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EPA'S RESPONSE TO 9/11 AND LESSONS LEARNED FOR FUTURE EMERGENCY PREPAREDNESS

HEARING

BEFORE THE

SUBCOMMITTEE ON SUPERFUND AND ENVIRONMENTAL HEALTH

OF THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

ONE HUNDRED TENTH CONGRESS

FIRST SESSION

JUNE 20, 2007

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C O N T E N T S

EPA'S RESPONSE TO 9/11 AND LESSONS LEARNED FOR FUTURE EMERGENCY PREPAREDNESS

WEDNESDAY, JUNE 20, 2007

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON SUPERFUND AND
ENVIRONMENTAL HEALTH,
Washington, DC.

The subcommittee met, pursuant to notice, at 10 a.m. in room 406, Dirksen Senate Office Building, Hon. Hillary Rodham Clinton (chairman of the committee) presiding.

Present: Senators Clinton, Craig, Boxer, Inhofe, and Lautenberg.

STATEMENT OF HON. HILLARY RODHAM CLINTON, U.S. SENATOR FROM THE STATE OF NEW YORK

Senator CLINTON. The hearing will come to order.

I want to welcome all of you. We are expecting votes, and there was a lot of scrambling around, trying to decide whether we would start the hearing and then go vote or vote and then start the hearing. So some of my colleagues who will join me later will try to figure out the time has been changed, so we're not sure exactly when the vote will occur. But we want to go ahead and get started.

I thank you all for being here. I know there are a number of New Yorkers in the audience. I welcome all of you: Kimberly Flynn, Joseph Jones, Jenna Orkin, Marvin Bethea, Barbara Einzig and everyone else.

This is the first hearing of the Subcommittee on Superfund and Environmental Health. It is entitled EPA's Response to 9/11 and Lessons Learned for Future Emergency Preparedness.

Also in the audience is my friend and colleague and someone who has been a real leader on these issues, Congressman Jerry Nadler.

This follows a hearing that I chaired in the HELP Committee earlier this year in March to address the urgent health needs of the thousands of first responders, workers, volunteers and residents who have suffered illnesses because of the toxins to which they were exposed following the attacks of 9/11. It is a companion hearing to the one that Congressman Nadler will hold on the House side next week.

We will first hear testimony from a Federal panel that includes EPA, the White House Council on Environmental Quality, the Agency for Toxic Substances and Disease Registry, and the Government Accountability Office. We will then hear from a panel that in-

cludes a New York City resident and a scientific expert, both heavily involved in 9/11 contamination issues.

I am delighted to be joined by the Ranking Member on this committee, Senator Larry Craig. Thank you very much, Senator Craig, for coming. My Chairman of the full committee, Barbara Boxer, as well as my friend and colleague, Senator Lautenberg. I really appreciate each of their interest in this issue. Of course, Senator Lautenberg and I share many constituents who have been suffering and even dying because of their exposures to the toxins at and around Ground Zero.

I called this hearing because it is time for answers. Nearly 6 years after 9/11, we still don't have the whole truth about the toxic cloud of poison that filled the air after the towers fell. We don't have an explanation for the misrepresentations that put countless people at risk of exposure to chemicals that we know are causing illness and death.

When we turned to our Government in Washington for guidance in the hours, days and weeks after that tragedy, one of the questions people asked was obvious and important: is the air safe. What did EPA tell us? On September 18, 2001, Governor Whitman said, "I'm glad to reassure the people of New York and Washington, DC., that their air is safe to breathe and their water is safe to drink."

Now, based on EPA's statements, parents sent their children to school in the area, residents returned to their apartments. But as the EPA Inspector General informed us in 2003, the EPA's statements were "not supported by the data available at the time."

Now, I recognize that EPA and everyone else involved were operating under unprecedented and extremely difficult circumstances. But I simply cannot accept what appears to have been a deliberate effort to provide unwarranted reassurances at the direction of the White House to New Yorkers about whether their air was safe to breathe. I well remember my first visit to Ground Zero, the day after 9/11. You could feel it on your skin, the air was acrid and thick, you could taste it, you certainly could smell it.

Back in Washington, I went to work, pushing then-Administrator Whitman to address environmental hazards from the 9/11 fallout and to hold hearings in New York City on the issue in February 2002. I pushed for EPA to address the indoor contamination issue and fought for the Administration to address the shortcomings identified in the first cleanup program leading to a commitment to establish the EPA World Trade Center Expert Technical Review Panel in 2003.

I have also worked to secure funding for programs to provide medical screening and tracking for first responders. I am very pleased that the Senate Labor HHS Education and Related Agencies Appropriations Subcommittee has approved a bill yesterday to provide an additional $55 million in Federal funding to address the mounting health needs of those who were exposed to environmental hazards. For the first time, we were able to secure bill language requiring the Department of Health and Human Services, through NIOSH, to extend the program to residents, students and others impacted by the toxins. I want to thank Senators Harkin and Spector for including this in the legislation.

The reason I have worked so hard on these issues is because of heart-rending stories of people like Felicia Dunn-Jones, and members of her family are here with us. In May, the New York City medical examiner reversed an earlier decision and ruled that the death of Felicia Dunn-Jones was connected to her exposure on 9/11, the first such ruling in New York. We already had had a ruling by the coroner in New Jersey connecting the death of a NYPD detective to his exposure.

Felicia Dunn-Jones was a 42-year-old lawyer who worked near the World Trade Center. In February 2002, she passed away from sarcoidosis, often associated with environmental hazards. Her husband, Joe, who lives in Staten Island with his two children, is here today, as is Felicia's sister, Sharon Alvarez.

She was caught in the toxic cloud, and her story recognizes how difficult the balance has been of scientific and medical evidence. But it is shifting, showing that increased exposure to 9/11 toxins actually can cause illness and death.

The first responders were the first to see the effects. Within 2 months of the attacks, 300 firefighters were on medical leave, suffering with lung ailments. Subsequent research has shown this was just the first sign of persistent health problems. More than 11,500 firefighters and 3,000 emergency medical technicians and paramedics took part in the greatest rescue ever mounted. We know that thousands are now suffering from adverse health effects. According to fire department studies, exposed firefighters on average experienced a decline in lung function equivalent to what would have been produced by 12 years of aging.

More than 34,000 employees of the New York Police Department participated in rescue, recovery and cleanup operations at Ground Zero or Fresh Kills, where the debris from the disaster was taken. More than 2,000 members of the police department have filed medical claims. The rescue and recovery efforts were assisted by heavy machine operators, laborers, iron workers, building and construction tradespeople, telecommunication workers and others from the public and private sector.

Researchers at Mount Sinai Medical Center have documented physical and mental health effects among this population, with 69 percent reporting new or worsened respiratory symptoms experienced while at Ground Zero and 59 percent still experiencing persistent health effects more than 2 years after the attacks.

Almost 60,000 residents live in the vicinity of the World Trade Center, south of Canal Street in Lower Manhattan. The dust and debris settled in many of the apartments and buildings in the vicinity of the attacks. An analysis of more than 2,000 residents in the area found 60 percent experienced the onset of respiratory symptoms, a rate approximately three times higher than that of people in the surrounding area in Manhattan.

In addition, students at Stuyvesant High School in Lower Manhattan, who were evacuated because of their proximity to the World Trade Center, resumed classes 1 month after the attacks. They had rates of respiratory and other illnesses higher than those at other New York City high schools.

Sadly, some of these illnesses were not preventable, as the toxic dust cloud literally enveloped many people as they fled from the

scene. But many who were exposed could have been protected. That is why it is important we examine what went wrong. Americans deserve to know what we can do to better protect them. We have a number of questions.

First, why did the Bush administration, EPA and CEQ management choose to downplay and grossly misrepresent the exposure health risks posed in the days and weeks after 9/11? Second, the EPA's own Inspector General blasted the EPA's program to clean up indoor contamination, but 4 years later, the EPA is making the same mistakes again.

Third, have EPA and CEQ learned lessons from the disaster and are better prepared to protect public health from environmental hazards in the future? To me, it is clear from the GAO testimony that some lessons are being ignored, and I don't want us to repeat the mistakes. We could never repay those who sacrificed for us, who answered the call of duty. We cannot go back in time and pull the brave men and women off that pile or order them to wear respiratory protection equipment. We can't tell the residents, the first responders, the workers and the volunteers that the air is too dangerous to breathe.

But we can clear the air here in Washington and clear the way to help those affected and to hold accountable those who did let New Yorkers and Americans down, to learn the lessons that we should to be fully prepared for the unthinkable. That is why I have called today's hearing.

Let me turn now to the Ranking Member on this subcommittee, Senator Larry Craig.

STATEMENT OF HON. LARRY CRAIG, U.S. SENATOR FROM THE STATE OF WYOMING

Senator CRAIG. Madam Chairman, the vote has just started. I certainly will get us under the wire.

But again, along with the Chairman, I want to thank all the witnesses today for joining us to examine the lessons learned from 9/11 and EPA's preparedness for future emergencies. Certainly, reviewing the past is critically important for any of us if we are going to be prepared for the future. Most, if not all of us, can tell the story of where we were and what we were doing when we first learned of the tragic events of 9/11. The aftermath of the Twin Towers collapse showed an inspiring level of heroism and teamwork literally unprecedented, I think, in our history.

These unimaginable circumstances also highlighted emergency response successes and shortcomings. That is what we are talking about here today. I think it is important to review the lessons we have learned and I look forward to the testimony of our witnesses.

In reviewing the reports within the scope of this hearing, it appears to me that criticisms largely hover around outdoor air health advisories as well as indoor air health and clean programs. The IG report released on August 21, 2003, regarded EPA's response to the World Trade Center collapse states, "Although many organizations were involved in addressing air quality concerns resulting from the World Trade Center collapse, subsequent events have demonstrated that ultimately the public, Congress and others expected EPA to monitor and resolve environmental issues, even when EPA

may not have had the overall responsibility to resolve these issues or the necessary resources to address them."

Later, the report states, "EPA does not have clear statutory authority to establish and enforce health-based regulatory standards for indoor air." As you can see, Madam Chairman, there is a serious disconnect, or it appears there is a serious disconnect, between what the public and some public officials have as expectations to EPA's ability and the actual authority granted to the Agency. I believe this disconnect should be addressed. I think it is appropriate and it is clearly necessary.

Additionally, there are differing opinions regarding the current status of the indoor air test and clean program, and what actions can be taken that are prudent for a safety-health standpoint, but that still maintain a level of fiscal responsibility. In other words, what is reality, what can we do, what is the statutory ability to do it, and what does it cost.

Although it has been less than 6 short years since this tragedy, I am interested to hear more about the programs EPA instituted as a result of the experience, such as the creation of the Office of Emergency Management and the National Decontamination Team and the expansion of the Environmental Response Team, among others.

One last thing, Madam Chair. It has been brought to my attention that due to past litigation surrounding these issues aimed at Chairman Connaughton, he may be unable to answer all of the questions. So I ask that we at least be cognizant to any legal situation that may exist. I am confident he will respond to that.

With that, Madam Chairman, I would like to thank you for holding the hearing. It is an important hearing. I will conclude this statement by saying, let us always review where we have been to know where we need to get, and the realities of what happened and how we might change them that are within the scope of the law or our responsibility, Madam Chairman, in adjusting the law to bring it into compliance, allow agencies to move in directions that we might otherwise have thought they had the authority to move in.

Thank you.

Senator CLINTON. Thank you very much, Senator Craig. I look forward to working with you on those issues.

Senator Boxer, Chairwoman Boxer.

STATEMENT OF HON. BARBARA BOXER, U.S. SENATOR FROM THE STATE OF CALIFORNIA

Senator BOXER. Thank you so much, Senator Clinton, for holding this important hearing, but also for your focus on this very moral issue and your leadership.

Nearly 6 year after the attacks of 9/11, the events of that horrific day are seared in our memories. We will never forget the collapse of the Towers into a billowing cloud that swallowed up thousands of people. Who can forget those brave firefighters and police officers charging into the smoking buildings and disappearing into the choking cloud?

We remember now the fine, gray dust that covered everything. Then we learned that that fine, gray dust was toxic. It contained

lead, asbestos and other dangerous materials. We are here today because we owe it to the families of those who died, those who are still sick and their families to ask questions that need to be answered about our Government's response.

It is our responsibility, which you are making sure we carry out, Madam Chair, to ensure that EPA and the rest of the executive branch carry out the laws that we pass, including our environmental laws. We now have a chance to take a look at how we did.

I am here to support Senator Clinton's efforts to oversee the Government response. She has my full confidence. She has been a true leader on this issue. She has worked to make sure that this committee stays on track and doesn't look away from this disaster.

As in the case of many lesser disasters, we only learn afterwards what the extent of the danger was to the people who were there. There are continuing concerns about the health of many people exposed to the toxins that I described.

I believe that the Government has a responsibility to level with the public about everything they know about the risks. If there are dangers, let's be honest about them. Government should never downplay or cover up danger.

I am concerned about allegations that officials at EPA and from the White House twisted the facts and misleadingly reassured the public about the health risks after the 9/11 attack in New York. Senator Clinton reiterated just one sentence from Administrator Whitman, which was reassuring and which was wrong.

After such disasters and health emergencies, the Government also must assure that we quickly and properly cleanup the contamination. The Government did mobilize substantial resources after 9/11, but we will hear testimony about some shortcomings in the response, especially with respect to the toxic dust that coated the indoors of many residences and businesses among other issues.

Finally, the Government should assist those whose health is hit hardest, especially the first responders and the most severely exposed citizens, to ensure that their health is monitored and protected. This is an ongoing concern after the World Trade Center attacks, and other disasters, when first responders and other citizens are highly exposed to toxic chemicals and materials.

Senator Clinton took the lead in getting a provision enacted in the Safe Ports Act last Congress that helps mobilize health tracking after a disaster. I want to announce today that she and I are working with Senator Baucus on a broader bill to make sure that in any, any disaster, a Federal disaster, there is follow-up and there is monitoring and there is help for those exposed, those workers exposed. I hope the Administration will work with us on this. We reach out to them today to do that.

Unfortunately, this Administration failed to level with many people in the aftermath of the attack. In 2003, the EPA's Inspector General found that the White House Council on Environmental Quality reviewed and changed EPA's statements in order to downplay the health risks associated with contamination. In public statements, the Inspector General said, "The White House Council on Environmental Quality influenced the information that EPA communicated to the public through its early press releases when

it convinced EPA to add reassuring statements and delete cautionary ones."

Twisting facts to encourage a false sense of security can harm people and erode the public's trust in Government. This is the Inspector General report. This isn't a political report. Government should rely on science and act in the best interests of its citizens, not spend the evidence.

So I am so pleased that we have the opportunity to shed more light on these critical issues and right the wrongs that have been done. Thank you.

[The prepared statement of Senator Boxer follows:]

Senator CLINTON. Thank you very much.

Senator Lautenberg, we will go and vote and tell them to wait until you get there.

Senator LAUTENBERG. I feel like the last man standing here, Senator Clinton. To collapse my minutes and wonder whether I am going to miss a vote is really not something I want to do.

Senator CLINTON. Well, why don't we recess now and we will all go vote and come back and then you can give your opening statement.

Senator LAUTENBERG. I would really prefer that. I appreciate it and I thank the witnesses.

Senator CLINTON. So we will be in recess.

[Recess.]

Senator CLINTON. The hearing will come to order.

We have been joined by Senator Inhofe. We will now go to Senator Lautenberg for his opening statement and Senator Inhofe, if you have an opening statement.

Senator INHOFE. I do, thank you.

Senator CLINTON. Senator Lautenberg.

STATEMENT OF HON. FRANK R. LAUTENBERG, U.S. SENATOR FROM THE STATE OF NEW JERSEY

Senator LAUTENBERG. Thank you very much, Madam Chairman, and thank you, those who are appearing at the witness table, for your indulgence while we took care of our voting responsibility.

On September 11, 2001, more than 3,000 people lost their lives, including 700 New Jersey residents. What was not obvious at the time, but apparent now, is the damage from the collapse of the World Trade Center buildings that extended beyond that immediate territory that fateful day. Now, 6 years later, the health of thousands of first responders, search and rescue workers, volunteers who rushed to Ground Zero, many, once again, from my home State of New Jersey, continues to decline.

Residents and office workers from some distance away from those buildings have also fallen ill. Their illnesses were caused by toxic dust that they inhaled in the days and the weeks after the attack. Many of those people are now suffering from respiratory problems, reduced lung functions. Many of the firefighters who were there can no longer conduct their duties, as has happened with other workers as well. Many have died.

One of those who died from inhaling the toxic dust was Joseph Zadroga, a decorated New York City detective from New Jersey. He was only 34 years old. Those who worked, lived, or volunteered

near Ground Zero in the aftermath of the attack had every right to expect their Government to provide honest, accurate and complete information about the environmental conditions and health consequences in New York City.

So it is disturbing to me that they were let down by the Administration's people. After the attack, the EPA downplayed the health risks posed by the toxic air and dust the Towers released when they collapsed. In 2003, a report by the EPA Inspector General found that EPA's statements misled the public about the safety of the air. Misled means that they had knowledge beforehand, and the White House rewrote EPA's press releases to minimize the health risks.

The Administration should have focused on educating the public and protecting them from the threats to their health. They certainly would do it if it was a volcano or some other thing that produced toxic materials as a consequence.

Since 9/11, the EPA has conducted testing and cleaning of apartments and buildings, some apartments and buildings, near the World Trade Center. But its approach has been criticized, including by an expert panel convened by EPA as insufficient to protect the public health, almost 6 years after 9/11. It is outrageous that EPA still has not gotten the message clearly. It is infuriating to think that people who were doing their duty trying to save others, and those who were innocent bystanders are now threatened with illnesses that are debilitating and life-shortening.

So Madam Chairman, I thank you for holding this hearing and I look forward to hearing from today's witnesses how this program should be improved. I am hoping that they will give their fullest response. Thank you.

[The prepared statement of Senator Lautenberg follows:]

STATEMENT OF HON. FRANK R. LAUTENBERG, U.S. SENATOR FROM THE STATE OF NEW JERSEY

Madam Chairman, on September 11, 2001, more than 3,000 people lost their lives, including 700 residents of New Jersey.

But as we know now, the damage from the collapse of the World Trade Center buildings extended beyond that fateful day.

Nearly six years later, the health of thousands of first responders, search and rescue workers and volunteers who rushed to Ground Zero—many from New Jersey—continues to decline.

And some nearby residents and office workers have also begun to fall ill.

Their illnesses were caused by the toxic dust they inhaled in the days and weeks after the attack.

Some of those people are now suffering from respiratory problems and reduced lung function. Others have died.

One of those who died from inhaling the toxic dust was Joseph Zadroga, a decorated New York City detective from New Jersey. He was just 34.

Those who worked, lived or volunteered near Ground Zero in the aftermath of the attack had every right to expect their government to provide accurate and complete information about the environmental conditions and health consequences in New York City.

So it's disturbing to me that the Administration let them down.

After the attack, the Bush EPA downplayed the health risks posed by the toxic air and dust the towers released when they collapsed.

In 2003, a report by the EPA Inspector General found that EPA statements misled the public about the safety of the air and the White House rewrote EPA's press releases to minimize the health risks.

The Administration should have focused on educating the public and protecting them from threats to their health.

Since 9/11, the EPA has conducted testing and cleaning on some apartments and buildings near the World Trade Center.

But its approach has been criticized, including by an expert panel convened by EPA, as insufficient to protect the public health, almost six years after 9/11.

It's outrageous that EPA has still not gotten this right.

I look forward to hearing from today's witnesses about how this program should be improved.

Thank you Madam Chairman.

Senator CLINTON. Thank you very much, Senator Lautenberg.

Senator Inhofe.

STATEMENT OF HON. JAMES M. INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

Senator INHOFE. Thank you, Madam Chairman.

The devastation of New York that was suffered on September 11th was just unprecedented and horrendous. As in all the Presidentially declared disasters, EPA cooperated with its many Federal departments to provide coordinated response. This hearing is to examine EPA's response and future preparedness, and I would say, lessons learned.

Following September 11th, EPA was highly involved conducting air, water and dust monitoring in lower Manhattan for environmental hazards. The EPA vacuumed street debris and disposed of hazardous waste. The EPA also conducted a voluntary cleanup program from 2002 to 2003 that served more than 4,000 residences in lower Manhattan.

Although the EPA does not ordinarily administer worker protection regulations, it provided respirators, protective gear for workers at the World Trade site. The EPA has received some criticism for its role following September 11th. The EPA Inspector General released a lengthy report in 2003, alleging many problems with EPA responses. I will provide you two brief examples.

First, the EPA IG alleged that EPA, OSHA and the Council on Environmental Quality released misleading information to the public on air monitoring and sampling in press releases. However, in the same report, the IG conceded that EPA used many methods to inform the public, including public meetings, fact sheets, its web site, interviews with newspapers, radio, TV, as well as through press releases. The IG concluded in the same report in regard to the monitoring data, "We found no evidence that EPA attempted to conceal results from the public."

Second, although the IG was critical of the EPA's response, including its response to indoor environmental contamination, the IG concluded, "The EPA's action to evaluate, mitigate and control risk to human health from exposure to indoor air pollutants in the World Trade Center area were consistent with applicable statutes and regulations." I think quite often you get people who pick and choose statements out of reports that give a negative, and I want to make sure that we have the full information out here.

Ultimately, the EPA IG report was incomplete, because the IG did not interview other officials in other Federal agencies such as OSHA and the CEQ. Following the release of the 2003 EPA IG report, my staff prepared a report, reviewing the IG's findings and interviewed EPA IG personnel, former Acting Administrator Mary Ann Orinco, and the CEQ Chairman, Jim Connaughton, and OSHA

Assistant Administrator John Henshaw. I request that those reports be made a part of the record. During that time, I was the Chairman of the committee, so we were very actively involved in this.

I also want to make a comment that normally, I like to get information from people closest to the problem. While the EPA IG was critical of EPA's response, not all officials were critical in their responses to 9/11. Dr. Thomas Frieden, the New York City Commissioner of Public Health, testified at an EPW Clean Air Subcommittee hearing held in New York City in February 2002, "One of the most vivid pictures to emerge is one of unprecedented cooperation between local, State, Federal health environmental and occupational agencies, the teamwork is quite extraordinary." That was coming from the Commissioner there in New York.

I hope this hearing does not focus on the conflicting findings of a 4-year-old IG report. Instead, I hope this hearing provides legitimate congressional oversight on activities in which the EPA is currently engaged. In January 2007, the EPA opened public registration for a new lower Manhattan testing and cleaning program. This program is designed to test for elevated levels of four contaminants associated with dust from the collapse of the World Trade Center. FEMA has provided $7 million to EPA for this work. I understand that members of that expert panel, the CEQ and EPA, convened for this purpose and are dissatisfied that a more exacting program could not have been developed.

However, I have an August 2006 letter from the same Commissioner, the New York City Health Commissioner Frieden, stating, "The environmental investigation and testing conducted in lower Manhattan indicates that potential health impacts from any remaining World Trade Center dust are extremely low or non-existing." I ask unanimous consent that also be made a part of this record.

We have witnesses that I know will shed further light on the many issues involving the World Trade Center and its aftermath, and I look forward to this committee hearing. I have made two unanimous consent requests for inclusions into the record.

[The prepared statement of Senator Inhofe follows:]

STATEMENT OF HON. JAMES M. INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

The devastation New York City suffered on September 11, 2001, was unprecedented and horrendous. As in all Presidentially declared disasters, EPA cooperates with many other federal departments to provide a coordinated response. This hearing is to examine EPA's response and future preparedness and to receive testimony on the Test and Clean program EPA is conducting in Lower Manhattan.

Following September 11th, EPA was highly involved conducting air, water, and dust monitoring in Lower Manhattan for environmental hazards. EPA vacuumed street debris and disposed of hazardous wastes. EPA also conducted a voluntary clean up program from 2002 to 2003 that served more 4,100 residents in Lower Manhattan. Although EPA does not ordinarily administer worker protection regulations, it provided respirators and protective gear for workers at the World Trade Center site.

EPA has received criticism for its role following September 11th. The EPA Inspector General released a lengthy report in 2003 alleging many problems with EPA's response. I'll provide two brief examples. First, the EPA IG report alleged that EPA, OSHA, and the Council on Environmental Quality released misleading information to the public on air monitoring and sampling in press releases. However, in the same report the IG conceded that EPA used many methods to inform the public in-

cluding public meetings, fact sheets, its website, and interviews with newspapers, radio, and television, as well as through press releases. The IG concluded in the same report, "In regard to the monitoring data, we found no evidence that EPA attempted to conceal data results from the public." Secondly, although the IG was critical of EPA's response including its response to indoor environmental contamination, the IG concluded, "EPA's actions to evaluate, mitigate, and control risks to human health from exposure to indoor air pollutants in the World Trade Center area were consistent with applicable statutes and regulations."

Ultimately, the EPA IG report was incomplete because the IG did not interview other officials at other federal agencies such as OSHA and CEQ. Following the release of the 2003 EPA IG report, my staff prepared a report reviewing the IG's findings and interviewing EPA IG personnel, former acting Administrator Marianne Horinko, CEQ Chairman Jim Connaughton, and OSHA Assistant Administrator John Henshaw. I request that report appear in the hearing record.

While the EPA IG was critical of EPA's response, not all officials were critical of the response to September 11th. Dr. Thomas Frieden, the New York City Commissioner of Public Health testified at an EPW Clean Air Subcommittee hearing held in New York City in February 2002, "One of the most vivid pictures to emerge is one of unprecedented cooperation between local, state, and federal health, environmental, and occupational agencies. The teamwork is quite extraordinary."

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We have witnesses that I know will shed further light on many of the issues involving the World Trade Center and its aftermath, and I look forward to their testimony. In conclusion, I would also like to point out that Chairman Connaughton has volunteered to testify although he is the target of litigation involving the World Trade Center. The complaint against him has been dismissed in the district court, and the appellate court affirmed that decision. I would request that Senators recognize that there may be questions that Chairman Connaughton may want to answer but may choose to decline because it may not be prudent given the litigation.

I appreciate all the witnesses'participation this morning.

Senator CLINTON. Without objection.

[The referenced material follows:]

21 of 30 DOCUMENTS

GAIL BENZMAN, DIANE LAPSON, JIM and ANAMAE GILROY, JoALISON POLETT, ROBERT GULACK, JANICE FRIED, JOHN CALDER, JENNA ORKIN, KELLY COLANGELO, GEORGE DINOS, BRIAN EDWARDS, and SARA MANZANO-DIAZ, on their behalf and on behalf of all other persons similarly situated, Plaintiffs, -against- CHRISTINE TODD WHITMAN, MARIANNE L. HORINKO, MICHAEL LEAVITT, and the UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, Defendants.

04 Civ. 1888 (DAB)

UNITED STATES DISTRICT COURT FOR THE SOUTHERN DISTRICT OF NEW YORK

2006 U.S. Dist. LEXIS 4005; 36 ELR 20036

February 2, 2006, Decided
February 2, 2006, Filed

SUBSEQUENT HISTORY: Motion denied by Benzman v. Whitman, 2006 U.S. Dist. LEXIS 91987 (S.D.N.Y., Dec. 15, 2006)

COUNSEL: [*1] For Gail Benzman, Diane Lapson, Jim Gilroy, On behalf of himself and all others similarly situated, Anamae Gilroy, On behalf of herself and all others similarly situated, JoAlison Polett, Robert Gulack, Janice Fried, On behalf of herself and all others similarly situated, John Calder, Jenna Orkin, Kelly Colangelo, George Dinos, Brian Edwards, On behalf of himself and all others similarly situated, Sara Manzano-Diaz, Plaintiffs: Bert A. Blitz, Shandell, Blitz, Blitz & Bookson, L.L.P, New York, NY.

For Christie Todd Whitman, Marianne L. Horinko, Defendants: Glenn Stewart Greene, United States Dept. of Justice, Torts Branch, Civil Div., Washington, DC; Scott Jeffrey Jordan, U.S. Department of Justice, Washington, DC.

For Michael Leavitt, United States Environmental Protection Agency, Defendants: Scott Jeffrey Jordan, U.S. Department of Justice, Washington, DC.

JUDGES: DEBORAH A. BATTS, United States District Judge.

OPINION BY: DEBORAH A. BATTS

OPINION

DEBORAH A. BATTS, United States District Judge.

Before the Court are two separate Motions to Dismiss filed by Christine Todd Whitman and Marianne Horinko ("Individual Defendants"), and Michael Leavitt and the United States Environmental [*2] Protection Agency ("EPA Defendants").

Plaintiffs Gail Benzman, Diane Lapson, Jim and Anamae Gilroy, JoAlison Polett, Robert Gulack, Janice Fried, John Calder, Jenna Orkin, Kelly Colangelo, George Dinos, Brian Edwards and Sara Manzano-Diaz have brought the above-captioned putative class action suit on behalf of a class consisting of: (a) residents of Lower Manhattan (which includes Chinatown and the Lower East Side) and Brooklyn; (b) students attending schools in Lower Manhattan and Brooklyn; (c) workers whose place of employment was in Lower Manhattan and Brooklyn; who have been exposed to hazardous

substances in the interior of their residences, schools and workplaces as a result of the dust and debris released from the collapse of the World Trade Center ("WTC") towers and surrounding buildings following the terrorist attacks on September 11, 2001. (Am. Compl. P1.) Plaintiffs bring this action against Defendants Christine Todd Whitman ("Whitman"), Administrator of the EPA as of September 11, 2001, and until June 24, 2003; Marianne Horinko ("Horinko"), Assistant Administrator designee of the EPA during that same period of time; Michael Leavitt ("Leavitt"), the current Administrator **[*3]** of the EPA; and the United States Environmental Protection Agency ("EPA"). (Id.)

Plaintiffs bring four causes of action in their Amended Complaint. Count One, alleging a violation of the Fifth Amendment of the Constitution, is asserted against Individual Defendants Whitman and Horinko. Plaintiffs seek compensatory damages, reimbursement of costs incurred by Plaintiffs, and the creation of a fund to finance medical monitoring services. Counts Two and Three are asserted against the EPA Defendants. Count Two challenges EPA Defendants' actions after the September 11, 2001 attacks under the Administrative Procedure Act ("APA"), 5 U.S.C. § 701, et seq., for not being in accordance with the law, as arbitrary and capricious, and contrary to Plaintiffs' Fifth Amendment rights. Count Three is a mandamus action, pursuant to 28 U.S.C. § 1361. Count Four is asserted against only the EPA and is brought pursuant to the citizen suit provision of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9659(a)(1), for violation of regulations under CERCLA. The last three causes of action **[*4]** seek identical relief: to compel testing by the EPA of office buildings, schools and residences in Lower Manhattan and Brooklyn, and if such tests reveal the presence of hazardous substances, to implement a professional clean-up of all such buildings, and to compel the EPA to implement a program for medical monitoring services. (Id. PP239, 245, 248.)

The Individual Defendants have moved to dismiss Count One of the Amended Complaint pursuant to Fed. R. Civ. P. 12(b)(6). EPA Defendants have moved to dismiss Counts Two, Three and Four pursuant to Fed. R. Civ. P. 12(b)(1) and 12(b)(6).

For the reasons that follow, Individual Defendants' Motion to Dismiss is GRANTED in part and DENIED in part, and EPA Defendants' Motion to Dismiss is GRANTED in part and DENIED in part.

I. BACKGROUND

The following facts are taken from the Amended Complaint and are assumed to be true for the purposes of the Motions to Dismiss.

This case is based on nihilistic actions that are imprinted on our collective memory as a nation. On September 11, 2001, terrorists hijacked three commercial **[*5]** airplanes. Two of these planes were intentionally flown into the World Trade Center towers in New York City. Within hours of impact, the two towers collapsed, killing thousands and spreading vast amounts of dust and debris. (Am. Compl. P41.) The airborne dust blanketed Lower Manhattan and also settled in building interiors north of Canal Street in Manhattan and parts of Brooklyn. (Id. P2.)

A. Declaration of a National Disaster

On the day of the attacks, President Bush signed a major disaster declaration for all five New York City counties, in order to provide assistance to New York State. This declaration activated the Federal Response Plan ("FRP"), which establishes the process and structure for the Federal Government to provide assistance to local agencies when responding to any major disaster or emergency declared under the Robert T. Stafford Disaster Relief and Emergency Assistance Act ("Stafford Act"), 42 U.S.C. § 5121, et seq. (Id. P44.) The Stafford Act was enacted in 1974 and its purpose is "to provide an orderly and continuing means of assistance by the Federal Government to State and local governments in carrying out their responsibilities **[*6]** to alleviate the suffering and damage which result from such disasters . . . ." 42 U.S.C. § 5121(b).

The FRP, which is administered by the Federal Emergency Management Agency ("FEMA"), includes twelve Emergency Support Functions. Each Emergency Support Function describes the specific type of support it provides to local authorities and identifies the Federal agency responsible for lend-

ing and assisting in that support. (Am. Compl. P45.) Emergency Support Function No. 10, "Hazardous Materials Annex" ("ESF # 10"), provides support to State and local governments in responding to an actual or potential discharge and/or release of hazardous materials following a major disaster or emergency, including the release of airborne contaminants. Part of the purpose of ESF # 10 is to coordinate the provision of federal support and overall management to the disaster response sites "to ensure actions are taken to mitigate, clean up, and dispose of hazardous materials and minimize the impact of the incidents." (Id. PP46-47.) The EPA is the designated lead agency for any activation of ESF # 10. (Id. P46.) FEMA's mission assignment to the EPA, immediately after the collapse of **[*7]** the World Trade Center (hereinafter referred to as "WTC Collapse"), included responsibilities such as "assessing 'all hazardous substance and oil releases throughout the NY, NY Metropolitan Area resulting from the World Trade Center attack'" as well as sampling, staging, securing and disposing of all hazardous materials and oil releases. (Id. P46.)

ESF # 10 places the response mechanisms of the National Oil and Hazardous Substances Pollution Contingency Plan ("NCP") within the FRP coordination structure. (Id. P48); see also 40 C.F.R. § 300.3(d) ("the NCP applies to and is in effect when the FRP and some or all of its Emergency Support Functions are activated.") The NCP are regulations enacted pursuant to the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), a statute enacted in 1980 which provides statutory authority and funding for the clean-up of serious threats to public health and the environment. See 42 U.S.C. § 9601, et seq. The NCP provides guidelines and procedures for responding to releases and threatened releases of hazardous substances, pollutants, or contaminants, including releases **[*8]** that threaten air quality. (Am. Compl. P49.) The NCP is also the implementing regulation for the EPA's Superfund program. [1] (Id.) The EPA is the agency responsible under the NCP for discharges or releases of hazardous substances into or threatening an inland zone.

1 CERCLA is often referred to as the "Superfund" statute. "Superfund" is the Federal government's program to clean up uncontrolled hazardous waste sites. See http://www.epa.gov/superfund/index.htm.

