California Environmental Protection Agency

Air Resources Board

Final Statement of Reasons for Rulemaking

Including Summary of Comments and Agency Responses

PUBLIC HEARING TO CONSIDER
THE PROPOSED ASBESTOS AIRBORNE TOXIC CONTROL MEASURE
FOR CONSTRUCTION, GRADING, QUARRYING AND SURFACE
MINING OPERATIONS

Public Hearing Date: July 27, 2001
Agenda Item No.: 01-6-7

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State of California
AIR RESOURCES BOARD

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I. GENERAL

On July 27, 2001, the Air Resources Board (ARB or Board) conducted a public hearing to consider an Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations: contained in section 93105, title 17, California Code of Regulations (CCR). The ATCM will require dust mitigation measures when construction, grading, quarrying, and surface mining operations are carried out in areas where naturally-occurring asbestos is found or is likely to be found. The Staff Report: Initial Statement of Reasons for the Proposed Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations, released to the public on June 8, 2001 (staff report), is incorporated by reference herein. At the July 27, 2001, hearing, the Board approved the proposed ATCM with various modifications. The modifications made to the ATCM were made available for a 15-day public comment period from December 19, 2001, to January 15, 2002. This Final Statement of Reasons for Rulemaking (FSOR) updates the staff report by identifying and explaining the modifications that were made to the original proposal. The FSOR also summarizes the written and oral comments received during the 45-day comment period preceding the July 27, 2001, public hearing, the hearing itself, and the 15-day comment period for proposed modifications, and contains the ARB's responses to those comments.

In 1990, the Board adopted an Asbestos ATCM for Asbestos-Containing Serpentine. The 1990 Asbestos ATCM prohibited the use of serpentine aggregate on unpaved surfaces if the asbestos content is greater than five percent. Information from ambient air monitoring studies and dust emission models developed since the adoption of the 1990 ATCM demonstrates a potential for elevated exposures and risks for individuals living near unpaved roads surfaced with asbestos-containing aggregates and from construction, grading, and mining activities carried out in areas where naturally-occurring asbestos is found. In 2000, the Board approved amendments to the 1990 ATCM for surfacing applications. The amendments prohibited the use of aggregate most likely to contain asbestos in unpaved surfacing applications unless the

asbestos content is measured and found to be less than 0.25 percent. In 2001, ARB staff proposed the current rulemaking action: the Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations.

The ARB has determined that the adoption of the Asbestos ATCM will not impose a mandate upon or create costs or savings, as defined in Government Code section 11346.5(a)(6), to any school district. However, the ARB has determined that the adopted regulatory action will impose a mandate upon and create costs to local agencies (i.e., the local air pollution control and air quality management districts; the "districts"). The costs to the districts can be fully recovered by fees that are within the districts' authority to assess under Health and Safety Code sections 42311 and 40510. In other words, the districts have the authority to levy service charges, fees, or assessments sufficient to pay for the program or level of service within the meaning of section 17556 of the Government Code. Therefore, the Executive Officer has determined that the adoption of this regulatory action imposes no costs on local agencies that are required to be reimbursed by the State pursuant to Part 7 (commencing with section 17500), Division 4, Title 2 of the Government Code, and does not impose a mandate on local agencies that is required to be reimbursed pursuant to Section 6 of Article XIII B of the California Constitution.

The Air Resources Board (ARB) has determined that no reasonable alternative considered by the agency or that has otherwise been identified and brought to the attention of the agency would be more effective in carrying out the purpose for which the regulatory action was proposed, or would be as effective and less burdensome to affected private persons or businesses, than the action taken by the ARB.

II. MODIFICATIONS MADE TO THE ORIGINAL PROPOSAL

Various modifications to the original proposal were made to address comments received during the 45-day public comment period, and to clarify the regulatory language. These modifications are described below. A “Notice of Public Availability of Modified Text,” together with a copy of the modified sections of the Asbestos ATCM, was mailed on December 19, 2001, to each of the individuals described in subsections (a)(1) through (a)(4) of section 44, Title 1, CCR. Additionally, this notice was made available on ARB's website. By these actions, the modified Asbestos ATCM was made available to the public for a comment period from December 19, 2001, to January 15, 2002, pursuant to Government Code section 11346.8. To be consistent with the terminology customarily used for rulemaking actions, the FSOR will refer to this comment period as the “15-day comment period” even though a total of 27 days was actually allowed for public comment because the Christmas and New Years holidays occurred during the comment period, and staff wanted to provide the public with some extra time. Responses to comments made during the 15-day comment period for these modifications are presented in Section III of this FSOR. After the close of the 15-day comment period, the Board’s Executive Officer determined that no additional modifications should be made to the Asbestos ATCM with the exception of the non-substantial or solely grammatical modifications described below. The Executive Officer

subsequently issued Executive Order G-02-026, which adopted the proposed Asbestos ATCM.

General Exemptions (subsection (c))

The term "naturally-occurring asbestos" was deleted from subsection (c)(1) to avoid any confusion about the intent of the geologic exemption. The geologic exemption is not intended to allow an area with ultramafic rock to receive an exemption based on a claim that there is no naturally-occurring asbestos in the ultramafic rock. The originally proposed language was intended to allow an exemption for an area that contains no ultramafic rock (even though the map indicates that the area is located in a geographic ultramafic rock unit) <u>or</u> any known deposits of naturally-occurring asbestos. However, because of the concern on the part of some that this language was confusing, and because subsection (b)(2) makes the regulation applicable if naturally-occurring asbestos is known to occur outside of a geographic ultramafic rock unit, staff made this modification to the regulatory language.

New language was also added (subsection (c)(2)) to specify that a regulatory modification will be proposed to allow an exemption if a method is developed that can accurately demonstrate that property located in an ultramafic geographic rock unit has no detectable asbestos in the area to be disturbed. The remainder of subsection (c) was renumbered to accommodate this change.

Modifications were made to the language of subsection (c)(3) to clarify which regulatory requirements apply to the construction of roads at agricultural or timber harvesting operations. The modified language specifies that construction of roads is subject to the requirements of subsection (e) if the road is part of a construction or grading operation, quarry, or surface mine, and is subject to the requirements of subsection (d) if the road is <u>not</u> part of a construction or grading operation, quarry, or surface mine.

Subsection (c)(4) was modified to clarify that the exemption for homeowners and tenants only applies to residential property.

Requirements for Road Construction and Maintenance (subsection (d))

Extensive modifications were made to this subsection. The modifications generally provide more flexibility for road construction projects and make the performance standards consistent with the requirements for other construction, grading, quarrying, and surface mining operations. Specifically, the requirement that dust control measures must be sufficient to prevent the emission of visible dust to the ambient air has been changed to require that the following specific actions must be taken:

- Unpaved areas subject to vehicle traffic must be stabilized by being kept wetted, treated with a chemical dust suppressant, or covered with material that contains less than 0.25 percent asbestos;

- Vehicles and equipment may not travel more than 15 miles per hour unless the road surface and surrounding area are sufficiently stabilized to prevent the emission of dust that is visible crossing the project boundaries;
- Storage piles and disturbed areas not subject to vehicular traffic must be stabilized by being kept wetted, treated with a chemical dust suppressant, or covered with material that contains less than 0.25 percent asbestos; and
- Activities must be conducted so that no track-out from any road construction project is visible on any paved roadway open to the public.

In addition a subsection was added specifying that equipment and operations must not cause the emission of any dust that is visible crossing the project boundaries.

Air Monitoring for Asbestos (subsection (g))

Subsection (g) was modified to add the phrase "Pursuant to the requirements of Health and Safety Code section 41511" to the beginning of the first sentence in subsection (g). This is a nonsubstantial clarification that references the underlying statutory authority authorizing the APCO to require air monitoring. The modification makes this ATCM consistent with the ATCM for Surfacing Applications, which contains the same language in section 93106(g), title 17, CCR.

Definitions (subsection (i))

Two additional definitions were added to help clarify the provisions of subsection (d) (Requirements for Road Construction and Maintenance). A definition was added for “Project boundaries” to clarify that this term means the right-of-way and any construction easements adjacent to and necessary for the purposes of a specific road construction project or maintenance activity. A definition was also added for “Road Construction and Maintenance” to clarify the type of activities that subsection (d) applies to (i.e., the activities undertaken to build roads, highways, railroads, bridges, culverts, drains and other works incidental to road or highway construction, and maintenance activities that involve grading or excavation). This definition also clarifies that the construction of rest stops, maintenance buildings, or parking lots are not “road construction and maintenance,” and that these excluded activities are subject to the requirements of subsection (e).

Structural and Organizational Changes to the ATCM

In addition the modifications described above, a number of structural and organizational changes were made throughout the regulation to improve its clarity and readability. The changes included renumbering some subsections and minor changes to the wording and punctuation to clarify the meaning of the provisions. Changes were also made throughout the regulation to make consistent the references to material containing less than 0.25 percent asbestos.

Non-substantial or solely grammatical modifications made after the close of the 15-Day comment period

In addition to the modifications described above, the following non-substantial or solely grammatical modifications were made after the close of the 15-day comment period:

- §93105(f)(2)(A), the semicolon following the word "discovery" was deleted and replaced with a period;
- §93105 Appendix A, Geologic Atlas of California: Fresno, a period was added to the "L" in "Burnett, J.L.";
- §93105 Appendix A, Geologic Atlas of California: Westwood, the comma after "Lyndon, P.A.," was deleted;
- §93105 Appendix A, Geologic Map of the Santa Rosa Quadrangle, "Wagner and D.L.," was changed to read "Wagner, D.L."; and
- §93105 Appendix A, Geologic Map of San Bernardino Quadrangle, the comma after "Bortugno, E.J.," was deleted.

III. SUMMARY OF COMMENTS AND AGENCY RESPONSES

The Board received numerous written and oral comments in connection with the 45-day comment period, the July 27, 2001, hearing, and the 15-day comment period for this regulatory action. A list of commenters is set forth below, identifying the date and form of all comments that were timely submitted. Following the list is a summary of each objection or recommendation made regarding the proposed action, together with an explanation of how the proposed action has been changed to accommodate the objection or recommendation, or the reasons for making no change.

A. Responses to Comments Received During the 45-day Public Comment Period

Comments Received During the 45-day Public Comment Period and Board Hearing
(Note: Comments received during the 15-day comment period are listed separately in section D of this FSOR.)

Abbreviation	Commenter
ACAPCD	Ms. Karen Huss Air Pollution Control Officer Amador County Air Pollution Control District written testimony: July 19, 2001

ALAC	Mr. Earl Withycombe, Chair ALAC/CTS Government Relations Committee American Lung Association California Thoracic Society written testimony: July 23, 2001 written testimony: July 27, 2001 oral testimony: July 27, 2001
BAAQMD	Ms. Ellen Garvey Executive Officer Bay Area Air Quality Management District written testimony: July 25, 2001
BCAQMD	Mr. W. James Wagoner Assistant Air Pollution Control Officer Butte County Air Quality Management District written testimony: July 27, 2001 oral testimony: July 27, 2001
CFA	Mr. Mark S. Rentz' Esq. Vice President, Environmental and Legal Afairs California Forestry Association written testimony: July 25, 2001
CMA	Ms. Denise M. Jones Executive Director California Mining Association written testimony: June 24, 2001
	Mr. Adam Harper California Mining Association oral testimony: July 27, 2001
CMAC	Ms. Linda A. Falasco Executive Director Construction Materials Association of California written testimony: July 25, 2001
	Mr. Charles Rea Assistant Executive Director Construction Materials Association of California oral testimony: July 27, 2001

Cunningham	Mr. Eugene Cunningham The Citizens of California written testimony: July 27, 2001 oral testimony: July 27, 2001
DMG	Mr. James F. Davis State Geologist Department of Conservation Division of Mines and Geology (California Geological Survey) written testimony: July 25, 2001
	Mr. Ronald Churchill Department of Conservation Division of Mines and Geology oral testimony: July 27, 2001
EDCEMD	Mr. Jon A. Morgan Director El Dorado County Environmental Management Department written testimony: July 24, 2001 oral testimony: July 27, 2001
JohnsonJ	Mr. James Johnson written testimony: July 24, 2001 oral testimony: July 27, 2001
JohnsonT	Ms. Toni Johnson written testimony: July 24, 2001 oral testimony: July 27, 2001
KNF	Ms. Margaret J. Boland Forest Supervisor Klamath National Forest written testimony: July 24, 2001
LCAQMD	Mr. Robert Reynolds Air Pollution Control Officer Lake County Air Quality Management District written testimony: June 26, 2001 written testimony: July 27, 2001 oral testimony: July 27, 2001

	Mr. Ross L. Kauper Deputy Air Pollution Control Officer Lake County Air Quality Management District written testimony: July 27, 2001 oral testimony: July 27, 2001
McMahan	Mr. Lance McMahan written testimony: July 24, 2001
MBUAPCD	Mr. Douglas Quetin Air Pollution Control Officer Monterey Bay Unified Air Pollution Control District written testimony: July 25, 2001
FRC	Ms. Janna Scott Forest Resources Council oral testimony: July 27, 2001
Maidu Group	Ms. Alice Q. Howard Conservation Chair Maidu Group of the Mother Load Chapter of the Sierra Club written testimony: July 19, 2001 oral testimony: July 27, 2001
NSCAPCD	Mr. Alex V. Saschin Air Quality Engineer Northern Sonoma County Air Pollution Control District written testimony: July 25, 2001
PCAPCD	Mr. Todd K. Nishikawa Acting Air Pollution Control Officer Placer County Air Pollution Control District written testimony: July 23, 2001
Pechner	Ms. Freda D. Pechner Attorney At Law Written testimony: July 27, 2001
PW	Mr. Wayne Whitlock Pillsbury Winthrop LLP written Testimony: July 25, 2001

SRPI	Mr. James D. Hatler Sierra Rock Products, Inc. oral testimony: July 27, 2001
STC	Mr. Mark Pawlicki Public Affairs Manager Simpson Timber Company written testimony: July 20, 2001 oral testimony: July 27, 2001
TDLF	Mark D. Harrison The Diepenbrock Law Firm written testimony: July 25, 2001 oral testimony: July 27, 2001
Trent	Mr. Terry Trent oral testimony: July 27, 2001
U.S. EPA	Mr. Jack Broadbent Director, Air Division United States Environmental Protection Agency, Region IX written testimony: July 23, 2001
VargasJ	Mr. Joe Vargas oral testimony: July 27, 2001
VargasM	Mrs. Melissa Vargas Citizens for the Protection of Health, Environment & Quality of Life oral testimony: July 27, 2001
VM	Mr. Steven Cortner Vulcan Materials oral testimony: July 27, 2001

Comments and Responses

1.0 ATCM Development Process

1.1 Comment: We do not believe that ARB has met its mandate under state law to quantify the benefits of this ATCM in relation to its cost. As such, we respectfully ask that the Board not adopt this ATCM and instead direct staff to fill the data gaps identified in our comments. (CMA)

Agency Response: It is true that ARB is not able to quantify the statewide emission reductions associated with this ATCM. This data can not reasonably be made available. There are so many possible variations in terms of activity size, equipment use, soil moisture, meteorology, asbestos content, and current dust control practices that it is not feasible to make a statewide estimate of either current emissions, or of the emission reduction that will result from this ATCM (see also the response to Comment 1.11 regarding this issue). However, air monitoring has demonstrated that the activities addressed by the ATCM release asbestos to the ambient air and that dust control measures reduce these emissions. The ATCM is based on the best available control technology currently used in the industry. Emissions will be reduced on sites where the level of dust control is not equal to that required in the ATCM. Where the current level of emission control is equal to that required in the ATCM, there will be no increased cost associated with the dust control requirements of the ATCM. ARB staff made an extensive estimate of costs associated with this ATCM. They are very small (ranging up to $500 for new home construction and from $500 to $6,750 per quarry in the first year) and are not expected to have any significant economic impact. The costs of the ATCM are presented in detail in chapter VII of the ISOR. In short, the ARB has met the requirements of State law (Health and Safety Code section 39665(b)) by addressing cost emissions and risk to the extent data can reasonably be made available.

1.2 Comment: This regulation is unnecessary. The ATCM for surfacing applications adopted last year limiting the asbestos content to 0.25 percent effectively takes care of all surfacing. Few companies would want the liability of producing serpentine. (SRPI)

Agency Response: The Asbestos ATCM for Surfacing Applications addresses surfacing; however, the surfacing ATCM does not address asbestos emissions due to disturbance of naturally-occurring asbestos during construction, grading, quarrying, and surface mining operations. The regulation is necessary to address emissions from these sources. The ISOR discusses the evidence which establishes the need for this regulation. The two most important lines of evidence are the air monitoring which establishes exposure and the evaluation of current dust control requirements which establishes the need for consistent requirements.

1.3 Comment: The introduction to the ISOR inaccurately describes the requirements of the ATCM where the introduction states: “This proposed control measure would require persons proposing to disturb deposits of naturally-occurring asbestos to implement measures that will minimize the emissions of dust from these operations.” ISOR, p. I-2, (emphasis added). This statement is inaccurate because the proposed ATCM would require any aggregate or construction operation in ultramafic rock deposits to comply with its provisions, regardless of the presence or absence of asbestos. See proposed Section 93105, subdivision

(b)(1). As such, the introduction suggests that the proposed ATCM is less burdensome than it will be in practice. (TDLF)

Agency Response: In the Introduction to the Executive Summary (page i of the ISOR), staff states that the proposed regulation is designed to require work practices that will minimize emissions of asbestos-laden dust from operations that occur in areas where naturally-occurring asbestos is found or is likely to be found. The Summary of the Proposed ATCM (page v of the ISOR) states that these requirements apply to projects where the area to be disturbed is in an area specified on geologic maps published by the Department of Conservation (DOC) showing ultramafic rock units or where ultramafic rock, serpentine, or naturally-occurring asbestos is known to occur even if not shown on the maps. The statement the commenter identifies as inaccurate is found some eleven pages into the ISOR. Staff does not believe that this statement on Page I-2 is likely to mislead anyone as to the scope of the regulation.

1.4 Comment: The information presented in the public outreach section of the ISOR shows that the primary concern over exposure to naturally-occurring asbestos has been the result of the rapid urbanization of the El Dorado County area. There is no discussion anywhere in the public outreach section that even suggests that naturally-occurring asbestos has been a problem elsewhere in the State. Accordingly, the Construction Materials Association of California (CMAC) must question the wisdom of imposing new regulations that will cause adverse impacts when the problem is localized to one jurisdiction. (TDLF)

Agency Response: The commenter is mistaken in assuming that the problem is localized to one jurisdiction. As described in the ISOR, ultramafic rock is found in many areas of California. The fact that the staff took note of the intense public concern in El Dorado County in no way minimizes that public exposure occurs in other parts of California.

1.5 Comment: We incorporate by reference CMAC's comments submitted in conjunction with the amendments to the Surfacing ATCM, which are attached hereto as Exhibit A. (TDLF)

Agency Response: "Exhibit A" to the commenter's July 25, 2001, comment letter consists of an earlier comment letter dated July 17, 2000. This earlier comment letter was submitted during the 45-day comment period for the amendments to the Asbestos ATCM for Surfacing Applications, which was considered by the ARB at a July 20, 2000 public hearing. All of the comments contained in the July 17, 2000, comment letter (i.e., Exhibit A) were summarized and responded to in the Final Statement of Reasons for the amendments to the Asbestos ATCM for Surfacing Applications (Surfacing FSOR). The Surfacing FSOR is attached to the current FSOR and incorporated by reference herein.

1.6 Comment: The ARB cannot adopt any of the provisions of the proposed ATCM because the ISOR does not satisfy the requirements of the Health and Safety Code respecting the adoption of ATCMs and does not comply with the California Environmental Quality Act ("CEQA"). (TDLF)

Agency Response: In adopting the Asbestos ATCM, the ARB complied with all applicable provisions of California law. The commenter has expanded on this general comment with a number of more specific comments. These more specific comments describe in detail why the commenter believes that the ARB has violated applicable legal provisions. The commenter's more specific comments are set forth in this FSOR, followed by the ARB's detailed responses to these comments.

1.7 Comment: The process by which staff has approached the development of the ATCM does not comply with Health and Safety Code section 39665. A close examination of subdivisions (3) and (5) of section 39665(b) indicates that – by the use of the plural for the terms "categories," "numbers," and "sources" – the Legislature contemplated the Board receiving one report that contains a comprehensive discussion of all sources of the TAC currently under review. As applicable here, those sections suggest that the Board should receive one report that would discuss all sources of asbestos, including surfacing, construction, grading, mining, quarrying, weathering of outcroppings, and other sources, such as the disposal of asbestos-containing waste in landfills. The report would then present a control measure for each source, and the required cost-benefit analysis.

The process applied here is to first identify a suspected source of a known TAC and then generate data to support the hypothesis that the suspected source in fact presents a health risk. This procedure may work where the sources of the TAC can be easily identified – such as where synthetic chemicals like perchloroethylene are used by dry cleaners or hexavalent chromium is used in cooling towers – but when applied to the earth in its natural state that process breaks down. This leads to the flawed analysis presented in this ISOR and the 2000 Surfacing ISOR. (TDLF)

Agency Response: We do not agree with the commenter's interpretation of Health and Safety Code section 39665. The commenter's interpretation is that the ARB must gather detailed information on every source of a toxic air contaminant (TAC) proposed to be controlled, and then present a potential control measure and a cost-benefit analysis for every TAC source, before the ARB can act to protect public health from a particular TAC source that is known to present a substantial public health risk. We believe that the very time-consuming process envisioned by the commenter is inconsistent with the Legislative intent expressed in subsections (e) and (k) of Health and Safety Code section 39650. In these subsections the Legislature declared that it is necessary to achieve the earliest practicable control of TACs, and that it is necessary to

take action to protect public health even though absolute and undisputed scientific evidence may not be available to determine the exact nature and extent of risk from TACs. This expression of Legislative intent does not support the commenter's view that before the ARB can adopt any individual ATCM to protect public health, the ARB must first identify all future control measures for the same TAC, and develop each future measure in sufficient detail to complete a separate cost-benefit analysis.

Although the ARB does not agree with the commenter's legal interpretation, in previous regulatory actions regarding asbestos the ARB has already done much of what commenter has suggested. The Technical Support Document (TSD) for the 1990 Asbestos ATCM for Surfacing Applications contains a detailed discussion of the various sources of asbestos emissions in California and a description of the sources that are already regulated under various state and federal laws. The TSD indicates that while asbestos emissions from most sources are already controlled, naturally-occurring asbestos emissions are not subject to uniform regulations. The TSD then identifies (on page 93) the ARB's plan to adopt control measures to regulate asbestos emissions from naturally-occurring sources. The current ATCM is described as "Phase II" of the control activities planned by the ARB (although the 1990 TSD was overly optimistic in its estimate that "Phase II" would take 1 to 2 years to complete). The TSD for the 1990 ATCM is part of the administrative record for this rulemaking action and is listed as one of the references on page IX-1 of the ISOR.

1.8 Comment: The process by which ISOR was prepared and developed does not comply with Health and Safety Code section 39665, because of the question of when data is "reasonably available." If the "reasonably available data" standard in section 39665 covers only that data which staff has made efforts to obtain, then the standard is meaningless. The ARB would be free to choose not to obtain important data and justify any regulation without conducting the balancing called for by statute. In the case of this proposed ATCM, the ISOR frequently emphasizes that staff has identified only 25 mining/quarrying operations that would be subject to this ATCM. At the same time, staff has provided no explanation whatsoever for not obtaining more information regarding the purportedly relevant operating characteristics, such as the number of operating days per year, the number of acres of active operating areas, and bulk samples. For example, half of the air monitoring samples used in Table IV-4 were taken over ten years ago in 1988. This data may not even be relevant as dust control practices may have significantly improved over the past 12 years, and thus overstating the true risk these operations present in 2001. (TDLF)

Agency Response: The commenter's assumption that staff does not have data on the potentially affected sources is incorrect. As noted in the FSOR for the Asbestos ATCM for Surfacing Applications, staff has contacted all of the potentially affected quarries and toured nine of them in 2000 and four in 1988.

Staff has also obtained district permits (for those holding permits) and confidential production data for all 25. The data collected show that the disturbance of asbestos containing rock (via processing and other quarrying activities) results in asbestos emissions to the air. While dust control practices may have significantly improved since 1988, not all of the sources use the best available dust mitigation measures and district requirements vary. As noted in the ISOR, the ATCM is expected to promote statewide consistency in control requirements and compliance.

1.9 Comment: The ISOR does not comply with Health and Safety Code section 39665 because it does not adequately address the rate and extent of present and anticipated future emissions. Data that is currently available from the Department of Conservation and local planning agencies that will factor in to this analysis include aggregate resource deposits of regional or statewide significance as required by Surface Mining and Reclamation Act. An overlay of these maps and the maps showing ultramafic deposits will show if there are areas the DOC knows will be developed in the future and thus, staff can anticipate future particulate emissions (and supposedly asbestos emissions if any asbestos is actually present) from those sources. Looking to the present or near future, data regarding the remaining reserves of aggregate operations located in the ultramafic zones will indicate how much longer any asbestos emissions would occur. Finally, by examining any correlation between spheres of influence for local government agencies, or similar information generated by LAFCOs, and the DOC ultramafic maps, staff could predict the likelihood of new development in asbestos-containing rock bodies. (TDLF)

Agency Response: The responses to Comments 1.1, 1.13, and 1.14 explain why data cannot reasonably be made available to estimate the statewide emissions from present sources. The same considerations indicate why estimates of statewide emissions cannot reasonably be made available for sources that may or may not exist in the future. In addition to these considerations, the type of "analysis" suggested by the commenter is so speculative that it would be useless. The ARB staff would have to make highly speculative predictions about where local land use planners will or will not approve future development, and what kind of development would be approved. Such decisions depend on a host of political and economic factors that cannot reasonably be predicted. Furthermore, the DOC's identification of deposits of "regional or statewide significance" provides no information about whether the land on which these deposits are located will in fact be developed. The purpose of this identification is simply to bring to the attention of local planners the potential of these sites for aggregate production.

1.10 Comment: The process employed for this ATCM stands in stark contrast to the process ARB followed in adopting other ATCMs. See Exhibit A, pp. 26-27. (TDLF)

Agency Response: The ARB staff does not agree that the process followed for the Asbestos ATCM is different than the process followed for other ATCMs. The commenter does not explain what is meant by this comment, other than to reference pages 26-27 of "Exhibit A" to the commenter's July 25, 2001, comment letter. "Exhibit A" is a comment letter dated July 17, 2000, which was previously submitted by the same commenter on the 2000 Asbestos ATCM for Surfacing Applications. Pages 26-27 of Exhibit A essentially describe the data gathered by the ARB staff in 1993 in connection with the Perchloroethylene ATCM for Dry Cleaning Operations (title 17, CCR, section 93109). The commenter seems to be implying that staff used a different process (and did a better job) of gathering data for this ATCM in 1993 than staff did in 2001 for the Asbestos ATCM. Staff does not agree. For each ATCM, staff's process is to gather all relevant and reasonably available data. Such data may differ for each ATCM depending on what information is relevant and reasonably available, but this does not mean that the basic process followed by staff is different. More data may be reasonably available for sources such as dry cleaners where the equipment, materials, and processes are relatively uniform. This is not the case with naturally-occurring asbestos. However, staff visited a vastly greater fraction of the potentially affected sources in connection with the Asbestos ATCM than for the Dry Cleaning ATCM.

1.11 Comment: The ISOR does not accurately estimate particulate and asbestos emissions. Looking to the actual data used here, the ISOR extrapolates from particulate emissions estimates the volume of asbestos emissions that would result from the construction and mining activities regulated by the proposed ATCM. The ISOR concedes that staff is unable to accurately estimate total particulate (and therefore asbestos) emissions because of the variation of construction sites and mine sites. ISOR, p. IV-1. The ISOR further states: "we are assuming that the fraction of asbestos in the particulate matter emissions will be the same as the fraction of asbestos in the soil or bulk material being crushed, graded, driven on, or excavated." ISOR, p. IV-1. The ISOR then estimates the potential particulate emissions generated by driving heavy equipment on unpaved surfaces and extrapolates the assumed level of asbestos emissions. P. IV-2. The ISOR contains a similar analysis for a surface mine. It is important to note that the hypothetical operation used to estimate emissions in Chapter IV is significantly larger than the operation used to calculate the potential environmental impacts in Chapter VIII. This shifting of the baseline is a significant flaw in the ISOR. (TDLF)

Agency Response: The ISOR does not extrapolate from either the hypothetical quarry operation discussed in Chapter IV nor the air monitoring data presented. The ISOR clearly states that it is not possible to make an estimate of the asbestos emissions and public exposure. ARB staff then presents two types of data that demonstrate that the activities being proposed for regulation do result in public exposure to asbestos. The first is based on the emission factors for particulate matter as noted and the assumption that the asbestos fraction in the

particulate matter emissions will be the same as the asbestos fraction in the material being disturbed. The other is air monitoring in various parts of California and other states. The emissions from the hypothetical quarry are offered as an illustration of the sources of the emissions and the potential magnitude of the emissions from the various operations. The ISOR clearly states that actual emissions from individual quarries will vary. The analysis of the environmental impacts is not based on a hypothetical source. As discussed on page VIII-2 of the ISOR, staff used the aggregated production figures from the actual affected quarries to estimate the environmental impacts. Thus, the characterization of the data as a shifting of the baseline is incorrect.

1.12 Comment: The ISOR does not present any data, nor is industry aware of any such data, that shows any correlation between the asbestos content of rock and the asbestos emissions that result from that rock. Accordingly, the methodology used in the ISOR to estimate emissions from construction site and surface mining operations is flawed. In fact, the ISOR contradicts itself in this regard. As noted above, asbestos emissions are estimated by assuming that a portion of particulate is asbestos, and the standards contained in the proposed ATCM are all tied to visible emissions; however, on page V-1, the ISOR justifies the proposed ATCM by stating that current dust control measures are not designed to control asbestos. If there is no correlation between dust and asbestos such that current dust control measures can be attributed to some control of asbestos, then the ISOR cannot use particulate emissions as an indicator of asbestos emissions. (TDLF)

Agency Response: There are no known physical or chemical characteristics of asbestos that would render it less likely to become airborne as a result of disturbance than any other dust particle of a similar size, nor has industry presented any. The ISOR does demonstrate through air monitoring that elevated concentrations of asbestos in the ambient air occur in the vicinity of these operations. Dust control measures currently required for these sources are not intended for asbestos control. That does not imply that current dust control measures do not reduce asbestos emissions but that they may not be the best available control techniques for controlling a TAC such as asbestos. ARB staff noted in the same paragraph as the statement cited in the comment that dust control requirements vary.

1.13 Comment: Contrary to the Health and Safety Code requirements, the ISOR does not provide quantitative data showing the reduction in emissions and available alternatives to the proposed measure. The ISOR states in Chapter V that “we cannot make a quantitative estimate of the potential reduction in asbestos exposure.” ISOR, p. V-9. We pause to make two important points: (1) Health and Safety Code requires this data be included in the report, and (2) staff does not state that it cannot estimate the reduction in the health risk but exposure. Although flawed, staff’s earlier analysis shows that staff is, in fact, capable of estimating asbestos exposure. It did so by assuming that asbestos represented

a fraction of particulate emissions. Staff does not explain why it cannot use that same methodology to estimate the reduction of particulate emissions attributable to the control measures and then estimate the fraction asbestos emissions just as it did in Chapter IV, and then calculate the difference between uncontrolled and controlled emissions. Hence, staff has not presented the Board with data that is both required and reasonably available. Accordingly, the Board cannot adopt this proposed ATCM because it has not complied with the Health and Safety Code requirements. (TDLF)

Agency Response: It is important to note that emissions contribute to but are not the same as exposure (i.e., exposure represents the concentration in the air the public is breathing). The product of exposure and potency is risk. If emissions cannot be estimated, exposure cannot be estimated. And if exposure cannot be estimated, risk cannot be estimated. Health and Safety Code section 39665(b) states that emissions and risks must be estimated "to the extent data can reasonably be made available." Quantitative data are not reasonably available to estimate the reduction in emissions for a number of reasons. Rock quarrying and the other activities regulated by the ATCM are not enclosed processes, so the emissions cannot be collected and measured at various moisture levels. Asbestos concentrations are not uniform so emissions may vary from day to day at any particular source. Moisture content will vary from material to material depending on a variety of physical and chemical factors. The current levels of control will vary depending on the condition, design, and operating parameters of the control equipment. While emission factor equations can indeed be used to estimate reductions achievable for an individual source if a number of assumptions are made, this would be a significant effort and would only provide an estimate for that one source. All the parameters would be different for another source. This level of data cannot be reasonably made available for the more than 7000 sources subject to the ATCM.

