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

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

MEMORANDUM

DATE: December 3, 2001

SUBJECT: **WORD TRADE CENTER ASBESTOS**

TO: Lillian Bagus, Chief, Waste Identification Branch
HWID, Office of Solid Waste, US EPA

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This memorandum will bring you up to date on the World Trade Center asbestos situation and my efforts supplying information. The following topics are addressed:

1. HISTORY, including recent official EPA statements compared to EPA's established scientific policies and regulatory precedents on asbestos.

2. NEED FOR SAFE CLEANUP METHODS to protect citizens by utilizing the strict, science-based EPA national standards for asbestos cleanup and abatement.

HISTORY

9/11/01 - World Trade Center (WTC) towers collapse

On September 11, 2001, the World Trade Center (WTC) towers collapsed after the impact of heavily fuel laden passenger jets. The implosion pulverized asbestos to ultra-fine particles, spreading them over a large area in lower Manhattan.

The WTC was built from 1968 to 1972. A slurry mixture of asbestos and cement was sprayed on as fireproofing. This practice was halted in 1971 because of legislation. Some, but not all of the asbestos was removed in a later abatement program.

9/13/01 - EPA Administrator claims no apparent asbestos hazard

In a 9/13/01 press release, Governor Whitman, the EPA Administrator, announces no hazard, with incomplete knowledge:

> "EPA is greatly relieved to have learned that there appears to be no significant levels of asbestos dust in the air in New York City. . .
> "Public health concerns about asbestos contamination are primarily related to long-term exposures. Short-ter, low-level exposure of the type that might have been produced by the collapse of the World Trade Center buildings is unlikely to cause significant health effects."
> (www.epa.gov/epahome/newsroom.htm)

9/14/01 - EPA finds asbestos over 1% at Ground Zero

9/14/01 - Press article quotes EPA that some dust levels were over 1% asbestos, but only at Ground Zero. (9/14/01, Asbestos Alert, Newsweek, www.msnbc.com, also posted at www.nycosh.org/linktopics/WTC-catastrophe.html)

9/18/01 and 9/21/01 - EPA Administrator reiterates no asbestos hazard

Governor Whitman states in a 9/18/01 press release:

> "We are very encouraged that the results from our monitoring of air quality and drinking water conditions in both New York and near the Pentagon show that the public in these areas is not being exposed to excessive levels of asbestos or other harmful substances . . . I am glad to reassure the people of New York and Washington, D.C. that their air is safe to breathe and their water is safe to drink".
> (www.epa.gov/epahome/newsroom.htm)

In a 9/21/01 press release, Governor Whitman states:

> "EPA has been very aggressive in monitoring for potential environmental problems in the aftermath of the World Trade Center attack, and I am very pleased by what we've discovered. New Yorkers and New Jersians need not be concerned about environmental issues as they return to their homes and workplaces."
> "Only seven samples taken at or near ground zero have had marginally higher levels of asbestos that exceed EPA's level of concern for long-term exposure."
> (www.epa.gov/epahome/newsroom.htm)

10/3/01 - EPA Administrator claims no hazard, despite concurrent release of data showing 1% or over asbestos 5 to 7 blocks from Ground Zero

Governor Whitman's 10/3/01 press release states

> ". . . no evidence of any significant public health hazard to residents, visitors or workers beyond the immediate World Trade Center area." (www.epa.gov/epahome/newsroom.htm)

This same press release states that available EPA data now shows that 48 of 177 bulk dust and debris samples showed asbestos over 1 %. These locations were up to 5 to 7 blocks from Ground Zero. The press release made no comment on the significance of these findings. (www.epa.gov/enviro/nyc/bulkdust/)

The action level under the Clean Air Act (CAA) for asbestos is 1% in surface dusts, debris, and other materials. The CAA regulations for asbestos are under the National Emission Standards for Hazardous Air Pollutants (NESHAP).

The hazard and the regulations are tied to the concentrations in the dusts and other materials themselves,, not in the air, because it is what you do with the dust/material that determines the exposure levels. If the dust is stirred up during an uncontrolled cleanup operation indoors, it will generate higher airborne asbestos levels. That is why the asbestos NESHAP does not give any safe air concentrations in the standard itself, only concentrations in the surface dust itself. These national standards are science-based, peer reviewed, and have been subjected to and withstood numerous court challenges.

