N/A Map of Roof Falls – § 75.223(b) - (c)
- N/A Material Safety Data Sheets – § 47.51
- N/A Measurements of Tensioned Roof Bolt Torque – §75.204(f)(6)
- N/A Methane Monitor Calibration – § 75.342(a)(4)(ii)
- N/A Mine Accident, Injury, and Illness Reports (Form 7000-1) – §50.20(a)
- N/A Mine Accident Maintenance of Records – § 50.40(a) - (b)
- N/A Mine Emergency Evacuation Responsible Person Mine Emergency Evacuation Training and Drills – § 75.1504(d)(3)
- N/A Mine Emergency-Training and Records for Examination, Maintenance and repairs of Refuge Alternatives and Components - § 75.1508(b)
- N/A Emergency Evacuation Training – § 75.1501(a)(3)
- N/A Mine Map – § 75.1203
- N/A Miner Notification of Noise Exposure – § 62.110(e)
- N/A Monthly Calibration of Fire Sensors and Warning Device Systems – § 75.1103-8(c)
- N/A Monthly Examinations of Surface Electrical Equipment – § 77.502
- N/A Monthly Fire Doors Tests (when non-fireproof structures are within 100 feet of mine openings) – § 75.1708
- N/A Monthly Tests, Exams, & Maintenance of Surface High Voltage Circuit Breakers – § 77.800-2
- N/A Monthly Tests, Exams, & Maintenance of Surface Low & Medium Voltage Circuit Breakers – § 77.900-2
- N/A Monthly Tests, Exams, & Maintenance of UG High Voltage Circuit Breakers –§ 75.800-4(a)
- N/A Monthly Tests, Exams, & Maintenance of UG Low and Medium Voltage Circuit Breakers – § 75.900-4

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- N/A Movement of Energized High Voltage Power Centers and Transformers – §§ 75.812 and 75.812-2
- N/A Noise Records (Access to all Part 62 Records) – § 62.190
- N/A Post-Accident Communication and Tracking Component and System Failure and Corrective Action Records – Section 316(b)(2)(a) of the MINER Act (Refer to ERP for specific requirements.)
- N/A Post-Accident Communication and Tracking System Examination Records - Section 316(b)(2)(a) of the MINER Act (Refer to ERP for specific requirements.)
- N/A Post-Accident Tracking Miner Location Record – Section 316(b)(2)(a) of the MINER Act (Refer to ERP for specific requirements – this may be maintained as a data record.)
- N/A Preshift by Pumpers of Hazards Found – § 75.360(a)(2)
- N/A Preshift/On-shift Examinations – § 75.360(g)
- N/A Quarterly Employment and Coal Production Reports (Form 7000-2) – § 50.30(a)
- N/A Quarterly Inspection and Calibration of Thermal Dryer Control Instruments –§ 77.314(c)
- N/A Quarterly Mine Emergency Evacuation Training and Drills – §75.1504(a)
- N/A Qualified Persons to Test for Methane – § 75.151
- N/A Record of Explosive Materials – 27 CFR § 555.125(b) and 555.127 (surface area)
- N/A Record of Work on High Voltage – § 75.705-3
- N/A Recording of Hazardous Conditions – § 75.363(b)
- N/A Refuge Alternatives (Maintenance and Repair) – § 75.1508(b)
- N/A Roof Bolt Manufacturer’s Certification – § 75.204(a)(2)
- N/A Roof Control Plan Availability – § 75.220(e)
- N/A Seal- Approved Seal Design - § 75.335(c)(1)
- N/A Seal Sampling and Monitoring – § 75.333(e)
- N/A Seal Construction and Repair – § 75.337(c)(5)

