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Report on Tremolite in Vanderbilt Samples Downplaying Danger



UNIVERSITY OF MARYLAND AT COLLEGE PARK

DEPARTMENT OF GEOLOGY

Mr. Charles Byers
United States Gypsum
125 S. Franklin Street
Chicago, Illinois 60606-4678

June 16, 1995

Dear Mr. Byers;

I have reviewed the report, dated March 20, 1995 and written by A. W. Struss on International Talc 325 from R.T. Vanderbilt. I have also examined a portion of the sample labeled International Talc 325 that you sent to me.

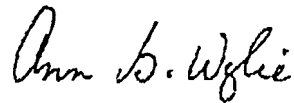
Mr. Struss's report has accurately identified tremolite and fibrous talc as the elongated minerals in the sample. He has also correctly concluded that while lizardite is present in the sample, chrysotile asbestos is not. I also agree that tremolite particles that are longer than 5 micrometers, narrower than 3 micrometers with a length to width ratio of at least 5 are present in the sample. However, I do not agree that these dimensions make these particles asbestos. Mr. Struss has applied criteria that are advocated by NIOSH for asbestos fiber counting on air filters. It is not really a definition but a set of criteria for counting asbestos to obtain an exposure index and as such it is inappropriate to apply to air filters unless asbestos is known to be present. In other words, this definitions tells the analyst which asbestos particles to count on air filters, but it does not tell him which ones are asbestos. Furthermore, since the NIOSH fiber counting criteria were designed for air filters, I would not apply them to bulk samples under any conditions.

When examining a bulk sample for the presence of amphibole asbestos by optical microscopy, I look for the following characteristics of a population of amphibole particles: 1) Mean aspect ratio of 20:1 or greater for fibers longer than 5 micrometers, 2) very thin fibrils, usually less than 0.5 micrometers in width, and 3) parallel fibers occurring in bundles. If amphibole is present that does not display these properties, then it is not asbestiform. I have not yet found a sample of amphibole asbestos (identified by its hand specimen characteristics) that does not display these properties under the microscope (although I have found chrysotile that does not). I have enclosed a paper I wrote several years ago describing the

differences between amphibole asbestos and cleavage fragments which gives the basis for the criteria I have summarized above.

I hope these comments are useful to you and help resolve the issue of Talc 325. I did not found asbestos in the sample and I believe your analyst will concur that the tremolite present in Talc 325 does not exhibit the properties I have described for the asbestiform habit.

Sincerely yours,

A handwritten signature in cursive script, reading "Ann G. Wylie".

Ann G. Wylie
Professor

cc: J. Kelse