ORAL ARGUMENT SCHEDULED FOR JANUARY 9, 2007

No. 01-1046

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

KENNECOTT GREENS CREEK MINING CO.,
Petitioner

v.

MINE SAFETY AND HEALTH ADMINISTRATION and
SECRETARY OF LABOR,
Respondents,

UNITED STEEL, PAPER AND FORESTRY, RUBBER,
MANUFACTURING, ENERGY, ALLIED INDUSTRIAL
AND SERVICE WORKERS INTERNATIONAL UNION,
Intervenor,

Consolidated with 01-1124, 01-1146, 05-1255
05-1291, 05-1296, 05-1312, 05-1314, 06-1184,
06-1194, 06-1204, 06-1205, 06-1223, 06-1225

On Petition for Review of Final Standards
of the Secretary of Labor

FINAL BRIEF FOR THE RESPONDENTS

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CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

Pursuant to Circuit Rule 28(a), the undersigned counsel certifies as follows:

A. Parties, Intervenors, and Amici

Except for Georgia Mining Association, a petitioner in No. 01-1146, all parties, intervenors, and amici appearing in this Court are listed in the Joint Brief for Petitioners.

B. Rulings Under Review

References to the rulings at issue appear in the Joint Brief for Petitioners.

C. Related Cases

These consolidated cases have not previously been before this Court or any other court, and counsel is not aware of any related cases.

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TABLE OF CONTENTS

TABLE OF AUTHORITIES*

Cases: Page

* Authorities upon which we chiefly rely are marked with asterisks.

Cases--continued: Page

Statutes and regulations:

Statutes and regulations--continued: Page

Statutes and regulations--continued: Page

63 Fed. Reg. (Oct. 29, 1998):

66 Fed. Reg. (Jan. 19, 2001):

Statutes and regulations--continued: Page

Statutes and regulations--continued: Page

Statutes and regulations--continued: Page

GLOSSARY

A:BKG-[#]	Background document in certified index, pt. A
A:COMM-[#]	Comment document in certified index, pt. A
A:CORR-[#]	Correspondence document in certified index, pt. A
A:HEAR-[#]	Hearing transcript in certified index, pt. A
B:ACTV-[#]	Activity document in certified index, pt. B
B:BKG-[#]	Background document in certified index, pt. B
B:COMM-[#]	Comment document in certified index, pt. B
B:CORR-[#]	Correspondence document in certified index, pt. B
B:GEN-[#]	General document in certified index, pt. B
Document [#]	Document in certified index, pt. C
DPM	Diesel particulate matter
EC	Elemental carbon
EPA	Environmental Protection Agency
HTDPF	High temperature disposable diesel particulate filter
IARC	International Agency for Research on Cancer
MSHA	Mine Safety and Health Administration
NIOSH	National Institute for Occupational Safety and Health
NCI	National Cancer Institute
NMA	National Mining Association
NO_2	Nitrogen dioxide
NSSGA	National Stone, Sand, and Gravel Association
OC	Organic carbon

OSHA	Occupational Safety and Health Administration
TC	Total carbon
USW	United Steel, Paper and Forestry, Rubber, Manufacturing, Energy, Allied Industrial and Service Workers International Union

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On Petition for Review of Final Standards
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FINAL BRIEF FOR RESPONDENTS

STATEMENT OF JURISDICTION

This Court has jurisdiction under 30 U.S.C. 811(d) to review the Mine Safety and Health Act standards at issue. The standards were promulgated on January 19, 2001, June 6, 2005, and May 18, 2006. 66 Fed. Reg. 5706 (2001) (JA 111); 70 Fed. Reg. 32,868 (2005)

(JA 729); 71 Fed. Reg. 28,924 (2006) (JA 1102). The petitions for review were filed prior to the 60th day after promulgation of the relevant standards and therefore timely under 30 U.S.C. 811(d).

STATEMENT OF THE ISSUES

1. Whether diesel particulate matter (DPM) presents sufficient risks of material health impairment to justify the carbon-based exposure limits set in 30 C.F.R. 57.5060(b) for underground metal and nonmetal mines.

2. Whether the Mine Safety and Health Administration (MSHA) reasonably concluded that compliance with the exposure limits is technologically feasible for the underground metal and nonmetal mining industry as a whole.

3. Whether MSHA reasonably provided medical evaluation and transfer rights to miners unable to wear respirators, fully complied with notice and comment requirements, and properly rejected industry's reliance on the Data Quality Act.

STATUTES AND REGULATIONS

The Mine Act provision for safety and health standards, 30 U.S.C. 811, and the 2001 DPM standard, as amended in 2005 and 2006, 30 C.F.R. 57.5060-57.5075, are included in the Statutory and Regulatory Addendum to this brief.

STATEMENT OF THE CASE

A. Nature of the case and course of proceedings

These consolidated cases challenge three successive health rules that, together, regulate DPM exposure in underground metal

and nonmetal mines. In the 2001 rule, MSHA determined that exposure to DPM creates a significant risk of lung cancer and other adverse health effects and that it was feasible for industry to take steps to limit DPM exposure. Among other things, the 2001 rule set an interim limit of 400 micrograms of total carbon (TC), equivalent to 500 micrograms of DPM, that operators had to meet after July 19, 2002. 66 Fed. Reg. 5907. The 2001 rule set a final limit of 160 micrograms of TC, equivalent to 200 micrograms of DPM, to be effective January 20, 2006. Ibid.

Industry petitioners challenged the 2001 rule in Nos. 01-1046, 01-1124, and 01-1146, and the United Steelworkers (now the United Steel, Paper, Forestry Rubber, Manufacturing, Energy, Allied Industrial and Service Workers International Union) intervened to defend the rule. At the request of the parties, this Court held the cases in abeyance while the parties pursued settlement. B:ACTV-11. Pursuant to a July 2002 partial settlement, 67 Fed. Reg. 47,296, 47,298 (July 18, 2002) (JA 411, 413), MSHA proposed revisions to the 2001 rule. 68 Fed. Reg. 48,668 (Aug. 14, 2003) (JA 599). In June 2005, MSHA promulgated a final rule that, consistent with that settlement, changes the interim 400 microgram TC limit to the equivalent 308 micrograms of elemental carbon (EC), allows operators to use respirators if engineering controls do not reduce DPM to required limits, requires MSHA to consider economic as well as technological feasibility in determining whether an operator qualifies for an extension of time to meet the final DPM

limit, and deletes a control plan requirement in the 2001 rule. 70 Fed. Reg. 32,868 (June 6, 2005) (JA 729). Industry groups are challenging the 2005 rule in Nos. 05-1255, 05-1291, 05-1296, 05-1312, and 05-1314.

Finally, a May 2006 rule retains the final 160 microgram TC limit set in 2001 but extends its effective date to May 20, 2008. 71 Fed. Reg. 28,924 (May 18, 2006) (JA 1102). The 2006 rule also retains the 2005 rule's 308 EC limit as a final limit effective May 20, 2006, lowers that limit to a 350 TC final limit effective January 20, 2007, and requires operators to provide medical evaluation and transfer rights to miners who have to wear respirators. Id. at 29,012. Industry groups are challenging the May 2006 rule in Nos. 06-1184, 06-1194, 06-1204, 06-1205, 06-1223, and 06-1225. On August 15, 2006, this Court denied an industry request to stay the 160 and 350 limits and medical evaluation and transfer provisions and ordered expedited briefing.

B. Statement of Facts

1. MSHA's diesel regulations

In 1988, an advisory committee recommended that MSHA regulate both the gaseous and particulate components of diesel exhaust based on the committee's concern that diesel exhaust represents a probable risk of causing human lung cancer. See 57 Fed. Reg. 500 (Jan. 6, 1992). In 1992, MSHA asked for comments on DPM's health effects, sampling methods, and the feasibility of DPM limits for the entire mining industry. 57 Fed. Reg. 501-503. After receiving

comments, MSHA proposed separate rules for underground coal mines and underground metal and nonmetal mines. 63 Fed. Reg. 58,104 (Oct. 29, 1998) (JA 35); 63 Fed. Reg. 17,492 (Apr. 9, 1998). MSHA proposed requiring coal mines to install and maintain filters, rather than meet a DPM limit, because MSHA was concerned that coal dust could be mistaken for DPM under methods used to measure DPM. 63 Fed. Reg. 17,498. MSHA proposed requiring underground metal and nonmetal mines to meet a DPM limit, rather than install and maintain filters as required in underground coal mines. 63 Fed. Reg. 58,117, 58,125 (JA 39, 40).

In January 2001, MSHA issued final rules for the underground coal and metal/nonmetal sectors. 66 Fed. Reg. 5526 (Jan. 19, 2001); 66 Fed. Reg. 5706 (Jan. 19, 2001). The coal rule, which was not challenged and has been in effect beginning in May 2001, relies on the same risk assessment as the metal/nonmetal rule. Id. at 5561. The coal rule requires operators to limit emissions from their engines, which they may do through filters or newer, cleaner engines. Id. at 5526-5527. MSHA explained that such a standard was not appropriate for the metal/nonmetal industry because it would limit operators' flexibility and because MSHA lacked information on emission rates of engines in underground metal/nonmetal mines. Id. at 5589.

2. Issues in the metal/nonmetal rulemakings

Throughout the metal/nonmetal rulemakings, MSHA has recognized and addressed three fundamental issues: need for the rule, MSHA's

ability to measure DPM, and industry's ability to comply with the rule's requirements. 66 Fed. Reg. 5708 (JA 113). An additional, ancillary issue concerns respiratory protection for miners. 71 Fed. Reg. 28,986 (JA 1164); 70 Fed. Reg. 32,956 (JA 817). MSHA initially resolved those issues based on the 2001 rulemaking record. After the 2001 rule was challenged, and after partially successful settlement discussions led to further rulemaking, it incorporated that record into the 2005 rulemaking record, and incorporated the 2001 and 2005 rulemaking records into the 2006 rulemaking record. 71 Fed. Reg. 28,981 (JA 1159); 70 Fed. Reg. 32,870 (JA 731). MSHA finally resolved those issues as follows:

a. Need for the rule: DPM's cancer risk

In promulgating the 2001 rule, MSHA determined from its samples in 27 underground metal and nonmetal mines, 66 Fed. Reg. 5756-5758 (JA 161-163), that underground miners were exposed to DPM levels up to 200 times higher than in the most heavily polluted urban areas and up to 10 times higher than the most heavily exposed workers in other occupational groups. Id. at 5709, 5764 (JA 114, 169); see id. at 5763 (Figure) (JA 168). Based on a peer-reviewed analysis of numerous studies, id. at 5842 (JA 247), MSHA then determined that DPM exposure causes acute health effects such as eye irritation and respiratory ailments, chronic effects such as premature death from heart and respiratory problems, and an increased risk of lung cancer. Id. at 5764-5811, 5854-5855 (JA 169-216, 259-260). It further noted that scientific organizations

and governmental agencies, including the National Institute for Occupational Safety and Health (NIOSH), the International Agency for Research on Cancer (IARC), California's EPA, and the German government, have also concluded that DPM is a probable human carcinogen or comparable category. Id. at 5840 (JA 245).

In analyzing the significance of the health risks, MSHA focused on lung cancer, because MSHA was better able to quantify that risk. 66 Fed. Reg. 5848 (JA 253). Based on the best available studies involving miners and on MSHA's observed levels of DPM in underground metal and nonmetal mines, MSHA concluded that over a 45-year working life, see 30 U.S.C. 811(a)(6)(A), miners exposed to DPM in such mines had between 2.4 times and 16.2 times the risk of lung cancer as unexposed miners. 66 Fed. Reg. 5848-5849, 5852 (JA 253-254, 257). MSHA considered even the lowest estimate -- a doubling of a miner's risk -- clearly to be significant. Ibid.

MSHA also determined that the DPM rule would decrease that risk. Relying on studies that had identified exposure-response relationships in underground miners, MSHA estimated the excess risk of lung cancer at the average observed level in underground metal and nonmetal mines (808 micrograms of DPM per cubic meter of air) and at the reduced levels required by the 2001 rule (an interim limit corresponding to 500 micrograms of DPM, and a final limit corresponding to 200 micrograms of DPM). 66 Fed. Reg. 5852 (JA 257). It concluded that the rule's lowest limit would

significantly reduce the observed risk. Id. at 5853 (table), 5854; see also JA 101-109. MSHA recognized that miners still have an excess risk of lung cancer even at the lowest limit set by the DPM rule, but determined that a lower limit was not feasible for industry. 66 Fed. Reg. 5854 (JA 259).

In the 2005 rule, MSHA concluded that more recent studies provided additional support for its 2001 risk assessment. 70 Fed. Reg. 32,900-32,915 (JA 761-776). It also noted that in 2002 the National Toxicology Program of the National Institutes of Health and the United States Environmental Protection Agency (EPA) had designated diesel exhaust as a likely human carcinogen. Id. at 32,911 (JA 772).

In the 2006 rule, MSHA relied on the 2001 risk assessment as updated in 2005. 71 Fed. Reg. 28,926-28,933 (JA 1104-1111). In particular, MSHA concluded that, even though DPM exposure levels have fallen since 2001, 2005 exposure levels still presented a significant risk of material adverse health effects to exposed miners. Id. at 28,933 (JA 1111).

b. How to measure DPM

DPM consists of a core of elemental carbon (EC), adsorbed organic carbons, and sulfates. 66 Fed. Reg. 5716 (Figure II-1) (JA 121); see also National Petrochem. & Refiners Ass'n v. EPA, 287 F.3d 1130, 1135 (D.C. Cir. 2002). In 2001, MSHA determined that the only way to measure DPM accurately for compliance purposes was to measure, as a surrogate for DPM, the carbon portions of DPM (either

EC or TC (EC plus adsorbed organic carbons)), using the NIOSH 5040 method. 66 Fed. Reg. 5718-5722 (JA 123-127). MSHA chose TC, based on evidence that TC is consistently 80-85% of DPM. Id. at 5719, 5726 (JA 124, 131). Using the lower, 80% figure, MSHA thus required operators to meet an interim limit of 400 micrograms of TC (corresponding to 500 micrograms of DPM) and a final limit of 160 micrograms of TC (corresponding to 200 micrograms of DPM). Id. at 5706, 5726 (JA 111, 131). MSHA recognized that the organic carbon portion of a TC sample may include non-DPM "interferences," such as oil mist and cigarette smoke. Id. at 5719, 5729 (JA 124, 134). MSHA concluded that it could address interferences by not sampling too close to the source of interference. Id. at 5729, 5730 (JA 134, 135).

MSHA recognized that EC is not subject to those interferences and that NIOSH had recommended EC rather than TC as a DPM surrogate. 66 Fed. Reg. 5712, 5726 (JA 117, 131). MSHA was concerned, however, that the ratio of EC to TC varied depending on a diesel engine's duty cycle, and which DPM controls were used; in fact, some data showed that the EC to TC ratio could range from 8 to 81%. Ibid. Because MSHA did not "at this time" know the ratio between EC and DPM, MSHA decided to use TC rather than EC as the surrogate for DPM. Id. at 5712 (JA 117).

After industry groups sued to overturn the 2001 rule, MSHA, industry, and the Steelworkers agreed to assess the interference problem through a 31-Mine Study. 68 Fed. Reg. 48,670 (JA 600); JA

565. Using a TC analysis, MSHA voided 61 of 464 samples because of interferences. JA 567. In light of that experience, MSHA concluded that it had no reasonable method of sampling TC to determine DPM levels where oil mist or tobacco smoke was present. JA 568, 569.

The 31-Mine Study also led MSHA to conclude, as had industry, that the ratio of EC to TC is sufficiently stable for MSHA to use EC as a surrogate for DPM. See JA 429, 442 (industry expert's conclusion that EC was about 75% of TC for over 90% of the valid samples in the 31-Mine Study, and on average 77% of TC). MSHA therefore agreed in the July 2002 partial settlement to propose a rule changing the surrogate from TC to EC. 67 Fed. Reg. 47,298 (JA 413). As requested by commenters, including operators, JA 484, 498, 505-506, MSHA proposed a change only for the 2001 rule's interim limit, which had been in effect since July 20, 2002, to give MSHA an opportunity to gather more information for a final limit. 68 Fed. Reg. 48,668 (JA 599).

In the 2005 rule, MSHA changed the 400 microgram TC interim limit to a 308 microgram EC limit, using a conversion factor of 1.3 (400 = 1.3 x 308). 70 Fed. Reg. 32,944 (JA 805). The 308 limit is based on evidence from the 31-Mine Study, supported by NIOSH and industry, that EC on average is 77% of TC (400 x .77 = 308). Id. at 32,944-32,945; see, e.g., JA 488, 500, 502-503, 635, 638, 644. MSHA recognized that the EC:TC ratio can vary considerably in specific cases, but concluded that a 308 EC limit was appropriate

because it was as protective of miners as the 400 TC limit and was feasible. 70 Fed. Reg. 32,899 (JA 760); see also id. at 32,944 (JA 805) (EC measurement imposes fewer sampling restrictions and is inherently more accurate); id. at 32,876 (JA 737) (results of MSHA's 2002 and 2003 baseline sampling of all underground metal and nonmetal mines, while not controlling for possible interferences, showed a 93.6% concurrence between an EC sample x 1.3 and a TC sample).

After the 2005 rule, MSHA confirmed from enforcement samples that 1.3 was the appropriate conversion factor for the interim limit. 70 Fed. Reg. 53,287 (JA 880). MSHA questioned whether 1.3 was appropriate for a lower final limit because the types of controls needed to meet the lower limits could alter the EC:TC ratio. Ibid. MSHA requested comments on an appropriate EC final limit, and stated its intent to propose a separate rulemaking on an EC to TC conversion factor for the final limit. Ibid.

After receiving a range of comments, MSHA decided in May 2006 that the record lacks sufficient evidence for a final EC limit, other than at the 308 limit. 71 Fed. Reg. 28,982-28,983 (JA 1160-1161). Accordingly, the 2006 rule set the final limits at 308 micrograms of EC, effective May 18, 2006; 350 micrograms of TC, effective January 20, 2007; and 160 micrograms of TC (the same as the final limit set in 2001), effective May 20, 2008 (two years, four months later than the 2001 rule's effective date). Id. at 29,012. MSHA stated its intent to convert the TC limits to EC

limits before January 20, 2007, and to use the 1.3 conversion factor for the 350 TC limit if the rulemaking is not complete by that date. Id. at 28,983 (JA 1161).

c. Feasibility of compliance

i. Technological feasibility

Issues regarding technological feasibility have been a central focus throughout this rulemaking history. In 2001, MSHA identified a number of actions operators could take to reduce DPM levels in their mines. To meet the interim limit, it determined that operators could optimally use DPM exhaust filters, environmental cabs, and ventilation. To meet the final limit, it determined that operators could optimally use more filters and ventilation and newer, less polluting engines. 66 Fed. Reg. 5888, 5894-5895 (JA 293, 299-300). Other controls identified by the agency included using low sulfur fuels, training miners on DPM controls, and maintaining equipment. Id. at 5873-5879 (JA 278-284). MSHA relied on a peer-reviewed computer program called the Estimator to predict that reducing DPM exposures to the prescribed limits by the effective dates could occur with the various controls. Id. at 5863, 5888 (JA 268, 273). The most contentious issue concerned the efficacy of ceramic filters. MSHA rejected operator arguments that ceramic filters will not work in underground mining based on evidence that they do work in Germany, England, and Scandinavia. Id. at 5740-5744 (JA 145-149).

To assist operators in implementing the technology, the 2001 rule provided one and a half years before the effective date of the 400 TC limit and an additional three and a half years before the effective date of the 160 TC limit, during which periods compliance assistance would be available. 66 Fed. Reg. 5860 (JA 265). The rule also provided that an individual operator could have a single extension of up to two more years to reach the 160 limit based on technological infeasibility. Id. at 5861 (JA 266).