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- N/A Seal-Certification of Provision of Approved Seal Design is Addressed - § 75.335(c)(2)
- N/A Seal-Certification of Seal Construction, Installation, and Materials - § 75.337(d)
- N/A Seal-Certified Person Sampling Training (records maintained 2 years) - § 75.338(a)
- N/A Seal-Certification of Training for Persons that Perform Seal Construction and Repairs - § 75.338(b)
- N/A Seal-Gas Sampling Records - § 75.336(e)(2)
- N/A Seal Recordkeeping Requirements (See Table) - § 75.339(a)
- N/A Self-Rescuer Device Tests - § 75.1714-3(e)
- N/A Self-Rescuer Inventory Update - § 75.1714-8(a), (b)
- N/A Semi-Annual Hoist Rope Measurements and Nondestructive Tests - § 75.1433(e)
- N/A Semi-Annual Hoist Rope Measurements and Nondestructive Tests - § 77.1433(e)
- N/A Smoking Program - § 75.1702
- N/A Testing, Examination, and Maintenance of High Voltage Longwall Equipment - § 75.821(d)
- N/A Training & Retraining of Surface Miners (Form 5000-23) - §48.29
- N/A Training & Retraining of Underground Miners (Form 5000-23) - §48.9
- N/A Training of Mine Rescue Team Members - § 49.18(g)
- N/A Trolley Overcurrent Tests and Calibrations - § 75.1001-1(c)
- N/A Weekly Examination for Hazardous Conditions - §75.364(h)
- N/A Weekly Examination of Fire Sensors and Warning Device Systems - § 75.1103-8(b) - (c)
- N/A Weekly Examination of Underground Electric Equipment - §75.512
- N/A Weekly Inspection of Fire Suppression Devices - § 75.1107-16(c)
- N/A Proximity Detection System Checks §75.1732(d)

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- N/A Air receivers/pressure vessels- § 57.13015
- N/A Boiler inspection- § 57.13030
- N/A Equipment safety defects- § 57.14100
- N/A Self-rescuer maintenance- § 57.15030
- N/A Examination of working places- § 57.18002
- N/A First aid training- § 57.18010
- N/A Emergency medical service/transportation- § 57.18014
- N/A Mine Emergency and Self-Rescuer Training - § 57.18028(d)
- N/A Hoist rope measurement- § 57.19022
- N/A Hoist rope examination- § 57.19023
- N/A Hoist operator physical examination- § 57.19057
- N/A Hoist inspection, testing and maintenance- § 57.19121
- N/A Daily fan inspection. Category I-A, II-A, III, V-A- § 57.22204
- N/A Weekly testing of Category I-A, III, V-A- § 57.22229
- N/A Weekly testing of Category II-A gassy mines - §57.22230
- N/A Miner Notification of Noise Exposure - § 62.110(e)
- N/A Audiometric Test Records - § 62.171(c)
- N/A Hearing Conservation Program Training - § 62.180(b)

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- N/A Administrative Noise Control Procedures – § 62.130(a)
- N/A AMS Map or Schematic – § 75.351(a)(3)
- N/A Approved Respirable Dust Control Plan (Surface) – § 71.301(d)
- N/A Approved Ventilation Plan and Revisions – § 75.370(f)(3)
- N/A Bathhouse Waiver – § 71.403(c). Bathhouse Waiver Form 2000-87
- N/A Citations and Orders - Section 109(a)
- N/A Contact Information for AMS Operators and Designated Responsible Persons – § 75.351(a)(4)
- N/A Copy of Mine Rescue Availability - § 49.12(h)
- N/A Copy of Mine Rescue (Alternative Capability Small and Remote Mines) - § 49.13(d)
- N/A Copy of Mine Rescue Notification Plan - § 49.19(b)
- N/A Emergency Medical Assistance Arrangements Underground Mine as per § 75.1713-1(a)
- N/A Escapeway Map Posted at a Surface Location Where Miners Congregate – § 75.1505(a)(4)
- N/A Granted Petitions for Modification – § 44.5(b)
- N/A Non-Final Petitions for Modification – § 44.9 (at mines with no representative of miners)
- N/A Pattern of Violation Notice – § 104.4(d)
- N/A Proposed Ventilation Plan and Revisions – § 75.370(a)(3)(iii)
- N/A Proposed Health and Safety Standards or Regulations Posted – Section 101(e)
- N/A Representative of Miners – § 40.4. MSHA Form 2000-238 Miners Rep
- N/A Respirable Dust Sample Results (Surface) – § 71.210(b)
- N/A Respirable Dust Sample Results (Underground) § 70.210(b)
- N/A Roof Control Plan Available – § 75.220(e)
- N/A X-Ray Plan – § 72.100

