



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF  
SOLID WASTE AND EMERGENCY  
RESPONSE

**MEMORANDUM**

**DATE:** February 10, 2002

**SUBJECT: NYC DEPARTMENT OF HEALTH MISREPRESENTATIONS  
February 8, 2002 press release:  
“NYC Department of Health Presents Findings  
from Indoor Air Sampling in Lower Manhattan”**

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**TO:** Affected Parties and Responsible Officials

A February 8, 2002 press release from the New York City Department of Health (NYC DOH) (attached) contains an interpretation of preliminary data from a study not yet released by the Agency for Toxic Substances and Disease Registry (ATSDR) of the Centers for Disease Control (CDC). This study conducted tests in apartments and buildings in lower Manhattan which were impacted by fallout from the collapse of the World Trade Center (WTC).

The ATSDR does not plan releasing the study or preliminary results to the public until spring, so it is difficult to determine whether or not the NYC DOH correctly represented the data. However, there is at least one major clear misrepresentation of the data by the NYC. There is evidence of other misrepresentations as well.

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<sup>1</sup> The conclusions and opinions in this memorandum are those of the author and do not necessarily reflect those of the U.S. Environmental Protection Agency.

## AIRBORNE ASBESTOS

The NYC DOH made the following claim in its press release:

The air samples from inside the buildings showed no elevated levels of asbestos. [NYC DOH]

The DOH does not mention in its press release exactly what the level of asbestos would be considered “elevated.” However, the press release refers readers to the NYC Department of Environmental Protection (NYC DEP) for more information. The cited NYC DEP web page (attached) states that the “safe” level, or standard, is 0.01 fibers per cubic centimeter (f/cc) (which is the same as fibers/milliliter):

The US and NYC standard for asbestos in community and residential buildings is 0.01 fibers/cubic centimeter (f/cc) [same as f/mL] in indoor air. ... As testing continues, there may be the possibility of occasional short-term increases in levels of asbestos in the air above the residential standard of 0.01 f/cc of air. [NYC DEP]

This is a misrepresentation. Due to the many public discussions over the safe level of asbestos in air, there can be no misunderstanding on the part of either the NYC DOH or DEP that the residential or ambient air standard of the U.S. Environmental Protection Agency (EPA) is 0.01 f/mL. And by law, any state or city standards for asbestos must be at least as stringent as the federal EPA standard.<sup>2</sup>

### EPA standard for asbestos

The EPA standard for asbestos in indoor and outdoor air is found in its Integrated Risk Management Information System (IRIS), attached, and other public documents. It is the policy and goal of EPA to protect at the 1 in a million cancer risk level ( $10^{-6}$  risk level), the point of departure. In all cases, action by EPA is triggered by any risk greater than 1 in 10,000. The EPA air standards for asbestos in inside and outside air at the different risk levels are given in the table below:

CANCER RISK LEVEL		AIR CONCENTRATION OF ASBESTOS
number of cancers	risk level	fibers per milliliter (f/mL), “PLM” fraction of fibers over 5 micrometers long
1 in 1,000,000	$10^{-6}$ (= E-6)	0.000004 f/mL (= 4E-6 f/mL)
1 in 100,000	$10^{-5}$ (= E-5)	0.00004 f/mL (= 4E-5 f/mL)
1 in 10,000	$10^{-4}$ (= E-4)	0.0004 f/mL (= 4E-4 f/mL)

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<sup>2</sup> The EPA itself has erroneously referred to the AHERA TEM test level of 70 structures per square millimeter as a “standard” on its website at <http://www.epa.gov/epahome/wtc/activities.htm>.

The safe level and goal of EPA, the actual air standard, is 0.000004 f/mL, and the action level for EPA to trigger a cleanup is 0.0004 f/mL. **The EPA standard is thus 2500 times lower** than the 0.01 f/mL level claimed to be the standard by the NYC DOH and DEP.

It is particularly important to test asbestos at the  $10^{-6}$  risk level, because other carcinogens and possible carcinogens are potentially present in WTC fallout, including fiberglass, dioxins, PCB's, and heavy metals. If several are present, the carcinogenic risk could be additive and result in a higher aggregate cancer risk.

### **Origin of NYC claim that their standard and the US standard is 0.01 f/mL**

The NYC DOH and DEP are apparently basing their claim that the standard is 0.01 f/mL on a particular test that must be conducted while using a one-horsepower leaf blower to stir up all the asbestos in a room after certified professional abatement. This is the AHERA TEM clearance test (Asbestos Hazard Emergency Response Act transmission electron microscopy).

