NYC 9/11 Public Portal Document

Enclosure 1
Results of Minerals and Fibers in Air and for Settled Dust Sampling in Building 26
(16 Jay Street)

On December 1, 2001, air and settled dust samples were collected from inside 2 residential units, 1 common area, and from 1 outdoor location close to your building. Because there was no visible dust present, no outdoor settled dust sample was collected. The samples were analyzed for crystalline minerals and for fibers. The results of samples collected from your building, along with the results of the samples collected in Manhattan comparison residential buildings above 59th Street, are the focus of this enclosure.

Explanation of Tables 1a and 1b: Crystalline Minerals found in Air and Settled Dust in Your Building and the Comparison Areas

Air Sample Collection and Analyses:
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. Air samples were collected for 4 different dust or particulate matter (PM) sizes: PM2.5, PM4, PM10, and PM 100. Particles with diameters of 4 microns or less (PM4 and 2.5) contain the fraction of particles that can be inhaled and enter the air exchange region of the lungs (air sacs). This fraction is often referred to as respirable size particles. The PM10 or thoracic fraction contains dust particles with diameters of 10 microns or less. This fraction includes the PM4 fraction, so it contains the respirable size particles along with particles from greater than 4 and up to 10 microns in diameter. These larger particles can deposit along lung airways. The PM100 or inhalable fraction contains particles with diameters of less than 100 microns. It includes particle sizes that can deposit in the lung air sacs (PM4), the lung airways (PM10), and the nose and throat.

X-Ray Diffraction (XRD) was used to analyze each of the different size ranges for all of the crystalline mineral analytes (quartz, cristobalite, tridymite, calcite, portlandite, gypsum, mica, and halite). XRD analysis identifies crystalline materials by their unique "fingerprint" given off from a beam of X-Ray. Because of quality assurance concerns regarding sample tracking, the results of the XRD analysis are being categorized as estimated values. In addition, because of the sample tracking concerns, we are not certain enough of air sample location (e.g., indoors vs. common indoor area). For this reason, Table 1a only indicates whether a mineral was found (detected) in the size fraction of interest, or not (not detected). Therefore, we are not reporting results by sample location. More detailed information can be found in the final technical report.

The results indicate the presence of quartz in air. Quartz was not found in the air of the comparison homes.

Settled Dust Sample Collection and Analyses:

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Settled dust samples were collected from indoor floors by using a specialized vacuum cleaner. The outdoor samples were collected by scraping visibly settled material into a container. XRD was used to analyze the crystalline mineral content of each sample. Results are reported as percent (%) of the specific mineral per weight of the dust sample.

Quartz, calcite, portlandite, gypsum, and mica were found in your building at levels similar to or lower than those found in the comparison areas. These materials are common components of building and road construction materials.

Please refer to the previous part of this report (executive summary) for the limitations of this data, the possible symptoms of exposure, and recommendations on how to reduce your potential for exposure.

Explanation of Tables 2a and 2b: Fibers found in Air and Settled Dust in Your Building and the Comparison Areas

Air Sample Collection and Analyses:
Air samples were collected for up to an eight-hour period using vacuum pumps to draw air past a filter that was suspended at the height of a person's breathing level. All air samples were analyzed for total fibers using Phase Contrast Microscopy or PCM. If levels of total fibers were higher than the PCM levels found in the comparison areas (0.003 fibers per cubic centimeter of air, or f/cc), the sample was re-analyzed using both Transmission Electron Microscopy (TEM) and Scanning Electron Microscopy (SEM). TEM analysis can distinguish asbestos from other fibers; SEM can distinguish fibrous glass from other fibers.

For an explanation of the asbestos results, please refer to the letter you received from us earlier this year that contained an enclosure titled: "Summary of Asbestos Sampling Results." As PCM results for 2 locations were above levels found in comparison homes, SEM analysis (for fibrous glass) was conducted for the "residence 1" and "common area" samples. Results show the fibrous glass was found at levels below those seen in the comparison homes.