In attempting to settle challenges to the 2001 rule, MSHA provided an additional year of extensive compliance assistance before issuing citations for violations of the 400 limit beginning July 20, 2003. 70 Fed. Reg. 32,873 (JA 734); 67 Fed. Reg. 47,298 (JA 413). As part of that assistance, MSHA took baseline samples between October 2002 and October 2003 of each mine subject to the rule and found no samples exceeding the 400 limit in 63% of the mines. 70 Fed. Reg. 32,879 (JA 740). MSHA also held meetings throughout the country, provided information and in-mine compliance assistance, and worked with a partnership of industry, labor and NIOSH, which was also providing information and assistance. Id. at 32,886-32,887, 32,916-32,917 (JA 747-748, 777-778). In May 2002, MSHA and NIOSH also alerted industry to a potential nitrogen dioxide (NO_2) problem when one type of filter is used under marginal ventilation conditions and developed a web-based, comprehensive filter selection guide with step-by-step assistance

to select appropriate filters. Id. at 32,922-32,923 (JA 783-784); see www.msha.gov/nioshmnmfilterselectionguide/dpmfilterguide.htm.

In the June 2005 rule, MSHA again determined that the interim limit, now expressed as 308 EC, is technologically feasible. 70 Fed. Reg. 32,915 (JA 776). In addition to the 2001 rulemaking record, MSHA relied on its compliance assistance and enforcement experience, and on a NIOSH study, first reported in 2004, that showed ceramic filters work in underground mines in the United States, and NIOSH's confirmation of MSHA's determination that operators can work through filter implementation issues. Id. at 32,916, 32,927, 32,933 (JA 777, 788, 794); see also 71 Fed. Reg. 28,961 (JA 1139) (82% of enforcement samples between November 2003 and January 2006 were below the interim limit). MSHA also concluded that a newly available innovation, biodiesel fuel, is a feasible DPM control based on in-mine testing. 70 Fed. Reg. 32,937 (JA 798).

Taking a cautious approach in the 2005 rule, however, MSHA expressed concern that some mines could have difficulties implementing the controls, particularly filters. 70 Fed. Reg. 32,915 (JA 776). Accordingly, MSHA modified the 2001 rule to permit operators to require miners to use respirators if feasible engineering and administrative controls do not reduce DPM to required levels. Id. at 32,915-32,916 (JA 776-777). MSHA also modified the 2001 rule to permit renewable extensions of time of up to one year per renewal to meet the final limit, based on either

technological or economic infeasibility, rather than a single extension of up to two years based only on technological feasibility concerns. Id. at 32,951 (JA 812). Acknowledging that it lacked sufficient data to reduce the interim limit "at this time," MSHA did not lower the limit in that rulemaking. Id. at 32,916 (JA 777).

In September 2005, MSHA proposed to phase in the 160 final limit set by the 2001 rule to become effective January 19, 2006, through five annual reductions between January 2007 and January 2011. 70 Fed. Reg. 53,293 (JA 886). MSHA proposed this approach because it believed that operators were having difficulty implementing filters, that mines had not replaced engines as quickly as MSHA anticipated in 2001, and that logistical problems existed in distributing biodiesel fuels to remote mining locations. Id. at 53,283-53,284 (JA 876-877). MSHA requested comments on those issues, id. at 53,283-53,287 (JA 876-880), and also "on whether five years is the correct timeframe," and whether an alternative to the annual reductions should "include an approach such as one or two reductions." Id. at 53,288 (JA 881).

In the May 2006 rule, MSHA, upon a review of the cumulative rulemaking record, chose a three-reduction approach, and accelerated the effective date for the final limit from what had been proposed. It continued the 308 EC (400 TC equivalent) limit already in effect and kept the first proposed phase-in, a 350 TC limit effective in January 2007, to provide a "necessary incentive"

for operators to continue to implement DPM controls and not to delay efforts to meet the final 160 limit. 71 Fed. Reg. 28,961 (JA 1139). MSHA determined that the limit is feasible because 78% of MSHA enforcement samples between November 2003 and January 2006, targeting miners with the highest levels of DPM exposure, are already below that limit. Ibid.

In requiring operators to meet the final 160 TC limit by May 20, 2008, rather than by May 20, 2011, as proposed (three years faster than the 2005 proposal but two years and four months later than the 2001 rule's effective date), 71 Fed. Reg. 29,012, MSHA explained that it had "more definitive information on availability of alternative fuels and the implementation issues" and accordingly could not "justify further delays" in implementing the 160 limit beyond May 2008. Id. at 28,979 (JA 1157). In particular, MSHA relied on comments indicating greater availability of biodiesel fuel, recent information on 2007 model year on-road engines that have DPM emissions 90% lower than existing EPA limits, and developments in disposable filter technologies. Id. at 28,935-28,939 (JA 1113-1117). MSHA explained that "these technologies are not subject to many of the difficult implementation issues that have slowed the adoption of some DPM controls." Id. at 28,944 (JA 1122). MSHA also noted that DPM filters are commercially available for all horsepower engines typically found in metal and non-metal mines, id. at 28,947 (JA 1125), yet few mines used filters to control DPM exposures, id. at 28,964 (JA 1142). Since "[s]ome

operators simply removed the controls instead of working through these implementation issues," id. at 28,938 (JA 1116), filters remained an underused control despite recent advances in the technology.

ii. Economic feasibility

In 2001, MSHA determined that the annualized industry-wide cost of the DPM rule was $25.1 million. 66 Fed. Reg. 5889 (JA 294). Because this cost was less than 1% of the affected mines' $3.726 billion in 1998 gross revenue, MSHA determined that the rule was economically feasible. Id. at 5887 (JA 292); JA 110.

In 2005, MSHA concluded that the 2005 revisions to the 2001 rule would result in a net savings to industry. 70 Fed. Reg. 32,939 (JA 800). In the 2006 rule, MSHA adjusted its cost estimates to reflect, among other things, possible increased costs to industry of evaluating and implementing controls, and concluded that the industry-wide cost of getting from the interim limit currently in effect to the 160 final limit by May 20, 2008, was $8,454,853. 71 Fed. Reg. 28,958, 28,997 (JA 1136, 1175). Because that cost is only 0.175% of industry's $4,836,245,377 in revenue for 2004, MSHA determined that the 2006 rule was economically feasible. Id. at 28,958 (JA 1136).

d. Medical evaluation and transfer

The 2001 rule prohibited the use of respirators to achieve compliance except when MSHA approved their use based on a mine's technological infeasibility of meeting the final limit or during

temporary inspection, maintenance, and repair work. 66 Fed. Reg. 5707, 5857-5858 (JA 112, 262-263). MSHA recognized that the well-established "hierarchy of controls" concept permits the use of respirators to achieve compliance when engineering controls are infeasible, but concluded that, except where the rule allowed respirators, there would be no need for them. Id. at 5862 (JA 267). The rule did not require operators to provide medical examinations and transfer rights to miners unable to wear respirators, although 30 U.S.C. 811(a)(7) requires such protection "[w]here appropriate."

After operators challenged the 2001 rule, MSHA agreed to apply the "hierarchy of controls" concept to permit respirators when engineering and work practice controls were infeasible. 70 Fed. Reg. 32,868 (JA 729); 67 Fed. Reg. 47,298 (JA 413). MSHA decided that requiring medical evaluation and removal was inappropriate for the 2005 rulemaking because operators were voluntarily implementing such provisions and the use of respirators would be limited under the interim limit established in 2005. 70 Fed. Reg. 32,957-32,958 (JA 818-819).

After the Steelworkers challenged the 2005 rule's failure to require medical evaluation and transfer in No. 05-1197, MSHA sought comments on whether it should adopt specific provisions to impose such requirements. 70 Fed. Reg. 53,289 (JA 882). The 2006 rule requires medical evaluation and transfer because MSHA estimated that more miners could be required to wear respirators for longer

periods when the final limit set by the 2006 rule goes into effect. 71 Fed. Reg. 28,990 (JA 1168). MSHA also explained that the 2006 rulemaking record established a need for medical evaluations because wearing a respirator places a physiological burden on the person wearing it that could cause illness, injury, or even death, depending on the person's medical condition. Id. at 28,986 (JA 1164). MSHA required transfer rights so that a miner would give truthful information during a medical examination rather that false information to protect his or her job. Id. at 28,990 (JA 1168).

SUMMARY OF ARGUMENT

I.A. MSHA met its burden, under National Mining Association v. MSHA, 116 F.3d 520, 527-528 (D.C. Cir. 1997), of establishing, "at most," a significant risk associated with having no DPM standard at all. MSHA determined from in-mine sampling that underground metal and nonmetal miners were exposed to DPM levels up to 200 times higher than the most heavily polluted urban areas and up to 10 times higher than the most heavily exposed workers in other occupational groups. MSHA then determined from an extensive body of scientific evidence that DPM presents a material risk of lung cancer and other adverse health effects that is far higher than the 1 in 1000 risk that courts consider significant.

Because MSHA found a significant risk at the lowest 160 limit set by the rules -- a limit based on feasibility -- MSHA was not required to establish a "dose-response" relationship between DPM and adverse health effects at various levels of exposure. Like the

EPA, MSHA may regulate DPM without waiting for research on whether clean engines create a nanoparticle health risk. Industry's concern with NO_2 is a filter-selection issue resolvable by increased ventilation or use of a different filter. MSHA was not required to accept an industry-retained expert's inability to find a significant risk from DPM because MSHA's interpretation of the data is supported by a body of reputable scientific thought that includes NIOSH, IARC, EPA, Germany, California's EPA, and NIH.

B. MSHA reasonably chose carbon-based limits as a surrogate for DPM because the only acceptable method that MSHA found for measuring DPM for compliance purposes, the NIOSH 5040 method, measures only the carbon parts of DPM. Using carbon as a surrogate was thus a rational choice and does not mean that MSHA is regulating carbon and not DPM, a probable human carcinogen. As in National Petrochemical & Refiners Association v. EPA, 287 F.3d 1130, 1142 (D.C. Cir. 2002), MSHA's ability to measure DPM accurately concerns only the agency's power to find a violation and is not a basis to upset the DPM rules. Because MSHA intends to follow an enforcement strategy for the 350 TC limit that uses TC and EC measurements and intends further rulemaking to convert the final 160 TC limit to an EC limit before the 160 limit's May 2008 effective date, this Court need not decide in this case whether TC or EC is the preferable surrogate for DPM. If the Court reaches that issue, it should conclude that MSHA can reasonably rely on either TC or EC.

II.A. MSHA established that the DPM limits are technologically feasible by proving a reasonable possibility, based on credible sources of information, that a typical firm will be able to develop and install controls to meet the limits in most of its operations. Studies in underground metal and nonmetal mines have shown that ceramic filters, while not problem-free, can reduce exposures to the 160 TC limit, and MSHA continues to assist operators in properly selecting, installing, and maintaining filters. Cleaner engines can also meet the 160 TC limit, as reasonably shown by MSHA's Estimator program, and industry does not dispute MSHA's conclusion that buying a new engine can pay for itself in less than three years because of fuel efficiency. Biodiesel fuel is also effective in reducing DPM, and operators' ability to use ventilation and environmental cabs is not as limited as industry argues. MSHA case files show that some mines are already meeting the 160 TC limit and that other mines can do so. The availability of respirators and renewable extensions and operators' ability to raise feasibility issues in enforcement proceedings also support feasibility.

B. MSHA reasonably predicts that industry can meet the deadlines set by the 2006 rule. Industry can meet the January 2007 deadline for the 350 limit because 78% of MSHA enforcement samples between November 2003 and January 2006 were already below that limit. The record also shows that industry can meet the May 2008 deadline for the 160 limit. That record shows that MSHA prudently

reexamined its 2001 feasibility determination after industry challenged the 2001 rule and adjusted its views in light of new evidence. In 2005, MSHA proposed phasing in the 160 limit in five steps between 2007 and 2011, but based on new information, MSHA determined in 2006 that biodiesel was more readily available and easier to use than MSHA had predicted, that a disposable filter technology with few implementation difficulties could be used in underground metal and nonmetal mines, and that 2007 on-road engines, which reduce DPM by 90% from current EPA limits, would have built-in filters and could be used in mining. That information, along with other expected advances in DPM control technology and gains expected once industry overcomes its reluctance to try filters or work through implementation issues, supports MSHA's conclusion that May 20, 2008 is a realistic effective date for the final 160 TC limit and that it could not justify a delay in that limit beyond that date.

III.A. MSHA reasonably included a provision for medical evaluation and transfer to protect miners who cannot safely wear respirators. The Mine Act specifically authorizes such a provision, and the record supports MSHA's conclusion that medical evaluation will prevent miners who are physically unable to wear a respirator from doing so, and transfer rights will encourage miners to give truthful information during an examination rather than false information to protect their jobs. Industry's concerns with respirators are meritless because they supported respirators in

2005, successfully gave medical evaluations, have no basis for predicting that large numbers of miners will have to wear respirators, and are unlikely to be affected by the transfer provisions, which will likely apply to fewer than five miners industry-wide at any one time.

B. MSHA complied with notice and comment requirements in promulgating the medical evaluation and transfer provisions because MSHA's proposal expressly asked for comments on the issue and set out the text of the provision it was considering. MSHA's choice of a May 2008 effective date for the 160 limit is a logical outgrowth of the proposed five step phase-in between January 2007 and January 2011 because MSHA gave notice that it was considering a range of options and the May 2008 date is within the range available to MSHA and advocated in comments. MSHA's reliance on new information concerning disposable filters and low-emission engines also satisfies notice-and-comment requirements. MSHA's proposal asked for information on the types and sizes of filters that industry had evaluated, and disposable filters were one of those types. MSHA also asked for information on industry's use of low-emission engines, which made it perfectly predictable that MSHA could obtain new information about those engines during the rulemaking. Industry also shows no harm from MSHA's use of new engine information.

C. Industry lacks standing to argue that MSHA failed to comply with the Data Quality Act. That Act directs the Office of

Management and Budget to issue guidelines to agencies concerning information that agencies maintain and disseminate. Because the Act creates no legal rights in third parties, industry lacks standing to challenge an agency's failure to comply with it, as in Salt Institute v. Leavitt, 440 F.3d 156, 159 (4th Cir. 2006). Permitting judicial review would interfere with agencies' ability to promulgate reasonable and necessary health and safety standards under their statutory mandates.

ARGUMENT

This Court reviews Mine Act rules under the "arbitrary and capricious" standard of review. National Mining Ass'n v. MSHA, 116 F.3d 520, 527 (D.C. Cir. 1997). Under that standard, the Court presumes the validity of agency action that has a rational basis. American Trucking Ass'ns v. EPA, 283 F.3d 355, 362 (D.C. Cir. 2002). The Court does not judge the merits of competing expert views, and will uphold the agency's choice between experts if it is reasonable and supported by the record, even if the record may also support other conclusions. Ibid. That limited review is appropriate because MSHA's rules involve "policy judgments in areas where specific factual findings cannot always realistically be made." S. Rep. No. 95-181, at 21 (1977).

I. MSHA REASONABLY DETERMINED THAT DPM PRESENTS SIGNIFICANT RISKS OF MATERIAL HEALTH IMPAIRMENT SUFFICIENT TO JUSTIFY THE CARBON-BASED EXPOSURE LIMITS SET IN 30 C.F.R. 57.5060(b) FOR UNDERGROUND METAL AND NONMETAL MINES

A. The rules address a significant risk of material health impairment from DPM

In promulgating standards dealing with toxic materials or harmful physical agents, the Secretary must "set standards which most adequately assure on the basis of the best available evidence that no miner will suffer material impairment of health or functional capacity even if such miner has regular exposure to the hazards dealt with by such standard for the period of his working life." 30 U.S.C. 811(a)(6)(A). This Court has questioned whether the Secretary must find a significant risk of material harm and has concluded that when existing Mine Act standards do not address a health or safety issue, the Secretary is required, "[a]t most," to identify a significant risk associated with having no standard at all. National Mining, 116 F.3d at 527-528. Once that risk is shown, the appropriate standard to address the risk "is a technical decision entrusted to the expertise of the agency rather than the conjecture of the Court." Id. at 528.

Before 2001, MSHA did not regulate DPM, the non-gaseous part of diesel engine emissions. See 57 Fed. Reg. 500 (Jan. 6, 1992). Thus, the National Mining standard applies.

MSHA's 2001 rule easily satisfies that standard, which "at most" requires a finding of significant risk and then gives the agency broad discretion to set the appropriate limit. Following an

advisory committee recommendation that DPM should be regulated separately from the gaseous elements of diesel exhaust, MSHA reasonably chose not to treat the agency's general air contaminants standard as a sufficient regulation of DPM. See Jt. Br. 15 (contending "pre-existing limits on diesel exhaust gases" makes DPM regulation unnecessary); In re United Mine Workers, 190 F.3d 545, 547-548 (D.C. Cir. 1999). Instead, MSHA reasonably determined that DPM posed a significant risk of harm to underground miners and required regulation.

MSHA first determined from its measurements of samples in 27 underground metal and nonmetal mines that underground miners were exposed to DPM levels up to 200 times higher than in the most heavily polluted urban areas and up to 10 times higher than the most heavily exposed workers in other occupational groups. 66 Fed. Reg. 5756-5758, 5764 (JA 161-163, 169). MSHA therefore reasonably determined that the risks to underground miners from DPM are greater than the risks to employees in surface mines or in other industries where DPM exposures are far lower. Id. at 5708, 5759-5760 (JA 113, 164-165); see Jt. Br. 21.

MSHA then analyzed an extensive body of current scientific literature on the risk of DPM exposure -- apart from possible risks from gaseous components of diesel exhaust, 66 Fed. Reg. 5734 (JA 139) -- and concluded that DPM presents a material risk of lung cancer and other adverse health effects even at the lowest limit (160 TC) set by the 2001 rule, a limit based on feasibility. Id.

at 5848-5849 (JA 253-254). MSHA further concluded that the risk of lung cancer death was between 83 and 830 per 1000 miners exposed to observed DPM levels at underground metal and nonmetal miners over a 45-year working life. Id. at 5854 (JA 259); see also JA 102-109. Because that risk is well above the "one in a thousand" odds of a fatality that can be considered significant when dealing with a toxic substance, Industrial Union Dep't v. American Petroleum Institute, 448 U.S. 607, 556 (1980) (plurality); International Union, UAW v. Pendergrass, 878 F.2d 389, 392 (D.C. Cir. 1989), MSHA reasonably concluded that the risk was significant.

Because MSHA found a significant risk even at the lowest 160 TC limit set by the rules based on feasibility constraints, and those rules were regulating DPM for the first time, MSHA was not required, contrary to industry's argument, to establish a "dose-response" relationship between DPM and adverse health effects at various levels of exposure. See Jt. Br. 21-22. Instead, MSHA only had to establish a significant risk of having no rule at all. National Mining, 116 F.3d at 527-528; see also 66 Fed. Reg. 5842 (JA 247) (explaining that under the OSH Act, see American Textile Mfgrs. Inst. v. Donovan, 452 U.S. 490, 505 n.25 (1981); Jt. Br. 22, dose-response relationship is a sufficient but not necessary way to show significant risk). MSHA also has evidence of an exposure-response relationship. 71 Fed. Reg. 28,928 (JA 1106); 66 Fed. Reg. 5842 (JA 247); see also JA 72 (NIOSH conclusion that relative risks of cancer in a German study of underground nonmetal miners are

correlated with intensity of exposure); JA 327 (EPA's conclusion that the magnitude of pathological changes in the respiratory tract "is determined by the dose delivered to the respiratory tract and is attributable to both the carbon core and the adsorbed organic materials").

