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PROGRAM INFORMATION BULLETIN NO. P13-03

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SUBJECT: Operator Respirable Dust Sampling Requirements
Replaces PIB 09-31

Scope

This Program Information Bulletin (PIB) is intended for Coal Mine Safety and Health (CMS&H) enforcement personnel, coal mine operators, independent contractors, coal miners, miners' representatives, and other interested parties.

Purpose

This PIB clarifies the existing operator sampling requirements in 30 C.F.R. Parts 70, 71 and 90.

Information

Coal mine operators collect and submit valid respirable coal mine dust samples in conformance with the requirements of 30 C.F.R. Parts 70, 71 and 90. As part of the Mine Safety and Health Administration's (MSHA) ongoing oversight of the mine operator's respirable dust sampling program, the Agency has been reviewing practices followed by individuals certified to conduct dust sampling at mines. This includes inspecting mine operator and contractor facilities where respirable dust sampling equipment is stored and/or serviced to ensure that certified persons are properly maintaining and calibrating sampling devices as prescribed by 30 C.F.R. Parts 70, 71, and 90.

This bulletin explains how the operator dust sampling program should be carried out to be compliant with applicable regulatory requirements. Mine operators and contractors may be cited by MSHA for failure to properly examine and maintain sampling equipment in approved condition and for failure to collect samples in accordance with regulatory requirements. MSHA retains the right to revoke certifications if the sampling, maintenance and calibration procedures prescribed by 30 C.F.R. Parts 70, 71 and 90 are not adhered to by certified persons.

1. Certified Persons

Sampling of respirable coal mine dust and maintenance and calibration of approved sampling devices can be performed only by certified persons. Persons may hold one or both of these certifications.

- A. Collecting Respirable Dust Samples: The collection and submission of respirable dust samples must be performed only by persons certified in accordance with §§ 70.202, 71.202 and 90.202. Persons not certified for sampling or those certified only in maintenance and calibration procedures are not permitted to collect respirable dust samples. If a sampling device must be transported within the mine due to the occupation/area being sampled working longer than an 8-hour shift, the device can be handled only by a person certified to collect respirable dust samples.
- B. Maintaining Approved Sampling Devices: Approved sampling devices must be maintained only by persons certified in maintenance and calibration procedures (§§ 70.203, 71.203 and 90.203). Persons certified only in respirable dust sampling are not permitted to conduct any maintenance or calibration work on approved sampling devices, such as replacing battery packs, pump inlet filters, etc.

To maintain sampling devices in approved condition (30 C.F.R. Part 74 - Coal Mine Dust Sampling Devices), use only appropriate replacement parts/components when performing required routine maintenance procedures or when replacing damaged or missing parts. MSHA may cite an operator or contractor for any sampling device (pump and sampling head assembly) that is not maintained as approved, unless it is identified as being "out of service." Listed below are examples of common deficiencies observed by MSHA inspectors that must be corrected to maintain sampling devices in approved condition, ensuring they perform as designed.

- 1) Pump deficiencies
 - missing screws
 - cracked or missing membrane switch covers
 - missing or illegible approval labels
 - cracked/deformed cases
 - missing external switch covers
 - missing/damaged case seals (O-ring)

2) Sampling head assembly deficiencies

- missing/damaged O-rings
- missing or inoperative spring clip for attaching the sampling head assembly to the miner's clothing
- improperly aligned backing plate assembly
- incorrect tubing length and/or inside diameter
- cracked barrel connector
- damaged vortex finder
- scratched internal surfaces of cyclone

C. Calibrating Approved Sampling Devices: Approved sampling devices must be calibrated only by persons certified in maintenance and calibration procedures (§§ 70.203, 71.203 and 90.203). Approved sampling devices are required to be calibrated in accordance with MSHA Informational Report IR 1240 (1996) before they are put into service and at intervals not to exceed 200 hours of operating time thereafter (§§ 70.204, 71.204 and 90.204). Mine operators must keep track of when each approved sampling device was calibrated and the number of hours of operation since the last calibration to ensure sampling devices are calibrated at appropriate intervals. The operating hours displayed on the pump should not be used to determine the total hours of use since the last calibration as the display can be reset by anyone.

