

\* \* \* ERROR REPORT ( NOV. 2.1998 10:00AM ) \* \* \*

TTI ODF GRANTS PASS

FILE	PERS. NAME	ADDRESS	MODE	TIME	PAGE	RESULT
341		5414767755	RES	1'25"	P. 3	E

PAGE NOT RECEIVE  
P. 3

QUICK SERVICE CODE  
0-20

# : BATCH  
M : MEMORY  
S : STANDARD

C : CONFIDENTIAL  
L : SEND LATER  
D : DETAIL

\$ : TRANSFER  
@ : FORWARDING  
F : FINE

P : POLLING  
E : ECM  
> : REDUCTION

United States Department of Commerce  
National Institute of Standards and Technology

**NVLAP**®

ISO/IEC GUIDE 25:1990  
ISO 9002:1987

**Certificate of Accreditation**



**WESTERN ANALYTICAL LABORATORY**  
BURBANK, CA

*is recognized under the National Voluntary Laboratory Accreditation Program for satisfactory compliance with criteria established in Title 15, Part 285 Code of Federal Regulations. These criteria encompass the requirements of ISO/IEC Guide 25 and the relevant requirements of ISO 9002 (ANSI/ASQC Q92-1987) as suppliers of calibration or test results. Accreditation is awarded for specific services, listed on the Scope of Accreditation for:*

**BULK ASBESTOS FIBER ANALYSIS**

**March 31, 1999**

*Effective through*

A handwritten signature in black ink, appearing to read "Jan L. Galt".

*For the National Institute of Standards and Technology*

**NVLAP Lab Code: 200037-0**

Public Health Services  
Environmental Health Services  
714 NW A Street  
Grants Pass, OR 97526  
(541) 474-5325  
TDD # 1-800-735-2900

Animal Control Services  
1420 Brookside Blvd.  
Grants Pass, OR 97526  
(541) 474-5458



**JOSEPHINE COUNTY, OREGON**  
**PUBLIC HEALTH DEPARTMENT**

GEORGE CALVERT ROCK QUARRY  
JUMP OFF JOE CREEK ROAD

### INTRODUCTION

Mr. George Calvert has applied to remove rock from a quarry located on Jump Off Joe Creek Road. Some rock from this quarry has been used previously for roads in his expanded recreational park—Joe Creek Falls RV Park. The rock pit and the recreation park are under his ownership.

Mr. Calvert's application for rock removal was submitted to the Josephine County Planning Department where it was approved. Subsequently, the Josephine County Board of Commissioners over a course of 4 public hearings denied the application to remove rock from the privately owned quarry.

During the hearings some of the neighbors articulated concern regarding a possibility of the serpentine rock containing asbestos. Several references were made to a situation in El Dorado County California as reported by the Sacramento Bee Newspaper. (Some of the newspaper articles have been included with this report.)

There are restrictions for removing rock based upon private or commercial use and volumes to be removed. Most of the conditions and restrictions relate to commercial sale of the rock.

Mr. Calvert has submitted another "preliminary application" for review by the Josephine County Planning Department and the Josephine County Board of Commissioners.

### QUARRY SITE VISIT

On Thursday September 17, 1998 around 2 pm, Bill Olson of the Josephine County Health Department and Frank Hladky, geologist for the State of Oregon's Geology and Mineral Industries Department, visited the rock quarry owned by Mr. Calvert. We were taken to the rock site by Rick Calvert, son of George Calvert. We also visited the ODOT rock quarry.

Attached is a letter dated September 21, 1998 from Frank Hladky giving his impressions of the site visits.

## TELEPHONE CONVERSATIONS

John Renz, Josephine County Planning Department:

Discussed status of application, board of commissioner concerns and future requirements.

Dan Racker, Roseburg--- (541-957-3601)---Oregon Department of Transportation:

Discussed ODOT site near Sportsman Park-----no asbestos identified

Gave me name of Harvey Jackie, (503) 254-1794 X 236 (Coffee Laboratories)

Discussed mining and safety people observations---no concerns.

Peter Wampler, Department of Geology and Mining Industries, Albany (541-967-2030)

Discussed permit requirements for rock removal

May need storm water discharge permit

Discussed mining health and safety requirements.

## RECOMMENDATIONS

Because of the long slender crystals noted by Mr. Hladky I am recommending the following:

(1) Someone ---private or agency---needs to test a sample of the serpentine rock for asbestos. This procedure would include preparing a thin section of the rock and observing for asbestos under the microscope. If there is no asbestos this would conclude the investigation. There are public agencies and private laboratories that could perform this test. There is a cost.

(2) If the sample results indicate that asbestos is present in the rock the quarry owner or an agency need to prepare and submit a plan for determining the extent of the asbestos, percent of asbestos in the rock, health hazards associated with mining the rock, soil sample requirements, etc. This plan will be reviewed before rock removal would be authorized..

(3) Prepare a list of conditions for mining the rock and for the protection of the neighborhood.

(4) Shall comply with all permit requirements and the mine health and safety rules and procedures.

## ISSUES

EPA rules governing asbestos and air quality.

Permit requirements.

Rock removal conditions.