MSHA's finding of a significant risk is also not undermined by MSHA's recognition, in 2001, that further research was needed to determine whether newer, cleaner engines create a health risk by generating more nanoparticles than older engines and whether filters were the only effective way to remove nanoparticles. 66 Fed. Reg. 5735-5738 (JA 140-143); see Jt. Br. 15-16, 22. Like the EPA, MSHA may regulate one pollutant without first "determining how that regulation would affect the levels of all other pollutants." American Trucking, 283 F.3d at 370. Prohibiting MSHA from regulating DPM because the nanoparticle issue needs further research would not only "hamstring the Agency," ibid., but would call into question the EPA's rules mandating newer, cleaner engines, which this Court has upheld. National Petrochem. & Refiners Ass'n v. EPA, 287 F.3d 1130, 1134 (D.C. Cir. 2002).

MSHA's finding of a significant risk is also not undermined by the increase in NO_2 during a NIOSH test of a filter at an industry mine. Jt. Br. 22. As MSHA explained, the increase occurred because the mine used a type of filter (platinum-coated, passively regenerating) that MSHA and NIOSH had warned industry about, and the mine lacked sufficient ventilation. 70 Fed. Reg. 32,929 (JA

790); see JA 389-390 (warning). Using other filters would avoid the problem, JA 509-510 (NIOSH), as would adequate ventilation. 70 Fed. Reg. 32,921 (JA 782)(discussing Kennecott's reported success, JA 645, in managing NO_2 through ventilation).

Finally, the inability of an industry-retained expert to see that MSHA's rules address a significant risk, Jt. Br. 20, does not undermine MSHA's contrary finding because MSHA explained why it disagreed with this expert, 70 Fed. Reg. 32,910-32,914 (JA 771-775), and MSHA's interpretation of the data is "supported by a body of reputable scientific thought." Industrial Union Dep't, 448 U.S. at 656 (plurality); see also American Trucking, 283 F.3d at 362; Building & Constr. Trades Dep't v. Brock, 838 F.2d 1258, 1266-1267 (D.C. Cir. 1988). Peer reviewers stated that MSHA made "a systematic and effective case for demonstrating the potential for material impairment." JA 34. NIOSH agrees with MSHA that DPM presents a significant risk even at the 160 TC level. JA 58, 1032. IARC, EPA, Germany, California's EPA, and the National Toxicology Program of the National Institutes of Health have also characterized DPM as at least potentially carcinogenic. 70 Fed. Reg. 32,911 (JA 772); 66 Fed. Reg. 5840 (JA 245). The only reasonable conclusion, as this Court recognized, is that DPM is

"harmful to the environment and human health." National Petrochem., 287 F.3d at 1134.[1]

B. MSHA reasonably chose carbon-based limits as surrogates for measuring DPM exposures

MSHA explained when it did its risk assessment in 2001 that it was regulating DPM, but setting carbon-based limits as a surrogate for DPM, because MSHA could not measure DPM directly for compliance purposes. 66 Fed. Reg. 5706, 5711-5712 (JA 111, 116-117). That approach is reasonable because the only acceptable method that MSHA found to sample for compliance purposes, the NIOSH 5040 method, measures only the carbon portions of DPM, i.e., the elemental carbon core (EC) and the adsorbed carbons that, together with the elemental core, equals total carbon (TC). Id. at 5718-5722 (JA 123-127) (MSHA discussion of available methods); JA 422 (industry experts recognize "growing agreement" that the NIOSH 5040 method "is the most sensitive and specific method available" for evaluating DPM exposures). Studies that MSHA relied on for its risk assessment also used surrogates for DPM, including carbon-based surrogates. See, e.g., 66 Fed. Reg. 5851 (JA 256) (discussing EC surrogate in Stayner and Steenland studies and TC in Saverin study). At least two countries use carbon-based surrogates

[1] Industry incorrectly states (Jt. Br. 19) that the record has no evidence that underground metal/nonmetal miners have suffered material health impairment from DPM. See JA 61 (Saverin study); JA 73 (attachment to NIOSH comments). NIOSH also told MSHA more than seven years ago not to delay rulemaking until completion of an ongoing NIOSH/NCI study of metal and nonmetal miners. JA 59; see Jt. Br. 4.

for DPM. Id. at 5846 (JA 251) (EC limits for Germany); JA 513 (EC limit for Switzerland); http://www.dieselnet.com/standards. TC and EC are also toxic materials or harmful physical agents in their own right because each "contribute[s] to the adverse health effects of miners caused by exposure to DPM." 71 Fed. Reg. 28,985 (JA 1163); see also 70 Fed. Reg. 32,898 (JA 759); JA 328 (EPA's conclusion that "both the particle core and the associated organic compounds have demonstrated carcinogenic properties").

Accordingly, there is no merit to industry's argument that the DPM rules are "ultra vires" because (a) they regulate TC and EC rather than DPM and (b) neither TC nor EC has been shown to be "toxic materials" or "harmful physical agents" under 30 U.S.C. 811(a)(6)(A). Jt. Br. 14. Nor is there any merit to industry's argument that oxides of nitrogen (NO_x) are a surrogate that MSHA can use in measuring DPM. Jt. Br. 15. Nitrous oxides are gases, not part of DPM. See National Petrochem., 287 F.3d at 1134 (citing EPA's separate limits for NO_2 and DPM). MSHA's recognition that "engine manufacturers" subject to the EPA rule can indirectly control DPM emissions by controlling NO_x emissions, 66 Fed. Reg. 5716 (JA 121); see Jt. Br. 15, does not remotely suggest that NO_x can be used to measure DPM in a mine atmosphere. MSHA's only rationally available choice was to decide between TC and EC as the appropriate surrogate for DPM.

In National Petrochemical, this Court held that even if the EPA could not measure DPM accurately, that "would not provide a basis"

to upset the EPA rule setting 2007 model-year diesel emission standards for engine manufacturers because possible measurement error "'merely deprives the agency of the power to find a violation of the standards, in enforcement proceedings.'" 287 F.3d at 1142 (citation omitted; court's emphasis). The same rationale applies here. Industry's argument that MSHA cannot accurately measure DPM, contrary to MSHA's belief that it can, means at most that MSHA may have difficulty enforcing the DPM limits it has set. Those possibilities provide no basis for invalidating the standards as beyond MSHA's power to regulate.

Moreover, National Petrochemical recognized that "issues about the reliability of [DPM] testing methods can be addressed at a later stage." 287 F.3d at 1142. That rationale may apply here because, although a Mine Act health or safety standard can be challenged only within a 60-day period after it is promulgated, 30 U.S.C. 811(d), MSHA's expressed policy for enforcing the 350 TC limit (EC x 1.3) is set out only in the preamble, 71 Fed. Reg. 28,978 (JA 1156), and therefore is not a health or safety standard. See National Indus. Sand Ass'n v. Marshall, 601 F.2d 689, 711-712 (3d Cir. 1979) (premature to review preamble statement on how standard would apply). The 160 TC limit is part of the 2006 rule, but review of that limit may also be premature because MSHA has stated its intent to change the limit to an EC limit before the 160 limit becomes effective. Accordingly, the Court may decide that issues concerning TC and EC are better reviewed later, when MSHA attempts to enforce

the 350 TC limit set by the 2006 rule or a future EC limit corresponding to the 160 TC limit.

If the Court chooses to address MSHA's choice of a surrogate, it should conclude that MSHA reasonably selected EC as the surrogate for the 308 limit while keeping TC as the surrogate for lower limits pending a rulemaking to convert the TC limits to EC limits. As discussed above, MSHA has to use either TC or EC as a surrogate for DPM because the only acceptable method of sampling for compliance purposes, the NIOSH 5040 method, measures only TC and EC.

Moreover, MSHA's choice of EC and TC surrogates in the 2006 rule is reasonable. The results of the 31-Mine Study, NIOSH, and industry comments all support the 308 EC limit that is currently in effect. See, e.g., JA 429 (operator's expert found that EC was on average 77% of TC in over 90% of samples in 31-Mine Study); B:CORR-13 at 1 (NIOSH adheres to its view that TC is 60-80% EC, based in part on two recently completed NIOSH studies) (copy attached); JA 502-503 (NSSGA); JA 635 (NMA); JA 638 (Placer); JA 644 (Kennecott); JA 651 (MARG). EC is also easier to measure and more directly correlates with DPM than TC because a TC measurement may include non-DPM interferences while DPM is the only source for EC on samples taken from underground metal and nonmetal mines. JA 1038 (NIOSH); 70 Fed. Reg. 32,871 (JA 732).

It makes no difference that MSHA recognized some statistically significant variation in the EC to TC ratios, Jt. Br. 17, 21. A

similar issue was presented in United Steelworkers v. Marshall, 647 F.2d 1189, 1259-1263 (D.C. Cir. 1980). There, OSHA adopted a standard that used air levels of lead as a surrogate for regulating blood levels of lead, despite an admitted lack of an exact correlation between air-lead and blood-lead measurements. Id. at 1259. This Court upheld OSHA's reliance on a report that predicted a 70.7% correlation between the air and blood levels, despite evidence that the correlation was less. Id. at 1261. The Court reasoned that in an area of scientific uncertainty, OSHA has "broad discretion to form the best possible solution," id. at 1259, and upheld OSHA's choice because it was "within a 'zone of reasonableness.'" Id. at 1263 (citation omitted; court's emphasis).

That rationale applies here. The correlation between EC and TC, at least at the 308 EC level, is even stronger than the 70.7% correlation upheld in Steelworkers because MSHA sampling shows a 93.6% correlation between TC measured directly and TC measured by multiplying EC by 1.3, based on the assumption that EC is about 77% of TC. 70 Fed. Reg. 32,876 (JA 737); see also id. at 53,287 (JA 880)(enforcement samples show that 1.3 is the most appropriate conversion factor). Given MSHA's possible choices (EC or TC), and MSHA's wide discretion, the choice of EC falls well within the zone of reasonableness.

TC, which is used for the January 2007 and May 2008 limits, is also a reasonable surrogate for DPM because TC is consistently 80-

85% of DPM. 66 Fed. Reg. 5719 (JA 124); JA 677. The difficulty with TC, as MSHA has recognized throughout these rulemakings, is that the organic (non-elemental) carbon portion of TC is prone to interferences from non-DPM sources. MSHA reasonably believes that it can account for possible interferences by not citing a sample that exceeds the 350 TC limit set to take effect on January 20, 2007, unless the sample's EC measurement x 1.3 also exceeds the 350 limit. That belief is reasonable because the 350 TC limit is close to the 400 TC limit, and industry agreed that an EC x 1.3 check was appropriate at the 400 level. 67 Fed. Reg. 47,298 (JA 413). NIOSH has also stated that one of MSHA's concerns -- that ceramic filters may affect the DPM:EC relationship, 70 Fed. Reg. 53,287 (JA 880) -- applies only when the filters "dominate the overall DPM ambient concentrations." JA 1038. Queenstake Mining, which no longer challenges the DPM rules, also recommended using the conversion factor. JA 1061.[2]

If necessary, MSHA could also enforce the 160 TC limit set to take effect May 20, 2008, despite industry assertions that MSHA admitted it cannot measure TC or convert it to an EC limit at the

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[2] MSHA is also developing an error factor to account for sample variations at the 350 level, which may differ from the error factor MSHA used at the 400 level. 71 Fed. Reg. 28,978 (JA 1156). Among other things, an error factor addresses concerns that the normal OSHA and MSHA use of a single sample to determine compliance may not accurately measure a miner's exposure. 63 Fed. Reg. 58,117 (JA 39); Secretary of Labor v. Asarco, Inc., 19 F.M.S.H.R.C. 1097, 1130-1136 (ALJ 1997), pet. dismissed, 20 F.M.S.H.R.C. 1001 (1998), pet. dismissed, 206 F.3d 720 (6th Cir. 2000).

lower limit. Jt. Br. 10, 16-17. MSHA admitted only that TC is not a reliable surrogate for DPM when potential interferences such as oil mist or tobacco smoke are present. 70 Fed. Reg. 32,871, 32,894 (JA 732, 755). In practical terms, this means that MSHA can enforce the 160 TC limit by sampling miners not subject to interferences. See 71 Fed. Reg. 28,966 (JA 1144)(MSHA voided 61 of 464 samples in 31-Mine Study because of interferences). Alternatively, MSHA could try to calculate the amount of TC attributable to interferences and cite only when a sample exceeds the 160 TC limit, plus an error factor, plus an amount attributable to possible interference. See JA 26 (article suggesting that an adjustment can be made for the presence of nondiesel carbon sources); JA 87-88 (MSHA tests measuring amount of organic carbon from cigarettes); JA 92-94 (MSHA tests measuring amount of organic carbon from oil mist). Such limitations on MSHA's enforcement are a reason MSHA intends to convert the 160 TC limit to an EC limit before May 20, 2008; indeed, work on developing an appropriate conversion factor at the lower limit is already underway and will be the subject of later rulemaking. Possible difficulties enforcing the 160 TC limit over a year and a half from now are not a reason for the Court to conclude that MSHA cannot accurately measure DPM for enforcement purposes, much less that the DPM standard itself is invalid ab initio.

II. THE DPM EXPOSURE LIMITS ARE TECHNOLOGICALLY FEASIBLE

To establish technological feasibility, MSHA "must prove 'a reasonable possibility that the typical firm will be able to develop and install engineering and work practice controls that can meet the PEL in most of its operations.'" American Iron & Steel Inst. v. OSHA (AISI), 939 F.2d 975, 980 (D.C. Cir. 1991) (quoting Steelworkers, 647 F.2d at 1272); see S. Rep. No. 95-181, at 21 (1977) (Mine Act, like the Occupational Safety and Health Act construed in Steelworkers, is technology forcing). MSHA can do so by "'pointing to technology that is either already in use or has been conceived and is reasonably capable of experimental refinement and distribution within the standard's deadlines.'" AISI, 939 F.2d at 980 (quoting Steelworkers, 647 F.2d at 1272). MSHA's obligation is thus merely to "'identify the major steps for improvement'" without having to provide "'detailed solutions to every engineering problem.'" National Petrochem., 287 F.3d at 1136 (citation omitted).

Technological feasibility does not require proof that all companies subject to a standard can comply with it. Instead, MSHA "'can impose a standard which only the most technologically advanced plants in an industry have been able to achieve -- even if only in some of their operations some of the time.'" AISI, 939 F.2d at 1002 (quoting Steelworkers, 647 F.2d at 1264). Moreover, MSHA "need not prove feasibility with 'certainty,'" and this Court will defer to MSHA's feasibility determinations if MSHA "makes

reasonable predictions based on 'credible sources of information' (e.g., data from existing plants and expert testimony)." Id. at 980 (quoting Steelworkers, 647 F.2d at 1265, 1266).

MSHA fully met those requirements by (A) identifying controls that can meet the lowest, 160 TC, limit set by the DPM rules (as well as the interim 308 EC and 350 TC limits) and (B) making a reasonable prediction based on the entire record that industry as a whole will be able to meet the 160 limit by May 2008 as well as the 350 limit effective in January 2007. Accordingly, industry's tendentious arguments that MSHA failed to engage in "reasoned decisionmaking" in its findings of technological feasibility must fail. Jt. Br. 25.

A. Controls exist to meet the 160 TC limit

1. Throughout these rulemakings, MSHA has identified engine filters, low-emission engines, ventilation upgrades, environmental cabs, and alternative fuels such as biodiesel as ways to meet the applicable DPM limits. 71 Fed. Reg. 28,938 (JA 1116); 66 Fed. Reg. 5713, 5746 (JA 118, 151). Consistent with industry's general preference for flexible performance standards, MSHA allows operators to pick the control or combination of controls that works best in a particular mine, although MSHA has predicted that to meet the 160 TC limit, operators will have to use filters and low-emission engines. See, e.g., 71 Fed. Reg. 28,936, 28,938 (JA 1114, 1116).

Several studies have shown that ceramic filters can meet the 160 TC limit. The Diesel Emissions Evaluation Project in Canada (DEEP) reported a long-term soot removal of more than 99% for both heavy-duty and light-duty vehicles at one mine, JA 831, and reductions of DPM to 50 micrograms at another mine. JA 712. A NISOH study at the Stillwater, Montana mine showed that filters lowered EC from more than 1000 micrograms to between 149 and 15 micrograms, JA 725, Table 5, and an MSHA study at the Greens Creek, Alaska mine showed that filters reduced TC (EC x 1.3) to 139 micrograms and lower. JA 695, § 4.2.

MSHA recognizes that operators must carefully select, install, and maintain filters for them to work properly. MSHA has therefore provided comprehensive compliance assistance and in February 2003 developed with NIOSH an internet-based filter selection guide (www.msha.gov/nioshmnmfilterselectionguide/dpmfilterguide.htm) to address filter implementation issues. 68 Fed. Reg. 48,695 (JA 603); 71 Fed. Reg. 28,968 (JA 1146). These steps go well beyond MSHA's obligation merely to "'identify the major steps for improvement'" without providing "'detailed solutions to every engineering problem,'" National Petrochemical, 287 F.3d at 1136 (citation omitted), and support NIOSH's assessment more than three years ago that implementation issues can be solved. JA 597-598; see also JA 1035 (NIOSH adheres to that assessment). In short, what has been lacking thus far has been industry's will, not a way to overcome obstacles to implementation.

Cleaner engines can also meet the 160 TC limit. The EPA Tier 1 and Tier 2 emissions standards applicable to engines introduced into underground metal and nonmetal mines after January 2001 require emissions of less than 0.1 grams per horsepower hour for on-road engines and a somewhat higher range for off-road engines. 30 C.F.R. 57.5067 (Table). Engines introduced into mines before then can have emission rates three to five times higher. See, e.g., JA 571-595 (MSHA's Report on 31-Mine Study, Mine by Mine Analysis Using Estimator for Mines D, H, L pt. 2, M, T); 71 Fed. Reg. 28,949-28,950 (JA 1127-1128) (discussion of old Toyota pickup truck, which may not be suitable for a filter). Replacing such engines with a Tier 1 or Tier 2 engine would therefore reduce emission rates by 66 to 80%, which could permit compliance with the 160 TC limit, particularly if the replaced engine has a high horsepower and runs for most of a shift. See ibid. Replacing a dirty on-road engine with a Tier 4 engine, which is 90% cleaner than the Tier 1 or Tier 2 standards, National Petrochemical, 287 F.3d at 1134, would be even more likely to reduce emissions below the 160 TC limit.