2. **Sampling Requirements**

A. Testing and Examining Approved Sampling Devices: Approved sampling devices must be tested and examined by a person certified in sampling or in maintenance and calibration immediately before each sampling shift (§§ 70.204(d), 71.204(d) and 90.204(d)). MSHA interprets "immediately before" as no more than 3 hours before the start of the shift on which the sampling device will be used to collect a respirable dust sample. This testing and examination must include the following:

- 1) Testing the battery voltage under actual load to assure it is fully charged. Actual load requires a fully assembled and examined sampling head assembly to be attached to the pump inlet with the pump running when the voltage check is made;
- 2) Examination of all components of the cyclone assembly to assure they are clean and free of dust and dirt. This includes the interior of the connector barrel (located between the cassette assembly and vortex finder), vortex finder, cyclone body and grit pot;

- 3) Examination of the inner surface of the cyclone to assure it is free of scoring or scratch marks on the inner surface of the cyclone where air is directed by the vortex finder into the cyclone body;
- 4) Examination of the external 3-foot (36 inches +/- ¼ inch) transparent tubing on the approved sampling device to assure it is clean and free of leaks, which can occur if the alligator clip attached to the backing plate assembly is clipped to the tubing puncturing it; and,
- 5) Examination of the clamping and positioning of the cyclone body, vortex finder and cassette to assure that they are rigid, in alignment, and firmly in contact and airtight.

B. Sampling Procedures: All respirable dust sampling required by 30 C.F.R. Parts 70, 71 and 90 must be performed only by persons certified to take respirable dust samples (certified person; sampling).

- 1) Sampling devices must be turned on at the mine portal at the beginning of the sampling shift, worn or carried directly to the mechanized mining unit (MMU), designated area (DA), designated work position (DWP), or Part 90 miner's position to be sampled and must remain in operation until returned directly to the mine portal where it is turned off (§§ 70.201(b), 71.201(b) and 90.201(b)). A sampling device may not be carried to other areas of the mine before exiting the portal (e.g., to allow one person to retrieve multiple sampling devices). Only certified persons are permitted to turn sampling devices "ON" or "OFF" when performing sampling.
- 2) Sampling devices must remain operational during the entire shift or for 8 hours, whichever time is less (§§ 70.201(b), 71.201(b), and 90.201(b)). For shifts of 8 hours or less, the sampling device must be worn or carried from the MMU, DA, DWP or Part 90 miner being sampled (entity/entities sampled) to the portal and then turned "OFF." However, for shifts longer than 8 hours (extended work shift), the sampling device must be removed from the sampled entity near the end of the 8th hour by a certified person, and worn or carried directly to the portal where it is turned "OFF."

Because of the requirement that sampling devices be "operated" portal to portal, a sampling device cannot be turned "OFF" at the end of the 8th hour when the normal work shift is longer than 8

hours and then worn or carried back from the sampled entity to the portal at the end of the extended work shift.

To accommodate unanticipated delays when exiting the sampled entity, MSHA permits the actual maximum sampling time of 8 hours or 480 minutes to be exceeded by an additional 15 minutes but not to exceed 495 minutes or the sample will be voided by MSHA. However, the concentration of respirable dust will continue to be determined using a maximum time of 480 minutes.