1.14 Comment: Nowhere in the ATCM does ARB quantify the emissions reductions to be achieved by the proposed ATCM. In failing to do so ARB denies operations their legislatively mandated redress under Health and Safety Code 39666(f) which allows an operator to propose alternative methods of compliance to a district provided the operator can demonstrate their methods can achieve an equal or greater amount of reduction than the methods of the ATCM. ARB does not have the authority to take this option away from operators by failing to quantify emissions reductions that will be achieved by the ATCM. (CMA, TDLF)

Agency Response: The commenter is incorrect in asserting that a source cannot exercise the alternative compliance option specified in Health and Safety Code section 39666(f) because the ARB was not able to quantify the emission reductions from the ATCM. The commenter has confused the ability to reliably quantify the total asbestos emissions and risk reductions throughout the state of California (i.e., from all sources subject to the ATCM) with the ability to estimate the emissions from an individual source. It is possible to make estimates for an

individual source; in Chapter IV of the ISOR, the ARB staff did this for a hypothetical source. What the ARB staff did not do is estimate the total emissions and risk reductions throughout the State, because the data cannot reasonably be made available to make such estimates. As explained below, however, the lack of such estimates would not prevent an individual source from utilizing the alternative compliance option specified in section 39666(f).

The ATCM provides a regulatory framework that allows each source a great deal of flexibility to design site-specific measures to reduce dust emissions. However, if a source proposes an alternative approach that does not fit within this regulatory framework, it would be possible for such an alternative to be approved by a district under Health and Safety Code section 39666(f). To obtain this approval, the source could generate a site-specific estimate of the emission reductions that would result from complying with the ATCM, by using the particular characteristics of the source and applying the emission factors discussed in Chapter IV of the ISOR. The source would then do the similar calculations to estimate the emission reductions from the proposed alternative for that source. If the proposed alternative would achieve equal or greater emission reductions, then such a demonstration for an individual source could meet the criteria in section 39666(f) that the alternative will achieve "equal or greater amounts of reductions in emissions and risk." This is obviously true with regard to "reductions in emissions". But it is also true with regard to "reductions in risk," because there is a correlation between emissions and risk such that if the dispersion characteristics are not changed a comparable reduction should occur for the source even if the exact numerical risk reduction cannot be quantified.

The approach described above takes into account the specific characteristics of the source. Because the characteristics of each source vary so widely, the only way to estimate emissions and risks for each source is to do a site-specific estimate. An estimate of the total asbestos emissions and risk reductions throughout the state of California, or the emission reductions associated with one or more hypothetical sources, would provide no help to an individual source that wished to develop a proposed alternative compliance method under section 39666(f). The source would still need to make its own estimate based on site-specific characteristics of the source. Therefore, the commenter is incorrect in asserting that the lack of quantitative emission reduction estimates for the thousands of sources subject to the ATCM, or the lack of risk reduction estimates, would prevent an individual source from utilizing the provisions of section 39666(f).

2.0 ATCM Implementation

2.1 Comment: For this program to be effective, the public, including the regulated community, must be educated to the new requirements and the public health benefits of reduced exposures to airborne asbestos fibers. Effective public

education programs require funding for the local efforts, which is not proposed with this regulatory action. (BCAQMD)

Agency Response: The commenter is correct that education is very important to effective enforcement. Notification of the affected industry is a recognized part of implementing and enforcing ATCMs. State law authorizes districts to collect fees sufficient to support enforcement of ATCMs. In addition, the Board has directed staff to take action to inform the public about the potential risks from disturbing asbestos containing material on their own property and appropriate ways to reduce the risk.

2.2 Comment: To strengthen public notification and education, we recommend that local air districts be required to disseminate project applications, planned mitigation measures, and any ambient air monitoring data and other relevant information about any projects covered under this regulation to the County Administrative Officer, the Planning Director and the Director of the Health Department. (ALAC)

Agency Response: All of these materials are public records which are generally available at the local air district. The public is entitled to review these materials. Adding a requirement that all of these materials must be disseminated to specific entities would add an administrative burden and would increase the cost of the regulation without any clear indication that the recipients of these materials would actually want to look at them.

2.3 Comment: The revisions made to the ATCM have failed to address the concerns CMA raised in our April 6th letter and May 19th letters. CMA remains concerned that this ATCM will be applied inconsistently across the state by the various districts and air pollution control officers and would like to see provisions added that ensure this is not the case. Please refer to our comment letter of April 6th for needed revisions. (CMA)

Agency Response: At the commenters request, ARB has added a requirement that districts act on an exemption application within 90 days and that if the district has not approved a proposed plan by the effective date, the facility can continue to operate using generic dust mitigation measures. There were many suggestions in the April 6th and May 19th letters which ARB felt would compromise the districts' ability to enforce the regulation or limit existing district authority. For instance, in the April 6th letter referred to, the commenter suggests that districts be required to approve an exemption if the geologic evaluation shows that the site is not likely to contain naturally-occurring asbestos, even though there is no method to make this determination. This suggestion is discussed in the response to Comments 8.5, 9.4, and 9.5. Further, the commenter suggests giving the owner/operator the right to appeal a denial of a geologic exemption to the Executive Officer of the Air Resources Board or resubmit the application upon correction of any deficiencies identified by the

APCO. The commenter also suggests an extensive set of restrictions on the authority of the district to require air monitoring.

ARB believes the district should have the authority to review not only the report but, if necessary, to examine the site, review any relevant data, and consider comments from members of the public. The district should also have the flexibility to deny an exemption if that examination raises concerns. This flexibility is necessary to ensure that the districts are able to adequately protect public health. Granting a right to appeal a decision of the district APCO to the Executive Officer of the ARB, as well as the other suggestions in the commenter's letters, are unnecessary restrictions on the districts authority that would hamstring the districts flexibility in implementing and enforcing the ATCM. The commenter's concerns about inconsistency in applying the ATCM are addressed in the response to Comment 2.4.

2.4 Comment: We are is concerned that the ATCM will be applied inconsistently across the State by various districts. (VM, CMA)

Agency Response: This regulation does give the districts a considerable amount of discretion with regard to the specific components of the asbestos dust mitigation plan. This discretion is appropriate; it makes the regulation more effective and less burdensome because it allows for the consideration of site specific conditions and activities. For instance, watering frequency can be adjusted to account for soil moisture. This approach may result in somewhat different requirements for different operations but is expected to result in consistent public health protection throughout the State.

2.5 Comment: The 14-day notice is especially onerous to the timber companies involved. The timber harvesting season is short. The two week notice period represents a significant portion of the total time in which timber harvesting can occur especially if a timber harvest plan is approved late in the season. (FRC, PW)

Agency Response: The commenter is referring to a draft version of the ATCM that was modified to provide that the districts be notified at least 14 days before the beginning of the activity or in accordance with an alternate procedure approved by the district (see subsection (d)(1)(A). Thus, if an owner/operator cannot notify the district during the time it is seeking approval of a timber harvest plan, it can work out a mutually satisfactory procedure with the district. This change was reflected in the proposed ATCM released at the start of the 45-day comment period.

2.6 Comment: Subsection (d)(1)(A) calls for at least a 14-day notice before any activities are started. It does not make sense to require a 14-day notice for minor road maintenance activities. Many of our road maintenance operations take

place as equipment is moved from one location to another. It is not practical to either schedule or delay such operations to fulfill a noticing requirement. (CFA)

Agency Response: See the response to Comment 2.5

2.7 Comment: There must be enforcement provisions in this regulation to ensure that mitigation plans are carried out as required, ambient air monitoring is occurring, and public health is protected. (ALAC)

Agency Response: The air districts are directed by state law to implement and enforce ATCMs. The ARB has oversight authority over the districts and will be monitoring the implementation of the ATCM and will provide assistance to the districts if needed. Penalties for violating the ATCM are specified in Health and Safety Code sections 39674 and 39675. Additional enforcement provisions in the ATCM are unnecessary.

2.8 Comment: Most of the requirements in subdivisions (e) and (f) are enforced through a dust mitigation plan. We note that there is significant discretion vested in the APCOs in approving these plans. There is not, however, any clear mechanism to resolve disputes between operators and APCOs regarding the contents of these plans. There are existing provisions in the Health and Safety Code to allow disputes regarding stationary source permits issued under air district regulations to be heard by the district hearing board. Industry suggests that provisions be added to this ATCM that expressly allow disputes over the contents of dust mitigation plans to be heard by the district hearing board following the same procedures for permit appeals. (TDLF)

Agency Response: ARB anticipates that for those sources that are required to obtain district permits, the asbestos dust mitigation plan will be a part of the permit and subject to state laws governing permits. For those sources not covered under existing district permitting rules, the district has the option to modify these rules to require permits, or to enforce the requirements of the ATCM without requiring the sources to get permits. For non-permitted sources, ARB staff believes that it is not necessary to specify an automatic right of appeal to the District Hearing Board. Districts routinely make numerous discretionary decisions in the course of performing their duties, and district staff is capable of making these decisions in a professional and competent manner. The Legislature has provided a right of appeal to the Hearing Board for only a limited subset of district decisions. ARB staff does not believe it is necessary or appropriate to expand this jurisdiction by including dust mitigation plans in the universe of district decisions that can be appealed to the Hearing Board.

3.0 ATCM Focus/Rock Type

3.1 Comment: The justification and authority for developing this ATCM rests on the 1986 Health Hazard Assessment for Asbestos. However, this ATCM proposes to

regulate materials other than asbestos without scientifically demonstrating that there is justification to do so. In the previously adopted surfacing ATCM, your Board regulated asbestos containing surfacing materials. Operations in ultramafic zones under that ATCM are required to test their materials using CARB Test Method 435 and if the materials sampled contained asbestos they could not be sold for surfacing. The surfacing ATCM recognized that while it may be likely to find asbestos in ultramafic rock units, materials may be extracted from such rock units that do not contain asbestos. However in the current proposed ATCM any operation in an ultramafic rock unit is required to implement an asbestos dust mitigation plan as if their facility contains asbestos. They are given no option to test and prove the lack of the presence of asbestos in their ultramafic rock. If the current philosophy had been applied in the surfacing ATCM, all aggregate materials extracted from ultramafic zones would have been banned. However, CARB does not have a health hazard assessment for ultramafic rock, nor has geological science defined ultramafic rock as asbestos.

The Initial Statement of Reasons (ISOR) on page III-4 glosses over this issue when it says, “It is unlikely that a geologist would be able to state with relative certainty that asbestos does not exist somewhere in the rock body. Staff does not believe that the tools and techniques currently exist that would allow a geologist to make this determination.” While accurate at one level of analysis, this statement fails to reflect that geological examination of a site is not the sole means of determining whether asbestos is present. Asbestos being present in the host rock is determined through sampling of the rock for asbestos fibers. (CMA)

Agency Response: Staff believes that the ATCM requirements are scientifically justified. The ATCM basically requires the use of best available dust control measures when rock is being disturbed where asbestos is found or is likely to be found (e.g., ultramafic rock bodies). The ATCM uses a preventive approach to activities in such areas, since applying dust control measures only after asbestos was found would still result in asbestos emissions. The ATCM is consistent with the requirements of Health and Safety Code 39666(c) in that it is designed to obtain the lowest achievable emission rate through application of the best available control technology.

In the Asbestos ATCM for Surfacing Applications, there exists a test method--Method 435--that allows a finite volume of aggregate material to be tested to determine the rock's asbestos content. It was therefore possible to design the Surfacing ATCM so that some aggregate material derived from ultramafic rock could still be used for surfacing applications, as long as the material was first tested and found to contain no asbestos. This situation does not exist for the current ATCM, because there is no test method that allows the asbestos content of an undisturbed ultramafic rock deposit to be reliably determined (see the responses to Comments 8.5, 9.4, and 9.5).

The concern ARB staff has with the proposition that a geologist could examine a site and determine that asbestos was not likely to be found lies with the level of confidence that could be placed in this finding. Even with site sampling, there are no data suggesting that the presence of asbestos in the rock could be demonstrated with a high level of confidence. Further, staff believes a high level of confidence is needed if this determination is to be used to justify allowing the excavation and processing of this material without the use of the best available dust mitigation measures. The level of confidence that can be placed on a sampling plan, and that the sample is representative, relies on the homogeneity of the material and the fraction of the material sampled. Processed aggregate has undergone a number of operations such as blasting and crushing that would enhance its homogeneity in contrast to rock in-place in the ground. This is why Method 435 can be reliably used for **small** volumes of aggregate as specified in the Asbestos ATCM for Surfacing Applications.

The Department of Conservation, Division of Mines and Geology has advised the ARB that the distribution of asbestos minerals within ultramafic rock bodies is typically inhomogeneous and that demonstrating that asbestos minerals are below detectable limits in a small sampled volume of rock does not assure that asbestos minerals are below detectable limits in any adjacent volume of rock. Proving the absence of asbestos in an ultramafic rock body to a high degree of certainty would be very difficult and would require extensive geologic investigation, sampling, testing, and statistical analysis. Currently, there is no generally accepted approach for demonstrating that an area containing ultramafic rock does not contain any detectable amounts of asbestos. This has been discussed with industry and industry geologists at length. These discussions clearly outlined the fact that no methods currently exist.

3.2 Comment: The mining industry does not believe that ARB has met its burden of proof for the inclusion of ultramafic rock units as a whole. The ISOR lists the results of four sampling efforts around quarries in California. While asbestos was measured around each of these quarries, those results only serve to demonstrate what was first concluded in 1990, that serpentine rock containing asbestos has the potential to generate airborne emissions when subjected to mechanical disturbances. None of the quarries sampled were simply classified as mines in ultramafic rock units. The ARB knew at the time of sampling that each site included serpentine within the deposit. Based on discussions we have had with staff, ARB has not completed, and is not aware of, any air monitoring results that show asbestos around any potential asbestos sources that do not include serpentine. Unless ARB has scientific evidence that earthmoving activities associated simply with ultramafic non-inclusive of serpentine are emitting asbestos, the Board does not have the necessary scientific information necessary to justify the inclusion of ultramafic rock in this ATCM. CMA believes the appropriate level of regulation within the ATCM is serpentinite and not ultramafic rock and the ATCM should be modified. (CMA)

Agency Response: The commenter misses the point. The ATCM requires dust mitigation for activities that disturb the rock type most likely to contain naturally-occurring asbestos. According to the staff at the Department of Conservation, Division of Mines and Geology (DMG), with whom ARB staff consulted on geologic matters, asbestos minerals are most commonly associated with ultramafic rocks and their metamorphic derivatives, including serpentinite (serpentine rock) in California. Ultramafic rocks form in high-temperature and high-pressure environments deep beneath the earth's surface. By the time they are exposed at the earth's surface, ultramafic rocks have typically undergone metamorphism, a process in which the mineralogy of the rock is changed in response to changing chemical and physical conditions. One of the commonly occurring types of metamorphism in ultramafic rocks is known as serpentinization, a process that alters the original iron-magnesium minerals in ultramafic rocks to one or more water-bearing magnesium silicate minerals belonging to the serpentine mineral group and producing a rock called serpentinite (serpentine rock).

The process of metamorphism typically proceeds in successive steps rather than happening all at once. When they are finally exposed at the earth's surface, the degree of metamorphism of ultramafic rocks may range from 0 percent to 100 percent, and most ultramafic rock bodies in California have been metamorphosed to some extent. Asbestos minerals may form at any time during the metamorphic process and, consequently, it is very common for at least a small quantity of asbestos to be present in ultramafic rock bodies in California. While it is hypothetically possible that there may be some ultramafic rock bodies exposed at the surface in California that have not been metamorphosed in any way since their original formation and, as a consequence, do not contain any asbestos minerals, it is more reasonable to suspect the occurrence of asbestos minerals in ultramafic rock bodies due to the likelihood of metamorphism at some point during their geologic history.

Because of the continuous gradation in the degree of metamorphism in ultramafic rocks, the classification boundary between what is called a serpentinite and what is called an ultramafic rock is arbitrary. Some geologists have suggested that this boundary should be at 50 percent. However, this suggestion has not been universally adopted by geologists mapping ultramafic rocks. In many geologic studies, the differentiation of serpentinite from ultramafic rock is not important to the goal or scope of the study and the distinction is not made. Rather, a single unit, "ultramafic rock" or "serpentinite"(or ultrabasic rock or serpentine in the older literature), is commonly used in geologic mapping and reports. Consequently, an "ultramafic rock" map unit may included any combination of serpentinite and ultramafic rock and it is often not possible to determine the degree of serpentinization that may have occurred from a geologic map alone.

DMG has provided references of published scientific studies on serpentine and ultramafic rock by a number of notable geologists. The geological literature illustrates the varying usage of the term serpentine and supports DMG's view that the boundary between serpentine and ultramafic rock is gradational and arbitrary.

Some of these references show that in ultramafic rocks that are only slightly metamorphosed, serpentinization can occur on a microscopic scale along mineral grain boundaries and microfractures. Such serpentinization can be very difficult or impossible to detect visually in the field during geologic mapping and its identification commonly requires petrographic analysis. Published documentation that minor quantities of serpentine minerals are often present as impurities in olivine foundry sand produced from high quality ultramafic rock deposits further demonstrates the pervasive nature of serpentinization in ultramafic rocks. Therefore, there is ample scientific evidence showing that regulating ultramafic rock is justified, and that the focus of the ATCM should not be narrowed as suggested by the commenter.

3.3 Comment: No data has been presented that justify why ultramafic rock areas should be included in the regulation. The inclusion of this broad type of igneous rock means this is a regulation focused on rock types, not asbestos. Furthermore, inclusion of this rock type threatens the future supply of aggregates in California. The association being made between ultramafic rock and asbestos hinders the development of these needed sources of aggregate for the future. (CMAC)

Agency Response: The responses to Comments 3.1 and 3.2 address the reasons ARB included ultramafic rock areas in this regulation. With regard to the concern about future supplies of aggregate, the regulation only requires the application of the best available dust mitigation measures when these rock types are excavated and processed. These are measures currently applied at the best-controlled existing sources. Based on staff's analysis of environmental and economic impacts, presented in the Staff Report, application of these measures will not prevent the development of aggregate operations in these areas. Thus, this ATCM is not expected to have any impact on future aggregate resources.

3.4 Comment: The objection to ultramafic rock being used as a basis for testing does not make sense to us. As we understand, this is the parent or host rock of serpentine and other rocks that are known to contain asbestos. If the ordinance were changed to specify testing for asbestos rather than ultramafic rock, it seems to us that the effects would be broadened rather than narrowed, as other types of rock may have to be tested to prove they do not contain asbestos. (JohnsonJ, JohnsonT)

Agency Response: This comment addresses the Asbestos ATCM for Surfacing Applications and supports the ARB's regulation of ultramafic rock.

3.5 Comment: Tremolite asbestos occurs in El Dorado County in areas not associated with serpentine and/or ultramafic material. The emphasis of the regulation on serpentine seems to allow tremolite to escape regulation. (Maidu Group)

Agency Response: The ATCM regulates activities occurring in areas identified on geologic maps as geographic ultramafic rock units. Both chrysotile and tremolite asbestos occur in association with ultramafic rock. In addition, subsection (b)(2) provides that the ATCM applies if any portion of the area to be disturbed has naturally-occurring asbestos, serpentine, or ultramafic rock as determined by the owner/operator or the APCO. Tremolite that occurs outside an area of ultramafic rock would be addressed by subsection (b)(2). Thus, if an area is known to have naturally-occurring asbestos it is covered by this ATCM whether that asbestos is tremolite or chrysotile.

3.6 Comment: There is a good probability of at least low levels of asbestos in ultramafic rocks and serpentinite in California. (DMG)

Agency Response: No response is required.

3.7 Comment: The process of metamorphism typically proceeds in successive steps rather than happening all at once. Consequently, when finally exposed at the surface of the earth some ultramafic rocks will only be partially metamorphosed while others may be completely metamorphosed. If the majority of the original minerals have been changed the rock will be called a serpentinite. If only part of the rock has been changed to serpentine minerals, geologists may call the rock an ultramafic rock. (DMG)

Agency Response: No response is required.

3.8 Comment: CMAC disagrees with the introduction in the ISOR to the extent that it states that ultramafic rock is a source of asbestos. The data generated and produced by ARB staff does not support this conclusion. (TDLF)

Agency Response: The statements in the ISOR are accurate and are supported by the scientific data, as explained at length in the ISOR and the responses to Comments 3.2 to 3.7.

3.9 Comment: The background section of the ISOR reiterates ARB's position that ultramafic rock is a source of asbestos. The background section concedes that the occurrence of asbestos in ultramafic rock is variable and that ultramafic rock in and around earthquake faults is more likely to contain asbestos. Given that concession, CMAC questions the wisdom of regulating a rock type that occurs in 42 of California's 58 counties. (TDLF)

Agency Response: According to DMG and the supporting scientific evidence discussed in the ISOR and FSOR, asbestos is likely to occur in ultramafic rock deposits, including, but not limited, to ultramafic rock in and around earthquake faults. ARB staff believes that the provisions of the ATCM relating to ultramafic rock are justified by the scientific evidence and are necessary to protect public health.

3.10 Comment: The inclusion of non-serpentine ultramafic rock in this regulation is not justified by the evidence. The ISOR makes a "leap of faith" in:

1. regulating naturally-occurring asbestos based on exposures to commercially processed asbestos, then
2. regulating serpentinite and then
3. regulating all ultramafic rock.

Staff has justified this overinclusive aspect of the regulation based on a statement by the Department of Conservation that it is difficult to distinguish between serpentine and other ultramafic rock. This statement is not supported by any evidence. In fact, the ARB has evidence that contradicts this statement. Prior to last year, the Surfacing ATCM only regulated serpentine. Neither this ISOR nor the 2000 Surfacing ATCM ISOR contains any evidence that shows that in the 10 years the 1990 regulation was in effect ARB or air districts had problems enforcing that regulation because someone claimed that the rock being used on a road or other surface was not serpentine but was instead "ultramafic." In the absence of data showing that the ATCM cannot be enforced when it covers only serpentine, the proposed ATCM is impermissibly overinclusive. (TDLF)

Agency Response: The ARB staff believes the data does support the need to include ultramafic rock in the regulation, as explained at length in the ISOR and the FSOR. The commenter's assertion that the regulation is overinclusive is unfounded because it neglects several important geologic facts. In any body of ultramafic rock, serpentinization will occur whenever the correct conditions (temperature, pressure and moisture content) are encountered. The correct conditions may occur multiple times throughout the rock's displacement from the location where it was formed deep in the earth's crust and the surface where it is exposed. In addition, there can be an extreme lack of uniformity in the degree of serpentinization even within a single rock body. Therefore, based on discussions with DMG (and the supporting information presented above and in our response to Comment 3.2), we believe that it is likely, given California's geologic history, that all ultramafic rock in California has undergone some degree of serpentinization. Therefore, there is ample evidence in the record supporting the ARB's decision to regulate ultramafic rock, whereas the commenter's claim to the contrary is not supported by any credible evidence.

Finally, the commenter makes an erroneous assumption in assuming that the enforcement history of the 1990 ATCM has any relevance. The 1990 ATCM specified that serpentine with an asbestos content of five percent or greater could not be used for surfacing. Enforcement of the 1990 ATCM required only that the inspector determine if the material was serpentine, as defined in the regulation, and test for asbestos. It did not require any testing for asbestos in rock that an inspector could not identify as serpentine. Thus, the enforcement record for the 1990 ATCM has no bearing on the question of when and what levels of asbestos can be found in ultramafic rock bodies.

3.11 Comment: The lack of data regarding the alleged health threat posed by non-serpentine ultramafic rock permeates the proposed ATCM. Until staff generates data that shows non-serpentine ultramafic rock is appropriately included in the regulation, it will be overinclusive. (TDLF)

Agency Response: This comment is addressed in the response to the previous comment (Comment 3.10).

4.0 Recordkeeping and Reporting

4.1. Comment: Subdivision (e) of the ATCM requires the owner/operator to maintain certain records for up to seven years. The statute of limitations for violations of air quality laws is three years, pursuant to Code of Civil Procedure section 338(k). There is no reason why any operator should have to maintain records regarding their compliance with this regulation beyond the time for enforcing any violation. It is not the purpose of the ARB to make data available for personal injury lawsuits or any similar civil action not tied to the ARB's statutory authority to enforce regulations. Subdivision (f) of the ATCM imposes similar obligations on mining and quarrying operation that subdivision (e) imposes on large construction operations, and the same concerns apply. (TDLF)

Agency Response: The requirements to maintain certain records for seven years are not intended to facilitate personal injury lawsuits or other private lawsuits. The requirements are designed to insure that the ATCM can be effectively enforced by the ARB and the air pollution control districts (districts).

Code of Civil Procedure section 338 provides that the statute of limitations is three years for the various types of actions listed in the subsections of section 338. For violations of air pollution regulations, the relevant portion of section 338 is subsection (k), which states:

> "(k) An action commenced under Division 26 (commencing with Section 39000) of the Health and Safety Code. These causes of action shall not be deemed to have accrued until the discovery by the State Air Resources Board or by a district, as defined in Section 39025 of the Health and

Safety Code, of the facts constituting grounds for commencing the action under its jurisdiction."

Under section 338(k), the three-year statute of limitations does not begin to run until the ARB or a district discovers a violation of an air pollution regulation. Discovering that a violation has occurred may take years in the case of activities subject to the Asbestos ATCM, since such activities can occur over hundreds of square miles throughout the state (much of which is on private land) and air pollution inspectors are few in number. It is important to have the necessary documentation as an aid to determining whether the requirements of the ATCM have been complied with. Seven years was chosen as a time period for retaining records because this period reasonably balances the need to effectively enforce the ATCM with the relatively minor inconvenience of recordkeeping. This time period is consistent with both the 1990 Surfacing ATCM and the amendments to the Surfacing ATCM approved in 2000; each of these regulations specifies that certain records must be retained for a seven-year period (see section 93106(b)(1) and (b)(2) in the 1990 Surfacing ATCM, and section (e)(1) and (e)(2), title 17, CCR, in the amendments to the Surfacing ATCM approved in 2000).

In addition to the reasons described above, the requirement to retain records is useful because the demonstrated presence of asbestos, serpentine, or ultramafic rock on a parcel may serve as an indicator that an adjacent parcel should be evaluated to determine whether the ATCM should or should not apply. Records of the air monitoring results may also provide districts and industry with information to evaluate and improve dust mitigation practices. Finally, the air monitoring and bulk sampling results may be useful in the future to evaluate the effectiveness of this ATCM and the need for revisions.

4.2. Comment: The draft ATCM requires that operators maintain records for at least seven years. This is far too short. The ATCM should be amended to require copies of all records to be provided to the ARB (so they are available to the public), and for those records to be maintained in perpetuity. The records should be posted on the ARB website to make them available to the widest audience. (McMahan)

Agency Response: Seven years is an adequate length of time to require companies to maintain these records. This retention period is not so long as to constitute an undue burden. However, it is long enough to fulfill the purposes discussed in the response to the previous comment. It is not necessary for ARB to act as a clearinghouse for all notifications, asbestos dust mitigation plans, geological exemption reports, and compliance reports, or to post such material on the ARB website. This information would be of limited interest to the vast majority of the public. Interested persons can access the information by contacting the local air districts.

4.3. Comment: Recordkeeping requirements should be amended from seven to 30 years, in recognition of the long latency period associated with the onset of a lung cancer or other lung diseases related to exposure to asbestos. Thirty years is consistent with requirements for asbestos in the occupational setting. (ALAC)

Agency Response: It is not necessary to impose a 30-year recordkeeping requirement. In the occupational setting, exposure records must be kept for 30 years. When employees have been exposed to asbestos levels at or above the permissible exposure limit (0.1 fibers/cc) or employees have done work that involves removal of asbestos containing material for at least 30 days in a year, the employer must provide medical examinations. The results of these medical examinations must be kept for the period of employment plus 30 years. By contrast, the records associated with the ATCM would not contain this type of detailed exposure data, and it would not be useful to keep them for 30 years.

5.0 Road Construction and Maintenance

5.1. Comment: Section 93105 (d) sets forth regulations for roads that are not part of a construction or grading project, quarry, or surface mine. However, they do apply to timber access roads. We believe that some of the language in this section is vague and some is excessive. For example, the proposed rules, although intended for construction and maintenance, appear to be written to cover ongoing operations as well. Those provisions should either be eliminated or modified to make it clear that they do not apply to ongoing use of roads. (STC, CFA)

Agency Response: The requirements of subsection (d) have been revised. The revisions were released on December 19, 2001, for a supplemental comment period which ended January 15, 2002. The revisions to subsection (d) are described in section II of this FSOR. We believe the revisions clarified the requirements for construction and maintenance of roads that are not part of a construction or grading project, quarry, or surface mine. The ATCM does not apply to the use of existing roads.

5.2. Comment: Relatively minor maintenance activities such as culvert replacement, or ditch cleaning on roads associated with timber harvesting will not produce dust in quantities that would be considered deleterious to human health, yet all of the provisions of section (d) apply to these situations. Given the stringent requirements of this section (e.g. notifying the APCO 14 days in advance of minor road maintenance) and the low risk of these projects, we recommend that section (d) only apply to construction, not maintenance. Additionally, the rules should clearly state that they do not apply to the ongoing use of roads once they are constructed. (STC, CFA)

Agency Response: We believe that dust mitigation requirements should apply to road maintenance activities that disturb the soil surface. While excavating for

culvert replacement and grading ditches and shoulders may not release dust emissions of concern in all cases, the potential for release of asbestos during these activities dictates the use of the best available practices to minimize the emissions. Further, the district needs to be informed when these activities will be happening in order to effectively monitor compliance. Modifications to subsection (d) have been made to provide more flexibility for the source and the district to arrange a mutually satisfactory process for providing notification. These modifications were released on December 19, 2001, for a supplemental comment period which ended January 15, 2002. Finally, we believe it is not necessary to explicitly state that the regulations do not apply to the ongoing use of roads. We believe the definition of road construction and maintenance makes it clear that simply using a road is not covered under the regulation.

5.3. Comment: California's forest practice rules for road maintenance require timber harvesters to take the necessary steps to reduce fugitive road dust when timber operations are occurring. Sections 923.4(h), 943.4(h), and 963.4(h) of the California Forest Practice rules relating to road maintenance state "During timber operations, road running surfaces in the logging area shall be treated as necessary to prevent excessive loss of road surface materials by, but not limited to, rocking, watering, chemically treating, asphalting, or oiling." We believe that this standard is sufficient to comply with the Air Board's rules for asbestos containment, making the reference to maintenance, as well as those provisions that appear to apply to ongoing road use unnecessary. (STC, CFA)

Agency Response: The requirements of this ATCM apply only during road construction and maintenance activities. A definition of road construction and maintenance has been added and the regulatory language in subsection (d) has been clarified to avoid this misunderstanding. Maintenance, as the term is used in the ATCM, means those activities that involve grading or excavation. Thus, the ATCM is neither in conflict with nor duplicative of the requirements of the Forest Practice Rules which deal with treatment of road running surfaces during timber operations.

5.4. Comment: The ATCM limits the speed of any vehicles traveling across unpaved areas to 15 miles per hour. This provision appears to be targeted toward ongoing traffic use, not construction or maintenance. We question why this is necessary given that the proposed rules do not apply to ongoing use, and that we are required (in the forest practice rules) to assure that dust control measures are in place. This provision should be deleted. (STC, CFA, PW)

Agency Response: This provision does not apply to ongoing use of roads. As explained in the response to the previous comment, a definition of road construction and maintenance has been added to clarify this. In addition, staff has made changes to subsection (d) which now states that the speed of equipment must not exceed 15 miles per hour unless the road surface and surrounding area is sufficiently stabilized to prevent vehicles and equipment

traveling more than 15 miles per hour from emitting dust that is visible crossing the project boundaries. These modifications were made available for a supplemental comment period starting December 19, 2001, and ending January 15, 2002.

5.5. Comment: Subsection (d)(1)(E) of the ATCM requires that vehicles must pass over a track-out prevention device when leaving an unpaved area. We do not see the need for installing expensive paved aprons or other devices leading on to paved highways when we have been required to control dust on unpaved surfaces. This provision also appears to be written for ongoing use. We recommend that this provision be deleted. (STC, CFA)

Agency Response: The requirements of this ATCM apply only during road construction and maintenance activities. Subsection (d) has been modified to clarify the applicability of the provisions and changes have been made to the requirements for track-out control. The change eliminated the originally proposed requirement to utilize a track-out prevention device, and provides sources with the flexibility to conduct their activities in such a way that no track-out from a road construction project is visible on any paved roadway open to the public. These modifications were released on December 19, 2001, for a supplemental comment period which ended January 15, 2002.

5.6. Comment: It doesn't seem like a practical thing for all the requirements of section (d) to apply when we do relatively minor maintenance activities such as culvert replacement or cleaning ditches. (STC)

Agency Response: See the response to Comment 5.2.

5.7. Comment: Road watering or abatement activities have to occur behind the road construction. In heavily timbered steep areas we can't possibly water in advance. (STC, CFA)

Agency Response: ARB staff believes that watering can be done prior to grading or excavation. Staff recognizes that tree and brush clearing may be necessary before dust abatement activities can begin. However, the ATCM does not apply to cutting and removing trees. Most water trucks are equipped with outlets that will allow the dispersal of water ahead of the truck such that water could be applied prior to the grading operation if the natural moisture is not high enough to meet the standard for "adequately wetted". In addition, according to the U.S. Forest Service, contracts for road building activities done in support of timber harvesting on National Forest land require dust abatement.

5.8. Comment: The intent of the Board is not clear with regard to whether maintenance of timber roads is regulated. Subsection (c)(2) exempts timber harvesting except for construction of roads. It is not clear whether this exception includes maintenance activity on timber roads. (PW)

Agency Response: Maintenance operations on timber roads are subject to the requirements of subsection (d). ARB added a definition of road construction and maintenance that specifically identifies the type of maintenance activities that are regulated under subsection (d) and modifications have been made to subsection (d) to clarify which activities are subject to subsection (d). These modifications were the subject of a supplemental comment period starting December 19, 2001, and ending January 15, 2002.