Settled Dust Sample Collection and Analyses:
Settled dust samples were collected indoors and outdoors in the same manner described previously. At the laboratory, samples were analyzed for asbestos and fibrous glass fibers using Polarized Light Microscopy (PLM). PLM can distinguish asbestos from non-asbestos fibers by the appearance and color given off by each different type of fiber.

For an explanation of the asbestos results, please refer to the letter you received from us earlier this year that contained an enclosure titled: "Summary of Asbestos Sampling Results." Indoor settled dust levels of fibrous glass were found at 5% in one location; none was detected in the comparison homes. No visibly settled dust was available to collect in your building or in comparison building outdoor locations.

Please refer to the previous part of this report (executive summary) for the limitations of this data, the possible symptoms of exposure, and recommendations on how to reduce your potential for exposure.

Table 1a **Crystalline Minerals in Air for Building 26 and the upper Manhattan Comparison Area** (milligrams per cubic meter of air)

	Building 26		Comparison Area	
Minerals in Air	**Inhalable (PM100)**	**Thoracic - Respirable (PM10-PM4)**	**Inhalable (PM100)**	**Thoracic - Respirable (PM10-PM2.5)**
Quartz	**Detected**	ND	ND	ND
Cristobalite	ND	ND	ND	ND
Tridymite	NA	NA	NA	NA
Calcite	ND	ND	ND	ND
Portlandite	ND	ND	ND	ND
Gypsum	ND	ND	**Detected**	**Detected**
Mica	ND	ND	ND	ND
Halite	ND	ND	ND	ND

NA = not analyzed
ND = not detected

Table 1b **Approximate Levels Crystalline Minerals in Settled Dust for Building 26 and the upper Manhattan Comparison Area** (percent of sample containing the mineral)

	Building 26				Comparison Area*		
Minerals in Settled Dust	**Common Area**	**Outdoor**	**Residence #1**	**Residence #2**	**Common Area**	**Outdoor**	**Residences**
Quartz	**0.7**	NS	ND	ND	**1.3**	NS	**2.2**
Cristobalite	ND	NS	ND	ND	ND	NS	ND
Tridymite	ND	NS	ND	ND	ND	NS	ND
Calcite	**1.6**	NS	ND	ND	**0.4**	NS	**0.9**
Portlandite	**0.6**	NS	ND	ND	**0.1**	NS	**0.1**
Gypsum	**2.3**	NS	ND	**0.1**	**3.1**	NS	**4.2**
Mica	**0.1**	NS	ND	ND	ND	NS	**0.1**
Halite	ND	NS	ND	ND	ND	NS	**0.4**

*Results are maximum values found in the comparison area
NS = not sampled
ND = not detected

Table 2a **Fibers in Air for Building 26 and the upper Manhattan Comparison Area** (fibers per cubic centimeter of air)

	Building 26				Comparison Area*		
Fibers in Air	**Common Area**	**Outdoor**	**Residence #1**	**Residence #2**	**Common Area**	**Outdoor**	**Residences**
Total Fibers (PCM)	**0.004**	**0.001**	**0.012**	**<0.001**	**0.002**	**0.001**	**0.003**
Asbestos (TEM)	**<0.001**	NA	**<0.001**	NA	NA	NA	NA
Fiberglass (SEM)	**<0.00004**	NA	**<0.00004**	NA	**0.00004**	**0.00004**	**0.00009**

*Results are maximum values found in the comparison area
PCM = phase contrast microscopy
TEM = transmission electron microscopy
SEM = scanning electron microscopy
NA = not analyzed

Table 2b **Fibers in Settled Dust for Building 26 and the upper Manhattan Comparison Area** (percent of sample containing fibers)

	Building 26				Comparison Area*		
Fibers In Dust	**Common Area**	**Outdoor**	**Residence #1**	**Residence #2**	**Common Area**	**Outdoor**	**Residences**
Asbestos (PLM)	ND	NS	ND	ND	ND	NS	ND
Asbestos (TEM)	ND	NS	ND	ND	ND	NS	ND
Fiberglass (PLM)	**5**	NS	ND	ND	ND	NS	ND

*Results are maximum values found in the comparison area
PLM = polarized light microscopy
TEM = transmission electron microscopy
NS = not sampled
ND = not detected