EPA took its airborne asbestos readings outdoors where the air is diluted. Thus, EPA's outdoor air readings are irrelevant in determining whether there are any hazards inside during a cleanup or other normal activities.

It was contrary to the legally-binding applicable CAA NESHAP standards for Governor Whitman to claim that there was no significant health hazard beyond the immediate vicinity of Ground Zero, because she had data at this time showing asbestos in surface dusts at 1% or more beyond Ground Zero.

10/3/01 - Study by HP Environmental uses more sensitive test methods, finds higher asbestos than EPA, and smaller particle sizes

Press articles report on new study by HP Environmental, which used a more sensitive test method than EPA. The EPA method could only detect asbestos particles greater than 0.5 microns in size, a size which is less hazardous. HP Environmental also found uniquely elevated concentrations of very small-sized asbestos particles, more easily aerosolized, "an asbestos fiber size distribution not previously encountered".

As an example, when HP Environmental tested air in two buildings that were up to 3 blocks from Ground Zero, only 2 of 11 samples showed asbestos above the limit using the EPA method, but

the more sensitive method by HP Environmental showed 7 of 11 samples had hazardous levels.

The complete study was posted on the American Industrial Hygiene Association (AIHA) website for a total of 5 hours on 9/3/01 before it was removed. The AIHA has not admitted its removal was motivated by the fact that it conflicted with Governor Whitman's press release of the same day claiming no hazardous exposures to asbestos except at Ground Zero.

HP Environmental is in Herndon, VA, Dr. Granger, lead investigator. It also performed the asbestos studies when the Trade Towers were bombed in 1993, and many other asbestos studies for the government. The complete study will soon be posted at www.nycosh.org/linktopics/WTC-catastrophe.html, www.nyenvirolaw.org and other sites. Press articles may be found by using the following search string: <<asbestos world trade "HP Environmental">>.

10/12/01 - Ground Zero Elected Officials Task Force commissioned study shows hazardous asbestos levels in apartments

The Ground Zero Elected Officials Task Force includes U.S. Congress members, NY State Assembly and Senate members, and New York City Council members and other officials representing citizens affected by the Trade Tower collapse. They commissioned a study by Chatfield Technical Consulting Ltd. and Environmental Quality Management, Inc. (Posted at www.nycosh.org/linktopics/WTC-catastrophe.html)

The air inside and surface dusts in and around two apartment buildings were tested. A "low exposure building" (45 Warren St.) was 4 blocks from the World Trade Center had all the windows intact. A dust layer was present inside the closed apartments, even though the windows had been closed. A "high exposure" building close to Ground Zero (250 South End Ave) had several windows broken by the blast. The following are some of the results, along with the concentrations that EPA found in surface dust and air near these two buildings:

LOW EXPOSURE BUILDING ASBESTOS LEVELS:
highest inside airborne asbestos - 316 structures/square mm
dust on roof outside building - 1.05%
EPA dust level, Warren & W. Bdwy - none detected
EPA dust level, Chambers & W. Bdwy - none detected
EPA air levels, Church & Duane, none detected to
59.4 structures/sq. mm.

HIGH EXPOSURE BUILDING ASBESTOS LEVELS:
highest inside airborne asbestos - 10620 structures/sq. mm
dust, exterior window ledge - 2.25%
dust, ground level courtyard, top of wall - 2.05%
EPA dust level, Albany & West - 3%
EPA dust level, 225 Rector - 1.3%
EPA air levels, Albany & West - none detected to
296.3 structures/sq. mm

The airborne levels can be compared to the standard used to determine whether children may re-enter a school building after asbestos has been removed or abated under the Asbestos Hazard Emergency Response Act (AHERA). This standard is 70 or fewer structures asbestos per square millimeter, which is a test using a specific type of filter through which a certain amount of air is drawn. The low exposure building exceeded this standard by 4.5 times at one location.

The high exposure building exceeded this standard 152 times at one location. The study noted that these levels could be many times higher when normal activities in the apartments resumed, or during cleanup operations, as the dusts became stirred up.

