

MSHA's Final Respirable Dust Rules Phase II

(February 1, 2016 Forward)

Phase II

Major Sections Affected

- Part 70 (Underground coal mines)
- Part 71 (Surface coal mines/facilities)
- Part 90 (Miners with lung disease)
- Section 75.350 (Belt Air Course Ventilation)

Phase II

- Changes effective February 1, 2016

Phase III

- Changes effective August 1, 2016

Part 70/71/90 New Term

- Excessive Concentration Value (ECV)
 - Refer to CPDM column of ECV tables when using a CPDM for sampling
- Other Designated Occupation (ODO)
 - Other occupation on an MMU that is designated for sampling

Part 70/71/90 - Standards

- Base standard for underground and surface mines - 1.5 mg/m³ effective August 1, 2016
- Underground mine - Intake air
 - 0.5 mg/m³ effective August 1, 2016
- Part 90 miners
 - 0.5 mg/m³ effective August 1, 2016

Part 70/71/90 Sampling General

- CPDM use required after February 1, 2016
 - DO sampling
 - Other Designated Occupations (ODO) sampling (former DAs on the MMU)
 - Part 90 miners
- CMDPSU used for DA and DWP sampling unless operator notifies District Manager of use of CPDM after February 1, 2016 at least 90 days prior to intended use

Part 70/71/90 Sampling General (Cont.)

- Miners required to wear CPDM trained on unit prior to wearing and every 12 months
- All sampling will be full-shift, portal-to-portal
 - Change out of CPDM unit to complete full shift

Part 70/71/90 Sampling CPDM Certification

- Persons certified by MSHA to conduct sampling with a CPDM
- Persons certified by MSHA to maintain and calibrate CPDM sampling units

Part 70/71/90 CPDM Sampling Certification

- Re-certified every 3 years
- MSHA may revoke certification
- Certified in sampling may collect samples
- Certified in Maintenance can work on sampling units
 - Maintenance certification not cover sampling duties

Part 70/71/90 CPDM Sampling Pre-Shift Checks

- Pre-shift of CPDM within 3 hours of sample shift
 - Follow procedures required by manufacturer
 - Pre-operational examination
 - Testing
 - Set-up

Part 70/71/90 CPDM Flowrate

- Operate at
 - 2.2 lit/min for CPDM
 - Other flowrate recommended by manufacturer or Sec. of Labor
- CPDM – examine unit at mid-shift or more often if specified in ventilation plan

Applicable to
Parts 70/71/90

TABLE 70-1 EXCESSIVE CONCENTRATION VALUES (ECV)
BASED ON SINGLE, FULL-SHIFT CMDPSU/CPDM
CONCENTRATION MEASUREMENTS

Applicable Standard (mg/m ³)	ECV (mg/m ³)	
	CMDPSU	CPDM
2.0	2.33	2.26
1.9	2.22	2.15
1.8	2.12	2.04
1.7	2.01	1.92
1.6	1.90	1.81
1.5	1.79	1.70
1.4	1.69	1.58
1.3	1.59	1.47
1.2	1.47	1.36
1.1	1.37	1.25
1.0	1.26	1.13
0.9	1.16	1.02
0.8	1.05	0.91
0.7	0.95	0.79
0.6	0.85	0.68
0.5	0.74	0.57
0.4	0.65	0.46
0.3	0.54	0.34
0.2	0.44	0.23

TABLE 70-2 EXCESSIVE CONCENTRATION VALUES (ECV) BASED ON THE AVERAGE OF 5 OR 15 FULL-SHIFT CMDPSU/CPDM CONCENTRATION MEASUREMENTS

Applicable Standard (mg/m ³)	ECV (mg/m ³) based on 5-Sample Average		ECV (mg/m ³) based on 15-Sample Average	
	CMDPSU	CPDM	CMDPSU	CPDM
2.0	2.15	2.12	2.09	2.07
1.9	2.05	2.01	1.99	1.97
1.8	1.94	1.91	1.89	1.87
1.7	1.84	1.80	1.78	1.76
1.6	1.74	1.70	1.68	1.66
1.5	1.63	1.59	1.58	1.56
1.4	1.53	1.49	1.48	1.45
1.3	1.43	1.38	1.38	1.35
1.2	1.33	1.27	1.28	1.25
1.1	1.22	1.17	1.17	1.14
1.0	1.12	1.06	1.07	1.04
0.9	1.02	0.96	0.97	0.94
0.8	0.92	0.85	0.87	0.83
0.7	0.81	0.75	0.77	0.73
0.6	0.71	0.64	0.67	0.63
0.5	0.61	0.53	0.57	0.52
0.4	0.51	0.43	0.47	0.42
0.3	0.41	0.32	0.37	0.32
0.2	0.31	0.22	0.27	0.21