The EPA regulations for conducting the AHERA TEM clearance test are contained in Title 40 of the Code of Federal Regulations, Part 763, Appendix A. Regulations are implementations of statutes, and thus are the law and legally binding. States and cities must adopt these regulations or have more stringent regulations. The AHERA TEM clearance test is a TEST, not an air STANDARD. Nowhere in any of the EPA regulations is the 0.01 f/mL level called a "standard" for air. The procedures for this test are given in part below:

#### 40 CFR - CHAPTER I - PART 763

Appendix A to Subpart E -- Interim Transmission Electron Microscopy Analytical Methods -- Mandatory and Nonmandatory -- and Mandatory Section to Determine Completion of Response Actions

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#### II. Mandatory Transmission Electron Microscopy Method

##### A. Definitions of Terms

1. *Analytical sensitivity* -- Airborne asbestos concentration represented by each fiber counted under the electron microscope. It is determined by the air volume collected and the proportion of the filter examined. This method requires that the analytical sensitivity be no greater than 0.005 structures/cm<sup>3</sup> . . .
14. The final plastic barrier around the abatement area remains in place for the sampling period.
15. After the area has passed a thorough visual inspection, use aggressive sampling conditions to dislodge any remaining dust. (See suggested protocol in Unit III.B.7.d.) . . .
17. A minimum of 13 samples are to be collected for each testing site consisting of the following:
  - a. A minimum of five samples per abatement area.
  - b. A minimum of five samples per ambient area positioned at locations representative of the air entering the abatement site.

...

[Unit III.B.]7. Abatement area sampling.

- a. Conduct final clearance sampling only after the primary containment barriers have been removed; the abatement area has been thoroughly dried; and, it has passed visual inspection tests by qualified personnel. (See Reference 1 of Unit III.L.)
- b. Containment barriers over windows, doors, and air passageways must remain in place until the TEM clearance sampling and analysis is completed and results meet clearance test criteria. The final plastic barrier remains in place for the sampling period.
- c. Select sampling sites in the abatement area on a random basis to provide unbiased and representative samples.
- d. After the area has passed a thorough visual inspection, use aggressive sampling conditions to dislodge any remaining dust.
  - i. Equipment used in aggressive sampling such as a leaf blower and/or fan should be properly cleaned and decontaminated before use.
  - ii. Air filtration units shall remain on during the air monitoring period.
  - iii. Prior to air monitoring, floors, ceiling and walls shall be swept with the exhaust of a minimum one (1) horsepower leaf blower.
  - iv. Stationary fans are placed in locations which will not interfere with air monitoring equipment. Fan air is directed toward the ceiling. One fan shall be used for each 10,000 ft<sup>3</sup> of worksite.  
[40 CFR 763, App. A]

The reason that the EPA designed the AHERA TEM clearance test, requiring first certified asbestos abatement procedures followed by a leaf blower, and then a fan, followed by air testing to the 0.01 f/mL (PCM) level (equivalent to 0.02 s/mL or 70 structures per square millimeter) was to save costs and time. EPA found that using a leaf blower increased asbestos concentrations in air by thousands of times. One study showed that using a leaf blower increased airborne asbestos concentrations over 100 times that caused by even vigorous broom cleaning.<sup>3</sup> And vigorous broom cleaning has been demonstrated to increase asbestos levels hundreds or thousands of times over that of passive conditions which do not disturb dusts. Testing at the low levels that are actually those of health concern, 0.000004 f/mL, can often take 24 or more hours, which was found to be impractical for asbestos abatement contractors.

Even if testing is done at the low levels associated with asbestos health effects (0.000004 f/mL), there must be human activities or simulated human activities in the same room at the same time of the testing. When testing airborne asbestos levels inside homes in Libby, Montana, the Superfund site, EPA had both stationary air monitors and monitors worn by residents going about their normal daily activities. See the attached risk assessment for the Libby site for a description. Another study showed that asbestos concentrations in air can be undetectable or below 0.005 f/mL when there are no activities in the room to stir up dusts, but as high as 0.09 to 54 f/mL when activities such as vacuuming, broom sweeping, gym activities, etc. are going on in

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<sup>3</sup> Millette, J., *et al.* Applications of the ASTM Asbestos in Dust Method D 5755. In: Advances in Environmental Measurement Methods for Asbestos, ASTM Special Technical Publication 1342.

the room to disturb the dusts.<sup>4</sup>

The following table gives the legal/legitimate and illegal/illegitimate ways to determine whether asbestos levels in air in homes, offices, or schools meets EPA standards:

<b>LEGAL/LEGITIMATE AIRBORNE ASBESTOS TESTING METHODS</b>		<b>ILLEGAL/ILLEGITIMATE AIRBORNE ASBESTOS TESTING METHODS</b>	
0.000004 f/mL (PCM) laboratory sensitivity (detection limit), the EPA safe level.	0.01 f/m (PCM) = 0.02 s/mL (all fibers) = 70 structures per square millimeter	0.000004 f/mL (PCM) laboratory sensitivity (detection limit), the EPA safe level.	0.01 f/m (PCM) = 0.02 s/mL (all fibers) = 70 structures per square millimeter
Conditions of actual or simulated human activities, such as a child jumping on a contaminated couch or rolling around on contaminated carpet	Testing for this level ONLY AFTER the following conditions, as required by law in 40 CFR 763:  1. Completion of professional certified asbestos abatement  2. Suspension of dusts by using one-horsepower leaf blower followed by fans during actual testing.	Passive conditions, <i>i.e.</i> , no activities to disturb dusts to cause them to be airborne.	This level under either passive testing conditions (no human activity) or even normal human activities

### **Probable testing methods of the CDC's ATSDR**

Although we do not know what methods the ATSDR used to test air inside buildings, it is doubtful that they utilized techniques that can detect asbestos at the 0.000004 f/mL level. If the ATSDR did test at this low level, it is unknown whether there were simulated or actual human activities taking place at the same time to disturb the dusts.

It is also doubtful that if they tested the air using less sensitive methods, that they used the aggressive leaf-blower conditions required for the AHERA TEM test. It would be impossible to use the aggressive leaf-blower test conditions in currently occupied spaces, as it could contaminate surfaces that had previously been cleaned. However, this is no excuse, since there are plenty of unoccupied apartments and business spaces which could be sealed off and tested, and contaminated carpeting and upholstered furniture from the same building could be placed in the space to be tested. (It would be a minor cost to purchase the carpeting or furniture from other tenants in the building.)

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<sup>4</sup> Millette, J. R., and Hays, S. M. (1994), Chapter 8, Re suspension of Settled Dust, in: *Settled Dust Sampling and Analysis*, page 63, Table 2, Lewis Publishers, ISBN 0-87371-948-4.

## **INDOOR DUST TESTING**

The NYC DOH described the results of the indoor dust testing as follows:

Testing was also conducted in four buildings above 59<sup>th</sup> Street to provide information on the background level of various substances present indoors in New York City.

...

The analysis of 98 dust samples for asbestos taken from the inside and outside of residential buildings in lower Manhattan indicated that while 20% were above background levels, only two samples which were taken from outdoors required abatement. Professional abatement work was completed in this area.

Samples taken from inside and outside of residential buildings in lower Manhattan were analyzed for fibrous glass. Fibrous glass was detected in 43 of the 98 samples taken. The results of air sampling for fibrous glass, and for air and surface testing of other materials, are not yet available.

It is alarming that 20% of samples from indoors (or this could be both indoors and outdoors) were over background levels. Although it was not stated, there could also be more than 20% of the indoor dusts that had detectable levels of asbestos, but which were not over background. At the Libby, Montana Superfund site (see attachment), only 11 to 23% of the indoor dust samples had detectable asbestos from the random homes selected in Phase 1 of the Libby investigation.

It is also inappropriate for the NYC DOH to establish background by going to other areas of Manhattan. The buildings above 59<sup>th</sup> Street could have been contaminated with WTC fallout, or could be contaminated from other sources of asbestos. These “background” buildings might also have unsafe levels of asbestos and require professional abatement. It is an unfair comparison to imply that only 20% of the inside building dusts in Lower Manhattan had elevated levels that required abatement, based on a comparison to levels in buildings above 59<sup>th</sup> Street, which might themselves be unsafe.

The finding of fibrous glass (fiberglass) in 44% of the samples is also alarming. It is also unfortunate that the ATSDR did not test for other hazardous substances, such as dioxins, PCB's, and heavy metals such as mercury.

## **OUTDOOR DUST TESTING**

The NYC DOH made the following statement regarding outdoor dusts:

The analysis of 98 dust samples for asbestos taken from the inside and outside of residential buildings in lower Manhattan indicated that while 20% were above background levels, only two samples which were taken from outdoors required abatement. Professional abatement work was completed in this area.

Although the NYC DOH does not state what level they consider to be a “safe” level in the outdoor dusts that triggered professional abatement, it can be deduced. The NYC DEP issued a letter on October 25 to residents of Lower Manhattan, stating that professional abatement was only necessary if indoor dusts contained 1% asbestos or higher. See attached.