- 3) Each sampling device must be examined twice each shift by a certified person to assure it is in the proper location, operating properly and at the proper flow rate. The first examination must occur during the second hour after being put into operation and necessary adjustments made if the proper flow rate is not maintained (§§ 70.205(b), 71.205(b) and 90.205(b)). A second examination must occur during the last hour of operation. If the proper flow rate is not maintained, the sample must be transmitted to MSHA with a notation made by the certified person on the back of the dust data card indicating an improper flow rate (§§ 70.205(c), 71.205(c) and 90.205(c)).
- 4) Sampling devices must be worn or carried directly to and from the mechanized mining unit (MMU), designated area or designated work position to be sampled. These devices must remain in the environment of the mining occupation or area to be sampled. In the event that a miner is reassigned tasks during the shift the sampling device would be transferred to the miner taking over the duties of the reassigned miner. For example, a continuous mining machine operator is told at mid-shift to go to the intake and build stoppings. His or her pump would be transferred to the miner assigned to run the continuous mining machine for the remainder of the shift.
- 5) Samples must be collected during a normal work shift which is considered any shift in which production equals 50% or more of the previous bi-monthly production or, in the case of designated area and surface sampling, where normal day-to-day mining activities are occurring. Samples must be representative of normal mining activity and miners should not be performing duties of the sampled entity any differently on sampling shifts than they are required/permitted on non-sampling shifts.

- C. Bimonthly Sampling of Mechanized Mining Units: Five valid designated occupation (DO) samples must be collected from each mechanized mining unit (MMU) either on consecutive normal production shifts or on normal production shifts each of which is worked on consecutive days (§ 70.207(a)). The normal production shifts sampled on consecutive days do not need to be the same shift each day as illustrated in the example below. Normal production shifts include weekend production days.

Example: Mine "A" works 2 production shifts each day:

	<u>Consecutive Shifts</u>	or	<u>Consecutive Days</u>
1st Sample	Day 1, Day shift		Day 1, Day shift
2nd Sample	Day 1, Eve shift		Day 2, Eve shift
3rd Sample	Day 2, Day shift		Day 3, Eve shift
4th Sample	Day 2, Eve shift		Day 4, Day shift
5th Sample	Day 3, Day shift		Day 5, Eve shift

Once an operator elects to sample on consecutive shifts, sampling must continue on consecutive shifts until the required number of samples are collected. If an operator elects to sample consecutive days, a sample must be collected each day that there is a normal production shift until the required number of samples are collected. Switching from one sampling schedule to another during the course of sampling is prohibited.

Submitting either voided or invalid samples will not satisfy the bimonthly sampling requirements. Therefore, it may be necessary for an operator to collect and submit additional samples during a bimonthly period. Failure to take the required number of valid respirable dust samples within a bimonthly period would constitute a violation. For this reason, it is to the operator's advantage to collect and submit the required number of samples early in the bimonthly period. This would allow ample opportunity for the collection and submission of additional samples if necessary.

- D. Bimonthly Sampling After a Change in the Dust Standard: When the respirable dust standard applicable at a mine is changed due to the presence of quartz, bimonthly sampling of the affected MMU, DA, DWP or Part 90 miner must begin on the first production shift during the next full bimonthly period after the operator is notified by MSHA of the revised respirable dust standard (§§ 70.207(b), 70.208(b), 71.208(b) and 90.208(b)). These provisions apply when the respirable dust standard is raised as well as when it is lowered.

- E. Abatement Sampling Following Issuance of a Citation for Excessive Dust: After taking required corrective action to lower the concentration of respirable dust to within the permissible concentration, the operator must sample either each production shift (§ 70.201(d)), normal work shift (§ 71.201(d)) or affected Part 90 miners (§ 90.201(d)) performing normal work duties (§ 90.201(e)) until five valid respirable dust samples are taken. Therefore, an operator is prohibited from skipping sampling any production or normal work shift or shift during which the affected Part 90 miner performs normal work duties. That is, an operator cannot limit sampling to once per day on consecutive days if there is more than one production or normal work shift per day, except when it involves sampling a particular Part 90 miner.