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- N/A Representative of Miners – § 40.4. MSHA Form 2000-238 Miners Rep
- N/A Granted Petitions for Modification – § 44.5(b)
- N/A Non-Final Petitions for Modification – § 44.9 (at mines with no representative of miners)
- N/A Revisions and Decisions Concerning Training Plan - §48.4(n)
- N/A Copy of Mine Rescue Availability - § 49.12(h)
- N/A Copy of Mine Rescue (Alternative Capability Small and Remote Mines) - § 49.13(d)
- N/A Copy of Mine Rescue Notification Plan - § 49.19(b)
- N/A Burning Rate of Safety Fuse - § 57.6502
- N/A Emergency Telephone Numbers - § 57.18012
- N/A Administrative Noise Control Procedures – § 62.130(a)
- N/A Proposed Health and Safety Standards or Regulations Posted – Section 101(e)
- N/A Pattern of Violation Notice – § 104.4(d)
- N/A Citations and Orders - § 109(a)

Coal Surface Facility and Surface Mine Records

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- N/A Audiometric Test Records – § 62.171(c)
- N/A Auger Mining Inspections – § 77.1501(a) - (b)
- N/A Certification for ROPS – § 77.403-1(d)
- N/A Contractor Register – § 45.4(a) - (b)
- N/A Daily Examination of Active Areas of Mine – § 77.1713(c)
- N/A Daily Examination of Hoist for Slope and Shaft Sinking - § 77.1906(c)
- N/A Preshift and On-shift Examination of Slope and Shaft Areas - §77.1901(f)
- N/A Daily Hoist Examination – § 77.1404
- N/A First Aid Training for Supervisors – § 77.1703
- N/A First Aid Retraining for Supervisors – § 48.29(a)
- N/A Hazard Training Records – § 48.31(d)
- N/A HazCom Program – § 47.31(a)
- N/A Hearing Conservation Program Training – § 62.180(b)
- N/A Hoist Rope Examination and Tests – § 77.1433(d) - (e)
- N/A Hoist Rope Initial Measurement – § 77.1432
- N/A Impoundment Inspection – § 77.216-3(c)
- N/A Investigation and Accident Reports (5 Years) – § 50.40(a) - (b)
- N/A Material Safety Data Sheets – § 47.51
- N/A Mine Accident, Injury and Illness Reports (Form 7000-1) – §50.20(a)
- N/A Miner Notification of Noise Exposure – § 62.110(e)
- N/A Monthly Examination of Electrical Equipment – § 77.502
- N/A Monthly Examination of High Voltage Circuit Breakers - § 77.800-2
- N/A Monthly Examination of Low & Medium Voltage Circuit Breakers – § 77.900-2
- N/A Qualified & Certified Persons – § 77.106
- N/A Quarterly Employment and Coal Production Reports (Form 7000-2) – § 50.30(a)

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- N/A Record of Equipment Pre-Operational Check - § 77.1606(a)
- N/A Record of Explosive Materials - 27 CFR §§ 555.125(b) and 555.127
- N/A Thermal Dryer Examination - § 77.314(c)
- N/A Training & Retraining of Surface Miners (Form 5000-23) - §48.29(a)
- N/A Work on Energized High Voltage Lines - § 77.704-3
- N/A Ventilation of Slopes and Shafts - § 77.1911(a)
- N/A X-Ray Plan - § 72.100

