STATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT

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MEMORANDUM

To: All CEQA Lead Agencies

From: Terry Roberts, State Clearinghouse Director
Governor's Office of Planning and Research

Date: August 1, 2007

Re: **Addressing Naturally Occurring Asbestos in CEQA Documents**

I. Purpose

This advisory memorandum provides guidance to Lead Agencies to analyze the impacts of naturally occurring asbestos (NOA) on the environment through the California Environmental Quality Act (CEQA) review process.

II. Background

What it is:

Asbestos is a term used for several types of naturally occurring fibrous minerals that are a human health hazard when airborne. The most common type of asbestos is chrysotile, but other types such as tremolite and actinolite are also found in California. Asbestos is classified as a known human carcinogen by state, federal, and international agencies and was identified as a toxic air contaminant by the California Air Resources Board (CARB) in 1986. All types of asbestos are hazardous and may cause lung disease and cancer.

Serpentinite may contain chrysotile asbestos, especially near fault zones. Ultramafic rock, a rock closely related to serpentinite, may also contain asbestos minerals. Asbestos can also be associated with other rock types in California, though much less frequently than with serpentinite and/or ultramafic rock. However, information available at this time is insufficient to allow such occurrences to be mapped on a regional or statewide basis.

Where it is Found:

Serpentinite and/or ultramafic rock are known to be present in 44 of California's 58 counties. These rocks are particularly abundant in the counties of the Sierra Nevada foothills, the Klamath

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Mountains, and Coast Ranges. These counties are identified in the attached list (Attachment 1). A report containing a map of ultramafic and serpentinite rock areas of the state that may contain NOA can be accessed at ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/ofr_2000-019.pdf. The report also contains definitions for asbestos, serpentine, serpentinite, and ultramafic rock. More detailed geologic maps indicating ultramafic rock units in California may be obtained from the Department of Conservation (DOC), California Geological Survey. It should be noted that these geologic maps are generalized depictions of the presence and distribution of rock types for given areas. Consequently, they may not show all potential occurrences of NOA within the areas they cover.

III. The Issue

Although NOA is present in many counties in California, many Lead Agencies are not aware of the environmental effects of NOA or how to analyze and mitigate them in the planning process.

Asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading for development projects, and at quarry operations. All of these activities may have the effect of releasing potentially harmful asbestos into the air. Natural weathering and erosion processes can act on asbestos bearing rock and make it easier for asbestos fibers to become airborne if such rock is disturbed.

IV. Regulations

Serpentinite and asbestos-bearing ultramafic rock materials used for surfacing applications subjected to vehicular, pedestrian, or non-pedestrian use, such as cycling and horse-back riding, may not contain more than 5% asbestos under the Asbestos Airborne Toxic Control Measure (ATCM) for Surface Applications adopted by the CARB in 1990. Several air pollution control districts adopted regulations in the early 1990's that lowered the limit on asbestos content to 1%, which is consistent with most regulations related to asbestos-containing materials in structures.

In July 2000, the CARB amended the ATCM whereby the allowable asbestos content was lowered to less than 0.25% (the detection limit for the specified analysis method) for surfacing applications. In addition, the amended rule prohibits the use of surfacing material from ultramafic rock units identified on specific geological maps developed by the DOC, unless testing of the material demonstrates that it is below the 0.25% asbestos content limit. Some limited exemptions are contained in the rule with the requirement that applications for the exemptions be filed with the local air pollution control or air quality management districts. The geological maps described in the regulation can be purchased through the DOC at the address listed below. More information about the CARB's ATCM for Surface Applications can be

obtained through the CARB web site, or by contacting them directly at the address listed in Section VI of this memo.

In July 2001, the CARB approved the ATCM for Construction, Grading, Quarrying and Surface Mining Operations to minimize NOA through the application of best management practices for fugitive dust from construction, grading and quarrying operations. Under this regulation, the ATCM requires dust control mitigation measures to be used on projects where construction activities, grading, quarrying and surface mining operations occur in areas known to have NOA. In addition, prior to the commencement of project activities, this ATCM requires notification to local air pollution control or air quality management districts.

V. Addressing the NOA Issue through CEQA Review

NOA is an environmental issue appropriate for analysis and review under CEQA. The CEQA process provides an opportunity for Lead Agencies to identify whether serpentinite or ultramafic rocks will be disturbed by the proposed project and to investigate ways to avoid, control, or otherwise mitigate the impacts of NOA. In addition, CEQA gives Lead Agencies the authority to require mitigation measures as a condition of the approval of a proposed project. NOA analysis can be logically included in the typical impact analysis for air quality, human health, and geology and soils.

Why CEQA?

CEQA requires that Lead Agencies evaluate the effects of proposed projects on the environment, including public health and safety impacts such as those resulting from the release of NOA by project activities. CEQA Guidelines Section 15126.2 specifically states:

> "In assessing the impact of a proposed project on the environment, the Lead Agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced by population distribution, population concentration, the human use of land (including commercial and residential development), <u>health and safety problems caused by physical changes</u> (emphasis added), and other aspects of the resource base such as water, historical resources, scenic quality and public services."

The CEQA process enables early identification of NOA and its associated environmental impacts. This encourages better decision-making by Lead Agencies and strengthens the Lead Agency's ability to protect the public health and welfare. The Lead Agency also benefits from greater protection against legal challenges to the adequacy of the CEQA document, if the NOA impacts and mitigation measures are clearly addressed.

How to Address the NOA Issue in a CEQA Document:

The Lead Agency should address the possibility of human exposure to NOA in the CEQA document for a proposed project. The Lead Agency should identify the nature and extent of exposure to NOA based on the project location and type of development that is being proposed. Even if the presence of NOA is not indicated or suggested by available state maps, it should still be addressed within the CEQA document if NOA is otherwise known to occur in an area.