5.9. Comment: The regulation for road construction and maintenance should be limited to areas disturbed by such activities. FRC requests that the Board limit subsection (d) to regulate only the area affected by the construction or maintenance activities and not "roads that are not part of a construction or grading project". To include all roads constitutes a broadening of the regulation not supported by the ISOR. (PW)

Agency Response: Subsection (d) applies to construction and maintenance of roads that are not part of a construction and grading project or a quarry or surface mine. The construction and maintenance of roads that are part of construction or grading project is regulated under subsection (e) and the construction and maintenance of roads that are part of a quarry or surface mine are regulated under subsection (f). Modifications have been made to subsection (d) and a definition of road construction and grading was added to clarify which activities are subject to subsection (d). These modifications were made available for a supplemental public comment period starting December 19, 2001, and ending January 15, 2002.

5.10. Comment: Sources of water to wet roads are limited. Therefore, FRC urges the Board to clarify that only the immediate areas upon which the construction activities are being conducted must be kept adequately wet. (PW)

Agency Response: The definition of road construction and maintenance added to the ATCM and made available for public comment from December 19, 2001, to January 15, 2002, clarifies that subsection (d) only applies during construction and maintenance of roads.

5.11. Comment: The term "unpaved areas subject to vehicle traffic" is impermissibly vague. As written, the proposed ATCM could be read to require a timber company to water miles one through 19 to construct mile 20. The provision does not meet the standard for clarity in the APA. FRC urges the Board to clarify that the proposed ATCM only regulates construction traffic not passive traffic associated with the transportation of work crews to the construction site. (PW)

Agency Response: Further clarification is unnecessary. The definition of road construction and maintenance added in the 15-day changes and made available for public comment from December 19, 2001, to January 15, 2002, adequately

clarifies that subsection (d) only applies to the area to be disturbed for any given road construction and maintenance project. In addition, subsection (b) of the ATCM (Applicability) specifies that the ATCM only applies to specified activities occurring in the “area to be disturbed”. It should therefore be obvious that passive transportation of work crews to the "area to be disturbed" is not subject to the ATCM requirements.

5.12. Comment: Construction and maintenance of timber roads should be exempt from the requirement for track-out prevention devices. This provision is disproportionately expensive for the timber industry and excessive and unnecessary. On a 10,000 acre holding with six points of entry, crew and equipment could be coming from and departing in a number of directions to the construction site. The potential expense of equipping multiple points of entry with devices could be extreme. Further construction vehicles may pass over many miles of private paved road before traveling on a paved public road. Fifty feet of pavement is considered adequate for track-out prevention at a quarry or surface mine. The Board has no basis for denying this to road construction projects. (PW)

Agency Response: The requirements for track-out control in the ATCM were modified to specify that activities must be conducted so that no track-out from any road construction project is visible on any paved roadway open to the public. ARB staff believes that this modification addresses the commenter’s concern that the regulation would require placement of track-out prevention devices at locations that may be remote from the construction project. These modifications were made available for a supplemental public comment period starting December 19, 2001, and ending January 15, 2002.

6.0 ATCM Definitions

6.1 Comment: The ATCM requires that unpaved areas subject to vehicle traffic are kept adequately wetted. This is vague in that it appears to apply to construction, maintenance, and ongoing use of all roads for all types of vehicles. Although the definition of “construction” refers to surface disturbance activities, it also includes “any related activity.” We suggest that the regulations be made clear that they apply to the use of heavy earth-moving equipment in road construction, not maintenance or roads that are in use. Further, we urge that the rules be clear that “adequately wetted” does not mean that the road surface should be wetted to the point that soil runoff could occur. That type of situation would put us in violation of the forest practice rules were it to occur. (STC, CFA)

Agency Response: ARB has modified the ATCM to add a definition for Road Construction and Maintenance. These modifications were released on December 19, 2001, for a supplemental comment period which ended January 15, 2002. ARB staff believes that this provision adequately specifies the activities covered by subsection (d). Staff believes that the definition of

"adequately wetted" does not need to be clarified. The definition references a test method for determining when material is adequately wetted. Material can meet the test for adequately wetted well before run-off occurs.

6.2 Comment: The term any activity that disturbs the ground as used in section (d)(1)(B) could be interpreted as someone walking. A pickup traveling along a road to conduct a simple road maintenance operation (e.g. check for and remove debris) may generate visible dust. (STC, PW)

Agency Response: Modifications were made to subsection (d) and a definition of "Road Construction and Grading" was added to clarify which activities are subject to subsection (d). These modifications should insure that subsection (d)(1)(B) will not be misinterpreted.

6.3 Comment: The term maintenance is not defined. (PW)

Agency Response: A definition for road construction and maintenance was added to clarify which activities are subject to subsection (d). This modification was made available for a supplemental public comment period starting December 19, 2001, and ending January 15, 2002.

6.4 Comment: The term 'ambient air' is not defined in the proposed ATCM. FRC urges the Board to adopt the federal definition of ambient air. (PW)

Agency Response: It is not necessary to define "ambient air" in the ATCM because the term has a generally understood technical meaning. In addition, subsection (d) was modified to specify that equipment and operations must not cause the emission of any dust that is visible crossing the project boundaries. This modification eliminated the reference to ambient air in the requirements for road construction and maintenance. This modification was made available for a supplemental public comment period starting December 19, 2001, and ending January 15, 2002.

7.0 Economic Impacts

7.1 Comment: The cost of implementing the requirements of the ATCM (work practices to minimize dust emissions) is reasonable given the public health benefits that would be expected occur. (BAAQMD)

Agency Response: ARB staff agrees with this comment.

7.2 Comment: The Initial Statement of Reasons inaccurately states that because dust control will be so low in cost, there is no reason to include a provision for site screening. This assumption fails to recognize the indirect costs born by operators of increased liability and public hysteria due to their activities being assumed to disturb and therefore emit asbestos. In addition, this statement

assumes that proving your innocence be mandated rather than voluntary on the part of the operator. Some operators would prefer to be able to prove to the public they are not disturbing asbestos even if that proof is considered to be more costly than simply complying. ARB should provide the industry with this option to benefit both the public and the operator through direct knowledge of whether an operation is actually exposing the public to risks associated with asbestos. (CMA)

Agency Response: An exemption from the dust control requirements based on a demonstration that there is no asbestos in an ultramafic rock unit is inappropriate because at present there is no generally accepted approach for demonstrating that an area containing ultramafic rock does not contain any detectable amounts of asbestos (see Comment 8.5). If any "increased liability and public hysteria" attaches to a property in ultramafic rock, it is due to the presence of the ultramafic rock, not the ATCM. The ATCM requires the use of the best available dust mitigation measures when Ultramafic rock is disturbed because of the high probability that ultramafic rock will contain detectable levels of asbestos. This approach should not result in any public hysteria and in fact should reassure the public that a mechanism is in place to reduce their exposure to a toxic compound. Further, the regulation does not prevent a source from trying to develop a method that can accurately demonstrate that asbestos does not occur in the area to be disturbed.

7.3 Comment: In reviewing ARB's cost numbers we found no cost analysis conducted for an operation that is ordered to conduct air monitoring. As it is a provision of the ATCM, it is reasonable that staff determine the reasonable cost an operator would bear for this monitoring. CMA in our April 6th comment letter created a cost analysis of the sampling protocol and the cost of various sampling requirements. Our April 6th letter addresses how the cost analysis was conducted. Our cost analysis showed that if a site were ordered to conduct daily sampling they would incur annual costs of $800,000+ dollars. This is a significant cost which should be addressed within the ISOR. (CMA)

Agency Response: The ATCM does not require any air monitoring. The ATCM specifies analytical methods to be used when the district exercises its **existing** authority to require air monitoring. Therefore, ARB staff does not consider the cost of any air monitoring required by the district to be a cost of this ATCM as that authority would exist in the absence of this ATCM. In addition, based on ARB staff discussions with the local air districts and our own experience with air monitoring, the industry's estimate of air monitoring costs is significantly overestimated.

7.4 Comment: We understand that there have been industry comments anticipating monitoring costs on the order of $800,000 per year per site that could be imposed upon quarry operators or developers. From our perspective as a local

air district, we believe air monitoring costs, if required, could only be a small fraction of this value. (MBUAPCD)

Agency Response: ARB staff agrees with this comment.

7.5 Comment: ARB has not analyzed the impacts of this ATCM on the general public in terms of loss in property or real estate values. This ATCM will restrict how future development occurs in all areas identified as ultramafic in California and may attach a stigma to that property. Landowners and homeowners under real estate law will be required to disclose this information to potential buyers. ARB does not consider in the analysis that property in an ultramafic unit will be less desirable to purchase for development due to health and liability concerns. (CMA, TDLF)

Agency Response: If properties in an ultramafic rock unit are less desirable, as speculated by the commenter, this would not be a result of the ATCM but of the possibility that asbestos, a toxic compound, may occur on them. The ATCM does not restrict development in an ultramafic rock unit. The ATCM requires that reasonable precautions be taken when materials likely to contain asbestos are disturbed. The requirement that buyers be informed of potential hazards is a separate legal requirement that exists whether or not the ATCM is adopted. The analysis of the impacts of this ATCM is limited to the requirements of this ATCM and cannot include any speculative assumptions about how property values or future development will be affected.

7.6 Comment: With respect to economic impacts, in the discussion of "Affected Businesses", p. VII-2, the ISOR fails to compare the known locations of ultramafic deposits to areas the Department of Conservation has indicated are aggregate deposits of regional or statewide significance under SMARA. To the extent that these areas overlap, future development in these regions could be hampered because supplying aggregate from these areas will require compliance with the proposed ATCM. (TDLF)

Agency Response: There is no reason to assume that the ATCM will impede future development in the areas shown on the maps as ultramafic rock. The cost of implementing the best available dust control is minimal. Since all of the existing quarries are expected to be able to bear the cost of this ATCM with minimal impacts, there is no reason to assume that quarries developed in the future in ultramafic rock would be significantly impacted.

7.7 Comment: The ISOR fails to discuss the potential impact on property values that may result from the stigma attached to property that must now comply with this ATCM. In this regard, it is important to note that the inclusion of non-serpentine ultramafic rock is particularly acute here – even though a parcel of land may have no asbestos present, the property subject to this regulation will be significantly less desirable than property outside of an ultramafic rock unit and hence have a

lower value. This effect occurs regardless of the true health risk associated with the property because the proposed ATCM does not require proof of a nexus between the property and asbestos – that nexus is assumed based solely on a geologic assumption that has no evidentiary basis. (TDLF)

Agency Response: There is no reason to assume that a stigma will attach to any property as a result of this ATCM. The cost of complying with this ATCM is not a significant increase in the cost of developing the property or working on it. If a property is considered less desirable because it is in an ultramafic rock deposit; that is the result of the potential presence of asbestos in the rock, not of the ATCM. ARB does not agree that there is no evidentiary basis for the expert opinion of the DMG. Based on discussions with DMG (and the supporting information presented in our response to Comments 3.2 and 3.10), we believe that it is likely, given California's geologic history, that all ultramafic rock in California has undergone some degree of serpentinization. The State Geologist has extensive knowledge of the Geology of California.

8.0 Test Methods

8.1 Comment: This is the first time that the appropriate risk management tool to use for analyzing asbestos in air has been before the Board. Absent a Board decision on the issue, ARB staff has been using the modified sensitivity. It is inappropriate for the Board to use a procedure that has not been tested to relate to health hazard data, nor one that has undergone scientific scrutiny to determine if its accuracy has been changed. We again refer you to the comments of ARB's own analytical laboratory RJ Lee in regards to their determination that this modification to Asbestos Hazard Emergency Response Act (AHERA) is inappropriate and results in data that is not attributable to risk. As it is the Board's duty to take the findings of OEHHA in the health hazard assessment and control risk based on scientifically accepted principles and methods CMA would suggest that either the Board remove the modifications to the AHERA method or better yet replace the AHERA method with National Institute for Occupational Safety and Health (NIOSH) 7402 as recommended by RJ Lee. (CMA)

Agency Response: ARB staff believes that the modified AHERA method as specified in subsection (e)(3) is the appropriate method for analyzing asbestos in air. The ARB has been performing airborne asbestos monitoring since 1986. At that time, we felt the most appropriate regulatory referenced air monitoring test method was in the Asbestos Hazard Emergency Response Act (AHERA). However, we had concerns with the high minimum detection limit (MDL) and the size of fibers counted under the AHERA method. After discussions with experts in the asbestos analysis field, as well as Mr. Kyle Bishop of RJ Lee's San Leandro Office, we lowered the MDL to a health-protective level and required the counting rules be changed to include all fibers with an aspect ratio greater than 3 to 1. NIOSH Method 7402, which the commenter suggests, would also have to be modified to meet these requirements.

The counting of all fibers with an aspect ratio greater than 3 to 1 is an outcome of the Board's identification of asbestos as a toxic air contaminant (TAC), in accordance with Health and Safety Code section 39650, et seq. In the health effects analysis conducted by the California Department of Health Services (DHS) staff (now part of the Office of Environmental Health Hazard Assessment) DHS found that the evidence did not support a conclusion that fibers less than five microns in length did not cause cancer. DHS's conclusion was that all fibers with an aspect ratio greater than 3 to 1 should be considered carcinogenic. To account for the greater ability of TEM to detect smaller fibers, DHS developed conversion factors to allow the toxicity factors developed from epidemiology data based on PCM to be used with TEM analyses. These conclusions were published in a report on the health effects of asbestos in 1986. As recently as 2000, OEHHA has reviewed all subsequent peer-reviewed studies on asbestos exposure and determined that there is insufficient evidence to change the 1986 published findings.

8.2 Comment: Vulcan Materials Company would like to ask the Board to adopt the suggested changes proposed by R. J. Lee to the AHERA method. (VM)

Agency Response: See the response to Comment 8.1.

8.3 Comment: CMA believes it would be prudent for the Board under Section (h) test methods, item (3) analysis of air samples, to include language that allows flexibility and growth in the ATCM. We would suggest that at the end the language "…or other test method approved by ARB." If ARB never finds reason to adopt an air sampling protocol for asbestos it will never be used. If ARB does it will allow that new procedure to be used within this ATCM without further regulatory action. (CMA)

Agency Response: The asbestos test method referenced in subsection (h)(3) has been successfully used by the ARB to analyze air samples for over 15 years. Given this long history, ARB staff believes that any new test method for this purpose should be adopted as a regulatory change, after following the notice and public comment procedures of the Administrative Procedure Act. Therefore, it is not appropriate to include the language suggested by the commenter.

8.4 Comment: The ATCM allows for use of bulk sampling tests, without relation to any of the specific control measures and sampling protocols required in the ATCM. In the separate ARB regulation on surfacing applications of naturally-occurring asbestos, the bulk sampling is required to determine the asbestos content of rock and applicability to the regulation. In this regulation, it is not clear how bulk sampling pertains to applicability of the regulation, whether there are acceptable content levels, or if there is a tie to the earlier regulation on surface applications. (CMAC)

Agency Response: The bulk sampling mentioned by the commenter is referenced in subsections (d)(1)(B)1., (d)(1)(B)3. (e)(4)(D)2.iii., (f)(2)(B)2.iv., (f)(2)(B)3.iii., and (f)(2)(C)6.iv. In each of these subsections, one of the available dust control options is to cover exposed areas with material that contains less than 0.25 percent asbestos. The owner/operator is not specifically required to select this option and may choose one of several other options. If the owner/operator chooses to select this option, the ATCM specifies that the asbestos content of gravel or other bulk material is to be determined by using the bulk sampling test method specified in subsection (h)(2).

8.5 Comment: The distribution of asbestos minerals within ultramafic rock bodies is typically inhomogeneous. Demonstrating that asbestos minerals are below detectable limits in a small sampled volume of rock does not assure that asbestos minerals are below detectable limits in any adjacent volume of rock that might be quarried or disturbed during construction activities. Proving the absence of asbestos in an ultramafic rock body to a high degree of certainty would be very difficult and would require extensive geologic investigation, sampling, testing, and statistical analysis. Currently there is no generally accepted approach for demonstrating that an area containing ultramafic rock does not contain any detectable amounts of asbestos. (DMG)

Agency Response: ARB agrees with this comment. The commenter also underscores why it is necessary that any method that may potentially be developed be subject to public review and the full regulatory process before it can be considered for use.

9.0 Geologic Exemption

9.1 Comment: Section (c)(1) should provide flexibility for the air districts to utilize a qualified geologist (not necessarily registered) to perform a geologic evaluation. This would allow geologists with local knowledge and expertise to be utilized for this work. This would also be more consistent with Amador Air District's regulation regarding stationary source permitting where the Air Pollution Control Officer may require application information to be certified by a professional engineer registered in the state. (ACAPCD)

Agency Response: Staff believes it is best to have someone who has been identified by the State as a registered geologist to be responsible for the results of the geologic evaluation for the purpose of an exemption under subsection (c)(1). Otherwise any person with a layman's knowledge of geology could conduct an evaluation and submit the results to obtain an exemption. This could compromise public health protection by opening the exemption process to potential mistakes or misrepresentation of the facts. If a registered geologist conducted an evaluation and made gross mistakes or purposefully misrepresented the results to favor his client, there is the potential for recourse

against the geologist through the actions of the Department of Consumer Affairs, Board of Geologists and Geophysicists.

The regulation does not require that a district use a registered geologist to assess whether an area outside a geographic ultramafic rock unit should be covered under the regulation (i.e, to determine if the regulation applies to an area as specified in subsections (b)(2) and (b)(3)).

9.2 Comment: The narrow areas with naturally-occurring asbestos at the surface and in outcroppings, and areas of abandoned serpentine quarries and mines need thorough naturally-occurring asbestos impact assessments before development plans are pursued. When construction is safe and approved, appropriate written notices to potential lenders, insurers, and buyers need to occur regarding the potential toxic exposure to naturally-occurring asbestos that has up to 40 years latency between a person's exposure and her disease expression. (ALAC)

Agency Response: There are existing requirements under the CEQA and real estate law that address the need to evaluate the potential impact of development and require notice to potential buyers. Including such requirements in this ATCM would be duplicative. ARB staff does not believe it is appropriate for this ATCM to require notice to potential lenders and insurers.

9.3 Comment: Subdivision (c) of the ATCM exempts certain operations that would otherwise have to comply with the ATCM. With respect to the geologic evaluation exemption, CMAC notes that this exemption is quite difficult to meet. As we understand ARB's interpretation of this exemption, the operator must prove not only the absence of asbestos, but also must prove the absence of both serpentine rock and ultramafic rock. (TDLF)

Agency Response: In the 15-day changes, ARB has deleted the requirement that the geologic evaluation demonstrate the absence of asbestos. If asbestos is identified in the process of a geologic evaluation, however, subsection (b)(2) would then require that the ATCM apply. ARB staff does not agree that demonstrating that serpentine and ultramafic rock are not likely to be found is difficult. Registered geologists should be able to make such a determination.

9.4 Comment: The regulation includes no means for an operator to prove the absence of asbestos. CMAC has requested that an option be included to allow operators to prove the absence of asbestos. And, CMAC has agreed – as the Stationary Source Division requested at its May 15 workshop – to include periodic re-evaluation, sampling, and statistical probability. Yet, the draft ATCM contains no provision to even allow an operator to prove the absence of asbestos. ARB claims it would be too expensive to prove the absence of asbestos, but this is a matter of cost that should be decided by the operator.

Importantly, this draft removes any incentive for an operator to work around areas with asbestos. (CMAC)

Agency Response: The Department of Conservation, Division of Mines and Geology staff has advised the ARB staff and the Board that there is no generally accepted method to demonstrate that an area containing ultramafic rock does not contain any detectable amounts of asbestos. The lack of any currently available method to demonstrate the absence of asbestos – not the cost of such a method – is why the ATCM does not allow a source to avoid the ATCM requirements by attempting to prove the absence of asbestos. At the May 15, 2001, workshop, ARB staff listed some factors that would most likely have to be considered in evaluating a method for determining that no asbestos was present in a given ultramafic rock body. The same issue was also discussed at a June 12, 2001, meeting with ARB, DMG, industry representatives, and industry geologists. At this meeting, no testing methodology or criteria was offered by either industry or DMG that would allow an operator to prove the absence of asbestos. As a result, it is clear to ARB staff that such a method does not currently exist. If an accurate method is developed in the future to prove the absence of asbestos, the ARB staff is committed to proposing an appropriate regulatory amendment to the ATCM. This commitment is reflected in subsection (c)(2), which was added to the ATCM as one of the 15-day changes.

9.5 Comment: Staff has unjustifiably refused industry's request to include a procedure to exempt operations that demonstrate the absence of asbestos in the rock or soil subject to the operation. ISOR, p. V-14. Industry must instead prove the absence of ultramafic rock. In support of this position, staff cites to "informal discussions with the DOC" regarding the ability of a geologist to make a determination that there is no asbestos in the rock body. CMAC notes that in ARB's public outreach campaign, ARB consulted with the Sacramento Area Geologists and Engineers association. ISOR p. III-3. Staff does not cite any discussions with these professionals as support for DOC's proposition.

Staff also opines that the geologic evaluation required to obtain such an exemption may be more expensive than complying with the dust control measures. As to the issue of cost, only industry is in a position to determine if the logistical benefits that inure to not having to implement the more stringent dust control plans required here outweigh the costs of any exemption procedure. (TDLF)

Agency Response: The response to the previous comment explains why the ATCM does not allow a geological exemption to be granted based on an attempt to demonstrate the absence of asbestos in an ultramafic rock deposit. ARB staff's opinion that the methodologies to reliably make this demonstrate do not currently exist is based on the expert opinion of DMG staff. The members of the Sacramento Area Geologists and Engineers (SAGE), with whom ARB staff also

consulted, did not suggest that there was an existing method that could accurately make this demonstration.

It is also ARB staff's opinion that developing a reliable test method and using it to demonstrate the absence of asbestos would be very expensive, and would likely be more expensive than complying with the dust control measures specified in the ATCM. However, the expense of such a hypothetical method was not why staff did not provide this option in the ATCM; a method was not included because one does not currently exist that would do the job. If such a method is developed, staff has committed to proposing it for inclusion in the ATCM, and agrees with the commenter that an individual source should have the option to make its own determination about whether the benefits of using the method outweigh the costs.

9.6 Comment: The geologic exemption should be automatic. If a geologic evaluation shows that an area qualifies, it should be exempt without the landowner having to file and obtain approval for a proposed exemption. (PW)

Agency Response: An automatic exemption is not appropriate. The purpose of requiring the owner/operator to file a report and obtain approval for a geologic exemption is to ensure that the geologic evaluation conforms to the minimum requirements stated in the ATCM. This also provides information districts need for enforcement purposes and to respond to inquiries from the public. Having the exemption occur automatically without district approval could result in inadequate public health protection.

10.0 General Exemptions

10.1 Comment: Section (c)(3) should not exempt homeowners and tenants from implementing dust control measures on their own property during construction and grading at any size disturbance. Complying with section (e)(1) would ensure the reduction of asbestos being released. The Amador Air District supports the exemption from section (e)(3)(A). (ACAPCD)

Agency Response: ARB staff agrees that the dust control requirements of subsection (e)(1) would be prudent measures for homeowners to take when disturbing rock likely to contain asbestos. However, staff believes that public education will lead to greater compliance and lower emissions than imposing regulatory requirements and taking enforcement actions against individual homeowners and tenants. As directed by the Board, ARB staff will undertake a public outreach and education program to inform the public about the potential for exposure from disturbing asbestos-containing material on their own property and steps that can be taken to reduce their exposure.

In addition to the concerns mentioned above, ARB staff believes that the commenter's suggestion would impose a very significant enforcement burden on

small air districts, considering the large number of potential sources and the difficulty in enforcing the requirements on individuals working on their own property. If an air district wishes to undertake this enforcement burden, however, the district has the option under Health and Safety Code section 39666(d) to adopt more stringent regulations than the ATCM adopted by the ARB.

10.2 Comment: Homeowners and tenants should not be exempted from implementing dust control measures on their own property during construction and grading regardless of the disturbance size. Homeowners and tenants who are not normally engaged in the construction field are the persons least likely to be aware of the potential asbestos problem. The districts should be provided enforcement authority. (PCAPCD)

Agency Response: See the response to Comment 10.1.

10.3 Comment: The regulation does not specify on what basis the Air Pollution Control Officer may exempt sand and gravel operations processing materials with naturally-occurring asbestos. The proposed regulation should provide exemption criteria. (BCAQMD)

Agency Response: ARB staff considered establishing criteria that would limit the circumstances under which an exemption could be granted. Staff determined that it was not appropriate to do so, however, because of the wide variability in both the geology of alluvial deposits and the nature of operations in such deposits. It would be very difficult to define specific criteria that would effectively address all situations and factors that would be relevant to granting an exemption. The Asbestos ATCM for Surfacing Applications clarified the APCOs' authority to require testing of any aggregate material sold, supplied, offered for sale or supply, or used for surfacing. If the APCO has concerns about a specific sand and gravel operation due to its proximity to a known ultramafic rock deposit, or for some other reason, testing could be required and the results of that testing could be considered in determining whether to grant that exemption. Staff has confidence that the APCOs will exercise appropriate judgement regarding whether to grant an exemption. While the exemption process may place a decision-making burden on the APCO, it is appropriate that this burden rest with the APCO because the APCO is in the best position to evaluate all of the site-specific factors that may be relevant to this decision.

10.4 Comment: Activities associated with alluvial deposits should either be exempted outright, or the ATCM should state the criteria whereby exemption may be granted. Without this criteria, and in the interest of protecting the public health, the project proponent will be required to demonstrate conclusively, and perhaps at great cost, that an exemption would not result in adverse effects to health. If there is reason to believe that alluvial deposits are not of concern, then the measure should exempt related activities. As it stands, the measure places the burden of this decision upon the Air Pollution Control Officers without addressing

the circumstances under which an exemption may be reasonably approved. (PCAPCD)

Agency Response: Because the geologic composition of individual alluvial deposits varies widely, it is not appropriate provide a blanket exemption for all alluvial deposits. The response to Comment 10.3 explains why is in not feasible to provide specific criteria for granting an exemption. While the exemption process may place a decision-making burden on the APCO, it is appropriate that this burden rest with the APCO because the APCO is in the best position to evaluate all of the site-specific factors that may be relevant to this decision. Finally, it is not likely that "great cost" will be incurred by the project proponent to demonstrate that he or she is entitled to an exemption. Because of the homogenization that has occurred in the process of the transport and deposition of most alluvial deposits, less frequent testing may be acceptable for alluvial deposits than that specified in Test Method 435. Thus, depending on the circumstances, a small amount of testing may well be adequate to determine whether detectable asbestos could be found in the rock being processed.

10.5 Comment: Concerns regarding mining in alluvial deposits in our April 6th letter have been addressed within the ATCM through the sand and gravel exemption and associated definition of "Sand and Gravel" that includes any material mined from an alluvial deposit. However, this exemption as currently worded does not apply to excavation. We believe it is appropriate to include excavation within the exemption as all of these operations will default to dust control procedures under current law. (CMA)

Agency Response: It is not appropriate to allow an exemption for excavation for alluvial deposits. It is important to recall that this exemption is for alluvial deposits in Geographic Ultramafic Rock Units. It is conceivable that some of the underlying material could be excavated along with the alluvial material. In the interest of protecting public health, staff believes that effective dust control should be applied during excavation. As noted in the responses to Comments 1.8 and 1.12 and in the ISOR (Page V-1), district requirements vary. In addition, as pointed out in the response to Comment 1.1, where existing requirements are equivalent to the requirements of the ATCM, no additional control will be needed.

10.6 Comment: The current version of the ATCM uses the term "complete application." We do not object to the term itself but would ask that a provision be added to notify the operator whether an application is complete or not. The concern is that at the end of 90 days after filing a geologic exemption application an operation would receive word it was denied based on completeness, forcing them to begin the 90-day application process all over again. We would appreciate ARB providing clarification to ensure this does not occur. (CMA)

Agency Response: ARB does not believe extensive requirements and timeframes for action will improve the implementation of this ATCM. Staff has

every confidence that the administrative interactions between the air districts and the potentially affected sources can be carried out in a cooperative manner to accomplish timely compliance with this regulation. ARB added the requirement that air districts grant or deny an application for an exemption within 90 days at the request of the industry. The term "complete application" was added to encourage the applicant seeking the exemption to contact the district prior to submitting an exemption application. By doing this, the district is able to discuss with the applicant the information that will be required to process the application within the 90-day time period. As a result, the likelihood of an application being rejected because it did not contain the necessary information will be minimized and the applicant should not find themselves facing a new 90-day period.

10.7 Comment: The district should be given the authority to grant an exemption for alluvial source materials provided that the material is only from alluvial and the material is tested once per year. (LCAQMD)

Agency Response: While ARB staff's preliminary draft regulation did not contain the exemption requested by the commenter, the requested exemption was contained in the proposed regulation made available for the 45-day comment period. However, ARB has not included a requirement that the material be tested on a specific frequency. We believe that the district is in a better position to attach appropriate conditions to the exemption, including a condition requiring periodic testing.

10.8 Comment: Exemptions may be granted by the APCO. The APCO may wish to place conditions on the exemption for the protection of the public health. Language should be added which grants the APCO the authority to include, on a case-by-case basis, additional conditions on any exemption granted. (LCAQMD)

Agency Response: ARB staff believes the authority of a district to grant exemptions includes the authority to attach appropriate conditions to those exemptions. The Legislature imposed on districts the duty to implement and enforce ATCMs (see Health and Safety Code section 39666(d)), and granted districts broad powers to "… do such acts as may be necessary or proper to execute the powers and duties granted to, and imposed upon the district …" (Health and Safety Code section 40702). ARB staff believes that attaching appropriate conditions to exemptions is within the scope of this broad grant of authority.

10.9 Comment: We believe it is possible to prove whether you are not disturbing asbestos. A surface investigation combined with an ongoing monitoring program is a valid option the Board could consider. (CMA)

Agency Response: A surface investigation would not reveal anything about the material below or adjacent to the sampled material. An ongoing monitoring program would not prevent emissions but would only be capable of detecting

them as or after they had occurred. Depending on the type and extent of monitoring, emissions could actually occur without being detected. Requiring dust mitigation measures only after the emissions had occurred and been detected is not a health protective approach and would not meet the requirements of Health and Safety Code section 39666(c).

10.10 Comment: As proposed, a discretionary exemption from these regulations is offered to sand and gravel operations processing only materials from an alluvial deposit [section (c)(4)]. This exemption may be granted by an Air Pollution Control Officer without any technical analysis of emissions. I would recommend that this exemption be rescinded or revised to first require a demonstration of safe levels of asbestos fiber emission. (ALAC)

Agency Response: The commenter appears to be suggesting air sampling to demonstrate a "safe level of asbestos emission." ARB staff cannot identify a safe level of emissions because asbestos is a TAC for which a threshold exposure level could not be identified. As discussed in the response to Comment 10.3, it is not feasible to establish specific criteria for granting this exemption. The APCO is in the best position to assess what information may need to be provided to support an exemption request.

10.11 Comment: We agree that the regulations generally should not apply to ongoing timber harvesting activities. It would be virtually impossible to meet the conditions being imposed for construction or other activities in the proposed regulation on the steep wooded hillsides where most of our activities occur. The final regulation should retain this provision. (CFA, PW)

Agency Response: This exemption is retained in the adopted regulation.

10.12 Comment: Timber roads should be categorically exempt because they are already regulated by the Forest Practices Act and the Forest Practice Rules through the Timber Harvest Plan process. In addition, they are remote, temporary, and not intended for public traffic. Entrances to the property are gated and vehicular traffic is limited to employees and contractors of the timber companies. (PW)

Agency Response: A categorical exemption for timber roads is not appropriate. In some cases the existence of inholdings result in the timber roads on private property being open to the public. In addition, some timber roads are constructed on public property (land administered by the National Forest Service or the Bureau of Land Management) and these roads are likely to be open to the public as these lands are designated for multiple uses. The ATCM provides an exemption for road construction and maintenance projects in remote locations so this option is available for timber roads that are truly remote. The Forest Practice Rules state that site preparation shall be planned and conducted in a manner which encourages maximum timber productivity, minimizes fire hazards, prevents

substantial adverse effects to soil resources and to fish and wildlife habitat, and prevents degradation of the quality and beneficial uses of water. Erosion control procedures are required to prevent excessive runoff during the rainy season. Nothing in the Forest Practice Rules requires application of the best available dust control measures. Therefore, ARB staff does not believe that the application of these rules provides protection of public health that is equivalent to the ATCM.

10.13 Comment: Maintenance of timber roads should be categorically exempt. Timber companies voluntarily conduct significant road maintenance to improve and protect water quality, species, and habitat and to access their resources. Regulating road maintenance would provide a disincentive for timber companies to improve existing environmental conditions on their land. (PW)

Agency Response: An exemption is not appropriate. The requirements of the ATCM will ensure that the road maintenance activities on timber roads are done in a manner that will not harm public health. The requirements adopted by the Board are not excessively burdensome and will result in reduced emissions of naturally-occurring asbestos to the ambient air. Because the requirements of the ATCM are not difficult to comply with, staff does not believe that they would be a "disincentive".

