

**NEVADA MINING ASSOCIATION**

November 25, 2002

Mr. Marvin Nichols  
Director  
Office of Standards, Regulations, & Variances  
Mine Safety and Health Administration  
1100 Wilson Boulevard, Room 2313  
Arlington, VA 22209-3939

**RE: COMMENTS ON MSHA DPM ANPRM (67 Fed. Reg. 60199  
(September 25, 2002))**

Dear Mr. Nichols:

This letter is submitted on behalf of the Nevada Mining Association (NvMA), in response to MSHA's Advance Notice of Proposed Rulemaking ("ANPRM") on Diesel Particulate Matter ("DPM) exposure published on September 25, 2002 (67 Fed. Reg. 60199).

We appreciate the opportunity to comment on these questions, which are crucial to implementation of the DPM litigation Settlement Agreement of July 15, 2002, reached among the industry, labor and government parties (AngloGold Corporation, Kennecott Greens Creek Mining Co., Getchell Gold Corporation (Getchell), the MARG Diesel Coalition, the Georgia Mining Association, the National Mining Association ("NMA), the Salt Institute, the United Steelworkers of America, and MSHA). As you know, the NvMA represents Nevada's mining industry, and a number of our underground mining members are directly affected by the DPM rule. We have monitored the entire DPM regulatory process closely, and we participated very actively in the initial proposal phase.

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Preliminarily, we appreciate the Agency's decision to provide a 60-day rather than 30-day comment period, as substantially sought by our member, Getchell/Placer Dome America (Getchell/Placer Dome) on September 20, 2002. Like our sister trade association, the NMA, however, we are extremely concerned that essential information required for a final concentration limit that will be both technologically and economically feasible, may not be available within the Agency's present regulatory schedule. We join the NMA and Getchell/Placer Dome in recommending a two-phased rulemaking process in which all issues, other than the final concentration limit, would be resolved by the current July 2003 deadline. This would allow the necessary feasibility research to be carried out before rulemaking on the final limit.

We also believe that the information developed in the draft *31-Mine Study*, conducted by the Agency, industry, and labor during the parties' settlement negotiations, indicates that, in the underground metal mining sector and other affected sectors as well, major feasibility problems with compliance remain. The new partnership with NIOSH, the NMA, and others is designed to conduct in-mine testing on the feasibility of current control technology. We are also working with NIOSH to conduct in-mine feasibility work here in Nevada, and look forward to discussing these efforts in depth with the Agency. We urge MSHA to help facilitate such research and to await and analyze the results of these processes before proposing a final exposure limit.

Our comments follow:

**1. Section 57.5060(a) and (b), Limit on concentration of diesel particulate matter.**

(a) *What are the appropriate interim and final limits if EC is the surrogate?*

Under the terms of the Settlement Agreement, the interim level, for compliance purposes, is the Elemental Carbon (EC) equivalent of the 400 microgram (mcg) Total Carbon (TC) standard contained in the final rule, adjusted by the applicable Error Factor.

We urge MSHA to give serious consideration in the months ahead to retaining the 400 mcg interim limit as the final limit. We, as well as our affected members, believe that the present final limit in the rule, 160 mcg, is unattainable in the foreseeable future for most affected underground metal (and other) mines, and that this conclusion is borne out by the relevant data in the *31-Mine Study*.

Accordingly, we believe it is premature at this time to comment on the appropriate final concentration limit, even with EC as the surrogate. Many substantial issues remain regarding the economic and technologic feasibility of after-treatment control technology - - to the extent that such technology is even available at the present time. Determination of an appropriate final limit must be based on-going research and further data that will shed light on these feasibility concerns.

(b) *What error factor should MSHA use for determining noncompliance on an EC standard?*

In implementing the Settlement Agreement, the litigating parties agreed that the following Error Factors would be applied:

Interim limit: 12.2%

Final limit: 15.4%

We support the use of these factors.

(c) *Are there any interferences in the environment of an underground metal and nonmetal mine that would preclude personal sampling with the impactor when EC is used as the surrogate for DPM?*

The *31-Mine Study* demonstrated that environmental tobacco smoke and oil mist are eliminated as interferences if EC is used as the surrogate, as provided under the Settlement Agreement. However, the *31-Mine Study* did not show that carbonaceous materials in host rock will not interfere with personal sampling. Like the NMA, we are troubled that carbonaceous particulate smaller in diameter than the impactor cut-point may contaminate samples. Further research and data are needed on this subject.