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- N/A Contractor Register - § 45.4(a) - (b)
- N/A Legal Identity Changes Within 30 Days - § 41.12
- N/A HazCom Program - § 47.31(a)
- N/A Material Safety Data Sheets - § 47.51
- N/A Training & Retraining of Surface Miners (Form 5000-23) - §48.29(a)
- N/A Hazard Training Records - § 48.31(d)
- N/A Mine Accident, Injury and Illness Reports (Form 7000-1) - §50.20(a)
- N/A Quarterly Employment and Coal Production Reports (Form 7000-2) - § 50.30(a)
- N/A Investigation and Accident Reports - § 50.40(a) - (b)
- N/A Rock bolt tests and certification- § 56.3203
- N/A Firefighting equipment inspection- § 56.4201
- N/A Firefighting, evacuation and rescue- § 56.4330
- N/A Continuity and resistance- § 56.12028
- N/A Air receivers/pressure vessels- § 56.13015
- N/A Boiler inspection- § 56.13030
- N/A Equipment safety defects- § 56.14100
- N/A Examination of working places- § 56.18002
- N/A First aid training- § 56.18010
- N/A Emergency medical service/transportation- § 56.18014
- N/A Hoist rope measurement- § 56.19022
- N/A Hoist rope examination- § 56.19023
- N/A Hoist operator physical examination- § 56.19057
- N/A Hoist inspection, testing and maintenance- § 56.19121
- N/A Miner Notification of Noise Exposure - § 62.110(e)
- N/A Audiometric Test Records - § 62.171(c)
- N/A Hearing Conservation Program Training - § 62.180(b)

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- N/A Administrative Noise Control Procedures – § 62.130(a)
- N/A Approved Respirable Dust Control Plan (Surface) – § 71.301(d)
- N/A Bathhouse Waiver – § 71.403(c). Bathhouse Waiver Form 2000-87
- N/A Bathhouse Waiver Application – § 71.404(b)
- N/A Citations and Orders - Section 109(c)
- N/A Emergency Medical Assistance Arrangements (Surface Mine) §77.1702(e)
- N/A Granted Petitions for Modification - § 44.5(b)
- N/A Mine Map (Posted or Available) – § 77.1202
- N/A Non-Final Petitions for Modification – § 44.9 (at mines with no representative of miners)
- N/A Pattern of Violation Notice – § 104.4(d)
- N/A Proposed Health and Safety Standards or Regulations Posted Section 101(e)
- N/A Representative of Miners – § 40.4
- N/A Respirable Dust Sample Results (Surface) – § 71.210(b)
- N/A Safety Program Instructions – § 77.1708
- N/A Training Plans (with no miners’ representative) – § 48.23(d)
- N/A Training Plans – § 48.23(n)

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- N/A Representative of Miners - § 40.4
- N/A Granted Petitions for Modification - § 44.5(b)
- N/A Non-Final Petitions for Modification - § 44.9 (at mines with no representative of miners)
- N/A Training Plan Submission (Where there is no Miner's Representative) - § 46.3(d)
- N/A Training Plan Approval (Where there is no Miner's Representative) - § 46.3(g)
- N/A Training Plans (with no miners' representative at a Standalone Surface Facility and Surface Metallic Mines) - § 48.23(d)
- N/A Training Plans (At a Standalone Surface Facility) - § 48.23(n)
- N/A Burning Rate of Safety Fuse - § 56.6502
- N/A Emergency Telephone Numbers - § 57.18012
- N/A Administrative Noise Control Procedures - § 62.130(a)
- N/A Bathhouse Waiver - § 71.403(c). 2000-87 Bathhouse Waiver Form
- N/A Proposed Health and Safety Standards or Regulations Posted- §101(e)
- N/A Pattern of Violation Notice - § 104.4(d)
- N/A Citations and Orders - § 109(c)