NYC 9/11 Public Portal Document

Summary of Asbestos Sampling Results
130 Water Street, New York, N.Y., 10005

Date sampled: November 30, 2001

Four locations were sampled at your building: inside two private residences, an indoor common area (e.g., a lobby or hallway), and a nearby outdoor area (see tables below for sampling results). One air and one dust sample was collected in each of the four locations. An additional air sample was collected in one of the residences for quality control purposes.

Air samples were collected using vacuum pumps to draw air past a filter that was suspended at the height of a person's breathing level. Outdoor dust and debris samples were collected by placing visible material in a container. Indoor dust and debris samples were collected on a filter by vacuuming surfaces. The collected material was weighed, viewed under a microscope, and/or chemically processed to determine the types and quantities of substances present. The materials are being analyzed for fibers such as asbestos, fiberglass, synthetics (e.g. man-made materials such as nylon and polyester), cellulose (e.g. cotton, paper), silica, and for other minerals and small particles.

ASBESTOS AIR TEST RESULTS

The air samples tested from directly outside, in the building lobby, and in the apartments were taken during normal daily activity. All air samples were examined in a laboratory for fibers using the Phase Contrast Microscopy (PCM) method.

Fibers were detected in all of the air samples by PCM analysis; the highest of these was at a level of 0.005 f/cc. For comparison, in the homes above 59th Street, level of fibers found in the air ranged from less than 0.001 f/cc to 0.003 f/cc. Since the PCM air analysis includes non-asbestos fibers, the two highest samples were re-examined by a second laboratory method, transmission electron microscopy (TEM), to determine if any of those fibers were asbestos. No asbestos fibers were found in these two samples by TEM.

Airborne fibers as determined by PCM analysis: An air sample is collected by pulling air through a filter. The filter catches fibers and is sent to a laboratory to determine the number of fibers in the air. Phase contrast microscopy identifies fibers based on size and shape, but not the specific type of fiber. Therefore, the fibers seen by PCM include asbestos fibers as well as other fibers, such as textiles, fiberglass, and cellulose, which might be present in your home. The PCM analysis assumes that all fibers present were asbestos. Therefore, less hazardous fibers that may have been present, such as textiles or fiberglass, are counted along with the asbestos fibers, and the total fiber count is then compared to the asbestos standard. If the results were above 0.003 f/cc using the PCM methodology, additional analysis was performed to determine whether any of the fibers were asbestos. This additional analysis was done for the air sample in one residence since the air sampling results were greater than 0.003 f/cc.

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Results of Phase Contrast Microscopy (PCM) testing of air at 130 Water St., Nov. 30, 2001

Area Sampled	Outside	Common	Residence 1	Residence 2	Residence 2
Sample Numbers	A-O-24	A-C-24	A-R1-24	A-R2-24	A-R2-24*
Concentration of Fibers in Air at 130 Water Street (f/cc)**	0.002	0.001	0.001	0.005	0.005*
Concentration of Fibers (f/cc) in comparison locations	<0.001 to0.001	<0.001 to 0.002	<0.001 to 0.003	<0.001 to 0.003	<0.001 to 0.003
NYC Re-occupancy Standard (f/cc)* **	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**

* Denotes a second air sample taken in the same location for quality control purposes.
** f/cc is fibers in each cubic centimeter (cc) of air. This is calculated from the number of fibers seen on the air filter and the volume of air pulled through the filter measured in cubic centimeters of air.
*** New York City Department of Environmental Protection asbestos clearance criteria for post-abatement work (Rules of the City of New York, Title 15, Chapter 1)

Asbestos in air as determined by Transmission Electron Microscopy (TEM) analysis: TEM analysis is very specific and can distinguish between asbestos and non-asbestos fibers, such as textiles. This analysis determines if the fibers seen in the PCM analysis are asbestos, or if they are some other material. TEM analysis was conducted on all air samples that showed more than 0.003 f/cc in the air by PCM analysis. No asbestos fibers were found in the TEM analysis of these air samples.[2]

Results of Transmission Electron Microscopy (TEM) testing of air at 130 Water St, Nov 30, 2001

Area Sampled	Residence 2	Residence 2
Sample Numbers	A-R2-24	A-R2-24*
Concentration of **Asbestos Fibers** in Air at 130 Water Street (f/cc)**	< 0.001	< 0.001
Concentration of **All Fibers** (f/cc) in comparison locations	< 0.001 to 0.003	< 0.001 to 0.003
NYC Re-occupancy Standard (f/cc)* **	**0.01**	**0.01**

* Denotes a second air sample taken in the same location.
** f/cc is fibers in each cubic centimeter (cc) of air. This is calculated from the number of fibers seen on the air filter and the volume of air pulled through the filter measured in cubic centimeters.
*** New York City Department of Environmental Protection asbestos clearance criteria for post-abatement work (Rules of the City of New York, Title 15, Chapter 1)

[2] The TEM method employed here, NIOSH 7402, counts fibers of the same size as those detected by PCM analysis. Fibers reported here are greater than or equal to 5 microns in length and 0.25 microns in width.

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ASBESTOS DUST TEST RESULTS

In general, the dust and debris samples were examined by two different laboratory methods for asbestos fibers, Polarized Light Microscopy (PLM) and Transmission Electron Microscopy (TEM). PLM is used to define asbestos containing material in dust and debris. A material is considered to be asbestos containing material if it contains more than 1% asbestos using the PLM method. The PLM method only counts the larger asbestos fibers. Therefore, if results by PLM were not greater than 1% asbestos, the sample was then analyzed by the TEM method that does count the smaller fibers. However, TEM analysis is not used for regulatory purposes for dust samples.

No asbestos fibers were found in the dust samples from outside, the common area or in the two residences by the PLM laboratory method. Further analysis by the TEM method detected asbestos in the common area dust at levels of less than 1%. The TEM method did not detect any asbestos fibers in the dust from outside or the two residences.

Fibrous materials in dust found by PLM analysis: Polarized Light Microscopy identifies asbestos fibers by shape and optical characteristics. Other fibers such as fabric (synthetics), paper (cellulose) and fiberglass may be identified in the analysis. The laboratory analyst counts the fibers present to give an estimate of fiber content. PLM is used for regulatory purposes for dust samples.

Results of Polarized Light Microscopy (PLM) testing of dust at 130 Water St, Nov 30, 2001

Area Sampled	Outside	Common	Residence 1	Residence 2
Sample Numbers	SA-C-24	VA-C-24	VA-R1-24	VA-R2-24
Asbestos fibers (%)	None Detected	None Detected	None Detected	None Detected

Asbestos in dust as determined by TEM analysis: TEM analysis was conducted on all dust samples that showed asbestos content by PLM as less than 1%. TEM analysis is very specific, can detect smaller fibers of asbestos and is subject to less interference. This analysis was done to confirm the PLM findings of no asbestos found. However, TEM analysis is not used for regulatory purposes for dust samples.

Results of Transmission Electron Microscopy (TEM) testing of dust at 130 Water St, Nov. 30, 2001

Area Sampled	Outside	Common	Residence 1	Residence 2
Sample Numbers	SA-C-24	VA-C-24	VA-R1-24	VA-R2-24
Asbestos fibers (%)	None Detected	< 1.0%	None Detected	None Detected

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