B. WTC Collapse and the Presence of Pollutants and Hazardous Substances

The collapse of the WTC towers and nearby buildings created a 16-acre disaster zone. The initial fire caused by the impact of the planes, the "pancaking" or downward implosion of the buildings, and the subsequent fire, released hazardous substances into the environment, and deposited an estimated one million tons of dust on Lower Manhattan and surrounding areas. This dust was composed of a mixture of building debris and combustion byproducts, which included asbestos, lead, **[*9]** glass fibers and concrete dust. Fires at the WTC site emitted harmful pollutants into the air, including particulate matter, various metals, polychlorinated biphyenyls (PCBs), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs) and dioxin. (Am. Compl. PP42-43.) According to Plaintiffs, the exact composition of the building materials used in the WTC towers is not known, but some of the major hazards were "readily apparent," including: 2000 tons of asbestos used in the construction of the towers; fiberglass and Freon refrigerants used in the air conditioning systems; an estimated 424,000 tons of concrete, sheet, gypsum, fiberglass and glass; approximately 50,000 personal computers each containing approximately 4 pounds of lead; glass; PCBs; mercury from light bulbs and computers; and 130,000 gallons of transformer oil. (Id. P52.) Based on the 1993 terrorist attacks on the World Trade Center, the EPA already knew that the WTC towers contained roughly 400 to 1,000 tons of asbestos. Moreover, the EPA had general knowledge that the "uncontrolled burning of building materials releases toxic chemicals and that cement dust is very caustic because the EPA has studied incineration, **[*10]** demolition and pollution and debris they create for many years." (Id. PP54-55.)

The EPA began collecting samples of the bulk dust on September 11, 2001 to determine the level of asbestos present. By September 12, 2001, the EPA knew that one of the first samples it had tested contained 4% asbestos, four times higher than the EPA threshold for danger, 1%, which is also the standard the EPA employed as the point at which asbestos in WTC dust becomes a danger to human health. [2] One hundred and seventy bulk dust sam-

ples were taken by September 17, 2001 and 30% of those were found to contain levels of asbestos higher than 1%. (Id. P56.) When conducting these tests, the EPA used a 20-year-old technology, polarized light microscopy ("PLM"), known to be far less sensitive in detecting asbestos than the newer transmission electron microscopy ("TEM") or scanning electron microscopy ("SEM") technologies. [3] (Id. P56.) The EPA did use TEM, however, when it tested its own building at 290 Broadway in Lower Manhattan.

2 Plaintiffs note in their Amended Complaint that the 1% standard is "flatly inconsistent with the EPA's historical position . . . that all asbestos exposure is hazardous to human health." (Am. Compl. PP56, 130.)

[*11]

3 PLM, TEM and SEM are three different methods for analyzing asbestos material. The EPA describes PLM as a method used to "visually estimate the percent of asbestos in bulk samples, such as soil and insulation materials. It can differentiate between asbestos types, but cannot reliably detect asbestos in low concentrations (below 1%)." See Region 8 - Libby Asbestos, Sampling and Analysis, Analytical Methods at http://www.epa.gov/region8/superfund/libby/sampling.html. TEM is "more complex than PCM or PLM, and it uses a more sophisticated analysis instrument. TEM can distinguish between asbestos and non-asbestos fibers and asbestos types. It can be used at higher magnifications, enabling identification of smaller asbestos fibers than can be seen by other techniques." Id. SEM is similar to TEM. "It is capable of distinguishing asbestos fibers from non-asbestos fibers and is capable of higher magnifications than PCM. Its range of visibility is more limited than TEM." Id. PCM (Phase contrast microscopy) is the traditional technique for measuring asbestos fibers in air and results of PCM testing are often used to estimate health risk due to asbestos in air. However, PCM is of limited utility because it cannot distinguish between asbestos and non-asbestos fibers. Id.

[*12] Not satisfied with government reports and unable to obtain monitoring data from government agencies, several organizations and independent researchers conducted their own tests. These tests revealed asbestos at levels of 3% and 4.5%, high levels of fiberglass and the substance used to replace it, and other types of mineral fibers. [4] Studies also showed that the EPA tests could not detect the finer-particle, more hazardous form of asbestos which was also released into the environment by the WTC Collapse.

4 Plaintiffs acknowledge that fiberglass is not as dangerous as asbestos, but cite the American Lung Association's caution that "There might be a possibility that [fiberglass] fibers cause permanent damage to the lungs or airways, or increase the likelihood of developing lung cancer." (Id. P59.)

An environmental toxicologist for HP Environmental Inc., Hugh Granger, took samples of residual dust from both inside and outside two office buildings near Ground Zero. Granger used the TEM method because the asbestos **[*13]** fibers found "were considerably smaller than usual." (Id. P60.) The samples revealed that close to 90% of the asbestos fibers were less than 5 microns in length. According to Granger, the analytical methods used by the EPA could not detect such short fibers. (Id. PP59-60, 76-77.)

Another study was conducted by Dr. Thomas Cahill and the Delta Group, a group of scientists convened by the U.S. Department of Energy to monitor major air pollution incidents around the world. Measurements were taken a mile north of Ground Zero, starting weeks after September 11, 2001. Dr. Cahill found a level of fine particulates in the outdoor air that was higher than levels measured at the Kuwaiti oil field fires during the Gulf War. (Id. P65.) Plaintiffs allege that the existence of such a dangerously high level of fine particulates in the outdoor air, a mile away from Ground Zero, indicates the likelihood that such a level existed in the WTC dust that permeated indoor air. (Id. P66.)

Private tests also found high levels of polycyclic aromatic hydrocarbins (PAHs), a group of well-known carcinogens, in the WTC dust. The EPA did not test for PAHs or other toxic organic chemicals. (Id. P68.)

Various other **[*14]** articles and studies by scientists also addressed the hazardous nature of the WTC dust. (Id. PP69-74.) One such study, the largest in terms of buildings analyzed, was performed by the New York City Department of Health and Mental Hygiene and the U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry. The study collected dust and air samples in and around 30 residential buildings between November 4 through December 11, 2001 in Lower Manhattan. The final report was issued in September, 2002. (Id. P210.) According to a report by the EPA's Office of the Inspector General issued on August 21, 2003 ("OIG Report"), 85% of the apartments had been cleaned prior to that sampling. However, the study concluded that almost 20% of the apartments still had interior dust with asbestos at above 1%. (Id. P76.)

C. The EPA's Actions

According to Plaintiffs, Defendants EPA, Whitman and Horinko undertook a series of actions "which consistently exemplified a concerted effort on the part of the EPA to avoid responsibility for the interior clean-up of buildings contaminated by the WTC Dust despite its legal obligations to do so and despite the health risk such **[*15]** contaminants have posed to the occupants." (Id. P3.) These actions included statements made by the EPA, Whitman and Horinko, the failure of Defendants to uphold their obligations under law, the improper delegation of indoor clean-up to the City of New York, and the inadequate voluntary clean-up program implemented belatedly in 2003.

1. Statements Made by the EPA and Whitman

Although tests revealed high levels of asbestos, on September 17, 2001, Federal and New York City officials allowed thousands of people to return to their homes and workplaces in Lower Manhattan and Brooklyn, without any proper clean-up of those areas. [5] (Id. P2.) The EPA and Whitman issued a number of press releases which falsely represented that the air in and around Lower Manhattan was safe to breathe, and that there were no significant health risks, although at the time they issued these statements, the EPA and Whitman did not have sufficient data and analyses to substantiate these statements. (Id. P4.)

5 Federal officials allowed people to return even though on September 12, 2001, Dr. Ed Kilbourne, a senior scientist at the Toxic Substances and Disease Registry, warned the EPA against reoccupation of buildings in Lower Manhattan because of the dangers posed by the presence of hazardous substances. (Am. Compl. P129.)

[*16] In a September 13, 2001 press release, the EPA assured the public that the air around Ground Zero was relatively safe and stated that "Short-term, 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." (Id. P126.) In the press release, Whitman also stated that the "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." (Id.)

The EPA's Office of Inspector General ("OIG") Report of August 21, 2003 listed the following key statements from EPA press releases, made in the days and months following the September 11, 2001 attack:

. September 16, 2001: "Our tests show that it is safe for New Yorkers to go back to work in New York's financial district" (quoting Assistant Secretary of Labor for [Occupational Safety and Health Administration]). "The good news continues to be that air samples we have taken have all been at levels that cause us no concern" (quoting Whitman). "The Agency is recommending that businesses in the area planning to reopen next week take precautions including cleaning air conditioning **[*17]** filters and using vacuums with appropriate filters to collect dust."

. September 18, 2001: "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. Given the scope of the tragedy last week, I am glad to reassure the people of New York and Washington, DC that their air is safe to breath [sic] and the water is safe to drink" (quoting Whitman).

. September 21, 2001: "EPA Disaster Response Update NYC Monitoring Efforts Continue to Show

Safe Drinking Water, Air" (press release heading). "New Yorkers and New Jersians need not be concerned about environmental issues as they return to their homes and workplaces. Air quality monitoring data in residential areas has been consistently reassuring" (quoting Whitman).

. October 3, 2001: "Data Confirms No Significant Public Health Risks; Rescue Crews and Nearby Residents Should Take Appropriate Precautions . . ." (press release sub-heading).

. October 30, 2001: "While we have fortunately not found levels of contaminants that **[*18]** pose a significant health risk to the general public, our efforts to monitor the area and keep the public informed of our findings have not waned."

(Id. P128.) Plaintiffs state that these statements are remarkable given that the EPA's own tests revealed that the WTC dust contained concentrations of asbestos at levels above the "so-called 1% danger threshold." (Id. P129.)

The EPA made various other statements to the public that minimized the risks posed to the public by the WTC dust and contained an overriding message of reassurance. On September 13, 2001, The New York Times reported that Whitman had said that "some chemicals that were of theoretical concern in the hours after the collapse, especially lead, . . . had not been detected in quantities high enough to raise alarm." (Id. P135.) However, tests conducted by the EPA on September 26, 2001 revealed elevated readings for lead; these results were not released until the end of October, 2003. On October 28, 2003, at a Congressional hearing, the EPA disclosed that 13.5% of apartments tested showed elevated lead levels. (Id. P75.)

In the same September 13, 2001 article in The New York Times, Whitman was reported to have **[*19]** also stressed that asbestos levels were a concern only to rescue workers and work crews and not to residents near the Ground Zero site. This was echoed by an EPA spokesperson, who stated on or about September 18, 2001 that "there are small pockets of asbestos" and that the concern was not for the city or residents, but for the rescue workers. On September 14, 2001, an Associated Press article reported a statement made by Whitman the previous day that "there's no immediate health threat to people outside the ground zero area." Also on September 14, 2001, the EPA and the Occupational Safety and Health Administration ("OSHA") reported in a press release that although the EPA had found variable asbestos levels in the dust and debris, the EPA continued to believe there was no significant health risk to the general public and that appropriate steps were being taken to clean up the dust and debris. The EPA continued to make a distinction between any potential risks to residents and workers at Ground Zero in press releases and articles throughout the next several months. (Id. P135.)

In all of the EPA's public statements about asbestos, the EPA repeatedly referred to the fact that 1% of **[*20]** asbestos or above constitutes "asbestos material" or "asbestos containing material." However, the EPA failed to disclose that 1% asbestos is not a health-based standard, but pertains to whether solid asbestos building materials should be removed professionally. Levels of less than 1% can still pose a danger. (Id. P136.)

According to Plaintiffs, at the time the EPA made these reassuring statements, they did not have sufficient information and data. The EPA's Office of Research and Development lacked the monitoring data necessary to make health risk evaluations for exposure to the air in the first few days after the WTC collapse. Sampling of several potential pollutants did not even begin until September 16, 2001, and in many cases, results of those samples were not available by September 18, 2001, when the EPA made its statement that the public could return to Lower Manhattan. (Id. P133.)

The EPA's own Office of the Inspector General criticized the EPA's response to the WTC Collapse. The OIG Report stated that the EPA did not have available data and information to support the EPA's statement in the September 18, 2001 press release that the air was "safe" to breathe:

> At [the **[*21]** time the EPA made the announcement], air monitoring data was lacking for several pollutants of concern, including particulate matter and polychlorinated biphenyls (PCBs) . . . . An EPA draft risk evaluation completed over a year after the attacks concluded that, after the first few days, ambient air levels were un-

> likely to cause short-term or long-term health effects to the general population. However, because of numerous uncertainties -- including the extent of the public's exposure and a lack of health-based benchmarks -- a definitive answer to whether the air was safe to breathe may not be settled for years to come.

(Id. P132.)

2. The EPA's Legal Responsibilities Under Federal Law

According to Plaintiffs, the EPA has clear authority to respond to the release of hazardous substances that may present an imminent and substantial danger to the public health or welfare. (Id. P155; see 42 U.S.C. § 9604.)

In addition to being given the lead role under the FRP and ESF # 10 pursuant to the Stafford Act, the EPA was specifically mandated to clean up building interiors following the September 11, 2001 attacks by provisions of Presidential Decision Directive **[*22]** 62 ("PDD 62"), signed by President Clinton in 1998. [6] PDD 62 assigns lead responsibility to the EPA for cleaning up buildings and other sites contaminated by chemical or biological agents as a result of terrorism. In her testimony before a Senate Subcommittee in November, 2001, Whitman acknowledged this mandate:

> Under the provisions of PDD 62, signed by President Clinton in 1998, the EPA is assigned lead responsibility for cleaning up buildings and other sites contaminated by chemical or biological agents as a result of an act of terrorism. This responsibility draws on our decades of experience in cleaning up sites contaminated by toxins through prior practices or accidents.

(Id. P142.) Horinko also testified that pursuant to PDD 62, the EPA is responsible for clean-up of the inside of buildings in the event of terrorism or a disaster. (Id. P143.) The Department of Homeland Security confirmed the EPA's mandate in the July 2002 National Strategy for Homeland Security, which stated that after a "major incident," the EPA is responsible for decontamination of affected buildings and neighborhoods and providing advice and assistance to public health authorities in the **[*23]** determination of when it is safe to return to affected areas. (Id. P145.) Plaintiffs allege that, according to PDD 62, the EPA had to maintain lead responsibility of clean-up of building interiors, as well as outdoor air.

> 6 An unclassified abstract of PDD 62 can be found at http://www.ojp.usdoj.gov/odp/docs/pdd62.htm. The abstract does not contain the section cited by Plaintiffs as providing the EPA with lead responsibility for cleaning up sites contaminated by chemical or biological agents as a result of terrorist acts.

The EPA is also part of the United States Government Interagency Domestic Terrorism Concept of Operations Plan ("CONPLAN"), which is a Federal signatory plan among six Federal departments. CONPLAN provides guidance to Federal, State and local agencies on how the Federal government should respond to a terrorist attack in a manner consistent with PDD 39 and 62. CONPLAN clearly states that applicable statutory authorities are modified by PDD 39 and 62. (Id P150.) Both Whitman and Horinko were aware **[*24]** of CONPLAN. (Id. P151.)

The EPA is allowed to assign lead responsibility for a portion or all of a removal activity, pursuant to an agreement with a State or a political subdivision thereof. See 40 C.F.R. § 35.6205. [7] However, Plaintiffs allege that the EPA is prohibited from doing so if a Presidential Directive dictates otherwise. (Id. P149.) As previously stated, Plaintiffs appear to interpret the fact that PDD 62 specifically mandated that the EPA take lead responsibility for cleaning up buildings and other sites contaminated by hazardous and chemical agents as just such a prohibition. (Id. P141.)

> 7 "Remove" or "removal" is defined in CERCLA as

> the cleanup or removal of released hazardous substances from the environment, such actions as may be necessary taken in the event of the threat of release of hazardous substances into the environment, such actions as may be necessary to monitor, assess, and evaluate the release or threat of release of hazardous substances, the disposal of removed material, or the taking of such other actions as may be necessary to prevent, minimize, or mitigate damage to the public health or welfare or to the environment, which may otherwise result from a release or threat of release. . . .

42 U.S.C. § 9601(23).

[*25] Even in the absence of PDD 62, Plaintiffs allege that the NCP prohibited the EPA from delegating the responsibility to the City. According to the NCP, the EPA can give away lead responsibility to a political subdivision of a State only "if both the State and EPA agree" to do so and the political subdivision has the "necessary capabilities and jurisdictional authority." (Id. P152; see also 40 C.F.R. § 35.6205.) Plaintiffs claim that "Given the City's lack of funds and its expressed intent to leave the cleaning up to the public, it was beyond question that after 9/11 the City lacked the capabilities necessary to execute an interior clean-up of Lower Manhattan and Brooklyn." (Id. P152.)

Moreover, Plaintiffs state that, as administrator of the NCP, the EPA has the responsibility through On-Scene Coordinators ("OSCs"), who are predesignated by the EPA, to direct response efforts and coordinate all other efforts at the scene of a release. Hence, Plaintiffs allege that even if the EPA could delegate responsibility for the clean-up, it could not do so completely and must retain some responsibility. (Id. P153; see 40 C.F.R. § 300.175 **[*26]** .)

3. The EPA's Delegation of Indoor Clean-Up to the City of New York

Initially, in the immediate aftermath of the September 11, 2001 attacks, Whitman made statements indicating that the "EPA would fulfill its mandate to take the lead in the environmental clean-up." (Id. P121.) In the September 14, 2001 issue of Newsweek, Whitman is quoted as saying "We're getting in there and testing to make sure things are safe . . . . Everything will be vacuumed that needs to be, air filters (in area buildings) will be cleaned, we're not going to let anybody into a building that isn't safe. And these buildings will be safe." (Id. P122.) She stated in a New York Daily News article, published three days after the attacks, that "The President has said, 'Spare no expense, do everything you need to do to make sure the people of the city and down in Washington are safe as far as the environment is concerned.'" (Id P121.)

The EPA soon switched course, however, and made many statements that the EPA was not responsible for the clean-up of building interiors and did not have jurisdiction over indoor air quality. [8] (Id. P160.)

> 8 Plaintiffs note that the NCP does not delineate between indoor and outdoor air; it authorizes the EPA to "enter any vessel, facility, establishment or other place, property, or location . . . and conduct, complete, operate, and maintain any response actions authorized by CERCLA or these regulations." (Id. P155; 40 C.F.R. § 300.400(d).)

[*27] Instead of taking the lead in the clean-up efforts of building interiors, the EPA allegedly passed the responsibility off to the City of New York ("the City"). (Id. P161.) The EPA then failed to ensure that the City adhered to EPA cleaning standards for removal of hazardous materials. Instead, the EPA deferred to the City's judgment, although the EPA and Whitman have admitted that EPA standards are materially stricter than those the City endorsed. (Id. P8.) This was contrary to NCP regulations which state that "Only those state standards that . . . are more stringent than Federal requirements may be applicable or relevant and appropriate." 40 C.F.R. § 300.400(g)(4).

According to Plaintiffs, because the City was ill-equipped to handle the clean-up, the City, with the EPA's knowledge and consent, passed the responsibility for testing and remediation of indoor

spaces to individual building owners and tenants. (Id. P163.) Individuals were referred to the New York City Department of Health (NYCDOH) for recommendations on reoccupying homes and businesses. The NYCDOH guidelines, recommended by New York City and endorsed by the EPA, were grossly inadequate. The **[*28]** guidelines included instructions to wear masks, long-sleeved clothing and closed-toe shoes while following the NYCDOH cleaning procedures. The guidelines also advised residents to remove dust with a wet rag or wet mop which could then be rinsed under running water. NYCDOH recommended using HEPA (high efficiency particulate air) filtration vacuums when cleaning up apartments, if possible; if not possible, NYCDOH recommended that HEPA bags and dust allergen bags be used with a regular vacuum. In the alternative, NYCDOH suggested wetting down and removing the dust in accordance with its guidelines. The guidelines also recommended shampooing and vacuuming carpets and upholstery, and using air purifiers to remove dust from the air. (Id. P166.)

The EPA did not give any precautionary instructions and did not instruct residents to have the cleaning done professionally, although this is their conceded position. Whitman acknowledged in "The NewsHour with Jim Lehrer" on April 16, 2002 that professional cleaning was mandated for an adequate cleaning. (Id. P167.) The EPA also did not inform the public that the NYCDOH guidelines were meant to apply only to spaces that had been pre-cleaned or tested **[*29]** for asbestos and other toxic substances, as it later claimed. In addition, the EPA did not urge the City to use the most up-to-date testing method for asbestos; the City advised building owners to use an older technique which did not reveal all asbestos fibers. (Id.)

Plaintiffs argue that the EPA's careless handling of indoor clean-up in Lower Manhattan was at odds with the heavy regulation of asbestos by the Federal government. The EPA has listed asbestos as a Group A (known) human carcinogen. (Id. P89.) Exposure to asbestos can lead to, among other diseases, asbestosis, lung cancer and mesothelioma. [9] (Id.) Asbestos is regulated under various Federal statutes, including the Clean Air Act, the Toxic Substances Control Act, the Emergency Planning and Community Right-to-Know Act and CERCLA. Applicable regulations are found in the National Emission Standards of Hazardous Air Pollutants, standards promulgated by OSHA, [10] and regulations under the Toxic Substances Control Act. (Id. PP91-112.)

9 Asbestosis is a serious progressive long-term disease of the lungs. Symptoms include shortness of breath and a dry, crackling sound in the lungs. There is no effective treatment for asbestosis. Mesothelioma is a rare, generally fatal form of cancer; cancer cells are found in the mesothelium, a protective sac that covers most of the body's internal organs. (Id. P89.)

[*30]

10 The EPA adopted the OSHA Asbestos Standards in January, 2000. (Id. P168.)

In cleaning its own building in Lower Manhattan, 290 Broadway, the EPA utilized the most up-to-date method of asbestos testing, TEM, when testing the indoor dust. In addition, the entire building was professionally and systematically cleaned, displacing all EPA personnel for one week. This process was far more thorough and stringent than the procedures set forth in the NYCDOH guidelines. Yet, the EPA did not disclose the fact of this cleaning until months after the WTC Collapse, and instead, minimized the steps it had taken. Plaintiffs state that 290 Broadway is beyond the geographical area covered by the EPA's voluntary clean-up program initiated in mid-2002. (Id. P140.)

Plaintiffs argue that as a result of the EPA's actions, there has been inadequate indoor hazardous materials remediation, and a threat to public health remains. Many residential and commercial spaces were cleaned as if the dust did not contain hazardous materials. About 40% of downtown residents reported that they were not given any instructions for **[*31]** clean-up or hazardous remediation. Even when residents and building owners had notice of the instructions, many failed to do any remediation, or to do it properly. Often, the reasons for this included the lack of financial resources of residents and business owners and inadequate enforcement measures. (Id. PP170-183.) The NYCDOH enforcement measures consisted of a letter sent to building owners around February, 2002, requesting documentation of clean-up measures taken. Plain-

tiffs believe that only a small number of landlords responded to this request. (Id. P186.)

4. The EPA's Voluntary Clean-Up Program

Under pressure from EPA Ombudsman hearings held in February and March, 2002, [11] politicians and the community, in February, 2002, Whitman announced the establishment of a task force to address the issue of indoor air. According to a former EPA Chief of Staff, the EPA initiated this effort because "Over time, we saw that New York City was not prepared to handle all the issues related to indoor air and offered to support them." (Id. P191.) In April, 2002, before the task force initiated any actual interior clean-up program, New York City's Mayor, Michael Bloomberg, requested that the **[*32]** EPA take the lead on indoor air issues arising from the WTC Collapse. (Id.)

11 According to Plaintiffs, the EPA "brazenly refused to testify at the hearings, which, according to then-Ombudsman Robert Martin, was the first such Agency refusal in his nine-year tenure." The EPA allegedly stated that the hearing "may be off-off Broadway, but it is still pure theatre." (Id. P190.)

On May 8, 2002, the EPA, New York City and FEMA officials publicly announced a FEMA-funded clean-up program, which the EPA characterized as a "removal" under 40 C.F.R. § 300.415. [12] (Id. PP191-92.) Lower Manhattan residents, living south of Canal Street, could request testing and cleaning of their residences, or just testing of their residences. Office buildings were omitted from the program. Residents requesting the "testing only" option could choose between aggressive sampling or modified aggressive sampling. For either option, air samples were to be analyzed for asbestos only, despite the fact that the EPA **[*33]** had reason to believe that other contaminants were present at unhealthy levels. The EPA also planned to collect pre-and post-cleaning wipe samples for a limited number of residents (approximately 250) and test these samples for dioxin, total metals and mercury. (Id. P193.) For the "cleaning and post-cleaning" option, two approaches were used to clean the residences. First, the extent of dust contamination was determined through visual inspection. If the EPA believed there to be "substantial" dust, abatement workers were to use full protective equipment, including full body suits and HEPA respirators; residents would not be allowed to be present for a week while the cleaning took place and the apartment would be sealed off. (Id. P194.)

12 See supra footnote 7, p.20.

By December, 2002, the EPA had cleaned fewer than 500 homes. (Id. P192.)

Plaintiffs claim that this voluntary clean-up clearly demonstrates that there were hazards to all citizens who cleaned their apartments and offices of significant accumulations **[*34]** of dust and debris in accordance with NYCDOH guidelines. Also, Plaintiffs claim that the voluntary clean-up effort was grossly inadequate because the EPA only tested for asbestos, the geographical coverage (residences south of Canal Street) was limited and set arbitrarily, and the EPA has not required all apartments within a building to be cleaned which has led to re-contamination of clean residences. Furthermore, office buildings and other workplaces, including firehouses, were excluded from the program. (Id. P196.) The EPA refused to expand the list of hazardous substances to be tested and has continued to collect only air samples, which cannot reveal deposits of contaminants such as lead on the floor or in carpets. (Id. PP200, 202.)

The clean-up program reportedly ended in the Summer of 2003. Approximately 4,100 of 21,000 dwelling units were tested and/or cleaned. Even after cleaning, tests of some units still showed contamination above the health-based benchmark. (Id. P208.) The final report of the New York City Department of Health and Mental Hygiene and U.S. Department of Health and Human Services, Public Health Services, Agency for Toxic Substances and Disease Registry, issued **[*35]** in September, 2002, revealed that almost 20% of apartments tested in Lower Manhattan still had interior dust with measurable levels of asbestos. (Id. P210.)

Researchers have concluded that the cleaning has not removed all contaminants, and that WTC dust and public health risks are higher than estimated by governmental agencies. (Id. PP211-16.) In fact, the EPA now admits that residents may have long-term health risks associated with the WTC Collapse. (Id. P219.)

Plaintiffs claim that as a result of Defendants' wrongdoing, they have been exposed to hazardous substances for over three years and have been left with the expense of full and proper clean-up of their residences and workplaces, as well as the possibility that they may face serious long-term health effects. [13] (Id. P13.)

13 Paragraphs 15 through 25 of the Amended Complaint describe the named Plaintiffs in the suit and ways in which their health has been affected by the WTC Collapse.

II. DISCUSSION

Individual Defendants and EPA Defendants have moved **[*36]** to dismiss all claims against them.

A. Individual Defendants

Individual Defendants Christine Todd Whitman and Marianne Horinko move to dismiss Count One of the Amended Complaint pursuant to Fed. R. Civ. P. 12(b)(6). Count One charges Whitman and Horinko with violating Plaintiffs' Fifth Amendment rights. Individual Defendants argue that the qualified immunity doctrine shields them from personal liability for their actions taken within the scope of their employment with the EPA. Their argument for dismissal is based on three grounds: (1) Plaintiffs fail to plead facts that establish "any cognizable exception" to the qualified immunity protecting Individual Defendants and instead have invented "novel 'constitutional rights'" which they allege defendants violated -- constitutional rights that were not clearly established on September 11, 2001; (2) Plaintiffs' due process claim fails as a matter of law because it relies on statutes and provisions that grant discretionary authority to Individual Defendants; and (3) Plaintiffs also fail to demonstrate that Individual Defendants had an affirmative constitutional duty to protect Plaintiffs from **[*37]** the hazardous substances released into the environment by the September 11, 2001 attacks, and also fail to plead facts that support exceptions under the qualified immunity doctrine. (Ind. Defs.' Mem. Law at 3-4.)

Plaintiffs argue that Individual Defendants are not immune from personal liability because Count One is based on well-established constitutional rights.

1. Rule 12(b)(6)

In a motion to dismiss pursuant to Rule 12(b)(6) of the Federal Rules of Civil Procedure, the Court "must accept as true the factual allegations in the complaint, and draw all reasonable inferences in favor of the plaintiff." Bolt Elec., Inc. v. City of New York, 53 F.3d 465, 469 (2d Cir. 1995) (citations omitted). "The district court should grant such a motion only if, after viewing plaintiff's allegations in this favorable light, it appears beyond doubt that the plaintiff can prove no set of facts in support of his claim which would entitle him to relief." Harris v. City of New York, 186 F.3d 243, 247 (2d Cir. 1999).

A qualified immunity defense can be presented in a Rule 12(b)(6) motion as long as the defense is based on facts **[*38]** appearing on the face of the complaint. McKenna v. Wright, 386 F.3d 432, 436 (2d Cir. 2004). However, a qualified immunity defense raised in a motion to dismiss "must accept the more stringent standard applicable to this procedural route. Not only must the facts supporting the defense appear on the face of the complaint, but, as with all Rule 12(b)(6) motions, the motion may be granted only where it appears beyond doubt that the plaintiff can prove no set of facts in support of his claim that would entitle him to relief." Id. (citations and internal quotations omitted). The Rule 12(b)(6) standard that the plaintiff is entitled to all reasonable inferences from the facts alleged in the complaint applies to those facts that support his claim, and also those that defeat the immunity defense. Id.

2. Qualified Immunity

Individual Defendants argue that Count One must be dismissed because they are shielded by qualified immunity. [14]

14 Although Plaintiffs do not explicitly state that Count One is a Bivens action in their Amended Complaint, they make this clear in their Memorandum of Law. Count One rests upon an implied private action for damages against Federal officers alleged to have violated Plaintiffs' constitutional rights, first recognized by the Supreme Court in Bivens v. Six Unknown Fed. Narcotics Agents,

403 U.S. 388, 91 S. Ct. 1999, 29 L. Ed. 2d 619 (1971). (See Pls.' Mem. Law at 5.) A Bivens action permits victims of alleged constitutional violations by Federal officials to recover damages despite the absence of a statute specifically conferring such a cause of action. See Carlson v. Green, 446 U.S. 14, 18, 100 S. Ct. 1468, 64 L. Ed. 2d 15 (1980).

A Bivens action, however, may not be brought against Federal officials in their official capacity, and may only be brought against them in their individual capacities. The doctrine of sovereign immunity shields the United States against actions for damages absent consent. See Robinson v. Overseas Military Sales Corp., 21 F.3d 502, 510 (2d Cir. 1994) ("Because an action against a Federal agency or Federal officers in their official capacities is essentially a suit against the United States, such suits are also barred under the doctrine of sovereign immunity, unless such immunity is waived.") (citing FDIC v. Meyer, 510 U.S. 471, 485-86, 114 S. Ct. 996, 127 L. Ed. 2d 308 (1994)). Damages relief against Federal defendants in their individual capacities can be maintained as Bivens actions and are not barred by sovereign immunity. However, they may be subject to the defenses of absolute or qualified immunity. See Liffiton v. Keuker, 850 F.2d 73, 78 (2d Cir. 1988).

The Amended Complaint does not specify whether Plaintiffs are suing the Individual Defendants in their official or individual capacities. However, because Plaintiffs do not specify in what capacity they are suing Individual Defendants, the Court shall consider this cause of action as against Individual Defendants in their individual capacities.

[*39] "Qualified or 'good faith' immunity is an affirmative defense that must be pleaded by a defendant official." Harlow v. Fitzgerald, 457 U.S. 800, 815, 102 S. Ct. 2727, 73 L. Ed. 2d 396 (1982) (quoting Gomez v. Toledo, 446 U.S. 635, 100 S. Ct. 1920, 64 L. Ed. 2d 572 (1980)). Such a defense "serves important interests in our political system. It protects government officials from liability they might otherwise incur due to unforeseeable changes in the law governing their conduct." Sound Aircraft Servs. v. Town of E. Hampton, 192 F.3d 329, 334 (2d Cir. 1999). Qualified immunity also serves the important public interest of "protecting public officials from the costs associated with the defense of damages actions . . . [including] the expenses of litigation, the diversion of official energy from pressing public issues, and the deterrence of able citizens from accepting public positions." Crawford-El v. Britton, 523 U.S. 574, 590, 118 S. Ct. 1584, 140 L. Ed. 2d 759 at fn.12 (1998). Qualified immunity is not merely a defense; it is also "an entitlement not to stand trial or face the other burdens of litigation." Mitchell v. Forsyth, 472 U.S. 511, 526, 105 S. Ct. 2806, 86 L. Ed. 2d 411 (1985).

Qualified immunity shields a defendant from liability **[*40]** "if either (a) the defendant's action did not violate clearly established law, or (b) it was objectively reasonable for the defendant to believe that his action did not violate such law." Johnson v. Newburgh Englarged Sch. Dist., 239 F.3d 246, 250 (2d Cir. 2001); Brosseau v. Haugen, 543 U.S. 194, 125 S.Ct. 596, 599, 160 L. Ed. 2d 583 (2004) ("Qualified immunity shields an officer from suit when she makes a decision that, even if constitutionally deficient, reasonably misapprehends the law governing the circumstances she confronted"); see also Harlow, 457 U.S. at 818-19.

"[A] court evaluating a claim of qualified immunity must first determine whether the plaintiff has alleged the deprivation of an actual constitutional right at all, and if so, proceed to determine whether that right was clearly established at the time of the alleged violation." Wilson v. Layne, 526 U.S. 603, 609, 119 S. Ct. 1692, 143 L. Ed. 2d 818 (1999); see also Ying Jing Gan v. City of New York, 996 F.2d 522, 532 (2d Cir. 1993). Determining the constitutional question first serves two purposes: it spares the defendant of unwarranted demands and liability "customarily imposed upon those defending **[*41]** a long drawn-out lawsuit" and also "promotes clarity in the legal standards for official conduct, for the benefit of both the officers and the general public." Id.

If a deprivation of a constitutional right has been alleged, a court must determine whether the constitutional right was clearly established by determining: (1) if the law was defined with reasonable clarity, (2) if the Supreme Court or the law of the Second Circuit affirmed the rule, and (3)

whether a reasonable defendant would have understood from existing law that the conduct was unlawful. See Young v. County of Fulton, 160 F.3d 899, 903 (2d Cir. 1998). "The contours of the right must be sufficiently clear that a reasonable official would understand that what he is doing violates that right." Anderson v. Creighton, 483 U.S. 635, 640, 107 S. Ct. 3034, 97 L. Ed. 2d 523 (1987). The specific action in question does not have to have been explicitly deemed unlawful by the courts, but its unlawfulness in light of pre-existing law must be apparent. Id. "An overly narrow definition of the right can effectively insulate the government's actions by making it easy to assert that the narrowly defined right was not clearly **[*42]** established." LaBounty v. Coughlin, 137 F.3d 68, 73-74 (2d Cir. 1998). At the same time, the right cannot be defined too broadly, as that would convert the rule of qualified immunity into one of virtually unqualified liability. Id.

Even if a court finds that the right is clearly established, "defendants may nonetheless establish immunity by showing that reasonable persons in their position would not have understood that their conduct was within the scope of the established protection." LaBounty, 137 F.3d at 73 (2d Cir. 1998). "Reasonableness is judged against the backdrop of the law at the time of the conduct . . . . This inquiry must be undertaken in light of the specific context of the case, not as a broad general proposition." Brosseau, 125 S.Ct. at 599.

a. Allegation of a Deprivation of a Constitutional Right

Plaintiffs contend that they have alleged a constitutional violation, namely a violation of their "substantive due process rights to bodily integrity and, more specifically, their right to be free of official government policies that increase the risk of bodily harm." (Pls.' Mem. Law at 3.)

Individual Defendants argue **[*43]** that no due process right requires the Government to protect the public from environmental hazards created by third parties. (Ind. Defs.' Mem. Law at 13.) Specifically, Individual Defendants state that Plaintiffs' allegation fails the first prong of the qualified immunity test because "it does not take account of the particular context of this case" and instead, attempt to analogize the situation at issue here with cases that are completely dissimilar. [15] (Id. at 4, 6.) Individual Defendants make an additional argument that a constitutional violation has not been alleged because allegations that Individual Defendants acted with "deliberate indifference" do not state a violation of substantive due process rights, and Plaintiffs have failed to allege conduct that "shocks the conscience." [16] (Id. at 9.)