11.0 Exemptions – Remote Locations

11.1 Comment: The exemption for road construction and maintenance projects at remote locations should be revised to require that a screening risk assessment be submitted to and accepted in writing by the Air Pollution Control Officer demonstrating that the public health will be safeguarded if control requirements are waived. (ALAC)

Agency Response: The APCO has the authority to require an assessment of risk prior to granting an exemption, this authority is provided by Health and Safety Code section 40702; as explained in the response to Comment 10.8. ARB believes the district is capable of determining when to require a risk assessment based on site-specific factors such as the asbestos content, the extent of the activity, and the numbers, proximity, or type of potential receptors. Districts routinely engage in this type of decision making for a variety of source categories. It is not appropriate for the ATCM to mandate a risk assessment for every remote location exemption because a risk assessment would be unnecessary for some locations due to site-specific factors.

11.2 Comment: Economic and procedural impacts would be greatly lessened if there was a remote locations exemption for remote, low production, and infrequently used quarries that contain asbestos. Obtaining a permit each time one of these quarries is used would be a time-consuming process and an added expenditure of taxpayer money. A simple notification and request for exemption could be

made to the local Air Pollution Control District when the National Forest plans to use a remote quarry that contains asbestos. To reduce public exposures and comply with the proposed regulation, the National Forest can require a Dust Abatement Plan for quarry development and pit operations in asbestos-bearing rocks through Special Contract Specifications. (KNF)

Agency Response: The ARB staff believes that a remote location exemption for quarries is not necessary, and that the health protective requirements of the ATCM do not impose unreasonable economic and procedural impacts on remote, low production, or infrequently used quarries. The ATCM does not require that an operator acquire a permit each time a quarry is used. The ATCM requires a district-approved asbestos dust mitigation plan for each quarry and this requirement need be met only once. This requirement need not be excessively burdensome as an agency operating numerous quarries could develop a generic dust mitigation plan that could be used for all, or nearly all, of the quarries.

11.3 Comment: We agree that the regulations generally should not apply to ongoing timber harvesting activities. It would be virtually impossible to meet the conditions being imposed for construction or other activities in the proposed regulations on the steep, wooded hillsides where most of our activities occur. (STC)

Agency Response: The ATCM includes an exemption for timber harvesting operations (see subsection (c)(3)) in consideration of the issues expressed by this commenter.

11.4 Comment: In general, many of the roads servicing timber management activities are remote and pose no real risk with regard to asbestos. We urge you to retain an exemption for remote locations. However, in our view the exemption should be automatically applied in situations that meet the criteria for a remote area, rather than requiring the local APCO make the decision. (STC, CFA)

Agency Response: An automatic exemption is not appropriate because it would preclude the district from exercising any discretion based on site-specific considerations such as the asbestos content, the extent of the activity, and the numbers, proximity, or type of potential receptors. In addition, the requirement to obtain an exemption ensures that the district is aware of the activity and able to respond to inquiries from the public.

11.5 Comment: The Clear Creek off-road vehicle facility is in a known asbestos area. The State of California has a liability because it is funding this facility. The facility is owned by the U.S. Department of the Interior, Bureau of Land Management (BLM). BLM says that due to the asbestos hazard, BLM does not encourage use. The regulation should restrict the remote exemption for roads to roads that are not open to the public. (Cunningham)

Agency Response: The ATCM requires the use of the best available dust mitigation practices for road construction and maintenance in an area where asbestos is known or likely to occur. The district can grant an exemption for road construction and maintenance activities in a remote location. The district is not required to grant this exemption and has the authority to attach conditions to the exemption. It is not appropriate to limit the district's discretion by restricting the remote location exemption to roads that are not open to the public at all. Such a blanket restriction would not be justified in many situations where roads are infrequently used.

11.6 Comment: The discretionary exemption for road construction and maintenance projects occurring at "remote locations" from regulatory controls [section (d)(3)(B)] should be amended. Unless a worse case analysis is performed that confirms the adequacy of a one mile separation distance, section (d)(3)(B) should be revised to require the submittal of a screening risk assessment to the Air Pollution Control Officer in demonstrating that public health will be safeguarded if control requirements are waived. (ALAC)

Agency Response: This comment is addressed in the responses to Comments 11.1 and 11.8.

11.7 Comment: FRC agrees that it is appropriate to exempt road construction and maintenance activities in remote locations. However, FRC urges the Board to make it automatic rather than discretionary. If an area qualifies for the remote location exemption, then it should be exempted without the landowner having to file for and obtain approval for a proposed exemption. It is not clear under what circumstances or upon what basis the Board would deny an application for a remote location exemption. (PW)

Agency Response: ARB staff believes it is appropriate and necessary for districts to know the basis for and location of areas that are exempt from the dust control requirements. This allows the district to effectively manage enforcement resources and respond to inquiries from the public. The Board will not be evaluating or granting any exemptions under this ATCM. Implementation and enforcement of ATCMs is the responsibility of the air districts. ARB staff believes most remote location exemptions will be granted. However, there may be special circumstances in which the district might refuse an application for a remote location exemption. For instance, an exemption may not be appropriate for a project near a school, day care center, or another location where large numbers of sensitive receptors may be present. In addition, a district may deny an exemption for an extensive road construction project in an area where the asbestos concentration in the material being disturbed is likely to be high. A district may be aware that a currently "remote location" is scheduled to be developed in the near future. Given the great variability in the circumstances that may be present at any "remote location", the ARB concluded that to adequately

protect public health it would be inappropriate to specify criteria to limit an air district's discretion to deny a remote location exemption. Instead this decision is left up to the air districts, after taking site-specific conditions into account.

11.8 Comment: The definition of the term "remote location" is arbitrary and vague and is not supported by substantial evidence in the record. Unless there is substantial evidence in the record to support a distance of one mile as a safe distance, the definition of remote should be changed to one-fourth mile to account for the actual remoteness of construction and maintenance operations in timber country. In addition, FRC requests that the Board clarify the definition of remote location to make it clear that it does not regulate the entire span of a road if only part of the road falls within one mile of a potential receptor. (PW)

Agency Response: ARB staff cannot conclusively demonstrate that a distance of one mile from an emission source is safe. Air dispersion modeling indicates the risk may be minimal for use of unpaved roads at a distance of one mile if the asbestos concentration is less than five percent. (See pages III-4 and III-5 of the June, 2000 Initial Statement of Reasons for the Proposed Amendments to the Asbestos Airborne Toxic Control Measure for Surfacing Applications, which is listed as one of the references for the current rulemaking action). Staff felt that under some circumstances the risk might be low for road construction and maintenance activities at the same distance from receptors. While the road modeling provides some indication of the conditions under which disturbance of asbestos-containing materials may not create a significant hazard to public health, the differences between the modeled conditions and the actual conditions of a road construction and maintenance project do require that this be a discretionary exemption. Districts will need to consider appropriate factors such as the potential asbestos concentration, the extent of the activity and the proximity of sensitive receptors in determining whether to grant an exemption. The evidence does not support changing the definition of remote location to one-quarter mile because the data shows that risks may be significant at this distance. It should also be noted that the one-mile criterion for the remote location exemption is the same in this ATCM as in the Asbestos ATCM for Surfacing Applications, where the board considered the relevant issues before adopting the exemption. Finally, an explanation of how the remote exemption would apply to roads that are partially remote can be found in the FSOR for the Asbestos ATCM for Surfacing Applications (attached) in the response to Comment 11.1, which is incorporated by reference herein. Further clarification of the exemption is not necessary.

12.0 Visible Emissions

12.1 Comment: Throughout the regulation, it is prohibited to allow visible emissions to cross the property line. To ensure maximum protection of the public, the Amador Air District prefers that emissions be reduced at the release point and be measured at that point. This would be consistent with Amador Air District's

fugitive dust rule. You may consider using 10 percent opacity or an equivalent Ringlemann as the measurement criteria. (ACAPCD)

Agency Response: Requiring compliance based on visible emissions evaluation (VEE) was one of the alternatives ARB staff considered. The reasons this option was rejected are discussed on page V-12 in the ISOR. Most construction projects have not had to comply with VEE based regulations and consequently do not have staff trained in the procedure. Use of an opacity standard is only one way of evaluating compliance, not the only way and ARB staff concluded the adopted approach preferable because it was less burdensome and there is no evidence that the commenter's approach is any more health protective. The ATCM is a combination of prescriptive requirements and performance standards. It requires that certain dust mitigation practices be implemented, and includes the requirement that no operation produce emissions that are visible crossing the property line as a mechanism for judging whether these practices are being carried out adequately. Asbestos emissions can be reduced by effective dust control measures and evaluation of visible emissions can distinguish between effective dust control and ineffective dust control. The ATCM does require that emissions be reduced at the release point since the prescriptive requirements in the regulation are designed to do this. In addition, relying on an opacity standard only is not feasible because there is currently no generally accepted method for measuring the opacity of emissions from a moving source. Finally, it is not clear that a 10 percent opacity standard at the point of origin, as suggested, would result in a lower emission rate than the prescriptive requirements combined with a no visible emissions at the property line standard.

12.2 Comment: Visible dust at the property line may not prevent a public health risk. Control at the source is preferable to prevent re-release of small particulate from otherwise uncontrolled area sources and equipment. The visible emission limit of 20 percent opacity is not fully compatible with the goal of no visible emissions. (LCAQMD)

Agency Response: A discussion draft of the regulation proposed both a 20 percent opacity standard at the point of emission and a no visible emissions crossing the property line standard. The 20 percent standard was removed from the proposed regulation and replaced with standards for specific process equipment. These new standards reflect the U.S. EPA's New Source Performance Standards (40 CFR Ch. 1 Subpart OOO-Standards of Performance for Nonmetalic Mineral Processing Plants). ARB does not believe there is a conflict in having both an emission point opacity standard and a no visible emissions crossing the property line standard because neither standard may be exceeded. We recognize that the lack of visible emissions at the property line does not guarantee that there will be no public health risk. However, the regulation requires specific action to reduce emissions and provides the no visible emissions standard as a way to evaluate the effectiveness of the dust control measures. The objective of an ATCM for a TAC such as asbestos is to

reduce emissions to the lowest level achievable through application of the best available control technology, and ARB staff believes that this ATCM accomplishes this goal in the most feasible manner.

12.3 Comment: The “no visible emission” standard articulated in (d)(1)(B) should be applied to all construction and grading operations. Absent an analysis by ARB staff demonstrating a margin of safety in protecting the general public, I would recommend that the Board err on the side of public health and require that soil disturbance, excavation, transfer, and grading operations be required to comply with a no visible emissions standard, as is proposed for road construction and maintenance projects [section (d)(1)(B)], instead of a standard which prohibits visible emissions only at the property boundary. Preventing visible emissions only at the property line will not protect public health because by the time there are visible emissions at the property line it will be impossible to contain or control for any potential asbestos fibers. For quarrying and mining operations that are allowed to operate with visible emissions up to 10 or 15 percent, we would suggest that mandatory personnel, area, and fenceline monitoring be imposed to guarantee public health protection. (ALAC)

Agency Response: The ATCM requires no visible emissions at the property boundary for both: (1) road construction and maintenance activities, and (2) construction and grading operations. It is not appropriate to specify a standard of no visible emissions to the air at the point of emission (i.e., the point where the disturbance or operation is taking place) because such a standard is probably not achievable for all construction and grading operations or all road construction and maintenance activities. Even when a conscientious operator uses the best available control practices, it is unrealistic to expect that large pieces of heavy machinery can be operated without generating some localized dust for some activities.

The ATCM requires that certain dust mitigation practices be implemented. These prescriptive practices are combined with the requirement that no operation produce emissions that are visible crossing the property line. This is needed as a mechanism for judging whether these practices are being carried out adequately. Thus, the ATCM does require that emissions be reduced at the release point, but does not attempt to specify the somewhat unrealistic standard of "no visible emissions" at the release point. The ARB staff also does not believe that it is necessary to impose mandatory personnel, area, and fenceline monitoring. OSHA regulations specify when personnel monitoring is required; therefore a duplicate requirement in the ATCM is not necessary. ARB believes it is appropriate to allow districts to determine when to require ambient air monitoring, as provided in subsection (g) of the ATCM. Districts are in the best position to take into account localized and site-specific conditions in deciding when to require air monitoring.

12.4 Comment: CMA's April 6th letter suggested that zero visible emissions be defined using a test method and suggested U.S. EPA Method 22. At our meeting with ARB staff it was indicated that Method 22 was deemed unacceptable by staff, but that staff would look at incorporating a test method to ensure that readings are taken uniformly and consistently. While, we appreciate the added clarification of "crossing the property line", additional modifications are still needed to address our concerns. CMA believes that a method to determine zero emissions is needed. (CMA)

Agency Response: As noted by the commenter, ARB staff evaluated the feasibility of using EPA Method 22. Method 22 is designed to determine the frequency or duration of visible emissions. Since the standard incorporated in the ATCM does not allow emissions for any duration, Method 22 is not directly relevant. Method 22 and Method 9, a method for evaluating the opacity of visible emissions, have peripheral relevance in that both address the need for the observer to be cognizant of background contrast, ambient lighting, and observer position relative to lighting. The commenter has suggested that the ATCM specifically address these issues. ARB does not agree that this is necessary. District rules and state law contains specific visible emissions limits. Consequently, district inspectors are routinely trained in visible emissions evaluation and thus are sufficiently aware of the effects of lighting and background contrast. The definition of visible emissions in the ATCM is clear and specific and is consistent with the definition of visible emissions in the National Emission Standard for Asbestos (40 CFR Ch. 1 Subpart M).

12.5 Comment: CMA would suggest the following correction to (f)(3)(A)(1) so that it is consistent with (f)(2)(C)(1) due to modifications to reflect the various opacities;

> (f)(3)(A)(1) "material being excavated, crushed, screened, loaded, transferred or conveyed does not result in any dust that is visible crossing the property line; and"

We believe this is the intent of the section and it provides clarity by defining what sources of emissions are being controlled by the procedures and methods of the ATCM. (CMA)

Agency Response: It is not necessary to use the same language in both of these ATCM subsections because the two subsections are designed to accomplish different things. Subsection (f)(2) requires various measures to be implemented when ultramafic rock, serpentine, or naturally-occurring asbestos is discovered in the area to be disturbed after the start of the quarrying or surface mining operation. More specific requirements are appropriate for this subsection because sources must be provided with clear directions about what they must do in this situation, prior to the approval of a dust mitigation plan by the district. Subsection (f)(3) requires sources to submit a dust mitigation plan to the district and gives sources the flexibility to design this plan to meet site-specific

conditions. For this subsection it is appropriate to specify more general performance standards that do not unnecessarily restrict the potential dust generating equipment or operations that can be addressed in the plan. The necessary specificity will be incorporated in the plan.

12.6 Comment: Subsection (e)(4)(G) of the ATCM states the site must be stabilized at the end of construction, and lists the stabilization methods that may be used. One of these options is "any other measure deemed sufficient to prevent wind speeds of 10 MPH or greater from causing visible emissions." The purpose of this option is not entirely clear. As written, it implies visible emissions resulting from wind speeds of 10 MPH or less are acceptable, and that non-visible emissions at any wind speed are also acceptable. Since asbestos fibers are not visible without use of a high-powered microscope, it is apparent uncovered asbestos materials are not safe at any speed. Since this measure is not particularly effective, and appears to act as a performance standard that can be used in lieu of the three preceding management approaches, it is recommended that it be deleted. (McMahan)

Agency Response: Subsection (e)(4)(G) specifies that upon completion of the project, disturbed surfaces shall be stabilized using one or more of the methods listed (emphasis added). The purpose of the option in subsection (e)(4)(G)4 is to provide flexibility to consider measures other than those specifically listed. This added flexibility is necessary to address situations in which none of the listed methods are suitable or some other method may work better. The purpose of stabilizing the exposed surface is to prevent wind erosion. The criteria given are related to the susceptibility of the exposed surface to wind erosion. A surface is considered to be highly erodible if it has a threshold friction velocity corresponding to an ambient wind speed of about 15 miles per hour. A threshold requirement of 10 miles per hour was specified in the ATCM to provide an adequate margin of safety. Staff believes that measures sufficient to prevent visible dust emissions at this threshold level will also be effective in preventing asbestos emissions, whether visible or not, from becoming entrained in the ambient air. The commenter's underlying concern may be that some measures meeting the criteria of subsection (e)(4)(G) might just not work very well. The ARB staff does not believe that this is a problem, however, because the district must approve each plan and can reject any plan with proposed measures of questionable effectiveness.

12.7 Comment: The requirement of no visible emissions at the property line is not a practical way of minimizing emissions from any potential dust generating operations. The more prudent approach, which is used in standard dust mitigation plans, is to require the emissions be controlled at the source of generation. This will reduce any re-entrainment or re-release of emissions not considered in the dust control measures. For large properties over five acres, no visible emissions at the fenceline equals no control. The use of a "no visible emission at the property line" emission standard will not adequately protect public

health downwind of an operation releasing fugitive dust containing asbestos fibers, nor does such a standard represent best management practices in controlling asbestos fiber emissions from such sources. (NSCAPCD, ALAC)

Agency Response: At no place in the ATCM is the no visible emissions limit at the property line offered as a stand alone requirement. The ATCM is a combination of prescriptive requirements and performance standards. It requires that certain dust mitigation practices be implemented, and it also includes the requirement that no operation produce emissions that are visible crossing the property line as a mechanism for judging whether these practices are being carried out adequately. Thus the ATCM does require that emissions be controlled at the point of generation.

12.8 Comment: It is impractical to expect that dust control measures will prevent visible emissions during road construction activities. The Board should recognize that generation of some dust during the construction process is inevitable. (PW)

Agency Response: Modifications were made to subsection (d) that list specific dust control measures that must be taken and require that equipment and operations must not cause the emission of any dust that is visible crossing the project boundaries. These modifications were made available for a supplemental public comment period starting December 19, 2001, and ending January 15, 2002.

Staff recognizes that some localized dust may sometimes occur in the immediate area where heavy equipment is operating, even if dust control measures have been undertaken. Therefore, the regulation does not prohibit all visible dust only dust that is visible crossing the project boundaries.

13.0 Signing

13.1 Comment: The regulation should require that the owner/operator of an identified asbestos disturbance site provide a general notice, or a posting of signs, to inform workers at the site and the surrounding public of the potential presence of asbestos and the potential hazards. We encourage you to consider adding a posting requirement as part of the asbestos dust mitigation plan. Such notice is the right of both employees and the public. (PCAPCD, ACAPCD)

Agency Response: This requirement is not included in the ATCM because it is difficult to develop statewide criteria for signage due to the wide range of variability from site to site (e.g. duration of construction activities, proximity and type of receptors). ARB staff believes that the districts are in the best position to decide whether and for whom signs should be required based on site-specific factors.

13.2 Comment: It would be irresponsible from a public health viewpoint not to raise the issue that local governments must adequately inform current and future residents about the existence of asbestos. (ALAC)

Agency Response: This comment does not address any provision of the ATCM. However, the Board has directed staff to take action to inform the public about the potential risks from disturbing asbestos-containing material on their own property and appropriate ways to reduce their exposure.

13.3 Comment: Construction and grading operations often are phased with other construction activities and serpentine may be left exposed for periods of one or more years before a project is completed. Limiting public access and posting asbestos hazard warnings are consistent with “community right to know” and avoids unsecured and unauthorized disturbance. It should be a requirement of the ATCM. (LCAQMD)

Agency Response: It is unlikely that construction projects of one acre or less would be carried out in a phased manner. The larger projects the commenter is concerned about would be required to obtain district approval for an asbestos dust mitigation plan. Among the emission sources which must be addressed in the plan are disturbed surface areas and storage piles that will remain inactive for more than seven days. Limiting public access as well as preventing wind erosion are suitable requirements for such situations. With regard to the posting of signs, ARB staff believes that the districts are in the best position to decide whether and for whom signs should be required.

13.4 Comment: The ATCM should require a large sign clearly visible to persons entering any active construction site and containing the following or similar warning: “DANGER AIRBORNE ASBESTOS DUST HAZARD – CANCER AND LUNG DISEASE HAZARD – Avoid tracking material from site.” The lack of such a requirement is inconsistent with Proposition 65, with the federal asbestos rule for demolition and renovation that requires both posting and extensive training to handle less friable and smaller quantities of asbestos material, and with the existing Lake County AQMD rule. In addition, employees working at the construction site should be informed by the owner of the project of the potential health risk of airborne asbestos, and the requirements of the Asbestos Dust Mitigation Plan, District Rule, or the applicable prohibitions. We believe notice and awareness is necessary for effective management. (LCAQMD)

Agency Response: The ARB staff believes it is better public policy to allow each district to decide whether and under what conditions signs should be required, based on site-specific factors. It is neither necessary nor desirable for the ATCM to duplicate the requirements of Proposition 65, the Safe Drinking Water and Toxic Enforcement Act of 1986, and there is no "inconsistency" between Proposition 65 and the ATCM. (The asbestos-specific warning suggested by the commenter is also not the type of more generic warning required when

Proposition 65 requirements are triggered.) There is also no "inconsistency" with the federal asbestos rule for demolition and renovation, which covers completely different activities than those covered by the ATCM. In addition, the probability that the public will be in close proximity to the work is lower for construction, grading, quarrying, and surface mining that for demolition and renovation. Finally, individual districts who wish to require various public notice requirements are free to adopt their own ATCM which includes such requirements (see Health and Safety Code section 39666(d)).

13.5 Comment: The absence of a requirement to post or notice the potential release of asbestos is inconsistent with existing California requirements such as Proposition 65 and with the federal asbestos rule that requires both posting and extensive training to handle less friable and smaller quantities of asbestos material. (NSCAPCD)

Agency Response: This comment is addressed in the response to the previous comment.

14.0 Health Effects

14.1 Comment: The ISOR maintains that the scientific burden of proof in regards to the ATCM has been met by indicating that the 1986 OEHHA Health Hazard Assessment clearly found there was no safe level of asbestos and set a unit risk factor for asbestos. CMA does not completely agree with this assertion. Indeed, OEHHA did adopt a health hazard assessment for asbestos, however, the adopted health hazard assessment was for processed asbestos fibers in manufacturing and processing facilities and not adopted for asbestos as it occurs naturally in the environment. Indeed, the 1986 Health Hazard Assessment specifically chose to ignore health hazards associated with mining operations. Yet, ARB now proposes to regulate the mining industry based on an exposure assessment that did not include data from mining operations. (CMA)

Agency Response: In performing the health risk assessment for asbestos, OEHHA evaluated the available epidemiological data. Much of that data were based on exposure assessments of workers exposed to processed asbestos.

Much of the exposure data were collected using Phase Contrast Microscopy (PCM). As noted in the Attachment to the comments of the Construction Materials Association of California (CMAC) dated July 25, 2001, PCM is unable to distinguish between asbestos fibers and the cleavage fragments of similar minerals. The studies of Canadian asbestos miners were excluded from both the OSHA's 1986 quantitative risk assessment and the OEHHA's 1986 risk assessment because the dose response differed significantly from all the other studies. A number of theories have been advanced to explain this result. Some have suggested that this difference is due to some physical or chemical difference between mined and processed asbestos that makes mined asbestos

less hazardous. Others have cited this finding as evidence that chrysotile is not hazardous. Another possible explanation for this difference was offered in the attachment to the July 25, 2001, CMAC letter. It suggests that the asbestos product may represent only five percent of the mined rock. The other 95 percent would be primarily the non-asbestiform mineral antigorite. Measurements of asbestos using PCM would have included true asbestos fibers as well as non-asbestos antigorite cleavage fragments in the "fiber" count. This would result in an inflated fiber count and could account for the lower response to the estimated exposure seen in this study.

At this time, none of these explanations can be definitively proved so it is prudent to take the health protective approach. OEHHA has taken all of this evidence into account and has advised ARB that it is appropriate to adopt regulations for naturally-occurring asbestos based on the health risk assessment performed in 1986. They have also evaluated scientific evidence generated since 1986 and concluded that no change in the risk assessment is warranted.

14.2 Comment: Asbestos was identified as a TAC in 1986. A review of the scientific authorities presented in this ISOR and the 2000 Surfacing ISOR shows that little data has been generated since the original ATCM was adopted in 1990, and there is no new data on issues identified in the late 1980's such as whether there is any similarity between the asbestos fibers generated by aggregate and mining operations and those present in the ambient air. (TDLF)

Agency Response: As noted in the response to Comment 14.1, there is only one study which has found a difference in the dose response for miners. A number of theories have been advanced to explain this difference. Some have suggested that the emissions from mining and milling might differ in some characteristic that results in a different dose-response relationship. Others have held that this is proof that chrysotile is not hazardous. Still another theory identified in CMAC's July 25, 2001, comments suggests that the discrepancy may be related to the inability of the monitoring method to distinguish between asbestos fibers and antigorite cleavage fragments. Until studies that do not incorporate this flaw are done, ARB agrees with OEHHA that the results of this study should be excluded from the quantitative risk assessment. Further, OEHHA has advised ARB, based on all available evidence, that it is appropriate to adopt regulations for naturally-occurring asbestos using the quantitative risk assessment performed in 1986.

14.3 Comment: The risk analysis in the ISOR completely neglects the details of the 1986 DHS study, as explained in a 1989 OEHHA memorandum. The 1986 DHS study expressly excluded from its analysis data that showed a lower incidence of lung cancer in asbestos miners and millers. As relevant here, the memorandum stated:

> "While miners may be exposed in the occupational environment to the coarsest, least respirable fibers, this may not be true of environmental exposures to fibers from mines, quarries and crushed serpentine. Weathering may result in coarse fiber disaggregation, resulting in finer fiber size distribution in the general environment than in mines. Fine fibers are also most likely to be entrained and become airborne, so that the fiber size distribution in mines may not be representative of environmental exposures. A separate assessment using just the miners' and millers' data would result in an approximately ten- to thirteen-fold reduction in estimated risk."

The above statement distinguishes between fibers generated by the occupational activities at a mine – such as crushing, screening, stockpiling and loading – and the impacts of natural forces or "weathering." The OEHHA memorandum states that the natural forces are more likely to create the finer fibers, which are the fibers that are most likely to become airborne and present the greatest health risk. The proposed ATCM does not impose any requirements on mines that may reduce the possible exposure of serpentine to natural forces – it only regulates the occupational activities that generate the larger fibers, which are less likely to become airborne and inhaled. The ISOR fails to account for this important distinction in the data. Hence, there is evidence that suggests that the risks actually posed by the very activities regulated by the proposed ATCM are significantly lower than the other types of activities. (TDLF)

Agency Response: Many theories have been advanced as possible explanations for the results of the study of Canadian miners (see the responses to Comments 14.1 and 14.2). OEHHA has evaluated all the available evidence and concluded that it supports the ARB's decision to adopt regulations for naturally-occurring asbestos using the 1986 risk assessment. Further, the air monitoring done by ARB was designed to capture the smaller fibers (less than 10 microns) which are more likely to become airborne and present the greatest health risk. The air monitoring shows elevated asbestos concentrations and risks near sources regulated by the ATCM.

14.4 Comment: The miners and millers data is also supported by the lack of epidemiological or even anecdotal data from developed areas that exist in serpentinite deposits that shows a higher incidence of mesothelioma or lung cancer in the population. For example, there are a number of areas in the San Francisco Bay area, such as the Potrero Hills, Hunters Point, portions of Richmond, the El Cerrito Hills, and San Leandro that are in serpentinite deposits. In the case of the Potrero Hills and Hunters Point, those areas have been developed for almost one century. Again, there is no evidence that residents of these areas have a higher incidence of asbestos-related diseases. This is further evidence that significant research is necessary before Mother Earth in its natural state is regulated as a toxic. (TDLF)

Agency Response: The ATCM does not regulate Mother Earth in its natural state, it regulates the disturbance of the natural state. One reason so much of the human health effects data is based on worker exposure is that the exposure levels are more likely to have been measured and it is easier to track employees to determine health outcomes (especially those that may take decades to be manifested). Even with the best of data, effects from low levels of exposure may be statistically very difficult to distinguish from the background cancer rate. Even with a cancer such as mesothelioma, which is generally almost exclusively related to asbestos exposure, attributing any case to environmental exposure requires that all occupational exposure be ruled out. Given the difficulty of demonstrating a statistically significant increase in the cancer rate for a population with inconsistent and undocumented potential exposures, it is not surprising that there are no epidemiological studies (or anecdotal evidence) that demonstrate an increased incidence of cancer or mesothelioma for populations in areas in which serpentine occurs. The data is simply not available to support such a study and it can not reasonably be made available due to the factors mentioned above. Regarding the miners and millers data, see the responses to Comments 14.1 and 14.2. Regarding epidemiological studies, see the response to Comment 14.7.

14.5 Comment: We are concerned about exposures to naturally-occurring asbestos that may occur in the long-term if one allows construction upon such sites, especially so in the case of homes and schools. (Maidu Group)

Agency Response: ARB is also concerned about the potential for exposure when people disturb asbestos-containing material on their own residences. To address this, the Board has directed staff to inform the public about the potential exposure from disturbing asbestos-containing material on their own property and appropriate ways to reduce their exposure. The Board does not have any land use planning or permitting authority, which is the responsibility of local governments. A requirement currently exists under the CEQA to address the environmental impacts of development.

14.6 Comment: Epidemiological data supports the conclusion that amphiboles are far more toxic than chrysotile asbestos. There is a growing consensus that amphiboles should be regulated far more rigorously than chrysotile asbestos. Since amphiboles make up a very small percentage of the naturally-occurring asbestos formations, there are significant health and economic impacts that can be lessened by recognizing this disparity in toxicity. (McMahan)

Agency Response: The suggestion that the epidemiological data supports a lesser level of control for chrysotile is not supported by the facts. OEHHA's quantitative risk assessment is based on the best available scientific data available at the time it was completed. OEHHA staff has also reviewed data developed since the quantitative risk assessment was completed. The

conclusions of both the OEHHA and the Scientific Review Panel (SRP) are that the data does not warrant revision to the toxicity factors. Further, no studies have suggested any potency differences between chrysotile and amphiboles in causing lung cancer. The ATCM requires the use of control measures to reduce asbestos emissions regardless of whether the asbestos is chrysotile or amphibole.

14.7 Comment: Ongoing epidemiological studies should be conducted to ascertain the increased mortality and morbidity associated with construction of homes, schools, businesses and other facilities in amphibole deposits. Otherwise, such increases may simply be considered "background" levels of disease, defying classification as to cause. Implementation of the Asbestos ATCM, as written, would simply increase the exposed population. The ATCM should be amended to require epidemiological studies. (McMahan)

Agency Response: The commenter's assertion that the ATCM increases exposure is unfounded. The ATCM is specifically designed to minimize exposure through the implementation of best available dust mitigation measures. Furthermore, there is no justification for delaying adoption of the ATCM until additional epidemiological studies are completed, or requiring epidemiological studies in the ATCM. ARB has adequate health effects data to support regulating naturally-occurring asbestos. An assessment of the health effects of asbestos was completed in 1986. In this assessment, OEHHA utilized the best available data and scientific principles to develop a quantitative estimate of risk and concluded that no threshold exposure level could be identified below which no adverse health effect would be expected. OEHHA staff has also reviewed data developed since the quantitative risk assessment was completed. The conclusion of both the OEHHA and the SRP are that the data does not warrant revision to the toxicity factors at this time.

Epidemiology studies compare the incidence of disease in an exposed population and in a comparable unexposed population. The ability of an epidemiology study to detect elevated rates of mesothelioma in a population is limited by the level of exposure, the number of potentially exposed persons, the long latency period, and the availability of an unexposed comparison population. Most studies capable of demonstrating a connection between disease and exposure to an air pollutant are based on workplace exposure. The ability to connect an increased incidence of lung cancer to asbestos exposure is complicated by the potential confounding exposures and other factors that could be responsible for the excess. Asbestosis has only been seen where air concentrations are very high, which is typically in occupational settings. For all of these reasons, an epidemiological study is likely to be very expensive and not likely to yield any conclusive data. Finally, the commenter's claim that implementing the proposed ATCM would simply increase the exposed population is not supported by any evidence and does not make sense.

14.8 Comment: CMAC does not dispute that prolonged exposure to commercially processed asbestos can have potentially serious health effects. But, ARB has not generated any data that quantifies the health effects of naturally-occurring asbestos released into the ambient air. Accordingly, CMAC believes that regulation of naturally-occurring asbestos is inappropriate at this time because there is insufficient data to support such a finding. (TDLF)

Agency Response: The adverse health effects of asbestos are not limited to commercially processed asbestos exposures. Asbestos is a carcinogen for which OEHHA has not been able to identify a threshold exposure level below which adverse health effects are not expected. Evaluating the available data and quantifying the health effects of TACs is the responsibility of the OEHHA with oversight by the SRP, a panel of independent scientists. As noted in the responses to Comments 14.1 to 14.4, this evaluation has been done and the data supports the ARB's decision to regulate naturally-occurring asbestos.

14.9 Comment: Vulcan Materials Company requests that asbestos be defined properly, consistent with OSHA and with EPA. (VM)

Agency Response: The definition of "asbestos" in the ATCM is the same definition that the ARB adopted in 1986 when asbestos was identified as a toxic air contaminant (see title 17, California Code of Regulations, section 93000). It is also the same definition that is contained in the 1990 ATCM and the 2000 Surfacing ATCM. The ARB believes that continuing to use this definition is appropriate because it is consistent with past regulatory actions, and because it is geologically accurate. While it is possible to structure the language of a definition in many different ways, the commenter has presented nothing to suggest that there is any problem with the ARB's definition that would justify a revision.