Industry admits that clean engines can reduce DPM levels, 71 Fed. Reg. 28,963-28,964 (JA 1141-1142); JA 1045, and does not dispute MSHA's conclusion that buying a new engine can pay for itself in less than three years because of increased fuel efficiency. 71 Fed. Reg. 28,972 (JA 1150). Instead, industry complains about MSHA's use of a peer-reviewed, published program

called the "Estimator," JA 95-99, to predict the amount of reductions that will result from clean engines and other controls. Jt. Br. 27-28. MSHA has repeatedly explained that its Estimator predictions are based on a mine's actual data, rather than laboratory data as claimed by industry, Jt. Br. 28, and show "good agreement" with the DPM reductions that actually occur when controls are installed. 71 Fed. Reg. 28,942 (JA 1120); 70 Fed. Reg. 32,920 (JA 781). An industry expert has also conceded that the Estimator's math "cannot be challenged." JA 457. Accordingly, the Estimator is a "creditable source of information" that bolsters MSHA's "reasonable predictions," Steelworkers, 647 F.2d at 1266, rather than a reason to second-guess MSHA's conclusion that new engines can meet the 160 TC limit.[3]

Ventilation, environmental cabs, and biodiesel fuel are also effective tools in reaching the 160 TC limit. See Jt. Br. 40 (agreeing that ventilation and environmental cabs can be effective); JA 692 § 7 (study reporting 69% TC reduction with 50% biodiesel); JA 726 (study reporting 26% and 48% EC reductions with 20% biodiesel and 50% reductions with 50% biodiesel). Mines'

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[3] Industry also makes the nonsensical argument (Jt. Br. 29) that the Estimator is speculative because it was designed for measuring "ambient air" and MSHA changed the 2001 rule from an "ambient DPM" standard to a permissible exposure limit (PEL). The 2001 rule set a concentration limit rather than a PEL because MSHA intended to use area and occupational samples as well as personal samples to enforce it. The 2005 and 2006 limits are PELs because MSHA agreed with industry not to use area or occupational samples. That change in how MSHA measures ambient air is irrelevant to the Estimator's predictions on the effect of controls in reducing DPM.

ability to upgrade ventilation is not as limited as industry argues because it is an attractive option for many and perhaps most mines despite MSHA's recognition of its impracticality for some mines. 71 Fed. Reg. 28,955 (JA 1133). Moreover, even in multi-level metal mines, see Jt. Br. 40, ventilation could be improved by such things as proper fan placement and maintenance. 71 Fed. Reg. 28,954 (JA 1132); see JA 701-705 (MSHA report on Stillwater assistance, discussing leaks in ventilation tubing and recirculation of exhaust air because fans were in wrong positions). Cabs are also more available than industry asserts, despite MSHA's recognition that they may not be feasible in mines with narrow openings and low ceilings, because they are frequently used in underground stone mines. 71 Fed. Reg. 28,953-28,954 (JA 1131-1132). Again, what has been lacking is a will, not a way.

Although this evidence by itself satisfies MSHA's burden of "'pointing to technology that is either already in use or has been conceived and is reasonably capable of experimental refinement,'" AISI, 939 F.2d at 980 (citation omitted), MSHA has more evidence in its case files, which show that some mines are already meeting the 160 TC limit. See JA 961-971 (February 9, 2006 report on study at Martin Marietta's Sully Mine); JA 1099-1100 (MSHA's enforcement sampling shows that in the last year 48.6% of samples were under the 160 TC limit); see also JA 949 (Huber Limestone mine is under 160 TC). The files also show that other mines can meet it. See JA 870-872 (Balmat mine could increase fan capacity and use filters

and alternative fuel); JA 716-717 & Table 2 (Newmont Carlin East mine could use a filter on a vehicle and increase airflow); JA 708 (Hampton Mine could use filters and replace an engine); JA 974-978 (Martin Marietta Durham mine could use alternative fuels and increase air flow); JA 721-722 (Newmont Midas mine could use filters on four haulage trucks); JA 899 (Petersburg mine can use filters and increase airflow). Those files further support the technological feasibility of the 160 TC limit. See AISI, 939 F.2d at 1006-1007.

2. Furthermore, in its 2005 and 2006 revisions to the 2001 rule, MSHA has adopted a strategy designed to leave no mine behind. The DPM standard permits respirators if engineering controls do not meet the applicable limits and allows operators to obtain renewable one-year extensions to meet the limits if they establish that compliance is technologically or economically infeasible at a particular mine. 71 Fed. Reg. 29,012; 70 Fed. Reg. 32,966 (JA 827). Those provisions and operators' ability to raise feasibility issues in enforcement proceedings, see Secretary of Labor v. Callanan Industries, 5 F.M.S.H.R.C. 1900, 1906-1909, 1983 WL 165363, at *4-*7 (Comm'n Nov. 9, 1983), "'greatly ease'" MSHA's burden of proving technological feasibility. AISI, 939 F.2d at 980 (citation omitted).[4]

[4] Industry suggests (Jt. Br. 33) that in 2005 when MSHA adopted the respirator provision, it inexplicably "abandoned" the 2001 rule's prohibition against the use of respirators and (continued . . .)

B. MSHA reasonably predicts that industry can meet the 350 TC limit by January 2007 and the 160 TC limit by May 2008

In 2001, MSHA concluded that industry could meet a 160 microgram TC limit by January 2006, although it permitted a single two-year extension for individual mines that could prove technological infeasibility. After industry challenged the 2001 rule, MSHA reexamined that conclusion and ultimately determined after further rulemaking and three years of experience with the 400 TC/ 308 EC interim limit, that industry could meet the 160 TC limit by May 2008, with renewable one-year extensions for individual mines. MSHA also set a 350 TC limit by January 2007 as an incentive for operators to begin work immediately to meet the 160 TC limit. There is no serious question that industry can meet the January 2007 limit because 78% of MSHA's enforcement samples between November 2003 and January 2006, targeting miners with the highest DPM exposures, were already below that 350 TC limit. 71 Fed. Reg. 28,961 (JA 1139); (JA 1099-1100). A lower, second interim level is also necessary as an incentive given industry's

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(. . . continued)
administrative controls. Industry fails to mention, however, that it supported these compliance-easing changes, see JA 652, 683, 688-689, and that they were made to be consistent with the hierarchy of controls that MSHA and OSHA apply under other standards. See, e.g., 70 Fed. Reg. 32,918-32,919 (JA 779-780); AISI v. OSHA, 182 F.3d 1261, 1267 (11th Cir. 1999). MSHA also clarified that the 2001 rule's unique definition of "administrative controls" as rotation of miners, 66 Fed. Reg. 5859 (JA 264), permits administrative controls that do not involve rotation of miners, but kept the rotation prohibition. 70 Fed. Reg. 32,953-32,954 (JA 814-815).

lack of progress in reducing DPM until the first interim limit became effective. 71 Fed. Reg. 28,940 (JA 1118). We show below that (1) MSHA followed a reasonable process in setting May 2008 as the effective date of the 160 TC limit and (2) the record fully supports MSHA's conclusion that it cannot "justify further delays" beyond that date. Id. at 28,979 (JA 1157).

1. In 2001, MSHA had information that filters worked in Europe, see 66 Fed. Reg. 5740-5744 (JA 145-149), and a statement from the Engine Manufacturers' Association that "[t]he same technologies used in on-highway engines have been applied to nonroad engines used in mining and other equipment to achieve substantial emission reductions." JA 84. Assuming that 50% of engines would be replaced in five years through normal turnover, 66 Fed. Reg. 5889-5890 (JA 294-295), MSHA concluded that industry could feasibly meet a 400 TC limit in one and a half years and a 160 TC limit in an additional three and a half years.

After industry challenged the 2001 rule, MSHA reexamined that conclusion by agreeing to a 31-Mine Study with industry and the Steelworkers. After MSHA staff concluded in March 2002 that the study supported feasibility, MSHA received information questioning whether filters work as well as MSHA had predicted. See Jt. Br. 30-32; JA 331-338, 393-405, 423-482 (industry comments); JA 407-409 (Engine Manufacturers Ass'n); JA 515-563 (Engine Manufacturers Ass'n). MSHA's January 2003 final report on the 31-Mine Study acknowledged that MSHA had limited in-mine documentation on DPM

control technology and that complications concerning implementation of controls could influence the extent to which controls are feasible. 68 Fed. Reg. 48,671 (JA 601). MSHA later obtained NIOSH's June 2003 conclusion that implementation issues could be resolved, JA 597-598, and the results of studies, discussed above, showing that filters worked in underground metal and nonmetal mines, although the process required careful selection, installation, and maintenance of the filters.

Relying on this updated information, MSHA concluded in the June 2005 rule that an interim limit, converted from 400 TC to 308 EC, was feasible. MSHA was also concerned, however, that some mines could have difficulties implementing DPM controls, particularly filters. 70 Fed. Reg. 32,915 (JA 776). MSHA concluded that the record lacked sufficient information to justify a lower standard "at this time," i.e., in June 2005. Id. at 32,916 (JA 777). MSHA accordingly set out to address when a lower limit would be justified in light of the 160 TC limit set by the 2001 rule that, barring further regulatory action, was scheduled to go into effect in January 2006.

In September 2005, MSHA proposed to phase-in the 160 TC limit in five steps over five years, from January 2007 to January 2011, based on MSHA's belief that industry faced complex implementation issues, that engine replacement had been slower than MSHA predicted, and that industry would have difficulty obtaining and using biodiesel fuel. 70 Fed. Reg. 53,283-53,284 (JA 876-877).

MSHA requested comments on those issues, id. at 53,283-53,287 (JA 876-880), and also on the length of time and number of steps needed to reach the 160 TC limit. Id. at 53,288 (JA 881).

After the September 2005 proposal, MSHA concluded that disposable filter technologies, such as high temperature disposable particulate filters (HTDPFs) with heat exchangers, could be used in metal and nonmetal mines. 71 Fed. Reg. 28,944, 28,947 (JA 1122, 1125); see JA 889-891 (October 2005 MSHA presentation, Controlling Diesel Particulate Matter Exposures in Underground Mines, slides 38 and 48). MSHA also learned that on-road engines for 2007, which reduce DPM by 90% from current EPA limits, see National Petrochemical, 287 F.3d at 1134, would have built-in filters. 71 Fed. Reg. 28,935-28,936 (JA 1113-1114); see www.dieselforum.org/meet-clean-diesel/road-to-2007-technology-gallery (linked plans of Caterpillar, Cummins, Detroit Diesel, International Truck and Engine, and Mack Trucks). MSHA explained that "these technologies are not subject to many of the difficult implementation issues that have slowed the adoption of some DPM controls." 71 Fed. Reg. 28,944 (JA 1122).

This willingness to reexamine filter feasibility, much of it at industry's request, shows no "unexplained and irrational changes" in MSHA's thinking (Jt. Br. 29). Rather, as filter technology changed and more positive and negative information about it became available, MSHA's predictions about its efficacy in meeting the 160 TC limit changed. As with OSHA's repeated

reexamination of feasibility in AISI, MSHA's willingness to reexamine its initial finding of feasibility was a "prudent decision to monitor the . . . impact of the standard." 939 F.2d at 1006.

2. The record also fully supports MSHA's conclusion, based on new information, not only about filter technologies, but about biodiesel and new engines, that a delay in the 160 TC limit beyond May 2008 could not be justified. 71 Fed. Reg. 28,979 (JA 1157). After the September 2005 proposal, MSHA learned from the Biodiesel Board that biodiesel was more readily available and easier to use than MSHA had predicted. Id. at 28,939 (JA 1117); JA 893-894, 979-982, 1028-1029. Biodiesel can be used in any diesel engine, and operators even get a tax credit for using it. 71 Fed. Reg. 28,944, 28,973 (JA 1122, 1151); see American Jobs Creation Act of 2004, Pub. L. No. 108-357, § 302, 118 Stat. 1418, 1463-1464. The 2007 on-road engines for heavy-duty equipment with high horsepower, see 40 C.F.R. 86.007-11(a)(1)(iv), should not have difficult implementation issues given the Engine Manufacturers' Association's assurance that on-road engine technologies have been applied to nonroad engines used in mining, JA 84, and industry's admitted ability to solve alleged "vibration" problems. See Jt. Br. 38 n.21 (alleged problem); 70 Fed. Reg. 32,924 (JA 785) (shock-absorbing mounts are a solution). HTDPFs are well-suited to medium and smaller engines, 71 Fed. Reg. 28,944 (JA 1122), which last longer than the large ones, id. at 28,943 (JA 1121), and should not have

difficult implementation issues because disposable filters are currently being used in coal mining. 71 Fed. Reg. 28,947-28,948 (JA 1125-1126); see JA 728, 933-947. Indeed, MSHA recognized eight years ago that disposable filters work in low exhaust-gas temperature engines used in coal mining. 63 Fed. Reg. 58,117, 58,125 (JA 39, 40).

Additional support for a May 2008 deadline comes from evidence that industry has not tried available controls but can do so if faced with a deadline. See, e.g., JA 959 (NSSGA treats filters as a "last resort"); 71 Fed. Reg. 28,938 (JA 1116)(some mines removed controls rather than work through implementation issues); id. at 28,940 (JA 1118) (industry made "little progress" until the interim limit became effective and then implemented controls to meet that limit). MSHA also reasonably expects further developments in DPM control by May 2008 based on the 2008 availability of off-road engines that, although small, reduce DPM by 95%, id. at 28,935-28,936 (JA 1113-1114); see 40 C.F.R. 1039.1, 1039.102, and the 2006 availability of ultra-low sulfur fuel that will enable advanced DPM control technology that would otherwise have been inhibited. 71 Fed. Reg. 28,939 (JA 1117); National Petrochem., 287 F.3d at 1143-1145.

The cumulative rulemaking record is thus replete with examples of MSHA "'pointing to technology that is either already in use or has been conceived and is reasonably capable of experimental refinement and distribution within the standard's deadlines.'"

AISI, 939 F.2d at 980 (quoting Steelworkers, 647 F.2d at 1272). MSHA therefore met its burden on feasibility.

III. MSHA REASONABLY INCLUDED A PROVISION FOR MEDICAL EVALUATION AND TRANSFER, FULLY COMPLIED WITH NOTICE AND COMMENT REQUIREMENTS, AND PROPERLY REJECTED INDUSTRY'S RELIANCE ON THE DATA QUALITY ACT

As discussed above, in 2005 MSHA allowed expanded use of respirators, as industry requested, by incorporating its long-standing "hierarchy of controls" policy into the DPM rule. In 2006, MSHA included a medical evaluation and transfer provision to protect miners who have to wear respirators. This Court should reject industry's attempt to take away that protection, as well as its related procedural arguments concerning notice-and-comment and the Data Quality Act. See Jt. Br. 23, 37-38, 42-44.

A. The medical evaluation and transfer provisions are reasonable protections for miners who have to wear respirators

The Mine Act requires a mandatory health or safety standard, where appropriate, to provide for operator-paid medical examinations of miners exposed to a regulated hazard. 30 U.S.C. 811(a)(7). Where appropriate, the standard must also provide that a miner who may suffer material impairment of health because of such exposure shall be removed from exposure and transferred to another position with pay protection. Ibid.

Given this clear statutory mandate, the only issue is one of appropriateness, which is a matter for agency discretion, and not legal authority. MSHA reasonably determined that medical evaluation and transfer provisions are appropriate because they

protect miners who have to wear respirators. As MSHA explained, 71 Fed. Reg. 28,986 (JA 1164), medical evaluations are needed because wearing a respirator places a physiological burden on the person wearing it that could cause illness, injury, or even death, depending on the person's medical condition. See JA 11-17, 27-32, 902-903, 1037, 1080, 1190-1197. MSHA required transfer rights so that a miner would give truthful information during a medical examination rather than false information to protect his or her job. 71 Fed. Reg. 28,990 (JA 1168); see JA 904, 1081.

These inter-connected issues of respirator usage, fitness tests, and transfer rights are not unique to the DPM standard. See Pendergrass, 878 F.2d at 399. In any event, industry's concerns with the dangers of respirator use (Jt. Br. 43) are meritless given industry's support for respirators in 2005, JA 652, 683, 688-689, and their admittedly successful use of respirators and medical evaluations in 2006. See, e.g., JA 914-915, 918, 925, 1093. MSHA also reasonably concluded that fewer than 1,000 miners, industry-wide, will need to wear respirators at any one time, 71 Fed. Reg. 28,992 (JA 1170), and that the number would decrease over time, id. at 28,991 (JA 1169). This is so because, as discussed above, industry can implement DPM controls to meet the January 2007 effective date for the 350 TC limit and the May 2008 effective date for the 160 TC limit and thereby make respirators unnecessary.

Contrary to industry's argument (Jt. Br. 43), the medical evaluation and transfer provisions are consistent with MSHA

respirator standards for air contaminants because the same respirators can be used under both standards. See 30 C.F.R. 57.5005(a), (b) (air contaminants); 30 C.F.R. 57.5060(d)(1), (2) (DPM). Industry's speculation that the transfer provisions will disrupt workforces (Jt. Br. 44) is meritless because fewer than five miners industry-wide will need to be transferred at any one time. See A:HEAR-3 at 53-54 (copy attached); JA 1081. Indeed, some operators supported the transfer provisions, JA 1064-1065 (Queenstake), or found them not to be a problem. JA 925, 927 (Rogers Group).[5]

B. MSHA complied with notice and comment requirements

An agency satisfies notice-and-comment requirements so long as its final rule is a logical outgrowth of the rule it originally proposed. American Coke & Coal Chems. Inst. v. EPA, 452 F.3d 930, 938 (D.C. Cir. 2006). A final rule that differs from a proposal is a logical outgrowth "[i]f interested parties 'should have anticipated' that the change was possible, and thus reasonably should have filed their comments on the subject during the notice-and-comment period." Id. at 938-939 (citation omitted).

[5] Based on the improper use of a declaration that is not in the rulemaking record, industry also argues that medical examinations and transfers will be required to protect against DPM exposure hazards that may no longer exist in that workplace. Jt. Br. 43. Nothing in the DPM rule requires that result, and MSHA's September 2006 Compliance Guide, Q&A 109, states that a miner who was overexposed does not have to wear a respirator while working in an area of the mine where he is not overexposed, assuming that the operator is not rotating jobs. See www.msha.gov/REGS/COMPLIAN/Guides/MNMDPM/MNMdpmcompguide.pdf.

MSHA's 2006 medical evaluation and transfer provisions are a logical outgrowth of the September 2005 proposed rule because MSHA expressly asked for comments on whether to include a medical evaluation and transfer provision and set out the text of the provision it was considering. 70 Fed. Reg. 53,289 (JA 882); see also 30 U.S.C. 811(a)(2) (MSHA shall include text of proposed rule). Industry also extensively commented on the proposal. See 71 Fed. Reg. 28,987-28,988 (JA 1165-1166). The medical evaluation and transfer provisions therefore easily satisfy the logical outgrowth test, see United Steelworkers v. Schuylkill Metals Corp., 828 F.2d 314, 317-318 (5th Cir. 1987), and this Court should disregard industry's extra-record declarations (Jt. Br. 43-44) addressing the issue. National Mining, 116 F.3d at 528; 30 U.S.C. 811(d).

MSHA's choice of a May 2008 effective date for the 160 limit is also a logical outgrowth of the proposed five-step phase-in between January 2007 and January 2011. MSHA's proposal requested comments on whether five years was the correct time frame, whether a one- or two-step phase-in was appropriate, and whether the 160 TC limit in the 2001 rule should be repealed or reduced. 70 Fed. Reg. 53,285, 53,288 (JA 878, 881). Industry was therefore on notice that MSHA was considering a range of options, which included not amending the 2001 rule, thereby making the 160 limit effective on May 18, 2006, see New York v. EPA, 413 F.3d 3, 44 (D.C. Cir. 2005), repealing the limit, or having a two-step phase-in. See also JA 1083 (Steelworkers wanted July 20, 2006 as latest 160 TC effective

date). Industry also presented comments showing they fully understood that MSHA could consider a range of options. See JA 1055-1056 (keep 308 EC as final limit or adopt two-step, eight-year phase-in); JA 1048 (five-year, two-step phase-in); JA 987-988 (cannot meet 160 TC limit by May 2006 or at any other date, so phase-in question is "moot"); JA 1091 (have "two or three" step phase-in). Therefore, the phased-in final limit, which falls in the middle of the range of options for which MSHA had given notice, also easily satisfies the logical outgrowth test. See City of Waukesha v. EPA, 320 F.3d 228, 245-247 (D.C. Cir. 2003) (30 microgram limit is logical outgrowth of proposed 20, 40, and 80 microgram limits); Husqvarna AB v. EPA, 254 F.3d 195, 199, 203 (D.C. Cir. 2001) (four-year phase-in is logical outgrowth of proposed five-year phase-in).