15 Though Individual Defendants make this argument as part of their brief addressing Plaintiffs' failure to allege a constitutional violation, it appears to the Court that the argument is more properly directed toward the issue of whether the right alleged has been clearly established.

16 Individual Defendants dedicated a substantial portion of their initial Memorandum of Law to the argument that Count One should be dismissed because "Plaintiffs have no constitutional right to a healthful environment, or to a specific level or type of cleanup of environmental hazards." (Ind. Defs.' Mem. Law at 6.) They argue that Plaintiffs' substantive due process claim fails because they lack any statutory or regulatory entitlement or property interest. (Id. at 3, 7-8.)

However, it is clear from Plaintiffs' Amended Complaint and their opposition brief that Count One is based upon a violation of Plaintiffs' substantive due process right to be free of government policies that increase the risk of bodily harm. (Am. Compl. PP221-29; Pls' Mem. Law at 5.) In their reply, Individual Defendants state that "Plaintiffs concede that the substantive due process claim they assert . . . is not based upon any of the Federal statutes or regulations Plaintiffs cite in their Amended Complaint." (Ind. Defs.' Reply at 1.) However, by letter, dated July 7, 2005, the Individual Defendants brought to the Court's attention a recent Supreme Court case, Town of Castle Rock v. Gonzales, 125 S. Ct. 2796, 162 L. Ed. 2d 658 (2005), where the Supreme Court recognized that neither a substantive nor procedural due process right arises from statutes that confer discretionary authority on

> government actors. As Plaintiffs have clarified in their memoranda of law, they are not claiming a substantive due process violation based on any statute, entitlement or property interest. As such, the Court finds that Town of Castle Rock is not relevant to the analysis of whether an allegation of a constitutional deprivation has been made in this case.

[*44] The Due Process Clause provides that "No person . . . shall be deprived of life, liberty, or property, without due process of law . . . ." U.S. CONST. amend. V. The Supreme Court has recognized that this clause includes a substantive component, "which forbids the government to infringe certain 'fundamental' liberty interests at all, no matter what process is provided, unless that infringement is narrowly tailored to serve a compelling state interest." Reno v. Flores, 507 U.S. 292, 302, 113 S. Ct. 1439, 123 L. Ed. 2d 1 (1993); see also Washington v. Glucksberg, 521 U.S. 702, 719, 117 S. Ct. 2258, 117 S. Ct. 2302, 138 L. Ed. 2d 772 (1997) ("The Due Process Clause guarantees more than fair process . . . .") (emphasis added). "The Due Process Clause . . . was intended to prevent government 'from abusing [its] power, or employing it as an instrument of oppression.'" Collins v. Harker Heights, 503 U.S. 115, 126, 112 S. Ct. 1061, 117 L. Ed. 2d 261 (1992) (quoting DeShaney v. Winnebago County Dept. of Social Services, 489 U.S. 189, 196, 109 S. Ct. 998, 103 L. Ed. 2d 249 (1989)).

The Supreme Court has recognized a substantive due process right to bodily integrity. See Albright v. Oliver, 510 U.S. 266, 272, 114 S. Ct. 807, 127 L. Ed. 2d 114 (1994); Planned Parenthood v. Casey, 505 U.S. 833, 112 S. Ct. 2791, 120 L. Ed. 2d 674 (1992); **[*45]** Washington v. Harper, 494 U.S. 210, 110 S. Ct. 1028, 108 L. Ed. 2d 178 (1990); Winston v. Lee, 470 U.S. 753, 105 S. Ct. 1611, 84 L. Ed. 2d 662 (1985); Rochin v. California, 342 U.S. 165, 72 S. Ct. 205, 96 L. Ed. 183 (1952). However, "as a general matter . . . a state's failure to protect an individual against private violence simply does not constitute a violation of the Due Process Clause." DeShaney v. Winnebago County Dept. of Social Services, 489 U.S. 189, 197, 109 S. Ct. 998, 103 L. Ed. 2d 249 (1989). The language of the Due Process Clause does not "require the State to protect the life, liberty, and property of its citizens against invasion by private actors. The Clause is phrased as a limitation on the State's power to act, not as a guarantee of certain minimal levels of safety and security." Id. at 195. The Due Process Clause was included in the Constitution to "protect the People from the State, not to ensure that the State protected them from each other." Id. at 196. In DeShaney, the Supreme Court found that there was no violation of the plaintiff's substantive due process rights in a case where the State had been aware of a child's physical abuse by his father yet failed to remove the child from his father's **[*46]** custody.

The Supreme Court recognized, however, that "in certain limited circumstances the Constitution imposes upon the State affirmative duties of care and protection with respect to particular individuals." Id. at 198. Two such circumstances, referred to by the Supreme Court in DeShaney, have been recognized by the circuit courts. One such circumstance arises when the State "takes a person into its custody and holds him there against his will," thereby depriving him of liberty. DeShaney, 489 U.S. at 199-200. This is often referred to as the "special relationship" doctrine. The DeShaney court also recognized a second possible set of circumstances where the state could be held liable for harm inflicted on an individual by third parties, when it said that:

> While the State may have been aware of the dangers that [the child, Joshua] faced in the free world, it played no part in their creations, nor did it do anything to render him more vulnerable to them.

Id. at 201. This exception to the DeShaney rule has been termed the "state-created danger" doctrine. Plaintiffs claim that their allegation of a violation **[*47]** of their substantive due process rights falls under this second doctrine.

All the circuit courts have recognized this "state-created danger" doctrine. See Coyne v. Cronin, 386 F.3d 280, 287 (1st Cir. 2004) (stating that the "Due Process Clause may be implicated where the government affirmatively acts to increase the threat to an individual of third-party private harm"); Butera v. District of Columbia, 344 U.S. App. D.C.

265, 235 F.3d 637, 651 (D.C. Cir. 2000) (holding that "under the State endangerment concept, an individual can assert a substantive due process right to protection by the District of Columbia from third-party violence when District of Columbia officials affirmatively act to increase or create the danger that ultimately results in the individual's harm."); Penilla v. City of Huntington Park, 115 F.3d 707, 709 (9th Cir. 1997) (stating that "when a state officer's conduct places a person in peril in deliberate indifference to their safety, that conduct creates a constitutional claim"); see also Kneipp v. Tedder, 95 F.3d 1199, 1205, 1208 (3d Cir. 1996); Pinder v. Johnson, 54 F.3d 1169, 1175-77 (4th Cir. 1995) **[*48]** (en banc); McKinney v. Irving Independent School District, 309 F.3d 308, 313 (5th Cir. 2002); Kallstrom v. City of Columbus, 136 F.3d 1055, 1066 (6th Cir. 1998); Reed v. Gardner, 986 F.2d 1122, 1125 (7th Cir. 1993), cert. denied, 510 U.S. 947 (1993); Avalos v. City of Glenwood, 382 F.3d 792, 799 (8th Cir. 2004); Uhlrig v. Harder 64 F.3d 567, 572 n.7 (10th Cir. 1995), cert. denied, 516 U.S. 1118, 116 S. Ct. 924, 133 L. Ed. 2d 853 (1996); Wyke v. Polk County Sch. Bd., 129 F.3d 560, 567 (11th Cir. 1997).

The Second Circuit as well has recognized this state-created danger doctrine and has stated that:

> the DeShaney Court's analysis [implies] that, though an allegation simply that police officers had failed to act upon reports of past violence would not implicate the victim's rights under the Due Process Clause, an allegation that the officers in some way had assisted in creating or increasing the danger to the victim would indeed implicate those rights.

Dwares v. City of New York 985 F.2d 94, 99 (2d Cir. 1993) (emphasis added). The Second Circuit **[*49]** has made it clear that it treats "special relationships and state created dangers as separate and distinct theories of liability." Pena, 432 F.3d 98, 2005 WL 3340380, at *7. "State created danger liability arises from the relationship between the state and the private assailant" and not the state and the victim. Pena, 432 F.3d 98, 2005 WL 3340380, at *7 (internal quotations marks omitted).

In applying the state-created danger doctrine, the Second Circuit has "sought to tread a fine line between conduct that is 'passive' as in DeShaney and that which is 'affirmative' as in Dwares." Pena v. Deprisco, 432 F.3d 98, 2005 WL 3340380, at *7 (2d Cir. 2005). See also Hemphill v. Schott, 141 F.3d 412, 418 (2d Cir. 1998) (finding that state actors also can be found to have violated due process rights "where the state actors actually contributed to the vulnerability of the plaintiff.").

In Dwares, the court found that plaintiff stated a claim for deprivation of his substantive due process rights by alleging that defendant police officers agreed with a group of skinheads to **[*50]** allow them to assault plaintiff with impunity, stood by without interfering when plaintiff was beaten, and did not arrest the assaulters. The Second Circuit found that the defendant officers' prior indication to the skinheads that they would not intervene, as well as their subsequent failure to prevent harm to the plaintiff affirmatively increased the danger the plaintiff faced from the group of skinheads who attacked him. The Second Circuit found Dwares distinguishable from DeShaney because the complaint "went well beyond allegations that the defendant officers merely stood by and did nothing." In Pena v. Deprisco, 432 F.3d 98, 2005 WL 3340380 (2d Cir. 2005), plaintiffs' allegations that defendants communicated to the police officer that he was free to drink excessively and drive in that condition, and "encouraged to inappropriately and excessively drink while on and off-duty" were found sufficient to allege state-created danger. Merely alleging a failure to interfere when misconduct takes places, and nothing more, however, is not sufficient in pleading a constitutional violation based on the state-created danger doctrine. Id., 432 F.3d 98, 2005 WL 3340380, at *8.

The D.C. Circuit has **[*51]** similarly held that "an individual can assert a substantive due process right to protection by the District of Columbia from third-party violence when District of Columbia officials affirmatively act to increase or create the danger that ultimately results in the individual's harm." Butera, 344 U.S. App. D.C. 265, 235 F.3d 637, 651. In Butera, the D.C. Circuit Court found that a violation of a substantive due process right was alleged by the estate of an undercover operative for the Metropolitan Police Department of the Dis-

trict of Columbia who died during an undercover operation. The estate alleged that the Police Department had not fully advised the undercover of the potential risks, and that appropriate precautions had not been taken to ensure his safety. Relying on Butera, a district court in the District of Columbia recognized the state-created danger exception in a suit filed by postal workers exposed to anthrax when a letter addressed to Senator Tom Daschle was processed at the Washington, D.C. postal facility where they worked. [17] Briscoe v. Potter, 355 F. Supp. 2d 30 (D.D.C. 2004). The Briscoe court found that the defendants took the requisite "affirmative [*52] actions" by "engaging in a series of actions which intentionally misled Plaintiffs into believing the facility was safe and prevented them from acting to preserve their own safety." 355 F. Supp. 2d at 44-45.

17 A contrary conclusion was reached in Richmond v. Potter, 2004 U.S. Dist. LEXIS 25374, No. 03-00018, slip op. (D.D.C. Sept. 30, 2004), another case involving the same anthrax incident. That court found that the plaintiff failed to allege a constitutional deprivation because the conduct of defendants did not arise to one that shocked the conscience.

Any allegation of a deprivation of the substantive due process right based on the state-created danger doctrine must "shock the conscience." "The due process guarantee does not entail a body of constitutional law imposing liability whenever someone cloaked with state authority causes harm." County of Sacramento v. Lewis, 523 U.S. 833, 848, 118 S. Ct. 1708, 140 L. Ed. 2d 1043 (1998). In order for a substantive due process allegation to survive a Rule 12(b)(6) motion, the complaint "must allege [*53] governmental conduct that 'is so egregious, so outrageous, that it may fairly be said to shock the contemporary conscience.'" Velez v. Levy, 401 F.3d 75, 93 (2d Cir. 2005) (quoting County of Sacramento v. Lewis, 523 U.S. 833, 847, n.8, 118 S. Ct. 1708, 140 L. Ed. 2d 1043 (1998)). The plaintiff must satisfy the "intent to harm" standard to prove that the police officers' behavior in the context of a high-speed chase, was conscience-shocking. Sacramento, 523 U.S. at 854. However, allegations of "less than intentional conduct . . . may be actionable," though the plaintiff must allege "something more than negligence." Id. at 848.

In some circumstances, deliberate indifference by officials may satisfy the "shocks the conscience" test. Such is the case in prison cases where the State has taken an individual into its custody and "so restrains [his] liberty that it renders him unable to care for himself." Id. at 851. Deliberate indifference can also shock the conscience in non-custodial situations when "the State also owes a duty of protection when its agents create or increase the danger to an individual." Butera, 235 F.3d at 652. [*54] Alleged behavior "over an extended period of time and in the face of action that presents obvious risk of severe consequences and extreme danger" can also be characterized as conscience-shocking. Pena, 432 F.3d 98, 2005 WL 3340380, at *11 (finding that police officers who had ample opportunity to decide what to do and say in response to the alleged practice of drinking and driving by off-duty officers, when the risk of drinking and driving was widely known and yet did nothing, created a serious danger by acting with conscience-shocking deliberate indifference).

Plaintiffs allege a violation of their substantive due process rights by actions taken by Defendants Whitman and Horinko. Specifically, Plaintiffs allege the following acts:

. Whitman made affirmative statements that the EPA would clean up building interiors to an acceptable level of safety, and failed to do so, and allowed residents, office workers, firefighters and school children to return to their buildings on September 17, 2001;

. Whitman's and Horinko's knowingly false statements were disseminated to victims of the attack regarding the air quality;

. Whitman and Horinko illegally and improperly delegated [*55] to New York City indoor clean-up;

. Whitman and Horinko endorsed and disseminated New York City's grossly improper cleaning instructions; and

. Whitman and Horinko generally failed to ensure a clean-up of the impact area of the WTC attack and to ensure the decontamination of buildings

containing carcinogens and other hazardous substances.

(Am. Compl. P223.)

Plaintiffs' allegations that Whitman and Horinko must be held liable because they intentionally shirked EPA's duties and laws, including the PDD 62, the Federal Response Plan and other Federal law, by their improper delegation of all indoor clean-up to the City of New York, and implementation of an inadequate voluntary clean-up program, are not properly directed towards Whitman and Horinko individually. Aside from their general allegation that Whitman and Horinko "were responsible for and did direct the formulation, implementation and enforcement of the EPA's policies with respect to WTC dust, [and] the clean-up of such dust in interior spaces," (Am. Compl. P29), and Whitman and Horinko's acknowledgment that as heads of the EPA, they had lead responsibility for clean-up, (id. PP142-43), Plaintiffs fail to allege **[*56]** any actions that Whitman and Horinko took as individuals in the delegation of authority to New York City, and the implementation of the clean-up program. The allegations are in fact allegations against the agency itself, the EPA. Indeed, the Court's careful review of the Amended Complaint does not reveal any specific mention of Whitman or Horinko in any portion of the Amended Complaint that deals with the alleged improper delegation of clean-up and the voluntary clean-up program. Accordingly, the Court finds that Individual Defendants cannot be held liable for actions that were in fact taken by the EPA as an agency, and not individually by either Whitman or Horinko.

However, Plaintiffs also allege a number of deceptive and false statements made by Whitman and Horinko that placed Plaintiffs "directly in the path of danger, knowingly exposing them to asbestos and other carcinogens and hazardous substances, which in turn created a serious risk of significant long-term health problems." (Pls.' Mem. Law at 2.)

In particular, the Amended Complaint alleges numerous false statements by Whitman which they say, increased their risk of bodily harm. (See Am. Compl. PP121, 122, 126, 128, **[*57]** 135 and 136.) Whitman made these statements with the knowledge of the hazardous materials actually and potentially released into the environment and of the health dangers associated with such substances to the public through inhalation, ingestion and hard contact. (Am. Compl. P226.) Whitman's deliberate and misleading statements made to the press, where she reassured the public that the air was safe to breathe around Lower Manhattan and Brooklyn, and that there would be no health risk presented to those returning to those areas, shocks the conscience.

The EPA is designated as the agency in our country to protect human health and the environment, and is mandated to work for a cleaner, healthier environment for the American people. See EPA, "Our Mission", http://www.epa.gov/epahome/aboutepa.htm. The agency enforces regulations regarding pollution in our environment and the presence of toxic and hazardous substances, and has endorsed and promulgated regulations for hazardous and toxic materials, such as asbestos and lead. [18] As head of the EPA, Whitman knew of this mandate and took part in and directed the regulatory activities of the agency. Given this responsibility, the allegations **[*58]** in this case of Whitman's reassuring and misleading statements of safety after the September 11, 2001 attacks are without question conscience-shocking. The pleaded facts are sufficient to support an allegation of a violation of the substantive due process right to be free from official government policies that increase the risk of bodily harm by Defendant Whitman when she consistently reassured the members of the public that it was safe for them to return to their homes, schools and workplaces, just days following the September 11, 2001 attacks.

18 According to the EPA, it carries out its efforts to protect the environment through the following laws: Federal Food, Drug, and Cosmetic Act; Federal Insecticide, Fungicide, and Rodenticide Act; Federal Water Pollution Control Act (also known as the Clean Water Act); Clean Air Act; Shoreline Erosion Protection Act; Solid Waste Disposal Act; National Environmental Policy Act; Pollution Prevention Packaging Act; Resource Recovery Act; Lead-Based Paint Poisoning Prevention Act; Coastal Zone Management Act; Marine Protection, Research, and Sanctuaries Act; Ocean Dumping Act; Endangered Species Act; Safe Drinking

Water Act; Shoreline Erosion Control Demonstration Act; Hazardous Materials Transportation Act; Resource Conservation and Recovery Act; Toxic Substances Control Act; Surface Mining Control and Reclamation Act; Uranium Mill-Tailings Radiation Control Act; Asbestos School Hazard Detection and Control Act; Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); Nuclear Waste Policy Act; Asbestos School Hazard Abatement Act; Asbestos Hazard Emergency Response Act; Emergency Planning and Community Right to Know Act; Indoor Radon Abatement Act; Lead Contamination Control Act; Medical Waste Tracking Act; Ocean Dumping Ban Act; Shore Protection Act; and National Environmental Education Act. See EPA, Laws and Regulations: Introduction to Laws and Regulations, at http://www.epa.gov/epahome/lawintro.htm.

For example, under the Resource Conservation and Recovery Act, the EPA is required to "promulgate regulations for the treatment, storage, or disposal of hazardous waste . . ., as may be necessary to protect human health and the environment." 42 U.S.C. § 6924(a). The Clean Air Act requires the EPA to promulgate and establish emission standards for sources of hazardous air pollutants. 42 U.S.C. § 7412(d). Among the factors the EPA must consider when promulgating standards is the "known or anticipated adverse effects of such pollutants on public health and the environment." 42 U.S.C. § 7412(e)(2). Other major environmental laws contain similar provisions.

[*59] However, although Plaintiffs allege that Horinko made knowingly false statements to the public, no such statement can be found in the Amended Complaint. It appears that Plaintiffs' allegation that Horinko violated their constitutional rights is actually based on Horinko's alleged participation in the delegation of the clean-up and the implementation of the clean-up program. As the Court has determined that such actions are not attributable to Horinko individually, and there is not one allegedly false statement made by Horinko individually concerning the air quality in the Amended Complaint, Count One against Horinko is DISMISSED.

b. Clearly Established Constitutional Right

Defendant Whitman argues that if the Court finds that Plaintiffs alleged a deprivation of their substantive due process rights, that she is still entitled to qualified immunity because the right alleged by Plaintiffs was not clearly established at the time of Defendant Whitman's conduct. [19] Plaintiffs disagree and contend that the right to be free of dangers created by government officials is clearly established in this Circuit.

19 Because the Court has found that Plaintiffs have failed to allege unconstitutional acts by Horinko, the Court only addresses the argument of remaining Individual Defendant, Whitman, in this portion of the Opinion.

[*60] The Second Circuit has found the state-created danger doctrine to apply in two instances. The Second Circuit stated in Dwares that plaintiff's allegations of "a prearranged official sanction of privately inflicted injury" surely violated the plaintiff's Due Process rights. In Pena, the Second Circuit found that "repeated inaction on the part of government officials over a long period of time, without an explicit statement of approval, might effectively constitute such an implicit 'prior assurance'" that it rose to the level of an affirmative act. [20]

20 However, in Pena, the Second Circuit found that the substantive due process violation alleged by plaintiff "was not clearly established for purposes of qualified immunity. Dwares did not address, let alone decide, whether repeated inaction on the part of government officials over a long period of time without an explicit statement of approval, might effectively constitute such an implicit 'prior assurance' that it rises to the level of an affirmative act." 432 F.3d 98, 2005 WL 3340380, at *12. Pena is clearly distinguishable from this case; Plaintiffs allege affirmative acts by Defendant, and not inaction, or implied assurances by Defendant.

[*61] Defendant Whitman states that "There is no analogous claim in this case that [Whitman] conspired with the 9/11 terrorists to cause Plaintiffs to be exposed to hazardous substances." (Ind. Defs.' Mem. Law at 20.) Defendant Whitman argues that there is no "settled precedent that public misrepresentation by a government official regarding potential dangers from environmental hazards created by a third party's actions can be construed, for due process purposes, as 'increasing the danger' posed by those hazards." (Id.)

Defendant Whitman, however, seeks to define the contours of the state-created danger doctrine as recognized by the Second Circuit too narrowly. As mentioned previously, in the context of qualified immunity, the Supreme Court has stated that the specific action in question does not explicitly have to have been deemed unlawful, as long as its unlawfulness in light of pre-existing law is apparent. See Anderson v. Creighton, 483 U.S. 634, 640 (1987). By stating that Plaintiffs need to have alleged a conspiracy between Defendant Whitman and the Al Qaeda terrorists in order to allege state-created danger, Defendant Whitman raises a rather specious argument **[*62]** which demonstrates a myopic view of the Plaintiffs' claim. There is no question that Whitman did not conspire with Al Qaeda to harm Plaintiffs. But by the time the Al Qaeda terrorists had committed their horrific acts, and the World Trade Center towers had collapsed, Whitman knew that the consequences of the terrorists' actions, namely causing the collapse of the World Trade Center, included the emission of tons of hazardous materials into the air. It is at this point, when the harmful emissions created a danger to the public that Whitman, knowing the likely harm to those exposed to the hazardous materials, encouraged residents, workers and students to return to the area. By these actions, she increased, and may have in fact created, the danger to Plaintiffs, namely harm to their persons through exposure to the hazardous substances in the air after the WTC collapse. Without doubt, if Plaintiffs had not been told by the head of a federal agency entrusted with monitoring the environment that it was safe, plaintiffs would not have so readily returned to the area so soon after the attacks.

Defendant Whitman, like the defendant officers in Dwares, affirmatively took actions that **[*63]** increased or created the danger to Plaintiffs. If officials who conspire with others who harm others can be held liable under the state-created danger doctrine, it is even more clear that officials who themselves directly lead victims to a likely and/or known harm can be held liable under this doctrine. The Court, having found that the law of state-created danger was defined with reasonable clarity to give Defendant Whitman notice, also finds that no argument can be made that Defendant Whitman could not have understood from existing law that her conduct was unlawful. No reasonable person would have thought that telling thousands of people that it was safe to return to Lower Manhattan, while knowing that such return could pose long-term health risks and other dire consequences, was conduct sanctioned by our laws. The Court finds that Defendant Whitman is not entitled to the defense of qualified immunity at this stage. Accordingly, Individual Defendants' Motion to Dismiss Count One is GRANTED in part as to Defendant Horinko and DENIED in part as to Defendant Whitman.

B. EPA Defendants

EPA Defendants move to dismiss the second and third causes of action against them for lack of **[*64]** subject matter jurisdiction and failure to state a claim. The EPA, as the sole defendant named in the fourth cause of action, moves to dismiss that claim on the ground that Plaintiffs have failed to properly allege a Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA") citizen suit claim.

1. Legal Standards

EPA Defendants move to dismiss the claims against them under Rules 12(b)(1) and 12(b)(6) of the Federal Rules of Civil Procedure. The standards for dismissal under 12(b)(1) and 12(b)(6) are virtually identical. Lerner v. Fleet Bank, N.A., 318 F.3d 113, 128 (2d Cir. 2003).

Rule 12(b)(1) provides for dismissal of a claim when the Federal court "lacks jurisdiction over the subject matter." Fed. R. Civ. P. 12(b)(1). In deciding such a motion, a court must assume as true all well-pleaded factual allegations in the complaint and draw all reasonable inferences in favor of the plaintiff. Raila v. United States, 355 F.3d 118, 119 (2d Cir. 2004); Sweet v. Sheahan, 235 F.3d 80, 83

(2d Cir. 2000). Dismissal is appropriate only when **[*65]** the plaintiff can prove no set of facts entitling him to relief. Raila, 355 F.3d at 119. "But when the question to be considered is one involving the jurisdiction of a Federal court, the jurisdiction must be shown affirmatively, and that showing is not made by drawing from the pleadings inferences favorable to the party asserting it." Shipping Financial Services Corp. v. Drakos, 140 F.3d 129, 131 (2d Cir. 1998).

2. Second Cause of Action: APA Claim

EPA Defendants contend that the Administrative Procedure Act Claim must be dismissed because it is precluded by the Stafford Act's bar on judicial review, contained in 42 U.S.C. § 5148. In the event that the Court finds that judicial review is not precluded by the Stafford Act, EPA Defendants argue that judicial review is still unavailable because Plaintiffs have failed to identify any "agency action" by the EPA as required by the APA.

a. Judicial Review under the APA

Plaintiffs assert jurisdiction under 28 U.S.C. § 1331, the Federal question statute, the Fifth Amendment of the Constitution, the Stafford Act, CERCLA and the APA. (Pls.' Mem. Law at 5.)

[*66] The federal question statute, 28 U.S.C. § 1331, in combination with the APA, 5 U.S.C. § 702, provides for judicial review of Federal administrative actions. Califano v. Sanders, 430 U.S. 99, 105-07, 97 S. Ct. 980, 51 L. Ed. 2d 192 (1977); Lunney v. United States, 319 F.3d 550, 557-58 (2d Cir. 2003); New York v. U.S. E.P.A., 350 F. Supp. 2d 429 (S.D.N.Y. 2004). The APA provides that "a person suffering legal wrong because of agency action or adversely affected or aggrieved by agency action within the meaning of a relevant statute, is entitled to judicial review thereof." 5 U.S.C. § 702. This provision waives sovereign immunity in actions for relief other than money damages against officials acting in their official capacity, concerning "agency action made reviewable by statute and final agency action for which there is no other adequate remedy in a court. 5 U.S.C. § 704.

The APA's waiver of sovereign immunity, however, is not unlimited. Judicial review of agency action under the APA is unavailable where "(1) statutes preclude judicial review; or (2) agency action is committed **[*67]** to agency discretion by law." 5 U.S.C. § 701(a). The former restriction applies to instances where Congress expressed an intent to prohibit judicial review; the latter restriction applies where statutes are drawn in such broad terms that there is no law to apply in any given case. See Webster v. Doe, 486 U.S. 592, 599, 108 S. Ct. 2047, 100 L. Ed. 2d 632 (1988) (citing Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402, 410, 91 S. Ct. 814, 28 L. Ed. 2d 136 (1971)).

b. Preclusion under § 701(a)(1) of the APA

The exceptions to judicial review under the APA contained in 5 U.S.C. § 701 must be construed in light of the "strong presumption that Congress intends judicial review of administrative actions." Traynor v. Turnage, 485 U.S. 535, 542, 108 S. Ct. 1372, 99 L. Ed. 2d 618 (1988). Judicial review may be overcome "only upon a showing of 'clear and convincing evidence' of contrary legislative intent." Abbott Laboratories v. Gardner, 387 U.S. 136, 140-41, 87 S. Ct. 1507, 18 L. Ed. 2d 681 (1967), overruled on other grounds by Califano v. Sanders, 430 U.S. 99, 97 S. Ct. 980, 51 L. Ed. 2d 192 (1977). An indicator of such intent can be found in the specific language of the statute or specific legislative history. See **[*68]** Block v. Community Nutrition Institute, 467 U.S. 340, 349, 104 S. Ct. 2450, 81 L. Ed. 2d 270 (1984). Moreover, "The fact that a statute precludes review of a particular category of determinations does not mean that Congress intended to preclude review of other types of determinations covered by the same statute." State of New York v. United States Environmental Protection Agency, 350 F. Supp. 2d 429, 437 (S.D.N.Y. 2004) (citing Bowen v. Michigan Academy of Family Physicians, 476 U.S. 667, 674, 680-81, 106 S. Ct. 2133, 90 L. Ed. 2d 623 (1986)).

In determining whether and to what extent a particular statute precludes judicial review, a court may look at the express language of the statute, the structure of the statutory scheme, its objectives, its legislative history, and the nature of the administrative action involved. See Block, 467 U.S. at 345 (1984). Unconstitutional agency action, however, is never precluded from judicial review. "Where Congress intends to preclude judicial review of constitutional claims its intent to do so must be clear . . . . [This is required] in part to avoid the serious con-

stitutional question that would arise if a Federal statute were construed to deny any **[*69]** judicial forum for a colorable constitutional claim." Webster v. Doe, 486 U.S. 592, 603, 108 S. Ct. 2047, 100 L. Ed. 2d 632 (1988) (internal quotations and citations omitted). See also Johnson v. Robison, 415 U.S. 361, 373-74, 94 S. Ct. 1160, 39 L. Ed. 2d 389 (1974) (same); Battaglia v. Gen. Motors Corp, 169 F.2d 254, 257 (2d Cir. 1948) (finding that although Congress has the power to give, withhold and restrict the jurisdiction of courts other than the Supreme Court, "it must not so exercise that power as to deprive any person of life, liberty, or property without due process of law . . . .").

c. Stafford Act

> Section 5148 of the Stafford Act provides that The Federal Government shall not be liable for any claim based upon the exercise or performance of or the failure to exercise or perform a discretionary function or duty on the part of a Federal agency or an employee of the Federal Government in carrying out the provisions of this chapter.

42 U.S.C. § 5148. The legislative history of § 5148 reflects Congress' intent to provide broad immunity for discretionary actions taken by officials under the Act. Prior to its passage, Representative Whittington, Chairman **[*70]** of the House Public Works Committee, stated:

> We have further provided that if the agencies of the Government make a mistake in the administration of the Disaster Relief Act that the Government may not be sued. Strange as it may seem, there are many suits pending in the Court of Claims today against the Government because of alleged mistakes made in the administration of other relief acts, suits aggregating millions of dollars because citizens averred that the agencies and employees of Government made mistakes. We have put a stipulation in here that there shall be no liability on the part of the Government.

H.R. 8396, 81st Cong., 2d Sess., 96 Cong.Rec. 11895, 11912 (1950).

The language of the statute and the legislative history of the Stafford Act clearly preclude discretionary actions taken under the Stafford Act from judicial review. The question then becomes whether the actions taken by the EPA are discretionary or mandatory functions. [21]

> 21 Plaintiffs argue that § 5148 of the Stafford Act does not apply because CERCLA waiver of sovereign immunity trumps the preclusion of judicial review contained in § 5148. To support their argument, Plaintiffs cite United States v. City of New Orleans, 2003 U.S. Dist. LEXIS 16765, No. Civ.A. 02-3618, 2003 WL 22208578 (E.D. La. Sept. 19, 2003). In City of New Orleans, the district court found that
>
> > the express language of the statute superimposes CERCLA liability on agencies of the government even in the event that those agencies, including the [U.S. Army Corps of Engineers ("Corps")], would not be liable generally for damages from their actions pursuant to waivers for liability in other statutes. For example, pursuant to § 5148 of the [Stafford Act], the Corps may not be liable to an individual whose property is damaged, or who is personally injured, by the Corps' actions in its clean-up of hurricane debris, but that waiver of liability does not extend to Corps' activities that fall within the ambit of CERCLA § 9607(a) as alleged in CFI's counterclaim.
>
> 2003 U.S. Dist. LEXIS 16765, 2003 WL 22208578, at *13.

Plaintiffs are bringing an APA claim against EPA Defendants, and not a claim under § 9607(a) of CERCLA, as did the Plaintiffs in City of New Orleans. Therefore, the reasoning applied by the court in City of New Orleans when it found that CERCLA waiver of sovereign immunity trumped § 5148 has no applicability to Plaintiffs' second cause of action.

[*71] (1) Discretionary Functions Exception

In determining whether the actions taken by the EPA are discretionary functions shielded from judicial review by the Stafford Act, courts have looked to the two-prong test set forth by the Supreme Court in United States v. Gaubert, 499 U.S. 315, 111 S. Ct. 1267, 113 L. Ed. 2d 335 (1991), which dealt with when the discretionary function exception under the Federal Tort Claims Act applied. [22] See Dureiko v. United States, 209 F.3d 1345, 1351 (Fed. Cir. 2000); Sunrise Village Mobile Home Park, L.C. v. United States, 42 Fed. Cl. 392, 398 (Ct. Cl. 1998); California-Nevada Methodist Homes, Inc. v. Federal Emergency Management Agency, 152 F. Supp. 2d 1202, 1207 (N.D. Cal. 2001); United Power Ass'n v. Federal Emergency Management Agency., No. A2 99-180, 2000 WL 33339635 (D.N.D. Sept. 13, 2000).

22 The Federal Tort Claims Act ("FTCA") contains a provision which exempts the government from liability for

> Any claim based upon an act or omission of an employee of the Government, exercising due care, in the execution of a statute or regulation, whether or not such statute or regulation be valid, or based upon the exercise or performance or the failure to exercise or perform a discretionary function or duty on the part of a federal agency or an employee of the Government, whether or not the discretion involved be abused.

28 U.S.C. § 2680(a).

[*72] The court must determine first, whether the act involves an element of judgment or choice, and if so, then whether that judgment is of the kind that the discretionary function exception was designed to shield. See United States v. Gaubert, 499 U.S. 315, 322, 111 S. Ct. 1267, 113 L. Ed. 2d 335 (1991); Berkovitz v. United States, 486 U.S. 531, 536, 108 S. Ct. 1954, 100 L. Ed. 2d 531 (1988). "Under the first prong, an act does not involve an element or choice if it is mandatory, i.e., if a federal statute, regulation or policy specifically prescribes a course of action for an employee to follow." Dureiko, 209 F.3d at 1351 (internal quotations omitted). "Under the second prong, because the discretionary function exception serves to prevent judicial second-guessing of legislative and administrative decisions grounded in social, economic, and political policy through the medium of an action in tort, the exception protects only governmental actions and decisions based on considerations of public policy." Id. (internal citations and quotations omitted).

Plaintiffs allege the EPA violated six regulatory provisions contained in the National Oil and Hazardous Substances Pollution Contingency Plan ("NCP"), enacted **[*73]** pursuant to CERCLA, and which are effective upon declaration of a national disaster pursuant to the Stafford Act.

(a) 40 C.F.R. § 300.155

40 C.F.R. § 300.155 provides that "When an incident occurs, it is imperative to give the public prompt, accurate information on the nature of the incident and the actions underway to mitigate the damage."

Plaintiffs claim that this provision commands that the public be told the truth, and that the word "imperative" unquestionably describes a mandatory duty. (Pls.' Mem. Law at 12.) EPA Defendants argues that although § 300.155 states the "general point that prompt accurate information is 'imperative,' . . . the specific language following that general point does not impose requirements." (EPA Defs.' Mem. Law at 7.)

