



Date: December 18, 2024

File No: ERI AS # 2411120

Case Name-Heather Carson

Specimen: A package within which were thirty-four blocks of embedded tissue (S22-02903 A1, B1, C1, C2, G1, G2, G3, G4, G5, H1, I1, J6, K1, K2, K3, L1, L2, M1, M2, M3, N1, N2, N3, N4, N5, N6, N7, N8, N9, N10, N11, P7, P8, P9) from Brigham & Women's Hospital, sent on behalf of MG+M The Law Firm was received on November 19, 2024. The materials were pathology samples from the case of Heather Carson.

On November 26, 2024 sixty-one slides (IS21-35818 1 recut, 2 recut; S22-02903 A-1*, A-2* [*Shattered Slides], B-1, C-1, C-2, D-1, D-2, E-1, F-1, G-1→G-5, H-1, I-1, J1→J6, K1→K3, L1, L2, M1, M2, M3, N1→N11, O1→O7, P1→P11) in the case of Heather Carson were received from Melinda Swift of Duke University Medical Center.

A communication dated December 3, 2024 was received from Mr. Chris Massenburg of the MG+M The Law Firm authorizing permission to evaluate the submitted-embedded tissue in Heather Carson case for fiber and ferruginous body content.

Approximately one half or less of the lung tissue on blocks S22-02903 I1, J6, M3, N1, N2, N3, N4, N5, N6, N8, N9, N10, N11 was sampled representing left lung tissue. The sample of left lung tissue was designated as ERI AS.# 2411120A and the tissue pool wet weight of the tissue was 1.6868 gms. of tissue.

Approximately one half or less of the lymph tissue on blocks S22-02903 B1, C1, G3, G4, G5, K1, K2, K3 was sampled as representative of lymph tissue. The sample of lymph tissue was designated as ERI AS# 2411120 C. The tissue pool weight of the tissue was 0.5262 gms. of tissue.

Tissue was sent by: See above.

Date received: November 19, 2024- thirty-four blocks of embedded tissue
November 26, 2024- sixty-one slides

Date analyzed: December 12, 2024 –Sample 2411120A d1 F4 -Light Microscopy for
Ferruginous Bodies (RFD)
December 12, 2024 –Sample 2411120C d1 F4 -Light Microscopy for
Ferruginous Bodies (RFD)
December 16, 2024-Sample 2411120A d1 F1 (ATEM Eurofins Resources)
December 17, 2024-Sample 2411120C d1 F1 (ATEM Eurofins Resources)

ERI Analytical

Morphology of Specimen: Pieces of embedded tissue defined as approximately one half or less of the embedded materials from blocks of lung tissue (ERI A.S. # 2411120A) and lymph tissue (ERI AS# 2411120C) were processed as follows. As much paraffin as possible was cut from the edge adjacent to the tissue after which the respective sample of lung or lymph tissue 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 deparaffinized samples from the lung tissues or the lymph tissues were carried through the modified bleach digestion procedure and aliquots of the individual digestates were collected on either 0.22 μm pored mixed cellulose ester filters for analysis by light microscopy for the presence of ferruginous bodies and on 0.2 μm pored polycarbonate filters which was prepared for evaluation by ATEM for the presence of uncoated fibers and ferruginous bodies.

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

Filter 2411120A d1 F4 representing the digestate sample from the lung tissue was scanned by light microscopy and represented by 0.19845 grams deparaffinized wet weight of tissue. The area scanned contained no classical ferruginous bodies. The limit of detection was 20 FB's/gm. deparaffinized wet weight of tissue.

Filter 2411120C d1 F4 representing the digestate sample from the lymph tissue was scanned by light microscopy and represented by 0.19134 grams deparaffinized wet weight of tissue. The area scanned contained no classical ferruginous bodies. The limit of detection was 21 FB's/gm. deparaffinized wet weight of tissue.

ATEM Morphology: For electron microscopy analysis a strip was cut from the carbon coated polycarbonate filter representing the area sampled. These strips were mounted on 100 mesh copper grids and the filter matrix dissolved using chloroform vapor. 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 with the emphasis 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 2411120A d1 F1 represented a 0.07938 gm. deparaffinized wet weight aliquot of the digestate from the sample of left lung tissue. An area of the prepared grids from this sample consisted of 1.266 mm^2 was scanned at 15,000x. There were no fibers found in the area scanned at 15,000x. There were no ferruginous bodies found in the area scanned at 15,000x. The limit of detection in the scan at 15,000x was 3,831 fibers/gm deparaffinized wet weight of tissue. An additional scan at 2,000x was carried out on a total of twenty grid squares on three grids for the presence of ferruginous bodies and fibers ($>3\mu\text{m}$). There were no ferruginous bodies found in the area scanned at 2,000x. There were no fibers ($>3\mu\text{m}$) found in the area scanned at 2,000x.

ERI Analytical

Filter 2411120C d1 F1 represented a 0.07654 gm. deparaffinized wet weight aliquot of the digestate from the sample of lymph tissue. An area of the prepared grids from this sample consisted of 1.236 mm² was scanned at 15,000x. There were no asbestos fibers found in the area scanned at 15,000x. There was one talc/transitional fiber found in the area scanned at 15,000x. There were no ferruginous bodies found in the area scanned at 15,000x. The limit of detection in the scan at 15,000x was 4,070 fibers/gm deparaffinized wet weight of tissue. An additional scan at 2,000x was carried out on a total of twenty grid squares on three grids for the presence of ferruginous bodies and fibers (>3 µm). There were no ferruginous bodies found in the area scanned at 2,000x. There was one anthophyllite asbestos fiber and one talc/transitional fiber (>3µm) found in the area scanned at 2,000x.


Background 495: There were no asbestos fibers equal to or greater than 0.5µm in length found in a scan of 1.218 mm² made at 15,000x. There were no asbestos fibers/or ferruginous bodies found in a scan 2.436 mm² 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 Eurofins/J3 Resources

Final Report Approved:

 Date Dec 18, 2024
Ronald F. Dodson, Ph.D.
President: Dodson Environmental Consulting, LLC
Senior Consultant: ERI Consulting, Inc.

 Date 12/18/2024
Tracy Foster, B.S.
Director: ERI Analytical Laboratory
ERI Consulting, Inc.