Neighborhood protection if applicable.

Rights of property owners.

Commercial versus private use of rock.

New addition to recreation park— road surfacing.

Plan preparation and lab test sampling and associated costs.

REPORT PREPARED BY BILL OLSON  
ENVIRONMENTAL HEALTH SPECIALIST  
JOSEPHINE COUNTY HEALTH DEPARTMENT  
SEPTEMBER 21, 1998

Attachments

## Projects in El Dorado churning up asbestos: Potential cancer hazard in unearthed bedrock

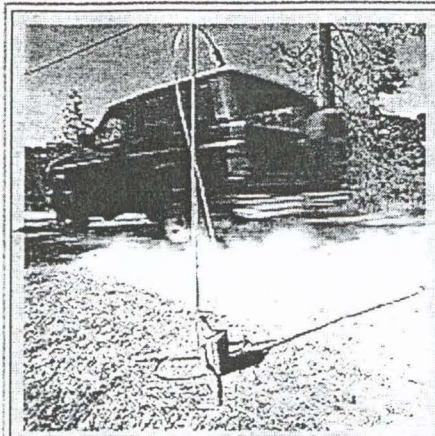
By Chris Bowman

Bee Staff Writer

©1998, The Sacramento Bee

(Published March 29, 1998)

Construction in the fast-developing foothills of El Dorado County has been unearthing and stirring up naturally occurring asbestos, creating a potential cancer hazard to some residents -- especially children.



An air sampler checks for asbestos along an unpaved section of Cothrin Ranch Road in El Dorado County. An inspector hired by The Bee conducted tests there after seeing vehicles drive over asbestos fragments. Analysis found considerable airborne asbestos.

Bee/Bryan Patrick

**THE ASBESTOS DANGER**

The threat is largely unknown to county officials and the many families who moved to the golden hills in pursuit of a cleaner environment.

Tests commissioned by The Bee confirmed the presence of a particularly hazardous kind of asbestos in neighborhoods of El Dorado Hills and Latrobe. The fibers were small enough to reach deep into the lung, yet large enough to lodge there for life and cause cancer.

Microscopic and X-ray analysis found these amphibole fibers, along with the more prevalent chrysotile asbestos, in the serpentine bedrock that pervades the area.

High concentrations of these fibers were found in the settled dust inside three homes. And dust raised by traffic on an unpaved road in residential Latrobe measured 22 times the federal limit on asbestos exposure in schools.

All sampling was near asbestos veins left exposed on road embankments.

Six authorities on asbestos-related diseases who reviewed The Bee's test results found them worthy of further investigation. One of them -- Marc Schenker at the University of California, Davis, School of Medicine -- promptly submitted a research grant proposal for a statewide study on the possible connection between cancer and natural asbestos deposits.

Though too limited to suggest an imminent health threat, the findings should prompt officials to minimize the disturbance, said

[Couple's tip led to tests, analysis](#)

[Pair gave up home over fear of asbestos](#)

[How homeowners can check for asbestos](#)

[Developers plan asbestos testing](#)

[Big demand for asbestos checks](#)

[Related Bee editorial](#)

[Where asbestos is found in California](#)

[How asbestos is formed](#)

findings should prompt officials to minimize the disturbance, said the reviewers -- all environmental health researchers at North American universities.

"It is believable," said Arthur Langer, a City University of New York scientist who helped uncover a major cancer cluster in Metsovo, Greece, due to the same amphibole asbestos found in El Dorado County, although at higher levels. "You've got the material, the material is disseminated. You don't know the extent of it. But it says there are instances out there in which this is a real problem. It should be looked at."

Many El Dorado County residents probably face no asbestos hazard as they live well away from the serpentine that hosts the fibrous mineral, said UCD geologists Howard Day and Robert Matthews, who toured the region at The Bee's request. But thousands of others may be affected as they live in areas where the greenish rock has been disturbed, they said, and developments for thousands more residents are in the offing.

Potential exposure to airborne asbestos most likely goes beyond the newspaper's test areas. Serpentine also runs through Cameron Park, Rescue, Shingle Springs, Pilot Hill and other parts of the county, geology maps show.

Officials in other serpentine regions, from the hills of eastern Virginia to the Coast Range of California, said asbestos exposure can be vastly reduced by requiring builders to monitor air pollution when they work and to cover exposed veins when they're done. Even the four-person air pollution staff in Lake County closely regulates building in serpentine.

Dennis Youngdahl, whose environmental consulting firm has done most of the geology investigations for developers of the 20-year-old El Dorado Hills community, vowed to set up a task force of engineers and geologists to propose a local ordinance controlling asbestos dust.

"That's something that very easily could be done and probably should be addressed," Youngdahl said, "especially now that you've done these studies on the houses, and found that (the asbestos) is being tracked inside."

Youngdahl said he had not known building in serpentine could be hazardous.

El Dorado County officials said they usually turn to veteran consulting geologist George Wheeldon for advice. Wheeldon, who has investigated many Mother Lode sites for developers, said air monitoring during construction would be impractical.

"If we are going to do that much of a constraint, we had better put a blanket over every serpentine outcropping in the whole state -- not allow a water line to be cut or a road to be graded or any other kind of construction," he said.