Finally, industry should have anticipated that MSHA could consider new information about the practicality of filters and availability of low-emission engines in selecting the May 2008 effective date. MSHA asked for information on "what types and sizes of [filters] have been evaluated" and "any other data related to in-mine experiences with [filters] on underground metal and nonmetal mining equipment." 70 Fed. Reg. 53,283 (JA 876). It was no secret that HTDPFs were one type of filter under evaluation because MSHA stated in 2003 that it was evaluating HTDPFs, 68 Fed. Reg. 48,682, MSHA had listed HTDPFs on the filter-selection webpage that it told industry to consult, 70 Fed. Reg. 32,883 (JA 744), and

NIOSH had tested an HTDPF at Stillwater's mine. Id. at 32,927 (JA 788); JA 724. Industry also commented on HTDPFs. JA 909-911, 984.

Industry also should have anticipated that MSHA might obtain new information about EPA Tier 4 engines because MSHA asked for comments on industry's use of "low DPM emitting engines," including the EPA Tier 1 and Tier 2 engines already in effect, to assess whether MSHA's 2001 predictions on engine use were accurate. 70 Fed. Reg. 53,284 (JA 877). Industry was also aware that new EPA requirements were set to take effect. JA 929, 931; see National Petrochem., 287 F.3d at 1134 (Tier 4 requirements were set in 2001). As in American Coke, it was "'perfectly predictable'" that MSHA could obtain new data about low-emission engines, "'either submitted by the public with comments or collected by the agency in a continuing effort to give the regulations a more accurate foundation.'" 452 F.3d at 939 (citation omitted).[6]

C. Industry lacks standing to rely on the Data Quality Act

In American Federation of Government Employees v. Rumsfeld, 321 F.3d 139, 142-145 (D.C. Cir. 2003), this Court rejected a private party's attempt to enforce occupational safety and health requirements for lack of prudential standing. The same rationale

[6] Industry also fails to show required harm. 452 F.2d at 939, 940. Industry does not dispute that engine manufacturers will meet Tier 4 requirements with filters built into engines, as MSHA learned, but simply wants to argue that on-road technology is not transferable to in-mine applications, Jt. Br. 38, contrary to the conclusion of MSHA and the Engine Manufacturers Association that it is. 71 Fed. Reg. 28,936 (JA 1114); 66 Fed. Reg. 5895 (JA 300); JA 84.

applies to industry's attempt to enforce the Data Quality Act, also known as the Information Quality Act. Jt. Br. 23. The Data Quality Act is an appropriations rider that directs the Office of Management and Budget (OMB) to issue guidelines to agencies concerning information that agencies maintain and disseminate. Pub. L. No. 106-554, § 515, 114 Stat. 2763, 2763A-153 (2000). Because the Act, by its terms, "creates no legal rights in any third parties," industry lacks standing to complain about alleged Data Quality Act violations. Salt Inst. v. Leavitt, 440 F.3d 156, 159 (4th Cir. 2006). Thus, although MSHA believes that it fully complied with the Data Quality Act, see 71 Fed. Reg. 29,000-29,006 (JA 1178-1184), and that OMB's clearance of the DPM rules indicates OMB's concurrence, the Court should not address the merits of industry's Data Quality challenge. Judicial review of Data Quality Act issues would interfere with agencies' ability to promulgate reasonable and necessary health and safety standards under their statutory mandates.

CONCLUSION

The petitions for review should be denied.

Respectfully submitted.

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DECEMBER 2006

CERTIFICATE OF COMPLIANCE

Pursuant to Fed. R. App. P. 32(a)(7), and Circuit Rule 32, I hereby certify that the Final Brief for Respondents is monospaced, has 10.5 or fewer characters per inch and contains 13902 words as determined by the Microsoft Word software system used to prepare the brief.

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CERTIFICATE OF SERVICE

I hereby certify that on this 6th day of December 2006, one copy of Respondents' final brief was served by electronic delivery and two copies were served by first class mail on the following counsel of record:

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STATUTORY AND REGULATORY

ADDENDUM

Pub.L. 91-173, Dec. 30, 1969, 83 Stat. 742, as amended
Title 30, U.S.C.A., §§ 801 to 962

CHAPTER 22—MINE SAFETY AND HEALTH

SUBCHAPTER I—GENERAL

§ 811. Mandatory safety and health standards

(a) Development, promulgation, and revision

The Secretary shall by rule in accordance with procedures set forth in this section and in accordance with section 553 of Title 5 (without regard to any reference in such section to sections 556 and 557 of such title), develop, promulgate, and revise as may be appropriate, improved mandatory health or safety standards for the protection of life and prevention of injuries in coal or other mines.

(1) Whenever the Secretary, upon the basis of information submitted to him in writing by an interested person, a representative of any organization of employers or employees, a nationally recognized standards-producing organization, the Secretary of Health and Human Services, the National Institute for Occupational Safety and Health, or a State or political subdivision, or on the basis of information developed by the Secretary or otherwise available to him, determines that a rule should be promulgated in order to serve the objectives of this chapter, the Secretary may request the recommendation of an advisory committee appointed under section 812(c) of this title. The Secretary shall provide such an advisory committee with any proposals of his own or of the Secretary of Health and Human Services, together with all pertinent factual information developed by the Secretary or the Secretary of Health and Human Services, or otherwise available, including the results of research, demonstrations, and experiments. An advisory committee shall submit to the Secretary its recommendations regarding the rule to be promulgated within 60 days from the date of its appointment or within such longer or shorter period as may be prescribed by the Secretary, but in no event for a period which is longer than 180 days. When the Secretary receives a recommendation, accompanied by appropriate criteria, from the National Institute for Occupational Safety and Health that a rule be promulgated, modified, or revoked, the Secretary must, within 60 days after receipt thereof, refer such recommendation to an advisory committee pursuant to this paragraph, or publish such as a proposed rule pursuant to paragraph (2), or publish in the Federal Register his determination not to do so, and his reasons therefor. The Secretary shall be required to request the recommendations of an advisory committee appointed under section 812(c) of this title if the rule to be promulgated is, in the discretion of the Secretary which shall be final, new in effect or application and has significant economic impact.

(2) The Secretary shall publish a proposed rule promulgating, modifying, or revoking a mandatory health or safety standard in the Federal Register. If the Secretary determines that a rule should be proposed and in connection therewith has appointed an advisory committee as provided by paragraph (1), the Secretary shall publish a proposed rule, or the reasons for his determination not to publish such rule, within 60 days following the submission of the advisory committee's recommendation or the expiration of the period of time prescribed by the Secretary in such submission. In either event, the Secretary shall afford interested persons a period of 30 days after any such publication to submit written data or comments on the proposed rule. Such comment period may be extended by the Secretary upon a finding of good cause, which the Secretary shall publish in the Federal Register. Publication shall include the text of such rules proposed in their entirety, a comparative text of the proposed changes in existing rules, and shall include a comprehensive index to the rules, cross-referenced by subject matter.

(3) On or before the last day of the period provided for the submission of written data or comments under paragraph (2), any interested person may file with the Secretary written objections to the proposed mandatory health or safety standard, stating the grounds therefor and requesting a public hearing on such objections. Within 60 days after the last day for filing such objections, the Secretary shall publish in the Federal Register a notice specifying the mandatory health or safety standard to which objections have been filed and a hearing requested, and specifying a time and place for such hearing. Any hearing under this subsection for the purpose of hearing relevant

information shall commence within 60 days after the date of publication of the notice of hearing. Hearings required by this subsection shall be conducted by the Secretary, who may prescribe rules and make rulings concerning procedures in such hearings to avoid unnecessary cost or delay. Subject to the need to avoid undue delay, the Secretary shall provide for procedures that will afford interested parties the right to participate in the hearing, including the right to present oral statements and to offer written comments and data. The Secretary may require by subpoena the attendance of witnesses and the production of evidence in connection with any proceeding initiated under this section. If a person refuses to obey a subpoena under this subsection, a United States district court within the jurisdiction of which a proceeding under this subsection is conducted may, upon petition by the Secretary, issue an order requiring compliance with such subpoena. A transcript shall be taken of any such hearing and shall be available to the public.

(4)(A) Within 90 days after certification of the record of the hearing held pursuant to paragraph (3), the Secretary shall by rule promulgate, modify, or revoke such mandatory health or safety standards, and publish his reasons therefor.

(B) In the case of a proposed mandatory health or safety standard to which objections requesting a public hearing have not been filed, the Secretary, within 90 days after the period for filing such objections has expired, shall by rule promulgate, modify, or revoke such mandatory standards, and publish his reasons therefor.

(C) In the event the Secretary determines that a proposed mandatory health or safety standard should not be promulgated he shall, within the times specified in subparagraphs (A) and (B) publish his reasons for his determination.

(5) Any mandatory health or safety standard promulgated as a final rule under this section shall be effective upon publication in the Federal Register unless the Secretary specifies a later date.

(6)(A) The Secretary, in promulgating mandatory standards dealing with toxic materials or harmful physical agents under this subsection, shall set standards which most adequately assure on the basis of the best available evidence that no miner will suffer material impairment of health or functional capacity even if such miner has regular exposure to the hazards dealt with by such standard for the period of his working life. Development of mandatory standards under this subsection shall be based upon research, demonstrations, experiments, and such other information as may be appropriate. In addition to the attainment of the highest degree of health and safety protection for the miner, other considerations shall be the latest available scientific data in the field, the feasibility of the standards, and experience gained under this and other health and safety laws. Whenever practicable, the mandatory health or safety standard promulgated shall be expressed in terms of objective criteria and of the performance desired.

(B) The Secretary of Health and Human Services, as soon as possible after November 9, 1977, but in no event later than 18 months after such date and on a continuing basis thereafter, shall, for each toxic material or harmful physical agent which is used or found in a mine, determine whether such material or agent is potentially toxic at the concentrations in which it is used or found in a mine. The Secretary of Health and Human Services shall submit such determinations with respect to such toxic substances or harmful physical agents to the Secretary. Thereafter, the Secretary of Health and Human Services shall submit to the Secretary all pertinent criteria regarding any such substances determined to be toxic or any such harmful agents as such criteria are developed. Within 60 days after receiving any criteria in accordance with the preceding sentence relating to a toxic material or harmful physical agent which is not adequately covered by a mandatory health or safety standard promulgated under this section, the Secretary shall either appoint an advisory committee to make recommendations with respect to a mandatory health or safety standard covering such material or agent in accordance with paragraph (1), or publish a proposed rule promulgating such a mandatory health or safety standard in accordance with paragraph (2), or shall publish his determination not to do so.

(7) Any mandatory health or safety standard promulgated under this subsection shall prescribe the use of labels or other appropriate forms of warning as are necessary to insure that miners are apprised of all hazards to which they are exposed, relevant symptoms and appropriate emergency treatment, and proper conditions and precautions of safe use or exposure. Where appropriate, such mandatory standard shall also prescribe suitable protective equipment and control or technological procedures to be used in connection with such hazards and shall provide for monitoring or measuring miner exposure at such locations and intervals, and in such manner so as to assure the maximum protection of miners. In addition, where appropriate, any such mandatory standard shall prescribe the type and frequency of medical examinations or other tests which shall be made available, by the operator at his cost, to miners exposed to such hazards in order to most effectively determine whether the health of such miners is adversely affected by such exposure. Where appropriate, the mandatory standard shall provide that where a determination is made that a miner may suffer material impairment of health or functional capacity by reason of exposure to the

hazard covered by such mandatory standard, that miner shall be removed from such exposure and reassigned. Any miner transferred as a result of such exposure shall continue to receive compensation for such work at no less than the regular rate of pay for miners in the classification such miner held immediately prior to his transfer. In the event of the transfer of a miner pursuant to the preceding sentence, increases in wages of the transferred miner shall be based upon the new work classification. In the event such medical examinations are in the nature of research, as determined by the Secretary of Health and Human Services, such examinations may be furnished at the expense of the Secretary of Health and Human Services. The results of examinations or tests made pursuant to the preceding sentence shall be furnished only to the Secretary or the Secretary of Health and Human Services, and, at the request of the miner, to his designated physician.

(8) The Secretary shall, to the extent practicable, promulgate separate mandatory health or safety standards applicable to mine construction activity on the surface.

(9) No mandatory health or safety standard promulgated under this subchapter shall reduce the protection afforded miners by an existing mandatory health or safety standard.

(b) Emergency temporary mandatory standards

(1) The Secretary shall provide, without regard to the requirements of chapter 5 of Title 5 for an emergency temporary mandatory health or safety standard to take immediate effect upon publication in the Federal Register if he determines (A) that miners are exposed to grave danger from exposure to substances or agents determined to be toxic or physically harmful, or to other hazards, and (B) that such emergency standard is necessary to protect miners from such danger.

(2) A temporary mandatory health or safety standard shall be effective until superseded by a mandatory standard promulgated in accordance with the procedures prescribed in paragraph (3) of this subsection.

(3) Upon publication of such standard in the Federal Register, the Secretary shall commence a proceeding in accordance with subsection (a) of this section, and the standards as published shall also serve as a proposed rule for the proceeding. The Secretary shall promulgate a mandatory health or safety standard under this paragraph no later than nine months after publication of the emergency temporary standard as provided in paragraph (2).

(c) Modification of standards

Upon petition by the operator or the representative of miners, the Secretary may modify the application of any mandatory safety standard to a coal or other mine if the Secretary determines that an alternative method of achieving the result of such standard exists which will at all times guarantee no less than the same measure of protection afforded the miners of such mine by such standard, or that the application of such standard to such mine will result in a diminution of safety to the miners in such mine. Upon receipt of such petition the Secretary shall publish notice thereof and give notice to the operator or the representative of miners in the affected mine, as appropriate, and shall cause such investigation to be made as he deems appropriate. Such investigation shall provide an opportunity for a public hearing at the request of such operator or representative or other interested party, to enable the operator or the representative of miners in such mine or other interested party to present information relating to the modification of such standard. Before granting any exception to a mandatory safety standard, the findings of the Secretary or his authorized representative shall be made public and shall be available to the representative of the miners at the affected mine. The Secretary shall issue a decision incorporating his findings of fact therein, and send a copy thereof to the operator or the representative of the miners, as appropriate. Any such hearing shall be of record and shall be subject to section 554 of Title 5.

(d) Judicial review

Any person who may be adversely affected by a mandatory health or safety standard promulgated under this section may, at any time prior to the sixtieth day after such standard is promulgated, file a petition challenging the validity of such mandatory standard with the United States Court of Appeals for the District of Columbia Circuit or the circuit wherein such person resides or has his principal place of business, for a judicial review of such standard. A copy of the petition shall be forthwith transmitted by the clerk of the court to the Secretary. The filing of such petition shall not, unless otherwise ordered by the court, operate as a stay of the standard. No objection that has not been urged before the Secretary shall be considered by the court, unless the failure or neglect to urge such objection shall be excused for good cause shown. The validity of any mandatory health or safety standard shall not be subject to challenge on the grounds that any of the time limitations in this section have been exceeded. The procedures of this subsection shall be the exclusive means of challenging the validity of a mandatory health or safety standard.

(e) Distribution of copies of proposed standards or regulations

The Secretary shall send a copy of every proposed mandatory health or safety standard or regulation at

the time of publication in the Federal Register to the operator of each coal or other mine and the representative of the miners at such mine and such copy shall be immediately posted on the bulletin board of the mine by the operator or his agent, but failure to receive such notice shall not relieve anyone of the obligation to comply with such standard or regulation. (Pub.L. 91–173, Title I, § 101, Dec. 30, 1969, 83 Stat. 745; Pub.L. 95–164, Title II, § 201, Nov. 9, 1977, 91 Stat. 1291; Pub.L. 96–88, Title V, § 509(b), Oct. 17, 1979, 93 Stat. 695.)

HISTORICAL AND STATUTORY NOTES

Effective and Applicability Provisions

1977 Acts. Amendment by Pub.L. 95–164 effective 120 days after Nov. 9, 1977, except as otherwise provided, see section 307 of Pub.L. 95–164, set out as a note under section 801 of this title.

1969 Acts

Subchapter operative ninety days after Dec. 30, 1969, except to the extent an earlier date is specifically provided for in Pub.L. 91–173, see section 509 of Pub.L. 91–173, set out as a note under section 801 of this title.

Change of Name

"Secretary of Health and Human Services" was substituted for "Secretary of Health, Education, and Welfare" in subsec. (a)(1), (6)(B), and (7), pursuant to section 509(b) of Pub.L. 96–88 which is classified to section 3508(b) of Title 20, Education.

mental carbon per cubic meter of air (308_{EC} $\mu g/m^3$).

(2) Effective January 20, 2007, a miner's personal exposure to diesel particulate matter (DPM) in an underground mine must not exceed an average eight-hour equivalent full shift airborne concentration of 350 micrograms of total carbon per cubic meter of air (350_{TC} $\mu g/m^3$).

(3) Effective May 20, 2008, a miner's personal exposure to diesel particulate matter (DPM) in an underground mine must not exceed an average eight-hour equivalent full shift airborne concentration of 160 micrograms of total carbon per cubic meter of air (160_{TC} $\mu g/m^3$).

(c)(1) If a mine requires additional time to come into compliance with the final DPM limit established in §57.5060 (b) due to technological or economic constraints, the operator of the mine may file an application with the District Manager for a special extension.

(2) The mine operator must certify on the application that the operator has posted one copy of the application at the mine site for at least 30 days prior to the date of application, and has provided another copy to the authorized representative of miners.

(3) No approval of a special extension shall exceed a period of one year from the date of approval. Mine operators may file for additional special extensions provided each extension does not exceed a period of one year. An application must include the following information:

(i) A statement that diesel-powered equipment was used in the mine prior to October 29, 1998;

(ii) Documentation supporting that controls are technologically or economically infeasible at this time to reduce the miner's exposure to the final DPM limit.

(iii) The most recent DPM monitoring results.

(iv) The actions the operator will take during the extension to minimize exposure of miners to DPM.

(4) A mine operator must comply with the terms of any approved application for a special extension, post a copy of the approved application for a special extension at the mine site for the duration of the special extension

DIESEL PARTICULATE MATTER—
UNDERGROUND ONLY

SOURCE: 66 FR 5907, Jan. 19, 2001, unless otherwise noted.

§ 57.5060 Limit on exposure to diesel particulate matter.

(a) A miner's personal exposure to diesel particulate matter (DPM) in an underground mine must not exceed an average eight-hour equivalent full shift airborne concentration of 308 micrograms of elemental carbon per cubic meter of air (308_{EC} $\mu g/m^3$). [This interim permissible exposure limit (PEL) remains in effect until the final DPM exposure limit becomes effective. When the final DPM exposure limit becomes effective, MSHA will publish a document in the FEDERAL REGISTER.]

(b)(1) Effective May 20, 2006, a miner's personal exposure to diesel particulate matter (DPM) in an underground mine must not exceed an average eight-hour equivalent full shift airborne concentration of 308 micrograms of ele-

period, and provide a copy of the approved application to the authorized representative of miners.

(d) The mine operator must install, use, and maintain feasible engineering and administrative controls to reduce a miner's exposure to or below the DPM limit established in this section. When controls do not reduce a miner's DPM exposure to the limit, controls are infeasible, or controls do not produce significant reductions in DPM exposures, controls must be used to reduce the miner's exposure to as low a level as feasible and must be supplemented with respiratory protection in accordance with §57.5005(a), (b), and paragraphs (d)(1) and (d)(2) of this section.

(1) Air purifying respirators must be equipped with the following:

(i) Filters certified by NIOSH under 30 CFR part 11 (appearing in the July 1, 1994 edition of 30 CFR, parts 1 to 199) as a high efficiency particulate air (HEPA) filter;

(ii) Filters certified by NIOSH under 42 CFR part 84 as 99.97% efficient; or

(iii) Filters certified by NIOSH for DPM.

(2) Non-powered, negative-pressure, air purifying, particulate-filter respirators shall use an R- or P-series filter or any filter certified by NIOSH for DPM. An R-series filter shall not be used for longer than one work shift.