Although § 300.155(a) states that it is "imperative" that the public be told the truth, the provision does not elaborate on this duty, and instead, lists discretionary duties of the On-Scene Coordinators/Remedial Project Managers: that they "should

ensure that all appropriate public and private interests are kept informed" and that they "should coordinate with available public affairs/community relations **[*74]** resources to carry out this responsibility," 40 C.F.R. § 300.155(a) (emphasis added). The provision does not contain any language that makes informing the public of the truth a mandatory duty.

(b) 40 C.F.R. § 300.170

40 C.F.R. § 300.170 provides that Federal agencies have duties established by statute, executive order or Presidential directive, which may apply to Federal response actions following, or in prevention of, the discharge of oil or release of a hazardous substance, pollutant or contaminant. Plaintiffs allege that the EPA failed to follow Federal authority, including the Presidential Decision Directive 62, which they allege, mandates that the EPA take lead responsibility over ensuring that WTC dust was removed from all interior spaces. (Pls.' Mem. Law at 12-13.)

As EPA Defendants assert, the provision does not itself establish any duties. It merely states that Presidential Directives and other statutes and executive orders may apply.

(c) 40 C.F.R. § 35.6205

40 C.F.R. § 35.6205 provides that "if both the State and EPA agree, a political **[*75]** subdivision with the necessary capabilities and jurisdictional authority may assume the lead responsibility for all, or a portion, of the removal activity at a site." Plaintiffs claim that the EPA "violated its non-discretionary duty to take the lead in removing contaminated interior WTC dust" when it was obvious that New York City lacked capability and when the City explicitly told the EPA that it intended to simply pass on responsibility for removal to the public. (Pls.' Mem. Law at 13.)

The phrase "necessary capabilities" does not provide a specific prescribed course of action, and instead, appears to leave to the agency's discretion to determine whether a political subdivision, such as New York City, has the necessary capabilities to assume responsibility for removal activity.

(d) 40 C.F.R. § 300.3(d)

40 C.F.R. § 300.3(d) provides that "the NCP applies to and is in effect when the Federal Response Plan and some or all its Emergency Support Functions (ESFs) are activated." Plaintiffs, relying on statements made by Kathleen Callahan, Director of the EPA Region 2's Division of Environmental Planning and Protection, argue that the **[*76]** EPA did not act pursuant to the NCP in its post-September 11, 2001 clean-up efforts.

However, again, as EPA Defendants point out, § 300.3(d) does not by itself create any nondiscretionary duty. It merely states that the NCP is in effect when an Emergency Support Function is activated.

(e) 40 C.F.R. §§ 300.400(g)(4), 300.5 and 763.92

40 C.F.R. § 300.400(g)(4) provides that only those state standards that are promulgated and more stringent than Federal requirements "may be applicable or relevant and appropriate." 40 C.F.R. § 300.5 provides a list of definitions. 40 C.F.R. § 763.92 lists duties of "local education agencies" defined as "the owner of any nonpublic, nonprofit elementary, or secondary school building," or "the governing authority of any school operated under the defense dependents' education system provided for under the Defense Dependants' Education Act of 1978)." 40 C.F.R. § 763.83.

Plaintiffs claim that the EPA violated § 300.400(g)(4) as well as 40 C.F.R. § 300.5 **[*77]** by endorsing the City's "unsafe 'do it yourself' clean up guidelines." (Pls.' Mem. Law at 13.)

Section 300.400(g)(4) merely states that those state standards that are promulgated, which is defined as standards "of general applicability and are legally enforceable," that are identified and are more stringent than Federal requirements may be applicable. The Court cannot see how this imposes any kind of mandatory duty. Nor does the Court see how §§ 300.5 or 763.92 are applicable to this case.

(f) 40 C.F.R. § 300.415(b)(2)

40 C.F.R. § 300.415(b)(2), which pertains to removal actions, provides that several factors "shall be considered in determining the appropriateness of a removal action pursuant to this section," including "actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants." 40 C.F.R. § 300.415(b)(2)(i). Plaintiffs state that this

provision clearly establishes a mandatory duty on the part of the EPA to consider the factors set forth in the provision.

Again, as EPA Defendants correctly point out, 40 C.F.R. § 300.400(i)(3) **[*78]** provides that "Activities by the federal and state government in implementing this subpart are discretionary government functions . . . . This subpart does not create any duty of the federal government to take any response action at any particular time." 40 C.F.R. § 300.415(b)(2) is in that subpart, Subpart E.

Accordingly, the Court finds that the regulations asserted by Plaintiffs as the basis for their APA claim are discretionary in nature and therefore, are precluded from judicial review by § 5148 of the Stafford Act.

(2) Constitutional Claims

Although § 5148 precludes judicial review of discretionary actions, as mentioned previously, "[it] does not deprive the federal courts of jurisdiction of . . . constitutional claims." Rosas v. Brock, 826 F.2d 1004, 1008 (11th Cir. 1987); see also United Powers Ass'n v. FEMA, 2001 U.S. Dist. LEXIS 12922, No. A2-99-180, 2001 WL 1789404, at *2 (D.N.D. Aug. 14, 2001) (finding that § 5148 does not preclude review of plaintiff's constitutional claim to the application of an agency rule); Lockett v. Federal Emergency Management Agency, 836 F. Supp. 847 (S.D. Fla. 1993) **[*79]** (finding that court had jurisdiction over claims alleging constitutional violations of agency pursuant to actions taken under the Stafford Act). As stated previously, the Supreme Court has recognized that a colorable constitutional claim will not be denied by a statutory provision which precludes judicial review but which does not specifically preclude judicial review of constitutional claims. See Webster v. Doe, 486 U.S. 592, 603, 108 S. Ct. 2047, 100 L. Ed. 2d 632. A "colorable constitutional claim" has been described as "any claim other than one that 'clearly appears to be immaterial and made solely for the purpose of obtaining jurisdiction' or one that is 'wholly insubstantial and frivolous.'" Chesna v. United States Dep't of Defense, 822 F. Supp. 90, 97 (D. Conn. 1993) (quoting Bell v. Hood, 327 U.S. 678, 682-83, 66 S. Ct. 773, 90 L. Ed. 939 (1946), and citing Spencer v. Casavilla, 903 F.2d 171, 173 (2d Cir. 1990)).

Defendants argue that for the same reason that Individual Defendants' Motion to Dismiss should be granted, EPA Defendants' Motion to Dismiss the APA Claim must also be granted.

Plaintiffs have alleged that EPA Defendants violated their substantive due process right **[*80]** under the Fifth Amendment of the Constitution. Plaintiffs argue, as they did in the first cause of action, that the EPA violated their constitutional right "to be free of official policies that create or intensify the risk of bodily harm." (Pls.' Mem. Law at 8.). Specifically, in Count Two, Plaintiffs contend that EPA Defendants issued false statements to Plaintiffs and the putative class, delegated all responsibility for interior clean-up to the City of New York, failed to supervise and oversee the clean-up efforts by the City, referring to the public guidelines issued by the City which were grossly inadequate, failed to properly assess the proper geographical scope of the hazard, failed to properly assess the hazardous substances in the WTC dust, and failed to properly remediate through their voluntary clean-up program. (Am. Compl. P236.) By these actions, EPA Defendants created or enhanced the danger to Plaintiffs.

As courts have made clear, a governmental agency cannot, even in following discretionary regulations, choose to flout a person's constitutional rights. Hence, although the Court has found that the regulations cited by Plaintiffs pose discretionary and not mandatory duties, **[*81]** Plaintiffs have made the additional argument that EPA Defendants violated their constitutional rights in their interpretation and implementation of the applicable regulations. Plaintiffs' constitutional claim is not "wholly insubstantial and frivolous." Accordingly, the Court has jurisdiction over Plaintiffs' claim under the APA for violation of their substantive due process rights. [23]

23 As an alternative jurisdictional basis for their APA Claim, Plaintiffs argue that the EPA did not follow the NCP, as they were instructed to do under 40 C.F.R. § 300.3(d). This argument is separate and apart from the issue of whether this regulation imposes a mandatory or discretionary duty.

An agency must follow its own regulations and may be sued for failure to do so. Service v. Dulles, 354 U.S. 363, 371-73, 77

S. Ct. 1152, 1 L. Ed. 2d 1403 (1967) (stating that although statute granted agency "absolute discretion" regarding employee discharge decisions, agency must still comply with its own regulations, and court has jurisdiction to consider claims that it did not do so). Hence, the Court also has jurisdiction of the APA claim because Plaintiffs claim that the EPA did not follow its own regulations under the NCP.

[*82] c. "Agency Action" under the APA

EPA Defendants argue that dismissal of the APA claim is also warranted because Plaintiffs' Amended Complaint fails to identify "agency actions" that are challengeable under the APA. In response, Plaintiffs argue that they have clearly identified the EPA's "final agency action" in this case: "the now-completed voluntary clean-up program -- a removal action taken by the EPA pursuant to the NCP, 40 C.F.R. § 300.415." (Pls.' Mem. Law at 17.)

EPA Defendants further argue that Plaintiffs cannot maintain a claim challenging the EPA's removal action as an APA action because such a claim is barred by CERCLA's judicial review provision in 42 U.S.C. § 9613(h)." (EPA Defs.' Reply at 9.) However, EPA Defendants fail to take into account the limits of 42 U.S.C. § 9613(h). This bar of judicial review is broad in scope, even barring, as EPA Defendants state, constitutional challenges to removal and remedial actions selected under 42 U.S.C. § 9604. [24] See J.V. Peters & Co. v. Administrator, EPA, 767 F.2d 263, 265 (6th Cir. 1986) (holding that constitutional **[*83]** challenges could not be brought prior to government enforcement or cost recovery action, as allowing a pre-emptive challenge to the EPA clean-up action would "debilitate the central function of the Act," which is the prompt clean-up of environmentally hazardous waste sites.); see also Broward Gardens Tenants Ass'n v. EPA, 311 F.3d 1066, 1074 (11th Cir. 2002); Reardon v. United States, 947 F.2d 1509, 1514-15 (1st Cir. 1991); Clinton County Comm'rs v. EPA, 116 F.3d 1018, 1025-26 (3d Cir. 1997).

24 Plaintiffs do not specifically state that this removal action falls under 42 U.S.C. § 9604. However, a review of the regulation, 40 C.F.R. § 300.415 and 42 U.S.C. § 9604 makes it apparent that a removal action under 40 C.F.R. § 300.415 is a removal action under 42 U.S.C. § 9604.

However, as the heading of § 9613(h) indicates, "Timing of review, **[*84]** " this provision is concerned with the timing of judicial review of removal and remedial actions. "The purpose of this limitation [contained in § 9613(h)] on federal court jurisdiction over challenges to EPA activities under CERCLA is to prevent litigation that will delay the EPA's cleanup efforts." Juniper Development Group v. United States of America, 774 F. Supp. 56, 58 (D. Mass. 1990). The legislative history of § 9613(h) also indicates that § 9613(h) was enacted to ensure that clean-up efforts would not be delayed:

> The timing of review section ensures that Government and private cleanup resources will be directed toward mitigation, not litigation. The section is designed to preclude piecemeal review and excessive delay of cleanup. Interested parties will be able to participate early in a more regularized administrative process instead of making premature challenges in court to remedy selection or liability.

Legislative History, Superfund Amendments and Reauthorization Act of 1986, Pub. L. No. 99-499, 100 Stat. 1613, et seq. (1986).

The voluntary clean-up program cited by Plaintiffs as the agency action in question is completed. Therefore, **[*85]** the bar on judicial review contained in § 9613(h) does not apply.

As mentioned previously, § 702 provides judicial review for "A person suffering legal wrong because of agency action, or adversely affected or aggrieved by agency action within the meaning of a relevant statute . . . ." 5 U.S.C. § 702. "Agency action" is defined under the statute as "the whole or part of an agency rule, order, license, sanction, relief or the equivalent or denial thereof, or failure to act[.]" 5 U.S.C. § 551(13). Section 706 further limits its judicial review under the APA by requiring "agency action." [25]

25 Section 706 provides in pertinent part that:

> To the extent necessary to decision and when presented, the reviewing court shall decide all relevant questions of law, interpret constitutional and statutory provisions, and determine the meaning or applicability of the terms of an agency action. The reviewing court shall --
>
> (1) compel agency action unlawfully withheld or unreasonably delayed; and
>
> (2) hold unlawful and set aside agency action, findings and conclusions found to be --
>
> > (A) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law;
> >
> > (B) contrary to constitutional right, power, privilege, or immunity;
> >
> > (C) in excess of statutory jurisdiction, authority, or limitations, or short of statutory right;
> >
> > (D) without observance of procedure required by law; . . .
>
> 5 U.S.C. § 706.

[*86] Several factors must be considered in assessing the finality of an agency action: (1) whether the action represents the agency's final and definitive position; (2) whether the action has a "practical and immediate" effect on the plaintiff; (3) whether the dispute involves questions that are purely legal or are otherwise fit for judicial review; and (4) whether immediate review would foster agency and judicial economy. See FTC v. Standard Oil Co., 449 U.S. 232, 239-42, 101 S. Ct. 488, 66 L. Ed. 2d 416 (1980).

Upon consideration of the appropriate factors, the Court finds that "the now-completed voluntary clean-up program" is a final agency action subject to judicial review under the APA. According to the Amended Complaint, the voluntary clean-up program represents the final and definitive position of the EPA and has had a "practical and immediate" effect on Plaintiffs. Moreover, Plaintiffs' claim raises constitutional questions that are obviously fit for review, and nothing has been put forward by Defendants to indicate that immediate review would not foster agency and judicial economy.

Accordingly, as the Court has found that it has jurisdiction over Plaintiffs' claim, and that Plaintiffs have identified **[*87]** a final agency action by the EPA, EPA Defendants' Motion to Dismiss the APA Claim is DENIED.

3. Third Cause of Action: Mandamus Claim

Defendants argue that Count Three must be dismissed for lack of subject matter jurisdiction because Plaintiffs have not alleged a waiver of sovereign immunity in either their APA or CERCLA claims. Alternatively, Defendants contend that the mandamus action fails as a matter of law for not complying with requirements of a mandamus claim.

Section 1361 of Title 28, United States Code, provides that "the district courts shall have original jurisdiction of any action in the nature of mandamus to compel an officer or employee of the United States or any agency or employee of the United States or any agency thereof to perform a duty owed to the plaintiff." "The extraordinary remedy of mandamus will issue only to compel the performance of 'a clear nondiscretionary duty.'" Pittston Coal Group v. Sebben, 488 U.S. 105, 121, 109 S. Ct. 414, 102 L. Ed. 2d 408 (1988) (citing Heckler v. Ringer, 466 U.S. 602, 616, 104 S. Ct. 2013, 80 L. Ed. 2d 622 (1984)). A plaintiff seeking this remedy must allege three elements: (1) a clear right in the

plaintiff to the relief sought; (2) a plainly defined and peremptory **[*88]** duty on the part of the defendant to do the act in question; and (3) no other adequate remedy. Billiteri v. United States Bd. of Parole, 541 F.2d 938, 946 (2d Cir. 1976); Lovallo v. Froehlke, 468 F.2d 340, 343 (2d Cir. 1972).

The Court has upheld Plaintiffs' APA claim, and as Plaintiffs have recognized, if either the APA or CERCLA claim is upheld "then this mandamus claim may be unnecessary." (Pls.' Mem. Law at 23, n.28.) Plaintiffs seek identical relief in their APA and mandamus claims. (Am. Compl. PP232, 239.) The APA claim alone provides an adequate remedy for Plaintiffs. Accordingly, the mandamus claim is DISMISSED.

4. Fourth Cause of Action: CERCLA Citizen Suit Claim

The EPA argues that dismissal of the CERCLA Citizen Suit Claim is required because Plaintiffs' allegation that EPA actions were "arbitrary and capricious" is not a proper citizen suit claim under 42 U.S.C. § 9659(a)(1), which is limited to allegations that a defendant is "in violation of" the statute, and that Plaintiffs have failed to state a claim within the scope of the citizen suit provision in 42 U.S.C. § 9659(a)(1). According **[*89]** to the EPA, 42 U.S.C. § 9659(a)(1) is the provision by which persons may enforce violations of CERCLA against regulated parties. (EPA Defs.' Mem. Law at 22.) The EPA, Defendants argue, are not regulated parties under CERCLA but the administrator of CERCLA. Hence, any challenges based on the EPA's implementation of CERCLA must be brought under 42 U.S.C. § 9659(a)(2). Plaintiffs disagree; Plaintiffs maintain that § 9659(a)(1) is the proper cause of action because they are alleging violations by the EPA as a regulated party, and not as implementor of CERCLA.

CERCLA was enacted to address "environmental and health risks posed by industrial pollution." United States v. Bestfoods, 524 U.S. 51, 55, 118 S. Ct. 1876, 141 L. Ed. 2d 43 (1998). The statute grants the President, and the Administrator of the EPA as the President's delegated agent, "broad power to command government agencies and private parties to clean up hazardous wastes" by or at the expense of the parties responsible for the contamination. Key Tronic Corp. v. United States, 511 U.S. 809, 814, 114 S. Ct. 1960, 128 L. Ed. 2d 797 (1994). It serves to "protect and preserve public health and the environment by facilitating **[*90]** the expeditious and efficient cleanup of hazardous waste sites." Pritkin v. Department of Energy, 254 F.3d 791, 794-95 (9th Cir. 2001) (internal quotations and citations omitted). The procedure established in CERCLA facilitates hazardous waste site clean-ups and insures that whoever undertakes the responsibility of clean-up can recover those costs from potentially responsible parties ("PRPs"). See 42 U.S.C. §§ 9604, 9606, 9607 and 9620. Two major policy concerns underlie CERCLA: (1) Congress intended that the Federal government be immediately given the tools necessary for a prompt and effective response to the problems of national magnitude resulting from hazardous waste disposal; and (2) Congress intended that those responsible for problems caused by the disposal of chemical poisons bear the costs and responsibility for remedying the harmful conditions they created. Dedham Water Co. v. Cumberland Farms Dairy, Inc., 805 F.2d 1074, 1081 (1st Cir. 1986); United States v. Cannons Engineering Corp., 899 F.2d 79, 90-91 (1st Cir. 1990); see also United States v. Davis, 261 F.3d 1, 26 (1st Cir. **[*91]** 2 001) ("The purposes of CERCLA include expeditious remediation at waste sites, adequate compensation to the public fisc and the imposition of accountability."); AmJur Pollution § 1270 ("[CERCLA's] primary purposes are to provide for the prompt cleanup of hazardous waste disposal sites and to impose the costs of such cleanup on those responsible for the contamination.").

CERCLA's citizen suit provision, contained in 42 U.S.C. § 9659, permits citizens to sue as private attorneys general in circumstances where government authorities have, after given notice, failed to take steps to remedy certain environmental harms. Section 9659 provides that:

> (a) Authority to bring civil actions
> Except as provided in subsections (d) and (e) of this section and in section 9613(h) of this title (relating to timing of judicial review), any person may commence a civil action on his own behalf --

> (1) against any person (including the United States and any other governmental instrumentality or agency, to the extent permitted by the eleventh amendment to the Constitution) who is alleged to be in violation of any standard, regulation, condition, requirement or order **[*92]** which has become effective pursuant to this chapter . . .; or
>
> (2) against the President or any other officer of the United States (including the Administrator of the Environmental Protection Agency and the Administrator of ATSDR) where there is alleged a failure of the President or of such other officer to perform any act or duty under this chapter, including an act or duty under section 9620 of this title (relating to Federal facilities), which is not discretionary with the President or such other officer.

42 U.S.C. § 9659(a). The provision restricts venue for actions under subsection (a)(2) to the United States District Court for the District of Columbia. See 42 U.S.C. § 9659(b).

A similar citizen suit provision is found in the Endangered Species Act ("ESA"). In Bennett v. Spear, 520 U.S. 154, 117 S. Ct. 1154, 137 L. Ed. 2d 281 (1997), the Supreme Court found that the citizen suit provision in the Endangered Species Act, authorizing injunctive actions against any person "who is alleged to be in violation" of the ESA, could not be interpreted to include the Secretary's maladministration of the ESA.520 U.S. at 173. The **[*93]** Supreme Court came to this conclusion after examining the statute as a whole, and also in view of a separate citizen suit provision in the ESA which authorized suit against the Secretary to compel him to perform a nondiscretionary duty. The Supreme Court stated that "That provision would be superfluous -- and worse still, its careful limitation to § 1533 would be nullified -- if § 1540(g)(1)(A) permitted suit against the Secretary for *any* 'violation' of the ESA." Id.

A district court in Illinois applied the Supreme Court's reasoning in Bennett to find that "citizens suit" provision in the Endangered Species Act was "analogous to that of CERCLA, [and that] the term violation in 42 U.S.C. § 9659(a)(1) does not include the Administration's maladministration of (CERCLA) . . . ." Battaglia v. Browner, 963 F. Supp. 689, 691 (N.D. Ill. 1997).

Plaintiffs argue that § 9659(a)(1) is the appropriate citizen suit provision because the EPA as an agency violated the NCP in many respects and because the EPA as an agency is the named defendant in the CERCLA cause of action, and not just the Administrator of the EPA. Plaintiffs argue that **[*94]** in Bennett, and two other cases cited by EPA Defendants, only the EPA's role as Administrator was at issue; the EPA itself is not the regulated party. (Pls.' Mem. Law at 25.) Neither of the two cases cited by Plaintiffs, United States v. Hardage, 982 F.2d 1436 (10th Cir. 1992) and Washington State Dep't of Transp. v. Washington Natural Gas Co., 59 F.3d 793 (9th Cir. 1995), concern citizen suits under CERCLA. Plaintiffs make no other argument or present any other caselaw that would support their contention that the EPA is a regulated party in this factual context.

The Court is entirely unpersuaded by Plaintiffs' arguments. Plaintiffs have argued elsewhere that their claim under the APA should be upheld because EPA Defendants violated nondiscretionary duties under the NCP. Based on the same types of violations, they seek to bring a citizen suit against the EPA under § 9659(a)(1), effectively attempting to end-run the statute and avoid bringing the suit under § 9659(a)(2) by naming the EPA as defendant and not the Administrator of the EPA.

It is clear to the Court that Plaintiffs' allegations against the EPA are for its failures to carry out its **[*95]** duties under CERLCA as administrator of CERCLA, and not as a regulated party. The EPA, as administrator of CERCLA, does not regulate itself. The appropriate citizen suit provision for the types of allegations made by Plaintiff here is § 9659(a)(2), which limits venue to the District of Columbia.

Accordingly, EPA Defendants' Motion to Dismiss Count Four is GRANTED.

III. CONCLUSION

For the foregoing reasons, Individual Defendants' Motion to Dismiss is GRANTED in part and DENIED in part. EPA Defendants' Motion to Dismiss is GRANTED in part and DENIED in part. Count One against Defendant Horinko and Counts Three and Four are DISMISSED.

Defendant Whitman and EPA Defendants shall file an Answer to Counts One and Two of the Amended Complaint within forty-five (45) days of the date of this Order.

SO ORDERED.

Dated: New York, New York

February 2, 2006

DEBORAH A. BATTS

United States District Judge

THE CITY OF NEW YORK
DEPARTMENT OF HEALTH AND MENTAL HYGIENE
OFFICE OF THE COMMISSIONER

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THOMAS R. FRIEDEN, M.D., M.P.H.
COMMISSIONER
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August 10, 2006

The Honorable Deborah Glick
Assembly District #66
853 Broadway, Suite 2120
New York, NY 10003-4703

Dear Assembly Member Glick:

I received your letter dated June 21, 2006 reiterating your concerns about the EPA's plan to address any remaining WTC dust in lower Manhattan and have reviewed your original (January 23, 2006) letter as requested.

The current EPA plan offers an evaluation and, if necessary, a cleaning of both residential *and* commercial space. Owners and managers of commercial space can request an evaluation of their building's common area, ventilation system, and any other areas that are made accessible by building management. Refer to eligibility requirements listed on page 3 of the plan (http://www.epa.gov/wtc/panel/pdfs/final_test_and_clean_program_plan.pdf).

While we are not aware of a separate or comprehensive database of environmental sampling in commercial spaces, the environmental investigations and testing conducted in lower Manhattan (referenced in my May 24, 2006 letter) indicates that potential health impacts from any remaining WTC dust are extremely low or non-existent. Further, since it has been several years since this testing was done, we would expect that levels of residual dust would be even further diminished.

Although no plan can characterize with certainty all the space potentially impacted by the disaster, the implementation of the EPA's plan will provide us with additional information to help assess the current environmental conditions of the area that

suffered the greatest impact from the disaster. Its implementation will also help to ensure that community concerns are addressed and that any remaining WTC dust is further characterized and cleaned.

Sincerely,

Thomas R. Frieden, M.D., M.P.H.
Commissioner

TRF/nlc

Cc: C. Manning

Senator CLINTON. I would now like to introduce our first panel: James Connaughton, Chairman, White House Council on Environmental Quality; Susan Bodine, Assistant Administrator, EPA Office of Solid Waste and Emergency Response; John Stephenson, Director of Government Accountability Office, Natural Resources and Environment Division; and Sven Rodenbeck, Agency for Toxic Substances and Disease Registry.

I would just remind our panelists that your written testimony will be made a part of the record in full. We ask that you limit your spoken testimony to 5 minutes. When the yellow light goes on, that means you have 1 minute remaining. When the red light goes on, you have passed the 5-minute mark, so please, if you would, wrap your testimony up so we will have time for questions.

Mr. Connaughton, please proceed.

STATEMENT OF JAMES L. CONNAUGHTON, CHAIRMAN, COUNCIL ON ENVIRONMENTAL QUALITY

Mr. CONNAUGHTON. Thank you very much, Chairwoman Clinton, Ranking Member Craig, nice to see you again, Senator Inhofe, and I am sorry Senator Boxer is not here. But I want to acknowledge her; I have had a very good working relationship with her since she has taken the helm of the committee.

I welcome the opportunity to testify today to once again go through the tragedy of September 11th, which was unprecedented in its scope. The physical, the psychological and the social toll of that terrible act of terrorism was vast at the time and it continues to this day.

The complexity of the situation facing the local, State and Federal Governments responding to this terrorist attack was immense. The work by all was heroic. But I would particularly call out the work by the Environmental Protection Agency. I had direct, personal involvement on a day to day, hour by hour and in some cases minute by minute, with the folks in the field and the folks here in Washington. I saw professionalism at its finest.

I would note that many of the officials that are being discussed and the official actions being discussed at this hearing were undertaken by New Yorkers, Federal Government officials who were New Yorkers, Federal Government officials who were from New Jersey. Governor Whitman herself was the Governor of New Jersey. Her own son was at the foot of the World Trade Center when the first plane hit and called her by cell phone, something I know because I was in her office when that call came through.

My own son that day spent the entire day at school thinking that I had been blown up by terrorists. The look on his face when I returned at the end of that long day to find out that I was alive was a look that I will never forget.

So the efforts undertaken by the Government were not just professional, they were also passionate and deeply personal. I think that is what this conversation is about. That passion was singularly dedicated to the safety and well-being of the citizens of New York, of the rescue workers that came in from all over the country to help on that day and the community, the broader community associated and the families associated with those individuals.

Chairwoman Clinton, I particularly want to call out your leadership on this subject as well as that of Senator Inhofe and Senator Lieberman in particular in providing very constructive oversight over the last 5 years on this subject, and not just oversight, but sound, good advice as we continue to cope with the aftermath of the terrorist attacks on New York City. I think you have been very thoughtful in the questions you have asked, I think you have been diligent in your pursuit of answers and your patience in getting the whole story. Most importantly, you have been very practical in working together and finding sensible solutions. I am glad that that continues.

Turning first to the wide variety of risk communication issues, including those involving air quality, but recognizing that we had dozens and dozen of risk communication issues we were dealing with, the Environmental Protection Agency did its utmost to communicate the best available information accurately and in a timely fashion to meet the needs of lower Manhattan residents, workers and businesses. To that end, EPA worked very closely with the State of New York, the city of New York, OSHA, and the Council on Environmental Quality to ensure the safety, health and well-being of the residents of lower Manhattan.

The Federal Government's communications in September 2001 and subsequently were conveyed real-time in very fast-moving circumstances, using a variety of approaches at a variety of levels. In all instances, the Federal agencies acted with the best available data at the time and updated their communications and actions as new information was obtained.

Many of the allegations that have been raised in the opening statements here have been gone over again and again in the last several years. But they really culminated in the Senate EPW oversight investigation and then after that, in 2004, these were carefully gone over by the 9/11 Commission, which came to conclusions other than those being described in some of the opening statements that were made today.

We all learned a great deal from September 11th, including how to improve Federal response and communications efforts. But I would note, those improvements happened real-time in response to the episode itself. EPA did some amazing work in getting web-based access to resources. We had a level of interaction and coordination in communication that we had not had before. September 11th itself was an improvement in agency processes. Subsequent to that, the agencies have done numerous lessons learned exercises and those were ultimately incorporated into their National Approach to Response at EPA. But more broadly, we saw very rapidly the establishment of the Homeland Security Council, under Tom Ridge, as well as the creation of the Department of Homeland Security, which has institutionalized within a very short period of time those lessons learned.

With respect to the test and cleanup program, I just want to say again, Chairwoman Clinton, that I appreciated the opportunity to sit down with you in October 2003 to work out a plan for moving forward. I think our staffs worked very well together in quickly developing a workable strategy, identifying appropriate resources and using an expert-led process with significant public involvement

under the supervision and management of seasoned EPA professionals.

I have not been directly involved in that process since then, but EPA has briefed me from time to time on its progress, because I wanted to be sure, Madam Chairwoman, that we were keeping track in the arrangement that we had reached. I am pleased that the top dogs at EPA, Administrator Susan Bodine, accompanied by Assistant Administrator, George Gray, are here today, who have been very closely associated with that effort.

As we move forward, Madam Chairwoman and members of the committee, I think this inquiry is useful. I think getting the full story is helpful and I think we should continue to inform our efforts as we go forward. I hope to never have to employ the processes that we employed on September 11th again on our soil, and I think we can all share that view.

Thank you.

[The prepared statement of Mr. Connaughton follows:]

STATEMENT OF JAMES L. CONNAUGHTON, CHAIRMAN, COUNCIL ON ENVIRONMENTAL QUALITY

Chairwoman Clinton, Ranking Member Craig and Members of the Committee, I welcome the opportunity to testify today. The tragedy of September 11th was unprecedented in its scope. The complexity of the situation facing the local, state, and Federal governments in responding to this terrorist attack was immense—the work by all was heroic.

Chairwoman Clinton, I appreciate your leadership, as well as that of Senator Inhofe and Senator Lieberman, in providing constructive oversight and advice as we continue to cope with the aftermath of the terrorist attacks on New York City on September 11, 2001. You have been thoughtful with your questions, diligent in your pursuit of answers, and practical in working to find sensible solutions.

With respect to a wide variety of risk communication issues, including those involving air quality, the Environmental Protection Agency did its utmost to communicate the best available information accurately, and in a timely fashion to meet the needs of lower-Manhattan residents, workers, and businesses. To that end, EPA worked with the State of New York, the City of New York, OSHA, and the Council on Environmental Quality to ensure the safety, health, and well-being of the residents of lower-Manhattan.

The Federal government's communications in September of 2001 were conveyed real-time in fast-moving circumstances, using a variety of approaches, at a variety of levels. In all instances, federal agencies acted with the best available data at the time, and updated their communications and actions as new information was obtained.

We all learned a great deal following September 11th, including how to improve federal response and communications efforts. EPA completed a lessons learned document for the World Trade Center response in February 2002. EPA has used these lessons learned as well as lessons learned from subsequent responses to strengthen its organizational structure, to improve its preparedness and response program, and to develop its National Approach to Response. EPA will be discussing those changes during today's testimony. These improvements were successfully put to the test in the swift and well-coordinated response to the space shuttle *Columbia* tragedy in February 2003.

With respect to the test and cleanup program, I appreciated the opportunity to sit down with you in October 2003 to work out a plan moving forward, building on the substantial effort previously undertaken. In a relatively short period of time, our staffs were able to quickly develop a workable strategy, identify appropriate resources, and initiate an expert-led process, with significant public involvement, under the supervision and management of seasoned EPA officials.

Although I have not been directly involved since that time, EPA has briefed me on its progress. I am pleased that Assistant Administrator Susan Bodine, accompanied by Assistant Administrator George Gray, are here today to discuss their efforts to date.

Along with EPA's leadership and expertise, I look forward to continuing to work with you, Members of the New York Congressional Delegation, and Members of this

Committee. Thank you for the opportunity to testify, and I look forward to answering your questions.

Senator CLINTON. Thank you very much.

Ms. Bodine.

STATEMENT OF SUSAN PARKER BODINE, ASSISTANT ADMINISTRATOR, OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE, U.S. ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY: GEORGE GRAY, ASSISTANT ADMINISTRATOR, OFFICE OF RESEARCH AND DEVELOPMENT, U.S. ENVIRONMENTAL PROTECTION AGENCY

Ms. BODINE. Good morning, Madam Chairman, Senator Craig, members of the subcommittee. I am Susan Bodine, I am the Assistant Administrator for EPA's Office of Solid Waste and Emergency Response. I am accompanied here today by Dr. George Gray, who is EPA's Assistant Administrator for the Office of Research and Development. It was that office that coordinated the test and clean program with the city and with Region 2 of EPA.

Thank you for the opportunity to be here to discuss both EPA's National Response Plan and their role in that plan, as well as EPA support for the World Trade Center response.

On September 11th, our country was attacked by terrorists. There is a reason that we call them terrorists. They want to destroy our sense of security, they want to damage our economy and they want to create fear. On 9/11, their overall mission failed. Today, America is stronger than ever.

But these terrorist acts caused a great deal of pain and suffering. There are a lot of individual victims of 9/11: people who were trapped in the Twin Towers or in the Pentagon or on Flight 93; people who were caught in the initial dust cloud when the Towers fell; the rescue workers who put their own lives at risk to help others; and the people who live and work in lower Manhattan.

I am very proud of our Nation's response to this attack, and I am sure, and I think it has already been discussed, some members of this subcommittee went to Ground Zero in New York City in the days and weeks after the attack as part of your oversight responsibility. The scene there was very impressive and very emotional. What you saw was everybody working together to do their utmost both to help our Nation recover from the attack and to help the victims.

The Federal agencies that responded to the World Trade Center disaster did an incredible job working together under our National Response Plan. It was called the Federal Response Plan, they changed the name. That was the overall framework for coordinating activities. As you know, the Federal Government's emergency authorities under the Stafford Act are activated when a Governor requests the President to declare a major Federal disaster; and then further, if, at the time FEMA, now Secretary for Homeland Security, determines that the State and local resources are going to be so overwhelmed that it is an incident of national significance, then we can also trigger the structure of the National Response Plan to provide assistance. The Federal assistance is divided into 15 separate emergency support functions. Agencies have leads under emergency support functions as well as support roles.

Now, EPA is the coordinator and primary agency under Emergency Support Function 10, which is oil and hazardous substance materials response. On 9/11, that was the structure we were working under. FEMA activated Emergency Support Function 10, and EPA received its first mission assignment on 9/11. EPA responded immediately. Our Region 2 headquarters is located in lower Manhattan. We have one of our special teams, the Environmental Response Team, located in Edison, NJ. With these assets in place, we were there. EPA personnel were there on the very first day and on the first day, they were already collecting air monitoring data for asbestos, lead and volatile organic compounds.