Locked in the Earth, asbestos poses no danger. But blasting,

formed

How people are exposed to asbestos

How asbestos harms the body

drilling, earth-moving and grading in serpentine can disperse the mineral fibers, especially on dry days, industrial hygienists said. The wind-blown specks can stay suspended for weeks, they said.

Asbestos can surpass safe breathing levels during construction without proper dust controls, officials with the state Occupational Health and Safety Administration said. Airborne amphibole asbestos of the kind found in California is a special problem, as spraying water is not sufficient to suppress it, they said.

The airborne danger can linger for occupants of new homes. Fibers from uncovered veins are easily liberated by erosion, the hygienists said.

While all asbestos has been shown to cause cancer, most of the scientists who reviewed The Bee's findings expressed special concern over the presence of amphibole asbestos, specifically the tremolite and actinolite forms.

Most lung disease experts agree the needle-like amphibole fibers are significantly more potent than the curled chrysotile fibers in causing mesothelioma (mees-o-thee-lee-O-ma) -- an inoperable and almost always fatal cancer of the membranes lining the chest and other body cavities

"Exposure to this amphibole asbestos would be a high-risk, high-hazard situation for particularly cancer and especially mesothelioma," said Schenker, who wrote a widely used textbook on occupational and environmental lung disease.

Short exposure -- months, not years -- may be followed decades later by an onset of malignancy and death, disease experts said. That means children are especially at risk because of their long life expectancy.

"The risk increases with time from onset of exposure," Langer said. "Your risk is seven times higher if you are born in the exposed area than if you moved in at age 30."

But scientists don't know exactly how much asbestos someone must inhale to cause cancer.



"All I would say is amphibole asbestos is not the material I would want to be the test case on," Schenker said. "This, more than any other environmental agent, causes me great concern because of this untreatable cancer that it causes."

County planning and environmental officials said they had no confirmation of amphibole asbestos in the region, and no reason to believe the public was exposed to unsafe levels of chrysotile.

"We are not requiring any projects that are going into (serpentine) areas to take any precautions or to avoid those areas," said Conrad Montgomery, the county planning director.

Ron Duncan, the county's director of environmental health and chief air pollution control officer, said he wants to see evidence of harm in the region before issuing advisories or investigating development's asbestos pollution.

"I just haven't heard that we really ought to be looking for a different thing besides chrysotile," Duncan said.

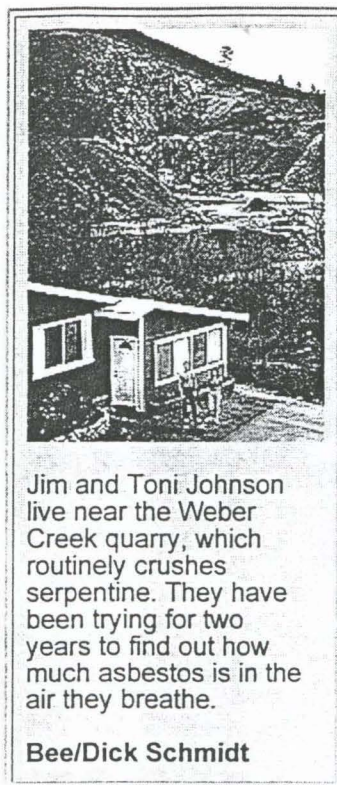
Asbestos is subject to significant disturbance in western El Dorado County.

About 40 housing and commercial developments are currently proposed or are being built in serpentine areas of the county, Planning Director Montgomery said. In the past year alone, county supervisors have approved tentative maps or specific plans for 4,319 new homes in areas known to contain serpentine, planning officials said.

The county tracks this development because of federal protections for rare plants that grow in serpentine areas. No more than 3,500 acres is expected to be put off limits to builders for these protected plants, federal wildlife officials said. That leaves at least 36,000 developable acres of serpentine landscape, they said.

And more development is sure to come. Population is expected to double to about 225,000 in the next 20 years for western El Dorado County.

But the potential asbestos exposure is scarcely known or talked about in the county. The Bee found no mention of it in public planning records on any of six recently proposed or built housing tracts in serpentine rock land.



Jim and Toni Johnson live near the Weber Creek quarry, which routinely crushes serpentine. They have been trying for two years to find out how much asbestos is in the air they breathe.

**Bee/Dick Schmidt**

Two of the three families who opened their doors to the newspaper's industrial hygienist said they had no idea their homes contained elevated levels of asbestos, much less that it originates from a native rock.

Each of the six samples taken from settled dust in the homes contained thousands of breathable asbestos fibers per square inch -- indicating a nearby source of contamination, said Christopher J. Tennant, a state-certified asbestos inspector and a professionally certified industrial hygienist hired by The Bee. The houses were built after 1980, when asbestos had been phased out of home construction.

The asbestos probably was carried into the homes by wind or on people's shoes and clothes, most likely from area veins uncovered in construction, Tennant said.

Amphibole asbestos is especially prone to dispersion, mineralogists say. A piece of tremolite or actinolite the size of a matchstick separates easily between the fingers, whereas the same amount of chrysotile takes considerable flexing to break.