14.10 Comment: The ISOR presumably relies on the data used in the 2000 Surfacing ATCM amendment. The monitoring data and risk assessment presented there includes in the health risk fibers smaller than five microns. Models generated since the 1986 DHS report only use fibers greater than five microns in determining health risk. Applying these more current analyses to the data presented in the 2000 Surfacing ISOR, the potential risk is significantly lower. (TDLF)

Agency Response: The ISOR did not overestimate the health risk. The identification of asbestos as a TAC provided potency factors applicable to PCM (optical microscopy) and with appropriate conversion factors to TEM (electron microscopy). These conversion factors include the effect of counting all fibers with an aspect ratio of 3 to 1. The convention of counting only those fibers that are five microns or longer is due to the limitations of PCM. It has not been shown to relate to health effects. The basis for the ARB staff's approach to risk assessment is also discussed in the response to Comment 8.1

15.0 Supporting Data

15.1 Comment: The scientific justification for this ATCM is insufficient because it contains a total of only 171 samples from mining operations, some were taken on-site, and some were taken in 1988. On-site samples are not reflective of asbestos emissions being transferred off-site. Samples taken in 1988 do not consider mandated improvements in dust control adopted since 1988. Rather they are a measure of the effectiveness of dust control methods in practice in 1988. Since 1988, district rules regarding particulate matter emissions have been modified and El Dorado County has adopted requirements to develop asbestos dust mitigation plans, making it reasonable to assume that the old monitoring data is no longer reflective of emission from these sources.

It is reasonable to ask that the ARB demonstrate that the data is current today and the district rules or other rules have not changed dust control practices which would determine if the emissions data could be construed as current. (CMA)

Agency Response: The commenter appears to be arguing that the data may not demonstrate a need for the regulation. This argument is not supported by the commenter's statements. Among the reasons cited in the ISOR for adopting this regulation is the need for consistent and enforceable regulations. The ATCM requires that the dust mitigation measures currently being used by the best controlled sources be used for all quarries and surface mines located in an area where asbestos is known to occur or likely to occur. Regulations to control nuisance dust currently vary from district to district.

ARB believes emissions from sources that are not among the best controlled can reasonably be used to demonstrate the need for a regulation. On-site measurements demonstrate that asbestos is released into the air when disturbed. The off-site measurements show that the asbestos reaches receptors such as schools, day care centers, and individual residences. These results are based on both recent data and data going as far back as 1988 (which the ARB included because it is appropriate to summarize and present all the relevant data that exists, not just recent data). Therefore, staff believes the data demonstrate that the public is being exposed to asbestos as a result of these operations and that the ATCM is needed to reduce the emissions and protect public health.

15.2 Comment: The 91 samples from around a serpentine quarry were collected at the same time the site was cited for violations of air control laws including visible dust by ARB and the U.S. EPA. These data cannot be construed as being reflective of current emissions by miners operating in compliance with existing laws. In addition, when CMA commented on these data in the surfacing ATCM staff noted in the Final Statement of Reasons that:

> "It is very unlikely that dust emissions from the quarry impacted the roadway monitoring. A monitoring site is equipped with a meteorological station for determining wind speed and direction. The meteorological data shows the wind at the roadway monitor was blowing towards the quarry during samples."

When adopted in the surfacing ATCM, the data was presented as evidence that the emissions were from the roadway, it is inappropriate for the data to now be presented as evidence that mining should be regulated. Importantly, the roadway in question is now regulated under the surfacing ATCM.
The data from monitoring around a quarry in Trinity was around an inactive operation. As such it is not relevant to a discussion regarding an operating facility, operating under current dust control standards.

Based on this analysis, ARB has no current data around a quarry operating in accordance with existing law, and therefore cannot have met their requirement under Health and Safety Code 39655(b)(1). (CMA)

Agency Response: The ARB staff believes, in its totality, the information available does demonstrate a need for regulation. Emissions from quarries are highly variable due to the differences in production and operation size as well as the natural variability of the asbestos content of the rock and the natural variability of the moisture content of the rock. An assessment of the potential for exposure is not restricted only to those quarries that are in compliance with all laws and regulations. Ideally, it should reflect current actual practice. Information from a quarry that is not complying with dust control requirements can still provide useful information, such as demonstrating that the activities associated with mining in asbestos-containing materials results in off-site emissions.

With regard to the roadway monitoring, the totality of emissions from a quarry includes the emissions attributable to the use of on-site quarry roads and the effect of track-out from the quarry roads to the paved public roads. For the quarry in question, the dust on the paved public road was the result of the track-out from the unpaved quarry road. Because the use of unpaved on-site roads is part of the activities associated with quarrying, it is appropriate for this monitoring data to represent roadway emissions and quarry emissions from that portion of the quarrying activities. The fact that the emissions from the excavation and rock processing activities at the quarry were not impacting this monitor is credible evidence that control for quarry roads open to the public and track-out should be required. Most notably, the Asbestos ATCM for Surfacing Applications specifically exempts roads at mines and quarries so emissions at this site will not be controlled by the requirements of the surfacing ATCM.

More recent air monitoring has been done in the vicinity of the Bear Creek Quarry. These results are discussed in the response to Comment 21.15. These

results indicated that air concentrations were lower than those found in 1988 but still cause for concern. The monitoring around the inactive quarry is indicative of the emissions that can be associated with uncontrolled stockpiles and disturbed surfaces. This monitoring is only one of the many pieces of evidence supporting the need for the ATCM.

15.3 Comment: The proposed formula used by CARB as an attempt to quantify emissions is not based on science but assumption. Until CARB, through scientific analysis, has tested and validated or corrected this hypothesis it can not be called science. Nor can it be demonstrated scientifically to be accurate. If the ARB estimated emissions are too high it will result in an over regulation of industry. If it categorizes them too low it will result in a regulation that fails to protect the public. ARB has the burden of determining what the accurate current emissions are, not what they think they might be if the following assumptions are true. (CMA)

Agency Response: The estimate of emissions for a hypothetical quarry was presented for illustration. It is based on emission factors published by the U.S. EPA. These emission factors were developed from data generated by numerous scientific studies. Many of these emission factors are based on equations developed to account for site-specific variables and all are based on source testing. An attempt to validate the emission factor equations is unnecessary as the ARB also presented air monitoring data which demonstrates a risk that clearly few would consider negligible.

With regard to the commenter's concern about over or under regulation, it should be noted that Airborne Toxic Control Measures for Toxic Air Contaminants with no identifiable threshold exposure level are required by the Health and Safety Code to obtain the lowest achievable emission rate through application of the best available control technology. The Board can require a lesser level of control if an assessment of risk indicates it is justified or if control costs are economically infeasible. Staff's assessment did not find either of those conditions to be true and found that effective control technology is readily available.

15.4 Comment: The ARB hypothetical quarry analysis is invalid in regards to the ATCM as the ATCM does not mandate the use of AP-42 values for moisture but instead mandates the use of adequately wetted. To date, ARB staff has not done studies to determine what percentage of moisture is actually represented by adequately wetted. Until ARB determines what adequately wetted means as a percentage to moisture content, any analysis using derivatives of AP-42 equations are speculative at best. Indeed, CMA has been arguing since the beginning of the development of this ATCM that adequately wetted not be used and that instead ARB set an AP-42 value for adequately wet based on the comprehensive dust data of that procedure. ARB can not deny the use of a procedure and then use its formulas and assumptions to justify an ATCM based on other principles of wet. (CMA)

Agency Response: The assumed moisture content incorporated in the AP-42 equations used to estimate emissions does not represent the best available control, but instead represents in some cases typical control and in others the natural moisture content. As such, AP-42 equations are appropriate to use for an estimate of a hypothetical quarry operating with typical dust control. But because AP-42 equations and values do not represent best available control, it is not appropriate to use them to determine "adequately wetted" under the ATCM. For this purpose the ATCM specifies a simple test method to determine "adequately wetted" (see subsection (h)(5)). This approach was chosen after the ARB staff considered but decided against defining "adequately wetted" by specifying a universally applicable moisture content such as the 12 percent specified in the Maricopa County, Arizona, fugitive dust rule. The industry (including CMA) correctly pointed out that the necessary moisture content for effective dust control would be different for different materials. Rather than trying to determine and specify a percent moisture content for each type of material (an approach that would be cumbersome at best and completely unworkable at worst), ARB provided a mechanism--the test method for "adequately wetted"--whereby the source could easily demonstrate the effective moisture content of material subject to the ATCM.

15.5 Comment: The Board has not met its obligations under the Health and Safety Code to consider the rate and extent of present and anticipated future emissions. The air sampling includes two studies from 1988 and dust control may have improved since then. In addition, the sampling done in 1998 was around a serpentine quarry that was cited for violations of dust rules and near an inactive site. (CMA)

Agency Response: The ARB followed the Health and Safety Code by evaluating all reasonably available data, including the most recent data, as well as data that was available from 1988. The response to Comment 15.2 responds to the issues raised by the commenter in more detail.

15.6 Comment: CMAC notes that the relative percentage of land that may be affected by the ATCM is overstated in the background section of the ISOR because the State's total land area may not be subject to development due to local land use controls, federal, and State land ownership, geography, and urban development. In addition, 14 counties, accounting for approximately 75,000 square miles, have no ultramafic rock. (TDLF)

Agency Response: ARB does not agree that the relative percentage of land that might be affected by the ATCM is overstated. In the background section of the ISOR, staff estimated the total land area in California expected to have ultramafic rock deposits and listed the counties in which ultramafic rock occurs. However, in estimating the number of potentially affected projects, ARB accounted for the non-uniform distribution of development and ultramafic rock by estimating the

number of affected projects for each county (see page VII-6 of the ISOR). Thus, within the limits of the available data, ARB's analysis accounted for the effects of local development pressures and constraints.

15.7 Comment: The ISOR does not accurately estimate the health risks posed by construction sites and surface mine operations. The ISOR calculates the health risk posed by naturally-occurring asbestos based on air sampling results taken from various construction sites and near four surface mine operations. ISOR, p. IV-6 to IV-7. The sampling data has almost no probative value because there is no data regarding the background level of asbestos, even though the ISOR notes that there were other potential sources of asbestos in the area. (TDLF)

Agency Response: As discussed in the 2000 ISOR (page III-1) and the 2000 FSOR (pages 79 and 80), ARB did extensive air monitoring in El Dorado County and in other areas to assess whether there was a consistent and widespread pattern of elevated exposures and if the public was exposed to elevated concentrations near potential sources. The 277 samples taken to assess "background" showed that there is not a widespread pattern of exposure of the general public to elevated levels of asbestos. Over 75 percent did not detect any asbestos. Therefore staff believes there is adequate data to establish a background level, and the background level is below the detection limit. Air sampling near sources did demonstrate a consistent pattern of elevated concentrations.

15.8 Comment: Regarding construction exposures, the only data that staff gathered was from personnel monitor sampling. Personnel monitors are used to assess the risks from occupational exposures, not exposures to the general population from the ambient air. Personnel who work in or near asbestos-containing soil or rock will be exposed to more asbestos than the general public due to the proximity of the worker to the asbestos. Thus, the risk data from construction exposures presented in the ISOR overstates the potential risk to the general population. Moreover, all of the data presented on construction exposures was generated by serpentine rock. This ISOR, the 2000 Surfacing ATCM ISOR, and the 1990 ATCM ISOR contain no evidence with respect to non-serpentine ultramafic rock. Thus, there is no data to support the overbroad regulation proposed here, which includes not only serpentine, but also non-serpentine ultramafic rock. (TDLF)

Agency Response: The commenter is mistaken in the conclusion that all the air monitoring for construction exposures was from personnel monitor sampling. Those air sampling projects that were not conducted by ARB used the same kind of sampling apparatus for personnel monitoring and area monitoring. However, it would be misleading to characterize all of the sampling done using these sampling cassettes as personnel monitoring. In personnel monitoring, the sampling cassette is attached to the person and operates as the worker moves about the site. Use of the same type of cassettes for area sampling means they

are set up at a specific location and sample the air passing by that location. One of the reasons ARB does not use this sampling procedure, is that the cassettes are not capable of sampling for 24 hours (the small cassettes get overloaded). Actual personnel sampling (as opposed to area sampling) for the most part did measure higher concentrations than the stationary samplers as expected. However, the stationary samplers (both short-term and 24-hour), measured asbestos concentrations off-site.

As noted in the response to Comment 15.7, ARB's air monitoring data did not show a widespread pattern of exposure of the general public to elevated levels of asbestos. The near-source data did show elevated concentrations.

There is a continuous gradation between un-serpentinized ultramafic rock and completely serpentinized ultramafic rock and there is no general agreement on when the material should be called ultramafic rock and when it should be called serpentine. Further, DMG has stated that asbestos can be found in both ultramafic rock and serpentine. Based on discussions with DMG (and the supporting information presented in our responses to Comments 3.2 and 3.10), we believe that it is likely, given California's geologic history, that all ultramafic rock in California has undergone some degree of serpentinization. The State Geologist has extensive knowledge of the Geology of California. Therefore, despite the commenter's objections, the regulation is not overbroad.

15.9 Comment: The same error identified in the previous comment occurs in the data for surface mines. Based on discussions between ARB staff and industry, it is industry's understanding that all of the aggregate at the operations where the sampling was performed are located in serpentine deposits. (TDLF)

Agency Response: Staff did not present data from any cassette sampling to demonstrate the air concentrations near quarries or surface mines. Only ambient data for these sources was discussed. In regard to serpentine deposits, please see the response to Comment 15.8.

16.0 Ambient Monitoring

16.1. Comment: Ambient air monitoring should be required for every project under this regulation and should not be left to the discretion of the local Air Pollution Control Officer. This will have the added advantage of collecting data to understand the impacts on human health. (ALAC)

Agency Response: ARB does not agree that ambient air monitoring should be required for every project. This would be an extremely costly proposition for the estimated 7,000 or more covered projects. For small projects, the cost of air monitoring could exceed the cost of dust mitigation. Such a requirement would add costs without producing any reduction in emissions, which is the primary purpose of an ATCM.

16.2. Comment: While this regulation, with the suggested amendments, would protect people from excessive chrysotile exposures, we would ask the ARB and OEHHA to consider additional efforts, including ambient air monitoring and epidemiological studies, to identify any unique health impacts of exposure to tremolite, and adopt additional control measures if warranted based on the emerging health risk data. (ALAC)

Agency Response: As noted in the response to Comment 3.5, this regulation will reduce emissions of both chrysotile and tremolite. If in the future OEHHA finds that additional evidence justifies a revision to the potency factors, ARB would re-evaluate both this ATCM and the Asbestos ATCM for Surfacing Applications.

16.3. Comment: The staff report for the proposed ATCM indicates that some companies fear that the districts will routinely require extensive air monitoring without a reasonable cause. While we believe that air monitoring may be important in some instances (e.g., for projects where compliance problems exist, and/or for large projects that occur over an extended period of time and that are in close proximity to residential areas), we do not expect that air monitoring will be required on a routine basis. We look forward to working with your staff in developing guidelines on when air monitoring may be appropriate for monitoring the effectiveness of dust control efforts. (BAAQMD)

Agency Response: ARB agrees that districts are unlikely to require extensive air monitoring. A detailed discussion of this issue can be found in the response to Comment 16.14. To further aid districts that may see the need for air monitoring, in the nonbinding implementation guidance document ARB staff also plans to include suggestions regarding situations in which air monitoring may be appropriate. The ultimate decision on whether to require air monitoring in a particular case will of course be up to the districts.

16.4. Comment: The mining industry believes it would be reasonable for the Board to include a provision within the ATCM which would allow operations in ultramafic zones to conduct an initial screening for asbestos, and then include ongoing monitoring for asbestos through settled dust sampling or another adequate scientific method to determine if the site actually has asbestos.

Because not all operations would want to prove they were not disturbing asbestos, we recommend a two path approach for operation in ultramafic zones. The first path would be as currently proposed in the ATCM, we would add a second path to allow the operation in an ultramafic zone to conduct an initial site survey and then monitor during the disturbance of the ultramafic portion of the ore body. (CMA)

Agency Response: The proposed approach would not adequately protect public health. An initial site survey for asbestos and monitoring during disturbance

would not result in asbestos control that is equivalent to requiring application of the best available control technology. Both the initial site screening and the subsequent settled dust sampling, which has not been demonstrated to be an effective method, carry a risk of not detecting asbestos that is present. In addition, if asbestos is present and is ultimately detected by monitoring, the proposed approach would result in emissions that would only be addressed after public exposure had already occurred. The approach in the ATCM is preferable because it minimizes emissions thereby reducing public exposure.

16.5. Comment: The ISOR for the ATCM claims that it is a best available control technology (BACT) standard and that the Board seeks to reduce asbestos emissions through the best available control technology. For the most part this is true except in Sections (g)(1) and (2) of the ATCM. These sections state that air monitoring may be required by the district air pollution control officer (APCO) and further that the Asbestos Dust Mitigation Plan may be adjusted by the APCO based on those results. These sections are inconsistent with a BACT standard and completely inappropriate given that ARB has set no safe level of asbestos exposure or even defined what background asbestos concentrations are.

As staff maintains this is a BACT standard, and in order to ensure that it remains a BACT standard as implemented by the APCOs, CMA asks that (g)(1) and (2) be stricken from the ATCM. It is not appropriate to place an operator in a position where they can be following the letter of the law under a BACT ATCM and still be ordered by the APCO to do more. (CMA)

Agency Response: It is not appropriate to delete subsections (g)(1) and (g)(2). The ATCM gives the APCO the flexibility to approve an asbestos dust mitigation plan that meets the general requirements specified in subsections (e)(4) and (f)(3). This flexibility also requires recognition of the APCO's existing authority to require changes to the plan if there is evidence that the specific provisions of the plan do not result in the lowest achievable emission rates. Air monitoring is one tool the APCOs can used to make this judgement. This flexibility is appropriate and desirable because it provides for the development of new dust control techniques and consideration of site-specific factors. This flexibility also gives the sources more control over how they comply with the ATCM and that opportunity must also be accompanied by some responsibility. If the source is in fact implementing the dust controls effectively and the dust controls are working to control asbestos emissions, there should be no need for modifications to the plan.

16.6. Comment: CMA would like to note that California is alone in the adoption of a health hazard assessment for asbestos based on counting fibers less than five microns as a health risk. Indeed U.S. EPA and the international community (who adopted testing procedures after California) instead concentrated on fibers greater than five microns in size with many now believing that even larger fibers, those greater that 10 microns, pose a greater health risk. The OEHHA Health

Hazard Assessment ignores these findings and instead regulates all asbestos fibers with one health hazard value.

A review of the monitoring data collected by ARB and reported in the ISOR for the surfacing ATCM shows just how different these levels of analysis are. In one test report using ARB staff's preferred method of analysis and counting for 50 samples, our review found 21 positive samples and a total of 72 asbestos structures. When counting only the fibers greater than or equal to five microns using the same 50 samples the results would only be to find six positive samples and seven asbestos structures counted. This significant difference in results is extremely relevant to the ISOR for this ATCM, because ARB references monitoring results from locations outside of California. Unless the data referenced in the ISOR has been adjusted to reflect ARB counting procedures the results are not comparable in regards to health criteria, especially if we assume that the number of small fibers to large fibers is proportionally constant around construction and mining activities regardless of location. Indeed, such an assumption is the only way one can argue that data from other states is relevant to California. Yet when looking at the California data it is clear that if adjustment is made to count fibers in the same manner as the rest of the world, California's exposure and risk levels are significantly less. This exposure is less even though the ARB air monitoring was conducted around a quarrying operation that at the time of monitoring was cited for violating dust emission requirements. (CMA)

Agency Response: The identification of asbestos as a TAC provided potency factors applicable to PCM (optical microscopy) and appropriate conversion factors to TEM (electron microscopy). These conversion factors include the effect of counting all fibers with an aspect ratio of 3 to 1. ARB staff believes these conversion factors are a more appropriate approach to estimating risk from TEM measurements than counting only those fibers longer than five microns because OEHHA has found that there is no compelling evidence that only fibers greater than five microns cause cancer. The convention of counting only those fibers that are five microns or longer is due to the limitations of PCM. Essentially, this is a counting convention which has not been shown to relate to the health effects. OEHHA has examined all the relevant evidence and concluded that risk assessment should be based on counting all fibers with an aspect ratio of 3 to 1 regardless of fiber length. The evidence does not support regulating only the longer fibers.

Results from any one location can not be assumed to characterize the emissions at another. Variables affecting emissions include the type and intensity of activity, the concentration and distribution of asbestos, and the effect of soil moisture or dust control practices. The air monitoring results presented from sites outside of California demonstrate two things. They demonstrate that these activities result in airborne asbestos when asbestos is present in the soil and rock and they demonstrate that airborne asbestos can be transported off-site and

create public exposure. Whether the same analytical methods and counting protocols were used is irrelevant to proving those two points.

16.7. Comment: ARB has included several out of state monitoring studies to demonstrate that asbestos has the potential to become airborne at levels of concern around construction operations. As ARB has identified dust control as the method for controlling asbestos, staff needs to demonstrate that the sites at which air monitoring occurred out of state had dust control requirements at least as stringent as those in California. Without this demonstration, it is inappropriate to include this data in the ISOR. (CMA)

Agency Response: It is appropriate to include this data in the ISOR because staff has the obligation to present all reasonably available emissions data regarding the activities regulated by the ATCM. Discussions of air monitoring results in the ISOR serve two purposes: first, to demonstrate that the operation is a source of emissions and second, to demonstrate that control is feasible. The air monitoring for Fairfax County, Virginia demonstrated that asbestos is released from a variety of construction and grading activities when asbestos is present. As discussed in the response to Comment 16.6, concentrations of asbestos measured at one site cannot be used to infer similar concentrations at another. The air monitoring results published by the Fairfax County Health Department, Air Pollution Control Division were measured at sites regulated under the Fairfax County APCD control requirement 1. This requires dust control to reduce asbestos emissions. In California, district rules for dust control vary from district to district. In addition, the level of dust control achieved can vary from site to site. In general however, staff believes that current California dust control rules are not likely to be any more stringent than those adopted by Fairfax County for asbestos control. In addition, the air monitoring in El Dorado County and Santa Clara County also demonstrated off-site exposure in California.

16.8. Comment: According to ARB, they have identified 25 operations as being impacted, yet rather than analyze emissions and reductions at these facilities through comprehensive monitoring ARB has put forward two hypothetical examples. With 25 real world examples readily available for ARB to use there is no need for these hypothetical models. It is reasonable that ARB create actual models based on these sites to validate or invalidate the need for the ATCM. (CMA)

Agency Response: Among the information presented was an estimate of emissions from a hypothetical quarry based on published EPA emission factors. A hypothetical quarry was used because the production rates for the existing quarries are confidential information that some quarries were unwilling to provide to the ARB. Other data was presented that included the results of an extensive air monitoring study at an operating quarry and other air monitoring studies. ARB also conducted air monitoring at the Bear Creek quarry in 1988 and in 2000 (See the response to Comment 15.2). The commenter appears to be suggesting that

air monitoring near all 25 quarries is necessary to demonstrate the need for a regulation. ARB does not agree. ARB has done numerous site visits and talked with the owner/operators of nearly all the potentially affected quarries. Based on all the information gathered and presented, including the emission factor analysis, the air monitoring, and the review of existing dust control requirements, we believe the record demonstrates that current dust control regulations do not provide consistent and adequate public health protection. Therefore, the need for a regulation has been adequately demonstrated.

16.9. Comment: The draft ATCM calls for air monitoring using the AHERA method to an analytical sensitivity of 0.001 s/cc. The R.J. Lee Group, an analytical laboratory, has reviewed this methodology and found it inappropriate for evaluating asbestos in ambient atmospheres or for risk-based evaluations. Not only is the analytical method flawed, but the ATCM would allow the testing to be conducted by the air districts. By inappropriately identifying asbestos, these false readings could lead to unwarranted public concern and threaten the viability of aggregate operations. The Board should either direct the Stationary Source Division to use commonly accepted analytical methods or remove the requirement for air monitoring. CMA endorses the changes proposed in the R.J. Lee letter and would ask that the Board include them in the ATCM. In this letter, R.J. Lee says that the modified AHERA method is not appropriate because risk based evaluations must be based on analytical data which can be related to past epidemiology studies. On this basis, R.J. Lee suggests that NIOSH 7402 is the appropriate method to use because it only counts fibers longer than five microns and wider than 0.25 microns. R.J. Lee claims that fibers less than five microns do not cause cancer. In support of this assertion, R.J. Lee cites a 1995 study published in Risk Analysis by Berman. They also suggest that the modified AHERA method can not distinguish between asbestos fibers and cleavage fragments. They further suggest that the definition of amphibole asbestos should be changed to reflect a 1997 report on nomenclature of amphiboles to the International Mineralogical Association because analysis of airborne fibers will require identification of all amphibole fibers. (CMA, CMAC)

Agency Response: Based on ARB staff's years of experience with asbestos monitoring, we believe the modified AHERA method is the appropriate method and it is not necessary to make the changes suggested by the commenter. ARB staff has been performing airborne asbestos monitoring since 1986 using the analytical method identified in the ATCM. Staff felt the most appropriate regulatory referenced air monitoring test method was in the Asbestos Hazard Emergency Response Act (AHERA). However, we had concerns with the high minimum detection limit (MDL) and the size of fibers counted under the AHERA method. After discussions with experts in the asbestos analysis field, we lowered the MDL to a health-protective level and required the counting rules be changed to include all fibers with an aspect ratio greater than 3 to 1. NIOSH Method 7402, which the commenter suggested, would also have to be modified to meet these requirements.

In their risk assessment for asbestos, the California Department of Health Services (DHS) staff (now part of the Office of Environmental Health Hazard Assessment) developed toxicity factors that applied to all PCM fibers. They recommended that all fibers with a length to width ratio of 3 to 1 be counted when using these toxicity factors. They also reviewed conversion factors for relating TEM monitoring to the equivalent PCM fibers. The conversion factors were based on measurements in a variety of environments using both measurement methods. ARB currently uses the geometric mean of all the calculated conversion factors to relate asbestos concentrations measured by TEM to the health effects. This conversion factor accounts for the increased ability of TEM to detect asbestos. ARB and OEHHA believe this is the appropriate method because there is no compelling evidence that only fibers greater than five microns cause cancer. There is also no reason to believe that the distribution of fiber lengths is any different at present than it was when the epidemiology studies were done. As recently as 2000, OEHHA reviewed all subsequent peer-reviewed studies on asbestos exposure and determined that there is insufficient evidence to change the 1986 published findings.

The approach ARB has taken in estimating risk due to asbestos exposure is consistent with Health and Safety Code section 39650, et seq. which established the process for identifying and controlling toxic air contaminants.

ARB staff does not agree that the suggested change in the definition of asbestos is necessary. It is not necessary to specifically identify which types of asbestos fibers are found in an air monitoring study because the toxicity factors apply to all types of asbestos fibers. Staff finds it is appropriate to leave the definition of asbestos unchanged because the commenter's reasons are unconvincing and the current definition is consistent with the definition of asbestos in the Asbestos ATCM for Surfacing Applications.

16.10. Comment: Industry's objection that air monitoring 24/7 365 days a year is too costly is unfounded in that they are not required to do so by the ordinance. It is left up to the local APCD to decide. We know of nothing that currently restricts how much air monitoring the Local APCD may require now, so adopting the ordinance would have no financial effects on these operations. It would only give higher authority for enforcement, which has been previously lacking at the local level. At any rate, even if the 24/7 365 days was a requirement and would cost as much as they have claimed, we believe that the price they may pay is worth the cost of saving lives. (JohnsonJ, JohnsonT)

Agency Response: The commenter is correct that there is nothing that currently restricts how much air monitoring the APCD may require other than the general constraints of 'reasonableness" because state law gives the APCO authority to require air monitoring (see Health and Safety Code section 41511). The air monitoring provisions in the ATCM primarily clarify the districts existing authority,

the appropriate analytical methods, and the authority of the APCO to modify the dust mitigation plan.

16.11. Comment: The ATCM leaves decisions regarding whether air monitoring is required, and what the monitoring may entail, to the local Air Pollution Control Districts. It is recommended that breathing zone air monitoring be a requirement of the ATCM. The ATCM should specify monitoring protocols to ensure data is collected and interpreted consistently, and will account for the episodic nature of environmental exposure to amphiboles. Monitoring should be mandatory under all circumstances, with results available within 24 hours of collection to ensure corrective action can be taken in a timely manner. (McMahan)

Agency Response: ARB does not agree that ambient air monitoring should be required for every project. ARB staff believes air monitoring is a useful tool for evaluating the effectiveness of dust mitigation measures and plans, for improving enforcement, and for monitoring the potential exposure to the public and sensitive receptors. However, site specific factors are too variable to specify the prescriptive and detailed requirements suggested by the commenter. The APCOs are in the best position to decide when and to what extent air monitoring is necessary to protect public health.

16.12. Comment: The American Lung Association feels that ambient monitoring should be required for every project under this regulation. Personal monitoring at approximately $30 per sample is a minimum level of monitoring that should occur as an early warning sign as to whether fenceline monitoring needs to be conducted. (ALAC)

Agency Response: Personal monitoring for workers is required by federal law when there is a possibility of exposure at or above the permissible exposure level (PEL). The employer is responsible for making an assessment of the potential level of exposure to determine whether monitoring is needed. While the results of worker exposure monitoring may contribute to an APCO's decision to require air monitoring, it is not appropriate for the ATCM to duplicate or extend federal requirements by requiring worker exposure monitoring. As noted in the response to the previous comment, ARB does not agree that air monitoring should be required for every project.

16.13. Comment: Throughout the proposed regulation, requirements for ambient monitoring of downwind asbestos fiber concentrations are imposed only at the discretion of the Air Pollution Control Officer. This discretion should be rescinded from the control measure, and monitoring at one level or another should be required of every affected project. (ALAC)

Agency Response: ARB does not agree that air monitoring should be required for every project, as explained in the response to Comment 16.11.

16.14. Comment: Subsection (e) of the ATCM allows the APCO to require air monitoring without any guidance for their discretion. The ISOR discusses some reasons why the APCOs may want to impose such a requirement, but the ISOR provides no reason as to why those specific criteria cannot be made non-exclusive factors that the APCO must consider in imposing an air monitoring requirement. Subsection (f) of the ATCM imposes similar obligations on mining and quarrying operation that subsection (e) imposes on large construction operations, and the same concerns apply. (TDLF)

Agency Response: The ARB staff considered establishing specific criteria that would identify (and therefore limit) the circumstances under which air monitoring could be required by the air pollution control officer (APCO). However, staff concluded that it was not possible to comprehensively list each potential situation in which air monitoring might be appropriate. While the ISOR discusses some reasons why the APCO might choose to require air monitoring, it is not possible to exhaustively list all such reasons or situations because the site-specific characteristics of individual projects and locations are simply to variable to do this. For the same reason, it is also inappropriate to list a number of non-exclusive factors that the APCO must consider before imposing air monitoring. Including such a requirement could impose on the air districts an obligation to consider factors that might be completely irrelevant with respect to a specific project.

The commenter's underlying concern may be that APCOs might act arbitrarily or unreasonably in requiring air monitoring. To address this concern, subsection (g) was modified to add the phrase "Pursuant to the requirements of Health and Safety Code section 41511." This clarification references the underlying statutory authority authorizing APCOs to require the air monitoring, and clarifies, consistent with section 41511, that the determination to require such actions must be "reasonable" under the circumstances. The addition of this phrase is also consistent with the same language contained in section 93106(g) of the 2000 Surfacing ATCM.

16.15. Comment: It is inappropriate to allow the APCO to change a best available control technology plan without setting an ‘acceptable’ emission level. The authority of the APCO to require dust monitoring should only be addressed in the context of a dust control plan. That way the operator and APCO could come to an agreement during plan development on when and why air monitoring would be required and what would happen if a predetermined level of asbestos was found. (CMA)

Agency Response: ARB does not agree. As explained in the responses to Comments 16.10 and 16.14, the local air districts already have the authority to require air monitoring or take other steps necessary to protect public health. ARB staff believes that ambient air monitoring can provide useful information in certain circumstances. For example, it can be used to evaluate the effectiveness

of dust mitigation measures and to ensure that the measures taken are adequate for special circumstances, such as when there are sensitive receptors near a major construction site. Ambient monitoring can also allow the district to consider appropriate modifications to the asbestos dust mitigation plan or to monitor compliance when there is a history of non-compliance or evidence of off-site transfer of particulate matter.