As each day passed, we expanded our sampling programs and monitoring programs and ultimately took tens of thousands of samples and over a quarter of a million data points based on those samples. At that time, it was the most complex effort in the history of the Agency. At every step of the way, we were working not only with other Federal agencies, but we were coordinating also with top scientific and medical experts, again, from all levels of Government and from the academic world. We pulled together teams of experts to establish benchmarks. We found ways of getting test results quickly. We found ways of getting them up on our Web site quickly and available to the public, so everyone could see the data.

In 2002, EPA also provided oversight and sampling for an indoor cleanup program that is going to be discussed today. Then in December 2006, EPA announced the availability of further testing and cleaning in lower Manhattan. Again, I know that that will be the topic of discussion today.

In my last few seconds, I want to summarize why I am saying America is stronger than ever. We have talked about lessons learned. We can always improve. EPA now is even more prepared to respond. In 2003, we introduced our National Approach to Response that takes the view that it is the entire Agency that needs to work together cohesively to respond to an emergency. That means we embrace the National Incident Management System, which is part of the National Response Plan. That means we have trained our people under an Incident Command System, which again is part of the National Response Plan, so everybody knows what they are supposed to do when an emergency happens.

We have added additional on-scene coordinators. We have created a West Coast Environmental Response Team like the one in Edison that responded. We have created a National Decontamination Team. We have increased our response capacity by training over 2,000 people in incident command as well as creating a Response Support Corps. We have done a number of additional things I don't have time to go into. In the written testimony, there is more detail.

I just want to make sure that you know that EPA today is better prepared to respond to any emergency. We stand ready to support State and local governments when the next emergency happens.

[The prepared statement of Ms. Bodine follows:]

STATEMENT OF SUSAN PARKER BODINE, ASSISTANT ADMINISTRATOR, OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE, U.S. ENVIRONMENTAL PROTECTION AGENCY

Good morning, Madam Chairman and members of the Subcommittee. I am Susan Bodine, Assistant Administrator of the Office of Solid Waste and Emergency Re-

sponse, U.S. Environmental Protection Agency (EPA). I am accompanied today by George Gray, Assistant Administrator of EPA's Office of Research and Development. Thank you for the opportunity to discuss EPA's role under the National Response Plan (NRP) and Agency efforts associated with the World Trade Center response.

EPA'S NATIONAL RESPONSE ROLE

As with other federal agencies, EPA's response pursuant to a disaster declared by the President is facilitated through the NRP. The NRP facilitates federal support to State and local governments. Under the NRP, EPA is the Coordinator and Primary Agency for Emergency Support Function (ESE) #10—Oil and Hazardous Materials Response. EPA is one of many agencies that may be activated to provide coordinated federal support during an incident, and like the other responding agencies, EPA receives mission assignments from the Federal Emergency Management Agency (FEMA) to carry out activities in support of state and local governments.

Our primary activities under ESF #10 include: efforts to detect, identify, contain, clean up or dispose of oil or hazardous materials; removal of drums and other bulk containers; collection of household hazardous waste; monitoring of debris disposal; air and water quality monitoring and sampling; and protection of natural resources. EPA is also a support agency for a number of other Emergency Support Functions.

EPA RESPONSE AT WORLD TRADE CENTER

EPA played a key role in the nation's response to the September 11, 2001 terrorist attacks on the World Trade Center in Lower Manhattan. We activated our emergency response personnel alter the first plane hit the North Tower. Before we knew the tragic consequences of the attack, EPA's responders, most of whom were located in our offices in Edison, New Jersey, headed to the site. After the collapse of the World Trade Center Towers, EPA began environmental monitoring of the resulting dust and debris. EPA responded pursuant to its first mission assignment under ESF #10 on September 11, 2001. EPA tested the air in the areas surrounding the World Trade Center site, including Brooklyn and Jersey City, New Jersey. On the first day, we tested for asbestos, lead and volatile organic compounds (VOCs).

As each day passed, EPA expanded its sampling program and ultimately the Agency took tens of thousands of samples of air, dust and water, which yielded close to a quarter of a million results. Levels of pollutants were sometimes elevated, particularly on the debris pile, but for the most part levels of contaminants in the ambient air outside of the immediate vicinity of the pile were not at elevated levels.

The information that EPA was giving to the public through daily interactions with the media was that workers should wear protective equipment and any person who experienced health effects should see a doctor. We shared data with reporters every day. As soon as we were able, we put our data on our Web site and made it available to the public from our offices in Lower Manhattan.

EPA also sampled drinking water from water mains in Lower Manhattan. In addition, the Agency sampled water from the Hudson and East Rivers and wastewater from a treatment plant in Brooklyn after several rainfalls to check for pollutants emanating from the World Trade Center site. While EPA detected one instance of slightly elevated PCBs in rainwater runoff at the wastewater treatment plant, ambient surface water sampling results did not indicate human health or ecological concerns.

EPA worked closely with the city to remove as much of the dust from public spaces as we could, including streets and parks. EPA even replaced sand in sandboxes. The City augmented our efforts by washing down streets, sidewalks and building exteriors. We also established worker and truck wash stations in both Lower Manhattan and on Staten Island to prevent dust from migrating from the recovery site.

When the initial phase of recovery efforts drew to an end, EPA through its Interagency Agreements with FEMA, responded to the ongoing concerns of Lower Manhattan residents with a residential indoor dust cleanup program. We consulted with city, state and other federal health and environmental officials to find a way to offer free cleaning and testing to all residents in Lower Manhattan. In developing our program, EPA met extensively with resident and tenant organizations, environmental and community groups, community boards and many city, state, and federal elected officials to refine the clean and test program. The program was launched in June 2002, with cleaning and testing activities continuing through the following spring. In the end, more than 4,000 residences were either tested or cleaned. Of the approximately 29,000 residential air samples taken, about 0.4 percent exceeded health-based benchmarks for asbestos. The program was completed in the summer of 2003.

EPA TEST AND CLEAN PROGRAM

On December 6, 2006, EPA announced the beginning of a $7-million, FEMA-funded program to further test indoor spaces in Lower Manhattan. Under this program, EPA has offered to test indoor spaces in Lower Manhattan in order to give information to people who have remaining concerns about possible contaminants in their indoor spaces. One challenge with such a program is that most of the contaminants that are associated with the World Trade Center dust are also found in every urban environment. EPA scientists did research to see if there is a reliable method to identify dust as being from the World Trade Center. Ultimately, after extensive peer review, EPA concluded that there is not a reliable method to definitively identify World Trade Center dust and distinguish it from other sources of such dust. In addition, the vast majority of occupied residential and commercial spaces in Lower Manhattan have been repeatedly cleaned in the more than 5 years since the terrorist attacks. However, we wanted to give people another opportunity to find out about possible contamination in their homes.

The program allows residents and building owners in Lower Manhattan to have the air and dust in their units tested for four contaminants associated with dust from the collapse of the World Trade Center. Priority for testing is based on a property's proximity to the World Trade Center site. If analysis of dust and air samples indicates elevated levels of any of four contaminants of concern—asbestos, lead, polycyclic aromatic hydrocarbons, and man-made vitreous fibers such as fiberglass—the contaminants will be cleaned up. The registration period for this program closed on March 31, 2007. Twenty five building representatives and 272 individual residents registered for the program. Testing of interior spaces is expected to begin later this year for all registrants who have sent access agreements to EPA.

CHANGING THE ORGANIZATION TO MEET GROWING NEEDS OF HOMELAND SECURITY

Since the September 11, 2001 attacks, the Agency has made broad, national improvements to its emergency response program. EPA took several steps to reorganize around its new emergency response and homeland security functions, including the creation of an Office of Homeland Security and the establishment of a new position of Associate Administrator for Homeland Security. Additionally, we have reorganized OSWER's emergency response functions under a single office—the Office of Emergency Management, which focuses on emergency planning, preparedness and response. This new organization allows us to concentrate our efforts and our resources to meet the national requirements identified by the Department of Homeland Security (DHS), as well as our internal planning, preparedness, and response goals.

We increased our specialized dedicated emergency response staff to improve our preparedness and response capabilities. The Agency hired 50 additional On-Scene Coordinators specifically trained to deal with Incidents of National Significance (INS) and issues relating to Weapons of Mass Destruction. We expanded and extended the capabilities of our existing Environmental Response Team (ERT) responsible for technological support and training through the establishment of an additional ERT office in Las Vegas, NV. We established a National Decontamination Team dedicated to providing decontamination expertise related to biological, chemical, and radiological agents used as Weapons of Mass Destruction (WMD).

The National Decontamination Team is the first of its kind and provides general scientific support and technical expertise for identifying technologies and methods for decontamination of buildings, building contents, public infrastructure (including waste/drinking water plants, chemical plants, power plants, food processing facilities and subways), agriculture, and associated environmental media (air, soil and water). This special team is honing its expertise, building relationships with other agencies, and providing training to EPA responders. Most importantly, it is developing a Decontamination Portfolio which will include comprehensive analytical, sampling, and decontamination methods, as well as health and safety information for chemical, biological and radiochemical agents.

EPA's newly renovated Emergency Operations Center (EOC) is EPA's hub for emergency management communication and coordination. The EOC is capable of 24/7 operations and has its own independent computer center, backup power source and dedicated HVAC, and has a secure access facility.

Staff in the EOC provide situational awareness to EPA management during emergency responses and are the central link with regional and field response assets. The EOC is linked to many other federal operations centers including the FEMA National Response Coordination Center, DHS's Homeland Security Operations Center and the U.S. Coast Guard Command Center.

Emergency response and associated homeland security issues remain among EPA's top priorities. EPA has drafted a Homeland Security Work Plan to provide a framework for advancing the Agency to our next level of preparedness.

EPA'S NATIONAL APPROACH TO RESPONSE TARGETED IMPROVEMENTS

In addition to strengthening our organizational structure, EPA strengthened its policy as well. EPA's National Approach to Response (NAR) was established in June 2003 to complement the government-wide NRP and National Incident Management System (NIMS). This policy ensures efficient use of emergency response assets within the Agency, creates the necessary consistency across the regions, and highlights priorities for further policy development and coordination. An important facet of the NAR is the recognition that an effective response requires participation from the entire Agency, not just those offices traditionally responsible for emergency response activities. This approach initially grew out of the lessons learned during the response to the September 11th attacks, and experience (e.g. anthrax, Columbia Space Shuttle, Hurricane Katrina) continues to inform its direction.

The NAR has had a positive and tangible impact on EPA's ability to respond to an INS. In fact, as a result of these efforts, EPA responded more effectively to Hurricane Katrina, one of the largest coordinated response efforts in history. Today, I will highlight some of the actions we have taken under the NAR to improve our processes, procedures and capabilities during an INS.

EPA has made a major effort to train responders at all levels in the Incident Management System, as required under NIMS. To date, EPA has trained approximately 2000 staff in the Incident Command System (ICS) and has expanded the training program to include EPA executive leadership, and non-emergency response volunteers from across the Agency. As a result of this training, ICS is used in EPA's day-to-day response operations and was successfully used in the response to Hurricane Katrina.

EPA's resource of voluntary support personnel proved to be invaluable during our response to Hurricane Katrina when we needed to fill support roles at every level of the response on a 24/7 basis. Since the Katrina Response, EPA has made improvements to this important program. The Response Support Corps is finalizing national guidelines to facilitate consistency in its recruitment, training, and activation. The new basic training Program is designed to ensure that all volunteers understand ICS structure and the expectations of a response. In addition, a national database has been developed to track the skills, experience and training of all volunteers.

EPA ensured communication with the public was one of its top priorities under the NAR. After the September 11th response, the Agency created a Crisis Communications Workgroup with the continuing goal of providing timely, accurate and consistent information to the public at the time of a response. The Workgroup is designing several new products including a training program specific to the public information role, which is an important aspect of the ICS structure.

Incident and Data Management

EPA implemented a new information technology strategy to manage data more efficiently and consistently during a response event. This strategy was developed during the response to Hurricane Katrina, as part of an overall process to expedite the review and public posting of the results of over 400,000 laboratory analyses. EPA adapted and integrated existing Agency technology to provide interfaces that allowed the electronic flow of data from the field to the public. Data was posted promptly on the Internet for all media analyzed (floodwater, sediments, soil, surface water, air). This integrated approach is now serving as the prototype for the Emergency Management Portal currently under development to address day-to-day responses, as well as other potential INS.

Field Communications

On September 11, 2001, the ability of all agencies to respond was seriously impacted following the collapse of the World Trade Center towers as cell phones and Internet connections were damaged. Under our telecommunication priority workgroup, EPA developed standards for quality, quantity and type of communications equipment that should be available to responders in each Region. Over the last three years, EPA purchased, evaluated and installed complex technology to create a national communications network for EPA responders. Through this national approach, EPA has amassed a pool of equipment that can be used daily in each region and shared quickly among regions during a disaster. This strategy paid off during the Katrina response when satellite dishes, radios and other communication equipment were sent from every region to assist Regions 4 and 6. As a result, EPA had

data (Internet) and voice communications in areas that were otherwise disconnected for many months.

Environmental Lab Capacity

EPA recognizes that our responsibilities under homeland security require us to increase our capacity to analyze and process a large number of field samples for contaminants directly related to terrorist threats based on needs identified after the 9/11 and Capitol Hill anthrax incidents. EPA created a compendium of labs with various pre-identified capabilities that can be accessed as needed during a large scale event, and is establishing an Environmental Laboratory Response Network (eLRN) of labs capable of handling chemical, biological, and radiological agents. EPA, in conjunction with Department of Defense and DHS, developed two prototype triage facilities to handle unknown samples in order to protect laboratory staffs health and safety and laboratory assets. We are also working with DHS to expand chemical warfare agent lab capabilities in fixed laboratories and to design high capacity mobile units.

CONTRIBUTING TO FEDERAL HOMELAND AND SECURITY EFFORTS

EPA has a long history in emergency preparedness, planning and response. This experience allowed us to play a strong role in the development of the NRP and NIMS. EPA continues to learn from its experiences and is working with DHS to incorporate changes as the NRP is being revised.

CLOSING

I am pleased to have had the opportunity to tell you about some of the critical steps EPA has taken to meet the needs of the public and the nation in its continued response to the September 11th attacks, and in preparation for another major incident. While the EPA requests only one part of the larger efforts occurring at the Federal, State and local levels, we take our role very seriously. We can never know the exact nature or location of the next incident. The extraordinary efforts of our response staff on a daily basis, combined with EPA's NAR, allows me to say that EPA stands ready to respond wherever and whenever it is needed.

RESPONSE BY SUSAN BODINE TO AN ADDITIONAL QUESTION FROM SENATOR INHOFE

Question. EPA has consistently maintained that there were no elevated levels of contaminants largely in the immediate vicinity of the World Trade Center. For the hearing record, please describe the steps EPA took with other agencies involved immediately after September 11 to determine the levels of contaminants and EPA's actions to protect residents.

Response. *Extent of Contamination.*—The U.S. Environmental Protection Agency (EPA) and many other agencies collected and analyzed environmental samples after the September 11, 2001 attack on the World Trade Center (WTC). EPA has posted much of its monitoring data on its Website at http://www.epa.gov/wtc/monitoring/index.html.

EPA has also made all of its data available to the public through the National Institute of Environmental Health Sciences and Columbia University at http://wtc.hs.columbia.edu/wtc/Default.aspx.

The EPA sampling data and the data from many other federal and state agencies are also available on a CD at http://oaspub.epa.gov/nyr/ced.

Remote monitoring data was collected and analyzed by the United States Geological Survey (USGS, 2001), the Aerospace Corporation (2002), and EPA's Environmental Photographic and Interpretation Center (US EPA, December 2005). The New York City Department of Environmental Protection (NYCDEP) conducted a building-by-building survey of the lower Manhattan buildings to determine the extent of external contamination. The plumes resulting from the collapse of the towers and subsequent fires were modeled by EPA (Gilliam, et al., 2005, Huber, et al., 2004).

It is clear from this data that the plumes from the collapse of the WTC and subsequent fires impacted much of the New York City (NYC) metro area. The most heavily impacted area is approximately bounded on the north by Chambers Street and the Brooklyn Bridge approaches. This area is entirely contained within the area that was the subject of EPA Region 2's 2002–2003 Indoor Air Residential Assistance Program.

Impacts on the Indoor Environment.—Shortly after the 9/11 attack, concerns were raised about the impact of the attack on the indoor environment. The Ground Zero Task Force commissioned a survey of two residential buildings (Chatfield & Kominsky, 2001). The buildings sampled were 45 Warren Street, four blocks north

of Ground Zero (undamaged); and 250 South End Avenue, close to Ground Zero, to the southwest of the WTC (damaged). The Warren Street building was considered to have been exposed to lower concentrations of dust than that at South End Avenue. The purpose of the survey was to assess the levels of polychlorinated biphenyls (PCBs), dioxins, furans, metals, and asbestos inside the buildings. Sampling was conducted on September 18, 2001 The report concluded that concentrations of PCBs, dioxins, furans, and metals (excluding calcium) were generally low or below comparative background levels at both locations. Concentrations of asbestos found in dust samples and in the air inside the apartments were significantly elevated, and all of the indoor samples collected in the South End Avenue building exceeded ~0.05 S/cc PCMe (structures per cubic centimeter phase contrast microscopy equivalents).

From November 4 through December 11, 2001, the New York City Department of Health and Mental Hygiene (NYCDOHMH) and the Agency for Toxic Substances and Disease Registry (ATSDR) collected environmental samples in and around 30 residential buildings in lower Manhattan, and comparison samples in four buildings above 59th Street (NYCDOHMH/ATSDR, 2002). The samples collected were analyzed for asbestos, synthetic vitreous fibers, mineral components of concrete (crystalline silica, calcite, and portlandite), and mineral components of building wallboard (gypsum, mica, and halite). Their 2002 report concluded that higher levels of asbestos, synthetic vitreous fibers (e.g., fiberglass), mineral components of concrete, and mineral components of building wallboard were found in settled surface dust in lower Manhattan residential areas when compared with comparison residential areas above 59th Street. NYCDOHMH and ATSDR recommended:

(1) Frequent cleaning with HEPA vacuums and damp cloths/mops to reduce the potential for exposure;

(2) Additional monitoring of residential areas in lower Manhattan;

(3) An investigation to better define background levels specific to New York City for asbestos, synthetic vitreous fibers, mineral components of concrete, and mineral components of building wallboard; and

(4) Residents in lower Manhattan who were concerned about potential WTC-related dust in their residences participate in EPA Region 2's Indoor Air Residential Assistance Program.

In February 2002, a multi-agency task force headed by EPA was formed to evaluate indoor environments for the presence of contaminants that might pose long-term health risks to residents. As part of this evaluation, a task force subcommittee was established (COPC Committee) to identify contaminants of potential concern that were likely to be associated with the WTC disaster and to establish health-based benchmarks for those contaminants during the planned (2002–2003) Assistance Program in lower Manhattan. A systematic risk-based approach was used to select COPC. The goal was to identify those contaminants likely to be present within indoor environments at levels of health concern. The following chemicals were identified as COPC: dioxins, PAHs, lead, asbestos, fibrous glass, and crystalline silica.

Risk-based benchmarks were developed to be protective of long-term habitability of residential dwellings and were submitted for peer review (US EPA, 2003a). EPA also conducted a cleaning study to evaluate the performance of the cleaning methods recommended in the NYCDOHMH and ATSDR report to ensure that the health-based benchmarks could be achieved by using them (US EPA, 2003c). EPA concluded the following:

(1) Observation of apparently WTC dust at that time was a good indicator that WTC contaminants were present, and the amount of such dust correlated with the level of contamination;

(2) Concentrations of some contaminants in the WTC dust were elevated above health-based benchmarks;

(3) Use of a standard cleaning method of vacuuming and wet wiping significantly reduced levels of WTC-related contamination with each cleaning event and was successful in reducing concentrations to levels below health-based benchmarks (in some cases, 2 or 3 cleanings were necessary);

(4) Asbestos in air is a good indicator of whether additional cleaning is needed; and

(5) Standard HVAC cleaning methods reduced the concentrations of WTC contaminants in HVAC systems.

Concurrently, EPA also conducted a "Background Study" to determine levels of selected contaminants in fourteen residential buildings (north of 77th Street in Manhattan) not directly impacted by the airborne dust plume that emanated from the WTC site (US EPA, 2003b). EPA sampled 25 residential units and nine common areas within the 14 buildings. The contaminants studied included: asbestos, lead, dioxins, PAHs, fibrous glass, crystalline silica, calcite, gypsum, and portlandite. The data collected from this study provided estimates of background concentrations for

compounds that were identified as COPC related to the WTC collapse. The estimates were shown to be consistent with other background studies and historical data, where such comparison data were available.

Beginning in 2002, residents of lower Manhattan, who lived below Canal Street were provided a choice of services. Residents could choose to have their residence professionally cleaned, followed by confirmatory testing, or they could choose to just have their homes tested. Owners and managers of residential buildings and boards of cooperatives and condominiums could also have their building's common areas cleaned and tested and the HVAC system evaluated and cleaned, as necessary. The common areas cleaned and tested included areas such as the building lobby, hallways, stairways, and elevator interiors. Certain other common areas, including laundry rooms, utility rooms, compactor rooms and elevator shafts, were tested and cleaned as needed.

Between September 2002 and May 2003, residences were cleaned using standard asbestos cleanup methods: using HEPA-filtered vacuums and wet wiping all horizontal hard surfaces (i.e., floors, ceilings, ledges, trims, furnishings, appliances, equipment, etc.). Vertical and soft surfaces were HEPA vacuumed two times. Depending upon the size of the residence, from three to five air samples were collected and analyzed for asbestos by using transmission electron microscopy (TEM) and phase contrast microscopy (PCM). A total of 4,167 apartments in 454 buildings and 793 common areas in 144 buildings were sampled for asbestos in air. A total of 28,702 valid sample results were analyzed; 22,497 from residential units, and 6,205 from common areas within residential buildings (e.g., hallways, laundry rooms). In a subset of the residences, pre and post-cleanup dust wipe samples were collected (e.g., from floors, walls, and furniture) and analyzed for dioxin, mercury, lead, and 21 other metals.

Of the total of 28,702 valid residential asbestos in air results generated, the number of samples that exceeded the health-based benchmarks for airborne asbestos was very small, 0.47% for the clean and test residences and 0.5% for the test only residences. In those residences and common spaces where the benchmark was exceeded in both residences and in common spaces, the cleanup program was successful in achieving the health-based benchmark for asbestos after the first cleaning approximately 99% of the time. An analysis of the location of asbestos exceedances does not demonstrate a spatial pattern of exceedances relative to WTC proximity. Apparent groups of asbestos exceedances could be explained by the location in the sampled buildings and the variability in the number of samples that were collected from each building. When we compared the frequency of detection from samples collected from clean and test and test only residences with the frequency of detection for samples collected in the background study, we found that they were similar. There was a detection rate of 2% in lower Manhattan (2.2% clean and test and 1.94% for test only) and 5% in upper Manhattan. The minimum concentrations from both areas were identical, while the maximum detected concentration in lower Manhattan was higher than the maximum detected concentration in upper Manhattan. Although the maximum detected concentrations were not similar between the two areas, the percentage of samples that exceeded the health-based criteria was similar, with 0.5% (of all asbestos samples) in lower Manhattan and 0.0% (no exceedances) in upper Manhattan. The mean values appear to be indistinguishable from background values.

Wipe samples were collected from 263 apartments in 156 buildings. Aproximately 14% of the pre-cleanup samples exceeded the 25 $\mu g/ft^2$ U.S. Department of Housing and Urban Development (HUD) screening level for lead. There were very few exceedances of the health-based screening values measured for any of the other 22 metals. The 627 $\mu g/m^2$ screening value for antimony was exceeded in two pre-cleanup samples (0.1% of all samples); the maximum measured value was 1,180 $\mu g/m^2$. The 157 $\mu g/m^2$ screening value for mercury was exceeded in five pre-cleanup samples (0.4% of all samples). The health-based benchmark for residential dust dioxin loading of 2 $\mu g/m^2$ was exceeded in four pre-cleanup samples (0.26% of all samples). The percentage of apartments that exceeded the lead health-based benchmark was greater than the percentages of apartments that had exceedances for other metals, mercury and dioxin. The frequency of detection, the maximum detected concentration, and the percentage of samples that exceeded the risk-based criteria were higher in the dust cleanup program in lower Manhattan when compared with the results from the background study in upper Manhattan for both test and clean and test only residences. The clearest relationship found was between lead concentrations and age of building, suggesting lead paint as a cause for high lead measurements in lower Manhattan. Proximity to the WTC and floor of the building seemed to be, at best, weakly related to measured levels of lead. The level in lower Manhattan was consistent, however, with data from the HUD on mixed age housing stock in

the northeast United States. This factor makes it difficult to distinguish between lead from WTC dust and other sources, especially in older buildings.

EPA Interpretation of Data.—With the exception of heavily impacted buildings which remain uncleaned, such as the former Deutsche Bank building at 130 Liberty Street, the level of contamination measured in indoor environments in the area most heavily impacted by the plume is low. No pattern that could be related to the WTC collapse was detectable in this area of lower Manhattan. It appears that cleaning efforts by residents, building owners and operators, EPA, and NYC, where applied, have been successful in reducing levels of contamination. The COPC asbestos, man made vitreous fibers (MMVF), and lead, are common materials in the urban environment. Silicates form 59% of the earth's crust. PAHs and dioxins are produced by many combustion sources, including automobiles and the 28,000 structural fires that occur in NYC each year. We estimate that there are over 170 million square feet of interior space in lower Manhattan. There may be areas within this space that have not been cleaned of WTC dust. The lack of a specific indicator for WTC dust, the nature of the contaminants, the widespread, low-level, background contamination from other urban sources, and the large and varied nature of the space involved make a sampling effort to identify additional areas whose cleanup would result in a reduction in exposure to WTC contaminants infeasible.

EPA has identified a small number of buildings that were not cleaned and are currently unoccupied. All of these buildings are scheduled for demolition or reconstruction. EPA and a number of federal, state, and local agencies are cooperating to ensure that this work is carried out in a manner that will not adversely impact public health and the environment.

RESPONSES BY SUSAN BODINE TO ADDITIONAL QUESTIONS FROM SENATOR CLINTON

Question 1. EPA press releases announcing the latest test and clean program state that any residual health risk is minimal. Yet we know that people are getting sick. Just this month, a study published by researchers from the New York State Department of Health, the NYU School of Medicine, and SUNY at Albany concluded that residents who were exposed to contamination generated by the collapse that had been deposited in their homes had a significantly elevated rate of persistent airway disease. This study also found a strong correlation between reactive airway disease and exposures to indoor contamination for a period of 3 months or longer.

These findings, and others like them, suggest that EPA's testing and risk assessments, which are based on data from 2001 and 2002, are lacking. Has EPA evaluated this and similar studies in order to inform and revise its post 9/11 risk assessment?

Response. EPA has and continues to evaluate studies (particularly those that appear in peer-reviewed journals) on health effects and contaminant characterization resulting from the WTC disaster to inform its ongoing response actions. For example, the draft risk assessment which evaluates exposures and potential health risks from outdoor, ambient air developed by EPA's Office of Research and Development, has included evaluations and summaries of epidemiological studies on health effects attributed to exposure to World Trade Center-associated contaminants. This risk assessment, titled "Assessment of Inhalation Exposures and Potential Health Risks to the General Population that Resulted from the Collapse of the World Trade Center Towers" has been submitted as a manuscript for publication in the open literature. For more information on the status of that risk assessment, see response to question #10 below.

The particular study referenced in Question 1 (Upper Respiratory Symptoms and Other Health Effects among Residents Living Near the World Trade Center after September 11, 2001.—Am J Epidem (162) P. 499–507, 2005) focused on the indoor (residential) environment and assessed new onset and persisting upper respiratory symptoms during approximately the first 12 months post 9/11. One of the strengths of this study is that it attempted to recruit a large sample of residents in the vicinity of the WTC; however, like many epidemiologic studies, response rate was poor as was dose reconstruction for individuals in the study. Of particular concern is the lack of information reported in the study as to whether any of the subjects in the affected area were caught in the dust plume on the morning on 9/11/O1 . Acute, high intensity exposure of this type would likely be a strong contributing factor to new-onset upper respiratory symptoms directly after 9/11.

In announcing its latest Test and Clean Program, the notation by EPA that residual health risk is minimal was based on information from sampling conducted by EPA and others (see above response to question from Senator Inhofe). Most compelling was the information obtained from EPA's 2002/2003 Indoor Air Residential As-

sistance Program that serviced over 4,000 residential apartments. The residential samples obtained from this program were generally obtained beyond one year after the event and were evaluated against health-based benchmarks that were developed to be protective of long-term exposure for contaminants such as asbestos that pose chronic health effects. Data show that about 1% of the residences that were either tested (1.15%) or cleaned and then tested (1.03%) exceeded EPA's benchmark for asbestos in air.

The collapse of the World Trade Center Towers resulted in impacts to both the outdoor and indoor environments. These environmental impacts have resulted in measured health impacts to both WTC site workers and, to a lesser extent, the general population residing and working in the vicinity of Ground Zero. EPA has considered this information in its risk assessments and in its current Test and Clean Program.

As noted in our response to Senator Inhofe's question, EPA implemented the program to address the recommendations outlined in the ATSDR and NYCDOH assessment.

Question 2. Just this month, a study published by researchers from the New York State Department of Health, the NYU School of Medicine, and SUNY at Albany concluded that residents who were exposed to contamination generated by the collapse that had been deposited in their homes had a significantly elevated rate of persistent airway disease. This study also found a strong correlation between reactive airway disease and exposures to indoor contamination for a period of 3 months or longer.

What this study indicates is that exposure to WTC dust in residential settings caused negative health impacts after as little as 3 months of exposure. Is EPA now prepared to respond within this kind of time frame to assess and remediate indoor contamination caused by a building collapse or other environmental disaster?

Response. The scope and long-term timing of federal agency response, including EPA's response, will necessarily depend, in part, on the nature of the incident. After the events of September 11, New York City was initially responsible for residential and indoor air issues following the events of September 11. From the beginning, the Federal Emergency Management Agency (FEMA), New York City and State, as well as EPA, provided advice to residents on cleanup methods (wet wiping/mopping, HEPA vacuuming) that proved effective. In addition, for residences with more than minimal dust, EPA urged using professional asbestos abatement cleaners.

Since that time EPA has made significant progress in preparedness efforts to assess and remediate indoor contamination caused by a building collapse or other environmental disaster. EPA's National Homeland Security Research Center is engaged in an effort for the development of subchronic health-based exposure advisory levels for the general public called Provisional Advisory Levels (PALs). PALs address exposure durations of one day, 30 days, and two years for chemical contaminants detected in air or drinking water. To date, EPA has developed PALs for over 20 chemicals (which equates to over 360 separate values: three exposure durations, for three levels of severity and for two environmental media). In addition, EPA is also continuing an effort with the National Research Council's Committee on Toxicology in the development of Acute Exposure Guidance Levels (AEGLs). They are emergency response standards applicable to the general public . They are developed for three levels of severity and for the durations of ten minute, 30 minute, one hour, four hour and eight hour exposures. PALs are being developed to provide benchmarks to bridge the gap between the acute exposure durations covered by the AEGLs and the chronic lifetime exposures covered by inhalation RfCs (Reference Concentrations) and oral RfDs (Reference Doses).

EPA also developed a method to assess risk from exposures to contaminated building surfaces. This guidance will be incorporated into an upcoming revision of the Risk Assessment Guidance for Superfund, Part E, Dermal Risk Assessment, which is expected to be released later in 2007.

Question 3. In February of 2006, Whitehouse Homeland Security Advisor Fran Townsend issued a report about the Administration's response to Katrina. That report concluded the following:

"Federal officials could have improved the identification of environmental hazards and communication of appropriate warnings to emergency responders and the public . . . there must be a comprehensive plan to accurately and quickly communicate this critical information to the emergency responders and area residents who need it. Had such a plan existed, the mixed messages from Federal, State, and local officials on the reentry into New Orleans could have been avoided."

The report went on to make the following recommendation: "DHS, in coordination with EPA, HHS, OSHA, and DOE should develop an integrated plan to quickly

gather environmental data and provide the public and emergency responders the most accurate information available to decide whether it is safe to operate in a disaster environment or return after evacuation. This plan should address how to best communicate risk, as well as determine who is accountable for making the determination that an area is safe. It should also address the need for adequate laboratory capacity to support response to all hazards. The plan should be completed in 180 days."

At the hearing I asked a question about whether this work had been completed, and EPA responded that:

"The agency has been working on a crisis communication plan. It is still in draft, it is still under review within the agency."

Please provide a copy of that draft communication plan, as well the timeline for completion. In addition, please provide whether EPA is implementing the other recommendations made in the February 2006 White House report on the Katrina response.

Response. The Townsend Report recommendation you reference recommended that the Department of Homeland Security (DHS) develop a plan in consultation with other federal agencies. DHS is in the best position to report on its progress in developing this plan. EPA's Crisis Communication Plan, (a copy is enclosed with this response) outlines responsibilities and procedures to help ensure the public receives accurate, timely, EPA information during a crisis. The plan summarizes EPA's public information roles at the field, regional and national levels during incidents of national significance; provides guidelines for developing and distributing information to the public, in coordination with partner agencies; and outlines the Agency's training requirements for public information staff. EPA considers this a living document and expects to update and revise the document periodically. Work is also underway to develop a companion resources guide for the implementation of the plan. This guide will include message maps, fact sheets, templates for communication of sampling data, job aides and other tools to assist the public information staff during a response. The Incident Command System training course for EPA Public Information Officers has already been revised to conform with the information in the Crisis Communications Plan.

An important aspect of communicating risk is the coordination between the Public Information Officer staff and the Environmental Unit staff to assure that environmental data is communicated in an appropriate context in plain language. In response to Katrina, a policy was established to include an Environmental Unit in EPA Headquarters that will work with public information staff after the data has been evaluated, validated and interpreted to assure that the data is presented in language that is easily understood and in formats easily accessible to the public.

EPA also is in the process of establishing an Environmental Response Lab Network (eLRN). The criteria for joining the eLRN will be in place at the end of this fiscal year and will include quality assurance and data standard requirements. The network will include existing capabilities for standard toxic industrial chemicals as well as chemical, biological and radiological (CBR) agents. The environmental lab capacity for these CBR agents is limited at this time EPA is working with the DHS, Department of Defense (DOD) and other agencies to expand these capabilities.

Although EPA was not assigned the lead on any of the recommendations in the 2006 White House report on the Katrina response, EPA stands ready to continue coordination with the DHS and other agencies to improve inter-agency coordination on this important topic of risk communication and community outreach, and other recommendations.

Question 4. In November of last year, Paul Lioy, Edo Pellizzari, and David Prezant published an article in the journal Environmental Science and Technology. As you know, Dr. Lioy was the Vice-Chairman of the EPA WTC Expert Technical Review Panel and is director of the Exposure Science Division of the EIOSHI at RWJMS, and Dr. Prezant is the chief medical officer of the FDNY. The authors have been heavily involved in examining contamination, exposure and health issues arising from the 9/11 attacks. In this article, they review the lessons of 9/11 and conclude that new protocols, strategies and tools are needed in order to better prepare for future disasters and to avoid repeating the mistakes made after 9/11. They make a detailed set of recommendations for EPA, OSHA and DHS, and I am going to follow up with detailed questions about these recommendations.

In regards to the EPA, the report states: "We need to develop exposure-science measurement tools (personal and biological markers), models and strategies for event preparedness. A set of "on the ground" protocols is necessary for quickly assessing the hazards and extent of contamination indoors and outdoors. Specific types of personal and stationary monitors must be made available for placement in

strategic locations. A solution for measuring supercoarse particles still needs to be provided. Disaster preparedness requires that we develop an effective, universal disaster plan, with disaster-specific components, for outdoor and indoor sampling and cleanup with appropriate quality assurance."