(e) Rotation of miners shall not be considered an acceptable administrative control used for compliance with the DPM standard.

[70 FR 32966, June 6, 2005; 70 FR 37901, June 30, 2005, as amended at 70 FR 55019, Sept. 19, 2005; 71 FR 29011, May 18, 2006]

EFFECTIVE DATE NOTE: At 71 FR 29012, May 18, 2006, §57.5060 was amended by revising paragraph (d) introductory text and adding paragraphs (d)(3) through (d)(8), effective Aug. 16, 2006. At 71 FR 36483, June 27, 2006, the "s" was deleted from the word "exposures" in revised paragraph (d) introductory text, effective Aug. 16, 2006. For the convenience of the user, the added and revised text is set forth as follows:

§ 57.5060 Limit on exposure to diesel particulate matter.

* * * * *

(d) The mine operator must install, use, and maintain feasible engineering and administrative controls to reduce a miner's exposure to or below the applicable DPM PEL established in this section. When controls do not reduce a miner's DPM exposure to the PEL, controls are infeasible, or controls do not produce significant reductions in DPM exposures, controls must be used to reduce the miner's exposure to as low a level as feasible and must be supplemented with respiratory protection in accordance with §57.5005(a), (b), and paragraphs (d)(1) through (d)(8) of this section.

* * * * *

(3) The mine operator must provide a confidential medical evaluation by a physician or other licensed health care professional (PLHCP), at no cost to the miner, to determine the miner's ability to use a respirator before the miner is required to be fit tested or to use a respirator at the mine. If the PLHCP determines that the miner cannot wear a negative pressure respirator, the mine operator must make certain that the PLHCP evaluates the miner's ability to wear a powered air purifying respirator (PAPR).

(4) The mine operator must provide the miner with an opportunity to discuss their evaluation results with the PLHCP before the PLHCP submits the written determination to the mine operator regarding the miner's ability to wear a respirator. If the miner disagrees with the evaluation results of the PLHCP, the miner may submit within 30 days additional evidence of his or her medical condition to the PLHCP.

(5) The mine operator must obtain a written determination from the PLHCP regarding the miner's ability to wear a respirator, and the mine operator must assure that the PLHCP provides a copy of the determination to the miner.

(6) The miner must be reevaluated when the mine operator has reason to believe that conditions have changed which could adversely affect the miner's ability to wear the respirator.

(7) Upon written notification that the PLHCP has determined that the miner is unable to wear a respirator, including a PAPR, the miner must be transferred to work in an existing position in an area of the same mine where respiratory protection is not required. The miner must be transferred within 30 days of the final determination by the PLHCP.

(i) The miner must continue to receive compensation at no less than the regular rate of pay in the classification held by that miner immediately prior to the transfer.

(ii) Increases in wages of the transferred miner must be based upon the new work classification.

(8) The mine operator must maintain a record of the identity of the PLHCP and the most recent written determination of each miner's ability to wear a respirator for the

duration of the miner's employment plus six months.

* * * * *

§ 57.5061 Compliance determinations.

(a) MSHA will use a single sample collected and analyzed by the Secretary in accordance with the requirements of this section as an adequate basis for a determination of noncompliance with the DPM limit.

(b) The Secretary will collect samples of DPM by using a respirable dust sampler equipped with a submicrometer impactor and analyze the samples for the amount of elemental carbon using the method described in NIOSH Analytical Method 5040, except that the Secretary also may use any methods of collection and analysis subsequently determined by NIOSH to provide equal or improved accuracy for the measurement of DPM.

(c) The Secretary will use full-shift personal sampling for compliance determinations.

[70 FR 32966, June 6, 2005]

§ 57.5065 Fueling practices.

(a) Diesel fuel used to power equipment in underground areas must not have a sulfur content greater than 0.05 percent. The operator must retain purchase records that demonstrate compliance with this requirement for one year after the date of purchase.

(b) The operator must only use fuel additives registered by the U.S. Environmental Protection Agency in diesel powered equipment operated in underground areas.

[66 FR 5907, Jan. 19, 2001; 66 FR 35520, July 5, 2001]

§ 57.5066 Maintenance standards.

(a) Any diesel powered equipment operated at any time in underground areas must meet the following maintenance standards:

(1) The operator must maintain any approved engine in approved condition;

(2) The operator must maintain the emission related components of any non-approved engine to manufacturer specifications; and

(3) The operator must maintain any emission or particulate control device installed on the equipment in effective operating condition.

(b)(1) A mine operator must authorize each miner operating diesel-powered equipment underground to affix a visible and dated tag to the equipment when the miner notes evidence that the equipment may require maintenance in order to comply with the maintenance standards of paragraph (a) of this section. The term *evidence* means visible smoke or odor that is unusual for that piece of equipment under normal operating procedures, or obvious or visible defects in the exhaust emissions control system or in the engine affecting emissions.

(2) A mine operator must ensure that any equipment tagged pursuant to this section is promptly examined by a person authorized to maintain diesel equipment, and that the affixed tag not be removed until the examination has been completed. The term *promptly* means before the end of the next shift during which a qualified mechanic is scheduled to work.

(3) A mine operator must retain a log of any equipment tagged pursuant to this section. The log must include the date the equipment is tagged, the date the equipment is examined, the name of the person examining the equipment, and any action taken as a result of the examination. The operator must retain the information in the log for one year after the date the tagged equipment was examined.

(c) Persons authorized by a mine operator to maintain diesel equipment covered by paragraph (a) of this section must be qualified, by virtue of training or experience, to ensure that the maintenance standards of paragraph (a) of this section are observed. An operator must retain appropriate evidence of the competence of any person to perform specific maintenance tasks in compliance with those standards for one year after the date of any maintenance, and upon request must provide the documentation to the authorized representative of the Secretary.

[66 FR 5907, Jan. 19, 2001, as amended at 67 FR 9184, Feb. 27, 2002]

EFFECTIVE DATE NOTE: At 66 FR 5907, Jan. 19, 2001, § 57.5066 was added, effective July 5, 2001, except for paragraph (b). At 66 FR 35518, July 5, 2001, the effective date of paragraph

(b) was delayed pending disposition of current litigation challenging the rule. At 67 FR 9184, Feb. 27, 2002, paragraphs (b)(1) and (b)(2) were revised, effective Mar. 29, 2002.

§ 57.5067 Engines.

(a) Any diesel engine introduced into an underground area of a mine covered by this part after July 5, 2001, other than an engine in an ambulance or fire fighting equipment which is utilized in accordance with mine fire fighting and evacuation plans, must either:

(1) Have affixed a plate evidencing approval of the engine pursuant to subpart E of Part 7 of this title or pursuant to Part 36 of this title; or

(2) Meet or exceed the applicable particulate matter emission requirements of the Environmental Protection Administration listed in Table 57.5067–1, as follows:

TABLE 57.5067–1

EPA requirement	EPA category	PM limit
40 CFR 86.094–8(a)(1)(i)(A)(2)	light duty vehicle	0.1 g/mile.
40 CFR 86.094–9(a)(1)(i)(A)(2)	light duty truck	0.1 g/mile.
40 CFR 86.094–11(a)(1)(iv)(B)	heavy duty highway engine	0.1 g/bhp-hr.
40 CFR 89.112(a)	nonroad (tier, power range)	varies by power range:
	tier 1 kW<8 (hp<11)	1.0 g/kW-hr (0.75 g/bhp-hr).
	tier 1 8≤kW<19 (11≤hp<25)	0.80 g/kW-hr (0.60 g/bhp-hr).
	tier 1 19≤kW<37 (25≤hp<50)	0.80 g/kW-hr (0.60 g/bhp-hr).
	tier 2 37≤kW<75 (50≤hp<100)	0.40 g/kW-hr (0.30 g/bhp-hr).
	tier 2 75≤kW<130 (100≤hp<175)	0.30 g/kW-hr (0.22 g/bhp-hr).
	tier 1 130≤kW<225 (175≤hp<300)	0.54 g/kW-hr (0.40 g/bhp-hr).
	tier 1 225≤kW<450 (300≤hp<600)	0.54 g/kW-hr (0.40 g/bhp-hr).
	tier 1 450≤kW<560 (600≤hp<750)	0.54 g/kW-hr (0.40 g/bhp-hr).
	tier 1 kW≥560 (hp≥750)	0.54 g/kW-hr (0.40 g/bhp-hr).

NOTES:
"g" means grams.
"hp" means horsepower.
"g/bhp-hr" means grams/brake horsepower-hour.
"kW" means kilowatt.
"g/kW-hr" means grams/kilowatt-hour.

(b) For purposes of paragraph (a):

(1) The term "introduced" means any engine added to the underground inventory of engines of the mine in question, including:

(i) An engine in newly purchased equipment;

(ii) An engine in used equipment brought into the mine; and

(iii) A replacement engine that has a different serial number than the engine it is replacing; but

(2) The term "introduced" does not include engines that were previously part of the mine inventory and rebuilt.

(3) The term *introduced* does not include the transfer of engines or equipment from the inventory of one underground mine to another underground mine operated by the same mine operator.

[66 FR 5907, Jan. 19, 2001, as amended at 66 FR 27864, May 21, 2001; 67 FR 9184, Feb. 27, 2002]

§ 57.5070 Miner training.

(a) Mine operators must provide annual training to all miners at a mine covered by this part who can reasonably be expected to be exposed to diesel emissions on that property. The training must include—

(1) The health risks associated with exposure to diesel particulate matter;

(2) The methods used in the mine to control diesel particulate matter concentrations;

(3) Identification of the personnel responsible for maintaining those controls; and

(4) Actions miners must take to ensure the controls operate as intended.

(b) An operator must retain a record at the mine site of the training required by this section for one year after completion of the training.

§ 57.5071 Exposure monitoring.

(a) Mine operators must monitor as often as necessary to effectively determine, under conditions that can be reasonably anticipated in the mine,

whether the average personal full-shift airborne exposure to DPM exceeds the DPM limit specified in § 57.5060.

(b) The mine operator must provide affected miners and their representatives with an opportunity to observe exposure monitoring required by this section. Mine operators must give prior notice to affected miners and their representatives of the date and time of intended monitoring.

(c) If any monitoring performed under this section indicates that a miner's exposure to diesel particulate matter exceeds the DPM limit specified in § 57.5060, the operator must promptly post notice of the corrective action being taken on the mine bulletin board, initiate corrective action by the next work shift, and promptly complete such corrective action.

(d)(1) The results of monitoring for diesel particulate matter, including any results received by a mine operator from sampling performed by the Secretary, must be posted on the mine bulletin board within 15 days of receipt and must remain posted for 30 days. The operator must provide a copy of the results to the authorized representative of miners.

(2) The mine operator must retain for five years (from the date of sampling), the results of any samples the operator collected as a result of monitoring under this section, and information about the sampling method used for obtaining the samples.

[70 FR 32966, June 6, 2005]

§ 57.5075 Diesel particulate records.

(a) The table entitled "Diesel Particulate Matter Recordkeeping Requirements" lists the records the operator must maintain pursuant to §§ 57.5060 through 57.5071, and the duration for which particular records need to be retained.

TABLE 57.5075(a)—DIESEL PARTICULATE RECORDKEEPING REQUIREMENTS

Record	Section reference	Retention time
1. Approved application for extension of time to comply with exposure limits.	§ 57.5060(c)	Duration of extension.
2. Identity of PLHCP and most recent written determination of miner's ability to wear a respirator.	§ 57.5060(d)	Duration of miner's employment plus 6 months.
3. Purchase records noting sulfur content of diesel fuel.	§ 57.5065(a)	1 year beyond date of purchase.
4. Maintenance log	§ 57.5066(b)	1 year after date any equipment is tagged.
5. Evidence of competence to perform maintenance.	§ 57.5066(c)	1 year after date maintenance performed.
6. Annual training provided to potentially exposed miners.	§ 57.5070(b)	1 year beyond date training completed.
7. Record of corrective action	§ 57.5071(c)	Until the corrective action is completed.
8. Sampling method used to effectively evaluate a miner's personal exposure, and sample results.	§ 57.5071(d)	5 years from sample date.

(b)(1) Any record listed in this section which is required to be retained at the mine site may, notwithstanding such requirement, be retained elsewhere if the mine operator can immediately access the record from the mine site by electronic transmission.

(2) Upon request from an authorized representative of the Secretary of Labor, the Secretary of Health and Human Services, or from the authorized representative of miners, mine operators must promptly provide access to any record listed in the table in this section.

(3) An operator must provide access to a miner, former miner, or, with the miner's or former miner's written consent, a personal representative of a miner, to any record required to be maintained pursuant to § 57.5071 or § 57.5060(d) to the extent the information pertains to the miner or former miner. The operator must provide the first copy of a requested record at no cost, and any additional copies at reasonable cost.

(4) Whenever an operator ceases to do business, that operator must transfer all records required to be maintained by this part, or a copy thereof, to any successor operator who must maintain them for the required period.

[70 FR 32966, June 6, 2005; 70 FR 37901, June 30, 2005; 71 FR 29012, May 18, 2006]

DIESEL PARTICULATE MATTER—UNDERGROUND ONLY

SOURCE: 66 FR 5907, Jan. 19, 2001, unless otherwise noted.

§ 57.5060 Limit on concentration of diesel particulate matter.

(a) After July 19, 2002 and until January 19, 2006, any mine operator covered by this part must limit the concentration of diesel particulate matter to which miners are exposed in underground areas of a mine by restricting the average eight-hour equivalent full shift airborne concentration of total carbon, where miners normally work or travel, to 400 micrograms per cubic meter of air (400_{TC} $\mu g/m^3$).

(b) After January 19, 2006, any mine operator covered by this part must limit the concentration of diesel particulate matter to which miners are exposed in underground areas of a mine by restricting the average eight-hour equivalent full shift airborne concentration of total carbon, where miners normally work or travel, to 160 micrograms per cubic meter of air (160_{TC} $\mu g/m^3$).

(c)(1) If, as a result of technological constraints, a mine requires additional time to come into compliance with the limit specified in paragraph (b) of this section, the operator of the mine may file an application with the Secretary for a special extension.

(2) No mine may be granted more than one special extension, nor may the time otherwise available under this section to a mine to comply with the limit specified in paragraph (b) be extended by more than two years.

(3) The application for a special extension may be approved, and the additional time authorized, only if the application includes information adequate for the Secretary to ascertain:

(i) That diesel-powered equipment was used in the mine prior to October 29, 1998;

(ii) That there is no combination of controls that can, due to technological constraints, bring the mine into full compliance with the limit specified in paragraph (b) within the time otherwise specified in this section;

(iii) The lowest achievable concentration of diesel particulate, as demonstrated by data collected under conditions that are representative of mine conditions using the method specified in § 57.5061; and

(iv) The actions the operator will take during the duration of the extension to:

(A) Maintain the lowest concentration of diesel particulate; and

(B) Minimize the exposure of miners to diesel particulate.

(4) The Secretary may approve an application for a special extension only if:

(i) The mine operator files, the application at least 180 days prior to the date the mine must be in full compliance with the limit established by paragraph (b) of this section; and

(ii) The application certifies that the operator has posted one copy of the application, at the mine site for 30 days prior to the date of application, and has provided another copy to the authorized representative of miners.

(5) A mine operator must comply with the terms of any approved application for a special extension, and post a copy of an approved application for a special extension at the mine site for

the duration of the special extension period.

(d)(1) Mine operators may permit miners engaged in inspection, maintenance, or repair activities, and only in such activities, with the advance approval of the Secretary under the circumstances and conditions defined in paragraphs (d)(2) through (d)(4) of this section, to work in concentrations of diesel particulate matter exceeding the applicable concentration limit under paragraph (a) or (b) of this section.

(2) The Secretary will only provide advance approval:

(i) For inspection, maintenance or repair activities to be conducted:

(A) In areas where miners work or travel infrequently or for brief periods of time;

(B) In areas where miners otherwise work exclusively inside of enclosed and environmentally controlled cabs, booths and similar structures with filtered breathing air; or

(C) In shafts, inclines, slopes, adits, tunnels and similar workings that the operator designates as return or exhaust air courses and that miners use for access into the mine or egress from the mine;

(ii) When the Secretary determines that it is not feasible to reduce the concentration of dpm in the areas where the inspection, maintenance or repair activities are to be conducted to those otherwise applicable under paragraph (a) or (b) of this section; and

(iii) When the Secretary determines that the mine operator will employ adequate safeguards to minimize the dpm exposure of the miners.

(3) The Secretary's determinations under paragraph (d)(2) of this section will be based on evaluating a plan prepared and submitted by the operator no less than 60 days before the commencement of any inspection, maintenance or repair activities. The mine operator must certify in the plan that one copy of the application has been posted at the mine site for 30 days prior to the date of submission, and another copy has been provided to the authorized representative of miners. The plan must identify, at a minimum, the types of anticipated inspection, maintenance, and repair activities that must be performed for which engineering controls sufficient to comply with the concentration limit are not feasible, the locations where such activities could take place, the concentration of dpm in these locations, the reasons why engineering controls are not feasible, the anticipated frequency and duration of such activities, the anticipated number of miners involved in such activities, and the safeguards that the operator will employ to limit miner exposure to dpm, including, but not limited to the use of respiratory protective equipment. The approved plan must include a program for selection, maintenance, training, fitting, supervision, cleaning and use of personal protective equipment and must meet the minimum requirements established in § 57.5005 (a) and (b).

(4) An advance approval by the Secretary for employees to engage in inspection, maintenance, or repair activities will be valid for no more than one year. A mine operator must comply with the conditions of the approved plan [which was the basis of the approval], and must post a copy of the approved plan at the mine site for the duration of its applicability.

(e) Other than pursuant to the conditions required in paragraphs (c) or (d) of this section, an operator must not utilize personal protective equipment to comply with the requirements of either paragraph (a) or paragraph (b) of this section.

(f) An operator must not utilize administrative controls to comply with the requirements of this section.

EFFECTIVE DATE NOTE: At 67 FR 47297, July 18, 2002, in § 57.5060, paragraphs (d), (e), and (f) were stayed, effective July 20, 2002, until completion of further rulemaking to address these provisions.

EFFECTIVE DATE NOTE: At 70 FR 32966, June 6, 2005, § 57.5060 was revised, effective July 6, 2005. At 70 FR 37901, June 30, 2005, technical amendments were incorporated. For the convenience of the user, the revised text is set forth as follows:

§ 57.5060 Limit on exposure to diesel particulate matter.

(a) A miner's personal exposure to diesel particulate matter (DPM) in an underground mine must not exceed an average eight-hour equivalent full shift airborne concentration of 308 micrograms of elemental carbon per

cubic meter of air (308_{EC} $\mu g/m^3$). [This interim permissible exposure limit (PEL) remains in effect until the final DPM exposure limit becomes effective. When the final DPM exposure limit becomes effective, MSHA will publish a document in the FEDERAL REGISTER.]

(b) After January 19, 2006, any mine operator covered by this part must limit the concentration of diesel particulate matter to which miners are exposed in underground areas of a mine by restricting the average eight-hour equivalent full shift airborne concentration of total carbon, where miners normally work or travel, to 160 micrograms per cubic meter of air (160_{TC} $\mu g/m^3$).

(c)(1) If a mine requires additional time to come into compliance with the final DPM limit established in § 57.5060 (b) due to technological or economic constraints, the operator of the mine may file an application with the District Manager for a special extension.

(2) The mine operator must certify on the application that the operator has posted one copy of the application at the mine site for at least 30 days prior to the date of application, and has provided another copy to the authorized representative of miners.

(3) No approval of a special extension shall exceed a period of one year from the date of approval. Mine operators may file for additional special extensions provided each extension does not exceed a period of one year. An application must include the following information:

(i) A statement that diesel-powered equipment was used in the mine prior to October 29, 1998;

(ii) Documentation supporting that controls are technologically or economically infeasible at this time to reduce the miner's exposure to the final DPM limit.