"Exposed tremolite-actinolite in road cuttings is eroding onto sidewalks and roads, increasing the potential of the mineral being broken down further into small enough fragments to become airborne and potentially respirable," Tennant said in his report to The Bee, which was distributed to health experts and government officials earlier this year.

The families feared for their property values, if not their health.

"I'm worried about my kids," said Susan Beck, a 35-year-old San Jose native who moved to rural Latrobe for a life of "Little House on the Prairie."

"It's not a pretty thought that our dream house may be sitting on a piece of dynamite," she said. "But we should know about it."

The Becks' home on Cothrin Ranch Road was one of three in the Latrobe and El Dorado Hills communities that The Bee tested on Sept. 6. All were near road embankments with exposed asbestos veins. Other homes in those neighborhoods were not tested.

There was no disturbance of serpentine earth apparent in the area at the time of the tests, Tennant said. Air samples around the homes showed no asbestos levels of health concern, he said. But scientists were concerned about the asbestos found in settled dust inside the homes because it indicated particles had been in the air indoors, where people spend most of their time.

Ron and Judy Bolander allowed Tennant in for a check of the living room in their 2-year-old El Dorado Hills home on Woedee Drive. The Bee informed them that a high-powered microscope picked up fibers of actinolite and chrysotile in dust collected atop a high shelf and the front door.

The Bolanders were disturbed by the news, but resigned to it.

"There's nothing I can do about it," Judy Bolander said.

Further air sampling would be needed to tell whether the asbestos posed a health risk across the street at Oak Ridge High School and the El Dorado Hills Community Center on Harvard Way. Environmental consultant Youngdahl said a nearby site where Rolling Hills Middle School is being built contains no serpentine.

Terry Trent and Carol Adams were not surprised by the results of the inspection of their home on Wild Turkey Drive. Their concerns about asbestos contamination prompted The Bee's investigation. The analysis reinforced their consultants' tests indicating hazardous contamination from an unusually large number of tremolite veins on their 10-acre Latrobe lot.

Trent and Adams recently gave up a two-year search for a solution and let the bank repossess their seven-bedroom home overlooking the Sacramento Valley.

"Never did I think I would be put into a position where I couldn't protect my family," Trent said.

Government rule books are thick with protections for employees who work around asbestos and for children in old school buildings containing the stuff in floor and ceiling tiles.

In El Dorado County, the knowledge and safeguards surrounding dispersion of naturally occurring asbestos are scant by comparison:

Consultants who have investigated foothill development sites said the heightened mesothelioma risk posed by amphibole asbestos would be news to most geologists.

The state Division of Mines and Geology's guidelines followed by developers' consultants do not address serpentine. State Geologist James F. Davis said he would investigate whether revisions are warranted.

Neither county rules, nor state and federal regulations protect the public from exposure to naturally occurring asbestos arising from construction.

El Dorado is the worst county in the state when it comes to policing environmental rules on serpentine quarries and other mines, state mining regulators said. Lou Green, the county's chief attorney, said that any problems are in the past. "We are on top of it now and we are performing our enforcement responsibilities as lead agency," he said.

All five members of the county Board of Supervisors said the county should address the issue immediately.

Supervisor Walt Shultz of Cool expressed concern over setting off "a flurry of fear" that could stymie development. And Sam Bradley, who represents El Dorado Hills, Latrobe and part of Cameron Park, believes adopting asbestos protections for

development would be a tough political battle.

"There would be people upset with me for even raising the issue," Bradley said.

One law on the books that might be expected to protect people from natural asbestos has been no apparent help to Jim and Toni Johnson.

The Johnsons live within a stone's throw of the Weber Creek quarry along Lotus Road, which routinely crushes serpentine. They have been trying for two years to find out how much asbestos is in the air they breathe.

Toni Johnson said the quarry sometimes creates such dust that "you cannot see our house from the end of the driveway."

The quarry is supposed to follow a state air pollution law that requires regular sampling of serpentine gravel for roadways and other surfaces to ensure the asbestos content does not exceed 5 percent.

Yet a lawsuit filed in September by the state Department of Conservation alleged that the county knew of quarry owner Loring Brunius' "failure to perform required sampling," and that the county had not adequately addressed his "consistent failure to control dust." The suit charged that Brunius' plan to ensure long-term environmental protection was inadequate, and that the county had violated state law by approving it.

Brunius insisted that the state's allegations are incorrect. He said he complies with the testing rule and that dust clouds from his operation are infrequent. "Unfortunately, there's a lot more hysteria than fact," he said.

County Counsel Green said: "The board maintains that the plan is adequate and complies with the law, but we're still willing to sit down with the state and see if we can reach an agreement."

It may be hard to see danger in something as natural to the foothills as oak trees.

The serpentine outcrops are recognizable enough, with their waxy luster and many shades of green and blue. Many foothill residents cover their driveways with serpentine gravel. Some frame their yards or fireplaces with the decorative rock.

But it was something else that moved the state Legislature in 1965 to anoint serpentine the official "state rock." The California Federation of Mineralogical Societies made the pitch:

"It is the host rock for the state's newest and most rapidly growing mineral industry: Asbestos, now bringing in several million dollars annually."