(d) *Is a field blank required if EC is used as the surrogate?*

This could be helpful. A minimum of one field blank per ten samples should be sent in for analysis. This is standard IH practice. The manufacturing problems encountered by SKC in the development and sale of the impactor further justify utilizing a field blank.

**2. Section 57.5060(c) addresses application and approval requirements for an extension of time in which to reduce the concentration of DPM to the final limit.**

(a) *What circumstances would necessitate an extension of time to come into compliance?*

An extension of time is necessary where a mine operator faces either practical, technologic, or economic feasibility problems that preclude compliance. The determination of such feasibility constraints must be site-specific and based on an operator's good faith efforts to reduce DPM.

(b) *What should be the duration of the extension?*

A one-year period that is annually renewable.

(c) *Should MSHA allow more than one extension?*

Yes. Operators must have flexibility in complying with the exposure limits. The NMA has found that, regardless of the representations of control technology manufacturers, in-mine applications often differ substantially from laboratory results. Additionally, as Getchell/Placer Dome points out, engine manufacturers are currently concentrating their resources and attention on new engine technology to comply with EPA engine standards. While this new technology will assist the mining community in the long term, it is unrealistic to expect that manufacturers will expend significant sums on control technology applicable to existing equipment and engines. Because of such realities, MSHA should grant justified requests for additional extensions.

(d) *What actions should mine operators be required to take to minimize DPM exposures if they are operating under an extension?*

Protecting miners by minimizing DPM exposure is the fundamental goal of all involved. Therefore, where an extension is in place, operators should use permissible administrative controls and provide their affected miners with appropriate Personal Protective Equipment (“PPE), i.e., respiratory protective devices.

**3. Section 57.5060(d) addresses certain exceptions to the concentration limit.**

(a) *Would this provision be necessary if MSHA includes in the final rule its current hierarchy of controls for its other exposure-based health standards for metal and nonmetal mines?*

No. The current hierarchy of controls, if applied to all affected miners, renders this provision unnecessary. This provision refers only to inspection, maintenance, and repair. The settlement agreement recognized that, regardless of any particular mining activity, all affected miners are to be protected. Thus, in appropriate circumstances, miners would be permitted to work in concentrations of DPM exceeding the concentration limits, so long as appropriate protective administrative and/or PPE measures were being used.

(b) *What would be the impact of removing this provision?*

Removal, combined with implementation of the triad of DPM exposure controls, would increase the protection available to all affected miners.

**4. Section 57.5060(e) prohibits use of personal protective equipment to comply with the concentration limits; and sec. 57.5060(f) prohibits use of administrative controls to comply with the concentration limits.**

(a) *Currently, there is no approved respirator for use in protecting miners exposed to DPM atmospheres. If MSHA includes requirements for some form of respiratory protection, what type of respirators would be protective of miners? What are their specifications?*

The NMA has reported that 3M Corporation will be submitting comments on the availability of respirators sufficient to protect miners from DPM. The NMA has also been informed that these devices have efficiencies of 95 or 100 % in filtering particulate smaller than comparable DPM particles. We join with the NMA and Getchell/Placer Dome in

suggesting a joint industry/MSHA research program to validate the effectiveness of any such devices for underground mining.

(b) *Should MSHA propose to require mine operators to implement a written respiratory protection program when miners must wear respiratory protection?*

MSHA should not propose a separate written respiratory protection plan. MSHA already has respiratory protection regulations, and the use of respiratory protection should not require additional paperwork, and can be covered under the existing regulations.

(c) *Should MSHA require mine operators to apply to the Secretary for approval to use respiratory protection? Should the application be in writing? What conditions should MSHA require mine operators to meet before approval is granted to use respirators?*

While the NvMA does not object to applying all current respiratory protection regulations to DPM protection, we do not believe there is any value requiring operators to file plans with District Managers before utilizing PPE. The paperwork involved would not be a value-added use of MSHA personnel. The plan can be made available at the mine site. MSHA should permit operators to use PPE at their discretion, subject to existing regulations.

