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July 30, 2003

Mr. Walter Melnick
Federal Emergency Management Agency
Federal Recovery Office
80 Centre Street, 3rd Floor
New York, NY 10013

Dear Mr. Melnick,

The U.S. Environmental Protection Agency (EPA) and NYC Department of Environmental Protection (DEP) are in receipt of the analytical test results supplied to the Federal Emergency Management Agency (FEMA) by residents of 114 Liberty Street via Congressman Jerrold Nadler's office. These samples were collected and analyzed in April 2003 and the data was received by FEMA on June 24 and EPA on June 25, 2003. As explained below we believe that the extensive data collected by DEP and its contractors to clear this building are valid.

As part of the EPA, FEMA and DEP voluntary clean-up program for residential units in lower Manhattan, DEP was responsible for the clean-up of World Trade Center (WTC) dust and debris from unoccupied, uncleaned residential buildings; one of which was 114 Liberty Street. EPA collaborated with DEP on this part of the program.

DEP developed the scope of work following the requirements set forth in Title 15 Chapter 1 of RCNY (Asbestos Control Program) Rules. Copies of this scope of work were distributed to EPA, the building management and the residents for input and comment. In addition, sampling was done for contaminants of potential concern following EPA protocols established specifically for EPA's WTC Residential Confirmation Cleaning Study. The analytical results were compared to health-based benchmarks established by EPA's Interagency Indoor Air Task Force. The contaminants of potential concern included: asbestos, lead, dioxin, PAHs (Poly Aromatic Hydrocarbons), fibrous glass and crystalline silica.

The clean-up started on March 6, 2003 and was completed on March 29, 2003. The test results were reviewed and indicated that all the primary clearance levels were achieved.

In April of 2003, DEP sent the Board of Directors a letter informing them that the clean-up activities had been completed as per the clean-up and monitoring specifications, as well as the access agreements for 114 Liberty Street. Attached to the letter were copies of correspondence from EPA regarding the clearance levels for contaminants of possible concern and

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enclosures summarizing the analytical results. Included in the letter was reaffirmation of DEP's Asbestos Control Program's staff observations whereby pre-existing building materials were identified as being suspect asbestos-containing material (ACM). Those materials included thermal system insulation, surfacing material and vinyl asbestos tiles. Copies of DEP's April 24, 2003 and EPA's April 18, 2003 letters are attached for your perusal.

The following provides the results of our review of the above-described data submitted to you by the residents of 114 Liberty Street:

Asbestos Data

Based on the results that were received, it appears that eleven wipe samples and sixteen microvacuum samples were collected by Ambient Group Inc. and analyzed by EMSL Analytical Inc. for asbestos. An additional wipe sample and two microvacuum samples were submitted as blanks. A summary of the results is presented below.

Location	Matrix	Sample Size	Minimum Conc. (s/cm^2)	Average Conc. (s/cm^2)	Maximum Conc. (s/cm^2)
All locations	Wipe	11	8,056	595,937	4,327,650
Below floor	Wipe	1	11,681	--------	11,681
Wall Tracking	Wipe	9	8,056	726,108	4,327,650
Below Light Switch	Wipe	1	8,652	--------	8,652
Blank	Wipe	1	2,164	--------	2,164
All Locations	Microvacuum	16	8,038	284,488	1,115,570
Below Floor	Microvacuum	10	40,192	369,830	1,115,570
Wall Tracking	Microvacuum	1	15,058	--------	15,058
I-beam	Microvacuum	2	7,636	7,636	8,038 (ND)
Column	Microvacuum	1	8,038 (ND)	--------	8,038 (ND)
Pipe Shaft	Microvacuum	1	71,592	--------	71,592
Front Office	Microvacuum	1	743,552	--------	743,552
Blank	Microvacuum	2	803	--------	803

ND= asbestos not detected

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The interpretation of these results is constrained by the scientific uncertainty regarding the potential for the measured concentrations in settled dust to become airborne. There are no standards currently available for assessing potential health consequences from asbestos through the evaluation of wipe or microvacuum samples. A scientific peer review panel (World Trade Center October 21- 22, 2002 Peer Review Meeting Notes. Available at www.tera.org.) recently evaluated the technical soundness of estimating airborne asbestos concentration as a function of asbestos concentration in settled dust for the purpose of setting health-based benchmarks. The panel recommended against such an approach based on the significant uncertainty associated with the numerous factors (such as activity patterns, sample location, surface characteristics, air exchange rates and room volume) that influence this relationship. EPA's use of surface wipe and microvacuum sampling at its WTC Residential Confirmation Cleaning Study site (110 Liberty St.) was intended to provide a measure of cleaning effectiveness, and not a risk-based health assessment. EPA's WTC Residential Confirmation Cleaning Study can be obtained at http://www.epa.gov/wtc.