At the time, health hazards of asbestos fibers were becoming widely apparent in industries that used the mineral for heating

insulation and fireproofing.

In California, official awareness of the threat posed by naturally occurring asbestos did not surface for another 20 years. It has centered on the thousands of miles of roads covered with serpentine gravel.

In 1986, concerns from Calaveras County residents prompted the federal EPA to blacktop 50 miles of roads to encapsulate asbestos fibers that were being released when cars crunched the gravel. The agency warned parents living along serpentine roads:

"Teach your children to avoid walking or riding their bikes behind moving vehicles."

Later that year, a federal clean-up team descended upon El Dorado County northeast of Coloma. Crews wearing respirators paved a road in Garden Valley Ranch Estates whose serpentine gravel contained up to 20 percent chrysotile. The U.S. Environmental Protection Agency considers stone exceeding 1 percent asbestos unsafe for roadways.

It wasn't until spring 1996 that amphibole asbestos came to the attention of county officials, when Trent fought a neighbor's plan to blast through asbestos veins.

Wheeldon, the consulting geologist for area developers, couldn't recall finding amphibole asbestos in his more than 20 years of site investigations.

"If this is such a problem, shouldn't there be an abnormally high incidence of lung cancer and mesothelioma . . . for people who live specifically in the Mother Lode?" he asked.

Scientists say it's too early to tell for El Dorado County.

Mesothelioma, which is almost always linked to asbestos exposure, has a long latency. The time between initial exposure and diagnosis averages 25 to 40 years. The bulk of construction in the serpentine areas occurred only in the past 20 years, making any link between disease and housing development virtually impossible to identify.

The current mesothelioma rate on the county's western slope is slightly higher than expected, but the difference is not statistically significant, according to a California Cancer Registry analysis requested by The Bee.

The study of the most recent reliable data identified 17 mesothelioma patients in the region from 1988 through 1995, compared with 10 cases that would be expected for a population of its size. The victims' history of residence and occupation are unknown. Their ages ranged from 59 to 85.

Both amphibole and chrysotile asbestos have been shown to cause mesothelioma and, more commonly, lung cancer.

Numerous studies have led most experts to conclude that amphibole fibers are considerably more potent than chrysotile in the development of mesothelioma.

They are long-lived in the lung, where they can penetrate the linings and induce cancer. Tremolite fibers found in the lungs of veteran Quebec asbestos miners, for example, have equaled or exceeded those of chrysotile -- even though tremolite is barely detectable in the ore, studies show.

Several hundred cases of mesothelioma are reported each year in California, and incidence is rising worldwide. Yet asbestos exposure in the mining, insulation and other industries has been declining over the past 30 years due to tightening job protections.

That paradox, and news of The Bee's findings, recently inspired UC Davis professor Schenker to propose a statewide study on whether environmental exposure could account in part for the persistence of mesothelioma.

"This concern has been increased because of development and increased populations in regions of the state with naturally occurring asbestos deposits," a team at UCD and the state Department of Health Services said in a proposal this month to the National Institute of Environmental Health Sciences.

Relatively little is known about exposure to amphibole asbestos outside the workplace. But ways of reducing the risk are at hand.

In 1987, workers excavating for an underground garage in Fairfax County, Va., were itching like crazy. Fairfax health officials traced the source of their discomfort: veins of tremolite asbestos in the serpentine earth. Officials wasted no time surveying the county. Just about everywhere they found serpentine, they found tremolite.

So they mapped the serpentine and set rules more stringent than federal job safety measures to reduce exposure to workers and nearby residents, including air monitors on the perimeter of work sites. Developers cannot build in serpentine without a county-approved protection plan prepared by an industrial hygienist.

"Through all the politicking and wringing of hands and wailing and gnashing of teeth this had caused people inside government and industry here, we just trucked right on and did it anyway," said Jim Dusek, a county environmental health inspector.

Some developers who at first protested expensive precautions now accept them, if only to avoid lawsuits.

"It's not in your interest to put somebody out there breathing high concentrations of asbestos . . .," said Jerry Naquin, safety officer with the big William A. Hazel Inc. construction firm in Chantilly, Va.

And some California jurisdictions already have precautions

against naturally occurring asbestos in planning and building rules.

Officials at the four-person Lake County Air Pollution Control District said common sense led them to adopt rules for home and road building in the serpentine-laced Coast Range.

"If it's a big problem in demolition or renovation, then it's of some concern if you are doing construction and moving a bunch of dirt around that happens to be the same stuff," district Deputy Director Ross Kauper said.

San Jose requires developers within areas of asbestos deposits to mitigate pollution from grading and digging.

Developers of filmmaker George Lucas' new studios had to have a trained on-site inspector and a safety plan approved by Marin County and Bay Area air pollution regulators before they could plow into serpentine in 1996.

The state Department of Education found that a single line added in 1993 to its checklist for new school sites has been enough to avoid hazards:

"If serpentine rock is present, address presence of asbestos."

