OEA/IEU comments on:

Draft Preliminary Evaluation Of The Implications Of Airborne Asbestos Exposure Concentrations Observed During Simulation Of A Selected Set of Common, Outdoor Residential Activities Conducted At The North Ridge Estates Site, Klamath Falls, Oregon

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The comments provided in this document are limited to sections of the above named evaluation (Berman document) which relate to information derived from experiments conducted by OEA to determine the potential for asbestos fibers to become airborne from disturbance of asbestos contaminated soil using the glove box procedure.

My overall comment is that it is not appropriate to evaluate data from analysis of samples collected by the glove box procedure in the Berman document. This document primarily relates to an evaluation of data collected during the simulated activities done in North Ridge Estates (NRE) in July of 2004. There is no specific discussion of the glove box procedures and no mention of the results of previous studies in which it has been applied. The qualitative data we derive from using the glove box is being unfairly judged against the quantitative data that results from the Berman elutriator. This is not an appropriate comparison due to the many differences between the two procedures.

Specific comments or concerns are as follows:

Under the heading "Data Quality", on page 2, Dr. Berman should provide a more detailed definition of what is meant by blanks. I think he should also <u>clearly</u> state what a blank would consist of and how it should be evaluated.

Under the heading "Amphibole-Related Risks", on page 5, in the fourth paragraph under the second bullet, Dr. Berman should rephrase the statement "...the QC checks conducted on the EPA study data are not sufficient to eliminate concerns that some of the data may have been contaminated...." I think what he is trying to state is that he thinks that some of the samples may have been contaminated and therefore the data should be disputed. "Contaminated data" implies something else entirely. I will discuss the contaminated sample question in more detail later, but for now, I think he needs to honestly consider other possibilities as well.

Under the heading "Conclusions and Recommendations" on page 6, second paragraph, second sentence, Dr. Berman refers to three amphibole fibers detected in one of the EPA samples collected in the glove box. It is not immediately clear which sample he is addressing. He should put an identifier, such as the sample number, into the text of the document. I assume he is referring to sample 0408111. He states that this sample appears to have QC problems. I don't know if he has enough information to determine this. We used the ISO method 10312 to analyze samples collected using the glove box procedure. We did submit a blank sample for analysis, sample number 03524003 and a background sample number 04084109. Asbestos was not detected in either of these samples. In fact, asbestos was not detected in the12 background samples, the QC sample, nor the health and safety samples that were analyzed by NIOSH method 7402. I would also point out that LabCor does its own process blanks as part of the laboratory QC procedure.

Under the heading "Asbestos Soil Data", on page 17, Dr. Berman suggests that analysis of blanks during EPA studies was not sufficient to eliminate concerns that some of the asbestos observed was due to filter or lab contamination. A blank filter was analyzed from the lot of filters used for the glove box samples. No asbestos was detected, although only 10 grids were observed by LabCor. This is their normal procedure for AHERA samples. The ISO method 10312 is rather vague on exactly the number of grids to be counted for a blank sample. I think this is where Dr. Berman has a legitimate issue. I recommend that EPA have additional grids (140 total) from both the QC filter and the background filter, sample numbers 03524003 and 04084109, analyzed to achieve the same analytical sensitivity as that achieved for sample 0408111.

On page 19, Dr. Berman again refers to glove box derived data in the last paragraph. Again, he points out that three long amphibole structures were detected in a sample prepared by the glove box procedure while a duplicate split of the soil prepared by the elutriator method showed detection of only three short chrysotile structures. He states that "... given the proven reliability of the elutriator method (over this study and studies in general), the source of the amphibole structures observed in the glove box sample is open to question." My response to this is that the specimen on soil in question is not homogenous. The techniques used to prepare and collect the samples (glove box versus elutriator) for analysis were quite different in several respects. Last, the result of analysis for bulk samples collected by the Oregon Department of Environmental Quality revealed that amosite asbestos, the amphibole identified in sample 0408111, was a component of some of the asbestos containing material (ACM) fragments found on this site.

Under the heading "Amphibole asbestos-related risks" on page 39 there is more discussion of the amphibole asbestos found in the EPA sample collected in the glove box and there is a footnote #39 which states "...there is currently no established procedure for quantitatively relating the results from analyses of glove box samples to exposure or risk." This is true. The glove box procedure is intended as a qualitative sampling method. It is not quantitative and it is not appropriate to draw conclusions about exposure or risk from samples

derived from this procedure. What is appropriate is using glove box derived data as a quick and relatively inexpensive means to determine areas where more quantitative methods should be applied.

On page 40, Dr. Berman re-emphasizes the difference between the glove box derived results and those derived from the elutriator with regard to one sample containing amphibole. If we have to go down this road, I think that it would be worth discussing any similarity or difference in the amount of chrysotile observed in other split samples when prepared using the glove box and elutriator procedures.

On page 42, last paragraph, second bullet, Dr. Berman again states the EPA data is contaminated. He should clearly state what he means even though I mostly disagree with what he is suggesting and how he presents it. In the second bullet, in order to make a case that if EPA finds a small number of amosite fibers in the glove box sample it must find them in the elutriator sample implies that the specimen of soil that was tested was homogenous. It was not. Before questioning EPA's results, Dr. Berman should honestly consider this. The soil specimen is heterogenous and it is possible that a small fragment of ACM containing amosite may have made its way into the split tested in the glove box but not into the split tested with the elutriator. Given that fragments of ACM containing amosite were identified in bulk samples from this site collected by ODEQ it seems reasonable to at least mention this fact.