Analysis of the NOA issue can be incorporated into the CEQA document's sections on air quality, geology and soils, and/or human health, depending on the nature of the project. Thresholds of significance should be developed to determine if the impacts from NOA are significant.

Jurisdictions that are known to have large amounts of NOA may want to develop standardized mitigation measures when those thresholds are reached. The CARB has developed a list of suggested mitigation measures that can reduce emissions during the design, construction, and operation phases of projects. These measures are listed in the attached table (Attachment 2). As mentioned earlier, the CARB adopted a regulation to minimize NOA emissions from construction, grading, and quarrying operations through the use of best management practices, including those in Attachment 2. Check with the CARB for any updates to these dust mitigation options by checking its web site at http://www.arb.ca.gov/toxics/asbestos/asbestos.htm, or by contacting them directly at the address listed below. If a Lead Agency considers these mitigation measures to be inadequate, they may develop alternative mitigation measures and/or propose project alternatives.

VI. For More Information

The CARB and the DOC have done considerable research on NOA. In 2002, the DOC developed guidelines for geologic investigations of sites where NOA may be present. The DOC has also completed several maps and reports related to NOA in California, but such specialized maps are unavailable for most of the state at this time. In their absence, DOC can provide information on the availability and use of existing geologic and soil maps to identify areas in California with the potential for NOA. The following links are provided for access to additional information on NOA.

California Air Resources Board
Asbestos: www.arb.ca.gov/toxics/asbestos/asbestos.htm
Asbestos Regulatory Information: www.arb.ca.gov/toxics/asbestos/reginfo.htm
Asbestos ATCM for Surface Applications: www.arb.ca.gov/toxics/atcm/asbeatcm.htm
Asbestos ATCM for Construction, Grading, Quarrying and Surface Mining Operations: www.arb.ca.gov/toxics/atcm/asb2atcm.htm

California Department of Conservation
Asbestos: www.consrv.ca.gov/cgs/minerals/hazardous_minerals/asbestos/index.htm

Guidelines for Geologic Investigations of Naturally Occurring Asbestos in California:
www.consrv.ca.gov/cgs/minerals/hazardous_minerals/asbestos/Asbestos_Guidelines_SP124.pdf

For more information and technical assistance in addressing this issue in your CEQA documents, please contact:

State Clearinghouse
Office of Planning and Research
1400 Tenth Street, Room 212
P.O. Box 3044
Sacramento, CA 95812-3044
Telephone (916) 445-0613
Website: www.opr.ca.gov/clearinghouse.html
E-Mail: state.clearinghouse@opr.ca.gov

California Air Resources Board (CARB)
Public Information Office
P.O. Box 2815
Sacramento, CA 95812
Telephone: (916) 322-2990
Website: www.arb.ca.gov

California Department of Conservation (DOC)
California Geological Survey
801 K Street MS 14-34
Sacramento, CA 95814-3532
Telephone: (916) 445-5716
Website: www.consrv.ca.gov

Attachments

1) Counties Containing Serpentinite and Ultramafic Rock
2) Ways to Control Naturally Occurring Asbestos Dust

Attachment 1

Counties Containing Serpentinite and Ultramafic Rock
(In Alphabetical Order)

Alameda	Los Angeles	Santa Barbara
Amador	Madera	Santa Clara
Butte	Marin	Shasta
Calaveras	Mariposa	Sierra
Colusa	Mendocino	Siskiyou
Contra Costa	Merced	Solano
Del Norte	Monterey	Sonoma
El Dorado	Napa	Stanislaus
Fresno	Nevada	Tehama
Glenn	Placer	Trinity
Humboldt	Plumas	Tuolumne
Imperial	San Benito	Tulare
Kern	San Francisco	Yolo
Kings	San Luis Obispo	Yuba
Lake	San Mateo	

Note: A map of the areas known to contain naturally occurring asbestos is available at: ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/ofr_2000-019.pdf. In addition, the Department of Conservation, California Geological Survey, can be contacted for more detailed quadrangle maps (scale 1: 250,000) that indicate locations of ultramafic rock units in more specific regions of the state.

Attachment 2

Ways to Control Naturally Occurring Asbestos Dust

Shown below are suggested ways to control asbestos dust from construction projects and roadways. These mitigation measures will not completely eliminate asbestos dust, but offer options to reduce the release of airborne asbestos fibers from various activities.

Construction Projects and Roadways

Dust Source	Mitigation Measure	Application Frequency	Relative Effectiveness[1]
Excavation	Water wetting	as needed	2-3
	Excavate during calm periods	when possible	1
Mobile Construction Equipment	Water wetting of roads surfaces	as needed	2-3
	Rinse vehicles / equipment	as needed	3
	Wet loads of excavated material	each load	3
	Cover loads of excavated material	each load	2-3
	Wet and cover loads	each load	4
Exposed Serpentine Areas	Water wetting	as needed	3-4
	Cover with 6 to 12 inches of non-asbestos material	end of project	4
	Wind breaks / berms	where needed	1-2
	Chemical sealants / dust suppressants	3 mos. - 1 yr.	3
	Vegetative reclamation	end of project	3
	Asphalt cement paving	as needed	4
Roads	Water wetting	as needed	3-4
	Speed control	always	1-3
	Wind breaks / berms	where needed	1-2
	Cover with 2 to 4 inches of non-asbestos rock	as needed	3-4
	Chemical sealants / dust suppressants	3 mos. - 1 yr.	2-3
	Single-coat chip/seal	as needed	4
	Triple-coat chip/seal	as needed	4
	Petroleum sealants	as needed	4
	Asphalt cement paving	as needed	4

1. Subjective rating where: 1 = least effective, and 4 = most effective