Has EPA taken steps to implement these recommendations or to address the concerns raised by the authors?

Response. EPA has long used environmental data and a variety of risk-based models and tools to estimate the hazards of toxic compounds and their potential for human exposure and harm. These tools have been tested against both real and simulated releases and have been found to be very reliable. These tools are used to develop preparedness plans to respond to a variety of disaster scenarios.

The response to Question 2 above provides information about ongoing efforts to develop exposure science measurement tools, models and strategies for event preparedness.

EPA has a number of emergency response models and tools to quickly assess the hazards and extent of contamination at disaster sites. Onsite monitoring data, prevailing meteorological conditions and geo-spatial data can be processed, in real-time, to produce site-specific maps depicting the extent, location of the contaminant plume, estimated concentration, as well as its migration and movements. These site-specific maps can help direct emergency response activities such as directing sampling efforts or initiating evacuation, to hasten the recovery efforts and protect the public.

EPA is currently evaluating its inventory of response equipment, methods and protocols. Part of this effort has been to develop uniform guidelines for use of response equipment and the compilation of a database of all available response equipment throughout the agency. The location and availability of specific monitoring equipment, vehicles, and sampling and analysis equipment will be at the disposal of EPA OSCs across the United States. Equipment can be deployed from any EPA warehouse to disaster sites throughout the United States. The database is currently undergoing beta-testing, with final release scheduled for the end of 2007.

EPA is continually developing and refining scenario driven disaster response plans on both the national and regional level. Inter-agency working groups, sponsored by EPA and DHS, have developed restoration plans for large transportation infrastructures. These have produced universal templates that can be used in developing generic disaster preparedness plans for a variety of scenarios. EPA is also supporting several inter-agency working groups developing uniform validated sampling plans, analytical methods and quality assurance protocols to support the timely cleanup and restoration of infrastructures after disaster events.

Question 5. EPA's testimony stated that the Agency did a good job after Katrina in collecting data and making that data available. However, the EPA IG report about EPA's Katrina response states that: "EPA During emergencies such as Hurricane Katrina, there is an immediate need for decision makers at various levels of government to have reliable water quality data. One of the databases used by EPA to store floodwater data is the SCRIBE database. EPA provided access to the data to officials at the State level and New Orleans parishes. However, Louisiana officials had trouble querying the database due to a lack of training and had trouble verifying the quality of data due to inconsistent data entry. Set protocols would address these types of issues.

EPA regional officials concurred that problems existed with querying SCRIBE. Region 6 officials said they have taken actions to correct these issues. This included querying the database on behalf of Louisiana until the issue was resolved to ensure Louisiana obtained the information it needed. This also included Region 6 providing training on the use of SCRIBE and making a SCRIBE user guide available to State officials."

Clearly, the communication plan was not prepared to respond to post-Katrina needs from outside of the Agency. How do you reconcile your testimony with the IG's assessments? Can you please provide a report on the steps that EPA has taken to address the problems identified by the IG report, and to ensure that it has a fully operational communication plan in place for response to future emergencies?

Response. SCRIBE is a field tool for collecting and managing data by On-Scene Coordinators (OSCs) and other field personnel. Since SCRIBE is a local application for use on personal computers, it is difficult to share data consistently. During Katrina, EPA used a preexisting water quality database to store the analytical data from the flood water and sediment sampling. This allowed us to share the data with the public via EPA's Enviromapper software. EPA is working to create a data store more suited to its environmental assessment data using its new Portal technology. Since there will be a predetermined path for the data from the field to the central

database, this technology will allow us to securely share our data with our partners and will also assist EPA in quickly sharing data with the general public. The Emergency Management Portal (EMP) will allow data to be queried and viewed in tabular format or spatially using existing EPA GIS tools. It will also allow data to be downloaded for use in other analytical tools. This module of the EMP is scheduled to be ready in 2008. In the interim, another approach has been identified in lieu of the approach that was utilized during the Hurricane Katrina response. In this interim approach as well as the EMP approach, the sharing of information with States and other partners will be greatly simplified and EPA does not forsee any issues with use of the technology by our partners.

Question 6. The 9/11 Commission report states "The EPA did not have the health-based benchmarks needed to assess the extraordinary air quality conditions in Lower Manhattan after 9/11. The EPA and the White House therefore improvised and applied standards developed for other circumstances in order to make pronouncements regarding air safety, advising workers at Ground Zero to use protective gear and advising the general population that the air was safe. Whether those improvisations were appropriate is still a subject for medical and scientific debate."

Based on the emerging scientific evidence, I believe it is clear that the improvisations made by the EPA and the White House were flawed, and have placed the long-term health of thousands of Americans in jeopardy. Please provide a detailed plan of what metrics you have designed for assessing risk, and your risk communication plan for informing the public of those risks during future disaster scenarios. What elements of this plan when tested by Hurricane Katrina fell short, and how as a result have you modified your action plan in order to protect public health and the environment?

Response. As noted in the response to Question #2 above, EPA has and continues to take part in an inter-agency effort to develop acute exposure guideline levels (AEGLs). AEGLS span acute exposure durations from 10 minutes to 8 hrs. Evaluation of available AEGLs informed EPA's position that workers on the pile should be equipped with appropriate respiratory protection. For exposures extending beyond the acute phase (greater than 24 hours), EPA developed screening criteria for the ambient air based on a subchronic exposure of 1 year (the best estimate in the days after 9/11 for site clean-up to be completed and in retrospect a reasonable upper-bound estimate given the site clean-up was completed by the end of May, 2002).

The methodology used to develop sub-chronic screening criteria for the ambient air, as noted in the above 9/11 Commission quote, employed existing standards (e.g., National Ambient Air Quality Standards—NAAQS) where relevant and appropriate. However, standards are not available for every chemical that may be released as the result of an incident of national significance. Thus, for most of the contaminants associated with the WTC disaster, screening criteria were risk-based and developed using well-established EPA risk assessment procedures and protocols. The full process was submitted for peer review in the draft of the "World Trade Center Indoor Air Assessment: Selecting Contaminants of Concern and Setting Health Based Benchmarks—September, 2002. A similar hierarchical process (employing existing standards where applicable then reverting to risk-based methods) was used and well-received by the independent peer review panel, for developing long-term benchmarks for indoor air and settled in the aforementioned report.

During the Hurricane Katrina response, we were able to quickly and effectively use the methodology that had been developed post 9/11 to generate appropriate screening levels to compare to outdoor/ambient air monitoring results. The screening levels included relevant standards and the development of one year, risk based criteria for those chemicals without applicable standards. In order to ensure that EPA uses the best available scientific information, it is critical to develop incident-specific screening levels at the time of the response.

Question 7. In your testimony you highlight the fact that the EPA's own Emergency Operations Center has a state of the art HVAC system in order to allow it to operate effectively in an emergency situation (pg. 6). A building's air-handling system can be likened to its lungs, and if its air handling system becomes internally contaminated, all persons present within it will be continually exposed to those air contaminants. As EPA highlights the importance of a building's air handling system, how do you explain the fact that the EPA's test and clean program was very restrictive in evaluating and cleaning HVAC systems in buildings that were clearly impacted by WTC dust and debris?

Response. The configuration of HVAC systems makes it impractical to obtain load samples (mass per unit area) that could be related to the benchmarks. Load samples are collected with a series of templates and equipment that cannot be reliably oper-

ated in a confined space. Concentration (weight per weight) of a contaminant in settled dust is a poor indicator of risk. A very dusty environment may pose a risk even if the concentration in dust is low. Conversely, an environment with little dust would not pose a risk even if there was a high concentration of the contaminant in the small amount of dust. The decision criteria for HVAC cleanup was proposed, in early plans, and remains based on the 95% upper confidence level (UCL) for a contaminant of potential concern (COPC) in the common areas of the building. Common area samples will be collected in close proximity to HVAC supply ducts in the air and of dust from surfaces in these areas. We do not consider this to be restrictive. It is in accord with EPA cleanup goals in many areas; an exceedance in a pathway of concern (air or dust) triggers a cleanup.

Question 8. The GAO testified that they: "found no basis for the $7 million EPA identified to implement its second program. It was simply the money left over from the first test and clean program, and it is less than 20 percent of the first program's funding. EPA chose to limit the scope of the second program to fit within these available resources, rather than design a comprehensive program and then estimate the resources needed to carry it out. EPA told us that if the demand had exceeded available resources, it would have limited participation in the program, rather than request additional resources."

Taking into account the human health data available when the test and clean program was implemented in 2007, how do you justify the modest budget allotted to the program in relation to the human health cost attributed to exposure to WTC collapse materials? What is the EPA's policy of giving weight to economic assessments in determining an adequate level of human health protection? In terms of protecting human health in an emergency or disaster scenario, where current risk analysis paradigms may have little or no applicability, what would be the benefit of implementing a response that is directed solely from the scientific guidance versus that, as in the post 9/11 New York, in which economic assessments also played a directing role? What would a test and clean program look like if it were developed without any consideration of economic assessment or existing budgetary allotments?

Response. EPA informed GAO that there is approximately $7 million in FEMA funds available to EPA to execute a plan. However, we did not develop a plan based on a $7 million budget. Each plan that EPA has proposed has included a table indicating what specific samples would be collected in each unit, space or building sampled. Based upon our experience in the indoor dust clean up program, and information on contract costs in EPA's existing programs, EPA has evaluated the potential costs for the plans by multiplying out the number of samples by the expected sample costs and by adding estimates for the costs of collecting samples, validating sample results and performing any necessary cleaning. The only significant variable involved in the cost estimates is the number of participants. Budgets did not dictate the plans, they arose from the plans.

GAO notes that the $7 million available for the current plan is a little less than 20% of the first program funding. In the first program a total of 4,167 apartments and 144 buildings were sampled for asbestos in air. In the current program, a total of 272 apartments and 25 buildings are expected to participate. EPA has not asked for additional supplemental appropriations. At this time EPA has no reason to do so.

Regarding the development of a test and clean program without any consideration of economic assessment or existing budgetary allotments, our response to Senator Inhofe in Question 1 describes the efforts of NYCDOHMH and ATSDR, the agencies responsible for public health evaluation, in the aftermath of the WTC attack. As noted in the testimony provided by ATSDR to your Committee, the primary finding of their investigation was that the levels of materials detected in the air and dust did not pose a potential health hazard provided that recommended cleaning measures were followed. Based upon their investigation, NYCDOHMH and ATSDR recommended:

- Additional monitoring of residential areas be conducted in lower Manhattan;
- Additional investigation be conducted to define background levels specific to the City of New York; and
- Lower Manhattan residents concerned about possible WTC-related dust in their residential areas participate in the 2002–3 EPA voluntary cleaning/sampling program.

EPA, acting in concert with NYC, implemented these recommendations. Our evaluation of the program results are included in the response to Senator Inhofe: "No pattern that could be related to the WTC collapse was detectable in this area of lower Manhattan. It appears that cleaning efforts by residents, building owners and

operators, EPA, and NYC, where applied, have been successful in reducing levels of contamination." This conclusion is consistent with the initial findings of NYCDOHMH and ATSDR.

Question 9. CEQ's testimony stated that: "We had a particular focus on the workers, who faced extreme danger in the conditions during the recovery and rescue work. We had a second focus on the people who were acutely exposed to the volume of dust immediately after the collapse, and that really was in the hands of the public health professionals. EPA was instrumental in encouraging people to go seek medical help and monitoring."

Based on the Administration's position, why then were there no statements issued to public health professionals advising them to be cognitive of acute exposure symptoms and potential long-term health impacts of exposure to WTC debris and materials? Have you integrated into your future communication plan safeguards to ensure that the medical community and health care system are properly informed?

Response. The National Institute of Occupational Safety and Health (NIOSH) did issue statements to public health professionals advising them to be aware of potential impacts from exposure to WTC debris and material. The National Institute of Environmental Health Sciences also worked to provide information to health professionals. While the two Institutes are better able to fully detail their actions, each has posted explanatory information on their websites. Information on efforts by NIOSH can be found on the NIOSH website at: *http://www.cdc.gov/niosh/topics/wtc/* and at: *http://www.cdc.gov/niosh/02–143.html*. Information on efforts by NIEHS can be found at: *http://www.niehs.nih.gov/dert/profiles/stories/2002/911.htm*

EPA will defer to the Department of Health and Human Services (DHHS) on statements issued on public health and to public health professionals in general. However, as stated in reply to Question 3, EPA's Crisis Communication Plan outlines responsibilities and procedures to ensure the public receives the most accurate information in a timely manner. EPA's communication plan does make it clear that the review environmental data (which is closely linked to health effects) will be coordinated with appropriate affected agencies. As EPA develops the companion resources guide, EPA will coordinate with agencies such as the Agency for Toxic Substances and Disease Registry (ATSDR). During the response to Hurricane Katrina, EPA worked closely with DHHS, ATSDR and the Centers for Disease Control (CDC) regarding the communication of environmental data. As mentioned above, we also stand ready to continue this interagency coordination on risk communication with DHS and other appropriate agencies to assure necessary community outreach.

Question 10a. EPA's draft document, "Exposure and Human Health Evaluation of Airborne Pollution from the World Trade Center Disaster", was released for comment and brought to the attention of the press by the Agency during the last week of 2002, generating a 12/28 NYT article headlined: "No Serious Risks for Public Near Ground Zero, E.P.A. Reports". The draft document underwent peer review at a two day meeting, held in NYC and hosted by Versar, Inc., on July 14–15, 2003. The peer review report, "Summary Report of the U.S. EPA Technical Peer Meeting on the Draft Document Entitled: Exposure and Human Health Evaluation of Airborne Pollution from the World Trade Center Disaster", was finalized in December of 2003. Though the product of an external peer review panel is a public document, the conclusions and recommendations of the peer reviewers were so antithetical to EPA's purposes that the Agency sought to suppress the report. Only with the assistance of the OIG, was I able to secure its release.

In December 2005, New Yorkers queried EPA regarding the status of the report and learned that it had been revised, and that the revised draft had been submitted to the July 2003 peer review panel for a letter review in the summer of 2005 under the title, "An Inhalation Exposure and Risk Assessment of Ambient Air Pollution from the World Trade Center Disaster" An EPA email response to this query in December of 2005 stated that EPA was in the process of preparing the report for public release in January or February 2006. However, requests for revised drafts of this document and other information about the process have been unanswered. Please provide the following documents and information:

The revised version of the external review draft, "Exposure and Human Health Evaluation of Airborne Pollution from the World Trade Center Disaster", that was submitted for peer review in 2005, under the title, "An Inhalation Exposure and Risk Assessment of Ambient Air Pollution from the World Trade Center Disaster", or under its original title, or under another title:

The name of the contractor that managed the 2005 peer review for EPA.

Response. Versar, Inc., 6850 Versar Center, Springfield, VA 22151.

Question 10b. The names of the peer reviewers who participated in the 2005 peer review.

Response. Michael Dourson, Ph.D., DABT, Toxicology Excellence for Risk Assessment (TERA), Cincinnati, OH 45211; Alison Geyh, Ph.D., Johns Hopkins University School of Public Health, Department of Environmental Health Sciences, Baltimore, MD 21205; Patrick L. Kinney, Sc.D., Mailman School of Public Health at Columbia University, Department of Environmental Health Sciences, New York, NY 10032; John R. Kominsky, M.Sc., CIH, CSP, CHMM, ROH, Environmental Quality Management, Inc., Cincinnati, Ohio 45240; Margaret MacDonell, Ph.D., Argonne National Laboratory, Argonne, IL 60439; Bertram Price, Ph.D., Price Associates, Inc., White Plains, NY 10601; Clifford P. Weisel, Ph.D., Environmental & Occupational Health Sciences Institute (EOHSI)/UMDNJ, Department of Environmental Medicine, Piscataway, NJ 08854.

Question 10c. All work products completed by peer reviewers for the 2005 peer review and communicated back to EPA.

Response. The peer reviewers did not provide any products to EPA directly. They were hired by Versar and provided their review comments back to Versar. Versar provided EPA with a report titled, "Support for the External Re-Review of the NCEA Report Exposure and Human Health Evaluation of Airborne Pollution from the World Trade Center Disaster" dated October 11, 2005. That report contained a brief synopsis by Versar of the overall reviewer response to each of the charge questions, followed by the unedited reviews supplied by each reviewer.

Question 10d. The charge questions provided to peer reviewers, the list of background documents, and the record of clarifying questions from peer reviewers and EPA's responses to those questions.

Do you agree that these were important changes to have been made to the document? Do you have any comments on these new additions/changes? Would you recommend further major changes?

Response. (a) Two new primary conclusions were added, bringing the total to five major assessment conclusions. The original three conclusions remain substantially the same, with some word changes. Please reread those and provide any fresh insights or comments, if appropriate. The new conclusions address the fact that health effects research has indicated that WTC-related respiratory and reproductive health effects have been observed in the general population. The new conclusions read:

Respiratory impacts, such as exacerbated asthma and "World Trade Center Cough", have been observed in residents and other individuals living and working on the perimeter of Ground Zero, and these impacts have persisted in some individuals to the current time. As in this assessment, researchers studying the respiratory impacts have hypothesized that these effects resulted from inhalation exposures which occurred near Ground Zero, and very near September 11 in time when concentrations of critical respiratory contaminants (particulate matter, synthetic vitreous fibers, asbestos, and others) were thought to be substantially elevated over typical background levels in air.

In addition to respiratory effects, reproductive effects were observed in two studies. In both studies, the cohorts were selected based on being near Ground Zero on September 11, but also who lived and worked in the area for weeks to months afterwards. Thus, both outdoor and indoor exposures may have contributed to the observed effects. In one study, the reproductive effect of intrauterine growth restriction resulting in small for gestational age babies was observed. In the second study, a small but significant reduction in gestation and birth weight was observed. Although attribution is not certain, the researchers concluded that the observed reproductive effects suggest an impact of pollutants (PAHs and particulates) and/or stress related to the WTC disaster.

(b) The monitoring chapter was greatly expanded to provide a more complete overview of the monitoring activities and the monitoring data available for analysis in this report.

(c) A new section on Health Risk Uncertainty, including the latest findings on observed health effects has been added to Chapter 2. Exposure Assessment and Risk Characterization Approach, and to the Executive Summary.

(d) A new table outlining the health or regulatory basis for all benchmarks used in this assessment is now included as Table 2.2.

(e) New contaminant assessments have been included on synthetic vitreous fibers (SVFs), PAHs, and silica.

(f) A new cancer risk assessment on asbestos has been added.

(g) All contaminant monitoring summaries were updated to include all final data (the original assessment included data only through March or April of 2002; most monitoring activities were discontinued in the summer of 2002). As well, summaries

of monitoring for all metals and all volatile organic contaminants were added, even though only a limited number of them were assessed.

(h) A new section in Chapter 5. Comment on the First Several Days After September 11, has been added. This section details the day-by-day monitoring activities which occurred between September 11 and September 18, 2001.

(i) The original Chapter 6. Data on Occupational and Indoor Exposures, has been deleted.

(j) A new appendix, Appendix B. Compilation of World Trade Center Studies on Environmental Impacts, Human Exposures, and Health Impacts, has been added to the document. (2) The panel also made recommendations that were not followed for this version of the assessment. Specifically, the panel recommended that existing health benchmarks, developed for a different purpose such as occupational exposure, be adjusted so that they are more appropriate for the exposure patterns that might be relevant to the target population of this assessment, the general public living and working near Ground Zero. EPA had decided that this assessment was not the appropriate forum to be developing new benchmarks. Also, the panel advocated addressing cumulative or aggregate effects of multiple chemical/multiple pathway exposures, to the extent possible and practical. EPA identified the lack of cumulative/aggregate exposure assessment as a major uncertainty for this assessment, but felt that both the WTC data and the procedures for cumulative/aggregate assessment were not sufficiently developed for this assessment. Does the panel agree with these decisions?

(3) Is the panel aware of any new data or studies that would benefit this assessment?

(4) Does the panel have any additional comments they wish to make after seeing this assessment a second time, given the years between reviews and the information and insights that have come out of the WTC experience?

List of background documents

1. The current version of the report

2. The December 2002 version of the report

3. A draft response-to-comments document prepared by EPA which includes responses to the comments made by the July 2003 external review panel as well as responses to comments provided by the public following the December 2002 release of the report.

4. A letter from EPA (developed by EPA and supplied to the contractor prior to the initiation of the review) which contains general information about the revised report and any specific re-review directions or charges.

Clarifying questions and responses

The review was conducted by Versar. If the reviewers had any questions, they supplied them to Versar and Versar was responsible for answering the question. If Versar did not have an adequate answer, they would ask EPA for assistance in answering the question. No assistance was asked of EPA, so if there were any clarifying questions posed by the reviewers to Versar, EPA is not aware of them.

Question 10e. The status of the final report.

Response. Based on the review, EPA prepared a final report and a response-to-comments document which included responses to: public comments supplied after the release of the December, 2002 draft document, comments provided by the July 2003 external review panel, and comments provided by the letter re-review of 2005. During an internal Office of Research and Development review of 2006, it was decided that the final report would be most useful if it were prepared as a journal article that would be submitted to a peer-reviewed journal for publication. That article was developed during the summer/fall of 2006 and reviewed internally by the Office of Research of Development. The manuscript was titled, "Assessment of Inhalation Exposures and Potential Health Risks to the General Population that Resulted from the Collapse of the World Trade Center Towers", and was submitted to the journal, Risk Analysis, in December of 2006. As of July, 2007, the journal has not made a final decision to accept or reject the manuscript for publication.

Question 11. "Presidential Decision Directive–62 (PDD–62), "Protection Against Unconventional Threats to the Homeland and Americans Overseas," dated May 22, 1998, puts EPA in charge of building decontamination after terrorist attacks. Why did EPA ignore this directive after 9–11?"

Response. EPA has carefully reviewed this classified document and did not find any reference to EPA being in charge of building decontamination after terrorist attacks. EPA's responsibility, per this document, is to participate with the Federal Emergency Management Agency (FEMA) in responding to such an event. EPA did work closely with FEMA and other appropriate State and Federal agencies in responding to 9/11.

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U.S. EPA National Approach to Response
Crisis Communications Plan for Incidents of National Significance
July 24, 2007

1.0 Introduction

During an Incident of National Significance, communication of key environmental information is essential in helping the public. An INS is defined as "an actual or potential high-impact event that requires robust coordination of the federal response in order to save lives, minimize damage, and help with long-term community and economic recovery." The information provided during such an episode must be understandable, timely, accurate and consistent. During an INS, requests for information from the public and the media, as well as from the White House and state, tribal and trust territory officials, start immediately and continue throughout the response. To successfully meet these demands, the responsibilities of those gathering, organizing and releasing this information must be clearly identified and coordinated through a well-defined dissemination process. This Crisis Communication Plan establishes this process.

1.1 Purpose and Scope

This plan establishes EPA's process for releasing key environmental data and coordinating public information among the various levels of a response to an INS. The plan identifies the roles and responsibilities of EPA communication personnel. However, various program offices will be involved in reviewing communications materials (i.e., Office of Emergency Management, Office of General Counsel, Office of Research and Development and other media offices as appropriate).

This plan is the public affairs component of EPA's National Approach to Response policy and supports EPA's efforts under the National Response Plan when EPA is designated as a lead or support agency. The plan is built upon the principles and concepts of the National Incident Management System and the planning assumptions and considerations of the NRP and the National Contingency Plan. Consistent with the NRP concept of operations, the premise of this plan is that incidents are generally handled at the lowest jurisdictional level possible. The Crisis Communications Plan will be activated when the Secretary of Homeland Security has declared an INS.

1.2 Applicability

During an INS this plan applies to all EPA offices, programs and facilities, with the exception of the Office of the Inspector General, and all incident management structures such as Incident Command Posts, Joint Field Offices, Regional Emergency Operations Centers, and the Headquarters Emergency Operations Center.

This plan is effective immediately and will remain in effect until revised or rescinded by the Associate Administrator for the Office of Public Affairs. The Deputy Associate Administrator for the Office of Public Affairs will review the plan in coordination with OEM in accordance with the procedures set forth by OPA and OEM to ensure consistency with the NIMS, and the

NRP to account for policy, management, and operational changes. Request for changes must be directed to the DAA OPA. The DAA OPA will work on coordination with the co-chairs of the Crisis Communications Workgroup on any requested changes to this document.

2.0 Concept of Operations

During an INS, EPA retains full responsibility for its crisis communication programs and policies related to its activities. EPA will implement an organized, integrated, and coordinated mechanism to ensure the delivery of understandable, timely, accurate, and consistent information to the public in a crisis. EPA will work within the NIMS and the NIMS Incident Command System structure, recognizing that Public Information Officers occupy a key position within the Incident Management Team. EPA will contribute to the overall unified message of the response and support external affairs activities based on the Emergency Support Function ESF-15 Annex of the NRP, including providing staff and other support to the Joint Information Center (JIC) if requested.

EPA will provide the public with the widest practical and appropriate dissemination of information concerning its activities. EPA will work with federal, state, tribal, trust territory and other unified command partners to coordinate on development and release of all materials, including validated analytical data, Web content and press releases. EPA will work with our partners to ensure an integrated distribution of this information.

The HQ OPA and the regional offices have primary responsibility for managing the EPA public affairs function during an INS. This plan recognizes the Public Affairs Director from the affected region as working in close coordination with and on behalf of the Regional Administrator. Public information officers will be deployed to the HQ level, the regional level (Regional Emergency Operations Center and the field level (Incident Command Public Information Officer). All PIOs deployed for an INS will be fully trained to respond to an INS and appointed by the AA OPA and/or the PAD.

3.0 Organizational Roles and Responsibilities

3.1 Leadership Cadre

The Leadership Cadre as described in ESF-15 includes the key functions for federal external affairs. EPA's Leadership Cadre (AA OPA, DAA OPA, PAD and IC PIO) is responsible for ensuring the coordination of communication between field, regional, and HQ-level incident management structures. The Leadership Cadre also ensures that all communication with the public is understandable, timely, accurate and consistent. EPA's Leadership Cadre will execute its communication roles and responsibilities in accordance with this plan.

3.1.1 Associate Administrator of the Office of Public Affairs

The AA OPA represents and advises the Administrator on all public information matters related to the management of the INS and serves as the focal point for crisis communications policy

issues. The AA OPA can delegate certain responsibilities to the DAA OPA or other senior OPA personnel as needed.

The AA OPA will:

- Serve on the Policy Coordinating Committee. The PCC is convened during an INS by the Administrator to exchange information about the incident and address significant Agency and inter-agency policy issues;
- Serve as the Administrator's representative to the White House and other Cabinet-level public affairs officials;
- Serve as the Administrator's representative to regional PADs and PIOs at all levels of the response;
- Coordinate the development of EPA messages;
- Serve on the Leadership Cadre;
- Act or designates a representative to act as EPA's ESF-15 liaison to DHS. The representative participates in National Incident Communications Conference Line calls. DHS operates these calls, which are designated as executive calls. They are held at least once a day after an incident to exchange and transmit up-to-date information between federal and affected state, local and tribal authorities;
- Designate a qualified OPA representative to be a member of the National Incident Coordination Team. The NICT, chaired by the National Incident Coordinator, is a standing team of senior representatives from each HQ office as well as a representative from the affected region. During a response, the NICT coordinates resources, resolves issues, and keeps the PCC fully informed;
- Coordinate with OEM to designate qualified PIOs to work in the HQ EOC;
- Designate, in coordination with the PAD and IC PIO and National Incident Coordinator, spokespeople for media inquiries; and
- Approve communication products, including press releases, talking points and internal EPA employee communication, i.e., mass mailers.

3.1.2 Deputy Associate Administrator of the Office of Public Affairs

The DAA OPA represents and advises the AA OPA on all public information matters relating to the management of the incident. The DAA OPA serves as the headquarters lead for day-to-day crisis communication issues and coordinates directly with the PAD and the HQ EOC PIO.

The DAA OPA will:

- Provide support and counsel to the AA OPA on public affairs matters;
- Serve on the Leadership Cadre; and
- Develop and oversee an incident-specific process to be used for the public release of EPA information pertaining to the incident. This process is referred to throughout the plan as the "review, approve and release" process.

3.1.3 Regional Public Affairs Director

The PAD advises and carries out the direction of the RA on all public information matters relating to the management of the incident. In close coordination with AA and DAA OPA, the PAD serves as the crisis communication lead for the affected region(s).

The PAD will:

- Serve as the RA's representative to the Leadership Cadre;
- Develop for the AA OPA's approval, in coordination with the RA and the Incident Management Teams PIO, all communication strategies and messages for the incident;
- Ensure products developed at the regional level go through the "review, approve and release" process and keeps the RA apprised of the status of products being processed;
- Coordinate the release of information in response to requests from HQ, affected states, tribes, territories, local public officials and the public;
- Provide public affairs resources to the IMT PIO as needed;
- Recommend to the RA, in consultation with the AA OPA, who should serve as the IC PIO during various stages of an INS. If the PAD and the AA OPA determine that the PAD will serve as the IC PIO, the PAD will designate a PIO in the Region to coordinate from the regional office, including requesting public affairs support from another region. Subsequent rotations of individuals serving as IC PIO will typically be other PADs or other EPA public affairs staff with appropriate training and experience;
- Assess the need for additional resource support requirements for the response and request those resources through the PAD network; and
- Keep the AA and DAA OPA fully informed of public and media inquiries.

3.1.4 Incident Command Public Information Officer

The IC PIO represents and advises the Incident Commander on all public information matters related to the management of the incident. The PAD will appoint the PIO in consultation with the AA OPA. The IC PIO provides operational support to the IC and coordinates with the Leadership Cadre. The PIO handles media and public inquiries, emergency public information and warnings, rumor monitoring and response, media monitoring, and disseminates accurate, concise and timely information related to the incident, particularly regarding information on public health and protection. The IC PIO is also responsible for coordinating public information at or near the incident site and serving as the on-scene link to the Joint Information Center.

The IC PIO will:

- Serve as the IC's representative to the Leadership Cadre and public affairs personnel staffing the JIC;
- Attend IMT operational briefings and IMT command, general and planning meetings;
- Brief the IC or designated field personnel to ensure the accurate release of information to the public and media;
- Apprise the Leadership Cadre of any forthcoming announcements or major developments;

- Provide the EPA JIC Assistant PIO(s) with current information about EPA response activities and assists in review/approval of information requests;
- Work in coordination with the Leadership Cadre and public affairs personnel at the JIC, develops communication products such as risk communication templates, press releases and flyers for the IC's approval and distribution;
- Ensure products developed at the field level go through the "review, approve and release" process and coordinates the process with the IC;
- Keep the PAD updated on the need for resources to support public affairs activities and assigns assistant PIOs as necessary;
- Advise the PAD of emerging issues and provides guidance to address these issues;
- Provide a communication summary at the end of each day to the Leadership Cadre on the activities for that day and on expected activities for the next day;
- Ensure coordination of information approval and release during the incident; and
- Ensure all public affairs materials are archived and documented.

3.2 Headquarters Emergency Operations Center Public Information Officers

The HQ EOC PIO is appointed by the AA OPA in consultation with OEM and serves as the OPA crisis communication liaison to the HQ EOC.

The HQ EOC PIO will:

- Coordinate with the Incident Coordinator in the EOC and other staff, such as the Liaison Officer;
- Serve as primary coordination point in the EOC for OPA leadership. Coordinates all materials for release from IC PIO to the AA OPA and, when deemed necessary by the AA OPA, works with the Office of General Counsel, represented by an attorney assigned to the HQ EOC, to review certain materials;
- Coordinate with the HQ EOC Environmental Unit regarding data and their release;
- Work with the HQ EOC Environmental Unit to prepare summaries of environmental sampling results, advisories, and statements on environmental data and related topics, coordinating with and seeking input from the REOC PIO and the PAD;
- Ensure that materials are written in language easily understood by the general public; and
- Coordinate approval and release of data-related materials using the established "review, approve and release" process.

3.3 Regional Emergency Operations Center Public Information Officer

The REOC supports and coordinates the Agency's tactical response in the field. The PAD appoints the REOC PIO, who serves as the crisis communication liaison to the REOC.

The REOC PIO will:

- Coordinate with the REOC Manager and the REOC and HQ Environmental Units on data and its release using the established "review, approve and release" process; and

- Work with the REOC and HQ Environmental Units to prepare summaries of environmental sampling results, advisories, and statements on environmental data and related topics, coordinating with and seeking input from the PAD and HQ EOC PIO.

4.0 Message Development and Distribution

4.1 Disseminating Information to the Public

During an INS, EPA will:

- Ensure that all information dissemination is coordinated with the DHS JIC as described under ESF-15 as required by the event (Leadership Cadre);
- Ensure that messages are conveyed to the public quickly, accurately and consistently by working with print and broadcast media and posting information on the Web;
- Work with partner agencies at the federal, state, tribal and local levels, as well as private sector and non-governmental organizations when appropriate, on development of public health and environmental information;
- Develop and maintain resources to assist public affairs personnel in their designated roles;
- Convene the Leadership Cadre to begin the communication strategy process (AA OPA, DAA OPA);
- Develop and disseminate the incident specific review, approval and release process for communications materials (DAA OPA);
- Develop the strategy for on-going operations and product distribution, including Agency-specific products and joint products developed under ESF -15 (Leadership Cadre);
- Review and approve national messages in coordination with the Leadership Cadre (AA OPA);
- Approve and review staff products such as press releases, fact sheets, remarks, Web text and flyers that come from already-approved content (IC PIO or PAD);
- Oversee information verification and coordination of all materials for release (IC PIO, HQ EOC PIO, NIC, OGC);
- Coordinate with HQ EOC Environmental Unit, program communication offices, and the IC PIO on development and approval of products related to data (EOC PIO); and
- Coordinate with the public affairs official for the lead federal agency conducting the investigation of any incident-specific information, particularly terrorism-related information or information related to criminal investigations into the cause of the incident (HQ EOC PIO, Office of Criminal Enforcement, Forensics, and Training public affairs officials, HQ EOC Environmental Unit, Regional PAD, and IC PIO).

4.2 Communication of Environmental Data

Environmental data is defined as scientific sampling and monitoring data related to the incident, which includes but is not limited to soil, sediment, air, and water. During an INS, environmental data must be disseminated to the public in an understandable, timely, accurate and consistent manner. Once data has been evaluated, validated and interpreted, the HQ EOC Environmental Unit will work with the HQ EOC PIO to prepare materials that present the data in easily

understood language and in formats easily accessible to the public (e.g., Web). The HQ EOC PIO, working with the Environmental Unit, will present environmental data in an appropriate context with the appropriate technical caveats noted in plain language. The HQ EOC PIO will work closely with the REOC PIO and the PAD on the dissemination of environmental data-related products. All data-related materials must follow the established "review, approve and release" process. The review and release of environmental data will be coordinated with the affected agency or agencies as appropriate.

5.0 Vehicles for EPA Communication with the Public

5.1 Spokespersons

During an INS, the AA OPA, in coordination with the PAD and IC PIO, will designate a spokesperson(s) to represent the EPA. Through an authorized spokesperson(s), EPA will respond in a timely manner to all media requests for information, interviews and visual imagery. Significant policy statements and potentially sensitive materials will follow the "review, approve and release" process. These materials will be fully coordinated with EPA Program Offices at the HQ and regional levels, with the affected state environmental agencies and with any federal partners such as natural resource and human health agencies before release. Urgent, incident-specific information related to the immediate protection of life and health may be released with the sole approval of the regional PAD or IC PIO. Incident Command Post and JIC news releases and media advisories, such as those that provide information on the JIC location or the timing of a news conference, may be released with the sole approval of the regional PAD or IC PIO.

