NATIONAL STONE, SAND & GRAVEL ASSOCIATION

Natural building blocks for quality of life

March 31, 2005

Air and Radiation Docket
U.S. Environmental Protection Agency
Mail Code 6102T
1200 Pennsylvania Ave, NW
Washington, DC 20460

Re: Docket ID No. OAR-2001-0017
U.S. EPA Particulate Matter Staff Paper, January 2005 Draft

Dear Docket Manager:

The National Stone, Sand & Gravel Association (NSSGA) submits the following comments concerning information provided in the document titled, "Review of the National Ambient Air Quality Standards for Particulate Matter, Policy Assessment of Scientific and Technical Information, OAQPS Staff Paper – Second Draft[1], dated January 2005.

Based near the nation's capital, NSSGA is the world's largest mining association by product volume. Its member companies represent more than 90 percent of the crushed stone and 70 percent of the sand and gravel produced annually in the U.S. and approximately 115,000 working men and women in the aggregates industry. During 2004, a total of about 2.79 billion metric tons of crushed stone, sand and gravel, valued at $16 billion, were produced and sold in the United States.

NSSGA is a participant in the Coalition for Coarse Particle Regulation[2] ("Coalition") who is submitting separate comments concerning the coarse particulate matter issues addressed in the Staff Paper. NSSGA concurs with the technical comments provided by the Coalition and we do not see the need to repeat their comments as part of this NSSGA submittal. All of the comments provided here are in addition to those provided by the Coalition.

NSSGA is submitting five specific comments concerning the Staff Paper. The lack of comments on other issues does not necessarily imply NSSGA concurrence with the statements and positions taken by EPA in the Staff Paper.

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[1] This document is termed the "Staff Paper" in the remainder of these comments.
[2] The term "Coalition" in the remainder of these comments refers to the Coalition for Coarse Particle Regulation.

1. The Staff Paper orientation should change to be more consistent with the stated objected to "bridge the gap" between scientific information and policy issues.

NSSGA agrees with the statement included on page 1-1 of the Staff Paper that the purpose of the document is to "bridge the gap" between the scientific information included in the Particulate Matter ("PM") Criteria Document ("CD") and the policy issues concerning possible revisions to the particulate matter national ambient air quality standards ("NAAQS"). However, with respect to some issues, the Staff Paper simply presents a summary of the scientific information included in the CD and fails to properly address important policy issues. One of the most important of these policy issues is the ability of state and other regulatory agencies to develop effective regulatory control strategies to implement the NAAQS. A second important issue is the regional differences in the chemical composition of fine particulate matter. A third issue is the development of PM NAAQS that are protective of health of communities without unnecessary impact on the economic well-being of the communities. Comments relating to three issues are provided in these comments.

2. EPA should adopt PM NAAQS that can be implemented effectively.

NSSGA has repeatedly submitted technical comments concerning the various drafts of the CD and the first draft of the Staff Paper (August 2003) concerning PM control strategy implementation issues. Specifically, NSSGA has recommended that EPA adopt PM_1 as the indicator of fine particulate matter instead of $PM_{2.5}$. The use of PM_1 would eliminate what EPA has recognized as the "tail" of the coarse particulate distribution in the inter-modal size range of 1 to 2.5 micrometers[3].

NSSGA has previously pointed out that the use of PM_1 does not in any way eliminate any specific types of particulate matter from regulatory requirements. Sources of particulate matter do not emit monodisperse particulate matter of any specific particle size. Furthermore, secondary particles formed in the atmosphere do not form monodisperse particulate matter. As the scientific information in the CD demonstrates, ambient particulate matter occurs in broad distributions.

The ambient concentrations of fine particulate matter should be addressed by control of recognized sources of fine particulate matter. The ambient concentrations of coarse particulate matter should likewise be addressed by the control of the sources of coarse particulate matter. These two separate control strategy approaches are required both by common sense and by court ruling. Furthermore, the scientific information provided in the CD demonstrates that the health concerns regarding the major constituents in the fine particulate matter mode are considerably greater than the health concerns of the material in the coarse particulate matter mode. Specially, the CD indicates that crustal materials from soils, natural fugitive dust sources, unpaved roads, and some industrial sources are not closely associated with health effects emphasized in the CD.

The inclusion of the "tail" of the coarse particulate matter distribution in the indicator used as a measure of the fine particulate matter distribution substantially complicates the problems faced by state, local, and tribal authorities in implementing the PM NAAQS. Specifically, the use of the $PM_{2.5}$ indicator as a measure of fine particulate matter means that future control strategies developed by regulatory agencies will have to consider the inclusion of a large number of fugitive dust sources that emit coarse particulate matter. These fugitive dust sources include natural sources (including weather related episodic conditions), global transport of fugitive dust from Asia and Africa, salts from evaporation of sea spray, and to a lesser extent fugitive dust sources from unpaved roads and industrial sources. These highly diverse and poorly characterized emission sources account for only a small

[3] All particle sizes are expressed in aerodynamic diameter in these comments.

fraction of the fine PM; however, the consideration of these sources in fine PM control strategy development will considerably complicate the agency efforts to develop an effective control strategy. Furthermore, the inclusion of these fugitive dust and natural emission sources could distract regulatory agencies attempting to control the fine particulate matter sources that generate the primary PM and secondary PM that is most relevant to the epidemiological studies addressed in the CD.