---

Problems? Suggestions? Let us hear from you.  
Copyright © The Sacramento Bee

SACBEE HOME / SPECIAL REPORTS INDEX

# Developers plan asbestos testing: Many in El Dorado concerned

By **Chris Bowman**  
Bee Staff Writer  
©1998, The Sacramento Bee  
(Published March 31, 1998)

Developers of the exclusive Serrano neighborhood in El Dorado Hills began planning Monday for extensive testing for cancer-causing asbestos in and around the houses of the golf course community.

The move comes as a swarm of residents expressed worry about the possibility that construction may have disturbed or exposed natural asbestos deposits.

"We have to do the right thing," said Sam Miller, director of planning for the developers of Serrano El Dorado, a 4,500-home project still under construction. "We need to know what the extent of the problem is, assuming that (asbestos) is a problem on our property, and design a way to minimize it."

Serrano's homeowners were among the hundreds of residents concerned about results of The Bee's investigation into asbestos air pollution in the western edge of El Dorado County. Dozens called state and county officials looking for ways to check asbestos levels in their homes and neighborhoods. More than 50 calls were logged at the state Division of Occupational Safety and Health in Sacramento alone.

The investigation, published Sunday, found that construction in the fast-developing region has been unearthing and stirring up naturally occurring asbestos, creating a potential cancer hazard to residents -- especially children.

Tests commissioned by The Bee confirmed the presence of a particularly hazardous kind of asbestos in neighborhoods of El Dorado Hills and Latrobe, about 15 miles east of Sacramento. The testing was limited to three homes and did not include the Serrano area. The threat has been largely unknown to residents and county officials, though



"They ranged from the area, to most people worried a said Hans Boers agency.

As for the Serrano firm has hired a exposed asbestos asbestos in the a

The company also they may need to said. "The fact is ". . . This is my fa

The company pla "Frankly, we've g dismiss it," Miller

MC  
ST

Pro  
Dor  
up :

Col  
test

Pai  
hor  
asb

How  
can  
asb

RE  
ST

Sac  
edit

GR



"Our phone has been ringing about every minute and a half," said county Supervisor Sam Bradley, who represents El Dorado Hills, Latrobe and Cameron Park. "People want to know what the county is going to do about this, and whether they are in danger."-

Bradley and other supervisors have been reviewing a Lake County ordinance as a possible template for construction restrictions.

Officials in the Coast Range county, which is also laced with serpentine, have mapped potential asbestos deposits and are requiring that developers control extensively for dust and monitor the air during digging and grading. They must cover any asbestos veins exposed during construction.

Bradley also said parents wanted to know whether students at Oak Ridge High School and other area schools were exposed to unsafe levels of asbestos. An industrial hygienist hired by The Bee found asbestos particles littering the sidewalks of a housing tract next to Oak Ridge High. High concentrations of asbestos fibers were also found in the settled dust of a home in the nearby subdivision.

Some residents said they were glad to find out about the potential hazard.

"It made me concerned about what I've been breathing for the last 20 years," said Mike Williams, a plumber who lives in the rural Latrobe community. "My driveway is paved with serpentine gravel. I will have to do something about that."

Some residents expressed frustration at county and state officials.

"What I didn't understand is the reluctance of officials to deal with the problem," said Dan Gomes, an eight-year resident of El Dorado Hills who related his conversations Monday with environmental health managers at the state and county. "All they had to say to me is that, 'We're on top of it and we're going to look into it.' That's all I needed to hear."

Cal-OSHA officials said some people were looking for asbestos consultants, which the agency certifies.

Where asbestos is found in California

How asbestos is formed

How people are exposed to asbestos

How asbestos harms the body

"They ranged from people who are looking to buy lots in the area, to mothers of children who play in the soil, to people worried about the effects on their property values," said Hans Boersma, an industrial hygienist with the agency.

As for the Serrano community, Miller said his development firm has hired a consultant to determine the extent of exposed asbestos in the area and the concentrations of asbestos in the air.

The company also will look at "appropriate" precautions they may need to take when building in serpentine, he said. "The fact is, my kids come and play here," Miller said. ". . . This is my family that's at risk, not just my job."

The company plans to make its test results public. "Frankly, we've got to let everybody know. We can't dismiss it," Miller said.

---

Problems? Suggestions? Let us hear from you.  
Copyright © The Sacramento Bee

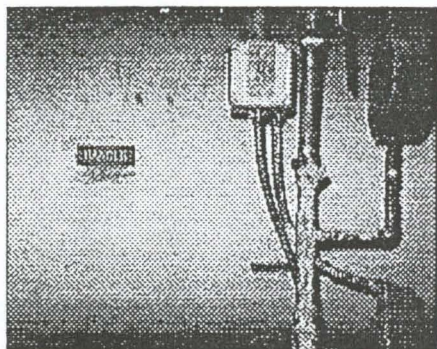
# Asbestos Awareness

## When is Asbestos Dangerous?

The most common way for asbestos fibers to enter the body is through breathing. In fact, asbestos containing material is not generally considered to be harmful unless it is releasing dust or fibers into the air where they can be inhaled or ingested. Many of the fibers will become trapped in the mucous membranes of the nose and throat where they can then be removed, but some may pass deep into the lungs, or, if swallowed, into the digestive tract. Once they are trapped in the body, the fibers can cause health problems.