The concentration of asbestos in the surface dusts outside the low exposure building were only 1.05% in this study. One percent is the level which triggers the rigorous cleanup standards under the CAA asbestos NESHAP. However, the airborne levels inside the building exceeded the AHERA level several times. Thus, even lower concentrations than 1% in the surface dusts could still be generating airborne levels exceeding the AHERA standard. Alternatively, dusts outside may have become diluted over time by mixing with other dusts and wind dispersal, while inside the building the dusts were more concentrated. (The study did not provide concentrations in the dust itself inside the buildings.)

11/1/01 - EPA Acting Deputy Regional Administrator claims no hazard, recommends unsafe cleanup methods

Ms. Kathleen Callahan, Acting Deputy Regional Administrator, EPA Region 2 in New York City, addressed the New York City Council Environmental Protection Committee on 11/1/01. She stated:

> "[T]he vast majority of our tests find levels of these contaminants that pose no significant long-term health risks to residents, business employees and visitors beyond ground zero. And despite recent press accounts which suggest otherwise, these findings have not changed."
> (www.epa.gov/region2/news/speeches/011101k.htm)

She did admit to asbestos levels at 1% or more in areas outside of Ground Zero in this speech. However, she was silent about the fact that this level is the science-based level found to be hazardous under the CAA, triggering the rigorous, safe cleanup methods of the asbestos NESHAP.

Ms. Callahan also recommended in her speech that people returning to dusty homes and businesses follow the recommendations of the New York City Department of Health (NYC DOH). (www.ci.nyc.ny.us/html/doh/html/alerts/wtc3.html)
The EPA website set up earlier on about 10/3/01 also refers residents to the extremely lenient, unsafe cleanup methods of the NYC DOH. (See EPA pages giving the actual asbestos concentrations that are linked to the map at www.epa.gov/enviro/nyc/bulkdust/)

Ms. Callahan also neglected to mention that the lenient NYC DOH guidelines she recommended contradict her own Region's recommendations. The EPA Region 2 web page

refers homeowners to the national guidance. This national guidance for private homeowners of single-family dwelling states:

> "Levels in Homes: Elevated levels can occur in homes where asbestos-containing materials are damaged or disturbed. . .
> Use trained and qualified contractors for control measures that may disturb asbestos and for cleanup. .
> When you need to remove or clean up asbestos, use a professionally trained contractor."
> (Region 2 page at
> www.epa.gov/region02/air/asbestos.htm,
> links to this national guidance at
> links to www.epa.gov/iaq/asbestos.html)

11/20/01 - EPA Region 2 Counsel claims CAA standards not applicable to disasters

Walter Mugdan, Regional Counsel for EPA Region 2 is quoted as claiming the following:

> "She [Jenkins] assumes that they [the CAA NESHAP regulations] apply to the cleaning up of dust in residential or office buildings in lower Manhattan. . .
> When they were written, they were never intended to apply to something like a terrorist act. These regulations apply to owners and operators of a facility who are carrying out a demolition or renovation. They were never contemplated to apply to someone cleaning an apartment . . . were never intended to apply to something like a terrorist act."
> (Feds, City Ignore Asbestos Cleanup Rules, Says EPA Vet, 11/20/01 NY Daily News,
> www.nydailynews.com, also posted at
> www.nycosh.org/linktopics/WTC-catastrophe.html)

This is false. In 1989, after the asbestos hazards created by the explosion of a steam pipe in Gramercy Park, NY, Hurricane Hugo, and the San Francisco earthquake, EPA issued its Guidelines for Catastrophic Emergency Situations Involving Asbestos. This document explicitly states that it was in response to these three specific disasters. The following quotation is relevant:

> "The applicability of the asbestos NESHAP is not altered as the result of a disaster. With a few exceptions for emergency renovations and government-ordered demolitions, all of the NESHAP requirements are applicable in emergency situations. . . Communications are needed between the asbestos NESHAP coordination and the other emergency response agencies and related agencies. The first step is for the Regional asbestos Neshap coordinator to discuss this matter with Regional FEMA personel . . ."
> (Available on the internet at
> www.epa.gov/ncepihom/nepishom)

The three asbestos disasters, Gramercy Park, Hugo, and the San Francisco earthquake are comparable on a legal standpoint to the 9/11/01 act of terrorism. These disasters were not related to the intentional demolition or renovation of a building.