Applicable to
Parts 70/71/90

Part 70

Quarterly Sampling – MMU

(effective February 1, 2016)

- Conducted with CPDM unless notified
- Sample DO consecutive shifts until 15 valid samples collected
 - Additional 15 shift groups may be required
 - District Manager discretion
 - Required if found not following approved ventilation plan

Part 70

Quarterly Sampling - MMU

- Sample ODOs (includes former DAs on MMU) consecutive shifts until 15 valid samples collected
 - ODO sampling not start until DO sampling complete
 - Different ODO types sampled over separate time period during quarter
 - Example: RB sampled over 15 shifts after DO 15 shift sampling complete
 - Example: SCs sampled over 15 shifts after the DO 15 shift sampling and the RB 15 shift sampling is complete

Part 70

Quarterly Sampling - MMU

- DOs, ODOs to be sampled specified in rule
- Other ODOs may be designated by the DM
- New reduced standard due to quartz will be effective 7 calendar days after the date of notification
- Samples exceeding applicable standard by 0.1 mg/m³ or more will be used regardless of production

Part 70

Quarterly Sampling – DAs

(effective February 1, 2016)

- Sample each DA 5 consecutive shifts each quarter
 - No consecutive days cycle
- Quartz present – resulting in reduced standard
 - New standard effective 7 calendar days after date of notification

Part 71

DWP Sampling

- Continues as specified effective August 1, 2014 except that DWP sampling May be performed using the CPDM with notification to the District manager

Part 70/71/90

Quarterly Sampling Compliance

- For each sample \geq ECV in Table 70-1
 - Make respirators available
 - Immediately take corrective action to lower to or below applicable standard
 - Make record of corrective action
 - Certify by mine foreman or equivalent
 - In secure book
 - Maintained at mine for at least 1 year

Part 70

Quarterly Sampling - MMU Noncompliance

- 3 or more CPDM samples \geq the Excessive Concentration Value (ECV) in Table 70-1
or
- Average of all samples collected during a sampling period \geq the ECV in Table 70-2

Part 70

Quarterly Sampling - DA

Noncompliance

- 2 or more CPDM samples \geq the Excessive Concentration Value (ECV) in Table 70-1 or
- Average of all samples collected during a sampling period \geq the ECV in Table 70-2

Part 70

Quarterly Sampling Noncompliance

- Citation for excessive dust issued – sequential actions to be taken:
 - Respirators available to affected miners
 - Immediately take corrective action to lower to or below applicable standard
 - Make record of corrective action
 - Certify by mine foreman or equivalent
 - In secure book
 - Maintained at mine for at least 1 year
 - Within 8 calendar days after date of citation, sample consecutive shifts until collect 5 valid samples

Part 70

Quarterly Sampling Noncompliance (cont.)

- Citation terminated after
 - Equivalent concentration of each of the 5 valid samples \leq applicable standard
 - Submit revised ventilation plan incorporating the corrective actions used
 - Revised ventilation plan approved by DM

Part 90 Sampling Compliance

- Requirements for Part 90 samples effective August 1, 2014 continue except that All Part 90 samples must be collected using a CPDM effective February 1, 2016

Part 70/71/90

Transmission of CPDM Sample Data

■ CPDM

- Certified sampler validate, certify and transmit electronically within 24 hours after end of sampling shift
 - Sample data file
 - Sample status conditions file
- Operator maintain data files at least 12 months
- Not tamper with CPDM or alter any data files

Part 70/71

Report and Posting

■ CPDM

- End-of-shift sample results – operator post within 12 hours after end of sampling shift
- Information remain posted until receipt of MSHA provided samples report
- MSHA sample results report posted at least 31 days