The 1% asbestos level is not considered to be a “safe” level by the EPA. It is not a risk-based number. It was developed to apply to the asbestos products themselves that were used in homes and other buildings, because it was found that these products always contained 1% or more asbestos. The dusts in a building that used these asbestos materials would always have lower levels of asbestos than the asbestos materials themselves. The EPA regulations require the removal or management in-place of the asbestos materials (at 1% asbestos or higher) and then the thorough abatement of all contaminated surfaces, whether containing 1% asbestos or not.

EPA has determined that levels of asbestos lower than 1% could present hazards:<sup>5</sup>

Levels of 1% or less could present a risk where there is enough activity to stir up soil and cause asbestos fibers to become airborne.

In one independent study, it was found that soils containing only 0.001% asbestos were still capable of producing measurable airborne asbestos concentrations greater than 0.01 fibers per milliliter (equivalent to structures per milliliter), which is an air concentration thousands of times higher than the EPA safe level of 0.000004 f/mL.<sup>6</sup>

## **CONCLUSIONS**

The CDC’s ATSDR should immediately provide the public with all the information and data that it has supplied to the NYC DOH, so that an honest evaluation can be made. Through its misrepresentations, NYC DOH is giving the public a false sense of security and the erroneous belief that exposures to asbestos and fiberglass are not hazardous, and also that there are no other hazardous substances present because the ATSDR did not test for them. Since the full study will not be released until spring, there are many months that may go by with additional needless exposures, particular during unsafe cleanups by citizens themselves.

It is a violation of the Administrative Procedures Act and the Sunshine Act for a federal entity such as the ATSDR to provide preferential treatment to the NYC DOH by the early release of

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<sup>5</sup> [www.epa.gov/region8/superfund/libby/qsafe.html](http://www.epa.gov/region8/superfund/libby/qsafe.html)

<sup>6</sup> Addison, J. (1995) Vermiculite: a review of the mineralogy and health effects of vermiculite exploitation. Reg. Tox. Pharm. 21: 397 - 405.

preliminary data without simultaneously releasing the same data to the public. The fact that the NYC DOH requested the study does not entitle it to receive any results prior to the public. Oftentimes industry, public interest groups, or even individual citizens request studies by federal agencies. When any data resulting from these studies is released, it is released to all parties simultaneously. The NYC DOH has no special standing in this regard.

## **LIST OF ATTACHMENTS**

This version of the memorandum does not contain the attachments, because it has been difficult for some to open the file with the attachments. However, you can access the same documents from the web sites listed with the attachments.

You can also access this memo with all of the attachments at either:

[www.NYenviroLAW.org](http://www.NYenviroLAW.org) or

[http://cbns.qc.edu/asbestos\\_references.pdf](http://cbns.qc.edu/asbestos_references.pdf)

You can download Adobe Acrobat Reader Version 4.0 for free from a very dependable, easy, safe web site at: <http://www.adobe.com/products/acrobat/readstep.html>

NYC Department of Health (February 8, 2002) NYC Department of Health presents findings from indoor air sampling in Lower Manhattan. Posted at: <http://www.nyc.gov/html/doh/html/public/press02/pr08-208.html> or [www.NYenviroLAW.org](http://www.NYenviroLAW.org)

NYC Department of Environmental Protection. (Undated) Air, noise and hazardous materials. Web page posted at <http://www.nyc.gov/html/dep/html/aimonit.html>

U.S. EPA (August, 2001) Integrated Risk Management Information System (IRIS) Summary for Asbestos, posted at <http://www.epa.gov/iris/subst/0371.htm>

USEPA (2001) Appendix A to Subpart E -- Interim Transmission Electron Microscopy Analytical Methods --Mandatory and Nonmandatory -- and Mandatory Section to Determine Completion of Response Actions, 40 CFR - CHAPTER I - PART 763. Posted at: [www.epa.gov/epahome/cfr40.htm](http://www.epa.gov/epahome/cfr40.htm)

Miele, J. A., Commissioner, NYC Department of Environmental Protection(October 25, 2001) Letter to Residents of Lower Manhattan. Posted at [www.NYenviroLAW.org](http://www.NYenviroLAW.org)

Weis, C. P., Senior Toxicologist/Science Support Coordinator, U.S. EPA (December 20, 2001) Excerpts from: Amphibole mineral fibers in source materials in residential and commercial areas of Libby pose an imminent and substantial endangerment to public health. Posted at: <http://www.epa.gov/region8/superfund/libby/riskassess.html>

