

**Bell Laboratories**

600 Mountain Avenue
Murray Hill, New Jersey 07974
Phone (201) 582-3000

Asbestos Analysis
Case: 48106-3
Reference: 1787

October 17, 1983

Ms. V. Orchier
New York Telephone Company
Room 1102
1095 Avenue of the Americas
New York, New York 10036

Dear Vicki:

Analysis has been completed on the group of samples you submitted for asbestos. The bulk sample was analyzed by polarized light microscopy using dispersion staining techniques. This method involves identification of fibers with optical and morphological characteristics of asbestos fibers. Results indicated the sample material contained chrysotile asbestos.

The cellulose ester filter wipe samples were analyzed by polarized light microscopy (PLM) and x-ray diffraction (XRD) to ascertain if asbestos was present in the dust on the filters. However, two complicating factors made it difficult to verify the presence of asbestos:

1. The quantity of material collected on the wipe filters was in most cases sufficient for polarized light microscopy but not adequate for x-ray diffraction analyses.
2. Cellulose fibers were predominant in the sample. Cellulose has optical properties similar to chrysotile asbestos. Thus when cellulose is present, it is difficult to identify trace amounts of asbestos by polarized light microscopy.

Based on the best available reading, the analyses results were as follows:

Sample 92283 Wipe 1

PLM analysis found the major fibrous material present was probably fibrous glass. A trace quantity of fine birefringent fibers was noted which may have been due to asbestos or cellulose. The principal peaks noted by XRD were from gypsum but peaks indicative of chrysotile were also noted, albeit small. The results of the above analysis indicate trace asbestos may have been present, but could not be confirmed.

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Sample 92283 Wipe 2

PLM analysis noted many man-made polymeric fibers and cellulose. No asbestiform fibers were seen. XRD analysis noted one peak indicative of chrysotile at a signal level barely above background noise. The results of the above analysis indicate asbestos is suspected but could not be confirmed.

Sample 92283 Wipe 3

PLM analysis noted fibrous glass, a minor amount of cellulose and a minor amount of asbestiform fibers. The only minerals noted by X-ray diffraction were gypsum and quartz. The results of the above analysis indicate a minor amount of asbestos may have been present but could not be confirmed.

Sample 92283 Wipe 4

PLM analysis noted very little fibrous material - all of which was cellulosic. No asbestiform materials or fibrous glass were seen. There was not enough material to perform X-ray diffraction analysis. Based on the above analysis, the sample probably does not contain asbestos but a larger sample should be submitted for confirmation.

Sample 92283 Wipe 5

The major fibrous materials noted by PLM were fibrous glass and mineral wool. No asbestiform materials were seen. XRD analysis found only gypsum and quartz. Based on the above analysis, the sample probably does not contain asbestos but a larger sample should be submitted for confirmation.

Sample 92283 Wipe 6

PLM found major amounts of fibrous glass and cellulose. Analysis for asbestiform materials was complicated by cellulose present but no asbestos was seen. XRD analysis noted gypsum and possibly chrysotile but the signal was barely above background. The results of the above analysis indicate a trace amount of asbestos may have been present but could not be confirmed.

Sample 92283 Wipe 7

PLM noted minor amounts of fibrous materials of which most was fibrous glass or cellulose. A trace amount of man-made polymeric fibers were also seen, but no asbestiform material was noted. The quantity of sample was insufficient for X-ray diffraction analysis. Based on the above analysis, the sample probably does not contain asbestos but a larger sample should be submitted for confirmation.

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Ms. V. Orchier - 3

As noted above, none of the above analyses should be considered conclusive. A bulk analysis of larger quantities of material are needed for definitive results.

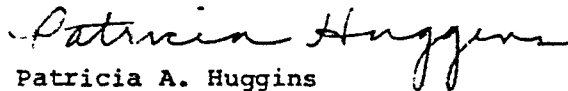
Filter samples were analyzed in accordance with NIOSH P&CAM 239. This method involves sizing and counting fibers using a phase contrast microscope. All fibers which have a physical dimension longer than 5 micrometers (μm) and a length to diameter ratio of 3 to 1 or greater, are counted.

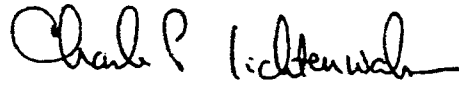
Fiber concentrations, expressed as fibers per cubic centimeter (fibers/cc), were calculated from the sampling data you provided and the analytical data. Results are listed in Table 1.

The Occupational Safety and Health Administration's (OSHA) 8-hour permissible exposure limit (PEL) for asbestos is 2 fibers/cc. The OSHA 8-hour action level is 0.1 fibers/cc.

Please call if you have any questions.

Sincerely,


Patricia A. Huggins


Charles P. Lichtenwalner

MH-78691-CPL-^{PAH}
CPL-mpb

Attachment
As Above

Copy to
P. H. Stark - NYT
G. H. Collings, Jr., M.D.

J. M. Degen - AT&T
R. W. Stone, M.D.

W. J. Schreibeis
G. M. Wilkening

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Table 1

Alrborne Fiber Concentrations
5030 Broadway, New York, New York
September 22, 1983

Sample No.	Sample Description	Sample Duration (Mins.)	Volume of Air Sampled (L)	Fibers ¹ Counted	Concentration* (Fibers/cc)
A-1	Personal Sample During Removal of Ceiling Tiles	20	70	23	0.21
A-2	Area Sample During Removal of Ceiling Tiles	20	10	10.5	0.07
A-3	Area Sample, Hung Ceiling, Storage Room	160	387	16	0.024
A-4	Area Sample, Under Floor, Storage Room	157	372	16.5	0.026
A-5	Area Sample Above Hung Ceiling, Computer Room	120	300	17	0.034
A-6	Area Sample, Under Floor, Computer Room	120	300	15.5	0.030
Blank	-	-	-	4	-

*Concentrations reported are corrected for blank.

¹Fibers counted in 100 microscope fields, 0.011 mm² per field.