



ERI ANALYTICAL

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Date: September 24, 2008

File No: ERI AS # 0808198B

Case Name-John A. Phillips #449-86-9741

Specimen: A package containing five blocks [SS08-23762 3 I, J, K; S085083, CB08-207] and twenty-one slides [S08-5083 L0, 5, 8, 39, 40, 51, 54, 59, 60, 61, 62, 67, 71, 72, 92, 93, 99; CB08-207, B08-207, S08-5083 1, 2] was received on 8/27/08 The material was sent by:

Ms. Chelsea Tran
Paralegal
Williams, Kherkher, Hart, Boundas, LLP
8441 Gulf Freeway, Suite 600
Houston, Texas 77017-5051

Date received: See above.

Date analyzed: 09/08/08 (Light Microscopy for Ferruginous Bodies-RFD)
09/16/08 Sample B- (ATEM- J3 Resources)

Morphology of Specimen: Authorization was received from Ms. Tran in a communication dated August 26, 2008 for digestion of paraffin embedded tissue that would permit determination of the presence of ferruginous bodies (FB) and uncoated asbestos fibers. Approximately one half of the lung parenchymal tissue on blocks SS08-23762 3I, 3J, and 3K were dissected as representative samples from right lung. As much paraffin as possible was cut from the edge of the block face adjacent to the tissue after which the tissue from the representative right lung samples underwent deparaffinization. The procedure for deparaffinization was as follows: the tissue was put on a hot plate to melt some of the paraffin, after which the sample was put through 6 changes of xylenes and 6 changes of ethanol.

The digest pool from the deparaffinized pieces of tissue representing the right lung (ERI A.S. No. 0808198B) contained 0.6398 gm deparaffinized wet weight of tissue. The respective samples of tissue from right lung were carried through the modified bleach digestion procedure and aliquots of the digestate were collected on either 0.22 μ m pored mixed cellulose ester filters for analysis by light microscopy for the presence of ferruginous bodies or on 0.2 μ m pored polycarbonate filters and prepared for analysis as to the presence of uncoated asbestos fibers and ferruginous bodies by ATEM.

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Light Microscopy: For this evaluation one fourth of the mixed cellulose ester filter from the representative sample was mounted on a glass slide, cleared (made transparent) using acetone vapor and then scanned by light microscopy at 200-400x in an Olympus light microscope.

Filter 0808198B d1 F4 representing the digestate samples from the blocks of tissue from the right lung was scanned by light microscopy and represented by 0.19686 grams deparaffinized wet weight of tissue. The area scanned contained forty-six classical ferruginous bodies. The forty-six classical ferruginous bodies were equivalent to 934.7 ferruginous bodies/gm deparaffinized wet weight of tissue. The limit of detection was 20.3 ferruginous bodies/gm deparaffinized wet weight of tissue.

ATEM Morphology: For electron microscopy analysis a strip was cut from the carbon coated polycarbonate filter representing each of the areas sampled. These strips were mounted on 100 mesh copper grids and the filter matrix dissolved by the use of chloroform. This resulted in the production of a carbon extraction replica containing the entrapped fibers and other particulates. Scans were made at 15,000x with counts and analysis including all fibers greater than or equal to 0.5 μm in length and with an aspect ratio of greater than 5:1. A scan at lower magnification (2,000x) was made of additional grid squares in an attempt to find ferruginous bodies. The cores of any ferruginous bodies found in the area scanned were analyzed as were any uncoated asbestos fibers ($>3\mu\text{m}$).

Filter 0808198B d1 F1 represented a 0.0787gm deparaffinized wet weight aliquot of the digestate from the samples of the right lung. An area of the prepared grids from this sample consisting of 1.1745 mm^2 was scanned at 15,000x. **There were sixteen crocidolite asbestos fibers found in area scanned at 15,000x.** The sixteen asbestos fibers were equivalent to 66,644.8 fibers/gm deparaffinized wet weight of tissue. There were no ferruginous bodies found in the area scanned at 15,000x. The limit of detection at 15,000x was 4165.3 fibers/gm deparaffinized wet weight of tissue. An additional scan at 2,000x was carried out on sixty grid squares on three grids for the presence of ferruginous bodies and uncoated asbestos fibers ($>3\mu\text{m}$). **There was one crocidolite cored ferruginous body and four crocidolite asbestos fibers ($>3\mu\text{m}$) found in the area scanned at 2,000x.**

Background 469: There were no asbestos fibers equal to or greater than 0.5 μm found in a scan of 1.1745 mm^2 made at 15,000x. There were no asbestos fibers or ferruginous bodies found in a scan 2.349 mm^2 at 2,000x.

Limit of detection: Limit of detection is defined as that concentration below which a single fiber or ferruginous body would not likely be detected.

Light microscopy analysis for the presence of ferruginous bodies performed by Ronald F. Dodson, Ph.D.

Analytical Transmission Electron Microscopy performed by J3 Resources

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Final Report Approved:

Tracy Foster Date 9/24/08

Tracy Foster, B.S.
Director:
Analytical Laboratory -ERI Consulting

[Signature] Date Sept 24, 2008

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