Official EPA spokesperson(s) will address policy and programmatic issues. The IC PIO is responsible for working with EPA field response personnel to prepare them for potential interviews with the media.

5.2 Internet

The Web site development will be done in coordination with OEI, the DHS Web team, and the relevant regional PADs and HQ program offices. In the event of an INS, HQ OPA will develop and maintain one Web site to keep the public informed of the incident status. All approved content and data will be posted to the Web site as quickly as possible. All Web content will follow the "review, approve and release" process and meet EPA and federal standards. HQ OPA will incorporate the regional and national Web content into a single EPA Web site.

5.2.1 National Content Source

HQ OPA, working with the HQ EOC PIO, regional PAD, and relevant HQ program offices, will develop national Web content that is consistent with Agency messages and other products created during the incident.

5.2.2 Regional Content Source

The regional PAD, working with the HQ EOC PIO, HQ OPA, and relevant HQ offices, will develop regional Web content that is consistent with Agency messages and other products created during the incident.

5.2.3 Incident Web Site Access

At the direction of HQ OPA, regional and HQ office staff could be given rights to post content that has been reviewed and approved by HQ OPA to the national INS Web site. HQ OPA will manage the Web site, coordinating postings and approvals. This Web site will include all information regarding the INS.

OEI will support this process with technical assistance such as rights to redundant access.

5.2.4 Link Development

The Web site will include any applicable links to other information related to the INS on other Web sites, including responsible parties, industry groups, federal agencies, municipal, tribal and state partners. External links will be considered under Agency external links procedures.

HQ OPA will develop a set of links that point to the Web site. Each relevant regional office and program office will include these links on its respective home page.

5.2.5 General Content Format

General communications content submitted for posting to the Web site must include text written in clear language and include supporting data and the context of any data. Text should be submitted in Word, without embedded images or tables. The submitter must also provide evidence of appropriate approvals and a time frame for posting.

5.2.6 Data, Context and Format

Data submitted for posting will - when possible - be posted to existing public EPA data interfaces (e.g. Cleanups in My Community) and on the EPA Web site, and linked to from the incident Web site. HQ EOC PIO will work with the appropriate HQ offices, HQ OPA and/or HQ and regional Environmental Units to prepare materials in easily understood language that includes the context of the data.

There may be times when environmental data will not be posted through existing EPA interfaces. OEI may be required to offer database support for such instances. In such instances, the HQ EOC PIO will work with the HQ Environmental Unit to provide a consistent format and accompanying text as above. The format of the content will be determined jointly by the Leadership Cadre and the HQ and regional Environmental Units.

5.3 Community Outreach

Community outreach is a vital component of the Agency's overarching communications strategy. Community relations enable the Agency to determine what environmental messages are important to the public and if key messages are being disseminated to the public in an understandable, timely, accurate, and consistent manner. Agency credibility depends on coordinated community relations and media efforts. Additional staff that may be required to carry out community outreach activities will be provided through EPA's Response Support Corps.

The IC PIO manages and coordinates a spectrum of public information activities, including community outreach activities, message strategies, and multi-lingual and cultural issues. This includes outreach to vulnerable populations during the course of the response, in collaboration with the Liaison Officer. EPA will coordinate community outreach activities with other Agencies through the JIC. All public outreach materials must follow the established "review, approve and release" process.

6.0 Coordinating of Public Information with our Partners

6.1 Interagency Coordination with DHS under ESF-15 – External Affairs Annex

During a potential or actual INS, ESF-15 ensures that sufficient federal external resources are assigned during an incident requiring a coordinated federal response to provide accurate, coordinated and timely information to affected audiences, including governments, media, the private sector and the public.

Upon activation of ESF-15 by DHS, federal external affairs resources will be employed to conduct sustained operations in support of the Principal Federal Official, Federal Coordinating Officer and Joint Field Office during an INS or incident requiring a coordinated Federal response.

EPA through its field and regional incident management structures will support the inter-agency effort under ESF-15 by providing the media and the public with information on EPA's response activities. EPA will deploy public affairs personnel to the JIC or other ESF-15 functions of an incident when requested by the DHS ESF-15 Director.

During an INS, a JIC will be established by DHS under ESF-15 and PIOs from responding organizations will work together in the JIC to provide coordinated and consistent information about the incident to the media. EPA PIOs working in the JIC will be responsible for working on all issues raised to the JIC and not just those related to environmental or EPA-specific matters. DHS will coordinate the release of all written material on the incident, including press releases and fact sheets. After obtaining proper approvals for this information, as described in this plan, subject information will be released to the media and public through the JIC. In many cases, the press releases issued can include information provided by many agencies involved in the response, including EPA.

All EPA materials will follow the EPA internal "review, approve and release" process. Once the information is approved for release, it will be funneled through the JIC for release as part of the coordinated federal response. The purpose of this coordination is to ensure the federal government is speaking with one voice.

6.2 State and Tribal Agency and Trust Territory Coordination

The Agency will coordinate the release of data and information with the affected states, tribes and trust territories.

The IC PIO will negotiate with the state, tribal and trust territory agencies to develop the incident-specific process for release of state data and information.

7.0 Training for INS Crisis Communications

EPA employees must complete the following courses before they can provide public affairs support to response operations during an INS:

- ICS 700/800, and
- ICS 100/200.

EPA employees must complete the following course before they can serve as a PIO during an INS:

- ICS 300/400.

EPA employees must complete the following course before they can serve as a PIO on an IMT during an INS:

- ICS 403 - PIO position-specific training.

It is recommended that EPA employees complete the following supplemental courses:

- ICS 420 - Command and General Staff training, and
- FEMA's Public Affairs/ESF-15 Seminar (note: may be required for those employees serving in the JIC).

8.0 Staffing & Deployment

The EPA will develop the capability to staff up to five concurrent INS. All deployments will be coordinated with HQ EOC and the affected region and then with the back-up regions. When regional and back-up regional resources are exhausted, further deployments will be coordinated through HQ EOC and the affected region. All qualified PIOs must register with their respective regions as members of the IMT. Depending on the complexity and duration of an INS, trained PIOs and PADs from the regional offices and HQ may be deployed to many locations, including the HQ EOC, the affected region(s), the ESF-10 Information Office in the field and the ESF-15

JIC. Subsequent rotations of individuals serving as IC PIO typically will be other PADs or other EPA public affairs staff with the appropriate training and experience. The IC PIO will be in the best position to assess field needs once the response is underway.

If staff is needed from other regions to fill in for regional staff deployed to an incident, then these resource requests would be outside of the scope of the response and handled independently.

References

1) National Response Plan
2) National Incident Management System
3) EPA National Approach to Response
4) EPA Memorandum entitled "Incorporating Environmental Justice Considerations into EPA Disaster Preparedness and Response Procedures," dated Nov. 2, 2006

Acronyms

AA(s) – Assistant/Associate Administrator(s)
AA OPA – Associate Administrator for the Office of Public Affairs
DAA OPA – Deputy Associate Administrator for the Office of Public Affairs
DHS – Department of Homeland Security
EPA – Environmental Protection Agency
ESF – Emergency Support Function
HQ EOC – Headquarters Emergency Operations Center
HQ EOC PIO – Headquarters Emergency Operations Center Public Information Officer
IC – Incident Commander
ICP – Incident Command Post
IC PIO – Incident Command Public Information Officer
IMT – Incident Management Team
IMT PIO – Incident Management Team Public Information Officer
INS – Incident of National Significance
JIC – Joint Information Center
NAR – National Approach to Response
NCP – National Contingency Plan
NICCL – National Incident Communications Conference Line
NICT – National Incident Coordination Team
NIMS – National Incident Management System
NRP – National Response Plan
OEI – Office of Environmental Information
OEM – Office of Emergency Response
OGC – Office of General Counsel
OPA – Office of Public Affairs
ORD – Office of Research and Development
PAD – Public Affairs Director
PCC – Policy Coordinating Committee
PIO(s) – Public Information Officer(s)
REOC PIO – Regional Operations Center Public Information Officer
RA(s) – Regional Administrator(s)
SITREP(s) – Situation Report(s)

Senator CLINTON. Thank you very much, Ms. Bodine.
Captain Rodenbeck.

STATEMENT OF SVEN RODENBECK, SC.D., P.E., BCEE CAPTAIN, U.S. PUBLIC HEALTH SERVICE, DEPUTY BRANCH CHIEF, AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

CAPTAIN RODENBECK. Yes, good morning, Madam Chairperson, members of the subcommittee and my fellow panel members. My name is Captain Sven Rodenbeck. I am a U.S. Public Health Service Commissioned Officer with the Agency for Toxic Substances and Disease Registry (ATSDR). Some of my responsibilities while stationed at ATSDR have been evaluating the public health impacts over 90 Superfund hazardous waste sites and leading various high profile agency responses to environmental health emergencies, including the World Trade Center and Hurricanes Katrina and Rita responses.

I am here today to provide you and the Subcommittee with a briefing of ATSDR's support that was provided to the New York City Department of Health and Mental Hygiene; our participation on multiple World Trade Center task forces; and our efforts to strengthen environmental health sciences and responses to environmental disasters.

First, however, I would like to take this opportunity to remember all those that we lost on 9/11 and their families who continue to remember them and love them in their memories. I would also like to acknowledge the sacrifices that the countless responders and volunteers made on that day, some of whom are still suffering. I know I will always remember them.

During the World Trade Center recovery efforts, ATSDR provided direct support to the New York City Department of Health and Mental Hygiene. Our biggest contribution was the implementation of a pilot residential sampling program. The objective of that pilot program was to sample a small number of residential units to determine what the indoor and immediately surrounding outdoor environment had as far as residue dust.

The sampling occurred from November 4 through December 11, 2001. The New York City Department of Health and Mental Hygiene and ATSDR released preliminary sampling results on February 8, 2002, and provided the final report on October 4, 2002. Our primary finding of the pilot investigation was that levels of materials detected in the air and dust did not pose potential health hazards, provided that recommended cleaning measures were followed.

ATSDR also participated on several World Trade Center-related task forces. From February 2002 through the summer 2003, we supported the EPA Task Force on Indoor Air in Lower Manhattan. This task force provided technical consultation to EPA Region 2 on several projects, including the initial EPA voluntary cleaning and sampling of residential areas, the cleaning demonstration project and the selection of World Trade Center Chemicals of Potential Concern. ATSDR also participated on the 2004–2005 EPA Expert Technical Review Panel.

To help strengthen the environmental health sciences, ATSDR published the 2002 Toxicological Profile for Synthetic Vitreous Fibers, also known as man-made vitreous fibers. We also convened an expert panel to gain a greater understanding of the toxicity of asbestos and man-made vitreous fibers, particularly the fibers that are sometime called short fibers, those that are less than 5 microns in length.

ATSDR's involvement on these various multi-agency World Trade Center task forces has served as a template for our responses to future environmental disasters. The early establishment of these types of task forces can improve the development and implementation of responses to the complex issues that arise from environmental disasters. An example of how this can be done is the 2005 CDC/ATSDR and EPA Environmental Health Needs and Habitability Assessment Task Force, which provided the State of Louisiana and the city of New Orleans with a rapid scientific evaluation of the overarching environmental health issues that needed to be done before the city could be reoccupied.

ATSDR also participated on the multi-agency task force that evaluated whether the storm surge from Hurricanes Katrina and Rita caused widespread sediment or soil contamination in the New Orleans area.

Madam Chairperson, this concludes my testimony. I would be more than happy to answer any questions.

[The prepared statement of Captain Rodenbeck follows:]

STATEMENT OF SVEN E. RODENBECK, SC.D., P.E., BCEE, CAPTAIN, U.S. PUBLIC HEALTH SERVICE, DEPUTY BRANCH CHIEF, AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Good morning Madam Chairperson and Members of the Subcommittee. My name is Captain Sven Rodenbeck, Deputy Branch Chief within the Agency for Toxic Substances and Disease Registry (ATSDR). I have been a U.S. Public Health Service Commissioned Officer for over 28 years. Since September 1987, I have been stationed at ATSDR performing various technical and managerial assignments. These assignments have included evaluating the public health impacts of over 90 Superfund hazardous waste sites, co-authoring the 1990 ATSDR The Public Health Implications of Medical Waste: A Report To Congress, and leading various high profile agency responses to environmental health emergencies including the ATSDR World Trade Center (WTC) (September 2001 through April 2003) and the Hurricane Katrina/Rita (September 2005 through July 2006) environmental monitoring and public health assessment activities. In addition, from March 2004 through December 2005, I represented ATSDR on the U.S. Environmental Protection Agency's (EPA) WTC Expert Technical Review Panel. I received my Bachelor of Science degree in Environmental Engineering from the University of Central Florida (1978), Master of Science degree in Environmental Engineering from the University of Maryland (1983), and Doctor of Science degree in Environmental Health (with emphasis in epidemiology, toxicology, and risk assessment) from the Tulane University School of Public Health and Tropical Medicine (1997). I am a registered professional engineer in the states of Florida and Maryland and a Board Certified Environmental Engineering. I have authored or coauthored numerous peer-reviewed publications and a book chapter on solid and hazardous waste.

I am here today to provide you and the Subcommittee with a briefing of ATSDR's WTC environmental monitoring involvement. I will specifically discuss: (1) ATSDR's support provided to New York City Department of Health and Mental Hygiene (NYC DOHMH), (2) ATSDR's participation on multi-agency WTC Task Forces, and (3) ATSDR's efforts to strengthen environmental health sciences and responses to environmental disasters.

Almost immediately after the planes crashed into the World Trade Center Towers, ATSDR implemented its emergency response procedures. From September 16–26, 2001, an ATSDR technical staff person traveled to the EPA Region II Edison, New

Jersey, Office to assure reliable communications between EPA Region II and ATSDR.

On September 26, 2001, NYC DOHMH requested that ATSDR provide on-site technical support to interpret the environmental monitoring data collected, assist with developing public health informational/educational material, and assist in providing technical information to the New York City public during public meetings. The on-site technical support to NYC DOHMH continued through June 28, 2002. In addition, ATSDR headquarters provided technical support which included the plotting and generation of geographic information system (GIS) maps and development of draft fact sheets that discussed asbestos, our pilot residential sampling investigation, and particulate matter (PM). NYC DOHMH and the deployed ATSDR staff used these technical materials to prepare for the various community meetings.

NYC DOHMH/ATSDR PILOT RESIDENTIAL AREA INVESTIGATION

ATSDR supported NYC DOHMH by implementing the Ambient and Indoor Sampling for Public Health Evaluations of Residential Areas Near the World Trade Center. Additional support was provided by the U.S. Federal Emergency Management Agency, EPA, the U.S. Public Health Service Commissioned Corps, and state and local environmental and health agencies. The objective was to conduct environmental sampling that characterized ambient and indoor airborne surface dust in a small number of residential areas of lower Manhattan. Sampling of residential units occurred from November 4 through December 11, 2001. NYC DOHMH and ATSDR released preliminary sampling results on February 8, 2002 and provided the final report for this investigation to the public on October 4, 2002. The primary finding of the pilot investigation was that the levels of materials detected in the air and dust did not pose potential health hazard provided that recommended cleaning measures were followed. Some of the other finding included:

- Low levels of asbestos were found in some settled surface dust, primarily below Chambers Street.
- The lower Manhattan residential areas had higher percentages of manmade vitreous fibers (MMVF), mineral components of concrete, and mineral components of building wallboard in settled surface dust than the comparison area.
- Lower Manhattan airborne levels of total fibers were no different than the levels detected in the four buildings above 59th Street, which served as the comparison area.
- Mineral components of concrete and mineral components of building wall board were detected in air samples at higher levels in lower Manhattan residential areas than in the comparison area.

Based upon the findings, NYC DOHMH and ATSDR recommended:

- Additional monitoring of residential areas be conducted in lower Manhattan,
- Additional investigation be conducted to define background levels specific to the city of New York, and
- Lower Manhattan residents concerned about possible WTC-related dust in their residential areas participate in the 2002–3 EPA voluntary cleaning/sampling program.

ATSDR SUPPORT TO MULTI-AGENCY WTC RELATED TASK FORCES

ATSDR has participated on several WTC related task forces. ATSDR supported the EPA Task Force on Indoor Air in Lower Manhattan; which began in February 2002. This Task Force provided technical consultation to EPA Region II on how best EPA Region II should respond to the indoor air issues related to the collapse of the WTC towers. In addition to the 2002-3 EPA voluntary cleaning/sampling of residential area, The Task Force on Indoor Air in Lower Manhattan provided technical advice for the:

- EPA sampling investigation to define better the typical New York City background levels of various WTC related materials (e.g., asbestos, MMVF, and crystalline silica);
- EPA demonstration project that evaluated the various cleaning techniques that could be used to remove WTC related materials from residential areas (e.g., HEPA vacuum); and
- EPA selection of chemicals of potential concern (COPC) to be addressed in indoor areas and development of air and surface screening values to employ as samples were collected.

The EPA Task Force on Indoor Air in Lower Manhattan completed its efforts in the summer of 2003.

ATSDR was also an active member of the New York City Lower Manhattan Air Task Force. The Mayor charged the task force to coordinate the response of the city

agencies and to establish a complaint and information phone line to address WTC environmental issues. The City Task was active from March to June 2002.

ATSDR also participated on EPA's 2004-5 WTC Expert Technical Review Panel. The purpose of that panel was to help guide EPA on how to determine whether any remaining WTC-related dust could be in lower Manhattan or other areas at levels of public health concern. As a member of the panel, ATSDR provided various technical guidance some of which is documented in the March 2005 ATSDR Health Consultation, Review of the Proposed Sampling Program to Determine Extent of World Trace Center Impacts to the Indoor Environment.

STRENGTHENING ENVIRONMENTAL HEALTH SCIENCES AND RESPONSES TO ENVIRONMENTAL DISASTERS

One science issue that ATSDR identified from its WTC experience was the need to further understand the health risks from exposure to MMVF, known also as synthetic vitreous fibers. To address this, ATSDR developed a "white paper" and the 2002 Toxicological Profile for Synthetic Vitreous Fibers. To obtain a better understanding of the health risks associated with asbestos and MMVF fibers less than 5 microns in length (sometimes called "short fibers"), ATSDR convened an expert panel. The panel met in New York City on October 29 and 30, 2002. The discussions, findings, and recommendations of the panelists are presented in the 2003 ATSDR Report on the Expert Panel on Health Effects of Asbestos and Synthetic Vitreous Fibers: The Influence of Fiber Length.

ATSDR's involvement on the various multi-agency WTC task forces has served as a template for our responses to other environmental disasters. The early establishment of multi-agency task forces can improve the development and implementation of comprehensive solutions to the complex environmental problems that are associated with disasters. For example, the 2005 Centers for Disease Control and Prevention and EPA Environmental Health Needs and Habitability Assessment Joint Task Force provided the State of Louisiana and the City of New Orleans with a rapid scientific evaluation of the overarching environmental health issues that needed to be addressed before the city could be reinhabited. ATSDR also participated on the multi-agency task force that evaluated whether the storm surges from Hurricanes Katrina and Rita had caused wide-spread sediment or soil contamination of the New Orleans area.

In closing, I would like to take this opportunity to remember all of those lost as a result of the events of September 11, 2001, and their families and friends who will love them forever and keep their memories alive. And I would like to gratefully recognize the countless responders and volunteers, some of whom are still dealing with what happened on that fateful day and shortly thereafter. I know that I will always remember.

Madam Chairperson, this concludes my testimony. I would be happy to answer any questions.

RESPONSES BY SVEN E. RODENBECK TO ADDITIONAL QUESTIONS FROM SENATOR INHOFE

Question 1. Please describe your role on the World Trade Center (WTC) expert panel the U.S. Environmental Protection Agency (EPA) convened.

Response. I participated on the EPA WTC Expert Technical Review Panel from March 2004 through December 2005. As a panel member, I reviewed all of the WTC-related environmental sampling results, the various scientific articles that have been published concerning WTC, and the various documents and sampling proposals developed by EPA. Based upon that information, I provided verbal and written comments and recommendations concerning the various issues being evaluated by the Panel.

Question 2. Although members of the panel has expressed disappointment over not identifying a dust signature, do you believe that the current testing and cleaning program is a step in the right direction and can you address the problems encountered in the peer-reviewed process to develop a targeted signature dust?

Response. *The Current EPA Testing and Cleaning Program.*—The testing and cleaning program currently being conducted by EPA in lower Manhattan provides the public with an opportunity to have their living spaces tested for WTC chemicals of potential concern. If the WTC chemicals of potential concern are found above the thresholds established by EPA and can not be attributed to other sources via a survey, then EPA will clean the space. To that end, the program should provide a level

of assurance to the people participating in this program that their living areas do not contain any of those particular chemicals at levels of health concern.

Developing a World Trade Center Dust Signature.—The panel and EPA focused a great deal of time and effort on trying to determine whether there was a specific pattern or signature that could differentiate between WTC and normal background dust. The development of a WTC dust signature was critical to addressing the main charge given the Panel. Without a signature, one cannot answer the basic questions that the public and policy leaders are asking:

- Is there any remaining WTC dust located in indoor areas?
- Is the WTC dust in the indoor areas at levels of health concern?
- What is the current extent of WTC dust inside buildings in lower Manhattan and elsewhere?

This was a very technically challenging charge to the Panel, particularly given the facts that the most of WTC-related dust constituents/chemicals can be found in typical/ordinary indoor dust, a vast majority of buildings surrounding WTC had already been cleaned to varying degrees, and so much time had passed since the collapse of the WTC buildings.

These discussions and activities led to the development of a new laboratory procedure that could potentially identify a specific type of manmade vitreous fibers (MMVF) found in WTC dust. It was hoped that the MMVF could be used as a WTC signature. But this signature turned out to be an imperfect fit because the specific type of MMVF that was being considered was also used in other buildings as insulation and sound reduction material and can be found at varying levels in normal background dust. Use of this signature would likely lead to a high false positive identification, that is, a significant number of indoor areas being identified as containing WTC dust when they, in fact, did not. This could bring into question the scientific reliability of any sampling/cleaning program that is based on that particular MMVF signature.

In addition, there were Panel discussions as to whether laboratories can consistently identify MMVF using the new laboratory procedure developed specifically for WTC. EPA conducted a pilot test in which a number of commercial laboratories were asked to use the new procedure. Unfortunately, the commercial laboratories could not consistently identify the specific MMVF when provided identical samples using the new procedure.

Question 3. Please describe the air monitoring Agency for Toxic Substances and Disease Registry (ATSDR) conducted with the New York City Department of Health and Mental Hygiene (NYC DOHMH) following the WTC disaster, Can you further describe the work between EPA and ATSDR to identify contaminants of concern for the residential cleaning program initiated in 2002 and since?

Response. *NYC DOHMH/ATSDR Limited Residential Area Sampling Near the World Trade Center.* A complete description, along with the sampling results and interpretation, of the limited air and dust monitoring ATSDR conducted with NYC DOHMH can be found at: *http:((www.atsdr.cdc.gov/asbestos/asbestos/types-of-exposure/—FullReport.html*

The following is a brief description of this limited sampling effort.

From November 4 through December 11, 2001, environmental samples were collected in and around 30 residential buildings in lower Manhattan. In addition, four buildings above 59th Street were sampled and used as a comparison area for this limited investigation. The purpose of the sampling was to assess the composition of both outdoor and indoor settled surface and airborne dust within a limited number of residential areas around WTC This information was used to help determine whether additional public health actions were needed to address any remaining WTC-related dust inside residential areas.

Attention was given to those materials reasonably expected to be in the original dust cloud and in dust generated by ongoing activities at WTC. Efforts were made to obtain as much information as possible with the sampling that could be conducted, given accessibility and equipment limitations. Air and settled surface dust samples were collected and analyzed for the following materials used in WTC construction components: asbestos, MMVF, crystalline silica, calcite, portlandite, gypsum, mica, and halite.

Results from this investigation did not necessarily reflect conditions that would be found in other buildings, at other times immediately following the collapse, or after the sampling period. The measurements reflect conditions present at the time of the sampling (November 4–December 12, 2001) in the buildings and areas sampled. The limited number of results obtained from the comparison areas above 59th Street was an attempt to determine the New York City-specific background levels of asbestos, MMVF, mineral components of concrete (quartz, calcite, and

portlandite), and mineral components of building wallboard (gypsum, mica, and halite).

Identifying World Trade Center Contaminants of Potential Concern.—On February 2, 2002, EPA Region II formed the Task Force on Indoor Air in Lower Manhattan. The ATSDR WTC Response Team was specifically asked to participate on this Task Force. The Task Force and its associated Working Groups were responsible for providing technical consultation to EPA Region II on how best EPA Region II should respond to the indoor air issues related to the collapse of the WTC towers.

One of the Task Force Working Groups was specifically charged with establishing health-based benchmarks for the WTC contaminants of potential concern. ATSDR technical staff worked collaboratively with EPA, the Occupational Safety and Health Administration, New York State Department of Health, and NYC DOHMH technical staff in developing the benchmarks. The process began with the review of an extremely large environmental data set, including indoor and outdoor air and dust data. This was followed by a two-level screening which considered individual contaminant toxicity, the prevalence of a contaminant within and across media, and the likelihood that a detected contaminant was related to the WTC disaster. The goal of the process was to identify those contaminants most likely to be present within indoor environments at levels of health concern.

Once the Working Group members had narrowed the contaminants to those that were thought to be related to the WTC, health-based benchmarks were developed to be protective of long-term habitability of residential dwellings. The following hierarchal approach was employed for developing benchmark values: use of relevant and appropriate environmental standards/regulations; calculation of health-based benchmarks employing environmental risk assessment guidance, and adaptation of occupational standards with additional safety factors.

The final document developed by the Working Group, after an external peer review, can be found at: *http://www.epa.gov/wtc/copc—study.htm*.

Senator CLINTON. Thank you very much, Captain.

Mr. Stephenson.

STATEMENT OF JOHN B. STEPHENSON, DIRECTOR, NATURAL RESOURCES AND ENVIRONMENT, U.S. GOVERNMENT ACCOUNTABILITY OFFICE

Mr. STEPHENSON. Madam Chairman and members of the subcommittee, I am here today to discuss GAO's ongoing review of EPA's second program to address indoor contamination from the World Trade Center. Our full report will be issued in September to you.

As you know, the terrorist attack at the World Trade Center nearly 6 years ago turned lower Manhattan into a disastrous site on a scale the Nation had never experienced. As the Towers collapsed, lower Manhattan was blanketed in a mixture of building debris and combustible materials that coated building exteriors and streets, as well as the interiors of apartments and offices, exposing thousands of residents and workers to hazards in the air and in the dust, such as asbestos, lead, glass fibers and pulverized concrete.

To put EPA's efforts into perspective, Figure 1 in my statement, you should all have a copy of this, contains a time line of EPA activity since 9/11. On the day of the attacks, the President signed a major disaster declaration, which activated the Federal Government's assistance to State and local agencies. In May 2002, after numerous cleanups, dust collection and air monitoring activities were conducted outdoors, New York City formally requested Federal assistance to test and clean indoor space and residences and common areas. As shown, EPA implemented the first program to test and clean indoor space about 1 year after the disaster. Residents of lower Manhattan living south of Canal Street, about

20,000 apartments, were eligible to participate in the program, and about 20 percent, or 4,100 apartments, did so.

However, EPA's first program was severely criticized. In August 2003, as has been mentioned, the EPA's Inspector General complained that the cleanup did not require that entire buildings be systematically cleaned, including HVAC systems, and concluded that the contaminants in uncleaned apartments and common areas could enter the air supply system and recontaminate clean spaces.

In March 2004, EPA convened an expert technical review panel to address IG and public concerns about EPA's program. The panel met periodically over 18 months through December 2005. EPA announced its second program to address indoor contamination in December 2006, over 3 years after completion of the first program. Only 295 of the over 20,000 eligible home and building owners have enrolled, compared to about 4,100 the first time.

Madam Chairman, you asked GAO to evaluate EPA's second test and clean program to determine, No. 1, the extent to which EPA implemented recommendations from the IG, the expert panel and others; No. 2, to determine the completeness of information EPA provided to the public about indoor contamination; and No. 3, to determine how EPA determined that $7 million was the appropriate amount to carry out the program.

In summary, we found that EPA incorporated some recommendations into its second indoor air program, but its decision not to adopt others has limited, in our view, the overall effectiveness of the program. EPA did implement recommendations to expand the number of contaminants tested beyond asbestos and did agree to test in dust as well as air. However, it did not incorporate recommendations to expand the boundaries of cleanup beyond Canal Street. EPA reasoned that it would need to identify a World Trade Center signature, that is, a method for differentiating between normal urban dust and World Trade Center dust to justify expanding the program.

EPA was ultimately never able to identify such a signature in part because it waited nearly 3 years to attempt to do so. EPA also did not incorporate recommendations to sample in HVACs or inaccessible locations within apartments and common areas, such as behind dishwashers, citing resource constraints. EPA also did not incorporate recommendations to expand the program to include workplaces, stating that worker safety is the responsibility of other agencies.

We also found that EPA did not provide sufficient information to allow the public to make informed choices about the extent of contamination and ultimately their participation in the indoor program. For example, EPA publicly reported that a very small number of samples from its first program exceeded risk levels of airborne asbestos. However, it did not adequately explain that this conclusion was based on the fact that most testing was done after cleaning rather than before cleaning. This may have given residents a false sense of security and contributed to the low participation in the second program.

Finally, we found no basis for the $7 million EPA identified to implement its second program. It was simply the money left over from the first test and clean program, and it is less than 20 percent

of the first program's funding. EPA chose to limit the scope of the second program to fit within these available resources, rather than design a comprehensive program and then estimate the resources needed to carry it out. EPA told us that if the demand had exceeded available resources, it would have limited participation in the program, rather than request additional resources.

Madam Chairman, that concludes my summary and I will be happy to answer questions.

[The prepared statement of Mr. Stephenson follows:]

STATEMENT OF JOHN B. STEPHENSON, DIRECTOR, NATURAL RESOURCES AND ENVIRONMENT, U.S. GOVERNMENT ACCOUNTABILITY OFFICE

Madam Chairman and Members of the Subcommittee:

I am pleased to be here today to discuss the preliminary results of our ongoing work on the development of the Environmental Protection Agency's (EPA) second program to address World Trade Center (WTC) indoor contamination. As you know, the September 11, 2001, terrorist attack on the World Trade Center turned Lower Manhattan into a disaster site, on a scale the nation had never experienced. The World Trade Center was a complex of seven buildings on 16 acres surrounding a 5-acre plaza in Lower Manhattan. The twin towers were at the center of the complex. Each tower had 110 floors, with approximately 43,200 square feet on each floor. As the towers collapsed, Lower Manhattan was blanketed in a mixture of building debris and combustible materials that coated building exteriors and streets, as well as the interiors of apartments and offices. This complex mixture gave rise to another major concern: that thousands of residents and workers in the area would now be exposed to known hazards in the air and in the dust, such as asbestos, lead, glass fibers, and pulverized concrete.

On the day of the attacks, the President signed a major disaster declaration, which activated the Federal Response Plan. The Federal Response Plan, now replaced by the National Response Plan, established the process and structure for the federal government's assistance to state and local agencies when responding to any major disaster or emergency declared under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act).[1] In May 2002, after numerous cleanup, dust collection, and air monitoring activities were conducted outdoors by EPA, other federal agencies, New York City and New York State, New York City formally requested federal assistance to clean and/or test residences in the vicinity of the WTC site for airborne asbestos.[2]

The Federal Emergency Management Agency (FEMA), which administered the Federal Response Plan, provided such assistance, entering into interagency agreements with EPA in 2002 to develop EPA's first program. This program allowed residents of Lower Manhattan living south of Canal Street (representing over 20,000 residences) to elect to have their home professionally cleaned, followed by testing, or to have their home tested only. Approximately 20 percent of the eligible residences participated in the program. The majority of these residences were professionally cleaned before they were sampled for asbestos because their owners selected the clean and test option rather than the test only option.[3] Even though samples were collected after cleaning in most cases, some residences (less than 1 percent) were still found to have unsafe levels of asbestos.

EPA's first program was criticized by several entities; as a result, EPA developed a second program, which is the focus of our ongoing work and our testimony today.[4] Let me provide some information on the events leading up to the second program.

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[1] 42 U.S.C. §5121, et seq. The purpose of the Stafford Act is "to provide an orderly and continuing means of assistance by the Federal Government to State and local governments in carrying out their responsibilities to alleviate the suffering and damage which result from such disasters." 42 U.S.C. §5121(b).

[2] In addition to using asbestos as a trigger for cleanup, in a small subset of residences, EPA conducted sampling for dioxin, mercury, and 22 metals to inform a study about the effectiveness of its cleaning techniques.

[3] EPA regional officials overseeing the program told us they assumed that some residents elected to have testing only because they had their residences cleaned before EPA's program.

[4] A lawsuit was filed in March 2004 that, among other things, challenged the adequacy of EPA's first test and clean program. The case is on appeal in the U.S. Court of Appeals for the Second Circuit. *Benzman* v. *Whitman*, No. 04–1888 (S.D.N.Y. filed March 10, 2004), appeal docketed, Nos. 06–1166–cv, 06–1346–cv, 06–1454–cv (2nd Cir. March 10, 2006). Pursuant to its long-

Continued

In August 2003, EPA's Inspector General made recommendations that addressed EPA's initial efforts to clean up indoor contamination following the towers' collapse, as well as recommendations that focused on EPA's future preparedness for large-scale disasters resulting in indoor contamination. The Inspector General reported that the effort to clean up indoor WTC contamination was inadequate for multiple reasons. For example, according to the Inspector General, the WTC cleanup did not require that entire buildings be systematically cleaned, including heating, ventilation, and air conditioning (HVAC) systems. As a result, the Inspector General concluded, the contaminants in uncleaned apartments and common areas could enter the air supply system and re-contaminate cleaned spaces. With regard to future preparedness, the Inspector General recommended, among other things, that EPA develop protocols for determining how indoor environmental contamination would be handled in the event of a future disaster.

The White House Council on Environmental Quality (CEQ) indicated in October 2003 that EPA would organize and lead an expert technical review panel to address the concerns of the Inspector General and others. In March 2004, EPA convened the WTC Expert Technical Review Panel, which met periodically through December 2005. The panel was composed of 20 individuals from academia and from city and federal health and science agencies, such as the Department of Labor's Occupational Safety and Health Administration (OSHA) and the Department of Health and Human Services (HHS). It also included two representatives from the Community-Labor Coalition (CLC), which is a network of community, tenant, labor, and environmental organizations formed after September 11, 2001, to advocate for appropriate health and safety efforts in the recovery from the WTC attack. The panel's overall task, as outlined by CEQ, was to advise EPA on efforts to protect New York City residents and workers potentially affected by the collapse of the World Trade Center. Specifically, the panel's goals were to help guide EPA in (1) identifying any remaining risks using exposure and health surveillance information; (2) identifying any unmet public health needs; and (3) determining steps to further minimize the risks. In addition, the panel was asked to provide advice for EPA's second program. Panel members, including the CLC representatives, submitted individual recommendations to EPA.

After obtaining the views of advisory groups, including the Inspector General, the expert panel, and the CLC, EPA announced its plan for a second program in December 2006. This 2006 plan targets residents and building owners in the same portion of Lower Manhattan as EPA's first program. In the 2006 plan, EPA also provided the results of the sampling from its first program. The second program is set to begin later in 2007. As of May 10, 2007, EPA told us, 295 residents and building owners had enrolled in the second program, compared with 4,166 eligible participants in the first program. Figure 1 shows the chronology of events preceding the second program.