17.0 Maps

17.1. Comment: CMAC has reviewed the maps prepared by the Department of Conservation included in Appendix A of the proposed ATCM. The most detailed of any of those maps is 1:250,000. At that scale, a 40-acre parcel of land is about the size the period at the end of this sentence. This lack of specificity makes the application and implementation of this ATCM nearly impossible. (CMAC)

Agency Response: ARB staff has consulted with the Department of Conservation, Division of Mines and Geology (DMG) and believes that the referenced maps are sufficiently detailed to allow effective implementation of the ATCM. The DMG 1:250,000 scale geologic maps are currently the best tool available to identify, on a statewide basis, areas where ultramafic rock and serpentinite may be present. Numerous geologic maps at various scales cover portions of California and, when present, ultramafic rocks and serpentinite may be represented in different ways on different maps. The 1:250,000 scale maps provide complete coverage of the state. No other geologic map series at more detailed scales is available that provides complete and accurate state coverage. For El Dorado and Lake Counties, accurate maps are available at a more detailed 1:100,000 scale, and the ATCM references these two more detailed maps for the two counties. If there is any doubt in a particular situation about whether a facility falls within the boundaries of a geographic ultramafic rock unit, the owner/operator can conduct a geologic evaluation which could, in part, utilize the information contained on more detailed geologic maps if any are available for that area.

18.0 Asbestos Dust Mitigation Plan

18.1. Comment: The revisions to the ATCM have partially addressed the concerns raised by CMA in our April 6, 2001, letter regarding “operating under proposed plan while awaiting approval.” While the ATCM would no longer place operations in “limbo” and unable to operate lacking approval of their plans, our suggestion that operations be allowed to operate under their proposed mitigation plan was not included. We request that the CMA proposal be given greater consideration and flexibility to allow operating under the pending plan be authorized. CMA believes that such a process will not only provide adequate protection to the public, but it is necessary to encourage operators to develop innovative and new

dust control techniques and technologies that may indeed be more protective of the public health than the methodologies put forward within this ATCM.

Discussions at the May 1, 2001, meeting between CARB and CMA suggested that possibly a provision could be added that if a mitigation plan was denied an operator would be required to operate under the specific provisions of the ATCM as if they were a site that had just discovered ultramafic rock, naturally-occurring asbestos or serpentine with a timeline for the submittal of a new mitigation plan and requirements they continue to operate under the ATCM pending the approval of this second plan. CMA would be supportive of such provisions designed to protect the public but affording responsible operators the opportunity to develop new technologies for APCO consideration. We would like to again note the APCO could immediately deny clearly deficient mitigation plans so there should not be a concern for the public health. (CMA)

Agency Response: There will be 120 days between the adoption of this ATCM and the date by which the District must implement and enforce the ATCM. This allows adequate time for an existing operation covered under the regulation to develop a dust mitigation plan and obtain district approval for it. The provision adopted by ARB gives the district at least 60 days to evaluate and approve a plan (see subsection (e)(2)(B)). Therefore, ARB believes the likelihood of this provision ever becoming applicable is very low. However, ARB does not believe that a source should be allowed to operate under a plan which has not been approved by the district because such a plan may be inadequate to protect public health. If the source has proposed innovative measures that will require a demonstration of their effectiveness, the source should be prepared to make that demonstration prior to the implementation date.

ARB staff finds the second suggestion unacceptable. Allowing an owner/operator to operate under the temporary measures specified for newly discovered sources after the district disapproved the proposed asbestos dust mitigation plan, would make the requirement that sources have and operate under a district approved asbestos dust mitigation plan meaningless. The specific measures for sites on which ultramafic rock, serpentine, or naturally-occurring asbestos was newly discovered are intended as temporary measures to reduce exposure while site-specific measures are investigated. A source that has already presented an asbestos dust mitigation plan to the district should have already completed this evaluation. If the district has disapproved the proposed plan, the correct action would be to work with the district to make the plan acceptable. Allowing a source to continue operating after the district disapproved a plan would lead to sources submitting inadequate plans and operating under the temporary measures in perpetuity with no motivation to work with the districts to define the best available site-specific measures.

18.2. Comment: CMA's April 6, 2001, letter identified the need for at least a basic time frame for the APCO to approve or reject a mitigation plan. No such language

has been included as of yet and CMA would encourage that language be included to set an upper level time frame for such action. We are understanding that ARB does not wish to tie the APCO's hands or set a time period that is so small that it results in the automatic rejection of plans. At the same time operators are expected to switch over to these plans within 14 days of approval, yet they have no regulatory guideline of when to expect the approval. If they have applied for approval for a plan that includes innovative technologies the purchase of these technologies may be required well in advance of approval to ensure they are on-site and ready for installation within the 14-day window. (CMA)

Agency Response: Staff recognizes that sources may not be able to purchase and install some types of control equipment within 14 days. However, placing a deadline on the district would not address this concern. Coordination with the district is a key element in this flexible regulatory framework. If sources have concerns about the time required to obtain and install equipment, these constraints can be addressed within the plan. For instance, sources that need a longer period of time to obtain and install equipment, can propose a plan with interim controls that will be replaced within a specified time frame. Staff would also like to note that only existing sources that had not received district approval for their plan in the 120 days prior to the implementation date are required to implement the plan within 14 days of district approval. Staff believes it is necessary to ensure that these sources come into compliance as soon as possible.

18.3. Comment: Employee awareness to minimize asbestos exposure hazards and ensure they have an understanding of the dust control plan is considered an excellent tool to achieve emissions controls. This should be a required dust plan element. (LCAQMD)

Agency Response: We agree that employee awareness is one of several approaches that can be very effective in ensuring ongoing compliance with air toxic regulations. However, for this ATCM, we did not believe it necessary for to require all sources to have an employee awareness program. We believe that given the vide variety of affected sources and affected activities establishing specific procedures on how the source should ensure ongoing compliance is not appropriate. However, if a district believes that such requirements are needed they could establish them by rule or as permit conditions.

18.4. Comment: The one acre limit for a dust mitigation plan is really too large. Small contractors will do the right thing if they know about it and the way to make sure of that is to have them get a permit. There are many projects smaller than one acre that can involve significant amounts of material transported off site and, due to their sensitive location, should be required to file formal dust control plans. The ATCM should utilize a different threshold or other method to determine if a

dust plan is to be required. The minimal ATCM requirements will not address much preventable exposure and release of asbestos. (LCAQMD)

Agency Response: Reviewing and approving asbestos dust mitigation plans for numerous small projects could be a significant administrative burden for some small districts. Because the ATCM does not exempt the sources less than one acre in size from dust control requirements (see subsection (e)(1)) staff does not believe requiring a larger number of sources to have district-approved asbestos dust control plans would necessarily result in a more health-protective regulation. The one acre threshold for requiring asbestos dust mitigation plans was selected in consideration of the number of sources and the size of sources. Most homes built outside of a subdivision and nearly all small projects such as installation of a swimming pool will not disturb more than one acre of surface. Most subdivisions and commercial or industrial projects will result in the disturbance of more than one acre. The one-acre threshold represents ARB staff's judgement on the appropriate balance between the potential burden on the district and the desire to provide flexibility to consider site-specific conditions. Under the Health and Safety Code, districts have the option of adopting more stringent district regulations.

18.5. Comment: We believe that the use of a dust mitigation plan during construction is essential for small contractors, or project owners, and their subcontractors and employees to have the necessary awareness and resources to comply with the prohibitory portion of the ATCM. We recommend the one acre threshold for construction projects be reduced to the federal action level thresholds of 260 linear feet and 160 square feet. This would make state and federal law consistent and better serve all parties. At minimum it should be reduced to require a dust plan at levels no more than 10 times larger than federal requirement for renovation and demolition. This would be 1,600 square feet for disturbed areas and a linear threshold of 2,600 feet for trenching. (LCAQMD, NSCAPCD)

Agency Response: This comment is addressed in the response to Comment 18.4. In addition, the federal law requirements cited by the commenter apply to demolition and renovation of buildings and other facilities. They are not directly relevant to regulation of the activities covered by the ATCM and there is no reason to make the requirements consistent.

18.6. Comment: It is unclear in the proposed ATCM as to how the one acre limit would apply to trenching jobs which are often several miles long and most problematic of the construction activities. Further, that if a community planning agency, building department or CEQA process requires a plan, which is acceptable to the District, this requirement could be waived by the District. (LCAQMD)

Agency Response: Most trenching jobs require the disturbance of the soil surface for a certain distance on either side of the trench. The width of the

disturbed surface times the length of the disturbed surface would be used to determine whether the project met the one acre threshold. For the reasons explained in the response to Comment 18.4, ARB staff believes the one acre threshold is appropriate for the statewide ATCM. Under the Health and Safety Code, districts have the option of adopting more stringent district regulations and a provision allowing the district to accept a functionally equivalent plan could be made part of those regulations. It is unnecessary to include such a provision in the ATCM. If a source has already prepared a plan for some other purpose that meets the requirements of the ATCM, it would be little trouble for the source to submit the same plan to the district for approval. The district would, in any event, need to review such a plan to make sure that it meets the ATCM requirements. Finally, a plan approved by the district can be enforced by the district, which would not be the case if the ATCM simply waived the requirement for a dust mitigation plan if another agency had approved a plan.

18.7. Comment: Post construction stabilization referenced in (4)(G)(2) of at least three inches of non-asbestos containing material is insufficient, because of normal erosion and normal landscaping disturbances. We recommend a depth of at least six (and better 12) inches of clean, compactable material when naturally-occurring asbestos is present in the native soil. (ALAC)

Agency Response: We believe that stabilization with a minimum of three inches of non-asbestos containing material is appropriate for most situations. For example, three inches of topsoil would be sufficient to support grass or other ground cover. In those situations where there is information which suggests that the cover material needs to be more than three inches, this could be required by the district.

18.8. Comment: Use of non-asbestos-containing topsoil is an effective means of avoiding exposure, provided the cap is not later eroded or disturbed. Three inches of topsoil placed on the asbestos soils would provide scant protection against erosion regardless of whether land use restrictions were imposed, and would not be adequate to reliably avoid exposure. The feasibility of importing large quantities of topsoil may, however, preclude the use of this alternative for routine construction projects. (McMahan)

Agency Response: See the response to Comment 18.7.

18.9. Comment: The ATCM states that a site must be stabilized at the end of construction and lists the stabilization methods that may be used. One of these methods is to establish and maintain a vegetative cover. A vegetative cover has not been demonstrated to be adequate for controlling emissions or of being health protective, particularly in a residential environment. Vegetative covers in asbestiform areas are naturally sparse at best; asbestiform minerals do not provide good quality soils for most plants. In addition, the simple act of maintaining that vegetative cover will result in emissions and exposures. There

is also no guarantee the future owners/tenants will realize or care that they are responsible for maintaining that cover now and into the future (in perpetuity). It is recommended that the use of vegetative cover be deleted from consideration. (McMahan)

Agency Response: The specific methods to be used on an individual site for post-construction stabilization will be specified in the asbestos dust mitigation plan to be approved by the air district. The plan may include specifications for defining an adequate vegetative cover. If the soil is too poor to sustain a vegetative cover, placement of topsoil may also be required. A vegetative cover has been proven to reduce windblown dust emissions and is included among the best management practices for dust control published by the U.S. EPA. While individual residents and tenants are not required to use best management practices when disturbing the soil if their homes are located in areas with asbestos deposits, ARB has committed to produce an advisory and pursue a public education program. These will explain the potential exposure and feasible mitigation measures when individuals engage in activities that will disturb the soil. In addition, in many new residential developments, landscape corridors, medians, and common areas are maintained by landscape contractors paid for by special fees assessed on homeowners.

19.0 Off-site Transport

19.1 Comment: In sections (c)(1)(E) and (c)(3)(B), Requirements for Construction and Grading Operations, the ARB should add a “covered load” requirement to the plan. Require a tarp cover for transport if distance is greater than two miles. Shorter distance hauling should require loads to be adequately wet. In section (c)(4)(F)(2)(ii) loads transported more than two miles should be adequately wet and tarpped. Loads transported less than two miles should be adequately wet and loaded in such a manner as not to spill on the roadway. (LCAQMD)

Agency Response: The comments refer to the preliminary draft regulation. In the adopted regulation, the requirements for construction and grading operations are contained in subsection (e). With reference to (e)(1)(E) and (e)(3)(B), the commenter is suggesting adding requirements for off-site transport to the requirements for areas one acre or less or that are newly discovered. California Vehicle Code section 23114 specifies that no vehicle may be driven or moved on any highway unless the vehicle is so constructed, covered, or loaded as to prevent any of its contents or load other than clear water or feathers from live birds from dropping, sifting, blowing, spilling, or otherwise escaping from the vehicle. ARB believes that if the site is complying with the other requirements of subsections (e)(1)(E) and (e)(3)(B), any material being moved off-site will be wet and will be comply with the Vehicle Code requirements. The ARB therefore believes that the revisions proposed by the commenter are unnecessary.

In addition, subsection (e)(4)(F)(2) allows either wet and covered or wet and loaded with six inches of freeboard as acceptable controls for off-site transport. ARB staff believes that these requirements are adequate to prevent dust emissions, and therefore sees no reason to add qualifications to those requirements as suggested by the commenter.

19.2 Comment: The proposed ATCM seems to be lacking in its approach to controlling the effects of off-site transport of material deemed surplus in the course of grading. In other words, don't spread it around. (Maidu Group)

Agency Response: The response to the previous comment explains why the ATCM's requirements for off-site transport are adequate. After the material has been transported off-site, the disposal of waste material that may contain asbestos is regulated by the Department of Toxic Substances Control.

19.3 Comment: The ATCM does not consider or address the significant exposures that can occur due to off-site transportation and use of soils containing asbestos. It is not uncommon for excess soils to be moved off site for use elsewhere. The ATCM should be amended to require soils for construction in amphibole deposits be maintained on-site. (McMahan)

Agency Response: See the response to Comment 19.2.

19.4 Comment: Another issue raised in CMA's April 6, 2001, letter was the transport of surfacing materials. As these materials would be coming from operations covered under the previously adopted ATCM, any material they were selling for surfacing would by law be required to have no detectable asbestos. As such, they are not a concern to the public safety and should be able to be transported in accordance with current law and not governed by the provisions of this ATCM. We would suggest that ARB add a subsection to (f)(2)(B)(6) to clarify this. In addition we would like to suggest that the words "mined bulk" be added before materials in that section. (CMA)

Agency Response: The commenter's proposal would make the ATCM too difficult to enforce. Special requirements for materials that had been tested and found to have no detectable asbestos would greatly complicate enforcement, because there would be no way to tell visually whether the aggregate in a truck contained asbestos. District inspectors would need to stop trucks and inspect paperwork to determine whether the ATCM requirements were applicable. This would be very inconvenient and time-consuming for both inspectors and truck operators. Furthermore, California Vehicle Code section 23114(e) requires that trucks transporting aggregate be either covered or loaded with six inches of freeboard. The ATCM requirements to control emissions from stockpiles and loading operations will result in the addition of water to the material, so material should already be wet when it is loaded on trucks for transport. Thus the ATCM requirements in subsection (f)(2)(B)(6) are consistent with state law, enforceable,

and should not impose an undue burden on sources. Finally, adding the phrase "mined bulk" is not appropriate because it is a confusing term that would adversely affect the clarity of the regulation.

19.5 Comment: Subdivision (e) of the ATCM imposes speed limits and wetting requirements on smaller operations, and then continues by adding on additional controls on operations greater than one acre. Notably, the proposed regulation requires trucks that will haul material off-site to be maintained such that no spillage can occur, requires the loads to be both adequately wetted and covered with a tarp or have six inches of freeboard. These requirements completely ignore the reality of the construction business. First, the trucks that haul material from a construction site are typically not owned or otherwise controlled by the owner or operator of the site, in addition to now requiring additional personnel to "inspect" third-party trucks. This same problem applies to the obligation to add a tarp. Subdivision (f) of the ATCM imposes similar obligations on mining and quarrying operation that subdivision (e) imposes on large construction operations, and the same concerns apply. (TDLF)

Agency Response: As discussed in the response to the previous comment, Vehicle Code section 23114 requires that the cargo area of a vehicle carrying aggregate material shall not contain any holes, cracks, or openings through which that material may escape and that loads must be covered or have six inches of freeboard. These requirements apply to any aggregate material. The potential presence of asbestos in the material is the reason for the added requirement that the materials be adequately wetted. The ATCM makes the owner/operator responsible for ensuring that the trucks meet the requirements at the time they leave the site. ARB believes this should be the responsibility of the owner/operator because the owner/operator of the truck may not know that the construction project or quarry is covered under the ATCM.

20.0 Environmental Impact Analysis

A. General Comments on the CEQA Requirements

20.1 Comment: The process by which the Board is evaluating the environmental impacts does not comply with CEQA. (TDLF)

Agency Response: In adopting the Asbestos ATCM, the ARB complied with all applicable provisions of the California Environmental Quality Act (CEQA). The commenter has expanded on this general comment with a number of more specific comments. These more specific comments describe in detail why the commenter believes that the ARB has not complied with CEQA. The commenter's more specific comments are set forth below in this FSOR, followed by the ARB's detailed responses to these comments.

20.2 Comment: The ARB's environmental analysis does not contain all of the information necessary to meet the special provisions of Public Resources Code section 21080.5. Public Resources Code section 21080.5 exempts certified regulatory programs from complying with portions of CEQA. Industry does not dispute that the Secretary of the Resources Agency has certified the ARB's program.

This exemption, however, is a limited one. As provided in subdivision (c) of section 21080.5, the Board is exempt only from the provisions of Chapter 3 (commencing with Section 21100), Chapter 4 (commencing with Section 21150), and Section 21167, except as provided in Article 2 (commencing with Section 21157) of Chapter 4.5. Accordingly, the Board must comply with all provisions of CEQA not contained within those chapters. The normal process of review and comment on environmental analyses is not contained in the exempted Chapters 3 or 4 and the Board must therefore comply with those provisions. The process currently employed by the Board is completely opposite of the normal and applicable CEQA process.

Public Resources Code section 21091 requires the agency to consider any comments it receives on a draft EIR or proposed negative declaration received within the public review period. PRC § 21091(d)(1). More importantly, that same statute requires the lead agency to consider any negative declaration together with any comments that were received and considered pursuant to paragraph (d)(1) prior to carrying out or approving the project. Public Resources Code § 21091(f) (emphasis added).

This section enforces one of the basic purposes of CEQA: informed decision-making. See CEQA Guidelines section 15003, 14 C.C.R. § 15003. The procedure currently employed by the ARB thwarts the goal of informed decision-making because the Board never sees the public comments and/or the responses to the comments. Instead, staff responds to public comments in writing after the Board has approved the project. The effect of this is to turn the public comment process into an exercise in post-hoc rationalization of the Board's decision.

By way of comparison, the technical support document for the 1990 Surfacing ATCM - which contains the public comments and responses – is dated February of 1990, but the hearing was held in April of 1990. This allowed the Board to see the public's comments and staff's responses before making its policy decision. Thus, the Board cannot find that it will have satisfied the requirements of CEQA if it adopts the proposed ATCM on the basis of only the ISOR. Nor can the Board authorize the Executive Officer to adopt the ATCM after the Executive Officer has prepared the Final Statement of Reasons ("FSOR"). Only the Board can adopt the ATCM and it can do so only after the Board has the FSOR before it. (TDLF)

Agency Response: This comment reflects a fundamental misunderstanding of how the ARB adopts regulations. It is premised on the incorrect assumption that the ARB took final action to adopt the Asbestos ATCM at its July 27, 2001, public hearing. In actual fact, final action to adopt the Asbestos ATCM will occur only when an Executive Order is signed by the ARB's Executive Officer. As explained in more detail below, this Executive Order will be signed after all of the CEQA comments had been summarized and responded to in the Final Statement of Reasons, as required by CEQA and the ARB's certified regulatory program regulations.

The process used in this rulemaking action is the same process that the ARB has used for over 20 years. The Board uses this process in regulatory actions, like the present one, where modifications are made to the originally proposed regulatory language. Under this process, the Board approved Resolution 01-28 at its July 27, 2001, Board hearing. The Resolution contains standard language directing the Executive Officer to adopt the regulatory amendments after: (1) making the modified regulatory language available for a 15-day public comment period, (2) considering such written comments as may be submitted during this period, (3) making such modifications as may be appropriate in light of the comments received, and (4) presenting the regulation to the Board for further consideration if this is warranted.

The reason that the ARB uses this approach is that the California Administrative Procedure Act (APA) specifically prohibits state agencies from taking final action to adopt a regulation until all modifications to the originally proposed language are made available for an additional comment period of at least 15 days, and all written comments are responded to in the FSOR (see Government Code section 11346.8(c)). The APA therefore prohibited the Board from taking final action to adopt that Asbestos ATCM at the July 27, 2001, Board hearing, which is why the Board delegated this responsibility to the ARB Executive Officer.

After the July 27, 2001, Board hearing, the ARB staff prepared this FSOR which summarizes and responds to all comments received during both the 45-day and the supplemental 15-day public comment periods, including all comments related to potential environmental impacts and other CEQA issues. Following the completion of the FSOR, the ARB Executive Officer will consider the responses to comments prepared by staff and, if appropriate, the Executive Officer will sign an Executive Order. This Executive Order will formally adopt the modified Asbestos ATCM as a regulation.

The commenter suggests that a different process was followed for the Surfacing ATCM adopted by the Board in 1990. This is incorrect; the process used in 1990 was the same process used for the current ATCM, as described above. The commenter has apparently confused the "Technical Support Document" for the 1990 ATCM with the FSOR for the 1990 ATCM. The Technical Support Document was part of the Initial Statement of Reasons for the 1990 ATCM, and

was indeed prepared in February 1990, prior to the April 12, 1990 public hearing. A portion of the Technical Support Document contains ARB staff responses to various comments that were made before February 1990. It is obvious, however, that the Technical Support Document could not and does not contain any responses to comments made during the formal 45-day comment period between February 1990 and April 12, 1990. All comments made during the 45-day comment period, including CEQA comments, were summarized and responded to in the FSOR for the 1990 ATCM, which was not prepared until many months after the Board hearing. Final administrative action to adopt the 1990 ATCM occurred after the preparation of the FSOR, when an Executive Order was signed by the ARB Executive Officer.

Finally, the commenter states that the Board cannot authorize the Executive Officer to adopt the ATCM after the FSOR has been prepared, and that: "Only the Board can adopt the ATCM and it can do so only after the Board has the FSOR before it." These statements are incorrect. The ARB Executive Officer is specifically empowered to adopt regulations on behalf of the Board by Heath and Safety Code section 39515(a) and (b), and section 39516. Section 39515(a) also specifically authorizes the Board to "… delegate any duty to the executive officer that the state board deems appropriate."

20.3 Comment: The comment and response process employed by staff for this ATCM does not comply with the requirements of the ARB's functional equivalent program. The ARB's own regulations, specifically 17 C.C.R § 60007, require staff to summarize and respond to comments that raise significant environmental issues associated with the proposed action. That same regulation requires the decision maker to approve the written response to each of the identified issues. As noted in the previous comment, the Board never sees the comments and responses in the process being employed here. Since the Board does not have all of the public comments and the responses to the comments before it when considering the ATCM and since there is no evidence that the Board has complied with the certified regulatory program, the Board cannot find that it has complied with CEQA. (TDLF)

Agency Response: This comment makes essentially the same point as the previous comment, except that instead of alleging that the ARB's process does not comply with CEQA, it is alleged that the ARB's process does not comply with the ARB regulation embodied in section 60007, title 17, CCR. The relevant portion of section 60007 is subdivision (a), which states:

> If comments are received during the evaluation process which raise significant environmental issues associated with the proposed action, the staff shall summarize and respond to the comments either orally or in a supplemental written report. Prior to taking final action on any proposal for which significant environmental issues have been raised, the decision maker shall approve a written response to each such issue.

As described in detail in the response to the previous comment, the process used by the ARB complies with the requirements set forth in section 60007(a).

20.4 Comment: Another problem with the ISOR is the failure to demonstrate that the functional equivalent document complies with the ARB's functional equivalent program. In order to claim the exemption from CEQA's EIR requirement, an agency must demonstrate strict compliance with its certified regulatory program "Mountain Lion Foundation v. Fish and Game Commission, 16 Cal.4th 105, 132 (1997)". There is no discussion whatsoever in the ISOR of the requirements of ARB's certification by the Secretary of the Resources Agency. Thus, the Board cannot meet this requirement.

Agency Response: The ISOR states that the ARB's regulatory program has been certified by the Secretary of Resources, and then very briefly mentions how the ARB complies with CEQA under the terms of its certification (see p. VIII-1 of the ISOR). The commenter seems to be arguing that it is not enough for the ARB to simply comply with the provisions of the ARB's certified regulatory program. The commenter's argument seems to be that CEQA imposes some legal requirement that the ISOR itself must discuss in detail the provisions of the ARB's certification, and must then discuss in detail exactly how the ARB has complied with each of these provisions. If this discussion is not included in the ISOR, the commenter seems to be arguing that CEQA compliance is defective even though the ISOR may address all of the substantive points that it is supposed to address under CEQA (i.e., an analysis of potential environmental impacts, alternatives, etc.).

This argument is incorrect, because CEQA imposes no such legal requirement. In addition, the case cited by the commenter does not support this argument. The out-of-context quotation cited by the commenter refers to a demonstration to the court, in the context of litigation before the court, that the agency has complied with the terms of its certified regulatory program. This case does not stand for the proposition that there exists some legal requirement that such an explicit demonstration must be presented in an agency's functionally equivalent CEQA document (e.g., the ISOR and FSOR).

20.5 Comment: Public Resources Code section 21159 requires the ISOR to contain an analysis of the reasonably foreseeable alternative means of compliance with the ATCM. The portion of the ISOR that purports to satisfy this requirement states:

> The ARB is required to do an analysis of reasonably foreseeable alternative means of compliance with the ATCM. Alternatives to the ATCM are discussed in Chapter V. ARB staff has concluded that the proposed regulation provides the greatest degree of flexibility and the least burdensome approach to reducing public

> exposure to emissions of naturally-occurring asbestos from construction, grading, quarrying, and surface mining operations consistent with protection of public health. ISOR, p. VIII-6.

There are a number of flaws in this statement. First, the stated purpose of the section is to evaluate the alternative means of compliance with the rule or regulation, not alternatives to the proposed ATCM. See PRC § 21159(a)(3). Hence, a correctly performed analysis would, for example, include a comparison of the environmental impacts of HEPA sweeping roads, water flushing roads, and water flushing followed by sweeping. See ISOR p. VI-4, Table IV-1. Similarly, a properly performed analysis would include a comparison of the environmental impacts of gravel-paving quarry roads, to the application of water, the application of dust suppressants, or paving the roads with asphalt or chip seal. Therefore, the ISOR has clearly not satisfied the requirements of Public Resources Code section 21159.

Second, since a proper analysis under both CEQA and Health and Safety Code section 39665 includes the comparison of the impacts of the alternatives to the ATCM, see Public Resources Code section 21080.5(d)(3)(A), staff is correct in at least referring to Chapter V, as this is where the alternatives to the ATCM are discussed. See ISOR, pp. V-12 through V-15. Unfortunately, the discussion in Chapter V only lays out the economic or logistical reasons staff rejected those alternatives. Id. There is absolutely no comparison of the environmental impacts of the alternatives in Chapter V or anywhere else in the ISOR. Accordingly, this Board cannot comply with CEQA until staff has prepared the appropriate analysis. (TDLF)

Agency Response: The ARB's environmental analysis complies with all CEQA requirements. Regarding Public Resources Code section 21159, staff does not agree with the commenter's legal interpretation that this section requires the ARB to conduct the type of extremely detailed analysis that the commenter proposes. Assuming for the sake of argument that section 21159 means what the commenter thinks it means, however, section 21159(a) states that in preparing an analysis "… the agency shall not be required to engage in speculation or conjecture." Engaging in speculation and conjecture is exactly what the ARB would have to do in order to perform the analysis suggested by the commenter.

The ATCM requires that certain dust mitigation practices be implemented. These prescriptive practices are combined with the requirement that no operation produce emissions that are visible crossing the property line. The result is a highly flexible approach that will allow for a variety of ways of complying with the ATCM. Staff expects that applying water to control dust emissions will be the control technology used in most situations by the vast majority of sources. This is because the application of water is a proven control technology, it is widely used today for dust control purposes, and it is generally much cheaper than other possible dust control methods especially for short term projects. Options for dust

control on non-traffic areas are unlikely to have greater environmental impacts, if any, than watering because watering requires frequent re-application. Use of tarps, vegetative cover, berms, enclosures, or windbreaks are in this category. The potential of chemical dust suppressants to cause water quality impacts is minimized by the oversight of the Regional Water Quality Control Boards. Most chemical dust suppressants have no direct air quality impact and would result in less diesel exhaust emissions because they may only need to be applied from 1 to 3 times per year. There may be some emissions to the air during road paving but paving is unlikely to be the chosen option for large areas or many sources unless the area was slated to be paved in the final development plan or is a frequently used road (e.g. quarry entrance). Again, these emissions would be of short duration and unlikely to be greater than the emissions associated with frequent watering. To the extent that such alternative methods might be used in a few limited situations, it is not possible to do a meaningful analysis because there is no way of knowing when or where a source would use such alternative methods. Any potential environmental impacts would likely depend on very site-specific factors, and cannot be analyzed in the abstract without conjecture and speculation. Therefore, staff's environmental impact analysis properly focused on use of watering as a control technology because it is both the most likely to be used and the most likely to result in significant impacts.

The track-out removed by HEPA filter devices and wet sweeping can be returned to the property from which it came. The potential impacts of installing track-out prevention devices (paving, grizzlies, gravel pads, or wheel wash systems) are unlikely to be significant and in many cases will not be additional impacts as these are routinely used at many construction sites and some quarries.

The commenter also believes that the ARB has not performed an adequate analysis of alternatives under CEQA. The alternatives to this project (i.e., the ATCM) are presented in Chapter V(C) of the ISOR. Eight alternatives are discussed. As explained below, staff believes that discussion meets all CEQA requirements for discussion and evaluation of alternatives. The first alternative is the "No action" or "No project" alternative, which would preserve the existing "baseline" environmental setting. This alternative obviously would not result in any environmental impacts as compared to the current situation because the current situation would remain unchanged if the ARB took no action. The remainder of the alternatives basically consist of different alternatives for structuring the regulation.

Alternative 2 is to establish regulatory standards based on visible emissions evaluations (VEE). As discussed in the ISOR (see page V-12), this alternative was rejected for construction and grading and road construction and maintenance because, among other reasons, this approach "… would have provided less consistent protection to the exposed population since it could allow higher dust concentrations off-site than the chosen approach." Analysis and quantification of any such adverse impacts is not possible without engaging in

speculation and conjecture, since the effectiveness of visible emissions evaluations depends on many site-specific factors such as the skill and diligence of the trained “smoke reader”, the physical characteristics of the site, prevailing wind direction and speed, and the type of emissions (VEE is not suitable for mobile emission sources). In addition to the potential adverse environmental impacts this option was rejected because it was not adequate in itself to meet the basic objectives of the ATCM.

Alternative 4 is to use an ASTM test method for determining whether material is “adequately wetted,” instead of using the test method contained in the regulation. There is no realistic possibility that this alternative could have environment impacts that are different than the impacts from the regulation. As the discussion of this alternative points out (see page V-13 of the ISOR), the basic idea in both cases is to specify a test method to ensure that material is kept sufficiently wet so that no dust emissions occur. If properly designed, both test methods would meet this objective without requiring excess water to be used. What is involved is simply a question of which test method has technical advantages such as practicality and simplicity of use. The discussion in the ISOR explains why staff chose the test method that appears in the regulation. A comparison of the nonexistent “environmental impacts” of this choice would be an artificial and unnecessary exercise.

Alternative 5 was to establish prescriptive standards instead of performance standards. This alternative was rejected as infeasible because source-specific conditions were too variable to specify prescriptive standards that would work in all situations. In addition, it is good public policy to avoid inflexible prescriptive standards and allow sources to meet more flexible performance standards whenever feasible.

Alternatives 3, 6, 7, and 8 were rejected as infeasible because they would not attain the basic objectives of the regulation—protecting public health by minimizing exposure to asbestos emissions. As specified in section 15126.6(f) of the CEQA Guidelines, the EIR need examine in detail only the alternatives that the lead agency determines could feasibly attain most of the basic objectives of the project. Since alternatives 3, 5, 6, 7, and 8 do not meet this criterion, CEQA does not require them to be examined in detail.

B. Potential Water Impacts

20.6 Comment: In analyzing the potential increase in water demand from complying with the ATCM, the ISOR uses a hypothetical operation that has a 3-acre active mine area, that operates 55 days per year, eight hours per day. Relying on the South Coast AQMD’s threshold of significance, the ISOR concludes that there will be no significant, adverse impact on water demand. ISOR, p.VIII-3.

Based on the data industry has gathered regarding the operations ARB has preliminarily determined is subject to this ATCM, the ISOR greatly underestimates the water that will be used by the mining industry. First, as noted earlier, the ISOR shifts the baseline aggregate operation it uses to evaluate the ATCM. In Chapter IV, the ISOR calculates the asbestos emissions from a hypothetical mine that operates 250 days per year with a four--acre active quarry area. In Chapter VIII, the ISOR bases its estimate of water used to control fugitive dust on a hypothetical mine that operates 55 days per year (almost 1/5th of the time used to estimate emissions) and has an active quarry area of three acres. By shifting the baseline, the ISOR skews the data that the Board uses to weigh the potential emissions that will be controlled by the ATCM with the environmental impacts. In order to have a balanced comparison of the benefits of the ATCM with the environmental impacts, the same hypothetical mine must be used.