Say that, for the sake of argument, that the CAA standards do not apply to the World Trade Center disaster. The question is, what other standards would apply? Is there any reason to afford citizens less protection? We are not in an emergency situation. There is no justification for any lesser degree of protection.

11/26/01- Claim that EPA has no authority over private home asbestos cleanups, and that a hose would be required if it were performed according to the NESHAP standard

On 11/26/01, Ms. Callahan of EPA Region 2 provided testimony to the joint New York State Assembly Committees on Environmental Conservation, Health, and Labor. She is quoted as claiming that the EPA had no authority to clean up residences and business using the science-based NESHAP standards under the CAA.

However, Ms. Callahan failed to provide testimony that EPA is taking action in another part of the country to remove asbestos contamination from private homes. Private homes in Libby, Montana were contaminated inside as the result of adjacent mining activities. She neglected to mention that EPA is utilizing the Superfund statute, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) as its authority to perform the cleanup in Libby, which will adhere to the stringent science-based standards in the CAA NESHAP standards.

Of interest may be the fact that Governor Whitman visited Libby, Montana on 9/7/01 to familiarize herself with the situation and the planned cleanup of private homes. It is not as though the Libby, Montana cleanup was unknown to high EPA officials. (See Q/A pages at the EPA Libby website at www.epa.gov/region8/superfund/libby/lbbyfaq.html)

In fact, EPA does not even have to designate homes, businesses and schools as Superfund sites by putting them on the National Priorities List before it has the authority to clean them up at public expense. All that is required is to declare a public health emergency.

EPA has exercised its authority to come into private homes for cleanup of hazardous substances on numerous occasions. For example, in 1997, when the banned pesticide methyl parathion had been used illegally, EPA cleaned up homes at no cost to homeowners. (http://es.epa.gov/oeca/osre/970801.html) Most people recollect the rigorous remedial action taken by EPA in the case of Times Beach, where some homes were merely cleaned up, and some were condemned as uninhabitable by EPA. Years ago, I was in an advisory status for a Superfund site in the northwest where EPA cleaned up homes contaminated inside by the overland flow of water from a wood preserving site.

Ms. Callahan is also quoted as testifying that if EPA were to conduct a cleanup inside buildings in lower Manhattan, then they would have to use hoses to wet the area down in order to follow the CAA NESHAP standards. This is false. There are many safe cleanup methods for asbestos

besides the use of large volumes of water. Proposed methods not specified in the asbestos NESHAP are routinely approved by the EPA regions through the variance process, which is initiated when the responsible party notifies EPA of the intent to commence a cleanup.

NEED FOR A SAFE CLEANUP TO PROTECT CITIZENS NOW AND LATER

Students and others unaware of exposures due to official claims of "no hazard"

Because of EPA's official pronouncements that there is no asbestos hazard except right at Ground Zero, the following types of activities are taking place:

On Thanksgiving Day, National Public Radio's Linda Wertheimer interviewed a group of 90 college students taking part in the "World Changers Thanksgiving Dust-Out" in New York City, part of the Southern Baptist Convention. This news broadcast may be found at www.npr.org/archives.

The students were cleaning out evacuated apartments in the Gateway Complex near the World Trade Center from Thursday to Saturday. The windows had been blown out of the apartment, which faced Ground Zero. Dust was 3 inches thick inside the apartment with the students. The students were only wearing dust masks, not approved and grossly inadequate to filter out the ultra-fine hazardous asbestos particles.

Many of us tried to get action to get the young people out, but we failed due to the inaccessibility of officials over the holiday weekend and the failure to act by other officials.

Inadequate respiratory protection in violation of NESHAP standard recommended by NYC DOH

Simple dust masks were recommended by the New York City Department of Health (NYC DOH) for cleaning up homes and businesses. (www.ci.nyc.ny.us/html/doh/html/alerts/wtc3.html.) However, this recommendation violates the NESHAP standards. As part of the standards, EPA published its recommendations for the proper use of respirators during any asbestos cleanup or abatement. These science-based recommendations were challenged in court by industries wanting more lenient standards, but remained intact. Only certain types of HEPA respirators are approved. Dust masks of any type are not approved, and deemed inadequate based on scientific studies. (EPA Publication No. 560-OPTS-86-001, A Guide to Respiratory Protection for the Asbestos Abatement Industry, not available on the internet as yet, but ordering information at no charge available at www.epa.gov/ncepihom.)