3. **Post-Sampling Requirements**

- A. Transmittal of Samples: All respirable dust samples collected to fulfill the requirements of 30 C.F.R. Parts 70, 71 and 90 must be promptly transmitted to MSHA within 24 hours after the end of the sampling shift (§§ 70.209(a), 71.209(a) and 90.209(a)). Failure to do so within this time period, which applies on weekend days as well, will result in the samples being voided as "DIS" (Discarded). Placing dust samples in the possession of the U.S. Postal Service (Post Office or U.S. mailbox) or other mailing service, e.g. FedEx[®], UPS[®], etc., within the required time period constitutes transmittal. This matter is discussed in more detail in PIB No. P11-10, issued March 23, 2011 (Reissue of PIB No. P04-15, June 18 2004).

- 1) Each sample transmitted to MSHA must be accompanied by the appropriate completed dust data card provided by the filter cassette manufacturer. Only persons certified to take dust samples are authorized to fill out and sign the dust data card, and it must include that person's certification number or MSHA Individual Identification Number (MIIN) (§§ 70.209(c), 71.209(c) and 90.209(c)). The MIIN is a unique 8-digit number preceded by the letter "M," which replaced Social Security Numbers for tracking certifications. More specific details on this important change are provided in MSHA PIB No. P08-07, issued March 31, 2008.

By signing the dust data card, the certified person performing the sampling is certifying that the samples were collected in accordance with Parts 70, 71, or 90 of Title 30 C.F.R. Also, as stated on the dust data card, "Knowingly making any false statement, representation, or certification on this document is a violation of the federal criminal code which may be punished by a fine or by

imprisonment or both." Respirable dust samples submitted with data cards not properly completed will be voided by MSHA.

- 2) Only MSHA is authorized to void a respirable dust sample collected and transmitted in accordance with sampling requirements of 30 C.F.R. Parts 70, 71 and 90. However, if the validity of any collected sample is ever questioned by the mine operator, the sample should be transmitted to MSHA with a notation made by the certified sampler on the back of the dust data card indicating the reason for the concern (e.g., invalid work shift because of equipment breakdown; sampling device not operating the full shift, sampling device dropped on the mine floor, improper flow rate during the last on-shift examination, etc.).
- 3) All respirable samples collected by the mine operator, including samples collected with a continuous personal dust monitor, are considered taken to fulfill the requirements of 30 C.F.R. Parts 70, 71 or 90 unless the samples have been identified in writing to the District Manager prior to the intended sampling shift. Samples so identified will not be considered compliance samples, however, the results of such samples should be recorded and made available to an authorized representative upon request.

- B. Posting of Sampling Results: The respirable dust sample data report for the sampled MMU, DA or DWP provided to the operator by MSHA, which includes the concentration of respirable coal mine dust for each valid respirable dust sample and the average concentration of respirable dust for all valid samples, must be posted on the mine bulletin board for at least 31 days (§§ 70.210 and 71.210).

4. Reporting of Status Changes

Whenever there is a change in the operational status of the mine, MMU, DA, DWP or Part 90 miner that affects the respirable dust sampling requirements of 30 C.F.R. Parts 70, 71 and 90, the operator must report in writing the status change to the appropriate MSHA office within 3 working days after the status change has occurred (§§ 70.220(a), 71.220(a) and 90.220(a)).

Background

Recent inspections of operator respirable dust sampling programs have identified instances where specific regulatory requirements are not being adhered to by certified persons. This bulletin explains how the operator dust sampling program should be carried out to be compliant with the applicable regulatory requirements.

Authority

The Federal Mine Safety and Health Act of 1977 as amended, 30 U.S.C. § 801 et seq.; and 30 C.F.R. Parts 70, 71 and 90.

Internet Availability

This PIB may be viewed on the Internet by accessing MSHA's home page (<http://www.msha.gov>) and then choosing "MSHA's Major Laws, Regulations and Policies" and "Compliance Information (PIBs, PILs, the PPM, and More)" and "Program Information Bulletins."

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