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## Libby Amphibole Contamination in Tree Bark Surrounding Historical Vermiculite Processing Facilities

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### ABSTRACT

Over a 70-year period, a mine near Libby, MT supplied nearly 80% of the world's vermiculite. Raw vermiculite, which was contaminated with naturally occurring amphibole in veins throughout the deposit, was shipped to processing sites throughout the United States for exfoliation. In this pilot study, tree bark samples were collected near processing facilities in Spokane, WA, Santa Ana, CA, Newark, CA, and Phoenix, AZ in an effort to determine if areas surrounding these facilities are today contaminated with Libby amphibole asbestos (AA). From areas surrounding each of the four historical processing sites, Libby AA was detected in a subset of the bark samples. At the Santa Ana, Newark and Phoenix facilities, actinolite-tremolite and other high Fe Ca-bearing amphibole were also measured from the bark samples. In addition, chrysotile was frequently measured in samples collected from each of the sites. From the results of this pilot study, it is evident that tree bark can serve as reservoirs of asbestos, and indicators of past and current contamination. These data also suggest that areas outside of these historical processing facilities may today have some level of existing contamination resulting from the operation of these facilities.

### KEYWORDS

Vermiculite, Asbestos, Amphibole, Libby, Exfoliation, Tree Bark

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