Asbestos is most hazardous when it is **friable**. The term "friable" means that the asbestos is easily crumbled by hand, releasing fibers into the air. Sprayed on asbestos insulation is highly friable. Asbestos floor tile is not.

Asbestos-containing ceiling tiles, floor tiles, undamaged laboratory cabinet tops, shingles, fire doors, siding shingles, etc. **will not release asbestos fibers** unless they are disturbed or damaged in some way. If an asbestos ceiling tile is drilled or broken, for example, it may release fibers into the air. If it is left alone and not disturbed, it will not.



Asbestos pipe and boiler insulation does not present a hazard unless the protective canvas covering is cut or damaged in such a way that the asbestos underneath is actually exposed to the air.

Damage and deterioration will increase the friability of asbestos-containing materials. Water damage, continual vibration, aging, and physical impact such as drilling, grinding, buffing, cutting, sawing, or striking can break the materials down making fiber release more likely.

## Health Effects

Because it is so hard to destroy asbestos fibers, the body cannot break them down or remove them once they are lodged in lung or body tissues. They remain in place where they can cause disease.

There are three primary diseases associated with asbestos exposure:

- Asbestosis
- Lung Cancer
- Mesothelioma

## **Asbestosis**

Asbestosis is a serious, chronic, non-cancerous respiratory disease. Inhaled asbestos fibers aggravate lung tissues, which causes them to scar. Symptoms of asbestosis include shortness of breath and a dry crackling sound in the lungs while inhaling. In its advanced stages, the disease may cause cardiac failure.

There is no effective treatment for asbestosis; the disease is usually disabling or fatal. The risk of asbestosis is minimal for those who do not work with asbestos; the disease is rarely caused by neighborhood or family exposure. Those who renovate or demolish buildings that contain asbestos may be at significant risk, depending on the nature of the exposure and precautions taken.

## **Lung Cancer**

Lung cancer causes the largest number of deaths related to asbestos exposure. The incidence of lung cancer in people who are directly involved in the mining, milling, manufacturing and use of asbestos and its products is much higher than in the general population. The most common symptoms of lung cancer are coughing and a change in breathing. Other symptoms include shortness of breath, persistent chest pains, hoarseness, and anemia.

People who have been exposed to asbestos and are also exposed to some other carcinogen – such as cigarette smoke – have a significantly greater risk of developing lung cancer than people who have only been exposed to asbestos. One study found that asbestos workers who smoke are about 90 times more likely to develop lung cancer than people who neither smoke nor have been exposed to asbestos.

## **Mesothelioma**

Mesothelioma is a rare form of cancer which most often occurs in the thin membrane lining of the lungs, chest, abdomen, and (rarely) heart. About 200 cases are diagnosed each year in the United States. Virtually all cases of mesothelioma are linked with asbestos exposure. Approximately 2 percent of all miners and textile workers who work with asbestos, and 10 percent of all workers who were involved in the manufacture of asbestos-containing gas masks, contract mesothelioma.

People who work in asbestos mines, asbestos mills and factories, and shipyards that use asbestos, as well as people who manufacture and install asbestos insulation, have an increased risk of mesothelioma. So do people who live with asbestos workers, near asbestos mining areas, near asbestos product factories or near shipyards where use of asbestos has produced large quantities of airborne asbestos fibers.

## **Other Cancers**

Evidence suggests that cancers in the esophagus, larynx, oral cavity, stomach, colon and kidney may be caused by ingesting asbestos. For more information on asbestos-related cancers, contact your local chapter of the American Cancer Society.

## Determining Factors

Three things seem to determine your likelihood of developing one of these asbestos related diseases:

1. **The amount and duration of exposure** - the more you are exposed to asbestos and the more fibers that enter your body, the more likely you are to develop asbestos related problems. While there is no "safe level" of asbestos exposure, people who are exposed more frequently over a long period of time are more at risk.
2. **Whether or not you smoke** - if you smoke and you have been exposed to asbestos, you are far more likely to develop lung cancer than someone who does not smoke and who has not been exposed to asbestos. If you work with asbestos or have been exposed to it, the first thing you should do to reduce your chances of developing cancer is to stop smoking.

Organizations that may offer programs, support, or information to help people stop smoking are:

- o OSU Wellness Center
  - o National Cancer Institute (1-800-4-CANCER)
  - o American Heart Association (1-800-242-8721)
  - o American Lung Association (in Oklahoma: 405-524-8471)
3. **Age** - cases of mesothelioma have occurred in the children of asbestos workers whose only exposures were from the dust brought home on the clothing of family members who worked with asbestos. The younger people are when they inhale asbestos, the more likely they are to develop mesothelioma. This is why enormous efforts are being made to prevent school children from being exposed.

Because each exposure to asbestos increases the body burden of asbestos fibers, it is very important to reduce and minimize your exposure.