Second, the hypothetical mine used in Chapter VIII is not representative of the 25 operations ARB has estimated will be subject to this ATCM. Industry data shows that these operations are typically active approximately 250 days per year, not 55. This will underestimate the water usage by a factor of almost five. In addition, most of these operations have an active quarry area of approximately 12 acres, not three. In some instances, the active operating areas may be up to 60 acres. Thus, there is another substantial increase in the potential water use. Accordingly, staff's analysis is woefully inadequate with respect to estimating water use. (TDLF)

Agency Response: Staff's estimate of water use was not based on a "hypothetical mine," as asserted by the commenter. As stated on page VIII-2, the average number of operating days per year was estimated using actual aggregated production figures for the potentially affected quarries. To estimate the average number of operating days per year staff took the average yearly production rate and assumed a daily production rate of 1000 tons per day. The production of the potentially affected quarries ranges from a few thousand tons per year to 500,000 tons per year. Operating 250 days per year, the three largest quarries were producing about 1750 tons per day. A smaller quarry was known to be producing 1200 tons per day. Therefore, ARB staff believed 1000 tons per day was unlikely to underestimate the average daily production. It is worth noting that those in the upper range of the potentially affected quarries are small in comparison to the average production rate for the industry as a whole.

ARB staff estimated that the average operating area was three acres. This estimate was based on the visits to nine of the potentially affected quarries staff made in 2000. The quarries staff visited were those that staff believed would be most likely to required to do dust mitigation. In addition they appeared to be a reasonable cross section of the potentially affected quarries based on the type of activity and the yearly production rates. Some quarries might have disturbed areas that are much larger than the active quarrying area but there are a number

of dust control options for the disturbed surface areas that do not require application of large amounts of water on a daily basis. It is also worth noting that this estimate of water use assumes that none of the potentially affected quarries will qualify for an exemption. This assumption is likely to result in an overestimate of the water use.

Further, the hypothetical quarry discussed in Chapter IV was not offered as an estimate of emissions to be compared with the cost or the environmental impact. It was offered only as an illustration of the activities that resulted in emissions and their relative magnitude. Staff clearly stated that because of the variability in quarry operations, asbestos content, current control, and other factors, ARB could not make an estimate of total emissions or exposure. Thus, the characterization of the difference between the hypothetical quarry and the average factors derived from actual production data as a shifting of the baseline is inaccurate.

20.7 Comment: Regarding the use of water as a control technology, the information currently available to industry indicates that in some counties, water is in short supply. For example, it has been reported by the news media that the El Dorado Irrigation District has declared a stage-two water emergency and may declare a stage three emergency. Industry has had reports that construction companies are prohibited from using the municipal water supply for dust control in El Dorado County. Thus, some sites may have problems complying with this ATCM at all unless this issue is resolved. (TDLF)

Agency Response: The Department of Water Resources periodically does an assessment of water use and supply for each hydrological region in California. No water shortages are forecast in normal years for any of the hydrological regions with ultramafic rock deposits. Much of California is subject to water shortages in drought years. Fortunately, the water emergency declared for El Dorado County was cancelled within weeks due to the arrival of seasonal rains. In addition, reclaimed water is available to construction companies for dust suppression in El Dorado County. However, options for dust control still exist throughout California even when water supplies are limited. Reclaimed water can be used for dust suppression as can chemical dust suppressants that will reduce the need for water. Some dust suppressants are highly effective for long periods on material that is not being disturbed. Other available options include covering exposed areas with materials of various types. Overall, the regulation provides enough options to allow all operations to maintain maximal dust control even when water is in short supply.

20.8 Comment: For water impacts, the ISOR uses a purported threshold of significance developed by the South Coast AQMD to determine that the total increased water use by both the construction industry and the aggregate industry will not be significant. ARB does not, however, demonstrate that this threshold of

significance meets the updated requirements of the CEQA Guidelines and industry's research indicates that it does not.

In 1998, the Resources Agency updated the CEQA Guidelines. One of the new regulations was section 15064.7. That regulation requires any threshold of significance to be adopted by rule, regulation, resolution, or ordinance and requires the thresholds to go through the public review process. 14 C.C.R. § 15064.7(b). Industry has contacted the South Coast AQMD. According to Steve Smith, Ph.D., the five million gallon per day threshold used by the South Coast district was obtained from an EIR prepared for the 1990 SIP for PM10 in the Coachella Valley. An EIR is not a rule, regulation, order, or resolution. Although EIRs go through the public review process, industry questions whether the EIR indicated to the public that the information on water use in that EIR would be used in the future as a threshold of significance that would satisfy the requirements of Guidelines section 15064.7. Accordingly, the Board cannot rely upon that threshold of significance in finding that there will not be a significant impact occasioned on the environment by the additional water consumed to comply with the proposed regulation. (TDLF)

Agency Response: The ARB's use of a five million gallons per day threshold for increased water use does not conflict with section 15064.7 of the CEQA Guidelines. Section 15064.7 encourages (but does not require) public agencies to adopt thresholds of significance. Section 15064.7(b) states that: "Thresholds of significance to be adopted for general use as part of the lead agency's environmental review process must be adopted by ordinance, resolution, rule, or regulation…" (emphasis added)

Since at least 1990, five million gallons per day is the threshold of significance for increased water that the South Coast Air Quality Management District (SCAQMD) has consistently used in their EIRs and other functionally equivalent environmental documents. The ISOR (page VIII-3) states: "To date, the ARB has not adopted thresholds of significance. For the purposes of this analysis, ARB will rely on the thresholds of significance adopted by the South Coast Air Quality Management District." These statements make it clear that the ARB has never adopted a threshold of significance for general use, and is not doing so in this regulatory action. Rather, for this particular regulatory action the ARB has chosen to use the same threshold for increased water use that the SCAQMD consistently uses. Since the ARB is not adopting a threshold of significance for general use, section 15064.7 does not apply.

The commenter's argument is somewhat unclear, but the commenter appears to be arguing that the SCAQMD may have violated section 15064.7 of the CEQA Guidelines because SCAQMD has consistently used this water use threshold in EIRs since 1990 but has never formally adopted it as a resolution, rule, or regulation. From this premise, the commenter seems to be suggesting that any other agency (e.g., the ARB) that uses the same threshold for a particular

environmental analysis has also violated section 156064.7. If this is the commenter's argument, it makes no sense. The ARB has to use some criteria for deciding whether or not an increase in water use is a significant adverse impact that will result from the ATCM. To make this judgement call it is appropriate to find out the administrative practice of other agencies that have analyzed similar impacts. When an agency has not formally adopted its own thresholds of significance, the Governor's Office of Planning and Research (OPR) recommends that the lead agency contact other agencies regarding the thresholds that they use. This is what ARB staff did here. ARB staff's decision to use the SCAQMD threshold represents a very conservative approach, since the five million gallons per day threshold is used in the very dry regions of the Southern California desert, whereas the ATCM will apply statewide in areas with far more water than the desert. The issue for the ARB is simply whether this numerical threshold is an appropriate one to use. To make this decision, it is irrelevant whether or not a legal argument can be made that the SCAQMD should have used a more formal process to adopt this threshold for general use in the South Coast Air Basin.

20.9 Comment: The use of the blanket threshold of significance is unwarranted in this case because of the special nature of this ATCM. The ISOR emphasizes that there are only 25 mines that will be impacted by this ATCM. In addition, because the ultramafic rock units are plainly indicated on the DOC map, staff can determine which water agencies will be called upon to deliver water to businesses complying with this ATCM. Using the data from the map, staff has the ability to determine whether the ATCM may have disparate adverse impacts on water demand based on the particular water supply situation in the geographic area surrounding the ultramafic rock unit. For example, the DOC map shows ultramafic rock units in El Dorado County and in Lake County. Staff can obtain precise data regarding local water supplies by contacting the Lake County and El Dorado County water agencies and then determine what level of increased demand for water will be significant for each area. There is no indication that staff sought this data. Staff has demonstrated that it could obtain such data, as staff contacted water agencies to obtain cost data for the economic impact analysis. See reference to ARB 2000e. (TDLF)

Agency Response: Staff held many discussions with the owners/operators of the potentially affected quarries. At no time during these discussions did any owner of an existing quarry express a concern about the availability of water to comply with the ATCM. While the location of ultramafic rock is shown clearly on the map, the service areas of water systems are not. In addition, most of the quarries (as is typical in many areas of the foothills and other rural areas) rely on self-supplied groundwater from wells tapping fractured rock aquifers. Of the 25 potentially affected quarries, staff has identified only one that is supplied by a municipal water system. This quarry is the best controlled of all the quarries that staff visited. Some quarries are operating under permits that require all or nearly all of the dust control measures specified in the ATCM. Though these quarries

were included in the estimate of additional water usage, in actual practice these sources are not likely to require a large increase in water use to comply with the requirements.

Few counties have adopted thresholds of significance for water use. The planning agency in Siskiyou County informs us that the significance of water use is evaluated on a site-specific basis and that use of water for dust control in a construction project or quarry would not generally be considered a significant water use. Trinity County and El Dorado County planning agencies evaluate the significance of water use on a case-by-case basis. The municipal water supplier in Mendocino County closest to the potentially affected quarries does not serve them. However, it uses groundwater and is not aware of any shortage of groundwater in the area. The potentially affected quarry in Placer County has filed a dust control plan with the APCO that indicates the quarry will be in compliance with the ATCM. The operator has identified an adequate supply of water. All the evidence available to ARB indicates that the projected increase in water use is not significant. Typically, the availability of water is evaluated when use permits are granted for mines and quarries as part of the CEQA review.

The additional water use for construction projects is not likely to be a significant increase in use in any location. The lowest significance threshold staff has identified was adopted for the North Monterey County Hydrogeological Study Area when it was placed under an interim moratorium on development. Even during this moratorium, additions, remodels, re-constructions, and construction of a new residence, commercial, or industrial use on an existing lot was allowed if that use required no more than 0.4 acre-feet (130,360 gallons) of water per year. Water usage for dust control to comply with the ATCM during residential and commercial construction is 19,360 gallons per acre. Water requirements for small projects are estimated to be 500 to 600 gallons per project. These requirements would not be considered significant even under this very low threshold.

20.10 Comment: The ISOR's complete analysis of water quality impacts is:

> Water quality is not expected to be adversely impacted because the proposed dust control measures are consistent with the best management practices established by the Water Quality Control Board.
>
> In addition to being a water-quality requirement, the best management practices with regard to water use for dust control are common sense. Sources are unlikely to apply so much water that it causes run-off because sopping wet soil is difficult to work in. Additionally, the use of excess water increases the cost of the project. ISOR, pp. VIII-3 to VIII-4.

Because the ISOR does not contain the required analysis of the alternative means of compliance with the ATCM, see Public Resources Code section 21159 and subsection G, infra, the ISOR myopically evaluates only the impacts from applying water to dirt. The proposed ATCM, however, also contemplates the application of water to paved surfaces to remove track-out. See ISOR, p. VI-4. In fact, the ISOR characterizes track-out as a "widespread problem." ISOR, p. IV-2. If an operator or construction company were to water-flush a road that is covered with asbestos containing soil, that soil may enter a storm drain that is not tied to a wastewater treatment system, but connects directly to waterways. Thus, the quality of that water body may be impaired if the concentrations of asbestos exceed established water quality goals.

For example, the Central Valley Regional Water Board has adopted water quality goals for asbestos of 101 parts per billion. See Central Valley Region Compilation of Water Quality Goals, May 1993, attached as Exhibit D. This is a very low threshold. Accordingly, the ISOR must contain some analysis or discussion of the potential for asbestos in excess of the water quality goals to enter surface waters in the Central Valley region, which includes El Dorado County. The failure to do prevents the Board from complying with the information gathering duties of CEQA. (TDLF)

Agency Response: ARB does not agree that an analysis of reasonably foreseeable impacts must include an assumption that operations will violate other existing regulations. The Water Quality Control Board's Best Management Practices (BMPs) are designed to prevent runoff of soil contaminated water. Water flushing such as the commenter foresees is not consistent with the BMPs nor is it required under the ATCM. Wet sweeping is not the same as water flushing. When properly employed, the dust mitigation measures will not result in any runoff of contaminated water. As noted, there are practical reasons to expect that they will be properly employed. Further, if the regulation did not require track-out prevention and clean-up, some of the tracked-out material could become airborne and the remainder would be washed into the drainage system by stormwater run-off. Thus, the regulation may result in an improvement in water quality.

C. Potential Impacts of Increased Electricity Use

20.11 Comment: The ISOR concludes that the proposed ATCM will not have a significant effect on electricity use because the total increase in power demand to pump water is one-millionth of the total electricity consumption in the state. ISOR, p. VIII-4. Comparing local impacts to a regional baseline is not a proper means of determining the significance of an impact. This rule is applicable here because the power crisis has not affected all areas of the state equally: some areas are supplied by municipal utilities that have not had power shortages while other areas have been plagued by rolling blackouts.

In this case, the ISOR identifies 25 quarries that staff expects to be impacted by this ATCM. The power supply for each region should have been analyzed to determine if compliance with the ATCM may have a disparate impact to certain geographic areas. For example, the ISOR obtained air monitoring data from the Raisch Quarry in the Santa Clara Valley. The South Bay area has been singled out as being severely impacted by the power crisis because of the power use by the Silicon Valley. Staff ignores the potential impact the increased power demands may have on the South Bay and other geographic areas when the mines in that area comply with the proposed regulation. (TDLF)

Agency Response: The increase in the electricity use from the ATCM (less than one millionth of the total currently used in California) is so extremely small that staff felt it was unnecessary to include a region-by-region analysis in the ISOR. Regarding the commenters points however, the Raisch Quarry in the Santa Clara Valley is not one of the potentially affected quarries because it is closed and is in the process of reclamation. One of the largest of the potentially affected quarries is in Alameda County. However, this quarry, when visited by staff, appeared to be currently employing all of the dust mitigation required by the ATCM. It is therefore very unlikely that any increased electricity use will occur at this quarry. Staff has not identified any other potentially affected quarries currently operating in the San Francisco Bay area. In any case, using the number of quarries per county and the electricity use per county shows that in no place would the additional energy use represent more than two ten thousandths (0.0002) of the year 2000 electricity use. This is still an insignificant increase even for those counties with a low level of energy use. In addition, a number of new power facilities are currently under construction and are expected to be on-line when the ATCM requirements become effective.

D. Potential Air Quality Impacts

20.12 Comment: Subdivision (e) of the ATCM requires disturbed surfaces to be stabilized after the project is completed. In the case of a home site, the options of paving or establishing vegetative cover is not feasible because such items are typically left to the discretion of the new homeowner. Thus, the only feasible option is importing soil. Since this must be done near the conclusion of the operation, there will again be additional truck traffic, with the concomitant increase in diesel particulate and criteria pollutant emissions. (TDLF)

Agency Response: ARB staff does not agree that the only feasible option is bringing in topsoil. This provision of the ATCM covers all types of construction projects over one acre. In many of these projects, such as commercial buildings, schools, etc., exposed areas will be covered with various types of material anyway as part of the normal work for the project. Thus, no additional emissions will occur. Even for subdivisions, many common areas are routinely covered and landscaped as part of the project. In addition, because many plants do not grow well in the highly mineralized soils derived from ultramafic rock, homeowners

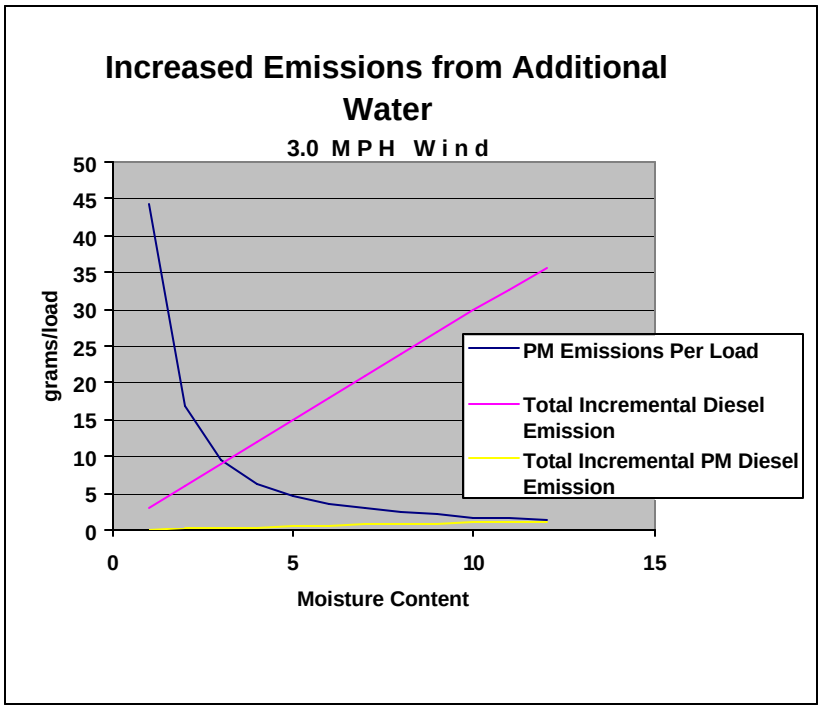
would likely need to bring in topsoil to landscape their yards anyway. Placing this soil cover as part of the project would not result in any more emissions than if homeowners did it later. In fact, the requirement is likely to result in less emissions and exposure than if material were imported by the homeowners after the homes were occupied. Placing the material at this stage would likely require the use of smaller trucks resulting in more trips and more emissions. For these reasons, ARB staff does not believe this requirement will result in any significant increase in emissions.

Even if one makes the rather unlikely assumption that no homeowner would import soil after their homes were occupied, any emission increases that might conceivably result from the ATCM would likely be extremely tiny. Calculating the potential impacts would require staff to make some assumptions for which supporting data may not be available. For instance there is no information available on the distance trucks might have to travel to get suitable material. If staff assumed that none of this soil could be obtained within the site and that trucks would have to transport it an average of 10 miles, an estimate could be made. Typical lot sizes in suburban subdivisions are from 5,000 to 10,000 square feet. The building(s) and driveway will cover about half of the ground surface. Three inches of soil for placement on the remainder will require about 23 to 46 cubic yards of soil or one to two truckloads per home. Based on limited data, we estimated that about half of the projected 1,182 new homes in ultramafic areas would be built in subdivisions (see page VII-17 of the ISOR). Based on these factors, trucks would have to travel an additional 5,910 to 11,820 miles to bring in the soil. At an emission factor of 0.67 grams of particulate matter per mile (see page V-11 of the ISOR for the Asbestos ATCM for Surfacing Applications), this would result in 10 to 20 pounds of diesel particulate per year statewide (i.e. less than 0.027 to 0.055 pounds per day). Therefore, even if there were additional emissions related to this requirement, they would be extremely tiny and would not significantly alter the emission estimates made in the ISOR.

20.13 Comment: The ISOR underestimates diesel exhaust emissions. First, just as with the water use analysis, the hypothetical mine analyzed in the ISOR is smaller than the operations staff has listed as being subject to this regulation. As noted above, industry's data regarding the number of days a mine operates shows that most mines operate at least 250 days per year, and have an active quarry area of at least 10 acres. In some cases, active areas may range up to 60 acres. Thus, staff's estimate of the miles traveled is severely understated.

Second, the ISOR does not consider the additional emissions generated by diesel engines working harder to move the same volume of minerals that have added water weight. Industry is unable to accurately calculate these emissions because the ISOR does not provide an estimate as to the moisture content of minerals that meet the "adequately wet" standard of the proposed ATCM. Industry can show, however, that there is a correlation between water content and diesel emissions (see graph below). Based on the data available to industry,

the ISOR grossly underestimates increased diesel particulate and criteria pollutant emission that will result from compliance with the ATCM. (TDLF)



Agency Response: The data upon which the industry bases this conclusion is not clear or substantiated. The commenter offered a graph with no indication as to its basis or origin to "demonstrate" that emissions increase by a certain factor as a result of an increase in the moisture content of the load. This graph shows three lines. The bottom line is labeled incremental diesel PM. The steeply curved line is labeled PM emissions and meets the incremental diesel PM line in the vicinity of a moisture content of 12 percent. The sloped line is labeled total incremental diesel emissions. The graph appears to be relating the reduction in total PM emissions to the moisture level of the material, i.e. the reduction in fugitive dust from the truck (which is precisely what the ATCM is designed to accomplish) to an increase in diesel emissions. There are some significant problems with this graph and what it purports to show. Most importantly, there is no indication of how any of the emission estimates were derived. It is not clear why the graph shows a wind speed of three miles per hour, which would not be representative of the actual conditions affecting a truck traveling on the highway. It is also not clear what total diesel emissions means and how that relates to air quality. The air quality effects of nitrogen oxides, hydrocarbons, carbon monoxide and particulate matter are very different. Showing the incremental diesel PM emissions gives the impression that doubling the moisture content would double the emissions. This is clearly not an accurate depiction, as the emissions must also reflect the weight of the truck and the weight of the rock. ARB staff believes that if the increase in diesel particulate matter were shown as the relative increase, not the incremental increase over an undisclosed baseline, it would be very small. Due to the above concerns, ARB staff does not find this

to be credible evidence that there will be a large increase in diesel emissions as a result of this provision. Further, wetting the loads prior to departure was standard practice at the largest of the potentially affected quarries staff visited.

The commenter states that the potential increase can not be calculated because the ATCM does not specify a required moisture content. When ARB proposed to require a minimum moisture content of 12 percent, the industry objected saying sand at a moisture content of 12 percent would be like soup. Staff agreed that the optimum moisture content would differ for different materials and crafted the regulation such that the required moisture content could be determined and made a part of asbestos dust mitigation plan or be tested using a functional field test. The advantage of this approach is a more flexible and less burdensome regulation. The disadvantage of this approach is that the moisture content of adequately wet material is unknown. There is also another part of the equation that is unknown. That is the moisture content of materials transported off-site prior to the implementation of the ATCM. Many conditions will affect this. Material is moistened as it is processed to reduce dust emissions. How much of that moisture remains in the stockpiles will depend on the length of time it sits and climatic conditions. Thus, the data are not reasonably available to make an accurate estimate of the potential increase in emissions due to the requirement that material be adequately wet without engaging in speculation and conjecture. However, ARB staff believes the increase, if any, would be very small because an increase in the moisture content from five percent to 12 percent would be an increase in the weight of seven percent. Theoretically, in a worst case scenario, the emissions from trucks hauling aggregate from the affected quarries could increase by that amount due to the decreased rock weight the trucks could haul. However, the aggregate production from the potentially affected quarries is less than one percent of the total aggregate production in the state. Therefore, the seven percent increase for an affected quarry would become a 0.0007 percent increase in emissions from aggregate hauling, and aggregate hauling itself is a very tiny percentage of total on-road diesel particulate matter emissions.

As explained in the response to Comment 20.6, the estimate of operating hours per year was not based on a 'hypothetical quarry' but was instead based on the actual reported production rates of the potentially affected quarries. It is common for quarries producing 500,000 tons per year or more to operate 250 days per year. Most of the potentially affected quarries do not produce that much and some operate only a few days per year or a few weeks every two or three years. Quarries that have been operating for many years may cover a large area; however, the active quarry area is often much less. The operating area used for the assessment of active operating quarry area was based on ARB staff's visits to nine of the potentially affected quarries. Thus, ARB staff is confident that the estimate of the miles traveled by water trucks is not an underestimate.

20.14 Comment: Subdivision (e) of the ATCM requires trucks that will haul material off site to be both adequately wetted and covered with a tarp or have six inches of

freeboard. By increasing the freeboard, less material can be hauled off site with the same number of truck trips and time. Thus, the completion of the operation is slowed, meaning that there will be additional time that soil or rock that purportedly contains asbestos will be disturbed and that there will be an increase in the number of truck trips required to complete the job. Increased truck trips increase the diesel emissions associated with the job. (TDLF)

Agency Response: Vehicle Code section 23114 (e) already requires that the cargo area of a vehicle carrying aggregate material shall not contain any holes, cracks, or openings through which that material may escape and that loads must either be covered or have six inches of freeboard. These requirements apply to any aggregate material, whether or not it contains asbestos. Since the requirement that trucks have six inches of freeboard or be covered is already a matter of state law, this requirement will not cause any increase in emissions.

20.15 Comment: The ISOR does not contain sufficient evidence to support a Statement of Overriding Considerations. The ISOR concludes that the increase in diesel emissions may be a significant adverse environmental impact, but also concludes that the reduction in asbestos emissions overrides those adverse impacts. ISOR, pp. VIII-5 to VIII-6. The analysis in the ISOR is not adequate to support the findings necessary to adopt a statement of overriding considerations with the specificity required by 14 C.C.R. § 15091. This is because the Board cannot find that the additional emissions of diesel exhaust are outweighed by the reduction in asbestos emissions because staff has not even attempted to estimate the reduction in asbestos emissions to be achieved by the proposed ATCM. In addition, the Board has no information regarding the potential impacts of increased diesel exhaust on the nonattainment areas in which ultramafic rock units may lie. The Board cannot, therefore, adopt the proposed ATCM at this time based on the current ISOR and find that it has complied with CEQA. (TDLF)

Agency Response: Staff believes there is adequate evidence to support a statement of overriding considerations. The commenter has confused the ability to estimate the emissions and risk from an individual source such as a quarry (which the ARB has done in the ISOR), with the ability to reliably estimate the total emissions and risks from all sources throughout California that are regulated by the ATCM (which ARB has not done because the data to do so is not reasonably available). The air modeling for an operating quarry in ultramafic rock demonstrates a potential mesothelioma risk of as much as 920 per million and a lung cancer risk of as much as 530 per million. The highest air concentrations measured in this study were found at a location that would primarily reflect the track-out emissions due to the wind direction during the air monitoring. The ISOR page VI-4 indicates that cleanup of track-out on a paved road can achieve a 58 percent reduction. The emission reduction for prevention combined with cleaning as required by the ATCM may be higher.

The total estimated statewide emissions of diesel particulate for this ATCM is 491 pounds per year. This is based on an estimated number of miles traveled of 213,600 for all sources in both construction and mining activities. Estimates of risk are related to air concentrations. ARB staff has previously made estimates of the air concentrations and associated cancer risk from diesel particulate. They indicate that the average increase in emissions per quarry is unlikely to result in more than a one in a million risk. A site-specific estimate of risk may show more or less risk due to meteorological and topographic considerations, the proximity of residences, the size of the disturbed area, and control technology options. However, it is clear that the asbestos risk reduction far outweighs the potential increase in risk from diesel particulate due to the ATCM and the Board did have sufficient data to adopt a statement of overriding considerations.

20.16 Comment: The ISOR states:

> The proposed regulation is expected to result in some reductions in particulate matter emissions. This will contribute to progress toward compliance with the air quality standards for particulate matter. We are unable to quantify this potential reduction in particulate matter due to the variability in current dust control practices used for these activities. ISOR, p. VIII-6.

This analysis is shortsighted. For example, the Sacramento Federal Non-Attainment area met its 1999 milestone for ozone by 80 pounds. The data in the ISOR shows that the Placer County area will be impacted by the proposed ATCM. Placer County is in the Sacramento Federal Non-Attainment area. Thus, the increased diesel emissions – when adjusted to account for actual mine conditions not the artificially low conditions evaluated in the ISOR – may adversely impact the ability of the Sacramento area to reach attainment.

This same analysis plays out in many of the areas that are subject to this regulation, including the San Jose/Santa Clara Valley and Riverside. Thus, the ISOR sorely neglects important considerations for this Board in adopting any regulation that may increase criteria pollutant emissions. Accordingly, this Board cannot adopt the proposed ATCM until staff provides a complete analysis of the potential impacts of the ATCM to attaining ambient air quality standards. (TDLF)

Agency Response: Under the transportation conformity provisions of the Clean Air Act, regions must show that emissions are within emission budgets in order to continue to receive federal transportation dollars. The Sacramento Federal Non-attainment Area met the NOx budget for the 1999 milestone year by 80 pounds per day. (Note pounds per day, not pounds per year). In addition, the transportation conformity budget concerns only on-road mobile source emissions rather than the entire emissions inventory. Thus, most of the emissions attributable to the ATCM are off-road emissions that do not apply in determining whether this milestone is met.

The additional NOx emissions expected from gravel trucks and water trucks due to the ATCM is approximately 32 to 38 pounds per day (11,800 to 13,800 pounds per year as shown in Table VIII-1 of the ISOR). This is less than the 80 pounds per day transportation conformity margin that Sacramento had in 1999. Also note that the 32 to 38 pounds per day is a statewide estimate not a regional estimate. Emissions in the Sacramento area and other individual regions would obviously be considerably less than this amount.

The statewide NOx emissions expected due to the ATCM are less than the Sacramento Metropolitan Air Quality Management District's CEQA thresholds of significance for NOx (65 pounds per day for long-term projects and 85 pounds per day for short-term projects). Sacramento also has the Sacramento Emergency Clean Air Transportation (SECAT) program, which is helping lower emissions from heavy-duty vehicles in the Sacramento region. Air quality agencies will need to ensure this very small increase in emissions is offset overall so that we meet our overall ozone SIP goals. However, this should be possible because new standards for heavy-duty diesel trucks will take effect in the next five years and as the fleet of heavy-duty diesel trucks turns over, the fleet gets cleaner and cleaner due to these previously adopted emission standards. The reduction in the fleet-average emission factors for heavy, heavy-duty trucks from 2000 to 2010 is expected to be 55 percent for ROG and 49 percent for NOx. Because of these considerations, ARB staff does not expect the small additional emissions increase due to this ATCM to prevent any region in the State from meeting the ozone requirements.

21.0 General

21.1 Comment: It may be appropriate for certain areas that contain substantial quantities of tremolite or other amphiboles at the surface to be declared off limits to development. (ALAC)

Agency Response: The ARB does not have authority over local land use planning. If there are areas in which substantial deposits of asbestos would make development hazardous, they can be addressed through local government land use planning and permitting processes and through CEQA.

21.2 Comment: We would like to see road decommissioning be added as a type of road construction and maintenance activity under Section (d) and under Definitions in Section (i). The majority of our road decommissioning activities are in remote locations, and involve activities similar to new road construction. (KNF)

Agency Response: Road decommissioning involves grading, culvert removal and re-contouring the disturbed areas. ARB staff believes routine dust control during this type of project is appropriate and in most cases is typical practice. ARB staff believes these types of projects will be few in number so the

requirement to apply appropriate dust control measures and obtain a district approved Asbestos Dust Mitigation Plan if the project will disturb more than one acre will not represent a significant burden.

21.3 Comment: The ATCM does not fully address ongoing traffic emissions on existing or newly created serpentine roads. These areas should be controlled, subject to low speed limits and asbestos hazard warnings if subject to mechanical travel. (LCAQMD, KNF)

Agency Response: This regulation was not designed to address travel on existing roads and other surfaces. However, the Asbestos ATCM for Surfacing Applications, which became effective November 13, 2001, will over time result in reduced emissions from roads and other surfaces due to a reduction in the asbestos content of the surfacing material. At this time, the ARB staff does not have adequate information to propose a regulation to address existing roads.

21.4 Comment: The most effective alternative, and one not addressed in the ATCM, is the "no-action" alternative (i.e., leaving amphibole deposits undisturbed). Any alternative involving excavation of amphibole asbestos deposits is fraught with risks of exposure. Construction projects routinely do not meet the current dust control standard nor is the standard properly enforced. The no-action alternative involves prohibiting construction altogether in amphibole asbestos formations, and is the most protective and least expensive of options. (McMahan)

Agency Response: Local governments through their planning and permitting processes determine where development is allowed. The ARB has no authority over local land use planning. The ATCM seeks to establish a level of control that will result in the lowest achievable emission rate through application of the best available control technology. The inconsistency of requirements for dust control on construction projects is one of the reasons the ARB determined an ATCM for this category of sources was necessary. The ATCM establishes statewide minimum dust control requirements for sites where naturally-occurring asbestos is found or is likely to be found and establishes enforcement mechanisms.

21.5 Comment: The ATCM should be amended to require monitoring of worker health and safety. (McMahan)

Agency Response: The federal Occupational Health and Safety Administration (OSHA) and Cal-OSHA have the authority to adopt regulations governing worker health and safety. Provisions addressing worker health and safety in the ATCM would be duplicative and unnecessary.

21.6 Comment: There are not adequate control measures available that will prevent exposure if development is allowed to proceed on these areas. (Trent)

Agency Response: The ARB is not a land use planning agency and has no authority with respect to where development can and cannot occur. If the local land use planning agency approves development in an area where asbestos is found or is likely to be found, the ATCM requires that dust mitigation measures be implemented to reduce emissions to the lowest level achievable through application of the best available control technology.

21.7 Comment: We're asking the Board to regulate asbestos using the same risk management tools and levels of analysis as the rest of the world and as U.S. EPA uses. (VM)

Agency Response: The risk assessment process that developed the potency factors used by the ARB for this ATCM was conducted in accordance with the procedures established by the Legislature. These procedures can be found in Chapter 3.5 of the Health and Safety Code. The risk assessment criteria and toxicity factor for asbestos were developed by the Office of Environmental Health Hazard Assessment (OEHHA) and reviewed by the Scientific Review Panel (SRP). These procedures are consistent with generally accepted scientific practices employed by U.S. EPA and other agencies.

