

- 2) The pump that may be used at this time may not have the capacity of 2 lpm. Does this mean the sample cannot be taken? No. What is required though is the known flow rate and the length of sample time.

This recommendation that is referred to above, probably is attempting to relate to the counting requirements that are needed in order to obtain a statistically acceptable sample. In order to have an accurate estimate of the number of fibers, the statistical error resulting from the random distribution of the fibers must be kept reasonably low. To quote from the Criteria Document on Asbestos:

"Since fiber counts follow a Poisson distribution, a count of 100 fibers in a sample would have a standard deviation of $\sqrt{100}$ or 10 fibers or $\pm 10\%$. Thus the 95% confidence limits would be approximately 2 standard deviations or $\pm 20\%$. Since the 37 mm filter has an effective collecting area of 855 mm^2 and the projected field area of the Porton reticle is 0.005 mm^2 , each field represents $1/171000$ of the sample. Based on this ratio, the following number of fields must be counted to measure the various limits in various sampling times:"