(d) *Should MSHA propose to require mine operators to implement a written administrative control plan when they use administrative controls to reduce miners' exposures to the required limit?*

Consistent with the preceding response, NvMA objects to any proposal for written administrative control plans.

**5. Section 57.5061(b) addresses how MSHA will collect and analyze samples for compliance purposes.**

We strongly support the change to EC from TC as the sampling surrogate for DPM.

**6. Section 57.5061(c) provides for MSHA to conduct personal, area, and occupational sampling for compliance determinations.**

(a) *What would be the cost implications for mine operators to conduct personal sampling of miners' DPM exposures if EC is the surrogate?*

NvMA is unaware of any additional cost implications to operations regardless of whether EC or TC is used to determine compliance. The costs may actually decrease as fewer false readings due to contamination should be generated.

(b) *What experience do mine operators have with DPM sampling and analysis?*

A number of NvMA member mines have experience with DPM sampling, but some of this work pre-dated the SKC impactor equipment. The data from the 31 mines participating in the settlement-related study should also be considered. Further in-mine sampling is necessary to implement the goals underlying the Settlement Agreement. The results of such sampling should be reflected in the present regulatory process before proposal of a final limit.

(c) *Is there experience with DPM sampling in other industries and other countries?*

NvMA is aware that a group in Canada (DEEP) has been researching technology to reduce DPM in occupational settings. The EPA's work on diesel exposure is not applicable to occupational settings.

**7. Section 57.5062 addresses the diesel particulate control plan.**

Rather than commenting on the sub-questions, we agree with the NMA that DPM control plans are not necessary and would impose unwarranted costs. Operator compliance can be adequately assessed by the operators' environmental monitoring and MSHA's compliance sampling. If out of compliance, operators will need to take appropriate actions developed for abatement, and abatement sampling will reflect whether the requisite progress has been made.

The hierarchy of controls, including administrative controls and PPE, will ensure the protection of miners during non-compliance situations. A formal plan would add little or nothing to this established system, which is also applicable to many other MSHA health regulations.

NvMA strongly urges MSHA to eliminate the control plan from the final rule. If enforcement concerns develop at a particular site, MSHA can adequately address that problem with existing enforcement tools.

**8. Technological and economic feasibility.**

(a) *What experience do you have modifying ventilation systems to reduce miners' exposure to DPM?*

Preliminary findings indicate that any major modifications to ventilation systems will be far more expensive and much less effective than MSHA has contemplated through use of its present estimates.

(b) *What were the costs to mine operators for auxiliary fans, booster fans, flexible ducts, or major ventilation upgrades necessary to meet the interim concentration limit?*

Preliminary indications also indicate that installation of these upgrades would be much more expensive and much less effective than projected through the estimator.

(c) *What has been the experience of mine operators with retrofitting existing diesel-powered equipment, especially in the range with less than 50 hp, as well as equipment that has greater than 250 hp, with DPM control devices? What adjustment did mine operators have to make to DPM control devices before there were reductions in DPM levels?*

We do not have enough data to comment.

(d) *What are the engineering costs associated with retrofitting?*

In general, engineering costs associated with retrofitting vary considerably. Retrofitting work may involve the replacement of exhaust systems and relocation of fuel and other lines. Such work could be expensive, and needs to be analyzed on a site-by-site basis.

(e) *What technical assistance should MSHA provide to mine operators in retrofitting DPM control devices or evaluating a mine's ventilation system, or filtration systems in environmental cabs?*

MSHA should make widely available helpful information regarding retrofitting, ventilation, and filtration. The Agency should also provide assistance on specific issues at

particular sites. The Agency should refrain, however, from forcing repeated, costly experiments at specific mines through the enforcement system, and should instead accelerate cooperative programs that may produce general information beneficial to a number of mines.

(f) *Are there circumstances where mine operators have had to change an engine model to accommodate DPM control devices? What were the costs of the engine models?*

We do not have sufficient data to comment.

(g) *How much did control devices cost for different horse-powered engines?*

Not enough data to comment.

(h) *Did mine operators have to modify the exhaust system to apply the DPM control? What were the costs for doing so?*

Not enough data to comment.

(i) *What are the advantages, disadvantages, and relative costs of different DPM control devices?*

Not enough data to comment.