Part 90

Report and Posting

■ CPDM

- Certified person in sampling shall provide to each Part 90 miner a paper record (dust data card) of sample run signed by certified person within first hour next work shift
- Operator shall ***NOT*** post sample information

Part 70/71/90 Status Changes

- Change in operational status of sampling entity or working status of Part 90 miner reported within 3 days
 - In writing or electronically

Part 75 – 75.350

Belt Air Course Ventilation

- Belt air used as intake air on MMU
 - Standard reduced to 0.5 mg/m^3 effective August 1, 2016
 - If a reduced standard is applicable on the working section that is less than the 0.5 mg/m^3 standard, then the lowest applicable standard applies to the belt entry

Valid Dust Sample Counts by Sample Type

8/1/2014 - 2/29/2016

Total Count, Counts Exceeding Current Dust Standards, ECV Values and 100 µg/m³ Quartz*

Sample Type	Sample Type Code	Operator Samples					MSHA Samples							MSHA and Operator Totals				
		Total Valid	Exceed Applicable Std		≥ Applicable ECV Value		Total Valid	Exceed Applicable Std		≥ Applicable ECV Value		Exceed 100 µg/m ³ Qtz		Total Valid	Exceed Applicable Std		≥ Applicable ECV Value	
			#	%	#	%		#	%	#	%	#	%		#	%	#	%
DO	1	28,181	875	3.1	535	1.9	4,300	96	2.2	55	1.3	91	2.1	32,481	971	3.0	590	1.8
NDO	2	853	16	1.9	13	1.5	17,419	257	1.5	146	0.8			18,272	273	1.5	159	0.9
DA	3	6,288	97	1.5	61	1.0	3,307	57	1.7	28	0.8	37	1.1	9,595	154	1.6	89	0.9
DWP	4	9,267	58	0.6	33	0.4	4,952	28	0.6	16	0.3	50	1.0	14,219	86	0.6	49	0.3
PART 90	5	1,656	46	2.8	23	1.4	295	8	2.7	4	1.4	1	0.3	1,951	54	2.8	27	1.4
NDA	6						325	2	0.6	2	0.6			325	2	0.6	2	0.6
INTAKE ⁺	7	646	19	2.9	13	2.0	4,526	28	0.6	15	0.3			5,172	47	0.9	28	0.5
NDWP	8						10,060	10	0.1	4	0.0			10,060	10	0.1	4	0.0
Total:		46,891	1,111	2.4	678	1.4	45,184	486	1.1	270	0.6	179	0.4	92,075	1,597	1.7	948	1.0

* Uses CMDPSU ECV values and the applicable dust standard for each sample.

⁺ Intake DA Type 3 samples are included with Intake Type 7

A total of **501** valid operator samples were taken during February 2016 with the Continuous Personal Dust Monitor.

MSHA informational samples taken in the longwall tailgate area (061) are not included.

Valid Operator Dust Sample Counts by Type

8/1/2014 - 2/29/2016

Total Count, Counts Exceeding Current Dust Standards and ECV Values*

Sample Type	Sample Type Code	Operator Samples				
		Total Valid	Exceed Applicable Std		≥ Applicable ECV Value	
			#	%	#	%
DO	1	28,181	875	3.1	535	1.9
NDO	2	853	16	1.9	13	1.5
DA	3	6,288	97	1.5	61	1.0
DWP	4	9,267	58	0.6	33	0.4
PART 90	5	1,656	46	2.8	23	1.4
NDA	6					
INTAKE ⁺	3	646	19	2.9	13	2.0
NDWP	8					
Total:		46,891	1,111	2.4	678	1.4

* Uses CMDPSU ECV values and the applicable dust standard for each sample.

⁺ Intake DA Type 3 samples.

A total of 501 valid operator samples were taken during February 2016 with the Continuous Personal Dust Monitor.