(iii) The most recent DPM monitoring results.

(iv) The actions the operator will take during the extension to minimize exposure of miners to DPM.

(4) A mine operator must comply with the terms of any approved application for a special extension, post a copy of the approved application for a special extension at the mine site for the duration of the special extension period, and provide a copy of the approved application to the authorized representative of miners.

(d) The mine operator must install, use, and maintain feasible engineering and administrative controls to reduce a miner's exposure to or below the DPM limit established in this section. When controls do not reduce a miner's DPM exposure to the limit, controls are infeasible, or controls do not produce significant reductions in DPM exposures, controls must be used to reduce the miner's exposure to as low a level as feasible and must be supplemented with respiratory protection in accordance with § 57.5005(a), (b), and paragraphs (d)(1) and (d)(2) of this section.

(1) Air purifying respirators must be equipped with the following:

(i) Filters certified by NIOSH under 30 CFR part 11 (appearing in the July 1, 1994 edition of 30 CFR, parts 1 to 199) as a high efficiency particulate air (HEPA) filter;

(ii) Filters certified by NIOSH under 42 CFR part 84 as 99.97% efficient; or

(iii) Filters certified by NIOSH for DPM.

(2) Non-powered, negative-pressure, air purifying, particulate-filter respirators shall use an R- or P-series filter or any filter certified by NIOSH for DPM. An R-series filter shall not be used for longer than one work shift.

(e) Rotation of miners shall not be considered an acceptable administrative control used for compliance with the DPM standard.

§ 57.5061 Compliance determinations.

(a) A single sample collected and analyzed by the Secretary in accordance with the requirements of this section shall be an adequate basis for a determination of noncompliance with an applicable limit on the concentration of diesel particulate matter pursuant to § 57.5060.

(b) The Secretary will collect samples of diesel particulate matter by using a respirable dust sampler equipped with a submicrometer impactor and analyze the samples for the amount of total carbon using the method described in NIOSH Analytical Method 5040, except that the Secretary also may use any methods of collection and analysis subsequently determined by NIOSH to provide equal or improved accuracy for the measurement of diesel particulate matter. Copies of the NIOSH 5040 Analytical Method are available by contacting MSHA's, Pittsburgh Safety and Health Technology Center, P.O. Box 18233, Cochrans Mill Road, Pittsburgh, PA 15236.

(c) The Secretary will determine the appropriate sampling strategy for compliance determination, utilizing personal sampling, occupational sampling, and/or area sampling, based on the circumstances of the particular exposure.

EFFECTIVE DATE NOTE: At 70 FR 32966, June 6, 2005, § 57.5061 was revised, effective July 6, 2005. For the convenience of the user, the revised text is set forth as follows:

§ 57.5061 Compliance determinations.

(a) MSHA will use a single sample collected and analyzed by the Secretary in accordance with the requirements of this section as an adequate basis for a determination of noncompliance with the DPM limit.

(b) The Secretary will collect samples of DPM by using a respirable dust sampler equipped with a submicrometer impactor and analyze the samples for the amount of elemental carbon using the method described in NIOSH Analytical Method 5040, except that the Secretary also may use any methods of collection and analysis subsequently determined by NIOSH to provide equal or improved accuracy for the measurement of DPM.

(c) The Secretary will use full-shift personal sampling for compliance determinations.

§ 57.5062 Diesel particulate matter control plan.

(a) In the event of a violation by the operator of an underground metal or nonmetal mine of the applicable concentration limit established by § 57.5060, the operator, in accordance with the requirements of this section, must—

(1) Establish a diesel particulate matter control plan for the mine if one is not already in effect, or modify the existing diesel particulate matter control plan, and

(2) Demonstrate that the new or modified diesel particulate matter control plan controls the concentration of diesel particulate matter to the applicable concentration limit specified in § 57.5060.

(b) A diesel particulate control plan must describe the controls the operator will utilize to maintain the concentration of diesel particulate matter to the applicable limit specified by § 57.5060. The plan also must include a list of diesel-powered units maintained by the mine operator, information about any unit's emission control device, and the parameters of any other methods used to control the concentration of diesel particulate matter. The operator may consolidate the plan with the ventilation plan required by § 57.8520. The operator must retain a copy of the current diesel particulate matter control plan at the mine site during its duration and for one year thereafter.

(c) An operator must demonstrate plan effectiveness by monitoring, using the measurement method specified by § 57.5061(b), sufficient to verify that the plan will control the concentration of diesel particulate matter to the applicable limit under conditions that can be reasonably anticipated in the mine. The operator must retain a copy of each verification sample result at the mine site for five years. The operator monitoring must be in addition to, and not in lieu of, any sampling by the Secretary pursuant to § 57.5061.

(d) The records required by paragraphs (b) and (c) of this section must be available for review upon request by the authorized representative of the Secretary, the authorized representative of the Secretary of Health and Human Services, or the authorized representative of miners. In addition, upon request by the District Manager or the authorized representative of miners, the operator must provide a copy of any records required to be maintained pursuant to paragraph (b) or (c) of this section.

(e)(1) A control plan established as a result of this section must remain in effect for 3 years from the date of the violation which caused it to be established, except as provided in paragraph (e)(3) of this section.

(2) A modified control plan established as a result of this section must remain in effect for 3 years from the date of the violation which caused the plan to be modified, except as provided in paragraph (e)(3) of this section.

(3) An operator must modify a diesel particulate matter control plan during its duration as required to reflect changes in mining equipment or circumstances. Upon request from the Secretary, an operator must demonstrate the effectiveness of the modified plan by monitoring, using the measurement method specified by § 57.5061, sufficient to verify that the plan will control the concentration of diesel particulate matter to the applicable limit under conditions that can be reasonably anticipated in the mine.

(f) The Secretary will consider an operator's failure to comply with the provisions of the diesel particulate matter control plan in effect at a mine or to conduct required verification sampling to be a violation of this part without regard for the concentration of diesel

particulate matter that may be present at any time.

EFFECTIVE DATE NOTE: At 67 FR 47297, July 18, 2002, § 57.5062 was stayed, effective July 20, 2002, until completion of further rulemaking to address these provisions.

EFFECTIVE DATE NOTE: At 70 FR 32966, June 6, 2005, § 57.5062 was removed, effective July 6, 2005.

§ 57.5065 Fueling practices.

(a) Diesel fuel used to power equipment in underground areas must not have a sulfur content greater than 0.05 percent. The operator must retain purchase records that demonstrate compliance with this requirement for one year after the date of purchase.

(b) The operator must only use fuel additives registered by the U.S. Environmental Protection Agency in diesel powered equipment operated in underground areas.

[66 FR 5907, Jan. 19, 2001; 66 FR 35520, July 5, 2001]

§ 57.5066 Maintenance standards.

(a) Any diesel powered equipment operated at any time in underground areas must meet the following maintenance standards:

(1) The operator must maintain any approved engine in approved condition;

(2) The operator must maintain the emission related components of any non-approved engine to manufacturer specifications; and

(3) The operator must maintain any emission or particulate control device installed on the equipment in effective operating condition.

(b)(1) A mine operator must authorize each miner operating diesel-powered equipment underground to affix a visible and dated tag to the equipment when the miner notes evidence that the equipment may require maintenance in order to comply with the maintenance standards of paragraph (a) of this section. The term *evidence* means visible smoke or odor that is unusual for that piece of equipment under normal operating procedures, or obvious or visible defects in the exhaust emissions control system or in the engine affecting emissions.

(2) A mine operator must ensure that any equipment tagged pursuant to this section is promptly examined by a person authorized to maintain diesel equipment, and that the affixed tag not be removed until the examination has been completed. The term *promptly* means before the end of the next shift during which a qualified mechanic is scheduled to work.

(3) A mine operator must retain a log of any equipment tagged pursuant to this section. The log must include the date the equipment is tagged, the date the equipment is examined, the name of the person examining the equipment, and any action taken as a result of the examination. The operator must retain the information in the log for one year after the date the tagged equipment was examined.

(c) Persons authorized by a mine operator to maintain diesel equipment covered by paragraph (a) of this section must be qualified, by virtue of training or experience, to ensure that the maintenance standards of paragraph (a) of this section are observed. An operator must retain appropriate evidence of the competence of any person to perform specific maintenance tasks in compliance with those standards for one year after the date of any maintenance, and upon request must provide the documentation to the authorized representative of the Secretary.

[66 FR 5907, Jan. 19, 2001, as amended at 67 FR 9184, Feb. 27, 2002]

EFFECTIVE DATE NOTE: At 66 FR 5907, Jan. 19, 2001, § 57.5066 was added, effective July 5, 2001, except for paragraph (b). At 66 FR 35518, July 5, 2001, the effective date of paragraph (b) was delayed pending disposition of current litigation challenging the rule. At 67 FR 9184, Feb. 27, 2002, paragraphs (b)(1) and (b)(2) were revised, effective Mar. 29, 2002.

§ 57.5067 Engines.

(a) Any diesel engine introduced into an underground area of a mine covered by this part after July 5, 2001, other than an engine in an ambulance or fire fighting equipment which is utilized in accordance with mine fire fighting and evacuation plans, must either:

(1) Have affixed a plate evidencing approval of the engine pursuant to subpart E of Part 7 of this title or pursuant to Part 36 of this title; or

(2) Meet or exceed the applicable particulate matter emission requirements

of the Environmental Protection Administration listed in Table 57.5067–1, as follows:

TABLE 57.5067–1

EPA requirement	EPA category	PM limit
40 CFR 86.094–8(a)(1)(i)(A)(2)	light duty vehicle	0.1 g/mile.
40 CFR 86.094–9(a)(1)(i)(A)(2)	light duty truck	0.1 g/mile.
40 CFR 86.094–11(a)(1)(iv)(B)	heavy duty highway engine	0.1 g/bhp-hr.
40 CFR 89.112(a)	nonroad (tier, power range)	varies by power range:
	tier 1 kW<8 (hp<11)	1.0 g/kW-hr (0.75 g/bhp-hr).
	tier 1 8≤kW<19 (11≤hp<25)	0.80 g/kW-hr (0.60 g/bhp-hr).
	tier 1 19≤kW<37 (25≤hp<50)	0.80 g/kW-hr (0.60 g/bhp-hr).
	tier 2 37≤kW<75 (50≤hp<100)	0.40 g/kW-hr (0.30 g/bhp-hr).
	tier 2 75≤kW<130 (100≤hp<175)	0.30 g/kW-hr (0.22 g/bhp-hr).
	tier 1 130≤kW<225 (175≤hp<300)	0.54 g/kW-hr (0.40 g/bhp-hr).
	tier 1 225≤kW<450 (300≤hp<600)	0.54 g/kW-hr (0.40 g/bhp-hr).
	tier 1 450≤kW≤560 (600≤hp<750)	0.54 g/kW-hr (0.40 g/bhp-hr).
	tier 1 kW≥560 (hp≥750)	0.54 g/kW-hr (0.40 g/bhp-hr).

NOTES:
"g" means grams.
"hp" means horsepower.
"g/bhp-hr" means grams/brake horsepower-hour.
"kW" means kilowatt.
"g/kW-hr" means grams/kilowatt-hour.

(b) For purposes of paragraph (a):

(1) The term "introduced" means any engine added to the underground inventory of engines of the mine in question, including:

(i) An engine in newly purchased equipment;

(ii) An engine in used equipment brought into the mine; and

(iii) A replacement engine that has a different serial number than the engine it is replacing; but

(2) The term "introduced" does not include engines that were previously part of the mine inventory and rebuilt.

(3) The term *introduced* does not include the transfer of engines or equipment from the inventory of one underground mine to another underground mine operated by the same mine operator.

[66 FR 5907, Jan. 19, 2001, as amended at 66 FR 27864, May 21, 2001; 67 FR 9184, Feb. 27, 2002]

§ 57.5070 Miner training.

(a) Mine operators must provide annual training to all miners at a mine covered by this part who can reasonably be expected to be exposed to diesel emissions on that property. The training must include—

(1) The health risks associated with exposure to diesel particulate matter;

(2) The methods used in the mine to control diesel particulate matter concentrations;

(3) Identification of the personnel responsible for maintaining those controls; and

(4) Actions miners must take to ensure the controls operate as intended.

(b) An operator must retain a record at the mine site of the training required by this section for one year after completion of the training.

§ 57.5071 Environmental monitoring.

(a) Mine operators must monitor as often as necessary to effectively determine, under conditions that can be reasonably anticipated in the mine—

(1) Whether the concentration of diesel particulate matter in any area of the mine where miners normally work or travel exceeds the applicable limit specified in § 57.5060; and

(2) The average full shift airborne concentration of diesel particulate matter at any position or on any person designated by the Secretary.

(b) The mine operator must provide affected miners and their representatives with an opportunity to observe exposure monitoring required by this section. Mine operators must give prior notice to affected miners and their representatives of the date and time of intended monitoring.

(c) If any monitoring performed under this section indicates that the applicable concentration limit established by § 57.5060 has been exceeded, an operator must promptly post notice of the corrective action being taken, initiate corrective action by the next work shift, and promptly complete such corrective action.

(d)(1) The results of monitoring for diesel particulate matter, including any results received by a mine operator from sampling performed by the Secretary, must be posted on the mine bulletin board within 15 days of receipt and must remain posted for 30 days. The operator must provide a copy of the results to the authorized representative of miners.

(2) The mine operator must retain for five years (from the date of sampling), the results of any samples the operator collected as a result of monitoring under this section, and information about the sampling method used for obtaining the samples.

EFFECTIVE DATE NOTE: At 70 FR 32966, June 6, 2005, § 57.5071 was revised, effective July 6, 2005. For the convenience of the user, the revised text is set forth as follows:

§ 57.5071 Exposure monitoring.

(a) Mine operators must monitor as often as necessary to effectively determine, under conditions that can be reasonably anticipated in the mine, whether the average personal full-shift airborne exposure to DPM exceeds the DPM limit specified in § 57.5060.

(b) The mine operator must provide affected miners and their representatives with an opportunity to observe exposure monitoring required by this section. Mine operators must give prior notice to affected miners and their representatives of the date and time of intended monitoring.

(c) If any monitoring performed under this section indicates that a miner's exposure to diesel particulate matter exceeds the DPM limit specified in § 57.5060, the operator must promptly post notice of the corrective action being taken on the mine bulletin board, initiate corrective action by the next work shift, and promptly complete such corrective action.

(d)(1) The results of monitoring for diesel particulate matter, including any results received by a mine operator from sampling performed by the Secretary, must be posted on the mine bulletin board within 15 days of receipt and must remain posted for 30 days. The operator must provide a copy of the results to the authorized representative of miners.

(2) The mine operator must retain for five years (from the date of sampling), the results of any samples the operator collected as a result of monitoring under this section, and information about the sampling method used for obtaining the samples.

§ 57.5075 Diesel particulate records.

(a) The table entitled "Diesel Particulate Recordkeeping Requirements" lists the records the operator must retain pursuant to §§ 57.5060 through 57.5071, and the duration for which particular records need to be retained. The table follows:

DIESEL PARTICULATE RECORDKEEPING REQUIREMENTS

Record	Section reference	Retention time
1. Approved application for extension of time to comply with final concentration limit.	§ 57.5060(c)	1 year beyond duration of extension.
2. Approved plan for miners to perform inspection, maintenance or repair actions in areas exceeding the concentration limit.	§ 57.5060(d)	For duration of plan.
3. Control plan	§ 57.5062(b)	1 year beyond duration of plan.
4. Compliance plan verification sample results	§ 57.5062(c)	5 years from sample date.
5. Purchase records noting sulfur content of diesel fuel	§ 57.5065(a)	1 year beyond date of purchase.
6. Maintenance log	§ 57.5066(b)	1 year after date any equipment is tagged.
7. Evidence of competence to perform maintenance	§ 57.5066(c)	1 year after date maintenance performed.
8. Annual training provided to potentially exposed miners	§ 57.5070(b)	1 year beyond date training completed.
9. Sampling method used to effectively evaluate mine particulate concentration, and sample results.	§ 57.5071(d)	5 years from sample date.

(b)(1) Any record listed in this section which is required to be retained at the mine site may, notwithstanding such requirement, be retained elsewhere if the mine operator can immediately access the record from the mine site by electronic transmission.

(2) Upon request from an authorized representative of the Secretary of Labor, the Secretary of Health and

Human Services, or from the authorized representative of miners, mine operators must promptly provide access to any record listed in the table in this section.

(3) An operator must provide access to a miner, former miner, or, with the miner's or former miner's written consent, a personal representative of a miner, to any record required to be maintained pursuant to §57.5071 to the extent the information pertains to the miner or former miner. The operator must provide the first copy of a requested record at no cost, and any additional copies at reasonable cost.

(4) Whenever an operator ceases to do business, that operator must transfer all records required to be maintained by this part, or a copy thereof, to any successor operator who must maintain them for the required period.

EFFECTIVE DATE NOTE: At 70 FR 32966, June 6, 2005, §57.5075 was revised, effective July 6, 2005. At 70 FR 37901, June 30, 2005, technical amendments were incorporated. For the convenience of the user, the revised text is set forth as follows:

§57.5075 Diesel particulate records.

(a) Table 57.5075(a), "Diesel Particulate Recordkeeping Requirements," lists the records the operator must retain pursuant to §§57.5060 through 57.5071, and the duration for which particular records must be retained.

TABLE 57.5075(a).—DIESEL PARTICULATE RECORDKEEPING REQUIREMENTS

Record	Section reference	Retention time
1. Approved application for extension of time to comply with exposure limits.	§57.5060(c)	Duration of extension.
2. Purchase records noting sulfur content of diesel fuel.	§57.5065(a)	1 year beyond date of purchase.
3. Maintenance log	§57.5066(b)	1 year after date any equipment is tagged.
4. Evidence of competence to perform maintenance.	§57.5066(c)	1 year after date maintenance performed.
5. Annual training provided to potentially exposed miners.	§57.5070(b)	1 year beyond date training completed.
6. Record of corrective action	§57.5071(c)	Until the corrective action is completed.
7. Sampling method used to effectively evaluate a miner's personal exposure, and sample results.	§57.5071(d)	5 years from sample date.

(b)(1) Any record listed in this section which is required to be retained at the mine site may, notwithstanding such requirement, be retained elsewhere if the mine operator can immediately access the record from the mine site by electronic transmission.

(2) Upon request from an authorized representative of the Secretary of Labor, the Secretary of Health and Human Services, or from the authorized representative of miners, mine operators must promptly provide access to any record listed in the table in this section.

(3) An operator must provide access to a miner, former miner, or, with the miner's or former miner's written consent, a personal representative of a miner, to any record required to be maintained pursuant to §57.5071 to the extent the information pertains to the miner or former miner. The operator must provide the first copy of a requested record at no cost, and any additional copies at reasonable cost.

(4) Whenever an operator ceases to do business, that operator must transfer all records required to be maintained by this part, or a copy thereof, to any successor operator who must maintain them for the required period.

DIESEL PARTICULATE MATTER—
UNDERGROUND ONLY

SOURCE: 66 FR 5907, Jan. 19, 2001, unless otherwise noted.

EFFECTIVE DATE NOTE: At 66 FR 5907, Jan. 19, 2001, a new undesignated center heading and §§ 57.5060 through 57.5075 were added to subpart D of part 57, effective Mar. 20, 2001. At 66 FR 15032, Mar. 15, 2001, the effective date was delayed until May 21, 2001. At 66 FR 27863, May 21, 2001, the effective date was further delayed until July 5, 2001 and § 57.5067 was amended in paragraph (a) by removing the date "March 20, 2001" and adding in its place "July 5, 2001".

§ 57.5060 Limit on concentration of diesel particulate matter.