(j) *What types of DPM control devices are commercially available and how much do these devices cost?*

We adopt the NMA's response to this question.

(k) *What are the engineering costs of the DPM control devices?*

Not enough data to comment.

(l) *What current reductions in EC levels are mine operators experiencing from having installed DPM control devices? What is the experience with filtration efficiencies?*

Not enough data to comment.

(m) *What has been the experience of mine operators with the useful life of DPM filters?*

Not enough data to comment.

(n) *Is there any information available with DPM control filters in non-mining industries or in other countries?*

We are aware that some preliminary data have been developed under the ongoing DEEP and VERT Programs that should be available to MSHA.

(o) *What has been the experience of mine operators with DPM filters? Did filters fail or did they perform as the manufacturer predicted? If they failed, what were the causes of filter failure? What could be done to prolong the life of DPM filters?*

Our understanding is that operator experience to date with currently available filter systems is very limited. DEEP field evaluations have yielded preliminary results that are varied and inconclusive. In general, field experience has not usually matched claimed laboratory results.

(p) *Do mine operators have any technical data on their experience with using cabs with filtered breathing air?*

Not enough data to comment.

(q) *Have you experienced increases in NO<sub>2</sub> when using any of the following: (1) A base-metal catalyzed filter; (2) a non-catalyzed filter; or (3) platinum-based catalyzed filter?*

The increase of NO<sub>2</sub> levels associated with some of these filters is now recognized. MSHA has indicated that this problem occurs with use of platinum-based, catalyzed filters. The other types of filters are not as effective in reducing relatively high levels of CO, HC and DPM. As the NMA states in its comment, non-platinum based filters do not, in most instances, attain sufficient temperatures for passive regeneration to occur and, thus, are of limited use for control purposes.

These serious problems highlight the feasibility issues faced by the mining community with currently available filters. More in-mine testing is needed

(r) *What effect do high altitudes have on the ability of the DPM control device to reduce DPM exposures?*

Not enough data to comment

(s) *What costs did mine operators incur for filters that were regenerated off board?*

Not enough data to comment.

(t) *What costs did mine operators incur for filters that were regenerated on board?*

Not enough data to comment.

(u) *Would active regeneration be feasible for your mine; such as off-board filter regeneration in an oven, or on-board electrical regeneration?*

Not enough data to comment.

(v) *What are the costs to mine operators for new engines and venting for filter ovens?*

Not enough data to comment.

(w) *Would fuel additives used to facilitate regeneration be feasible?*

NvMA and its members may be willing to experiment with the use of fuel additives to enhance regeneration, if the option is compatible with their equipment. Further in-mine research and data are needed.

(x) *Are there any significant technologies for controlling DPM when EC is the surrogate?*

Not enough data to comment.

**SUMMARY RESPONSE TO QUESTION 8:** Most of our answers to Question 8 reflect our members' lack of in-mine experience with various control options. Their relative lack of experience is probably not unique among affected mines at this time. As Getchell/Placer Dome points out, individual operators should not be expected to outlay large expenditures in experimenting with a range of unproven options, in effect, each trying to "invent the wheel" in their mines. These are the areas where carefully structured and targeted fieldwork involving both NIOSH and MSHA can be invaluable to the entire affected mining community. As noted above, we have already agreed with NIOSH to facilitate some of this vitally needed work in our members' mines. We have also offered to MSHA to partner in such collaborative in-mine research and testing. As emphasized throughout, MSHA should not propose a final concentration limit until this kind of work has yielded significant information on feasibility.

## **9. Paperwork Burden Issues.**

*What paperwork and other costs will you incur if changes are made to the DPM standard, particularly development of a written program for use of administrative controls, use of respiratory protection, and for development of a control plan?*

We believe that requirements for an administrative control plan, a respiratory protection plan, and a DPM control plan will impose unwarranted costs and burdens, while producing little benefit. Administrative controls and respiratory protection procedures can be handled adequately through simple documents, and the existing, normal system of compliance and enforcement can adequately address the control of DPM exposure.

The NvMA appreciates this opportunity to comment on the Agency's ANPRM. We continue to extend our hand to work cooperatively with MSHA and others in the mining community to address these DPM issues.

Respectfully submitted,



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cc: Jonathan Brown  
Bruce Watsman  
Wes Leavitt  
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