Valid MSHA Dust Sample Counts by Type

8/1/2014 - 2/29/2016

Total Count, Counts Exceeding Current Dust Standards, ECV Values and 100 µg/m³ Quartz*

Sample Type	Sample Type Code	MSHA Samples						
		Total Valid	Exceed Applicable Std		≥ Applicable ECV Value		Exceed 100 µg/m ³ Quartz	
			#	%	#	%	#	%
DO	1	4,300	96	2.2	55	1.3	91	2.1
NDO	2	17,419	257	1.5	146	0.8		
DA	3	3,307	57	1.7	28	0.8	37	1.1
DWP	4	4,952	28	0.6	16	0.3	50	1.0
PART 90	5	295	8	2.7	4	1.4	1	0.3
NDA	6	325	2	0.6	2	0.6		
INTAKE ⁺	7	4,526	28	0.6	15	0.3		
NDWP	8	10,060	10	0.1	4	0.0		
Total:		45,184	486	1.1	270	0.6	179	0.4

* Uses CMDPSU ECV values and the applicable dust standard for each sample.

⁺ Intake DA Type 3 samples are included with Intake Type 7 samples.

MSHA informational samples taken in the longwall tailgate area (061) are not included.

Valid Dust Sample Counts by Sample Type

8/1/2014 - 2/29/2016

Total Count, Counts Exceeding Current Dust Standards, ECV Values*

Sample Type	Sample Type Code	MSHA and Operator Totals				
		Total Valid	Exceed Applicable Std		≥ Applicable ECV Value	
			#	%	#	%
DO	1	32,481	971	3.0	590	1.8
NDO	2	18,272	273	1.5	159	0.9
DA	3	9,595	154	1.6	89	0.9
DWP	4	14,219	86	0.6	49	0.3
PART 90	5	1,951	54	2.8	27	1.4
NDA	6	325	2	0.6	2	0.6
INTAKE ⁺	7	5,172	47	0.9	28	0.5
NDWP	8	10,060	10	0.1	4	0.0
Total:		92,075	1,597	1.7	948	1.0

* Uses CMDPSU ECV values and the applicable dust standard for each sample.

⁺ Intake DA Type 3 samples are included with Intake Type 7 samples.

MSHA informational samples taken in the longwall tailgate area (061) are not included.

Valid Dust Sample Counts by Sample Type

8/1/2014 - 11/30/2015

Total Count and Counts Exceeding August 2016 Applicable Dust Standards and ECV Values*

Sample Type	Sample Type Code	Operator Samples					MSHA Samples					MSHA and Operator Totals				
		Total Valid	Exceed Applicable Std		≥ Applicable ECV Value		Total Valid	Exceed Applicable Std		≥ Applicable ECV Value		Total Valid	Exceed Applicable Std		≥ Applicable ECV Value	
			#	%	#	%		#	%	#	%		#	%	#	%
DO	1	26,531	1,715	6.5	1,184	4.5	3,741	243	6.5	151	4.0	30,272	1,958	6.5	1,335	4.4
NDO	2	404	35	8.7	26	6.4	15,176	552	3.6	349	2.3	15,580	587	3.8	375	2.4
DA	3	5,689	216	3.8	153	2.7	3,029	105	3.5	82	2.7	8,718	321	3.7	235	2.7
DWP	4	7,847	66	0.8	35	0.4	4,099	34	0.8	17	0.4	11,946	100	0.8	52	0.4
PART 90	5	1,410	162	11.5	117	8.3	256	26	10.2	20	7.8	1,666	188	11.3	137	8.2
NDA	6						278	9	3.2	5	1.8	278	9	3.2	5	1.8
INTAKE ⁺	7	585	107	18.3	41	7.0	3,957	141	3.6	64	1.6	4,542	248	5.5	105	2.3
NDWP	8						8,606	27	0.3	18	0.2	8,606	27	0.3	18	0.2
Total:		42,466	2,301	5.4	1,556	3.7	39,142	1,137	2.9	706	1.8	81,608	3,438	4.2	2,262	2.8

* Applies the 8-1-2016 maximum dust standard of 1.5 mg/m³ for MMU, DA and DWP samples and 0.5 mg/m³ for intake air and Part 90 miner samples. Uses corresponding CPDM ECV values for operator face area and Part 90 miner occupational samples, and CMDPSU ECV values for other samples. Reduced dust standards less than base standard are included.

⁺ Intake DA Type 3 samples are included with Intake Type 7 samples.

MSHA informational samples taken in the longwall tailgate area (061) are not included.