

Gilsenan, Michael

From: Gilsenan, Michael (ex)
Sent: Friday, August 02, 2002 1:10 PM
To: Radhakrishnan, Krish; Atteloney, Leonard
Subject: FW: summary of .0009 f/cc for 125 cedar scope



wtcsuccin.wpd

EPA's Draft of language for air monitoring at 125 Cedar.

-----Original Message-----

From: LaPosta.Dore@epamail.epa.gov [mailto:LaPosta.Dore@epamail.epa.gov]

Sent: Friday, August 02, 2002 12:51 PM

To: michaelgi@dep.nyc.gov

Cc: callahan.kathy@epamail.epa.gov; Basso.Ray@epamail.epa.gov;

Fitzpatrick.Robert@epamail.epa.gov

Subject: summary of .0009 f/cc for 125 cedar scope

please let me know (today, if possible) if you have any questions,
thanks

(See attached file: wtcsuccin.wpd)

Dore LaPosta
212 637-3145 phone
212 637-3115 fax
laposta.dore@epa.gov

Determination of .0009f/cc as clearance value for asbestos air monitoring

Risk Assessment

The IRIS inhalation unit risk for asbestos is 2.3 E-01 per f/cc. Here's how this unit risk is interpreted. Exposure over a lifetime (i.e., 70 yrs) to 1 f/cc of asbestos results in a cancer risk of 2.3 E-1. To get the fiber concentration equating to a 1 E-04 (one-in ten thousand risk - for lifetime exposure) the following equation is used:

$$\frac{.23}{1 \text{ f/cc}} = \frac{.0001}{x}$$

$$x = \frac{.0001}{.23}$$

$x = .0004 \text{ f/cc}$ this is the fiber concentration that equates to a 1 E-04 risk for 70 year exposure.

To adjust the exposure duration to 30 years, multiply .0004 f/cc by $\frac{70}{30} = .0009 \text{ f/cc}$

Analytical Methods

PCM NIOSH 7400 followed by AHERA TEM analysis should be used on all samples. AHERA TEM measures all fibers > .5 um. Additionally, the lab should record all fibers that are > 5 um to determine the PCMe value.

PCMe is determined by counting all fibers > 5 um with a 3:1 aspect ratio by TEM analysis. In our PCMe calculations we are using a conservative approach of counting all fibers >5um.

Therefore, the analytical result of fibers >5 um will be compared to .0009 f/cc to measure success in achieving the clearance value.

Sampling Approach

Air sampling pumps with a maximum flow rate of 15 liters per minute should be used along with sample cassettes with mixed cellulose ester filters having a pore size of .8 um. The minimum sampling volume required is 3600 liters to achieve the clearance criteria.