[Next](#)

---

[\[Modules\]](#) [\[Introduction\]](#) [\[Asbestos\]](#) [\[Locations\]](#) [\[Effects\]](#) [\[Exposure\]](#) [\[Quiz\]](#)

[Home](#)[Search](#)[Site Map](#)[Software](#)[Contact Us](#)

## Asbestos Air Monitoring in El Dorado County

*This page updated September 11, 1998.*

The Air Resources Board (ARB) is conducting air monitoring in El Dorado County to determine the levels, or concentration, of asbestos in the air at selected sites. This monitoring data will be used to help evaluate the extent of the public's exposure to asbestos.

### WHERE IS THE MONITORING BEING CONDUCTED?

Monitoring is currently being conducted in various locations in El Dorado County. The sites are selected to provide data on the concentrations of asbestos that may be present in the vicinity of a particular site, and in some cases, may represent "worst case" conditions. The ARB welcomes suggestions by the public for possible monitoring site locations.

### WHEN DID THE ARB START MONITORING?

Monitoring was started on April 21, 1998. No monitoring is conducted when it is raining and only resumes after 72 hours of dry conditions. The ARB plans to monitor through the summer months when the highest levels of asbestos would be expected.

### HOW ARE THE SAMPLES COLLECTED AND ANALYZED?

The monitor is a portable unit which consists of a battery operated pump and a filter designed for asbestos air monitoring. Air is drawn through the filter continuously over a 24 hour period. The filters are analyzed by United States Environmental Protection Agency procedures. The analysis uses transmission electron microscopy, a state-of-the-art technique, to identify the fibers as asbestos and to count the asbestos fibers on a small section of filter. The concentration is determined by dividing the number of fibers caught on the filter in a 24 hour period by the volume of air drawn through the unit in that time period. The samples are analyzed by a laboratory under contract to the ARB and certified by the National Institute of Standards and Technology's National Voluntary Laboratory Accreditation Program. Quality control measures and chain of custody procedures are followed in both the field and laboratory for all samples collected.

**WHAT ARE THE RESULTS?**

The sampling results from April 21 to July 3, 1998 are listed in the table below. The table will be updated regularly as new data become available.

Ninety-one of the 97 results monitored during the sampling period were below the minimum detection limit (MDL). The MDL is the amount of asbestos that cannot accurately quantify the amount of the substance because the amount is so small. For example, you cannot accurately weigh anything below a penny on a bathroom scale. The MDL for asbestos can vary depending on the sampling method which is drawn through the filter and the amount of the filter used. Currently, we are working on lowering the MDL for asbestos so that more results can be accurately measured.

Sutters Mill Elementary

Asbestos fiber analysis  
EPA 40 CFR Part 76

**WHAT DO THE SAMPLING RESULTS MEAN?**

First it is important to understand that these sampling results are only measurements at specific sites and do not represent what asbestos exposures may be in El Dorado County. The AF4 is a measure of potential cancer risks associated with the three individual samples that were above the MDL assuming that a person would be exposed to these levels for 24 hours a day for 70 years. The estimated lung cancer risk associated with the levels detected in the samples above the MDL is 1 to 10 chances per million. ***These risk numbers are preliminary data, and should not be used to characterize individual samples to provide a relative indication of cancer risk. To put these numbers into further perspective, the estimated cancer risk from air toxics in a large urban area is estimated to be 1 in 100,000 chances in a million. An individual's chances of getting lung cancer from all causes is estimated to be about 1 in 10,000 chances in a million.***

**NEED MORE INFORMATION?**

If you have questions or need more technical information about the asbestos monitoring program, please contact either of the following:

- |                  |                |                     |
|------------------|----------------|---------------------|
| George Lew       | (916) 263-1630 | <a href="#">glw</a> |
| Cindy Castronovo | (916) 263-1628 | <a href="#">cc</a>  |

If you would like to suggest monitoring site locations or have information about the potential health risks, please contact:

- |           |                |                    |
|-----------|----------------|--------------------|
| Todd Wong | (916) 322-8285 | <a href="#">tw</a> |
|-----------|----------------|--------------------|

---

**Measured Ambient Asbestos Concentrations in**

(Updated August 27, 1998)

You may also view a detailed listing, which includes asbestos concentrations and sampling dates.

Location	Geographical Area	Number of Samples Analyzed to-date	Number of Samples Detecting Asbestos
<u>Deer Creek Water Treatment Plant</u>	Cameron Park	8	0
<u>Bass Lake Facility</u>	Bass Lake	7	1
<u>Water Tank</u>	Greenstone area	3	0
<u>Fire Station #1</u>	El Dorado Hill	6	0
<u>Georgetown Elementary School</u>	Georgetown	11	1
<u>Golden Sierra High School</u>	Garden Valley	3	1
<u>Greenville Elementary School</u>	Cameron Park	3	0
<u>Horse Stables</u>	Auburn Trails Subdivision	6	0
<u>Latrobe Fire Station</u>	Latrobe	11	1
<u>Marina Village Intermediate School</u>	El Dorado Hills	3	0
<u>Northside Elementary School</u>	Cool	6	1
<u>Oakridge High School</u>	El Dorado Hills	3	0
<u>Pacific House Ranger Station</u>	Freshpond	18	1
<u>Ponderosa High School</u>	Shingle Springs	3	0