21.8 Comment: We recommend the reporting requirements and penalties for non-compliance, such as are contained in the U.S. EPA's Asbestos Hazard Emergency Response act (AHERA) and air pollution control district asbestos removal regulations be incorporated into this control measure. (ALAC)

Agency Response: The Legislature established the ARB's program for controlling toxic air contaminants. It is contained in Chapter 3.5 of the Health and Safety Code. Health and Safety Code section 39666 specifies that the air districts are to implement and enforce ATCMs. Health and Safety Code sections 39674 and 39675 establish maximum penalties for violations of Chapter 3.5, and it is unnecessary and duplicative to address penalties in the ATCM.

The ATCM specifies reporting requirements in several places. Specific reporting requirements are specified in subsections (e)(5)(B) for construction and grading and (f)(5)(B) for quarrying and surface mining. These specify that the results of air monitoring and bulk sampling that is required by the district or needed to demonstrate compliance must be reported. In addition, the ATCM requires the district to be notified when asbestos, serpentine, or ultramafic rock is discovered in the course of any road construction and maintenance, construction and grading, or quarrying and surface mining activity. Finally, the asbestos dust mitigation plan to be prepared for any construction and grading operation that disturbs more than an acre, and for any quarry or surface mine, must include site-specific reporting requirements.

These reporting requirements are designed to provide specific, focused information without being unduly burdensome to the regulated community. It is

not necessary to add additional reporting requirements as suggested by the commenter, particularly when these requirements are designed for different asbestos sources in different situations. For example, the AHERA requires that all schools have accredited inspectors evaluate the site and identify asbestos-containing material, and then prepare an asbestos management plan to prevent emissions and exposure. All asbestos-containing material must be re-inspected every three years. Finally, all this information must be made available for inspection. This would be analogous to requiring any property owner in an ultramafic rock deposit to survey and sample the soil to determine where asbestos might occur, and then develop a plan to prevent exposure. Such a requirement would be excessively burdensome for landowners given that the source of the exposure is the construction, grading, quarrying and surface mining activities.

21.9 Comment: Some quarries aren't following any dust mitigation measures at all. We have pictures of a quarry when it is operating without any dust control measures and nearby homes nearly obscured by the dust. Nobody can tell us at what level we're going to get cancer. We encourage you to adopt and approve staff's recommendations, because our lives are being affected and these measures are reasonable. (VargasM)

Agency Response: No response is required.

21.10 Comment: Where a District is willing to make a determination of the presence or absence of serpentine or ultramafic rock for the purpose of administering regulations based on the findings of a "qualified" but not necessarily a "registered" geologist, the District should have that flexibility to do so within the context of the other requirements of the ATCM for review and reporting. (LCAQMD)

Agency Response: It is acceptable for a qualified but not necessarily a registered geologist to advise the district that asbestos, ultramafic rock, or serpentine is known or has been discovered to occur on a site that is not within a geographic ultramafic rock unit. However, we feel that it is necessary that a registered geologist take responsibility for any report submitted for the purpose of gaining an exemption from the requirements of the ATCM for a site that is within a geographic ultramafic rock unit. This provides greater accountability and minimizes the potential for mistakes or misrepresentation of the facts. If a registered geologist conducted an evaluation and made gross mistakes or purposefully misrepresented the facts to favor a client, recourse is available against the geologist through the actions of the Department of Consumer Affairs, Board of Geologists and Geophysists.

21.11 Comment: Section (c)(2)(B)(2) essentially allows 14 days to complete a project using less than one acre dust controls for projects larger than one acre. We

suggest that the elements of the dust plan requirements in (c)(4) be implemented as appropriate until a specific dust plan is approved. (LCAQMD)

Agency Response: The commenter is referring to section (c)(2)(B)(2) in the preliminary draft regulation which is section (e)(2)(B)(2) in the adopted regulation. This section will apply to very few operations. It applies only to existing operations that have submitted an asbestos dust mitigation plan at least 60 days prior to the effective date of the regulation when that plan has not been either denied or approved by the district by the effective date of the regulation. The district's response will determine whether this provision ever applies. If a source submits a clearly deficient plan expecting to take advantage of this provision, the district can disapprove it within 60 days. This provision was added to address the concern of the industry that operations would be put in limbo awaiting district approval of a plan. The commenter suggests that the provisions of subsection (e)(4) (which was subsection (c)(4) in the preliminary draft) be implemented until the district approves a dust mitigation plan. This suggestion will not work because subsection (e)(4) merely identifies the elements that a plan must contain, without identifying specific, enforceable plan provisions that a source must comply with. However, the ATCM specifies that pending plan approval the source must comply with the measures specified in subsection (e)(1), which are enforceable provisions that a source must comply with.

21.12 Comment: The ATCM should use a lowest threshold value consistent with the applicable test method to replace terms such as "any" or "no". If the intent is to regulate asbestos at 0.25 percent or at a lower "trace" amount, let it be plainly stated in the applicable sections. A single fiber in a 400 count examination using Method 435 results in an asbestos concentration of 0.25 percent. A single fiber observed, but not at a count location should result in an analysis report of "trace" or less than 0.25 percent asbestos. Based on our experience, any single sample analyzed per Method 435 has an equal chance of reporting a "trace" or 0.25 percent asbestos concentration in alluvial gravel deposits located within several miles of known serpentine areas. This may result in inconsistent statewide exemption determinations. (LCAQMD)

Agency Response: Modifications were made throughout the draft regulation to ensure that all references to material with an asbestos content that is less than 0.25 percent are consistent. These modifications were released on December 19, 2001, for a supplemental comment period which ended January 15, 2002. Exemptions for materials being removed from an alluvial deposit can be provided at district discretion. Districts that are concerned about the proximity of an ultramafic rock deposit to an alluvial deposit have the authority to require testing of the product to determine if it is suitable for use in surfacing applications. They may also require testing to determine whether to issue an exemption.

21.13 Comment: The Clear Creek Off-Road Vehicle Facility should be closed. [Note: The commenter provided two maps of the delineated asbestos hazard area.] (Cunningham)

Agency Response: The Clear Creek Off-Road Vehicle Facility is owned and operated by the Bureau of Land Management. As the material submitted by the commenter shows, the area is labeled as an asbestos hazard on the maps. In addition, BLM has posted signs warning of the potential for asbestos exposure when using the area. ARB has no authority to require the closure of this facility.

21.14 Comment: Industry supports the concept of track-out controls, but one problem with the listed control technologies is that the dust suppressant option is not readily available. Some industry representatives attended a workshop at the University of California, Davis campus, also attended by ARB staff. Attendees of that workshop were informed that at the current time, the regional water quality boards have not approved a dust suppressant for general use – all dust suppressants must be approved on a per-project basis. Hence, there may be some construction sites or quarries that do not have chemical dust suppressants as a compliance option. (TDLF)

Agency Response: ARB staff recognizes that there might be locations where certain dust suppressants could not be used. This is the one of the reasons the ATCM was written with flexibility in providing alternative options. If the regional Water Quality Board will not permit the use of a specific dust suppressant at a specific site, one of the other listed measures or another equally effective alternative can be used.

21.15 Comment: Recent air testing results obtained by the Department of Toxic Substances Control affirmatively proves that there is no danger to the public health from the operation of serpentine rock quarries. The DTSC is intentionally suppressing this information from public review, until after the ARB hearing on the issue; such suppression is a breach of the public trust, contrary to the representations made by the DTSC, and entirely inconsistent with the search for truth in this area of intense controversy. In fact, DTSC refused to provide me with the results of the testing, pursuant to my request under the Public Records Act. They were required to provide me with some data pursuant to court order in doing so DTSC concealed the results of all the air testing. DTSC refused to provide me with the results of soil tests, but admitted that they had obtained test results from two different labs, which were found to be unreliable, and were seeking the funds to have a third lab test the soil. The fact that results are unreliable is important data the public is entitled to know. In any event, the testing revealed that no more than 10 chrysotile fibers over five microns were ever found in the filters measuring the air around the quarries, on any given day, finally providing evidence that the state rock of California is not hazardous to the health of its residents. No amphibole fibers were found at all; on many days, only 1 or 2 fibers in excess of five microns were found around the quarries. Copies of

the results I obtained from DTSC are attached to this letter, and must be made part of the administrative record on this regulation. The test results fail to attribute the source of any fibers found on the filters, thereby precluding any meaningful conclusions from being drawn from the data; however, even assuming that every fiber found on every filter during the testing is attributable to serpentine rock and/or quarries, the results demonstrate that this is simply not a health hazard. (Pechner)

Agency Response: The air testing results obtained by the commenter from DTSC do not prove that there is no danger to public health near serpentine quarries. They show air concentrations ranging from 0.0009 to 0.0391 structures per cubic centimeter (s/cc) in the air samples near the Bear Creek quarry and from 0.0004 to 0.0336 s/cc near Garden Valley Aggregates. The results from Bear Creek indicate a mesothelioma risk of from five chances per million to 233 chances per million and a lung cancer risk from three chances per million to 135 chances per million. The risks associated with the concentrations measured near Garden Valley Aggregates are from three to 200 chances per million for mesothelioma and from one to 115 chances per million for lung cancer. Risks over 10 chances per million are typically considered significant risks. These risk calculations are based on the OEHHA's recommended potency factors and include all fibers with an aspect ratio of at least 3 to 1, irrespective of fiber length. As discussed in the risk assessment, OEHHA has found that there is insufficient evidence to conclude that fibers five microns in length or less are benign.

The commenter's concern about inconsistent results obtained for soil sampling from two different labs are irrelevant with regard to the air sampling results and their reliability. The test method for detecting asbestos in bulk materials is completely different from the process for detecting asbestos on the air filters. Furthermore, inconsistent results from two different labs do not indicate that soil sample testing in general is unreliable, but do justify additional analyses to identify the cause of the inconsistent results in this particular case

21.16 Comment: Various federal agencies have carefully considered the issue of airborne asbestos and issued regulations regarding that issue. It is clear that the amounts of asbestos found in the ARB and DTSC air testing are *de minimus*, and further regulation is not required. Staff notes this difference, but fails to address its significance in the report. (Pechner)

Agency Response: It is not clear what federal regulations the commenter is referring to, or what relevance these unidentified regulations may have to the commenter's claim about air testing. The response to the previous comment addresses the commenter's claim that ARB and DTSC air testing indicate that further regulation of asbestos is not required.

21.17 Comment: The regulation already enacted has effectively closed the serpentine rock business of one of my clients. Contrary to the response to my comment that

the regulation would be a taking of my client's business, and staff's assertion that pollution regulations do not constitute such takings, the United States Supreme Court has recently ruled that regulations which have this impact on property, do constitute a taking, for which compensation must be paid. (Pechner)

Agency Response: The commenter is referring to the Asbestos ATCM for Surfacing Applications, which became effective November 13, 2001. During the rulemaking process for the Surfacing ATCM, the commenter submitted a comment letter claiming that the ATCM constitutes a regulatory taking of the property of one of her clients. The ARB staff responded in the Final Statement of Reasons that the Surfacing ATCM does not constitute a regulatory "taking" in violation of the United States and California Constitutions (see the response to Comments 1.24 and 1.25 in the Final Statement of Reasons for the Surfacing ATCM).

The ARB staff pointed out that the courts have consistently held that pollution control regulations like the Surfacing ATCM are not regulatory "takings" that violate the U.S. and California Constitutions. To briefly summarize a complex area of law, the courts have basically held that regulations do not constitute a "taking" unless they fail to advance a legitimate state interest, or they deprive a property owner of substantially all reasonable use of their property. The Surfacing ATCM does not constitute a taking because it advances the legitimate state interest of protecting public health by reducing asbestos exposure, and quarry owners are not deprived of all uses of their property because they can continue to sell rock – regardless of its asbestos content – for non-surfacing uses.

The commenter is now claiming that this ARB staff analysis is wrong, based on some recent ruling of the U.S. Supreme Court which the commenter does not mention by name. The ARB staff is not aware of any recent Supreme Court ruling that would call the ARB's analysis into question.

21.18 Comment: Staff's response to my comment on the takings issue specifically noted that serpentine rock could be used for purposes other than road surfacing, under the enacted regulation. Thus, staff concedes that if the proposed regulation is enacted, all uses of the rock will be precluded; I expect ARB to voluntarily compensate my clients for their losses, based upon this concession. (Pechner)

Agency Response: The ARB staff does not concede that the proposed ATCM will prohibit all uses of serpentine rock. It is difficult to understand how the commenter could reach such a conclusion. The ATCM for Construction, Grading, Quarrying, and Surface Mining Operations basically requires quarries and other sources to use best management practices to control dust. Many of these practices are currently being used today by many sources in California. The ATCM imposes no restrictions on using or selling serpentine rock. Finally,

the ATCM does not constitute a “taking” because it advances the legitimate state interest of protecting public health by reducing asbestos exposure, and quarry owners are not deprived of all uses of their property because they can continue to sell rock and carry on their other business activities as long as they control the dust from these activities by following the requirements of the ATCM.

21.19 Comment: The proposed regulation is not necessary, has been shown to be expensive to business and the public, no alternative means of regulation has been adequately considered, and passage of the regulation will certainly result in litigation against the ARB. The request of staff to expand governmental regulation into an area in which it is not needed should be denied by the board. (Pechner)

Agency Response: The necessity for the ATCM is explained at length in the ISOR. The ATCM is not unduly expensive to business or the public, as discussed in Chapter VII of the ISOR. The ARB did adequately consider alternatives to the ATCM; these alternatives are set forth on pages V-12 to V-15 of the ISOR. Finally, the threat of litigation by a commenter is not a reason for the ARB to avoid carrying out its responsibilities to protect public health.

22.0. Support Comments

22.1 Comment: Support the proposed ATCM. We feel that this is a necessary ordinance to protect the public health and safety. (JohnsonJ, JohnsonT)

Comment: Piles are left open and exposed. Children are being exposed to a lot of these areas that are uncovered. Exposure is even worse during a wind event. This is an important step in protecting public health and safety through the mitigation of construction, quarrying, and mining operations and we’re supportive of ARB’s proposed regulation. (VargasM)

Comment: Due to special concerns in a lot of these places, the lower vehicle mile per hour is appropriate. (VargasM)

Agency Response: The ARB agrees with these comments.

22.2 Comment: Support the ATCM. (KNF)

Comment: Support the ATCM. (MBUAPCD)

Comment: Support the ATCM. (BAAQMD)

Comment: Support the ATCM with suggested changes. (NSCAPCD)

Comment: We support the ATCM subject to changes that may come out of the other APCO’s concerns. (EDCEMD)

Comment: I support the ARB regulation. (VargasJ)

Comment: I support the ordinance. (JohnsonT)

Comment: Support the ATCM. (U.S. EPA)

Agency Response: No response is required

B. Responses to Comments Received During the 15-day Comment Period (December 21, 2001, to January 5, 2002)

Abbreviation	Commenter
Camus	Mr. Michel Camus written testimony: January 15, 2002
CMA	Ms. Denise M. Jones Executive Director California Mining Association written testimony: January 15, 2002
CMAC	Ms. Linda Falasco Executive Director Construction Materials Association Of California written testimony: January 14, 2002
DMG	Mr. James F. Davis State Geologist Department of Conservation Division of Mines and Geology (California Geological Survey) written testimony: January 15, 2002
Gorsuch	Ms. Joan C. Gorsuch written testimony: January 6, 2002
JohnsonT	Ms. Toni Johnson written testimony: January 8, 2002
McMahan	Mr. Lance McMahan written testimony: January 14, 2002

Tennant	Mr. Mark Kinter Principal Application Engineer Tennant Company written testimony: December 19, 2001
Trent	Mr. Terry Trent written testimony: January 15, 2002
VargasM	Mrs. Melissa Vargas Citizens for the Protection of Health, Environment & Quality of Life written testimony: January 14, 2002

Comments and Responses

1. Comment: Removal of visible track-out can not be done using conventional street sweepers. Conventional street sweepers that use water to prevent the generation of airborne dust do not remove silt deposits. Rather they tend to leave behind a trail of wet silt that can become airborne when it dries. Newer technology introduced by the Tennant Co. clean the road surface to a higher efficiency than wet sweeping and leaves no silt slurry behind. These are called combination sweepers because they use broom technology combined with filtered vacuum technology. The filtration level on these sweepers is 99 percent at five microns. (Tennantco)

   Agency Response: Staff agrees that street sweepers are not the best approach for controlling track-out emissions because street sweepers (both wet sweepers and vacuum assist devices) will fail to collect some of the fine silt. This is the reason the ATCM emphasizes track-out prevention for all construction projects greater than one acre in size and all mines and quarries. Visible track-out is an indication of a failure of the track-out prevention measure(s). While track-out prevention is the primary mechanism for reducing emissions due to track-out, track-out removal is necessary when the primary approach fails. The ATCM allows the use of the technology identified by the commenter if the district approves it as part of an asbestos dust mitigation plan. Track-out removal is the primary approach only for the very smallest operations or where space does not allow the preventive approach. These small sources are unlikely to use large street sweeping machines and are more likely to be using a broom and a hose or a hand-held vacuum.

2. Comment: HEPA filters are not practical on vacuum cleaning devices of a scale large enough to clean roadways. (Tennantco)

   Agency Response: Operations required to prevent and/or remove visible track-out range in size from small landscaping contractors to large construction projects. Not all of these operations will need to use a street sweeper to remove

track-out. HEPA filter equipped vacuum devices can be practical for removing small deposits. This approach is simply one option available to sources under the ATCM.

3. Comment: The rule should require that areas be swept either every four hours or after every 100 trucks have passed, but not less than one time per day. This would be consistent with South Coast Rule 1158. (Tennantco)

   Agency Response: We believe that this requirement is unnecessary. As noted in the responses to Comments 1 and 2, track-out removal is considered secondary control for the larger sources. The suggested change might be appropriate only if track-out removal were the primary approach for reducing track-out emissions on such large projects. For smaller projects (i.e. one acre or less), where track-out removal may be a primary mechanism, the requirement is also unnecessary because projects on one acre or less are unlikely to have a large number of vehicles leaving the jobsite in a day.

4. Comment: Are residing and incoming populations informed of the asbestos contamination? Are homebuyers and tenants informed before they move in so they can make a real choice? Are all those who presently live in or near tremolite areas informed of the risks, exposure potential, and the ways that they can minimize exposures? This should be a top priority for government health protection agencies. (Camus)

   Agency Response: Real Estate law requires sellers and landlords to inform prospective buyers and renters of any hazard known to exist on the property. The Air Resources Board has held public meetings, participated in an asbestos task force, and issued advisories and fact sheets. In addition, there have been numerous newspaper articles about the presence of asbestos and remediation actions taken for roads and waste piles. The Board has also directed staff to take action to inform the public about the potential risks from disturbing asbestos-containing material on their own property and appropriate ways to reduce the risk.

5. Comment: The concepts of “cumulative exposure” and the “higher toxicity” of amphiboles in general and tremolite in particular should be intrinsic to the present environmental risk assessment and management issue. (Camus)

   Agency Response: The risk assessment policy of California does not include different cancer potency estimates for the different types of asbestos. The Office of Environmental Health Hazard Assessment (OEHHA) completed a health risk assessment for asbestos in 1986 using the best available scientific evidence. This assessment work was reviewed and approved by a body of independent scientists, the Scientific Review Panel (SRP). Subsequent to the health risk assessment, OEHHA has reviewed more recent studies, and they and the SRP determined that there was not sufficient evidence to justify developing separate

toxicity factors. Under the program established by the legislature to control toxic air contaminants, the processes of risk assessment and risk management are separate. The risk assessment portion of the program considers only the scientific evidence of risk. The risk assessment process does consider the cumulative risk for carcinogens and for chemicals with cumulative chronic effects, such as lead.

6. Comment: On behalf of citizens who support and applaud the ARB's efforts to reduce or eliminate the public's exposure to asbestos, we are of the position that all forms of asbestos are harmful. (Vargas)

   Agency Response: The ARB appreciates the support of concerned citizens and notes that the ARB, the U.S. EPA, the Office of Environmental Health Hazard Assessment, and the Scientific Review Panel all agree that all forms of asbestos are harmful to public health.

7. Comment: We object to the removal of "sufficient to prevent the emission of visible dust to the ambient air". Asbestos fibers may be airborne and crossing the property line even if the dust is not visible at the property line. The dust control measures should be sufficient to suppress any visible dust from being generated at the source. (Johnson)

   Agency Response: The commenter is referring to the modification of subsection (d). This modification substituted specific dust reduction measures and a prohibition against emissions visible at the project boundary for the requirement that there be no visible emissions to the air from any activity associated with the road construction project. This approach combines prescriptive requirements (specific requirements for unpaved traffic areas, storage piles and disturbed areas, vehicle speed limits, and track-out prevention) and a performance standard (the requirement that equipment and operations not cause any dust that is visible crossing the project boundaries). Staff believes this approach produces a rule that is more enforceable and equally effective. It also is consistent with the approach used for construction projects, quarries, and surface mines. In addition, ARB staff did not have sufficient data to determine that all road construction projects could meet a "no visible emissions" standard.

8. Comment: The amendment in (c)(2) proposes an additional regulatory proceeding, which directly conflicts with direction the board gave staff at the July 27 hearing. It was agreed at the hearing that the amendment would allow for methods to prove the absence of asbestos subject only to the approval of the State Geologist. We urge the board to revise (c)(2) to allow an exemption based on methods for proving the absence of asbestos, provided the methods are approved by the State Geologist, and without a further regulatory requirement. (CMAC)

Agency Response: The provisions of subsection (c)(2) are consistent with the Board's direction to staff at the July 27, 2001 public hearing. Moreover, the approach advocated by the commenter is not permitted by the Administrative Procedure Act (APA). A regulation cannot refer to an undefined test method and criteria that have not yet been developed. Such regulatory provisions must be adopted in accordance with the provisions of the APA, after an opportunity for public comment and a public hearing. It would also be inappropriate to give the State Geologist a formal approval role regarding ARB regulations. While the ARB staff would of course consult extensively with the State Geologist in evaluating any proposed test method, under California law the final authority to actually approve the method rests with the ARB and cannot be delegated to another state agency.

9. Comment: A process to prove the absence of asbestos is necessary if this regulation is to be truly focused on asbestos not just rock types that may contain asbestos. (CMAC)

Agency Response: The addition of subsection (c)(2) provides the process that CMAC is looking for. As previously stated in the staff report and in several meetings with industry representatives, the methodology necessary to make a determination with respect to the absence of asbestos in a large body of rock, such as a quarry or construction site, do not currently exist. This is the conclusion reached by both ARB staff and staff from the State Division of Mines and Geology. It is also worth noting that industry geologists have not proposed or submitted any such methods for discussion. Since these methods do not currently exist, subsection (c)(2) provides a process for industry to begin work developing the necessary methods with the understanding that once the stated criteria are met and any proposed method has been sufficiently reviewed, the ATCM could be amended to allow its use. Furthermore, in the absence of such a method, the current focus of the ATCM is appropriate because ultramafic rock is the rock type most likely to contain asbestos and a geologic evaluation can be performed by a registered geologist to determine the presence or absence of ultramafic rock as defined in these regulations.

10. Comment: A change to the amendment in (c)(2) is needed for equivalency with the Asbestos ATCM for Surfacing Applications which specifies the use of ARB Test Method 435 or an alternative asbestos bulk test method approved in writing by the executive officer of the Air Resources Board for demonstrating the absence of asbestos in surfacing materials. (CMAC)

Agency Response: The Asbestos ATCM for Surfacing Applications specifies that material taken from a quarry located in an ultramafic rock unit must be tested and if it is determined to have an asbestos content of 0.25 or more it cannot be used for surfacing applications. Where the dust control measures specified in this regulation allow the use of material with an asbestos content of 0.25 or less to cover a road or exposed area, this ATCM specifies the use of Method 435 in the

same way as it is for the Asbestos ATCM for Surfacing Applications. The purpose of this ATCM is to ensure that the best available dust management practices are applied when the rock is being excavated and processed. Method 435 will not work for this purpose because it is designed to test aggregate after the rock has already been excavated and processed into aggregate. There is presently no method available that can provide a high level of confidence that asbestos does not occur in an ultramafic rock body before it is disturbed.

11. Comment: ARB's Test Method 435 is currently available to detect the absence of asbestos. In addition, we provided, in comments in July 2001, information on a settled dust method currently used by operators. Also, ARB has approved an alternative test method through core sampling for one operator. (CMAC)

    Agency Response: As mentioned in the response to the previous comment, ARB Test Method 435 is used to detect the presence of asbestos in bulk material. Test methods, by their nature, rely on sampling and an assumption that the sample is representative of the whole. The confidence that the sample is representative relies on the homogeneity of the material and the fraction of the material sampled. Processed aggregate has undergone a number of operations such as blasting and crushing that would enhance its homogeneity in contrast to rock in-place in the ground. In consideration of this, the likelihood of collecting a representative sample from in-place rock can not be assured.

    ARB staff has concerns about the settled dust method suggested in the July 2001 comments. Particulate matter less than 10 microns (PM10) is the size range most likely to have biological effects. Settled dust is primarily composed of larger particles than PM10. Staff has requested additional data to evaluate this suggested method on several occasions. However, no data on air monitoring conducted concurrently with settled dust sampling could be found or was provided by industry.

    ARB staff is evaluating an alternative sampling procedure submitted by a quarry operator for use **with** Method 435 based on sampling the material produced by drilling. It is not accurate to call this core sampling. In this drilling process, the material coming out of the hole piles up around the edge of the hole in the form of fine particulate matter. A cross sectional sample of the ring of debris is believed to be fairly representative of the rock the drill passed through. The alternative is still under review to determine if the method should be approved for this particular quarry.

12. Comment: There are still significant problems with the proposed ATCM that need to be addressed. Therefore, we are incorporating by reference our comments and attachments of April 6, 2001, May 19, 2001 and June 24, 2001. (CMA)

Agency Response: The comment letters and attachments of April 6, 2001, and May 19, 2001, were incorporated by reference in CMA's comment letter submitted June 24, 2001 during the 45-day comment period. All the comments contained in these three letters are summarized and responded to in section III.A of this FSOR, which addresses all 45-day comments.

13. Comment: The lives of El Dorado County residents are being endangered by development and habitation of areas with tremolite asbestos. Residents are not informed in any practical way of the hazards. Real estate notification indicates to potential buyers that serpentine asbestos may be present. It says nothing of asbestiform tremolite and is not specific to individual properties. EPA and the State agencies will not act to protect the people until they are embarrassed into action by the press. (Trent)

Agency Response: ARB agrees that lives may be endangered through exposure to asbestos. The ARB has identified asbestos as a toxic air contaminant with no identifiable "safe" level of exposure. ARB adopted a regulation to reduce the amount of asbestos in materials used for surfacing unpaved roads in 1990 and revised that regulation in 2000 to reduce the levels even further. This regulation was the first regulation to reduce exposure to naturally-occurring asbestos anywhere in the U.S. The U.S. EPA had undertaken some limited remediation actions where airborne levels of concern were measured but ARB's 1990 Asbestos ATCM was the first to take a preventive approach. Between 1990 and 2000, additional information was developed and a model was developed and validated to improve our ability to predict the level of exposure from roads with detectable asbestos in the surfacing material. In addition, ARB initiated an air sampling program in several areas of the State and near other potential sources to evaluate the need for further regulatory action. This and other air monitoring indicated a need to also adopt a regulation for quarrying and construction in areas where asbestos could be emitted. While the ARB welcomes and encourages public participation in efforts to protect public health, it is inaccurate to claim that the ARB only acts when forced to by media attention.

Real estate law requires that prospective buyers and renters be notified of any known hazardous conditions. In an area of ultramafic rock, the notice that asbestos may occur may in fact be appropriate. The occurrence of asbestos in a given rock body is variable and intermittent. ARB believes that educating the public about where asbestos might be found and what they can do to minimize the potential for exposure if it must be disturbed is an effective approach to public health protection that complements real estate disclosure requirements.

14. Comment: The ARB is enacting an asbestos ATCM which lacks fundamental protections for the people of the state of California. The board's finding that "Except for the cumulative emissions impacts described above (i.e. exhaust emissions) there are no cumulative adverse environmental impacts that would occur" fails to consider the greater long-term risks of exposure. The ATCM does

not adequately consider or address the long-term ramifications and liability of constructing schools, homes, businesses, and other facilities in areas containing amphibole asbestos, or distinguish between the amphibole and chrysotile forms of asbestos. [Note: The commenter also re-submitted comments submitted during the 45-day comment period.] (McMahan)

Agency Response: The ARB's environmental analysis and findings address the potential environmental impacts of the ATCM. The ATCM requires certain dust mitigation measures to be implemented when construction, grading, quarrying, or surface mining operations are carried out in areas where asbestos is known or likely to occur. The ATCM does not attempt to prohibit or restrict development or other land use activities in these areas. Whether or not to allow such activities is decided by local land use planning agencies, which are vested by State law with the power to make such decisions. The ATCM does not attempt to usurp local land use authority by dictating where or when development occurs, but simply insures that such development will be undertaken in a manner which minimizes the health impacts from asbestos emissions during the construction, grading, quarrying, or surface mining activity. The CEQA analysis for the ATCM therefore does not address the long term ramifications and liability of development in areas with naturally-occurring asbestos. Such issues should be considered in the CEQA analysis prepared during the land use planning process.

As explained in the response to 15-day Comments 5 and 6, it is not appropriate in the ATCM to distinguish between the amphibole and chrysotile forms of asbestos. Finally, the 45-day comments that were resubmitted by the commenter during the 15-day comment period are summarized and responded to in Section III.A of the this FSOR, which addresses all 45-day comments.

15. Comment: Enforcement of the regulation is essential to effective control. Will enforcement be addressed in the regulation? Who will be checking on the air districts to make sure regulations are adhered to as written? (Goresuch)

Agency Response: ARB staff agrees that enforcement is essential to effective public health protection. In the case of ATCMs, state law directs the local air districts to implement and enforce the regulations (see Health and Safety Code section 39666(d)). ARB supports the local air districts in this activity by providing technical assistance when requested, and providing training and fiscal support. The ARB also exercises oversight authority over the districts to ensure that they are adequately enforcing air quality regulations (See Health and Safety Code section 41500(c)). Since enforcement is already addressed in State law, it is not necessary that it be addressed in the regulation. In addition, the ARB maintains a hotline which citizens can use to notify ARB of suspected violations at 1 (800) 952-5588.

16. Comment: Enclosure 2 indicates the effective date of the regulation is 120 days after the date the ATCM becomes effective. Is this time set by law or can the regulation be enacted sooner? (Goresuch)

Agency Response: Consistent with Health and Safety Code 39666(d), subsection (a) of the ATCM specifies that no later than 120 days after approval of the ATCM by the Office of Administrative Law, each air pollution control and air quality management district must either implement and enforce the ATCM, or propose their own ATCM for adoption. Section 39666(d) also allows districts to implement and enforce the ATCM (or adopt their own ATCM) sooner than the expiration of this 120-day period.

17. Comment: If districts adopt their own regulation under Health and Safety Code section 39666(d) can they propose a more stringent regulation? (Goresuch)

    Agency Response: Yes, Health and Safety Code section 39666(d) specifies that districts may adopt a regulation that is more stringent than the ATCM.

18. Comment: Can the non-binding implementation guidance the Board directed the ARB to develop provide a loophole that would result in an ineffective regulation? (Goresuch)

    Agency Response: The non-binding implementation guidance would not replace, modify, or add any regulatory requirements. The guidance would provide technical information to assist districts in evaluating the potential effectiveness of dust control options and a generic asbestos dust management plan. Therefore, we expect that the implementation guidance will help ensure compliance with the regulation and will not serve as a loophole.

19. Comment: The State Geologist and his staff have reviewed the proposed modifications and have found them to be acceptable. (DMG)

    Agency Response: Staff appreciates the assistance provided by the State Geologist and his staff in the development of this control measure.

C. Responses to Comments Made by the Office of Small Business Advocate and the Trade and Commerce Agency

Abbreviation	Commenter
CTCA	Ms. Barbara Andersen, Analyst Regulation Review Unit California Trade and Commerce Agency written testimony: July 12, 2001

Comments and Responses

1. Comment: Section (c)(1) states "The APCO may provide an exemption from this section for any property that meets the criterion in item (b)(1) if a registered geologist has conducted a geologic evaluation of the property and determined that no naturally-occurring asbestos, serpentine, or ultramafic rock is likely to be found in the area to be disturbed." This statement appears to offer an exemption for a geologic evaluation of no naturally-occurring asbestos. However, the Summary of the Proposed ATCM and the Public Outreach, Issues sections of the ARB staff report both indicate that the ARB does not intend to offer exemptions for geologist evaluations of no naturally-occurring asbestos. (CTCA)

   Agency Response: The commenter is correct that the regulation is not intended to allow an exemption for an area with serpentine or ultramafic rock, based on a geologist's belief that there is no naturally-occurring asbestos in the rock. ARB staff's reasons for this position can be found on pages III-3 and III-4 of the ISOR and in the responses to Comments 8.5, 9.4, and 9.5. The commenter is also correct that the originally proposed language of subsection (c)(1) was ambiguous and could have been interpreted to allow an exemption if a geologist determined that an area of serpentine or ultramafic rock was not likely to contain naturally-occurring asbestos. To correct this ambiguity and avoid possible misunderstandings, subsection (c)(1) was modified to eliminate the reference to "naturally-occurring asbestos." The modified language was one of the changes made available for public comment during the 15-day comment period.