(a) After July 19, 2002 and until January 19, 2006, any mine operator covered by this part must limit the concentration of diesel particulate matter to which miners are exposed in underground areas of a mine by restricting the average eight-hour equivalent full shift airborne concentration of total carbon, where miners normally work or travel, to 400 micrograms per cubic meter of air (400_{TC} $\mu g/m^3$).

(b) After January 19, 2006, any mine operator covered by this part must limit the concentration of diesel particulate matter to which miners are exposed in underground areas of a mine by restricting the average eight-hour equivalent full shift airborne concentration of total carbon, where miners normally work or travel, to 160 micrograms per cubic meter of air (160_{TC} $\mu g/m^3$).

(c)(1) If, as a result of technological constraints, a mine requires additional time to come into compliance with the limit specified in paragraph (b) of this section, the operator of the mine may file an application with the Secretary for a special extension.

(2) No mine may be granted more than one special extension, nor may the time otherwise available under this section to a mine to comply with the limit specified in paragraph (b) be extended by more than two years.

(3) The application for a special extension may be approved, and the additional time authorized, only if the application includes information adequate for the Secretary to ascertain:

(i) That diesel-powered equipment was used in the mine prior to October 29, 1998;

(ii) That there is no combination of controls that can, due to technological constraints, bring the mine into full compliance with the limit specified in paragraph (b) within the time otherwise specified in this section;

(iii) The lowest achievable concentration of diesel particulate, as demonstrated by data collected under conditions that are representative of mine conditions using the method specified in § 57.5061; and

(iv) The actions the operator will take during the duration of the extension to:

(A) Maintain the lowest concentration of diesel particulate; and

(B) Minimize the exposure of miners to diesel particulate.

(4) The Secretary may approve an application for a special extension only if:

(i) The mine operator files, the application at least 180 days prior to the

date the mine must be in full compliance with the limit established by paragraph (b) of this section; and

(ii) The application certifies that the operator has posted one copy of the application, at the mine site for 30 days prior to the date of application, and has provided another copy to the authorized representative of miners.

(5) A mine operator must comply with the terms of any approved application for a special extension, and post a copy of an approved application for a special extension at the mine site for the duration of the special extension period.

(d)(1) Mine operators may permit miners engaged in inspection, maintenance, or repair activities, and only in such activities, with the advance approval of the Secretary under the circumstances and conditions defined in paragraphs (d)(2) through (d)(4) of this section, to work in concentrations of diesel particulate matter exceeding the applicable concentration limit under paragraph (a) or (b) of this section.

(2) The Secretary will only provide advance approval:

(i) For inspection, maintenance or repair activities to be conducted:

(A) In areas where miners work or travel infrequently or for brief periods of time;

(B) In areas where miners otherwise work exclusively inside of enclosed and environmentally controlled cabs, booths and similar structures with filtered breathing air; or

(C) In shafts, inclines, slopes, adits, tunnels and similar workings that the operator designates as return or exhaust air courses and that miners use for access into the mine or egress from the mine;

(ii) When the Secretary determines that it is not feasible to reduce the concentration of dpm in the areas where the inspection, maintenance or repair activities are to be conducted to those otherwise applicable under paragraph (a) or (b) of this section; and

(iii) When the Secretary determines that the mine operator will employ adequate safeguards to minimize the dpm exposure of the miners.

(3) The Secretary's determinations under paragraph (d)(2) of this section will be based on evaluating a plan prepared and submitted by the operator no less than 60 days before the commencement of any inspection, maintenance or repair activities. The mine operator must certify in the plan that one copy of the application has been posted at the mine site for 30 days prior to the date of submission, and another copy has been provided to the authorized representative of miners. The plan must identify, at a minimum, the types of anticipated inspection, maintenance, and repair activities that must be performed for which engineering controls sufficient to comply with the concentration limit are not feasible, the locations where such activities could take place, the concentration of dpm in these locations, the reasons why engineering controls are not feasible, the anticipated frequency and duration of such activities, the anticipated number of miners involved in such activities, and the safeguards that the operator will employ to limit miner exposure to dpm, including, but not limited to the use of respiratory protective equipment. The approved plan must include a program for selection, maintenance, training, fitting, supervision, cleaning and use of personal protective equipment and must meet the minimum requirements established in § 57.5005 (a) and (b).

(4) An advance approval by the Secretary for employees to engage in inspection, maintenance, or repair activities will be valid for no more than one year. A mine operator must comply with the conditions of the approved plan [which was the basis of the approval], and must post a copy of the approved plan at the mine site for the duration of its applicability.

(e) Other than pursuant to the conditions required in paragraphs (c) or (d) of this section, an operator must not utilize personal protective equipment to comply with the requirements of either paragraph (a) or paragraph (b) of this section.

(f) An operator must not utilize administrative controls to comply with the requirements of this section.

§ 57.5061 Compliance determinations.

(a) A single sample collected and analyzed by the Secretary in accordance with the requirements of this section shall be an adequate basis for a determination of noncompliance with an applicable limit on the concentration of diesel particulate matter pursuant to § 57.5060.

(b) The Secretary will collect samples of diesel particulate matter by using a respirable dust sampler equipped with a submicrometer impactor and analyze the samples for the amount of total carbon using the method described in NIOSH Analytical Method 5040, except that the Secretary also may use any methods of collection and analysis subsequently determined by NIOSH to provide equal or improved accuracy for the measurement of diesel particulate matter. Copies of the NIOSH 5040 Analytical Method are available by contacting MSHA's, Pittsburgh Safety and Health Technology Center, P.O. Box 18233, Cochrans Mill Road, Pittsburgh, PA 15236.

(c) The Secretary will determine the appropriate sampling strategy for compliance determination, utilizing personal sampling, occupational sampling, and/or area sampling, based on the circumstances of the particular exposure.

§ 57.5062 Diesel particulate matter control plan.

(a) In the event of a violation by the operator of an underground metal or nonmetal mine of the applicable concentration limit established by § 57.5060, the operator, in accordance with the requirements of this section, must—

(1) Establish a diesel particulate matter control plan for the mine if one is not already in effect, or modify the existing diesel particulate matter control plan, and

(2) Demonstrate that the new or modified diesel particulate matter control plan controls the concentration of diesel particulate matter to the applicable concentration limit specified in § 57.5060.

(b) A diesel particulate control plan must describe the controls the operator will utilize to maintain the concentration of diesel particulate matter to the applicable limit specified by § 57.5060. The plan also must include a list of diesel-powered units maintained by the mine operator, information about any unit's emission control device, and the parameters of any other methods used to control the concentration of diesel particulate matter. The operator may consolidate the plan with the ventilation plan required by § 57.8520. The operator must retain a copy of the current diesel particulate matter control plan at the mine site during its duration and for one year thereafter.

(c) An operator must demonstrate plan effectiveness by monitoring, using the measurement method specified by § 57.5061(b), sufficient to verify that the plan will control the concentration of diesel particulate matter to the applicable limit under conditions that can be reasonably anticipated in the mine. The operator must retain a copy of each verification sample result at the mine site for five years. The operator monitoring must be in addition to, and not in lieu of, any sampling by the Secretary pursuant to § 57.5061.

(d) The records required by paragraphs (b) and (c) of this section must be available for review upon request by the authorized representative of the Secretary, the authorized representative of the Secretary of Health and Human Services, or the authorized representative of miners. In addition, upon request by the District Manager or the authorized representative of miners, the operator must provide a copy of any records required to be maintained pursuant to paragraph (b) or (c) of this section.

(e)(1) A control plan established as a result of this section must remain in effect for 3 years from the date of the violation which caused it to be established, except as provided in paragraph (e)(3) of this section.

(2) A modified control plan established as a result of this section must remain in effect for 3 years from the date of the violation which caused the plan to be modified, except as provided in paragraph (e)(3) of this section.

(3) An operator must modify a diesel particulate matter control plan during its duration as required to reflect changes in mining equipment or circumstances. Upon request from the

Secretary, an operator must demonstrate the effectiveness of the modified plan by monitoring, using the measurement method specified by §57.5061, sufficient to verify that the plan will control the concentration of diesel particulate matter to the applicable limit under conditions that can be reasonably anticipated in the mine.

(f) The Secretary will consider an operator's failure to comply with the provisions of the diesel particulate matter control plan in effect at a mine or to conduct required verification sampling to be a violation of this part without regard for the concentration of diesel particulate matter that may be present at any time.

§ 57.5065 Fueling and idling practices.

(a) Diesel fuel used to power equipment in underground areas must not have a sulfur content greater than 0.05 percent. The operator must retain purchase records that demonstrate compliance with this requirement for one year after the date of purchase.

(b) The operator must only use fuel additives registered by the U.S. Environmental Protection Agency in diesel powered equipment operated in underground areas.

(c) Idling of mobile diesel-powered equipment in underground areas is prohibited except as required for normal mining operations.

§ 57.5066 Maintenance standards.

(a) Any diesel powered equipment operated at any time in underground areas must meet the following maintenance standards:

(1) The operator must maintain any approved engine in approved condition;

(2) The operator must maintain the emission related components of any non-approved engine to manufacturer specifications; and

(3) The operator must maintain any emission or particulate control device installed on the equipment in effective operating condition.

(b)(1) A mine operator must authorize and require each miner operating diesel powered equipment underground to affix a visible and dated tag to the equipment at any time the miner notes any evidence that the equipment may require maintenance in order to comply with the maintenance standards of paragraph (a) of this section.

(2) A mine operator must ensure that any equipment tagged pursuant to this section is promptly examined by a person authorized by the mine operator to maintain diesel equipment, and that the affixed tag not be removed until the examination has been completed.

(3) A mine operator must retain a log of any equipment tagged pursuant to this section. The log must include the date the equipment is tagged, the date the equipment is examined, the name of the person examining the equipment, and any action taken as a result of the examination. The operator must retain the information in the log for one year after the date the tagged equipment was examined.

(c) Persons authorized by a mine operator to maintain diesel equipment covered by paragraph (a) of this section must be qualified, by virtue of training or experience, to ensure that the maintenance standards of paragraph (a) of this section are observed. An operator must retain appropriate evidence of the competence of any person to perform specific maintenance tasks in compliance with those standards for one year after the date of any maintenance, and upon request must provide the documentation to the authorized representative of the Secretary.

§ 57.5067 Engines.

(a) Any diesel engine introduced into an underground area of a mine covered by this part after July 5, 2001, other than an engine in an ambulance or fire fighting equipment which is utilized in accordance with mine fire fighting and evacuation plans, must either:

(1) Have affixed a plate evidencing approval of the engine pursuant to subpart E of Part 7 of this title or pursuant to Part 36 of this title; or

(2) Meet or exceed the applicable particulate matter emission requirements of the Environmental Protection Administration listed in Table 57.5067–1. as follows:

TABLE 57.5067–1

EPA requirement	EPA category	PM limit
40 CFR 86.094–8(a)(1)(i)(A)(2)	light duty vehicle	0.1 g/mile.
40 CFR 86.094–9(a)(1)(i)(A)(2)	light duty truck	0.1 g/mile.
40 CFR 86.094–11(a)(1)(iv)(B)	heavy duty highway engine	0.1 g/bhp-hr.
40 CFR 89.112(a)	nonroad (tier, power range)	varies by power range:
	tier 1 kW<8 (hp<11)	1.0 g/kW-hr (0.75 g/bhp-hr).
	tier 1 8≤kW<19 (11≤hp<25)	0.80 g/kW-hr (0.60 g/bhp-hr).
	tier 1 19≤kW<37 (25≤hp<50)	0.80 g/kW-hr (0.60 g/bhp-hr).
	tier 2 37≤kW<75 (50≤hp<100)	0.40 g/kW-hr (0.30 g/bhp-hr).
	tier 2 75≤kW<130 (100≤hp<175)	0.30 g/kW-hr (0.22 g/bhp-hr).
	tier 1 130≤kW≤225 (175≤hp≤300)	0.54 g/kW-hr (0.40 g/bhp-hr).
	tier 1 225≤kW<450 (300≤hp<600)	0.54 g/kW-hr (0.40 g/bhp-hr).
	tier 1 450≤kW≤560 (600≤hp≤750)	0.54 g/kW-hr (0.40 g/bhp-hr).
	tier 1 kW≥560 (hp≥750)	0.54 g/kW-hr (0.40 g/bhp-hr).

Notes:
"g" means grams.
"hp" means horsepower.
"g/bhp-hr" means grams/brake horsepower-hour.
"kW" means kilowatt.
"g/kW-hr" means grams/kilowatt-hour.

(b) For purposes of paragraph (a):

(1) The term "introduced" means any engine added to the underground inventory of engines of the mine in question, including:

(i) An engine in newly purchased equipment;

(ii) An engine in used equipment brought into the mine; and

(iii) A replacement engine that has a different serial number than the engine it is replacing; but

(2) The term "introduced" does not include engines that were previously part of the mine inventory and rebuilt.

EFFECTIVE DATE NOTE: At 66 FR 5907, Jan. 19, 2001, § 57.5067 was added to subpart D of part 57, effective Mar. 20, 2001. At 66 FR 15032, Mar. 15, 2001, the effective date was delayed until May 21, 2001. At 66 FR 27863, May 21, 2001, the effective date was further delayed until July 5, 2001 and paragraph (a) was amended by removing the date "March 20, 2001" and adding in its place "July 5, 2001".

§ 57.5070 Miner training.

(a) Mine operators must provide annual training to all miners at a mine covered by this part who can reasonably be expected to be exposed to diesel emissions on that property. The training must include—

(1) The health risks associated with exposure to diesel particulate matter;

(2) The methods used in the mine to control diesel particulate matter concentrations;

(3) Identification of the personnel responsible for maintaining those controls; and

(4) Actions miners must take to ensure the controls operate as intended.

(b) An operator must retain a record at the mine site of the training required by this section for one year after completion of the training.

§ 57.5071 Environmental monitoring.

(a) Mine operators must monitor as often as necessary to effectively determine, under conditions that can be reasonably anticipated in the mine—

(1) Whether the concentration of diesel particulate matter in any area of the mine where miners normally work or travel exceeds the applicable limit specified in § 57.5060; and

(2) The average full shift airborne concentration of diesel particulate matter at any position or on any person designated by the Secretary.

(b) The mine operator must provide affected miners and their representatives with an opportunity to observe exposure monitoring required by this section. Mine operators must give prior notice to affected miners and their representatives of the date and time of intended monitoring.

(c) If any monitoring performed under this section indicates that the applicable concentration limit established by § 57.5060 has been exceeded, an operator must promptly post notice of the corrective action being taken, initiate corrective action by the next work shift, and promptly complete such corrective action.

(d)(1) The results of monitoring for diesel particulate matter, including any results received by a mine operator from sampling performed by the Secretary, must be posted on the mine bulletin board within 15 days of receipt and must remain posted for 30 days. The operator must provide a copy of the results to the authorized representative of miners.

(2) The mine operator must retain for five years (from the date of sampling), the results of any samples the operator collected as a result of monitoring under this section, and information about the sampling method used for obtaining the samples.

§ 57.5075 Diesel particulate records.

(a) The table entitled "Diesel Particulate Recordkeeping Requirements" lists the records the operator must retain pursuant to §§ 57.5060 through 57.5071, and the duration for which particular records need to be retained. The table follows:

DIESEL PARTICULATE RECORDKEEPING REQUIREMENTS

Record	Section reference	Retention time
1. Approved application for extension of time to comply with final concentration limit.	§ 57.5060(c)	1 year beyond duration of extension.
2. Approved plan for miners to perform inspection, maintenance or repair actions in areas exceeding the concentration limit.	§ 57.5060(d)	For duration of plan.
3. Control plan	§ 57.5062(b)	1 year beyond duration of plan.
4. Compliance plan verification sample results	§ 57.5062(c)	5 years from sample date.
5. Purchase records noting sulfur content of diesel fuel	§ 57.5065(a)	1 year beyond date of purchase.
6. Maintenance log	§ 57.5066(b)	1 year after date any equipment is tagged.
7. Evidence of competence to perform maintenance	§ 57.5066(c)	1 year after date maintenance performed.
8. Annual training provided to potentially exposed miners	§ 57.5070(b)	1 year beyond date training completed.
9. Sampling method used to effectively evaluate mine particulate concentration, and sample results.	§ 57.5071(d)	5 years from sample date.

(b)(1) Any record listed in this section which is required to be retained at the mine site may, notwithstanding such requirement, be retained elsewhere if the mine operator can immediately access the record from the mine site by electronic transmission.

(2) Upon request from an authorized representative of the Secretary of Labor, the Secretary of Health and Human Services, or from the authorized representative of miners, mine operators must promptly provide access to any record listed in the table in this section.

(3) An operator must provide access to a miner, former miner, or, with the miner's or former miner's written consent, a personal representative of a miner, to any record required to be maintained pursuant to § 57.5071 to the extent the information pertains to the miner or former miner. The operator must provide the first copy of a requested record at no cost, and any additional copies at reasonable cost.

(4) Whenever an operator ceases to do business, that operator must transfer all records required to be maintained by this part, or a copy thereof, to any successor operator who must maintain them for the required period.

SUPPLEMENT TO DEFERRED JOINT APPENDIX:

B:CORR-13 at 1;
A:HEAR-3 at 53-54

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Centers for Disease Control
and Prevention (CDC)
National Institute for Occupational
Safety and Health
Pittsburgh Research Laboratory
P.O. Box 18070
Pittsburgh, PA 15236-0070

June 25, 2002

Ms. Deborah K. Green, Esq.
Office of the Solicitor
Mine Safety and Health Administration
1100 Wilson Boulevard - 22nd Floor
Arlington, Virginia 22209

Dear Ms. Green:

I am pleased to respond to your request to clarify if total carbon consists of 60 to 80% elemental carbon? The MSHA/Industry Study of 31 Mines, and two recently completed NIOSH mine studies all support the conclusion that total carbon consists of 60-80% elemental carbon.

If you have any questions or need further assistance, please let me know. Thank you.

Sincerely yours,

Jeffery L. Kohler, Ph.D., CMSP
Director
Pittsburgh Research Laboratory

MSHA Docket No.
AB29-CORR-13

they provide this equipment and everything else to those workers. And again, one of the things that I wanted to talk about was the fact that fresh air supplies, and not negative air, but fresh air supply would allow the other workers that can't pass a job, and they can go to work with that fresh air supply, and it is important.

Some companies will put the money up for that, and provide a job for these workers. Outside of that, they are out of the business, unless they can find something in their own industry that they don't have to be exposed to the air, the contaminated air.

So that is the construction side. OSHA has been growing and has been very important to the industry. A lot more people are surviving accidents, and the safety has increased, and there has been a real improvement.

Anything from other than improving on the levels would be a sad situation. It should not be made worse; it should be made better. So, again, just wanted to speak and give you an opportunity from the construction end, my part of it, being in construction, and somebody that has pleural thickening, which is the beginning of the asbestosis, and living in that environment.

But now I test the workers to make sure that they don't get that situation in their life. Other than that, that is what I had to say, and I appreciate your time. If there are any questions, I would be happy to answer them.

MR. PETRIE: Have you found any workers that would be unable to wear an air supply respirator or a powered air purifying respirator?

MR. ELWELL: As long as they were clean-shaven, no, sir. They can go to work and they can work fine. Nobody would be restricted from going to work and having that air supply. It is highly recommended, and the equipment is out there. So it is available, and it is on the shelf.

MR. PETRIE: Thank you very much.

MR. SEXAUER: If there are no other questions, thank you very much.

MR. ELWELL: Thank you.

MR. SEXAUER: Is there anyone in the audience that would care to address the group?

(No response.)

MR. SEXAUER: Okay. Well, there being nobody else, we will adjourn. Thank you very much.

(Whereupon, at 11:08 a.m., the hearing in the above-entitled matter was concluded.)