NSSGA believes that the issue of overlap of the fine and coarse PM modes caused by the ill-advised use of $PM_{2.5}$ as an indicator of fine PM can still be addressed effectively in the PM NAAQS. NSSGA recommends that the NAAQS be structured to allow state, local, and tribal authorities to use PM_1 ambient air monitors in lieu of $PM_{2.5}$ ambient air monitors in geographical areas where there is significant impact of natural fugitive dust emissions, global fugitive dust transport, sea spray, and unpaved roads. This approach would allow these jurisdictions to compile ambient air quality data that is not biased by the inclusion of coarse PM that is regulated separately under the coarse PM NAAQS. It would allow these jurisdictions to focus instead on the same types of fine PM that are regulated in other geographical regions not significantly affected by these types of sources.

Ambient monitoring of PM_1 can be conducted using methods very similar to federal reference methods for $PM_{2.5}$. In fact, the existing $PM_{2.5}$ monitoring instruments can be modified to measure PM_1. Accordingly, regulatory agencies could easily convert to the measurement of PM_1 if it became apparent that the ambient air quality data and, accordingly, the control strategy was unduly influenced by the types of sources listed above.

Due to the regional differences in the chemical composition of particulate matter, the decision of which fine PM indicator to use (PM_1 versus $PM_{2.5}$) should be made by state, local, and tribal authorities rather than on a national level. This is the best approach to ensure regional fairness and to ensure that each jurisdiction is focusing on the types of fine PM of greatest health concern. Without this flexibility in the choice of the fine PM indicator, the fine PM NAAQS will be inherently unfair for large geographical areas dominated by natural emissions and crustal particulate matter emissions. The areas most impacted include the southwest, upper midwest, and some coastal areas.

3. EPA should allow states to demonstrate attainment of an air quality control region with the PM NAAQS by subtracting the portion of the PM sample due to crustal material.

NSSGA has previously submitted comments to EPA encouraging the use of limited chemical analyses of $PM_{10-2.5}$ and $PM_{2.5}$ filters to determine the loadings of crustal material. In air quality control regions where the measured and/or calculated $PM_{2.5}$ concentration are only slightly above the promulgated NAAQS, it should be possible for states to analyze selected filter samples that had the maximum particulate loadings. If these analyses indicated that the exceedance of the NAAQS on selected days was due solely to natural emissions of crustal material that could not be controlled by a SIP control strategy, then the area should be considered in conformance with the NAAQS. This approach is a logical extension of the "natural events" policy adopted by EPA regarding natural emissions of crustal material. Furthermore, it is consistent with the health effects data summarized in the Criteria Document concerning the lack of adverse health impact of natural crustal particulate matter.

4. EPA should continue to use spatial averaging in setting a $PM_{2.5}$ annual average standard

NSSGA recommends that EPA continue to use spatial averaging in setting an annual average fine PM NAAQS. As EPA has clearly stated, spatial averaging is consistent with the epidemiological data used as a basis for the existing fine PM NAAQS. Spatial averaging is logical considering that fine PM travels long distances and has a high extent of geographical homogeneity. Where there are isolated fine PM monitors having substantially higher concentrations than others in the same geographical region, these are usually impacted by local sources of primary fine PM that are best addressed using the 24-hour average NAAQS.

The use of spatial averaging provides the most flexibility to state, local, and tribal authorities in implementing the fine PM NAAQS. This flexibility ensures that the fine PM control strategies can be tailored to each area and that regulatory efforts focus on the broad geographical areas of higher concern rather than isolated areas affected by local primary fine PM standards. This approach is most consistent with the scientific information provided in the CD and with the approach that has been previously promulgated by EPA for fine PM.

If EPA has concerns about the application of spatial averaging, these can be easily addressed by refining the criteria used to determine the appropriateness of this approach. If these requirements are revised, NSSGA recommends that EPA respect the need for state, local, and tribal authorities to have the flexibility necessary to adapt to the specific needs of their community. The fine PM data summarized in the CD do not support a heavy handed, highly uniform approach to fine PM in each geographical region.

5. The fine PM annual standard range of 15 $\mu g/m^3$ should not be changed at this time.

The fine PM limit of 15 $\mu g/m^3$ is a stringent standard that is protective of public health. The scientific information provided in the CD does not justify lowering the standard at this time. The information provided in the CD also demonstrates the complexity of the fine PM issue and the lack of important information concerning a number of subjects including, but not limited to, the following:

- The specific physiological mechanisms responsible for adverse health effects and the specific chemical constituents in fine PM that are directly associated with these health effects
- The health effects of biological contaminants on the surfaces of fine particles
- The adequacy of centrally positioned ambient monitors to adequately characterize the cumulative exposure outdoors and indoors
- The importance of ultrafine particles in general, and in specific constituents in ultrafine particles, in causing adverse health effects.

Research into these subjects should be conducted before considering any reductions in the existing fine PM NAAQS.

Delaying a change in the fine PM NAAQS is especially appropriate considering that the fine PM ambient air quality data that has been compiled primarily since 1999 has clearly demonstrated that fine PM levels are already decreasing rapidly, probably due to other regulatory initiatives not related to the PM NAAQS. This is clearly shown in the data provided in the CD and in Figure 2-8 on page 2-28 of the Staff Paper. The fine PM ambient concentrations have decreased 6% to 20% in six of the seven geographical regions shown in Figure 2-8. These are rapid and significant trends in fine PM concentrations.

Considering that substantial progress is already being made in reducing fine PM ambient levels, EPA can now direct resources to analyze the four bulleted issues listed above to determine the best means to minimize health effects relating to fine PM.

Thank you for reviewing these technical comments and recommendations concerning the second draft of the Staff Paper.

Sincerely,

John S. Hayden, PG, REM
Vice President, Environmental Services