Unsafe cleanup methods recommended by NYC DOH, in violation of NESHAP

The NYC DOH recommendations state that you don't even need to wear these inadequate dust masks to clean out residences and businesses if you just follow the cleanup methods in the recommendations. What are these NYC DOH cleanup methods that obviate even the need for a dusk mask, much less any other type of respiratory protection? They state that if curtains are

dusty, you only need to lower them to the ground slowly to avoid exposures. They state that although a HEPA room air purifier is preferable, any type of air purifier could be used, with no specification as to the quantity of air that it can handle. Using a common room air conditioner to recirculate the air is recommended with changing the filter frequently, even though these filters cannot even begin to capture the dangerous ultra-fine asbestos particles.

There are many other problems with the NYC DOH cleanup methods. My concerns over the lenient NYC DOH recommendations for cleaning up asbestos were detailed in my 10/16/01 memorandum to Arts, Crafts, and Theater Safety in NYC. (posted at www.nyenvirolaw.org and soon at www.nycosh.org/linktopics/WTC-catastrophe.html)

Unsubstantiated EPA claim that exposures are only short term, and that short term exposures not dangerous

Governor Whitman and Ms. Callahan of EPA's Region 2 claimed that there would be no health hazards from only short-term high level exposures to asbestos in their many press releases and speeches, above. However, unless the asbestos is cleaned up according to the methods specified in the CAA regulations, there will in fact be those sustained hazardous long-term exposures over a lifetime for citizens living in lower Manhattan.

Consider this as well: We do not know what the health effects are for inhaling the type of asbestos found from the WTC at high concentrations for a short period of time. Since the ultra-fine asbestos particles lodge in the lung and are not eliminated, the effects could be the same. The asbestos is highly unusual in that it has been pulverized into ultra-fine particles. See earlier discussion of the HP Environmental study.

EPA has determined that even high asbestos exposures of relatively short duration are harmful through its regulatory and advisory system. The EPA recommendations for cleaning up private residences by homeowners require the use of qualified trained contractors (www.epa.gov/iaq/asbestos.html, discussed earlier). In making these recommendations, EPA would have assumed that the homeowner would not otherwise be constantly engaged in high asbestos exposure home renovations. Even with making this assumption, EPA still found it necessary to prevent exposures during these highly infrequent occasions of home asbestos removal and cleanup, requiring the use of trained qualified professionals.

Failure to acknowledge EPA determination that asbestos below 1% could be hazardous

The EPA has officially stated that asbestos levels LOWER than 1% could present health hazards :

> "Levels at 1% or less may be safe. Even higher levels could be considered safe at remote locations where no one comes in contact with the material. The key to determining whether there is a risk is exposure. If there is no exposure pathway i.e., a way for the asbestos to get into your body, such as contact with the material, or people driving over the material so that they breathe in the fibers, there is no

> risk. 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."
> (www.epa.gov/region8/superfund/libby/qsafe.html)

At no time have either Governor Whitman or Ms. Callahan acknowledged that the 1% level presented a hazard, much less levels below 1%.

The Ground Zero Task Force study confirms that asbestos concentrations at less than 1% in surface dusts can lead to airborne concentrations over established limits (see above).

CONCLUSIONS

The cleanup of all affected homes in lower Manhattan should be performed by EPA or other governmental bodies at public expense, utilizing the methods in the NESHAP or as proposed by certified asbestos abatement experts and approved by EPA regional NESHAP coordinators as meeting all CAA requirements. The criteria for areas receiving such cleanups should include an adequate margin of safety, possibly relating to distance zones around contaminated areas over 0.1% asbestos or even lower.

This memorandum represents my best professional judgement. Any conclusions or opinions do not necessarily reflect the many different, conflicting, contradictory official positions taken by EPA in this matter.

cc: To Whom it May Concern