Primarily, risk from asbestos is directly related to its concentration in air. Consequently, post-cleaning aggressive (i.e., use of a leaf blower and fans) air sampling was conducted at 114 Liberty St. by DEP's contractors to insure that asbestos levels in air met regulatory-based and risk-based clearance criteria.

The EMSL analytical report does not provide detailed information on sample collection; however, it appears many samples were collected from inaccessible areas below the hardwood flooring, or from areas of unknown accessibility such as, wall tracking, pipe shafts and I-beams. The scope of work developed for the clean up activities was designed for the removal of debris from the collapse of the World Trade Center and did not include the removal or remediation of pre-existing building materials. As a matter of precaution, any residual dust and, thus, potential reservoirs of asbestos, from currently accessible areas should be cleaned using the technique of vacuuming and wet-wiping.

Asbestos containing materials (ACMs), such as floor tiles, were observed during DEP's cleaning of the building. Some of the ACMs may be present under the hardwood flooring, thus samples collected from this location may be more representative of the building materials contained within the building rather than indicating contamination from other sources. Additionally, DEP noted and reported the presence of thermal system insulation and damaged asbestos-containing fireproofing within the building. Building representatives were provided with this information and were informed of the provisions of Title 15, Chapter 1 of the Rules of the

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City of New York that require the determination of the presence and quantity of ACM prior to alteration, renovation, modification, or demolition activities.

It should also be noted that several errors were detected in the calculation of sample concentrations. Two samples had incorrect concentrations reported, samples 221160-02 and 221160-03 (reported on page 6 of the report) should have reported concentrations of 1,471,401 and 432,765 s/cm^2, respectively.

Mold and Bacteria Data

Based upon the results that were received, it appears that one sample was collected for mold and bacteria from a kitchen floor and counter on the third floor. The sample was analyzed by P&K Microbiology Services, Inc. with the number and type of fungi and bacteria being counted and identified. Seven fungi species were identified with the highest count for any one species being 900 colony forming units/square inch (CFU/in^2) and a total sum of 2,200 CFU/in^2, while six bacteria species were identified with the highest count for any one species being 500 CFU/in^2 and a total sum of 1,600 CFU/in^2.

Mold

Interpretation of these results cannot be completed using standard practices. The standard practice for determining if an indoor environment is being impacted by mold is to compare the species and concentration of indoor mold samples to outdoor mold samples that were collected during the same sampling event. However, based on the data received, it appears that there were no outdoor samples collected for comparison. Using an approach that is less desired than the standard practice, the following conclusions can be drawn from the data. Although there are no specific standards, the general rule of thumb for interpreting mold data usually considers concentrations greater than 10,000 CFU/in^2 to be the low end of the spectrum for beginning additional mold investigation, and concentrations greater than 100,000 to signify "mold contamination". The concentrations for each individual species, as well as the total sum for all species was well below 10,000 CFU/in^2. In addition, the fungi species observed are the most frequent species identified and are ubiquitous in the environment, both outdoors and indoors. This leads to an overall conclusion that the concentration and species of mold present are typical of an indoor environment. More information can be obtained from the American Industrial Hygiene Association at http://www.aiha.org/GovernmentAffairs-PR/html/oomold.htm.

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Bacteria

The interpretation of the bacteria results has the same limitations as discussed above for mold, namely, that indoor concentrations should be compared to outdoor concentrations. There is less information about indoor concentrations of bacteria than there is for mold, however one report (http://www.atsdr.cdc.gov/HAC/PHA/franklinfungi/ief_p1.html) from the Agency for Toxic Substances and Disease Registry (ATSDR) reports that concentrations of *Bacillus* at 1,000 CFU/in2 and *Staphylococcus* at 2,400 CFU/in2 are low and most likely are a normal part of the bacterial load. The concentrations reported from 114 Liberty are much lower than these values. Therefore, even though there was not an appropriate outdoor sample collected for comparison, it can be concluded that the bacterial concentrations reported from the one indoor sample that was collected are typical of an indoor environment.

If you have any questions related to health-based benchmarks, please contact Dr. Mark Maddaloni of EPA at (212) 637-3590. If you have any questions related to mold or bacteria, please contact Mr. Chris D'Andrea of the New York City Department of Health and Mental Hygiene at (212) 788-4290.

If you require any additional information, please contact Michael Gilsenan of NYCDEP at 718 595-4418.

Sincerely,

Robert C. Avaltroni
Deputy Commissioner
Bureau of Environmental Compliance
NYCDEP

Kathleen Callahan
Assistant Regional Administrator
Response and Recovery Operations
USEPA

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