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standing policy of not addressing issues in ongoing litigation, GAO has not addressed EPA's first test and clean program.

9/11
• Terrorist Attacks
EPA's 1st program
EPA convenes Expert Panel
EPA's 2nd program[a]
2001
2002
2003
2004
2005
2006
2007
1 year
WTC dust research
3 + years[b]
9/17
• NYC residents to recovery rooms
• Wall Street is re-opened
EPA testolean programs
Expert panel
GAO

Our testimony, which is based on our ongoing work evaluating EPA's development of its second program, discusses (1) EPA's actions to implement recommendations from the expert panel and its Inspector General, (2) the completeness of information EPA provided to the public in its second plan, and
(3) EPA's assessment of available resources to conduct the program.

In summary, while we found that EPA has taken some actions to incorporate recommendations from the Inspector General and expert panel members into its second program, it decided not to incorporate other recommendations, which may limit the program's overall effectiveness. For example, EPA's second program incorporates recommendations to expand the number of contaminants tested, from asbestos only, to three additional contaminants and to test in dust as well as in the air. However, EPA's program does not incorporate a recommendation to expand the boundaries of cleanup to north of Canal Street and to Brooklyn. EPA reported that it was unable to develop a method for distinguishing between normal urban dust and WTC dust; therefore, the agency reported that it cannot assess the extent of WTC contamination, and has no basis for expanding the cleanup effort. EPA did not begin examining methods for differentiating between normal urban dust and WTC dust until May 2004—nearly 3 years after the disaster—and therefore the process for differentiating was more difficult. In addition, EPA's second program does not incorporate recommendations to sample in HVACs or "inaccessible" locations within apartments and common areas, such as behind dishwashers. The agency chose to offer more limited testing in a greater number of apartments and common areas rather than to provide more comprehensive testing (such as in HVACs) in a smaller number of these areas. Testing in such a restricted manner make evaluating the adequacy of clean up efforts very difficult, and may discourage participation. Moreover, this program does not incorporate the recommendation to test workplaces because, according to EPA officials, other federal agencies have procedures to address worker safety. We discussed the issues we address in this statement with EPA.

EPA did not provide sufficient information in its second plan to allow the public to make informed choices about their participation. Specifically, EPA did not fully disclose the limitations in the testing results from its first program. EPA concluded that a "very small" number of samples from its first program exceeded risk levels for airborne asbestos. However, EPA did not explain that this conclusion was to be expected because it took over 80 percent of the samples after residences were professionally cleaned. In addition, EPA did not fully explain that its conclusion was based on participation from only 20 percent of the eligible residences. Without this additional information, residents who could have elected to participate might have been discouraged from doing so because of EPA's conclusion.

EPA did not assess the adequacy of available resources to carry out its second program effectively. Instead of assessing the costs of carrying out its program and providing resources accordingly, EPA has simply identified how much money was left over from the first program. Further, the amount of funding provided for the second program seems inconsistent with the scale of second program activities. Specifically, the $7 million EPA plans to spend for the second program's testing and cleaning is less than 20 percent of the first program's funding, despite an increase in the number and type of contaminants being sampled. EPA indicated that if demand had exceeded available resources, EPA would have simply limited participation in the program.

BACKGROUND

After the collapse of the World Trade Center and the accompanying spread of dust resulting from the collapse, EPA, other federal agencies, and New York City and New York State public health and environmental authorities focused on numerous outdoor activities, including cleanup, dust collection, and air monitoring. In May 2002, New York City formally requested federal assistance to clean and test building interiors in the vicinity of the WTC site for airborne asbestos. Such assistance may be made available to state and local governments under the Stafford Act and the National Response Plan, which establishes the process and structure for the federal government to provide assistance to state and local agencies when responding to threats or acts of terrorism, major disasters, and other emergencies.[5] FEMA, which coordinates the federal response to requests for assistance from state and local governments, entered into interagency agreements with EPA to develop and

[5] The National Response Plan replaced the Federal Response Plan. The Federal Response Plan was in effect on September 11, 2001.

implement the first and second indoor cleanup programs for residents in Lower Manhattan.

EPA INCORPORATED SOME RECOMMENDATIONS, BUT ITS DECISION NOT TO ADOPT OTHERS MAY LIMIT THE SECOND PROGRAM'S EFFECTIVENESS

In response to recommendations from the Inspector General and expert panel members, EPA's second program incorporates some additional testing elements. For example, EPA is testing for a wider range of contaminants. In addition to asbestos, EPA will test for man-made vitreous fibers, which are in such materials as building and appliance insulation; lead; and polycyclic aromatic hydrocarbons, a group of over 100 different chemicals that are formed during the incomplete burning of coal, oil, gas, and garbage. EPA will also test dust as well as the air. In order to test the dust for these contaminants, EPA had to develop cleanup standards. However, EPA's second program does not incorporate the following other recommendations: (1) broadening the geographic scope of the testing effort, (2) testing HVACs and "inaccessible" locations, and (3) expanding the program to include workplaces.[6]

Broadening the geographic scope of testing.—EPA did not expand the scope of testing north of Canal Street, as well as to Brooklyn, as advisory groups had recommended. EPA reported that it did not expand the scope of testing because it was not able to differentiate between normal urban dust and WTC dust, which would have enabled it to determine the geographic extent of WTC contamination. Some expert panel members had suggested that EPA investigate whether it was feasible to develop a method for distinguishing between normal urban dust and WTC dust. EPA ultimately agreed to do so. Beginning in 2004—almost 3 years after the disaster—EPA conducted this investigation. EPA officials told us that because so much time had passed since the terrorist attack, it was difficult to distinguish between WTC dust and urban dust. EPA ultimately abandoned this effort because peer reviewers questioned its methodology; EPA decided not to explore alternative methods that the peer reviewers had proposed. Instead, EPA will test only in an area where visible contamination has been confirmed by aerial photography conducted soon after the WTC attack. However, aerial photography does not reveal indoor contamination, and EPA officials told us that they knew that some WTC dust was found immediately after the terrorist attacks outside the area eligible for its first and second program, such as in Brooklyn.

Testing HVACs and in inaccessible areas.—In its November 2005 draft plan for the second program, EPA had proposed collecting samples from a number of locations in HVACs. In some buildings HVACs are shared, and in others each residence has its own system. In either case, contaminants in the HVAC could recontaminate the residence unless the system is also professionally cleaned. However, EPA's second program will not provide for testing in HVACs unless tests in common areas reveal that standards for any of four contaminants have been exceeded. EPA explains in the second plan that it will not sample within HVACs because it chose to offer more limited testing in a greater number of apartments and common areas rather than provide more comprehensive testing in a smaller number of these areas. Similarly, EPA had proposed sampling for contaminants in "inaccessible" locations, such as behind dishwashers and rarely moved furniture within apartments and common areas. Again, because it was unable to differentiate between normal urban dust and WTC dust, EPA stated that it would not test in inaccessible locations in order to devote its resources to as many requests as possible. In fact, EPA only received 295 requests from residents and building owners to participate in the second program, compared with 4,166 eligible participants in the first program.[7]

Expanding the program to include workers/workplaces. According to EPA's second program plan, the plan is "the result of ongoing efforts to respond to concerns of residents and workers." Workers were concerned that workplaces in Lower Manhattan experienced the same contamination as residences. In its second program, EPA will test and clean common areas in commercial buildings, but will do so only if an individual property owner or manager requests the service. EPA stated that employees who believe their working conditions are unsafe as a result of WTC dust may file a complaint with OSHA or request an evaluation by HHS's National Institute of Occupational Safety and Health. Concerns remain, however, because these other agencies do not have the authority to conduct cleanup in response to contaminant

[6] EPA's second program does allow commercial building owners to request testing and cleaning, but does not permit workers or employers to do so.

[7] A total of 640 individual residents and building owners registered for the second program. Of this total, 295 eligible participants submitted the necessary access agreements.

levels that exceed standards. In addition, OSHA's standards are designed primarily to address airborne contamination, while EPA's test and clean program is designed to address contamination in building spaces, whether the contamination is airborne or in settled dust. Thus, OSHA can require individual employers to adopt work practices to reduce employee exposure to airborne contaminants, whereas EPA's test and clean program is designed to remove contaminants from affected spaces.

EPA DID NOT PROVIDE THE PUBLIC WITH SUFFICIENT INFORMATION TO MAKE FULLY INFORMED DECISIONS

EPA did not provide sufficient information in its second plan so that the public could make informed choices about their participation. Specifically, EPA did not fully disclose the limitations in the testing results from its first program. While EPA stated that the number of samples in its first program exceeding risk levels for airborne asbestos was "very small," it did not fully explain that this conclusion was limited by the following factors.

Participation.—Participation in the program came from about 20 percent of the residences eligible for participation. In addition, participation was voluntary, which may suggest that the sample of apartments was not representative of all the residences eligible for the program. Those who chose to participate may not have been at greatest risk.

Contaminants tested.—EPA's cleanup decisions were based only on tests for asbestos, rather than other contaminants, and the decisions focused on airborne contamination rather than contamination in dust inside residences.

Sampling protocol.—EPA took over 80 percent of the samples after professional cleaning was complete. Therefore it is not surprising that EPA found few samples exceeding its asbestos standard.

EPA also did not explain in its second program plan that its first program's test results excluded samples that were discarded because they were "not cleared—that is, could not be analyzed because the filter had too many fibers to be analyzed under a microscope. However, EPA's final report on its first program stated that residences with more than one inconclusive result, such as filter overload, were encouraged to have their residences re-cleaned and re-tested. EPA did not explain the impact of excluding these samples or other data limitations from its conclusion that the number of samples exceeding asbestos standards was very small. Without providing complete explanations of the data, residents who could have elected to participate might have been discouraged from doing so.

EPA DID NOT ADEQUATELY ASSESS RESOURCE NEEDS FOR THE SECOND PROGRAM

EPA did not take steps to ensure that resources would be adequate to achieve the second program's objectives. Instead, EPA is implementing this program with the funding remaining after its first program—approximately $7 million. EPA could not provide us with any basis for determining whether this funding level is appropriate. EPA officials told us that they were unable to determine the cost of the program without knowing the number of participants. However, we note that funds available for the second program are less than 20 percent of the first program's funding, despite an increase in the number and type of contaminants being sampled.

Almost two-thirds of the panel members told us they did not believe the $7 million for the sampling and cleanup was sufficient. According to one of the expert panel's chairmen—a former EPA Assistant Administrator—the $7 million was sufficient for initial sampling in the second program, but not for sampling and cleanup. If demand had exceeded available resources, EPA would have simply limited participation by ranking program applicants on the basis of their proximity to the WTC site.

CONCLUDING OBSERVATIONS

Shortcomings in EPA's second program to test and clean residences for WTC contamination raise questions about the agency's preparedness for addressing indoor contamination resulting from future disasters. The effectiveness of this program may be limited because some important recommendations were not incorporated, and because program implementation will not begin until later this year—more than 5 years after the World Trade Center collapsed. Furthermore, owing to these factors, the majority of panel members do not support EPA's second program, noting that it was not responsive to the concerns of residents and workers harmed by the collapse of the WTC towers, it was scientifically and technically flawed, or it was unacceptable because it would not identify the extent of contamination. Some panel members questioned the value of participating in EPA's program, and even stated that they would discourage participation.

Madam Chairman, this concludes my prepared statement. I would be happy to respond to any questions that you or Members of the Subcommittee may have.

CONTACTS AND ACKNOWLEDGMENTS

Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this testimony. For further information about this testimony, please contact John B. Stephenson, Director, Natural Resources and Environment (202) 512–3841, or stephensonj@gao.gov. Key contributors to this testimony were Janice Ceperich, Katheryn Summers Hubbell, Karen Keegan, Omari Norman, Diane B. Raynes, Carol Herrnstadt Shulman, and Sandra Tasic. Additional assistance was provided by Katherine M. Raheb.

June 20, 2007

GAO
Accountability · Integrity · Reliability
Highlights

Highlights of GAO-07-806T, testimony before the Subcommittee on Superfund and Environmental Health, Committee on Environment and Public Works, U.S. Senate

WORLD TRADE CENTER

Preliminary Observations on EPA's Second Program to Address Indoor Contamination

Why GAO Did This Study

The September 11, 2001, terrorist attack on the World Trade Center (WTC) turned Lower Manhattan into a disaster site. As the towers collapsed, Lower Manhattan was blanketed with building debris and combustible materials. This complex mixture created a major concern: that thousands of residents and workers in the area would now be exposed to known hazards in the air and in the dust, such as asbestos, lead, glass fibers, and pulverized concrete. In May 2002, New York City formally requested federal assistance to address indoor contamination. The Environmental Protection Agency (EPA) conducted an indoor clean and test program from 2002 to 2003. Several years later, after obtaining the views of advisory groups, including its Inspector General and an expert panel, EPA announced a second test and clean program in December 2006. Program implementation is to begin later in 2007, more than 5 years after the disaster.

GAO's testimony, based on preliminary work evaluating EPA's development of its second program, addresses (1) EPA's actions to implement recommendations from the expert panel and its Inspector General, (2) the completeness of information EPA provided to the public in its second plan, and (3) EPA's assessment of available resources to conduct the program. We discussed the issues we address in this statement with EPA.

www.gao.gov/cgi-bin/getrpt?GAO-07-806T.

To view the full product, including the scope and methodology, click on the link above. For more information, contact John B. Stephenson at (202) 512-3841 or stephensonj@gao.gov.

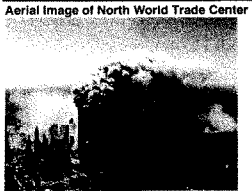
What GAO Found

EPA has taken some actions to incorporate recommendations from the Inspector General and expert panel members into its second program, but its decision not to incorporate other recommendations may limit the overall effectiveness of this program. For example, EPA's second program incorporates recommendations to expand the list of contaminants it tests for, and to test for contaminants in dust as well as the air. However, it does not incorporate a recommendation to expand the boundaries of cleanup to better ensure that WTC contamination is addressed in all locations. EPA reported that it does not have a basis for expanding the boundaries because it cannot distinguish between normal urban dust and WTC dust. EPA did not begin examining methods for differentiating between normal urban dust and WTC dust until nearly 3 years after the disaster, and therefore the process for finding distinctions was more difficult. In addition, EPA's second program does not incorporate recommendations to sample heating, ventilation, and air conditioning (HVAC) systems. According to EPA's plan, the agency chose to offer limited testing in a greater number of apartments and common areas rather than provide more comprehensive testing (such as in HVACs) in a smaller number of these areas.

EPA's second plan does not fully inform the public about the results of its first program. EPA concluded that a "very small" number of samples from its first program exceeded risk levels for airborne asbestos. However, EPA did not explain that this conclusion was to be expected because it took over 80 percent of the samples after residences were professionally cleaned. Without this additional information, residents who could have participated might have opted not to do so because of EPA's conclusion.

EPA did not assess the adequacy of available resources for the second program. EPA stated that it plans to spend $7 million on this program, which is not based on any assessment of costs, but is the funding remaining from the first program. Without careful planning for future disasters, timely decisions about data collection, and thorough communication of sampling results, an evaluation of the adequacy of cleanup efforts may be impossible.

Aerial Image of North World Trade Center Tower on 9/11



Source: NYPD Photo Unit.

Senator CLINTON. Thank you very much, Mr. Stephenson.

If I may begin by directing a series of questions to Mr. Connaughton, Chairman Connaughton. As you noted in your testimony, you and I did meet to discuss the findings of the 2003 Inspector General report, because the report did raise a number of serious concerns, primarily White House interference with EPA's communications about air quality and flaws with EPA's indoor test and clean plan.

I appreciate that we reached an accommodation at that time on the indoor contamination issue in the form of your commitment to launch an expert panel to look into it. We will explore the work of that panel and its results with other witnesses.

But I think it is fair to say, Chairman Connaughton, that there remained a number of troubling issues, raised by the EPA Inspector General, about EPA's early statements about air quality. This is really an opportunity for you to respond to some of these, because I think in the area of lessons learned, the whole issue of how we communicate with the public is critical. Every study that I have read about how best to convey information to the public with respect to a disaster puts a very high priority on the quality of information, the accuracy of information, the validation of that information by independent sources. Certainly, the Inspector General found that EPA's early statements that the air was safe to breathe was incomplete. It lacked necessary qualifications and was not supported by the data available at the time.

Let me just ask you, isn't it true that CEQ was involved in the drafting of those statements about air quality?

Mr. CONNAUGHTON. Yes, that's right, Madam Chairwoman. Very soon after the attack, Deputy Chief of Staff Josh Bolton established a domestic consequences group that ensured that there would be significant coordination among the different agencies, Federal agencies, in responding, not just in response, but also in communications and other issues associated with that, so that we would be working in a coordinated manner. You had ATSDR, you had EPA, you had OSHA, you had the New York State Department of Health, you had the New York City Department of Health. There were a lot of entities that were ramping up to a response. It was clear that some level of organization and coordination was going to be necessary.

Not just with the response. What we were doing with the environmental response had to then also take into account, we did not know if another attack was coming. The National Security Council, there needed to be a central node with them, so that we could feed in the environmental piece of the equation while they were looking at some of the human health issues, while they were looking at some of the security issues, the first responder issues, to be sure that we are doing triage on the highest priorities, getting the information that we needed in order and being sure we were taking advantage of resources.

Senator CLINTON. But let me ask you, Mr. Chairman, because the Inspector General goes on to say that the Agency did not reflect in its statements the best professional advice of the Agency's own experts. It appeared that the EPA's best professional advice was

overruled when relaying information to the public in the weeks immediately following the disaster.

Further, the AGA found that the White House Council on Environmental Quality, which you chair, influenced through the collaboration process which you just described the information that EPA communicated to the public through its early press releases, when it convinced EPA to add reassuring statements and to delete cautionary ones.

So let me ask: did you convince EPA to add reassuring statements and delete cautionary ones?

Mr. CONNAUGHTON. I think those characterizations by the Inspector General were incompletely formed and inaccurate.

Senator CLINTON. Well, let me just show you, the EPA IG report contains several specific examples of these types of changes, and one of them is reproduced on a chart that I brought today. Let me see—it is impossible to read, but as the chart shows, a draft September 13, 2001 press release stated that "Preliminary results of EPA's sampling activities," the thousands of samples that Ms. Bodine referred to, "indicated no or very low levels of asbestos. However, even at low levels, EPA considers asbestos hazardous and will continue to monitor and sample for elevated levels of asbestos and work with appropriate officials to ensure awareness and proper handling, transportation and disposal of potentially contaminated debris or materials."

That was the original draft. The final release stated that "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. We are working closely with rescue crews to ensure that all appropriate precautions are taken. We will continue to monitor closely. Public health concerns about asbestos contamination are primarily related to long-term exposure. Short-term low-level exposure is unlikely to cause significant effects."

There is a difference between the meaning and the impact of those. EPA originally said, however, even at low levels, EPA considered asbestos hazardous.

So why did CEQ overrule EPA, an agency with considerably more staff and expertise about environmental hazards, and modify that press release?

Mr. CONNAUGHTON. Actually, the inverse was the case, Madam Chairwoman. We had daily and sometimes more than daily conference calls with the people from Region 2, as well as the people here in Washington, including CEQ, that were going over all the communications and all of the data. What Mr. Thurndstrom was doing was coordinating the output of those discussions. The people drafting the press releases were not necessarily the professionals who were providing advice on how to construe the data.

So the final product of that one particular press release was the product of a much broader discussion among the public health professionals in the field and back here in Washington on how to make this one particular statement.

The other thing that is important, Madam Chairman, this is one press release out of what were thousands and thousands of communications. We had a particular focus on the workers, who faced extreme danger in the conditions during the recovery and rescue

work. We had a second focus on the people who were acutely exposed to the volume of dust immediately after the collapse, and that really was in the hands of the public health professionals. EPA was instrumental in encouraging people to go seek medical help and monitoring.

Then there was the third category about the residents, the people who were distant from the immediate Ground Zero, but who were worried about the smell and the odor and all the things that you all know about, the visceral scents from the fires in the days that followed September 11th. So what this one press release was was the first statement regarding the ambient concerns and it was specifically focused on the questions that came up with respect to asbestos. The data that we had in hand 5 days after monitoring started actually provided much greater reassurance. I can tell you, all of us were relieved. We feared that there would be quite substantial amounts of asbestos that people might be directly exposed to. As it happens, the data was showing that that was not the case.

I think the statement in the final press release was the accurate one. It is the other formulations that we decided as a group that needed to be adjusted. So this is not—your representation of overruling or not overruling and misleading, it just doesn't capture the nature of the dynamic we had at the time. We discussed this a bit in your office, and again, I am happy to go into greater detail on that process.

Senator CLINTON. Well, Mr. Connaughton, my time is up, I am going to go to my colleagues. But would you be willing to answer more specific questions of the nature that would get to the bottom of this? Because there is, as you are well aware, other evidence, particularly concerning Mr. Thurndstrom and some of his statements and some of the e-mail exchanges between Region 2 and the CEQ and EPA here in Washington.

What we are trying to figure out is how to sort this out. Because I think it is fair to say that many people in New York took the statements and were greatly relieved and reassured about them. If there had been a more accurate depiction, and I would argue that the first press release was more accurate, that low levels of asbestos exposure, to say nothing of everything else that was in the air, could pose health hazards, people could have made appropriate decisions.

That is where we are trying to get to the lessons learned here. I believe we should always err on the side of giving as accurate a picture as possible, so that people can make decisions for themselves. But let me move now to Senator Craig.

Mr. CONNAUGHTON. Senator, if I might, just on one point, the 9/11 Commission did look at all this very carefully and they talked with all of us. They concluded that although the White House review process resulted in some editorial changes to the press releases, these changes were consistent with what the EPA had already been saying without White House clearance.

What we are trying to do on that one press release that everyone is focused on is bring into one place what had been a constant flow of information on the ground directly to people. I don't know about you, but I don't read press releases. I don't think the public was reading the press release. What it was was follow-up by reporters

who were getting more detailed, there were outside people commenting on what the risks were. The New York Department of Public Health was making commentary on some of the human health issues.

But really, the most important communications are the ones that Governor Whitman——

Senator CLINTON. Mr. Connaughton, I understand your position. It is also clear, and we should put into the record, there is a current lawsuit going on, which you are well aware of, and under oath, the judge has reached very different conclusions based on the testimony that has been provided so far, and gone to the extent of even calling Governor Whitman and others at the EPA misleading and given great emphasis to the way that this information was communicated, and done so, I think based more accurately on the evidence that has been before it.

But I would just appreciate your willingness to provide additional information, so that we could sort this out. Let me turn now to Senator Craig.

Senator CRAIG. Madam Chairman, I am going to yield to Senator Inhofe because of his schedule, then I will come back.

Senator INHOFE. Thank you very much, Senator Craig and Madam Chairman.

Let me start off by recalling to the memories around here that I chaired this committee during the years after 9/11. In fact, I was somewhat apologetic to you and others during that period of time, because we had such intense oversight and so many questions. You were always very, very cooperative, and I want to compliment you publicly on that, Chairman Connaughton.

Let me ask you this question. Isn't it reasonable for a White House office, such as CEQ, to coordinate with Federal agencies to involve and produce common Federal messages? Are there any issues about this you would like to clarify concerning Federal communications?

Mr. CONNAUGHTON. I think in the after-reviews of what happened, I think the process that Deputy Chief of Staff Bolton put in place earned high praise, the fact that we were able to so rapidly create the coordination function that later became the Homeland Security Council, which also everybody was very strongly supportive of across the country, the Governors in particular. So what we had going on what exactly what people would expect. You would hope that the President and the White House were on top of the situation, and were actually coordinating to be sure that information was being obtained in a timely fashion, we are prioritizing those needs and we are getting people out to the right people in the right place at the right time.

As a participant in that process, I found it particularly effective. Everyone was throwing in their oars. We had fly-overs, doing satellite monitoring, we had airplane monitoring, we had on the ground monitoring. That information was coming in at a level of detail and a level of coordination that you typically do not see, and it is to be commended.

Senator INHOFE. I am glad you are clarifying that, because we had hearings involving all those other parties. I thought it was done quite well.

Let me ask you, Mr. Stephenson, you heard my opening statement, a quote that I made from the New York City Health Commissioner Frieden. I will read it again: "The environmental investigations and testing conducted in lower Manhattan indicate that the potential health impacts from any remaining World Trade Center dust are extremely low or non-existent." Did you consult New York City's Department of Health during the compilation of your report, and do you disagree or agree with that statement?

Mr. STEPHENSON. We did meet with them. They are talking about ambient air samples, I believe. We were looking specifically at indoor air and the second program in particular. So the sampling I was talking about took place on a voluntary basis from indoor apartments.

Senator INHOFE. All right. Captain Rodenbeck, let me ask you a question. Why don't you first of all define for some of us what dust signature is, then I will ask my question.

Captain RODENBECK. In this particular case, when we are talking about a dust signature, it is the makeup of the dust that makes it unique to the original source. So in this case, we are talking about how the building material that generated the dust is different in a way so you could look at different samples and say, yes, this originated from the World Trade Center.

Senator INHOFE. All right. Now, were you able to do that, I understand that you were not able to complete the dust sampling to your satisfaction?

Captain RODENBECK. Not to our satisfaction, no.

Senator INHOFE. I see. Can you comment on whether you believe that the current testing and cleaning program is a step in the right direction?

Captain RODENBECK. Without the dust signature, we cannot fundamentally answer the basic question that we all want to answer: is there still World Trade Center dust out there at levels of health concern.

Senator INHOFE. Ms. Bodine, you made the comment that you talked about lessons learned. I don't think you had a chance to elaborate any on that. Would you like to?

Ms. BODINE. Yes, thank you, Senator.

I wanted to point out, one of the challenges during 9/11 was certainly trying to come up with benchmarks and sampling protocols and methods to address situations that the Agency had not previously had to address. The staff did a tremendous job of consulting with experts, drawing together expert opinion and developing benchmarks and protocols.

But certainly as a lesson learned, we know that we can today look and say, what can we anticipate, what don't we know. Today, we can start working on closing those information gaps.

I mentioned that we had established a National Decontamination Team. One of their roles is of course, to respond. They always have their bags packed. But it is also to identify data gaps and work with our National Homeland Security Research Center, which is in Cincinnati, it is one of Dr. Gray's labs, to work together to do research to close some of those data gaps.

In addition, we have been developing a network of environmental laboratories. Because again, one of the issues during 9/11 and even

more so during Katrina was just the vast amount of data we collected and it became a capacity issue, collecting data and having the labs that are able to analyze it in a sufficient time to then provide good information to the public and provide information to officials who need to make decisions.

So we have been working with laboratories around the country, again, to establish common protocols, so that we have good information, we have information that is of high quality, so that when the next disaster hits, we have that capacity.

Senator INHOFE. Thank you very much, and thank you, Senator Craig, for helping accommodate my schedule.

Senator CLINTON. Senator Lautenberg.

Senator LAUTENBERG. Thank you, Madam Chairman.

It is obvious that there are different memories of things that were done and said and challenges to the reliability of things. You are all under strictures that talked about correct or not false statements. So I just wanted to be sure that that is clearly understood, and that, because, as the Chairperson described, we are going to continue this research of ours. Because there are so many challenges to what is said to be the intention of the White House to cover issues, so that they were to downplay the public risks and the EPA press releases were changed or modified to downplay those risks.

Why did the CEQ, Mr. Connaughton, decline to meet with the EPA Inspector General's investigators as they were preparing their report?

Mr. CONNAUGHTON. As I understand it, and you are now taking me back many years on this particular item, as I understand it, the Inspector General doesn't have authority to do oversight of offices outside of the EPA, and in particular, the President's offices. So it was just an issue of the Inspector General's authority. That is as I understand it. But I was not closely attuned to all the ins and outs of that. But that was dealt with by the White House Counsel's Office.

Senator LAUTENBERG. It is hard to see why that wouldn't, they wouldn't be included in the traditional IG's activities.

EPA officials told the Inspector General that your staff deleted recommendations that New York City residents obtain professional cleaning services for indoor areas. Why would the White House recommend removing those alerts from the statements?

Mr. CONNAUGHTON. Actually, Senator, I am not in a position to recall very specific decisions about very specific pieces of text, some of which I was not directly involved in. There was an interface between Mr. Thurndstrom of my office, who actually is a New Yorker as well, and the EPA on compiling the results of these broader interfaces among the public health professionals that I talked about.

So the effort between them was to see, to do the best job they could, using their best professional judgment, to capture the information we were receiving and then communicate that in the most accurate and timely way we could, and then to update that information as it was obtained. So any particular issue, items were added to the press releases, items were deleted to the press releases, items were changed in the press releases. EPA made

changes, my office made changes, OSHA suggested changes. This was a typical process of an inter-agency coordination on a communications document.

Senator LAUTENBERG. But without laboring under the review of the process, what are the elements that were obviously changed, differentiated, that would cause people to make changes that said, well, one particular CEQ official was designated to work with the EPA to ensure that clearances were obtained through the National Security Council. Although EPA's position is that World Trade Center area residents should obtain professional cleaning, EPA's press releases did not instruct residents to do so. Instead, they instructed residents to follow recommended and proper cleaning procedures.

We asked the OCEM, our associate administrator, whether her office had considered advising the public through a press release that they needed to obtain professional cleaning. The associate administrator said it was in a press release, it was removed by a CEQ contact. So there are so many differences here, Madam Chairman, that we are going to have to continue getting answers to these questions, if necessary, by writing, but also under the framework of forthrightness.

I want to close, Ms. Bodine, your statement about America stronger than ever is almost gratuitous. Because you make that statement without looking at the total problems that this country has as a result of inaction in the post-9/11 days, and further problems that we have. We have thousands of people doing security work, we have constant, we have new findings that terrorists are after us, people are living in a fearful mode. In my judgment, and I love our country, and I respect so much those who did the heroic work to try and save lives down there, there is no insinuation that those things were not done properly. It was as a result of the decisions that were made by the Administration, I think, that put people in jeopardy.

So when you make a statement like that, America is stronger than ever, it doesn't really register. That is your opinion and it would be best if you said, just registered it that way. Thank you.

Senator CLINTON. I am going to ask the witnesses' indulgence. I have to go vote, I will be right back. We will have one final round of questions for the witnesses before we move on to the next panel.

Those of you who have never been to a Senate hearing before, this is the way it works. We never know exactly what we are going to have to do from minute to minute. But I really appreciate your being here. These are important issues and I will be back very shortly.

[Recess.]

Senator CLINTON. Thank you very, very much for your patience.

I want to just put a few things in the record before I ask my final questions. One, the ATSDR fact sheet, and their study says, "Results probably underestimate the levels of World Trade Center-related material that were in lower Manhattan immediately after 9/11." The sampling that was done and the results, I think are very important for our continuing evaluation.

Second, there is no consensus, it has been said about whether a signature is possible, but there were two studies that I would like

to enter into the record that said a signature was possible. Unfortunately, we didn't act in a timely manner. The National Science Foundation funded work that has even found a defined dust signature in the sediments of New York Harbor. I would enter that into the record.

Then the USGS released in 2005 preliminary studies demonstrating the ability to apply a World Trade Center dust signature that can be used to guide health-based research and remediation.

[The referenced information follows:]

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World Trade Center: Fact Sheet

The Agency for Toxic Substances and Disease Registry (ATSDR), a public health service agency in the U.S. Department of Health and Human Services, was created to protect America's health from toxic exposures in the environment.

The mission of ATSDR is to serve the public by using the best science, taking responsive public health actions, and providing trusted health information to prevent harmful exposures and diseases related to toxic substances.

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Lower Manhattan Air and Dust Sampling

After the collapse of the World Trade Center towers, the New York City Department of Health and Mental Hygiene and ATSDR collected air and dust samples from 30 residential buildings in November and December 2001 in lower Manhattan. Four buildings in upper Manhattan above 59th Street were also sampled, as a comparison.

The sampling was conducted to find out what hazardous substances were in the air and settled surface dust in those residential areas.

This information was used to find out if hazardous materials in the air and dust were present at levels that could cause harmful health effects and what actions might be needed to protect public health.

The levels of materials detected in the air and dust samples do not pose potential health hazards provided that recommended cleaning measures are followed.

Air Sampling Results

- Airborne levels of total fibers were similar in lower and upper Manhattan.
- Airborne levels of mineral components of concrete and mineral components of building wallboard were higher in lower Manhattan than in the upper Manhattan comparison area.

Settled Surface Dust Sampling Results

- Low levels of asbestos were found in some settled surface dust in lower Manhattan, primarily below Chambers Street.
- No asbestos was found in the upper Manhattan comparison area.
- Lower Manhattan had higher percentages of fiberglass, mineral components of concrete, and mineral components of building wallboard in settled surface dust than the upper Manhattan comparison area.

Public Health Recommendations

- Continue to clean residences with HEPA vacuums and damp cloths/ mops to reduce the potential for exposure, and/or
- Participate in the U.S. Environmental Protection Agency cleaning/sampling program.

Health Implications

Exposure to fiberglass can cause rashes and upper respiratory irritation. However, these health effects diminish and then disappear when the exposure goes away.

Exposure to high levels of asbestos for a long time can cause serious illness. However, the low levels of asbestos detected and the short length of exposure make it very unlikely that people will become ill from that exposure.

Because asbestos and fiberglass particles are in settled dust and can easily become airborne if disturbed, residents should continue to frequently clean their apartments with HEPA vacuums and damp cloths/mops to reduce the potential for exposure.

Understanding the Sampling Results

The levels of particulate matter, airborne irritants, and settled surface dust were likely lower when sampling was conducted (November-December 2001) than they were in the immediate days and weeks after the World Trade Center collapse.

By November, outdoor dust contamination was likely reduced by wind, rain, and cleaning (city workers vacuumed the streets and sidewalks with HEPA trucks). Indoor settled surface dust may have been reduced if areas were cleaned before being sampled.

Therefore, these results probably underestimate the levels of World Trade Center-related materials that were in lower Manhattan immediately after September 11.

Materials Analyzed

We focused on materials that we expected to be present in the original dust cloud and in dust generated by ongoing activities at the World Trade Center, as well as materials that have irritant properties and that are associated with long-term health effects (for example, asbestos and quartz).

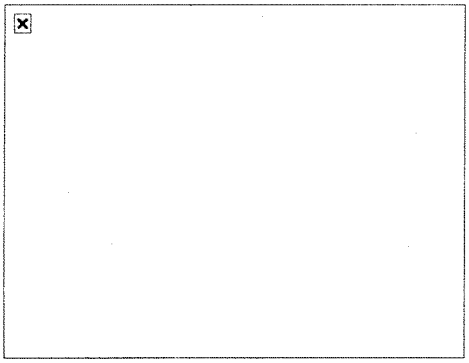
The samples were analyzed for the following materials:

- Asbestos
- Fiberglass
- Mineral components of concrete (quartz, calcite, and portlandite)
- Mineral components of building wallboard (gypsum, mica, and halite)

Sampling Dates and Locations

The sampling was conducted from November 4 through December 11, 2001, in and around 30 residential buildings in lower Manhattan.

Four more buildings in upper Manhattan (above 59th Street) were sampled, as a comparison.



Lower Manhattan Air and Dust Sampling Approximate Locations

Follow-Up Activities

The U.S. Environmental Protection Agency (EPA) is currently conducting follow-up activities to address the recommendations.

For more information

- Call the NYC DOHMH hotline at 877-796-5471
- Go to NYC DOHMH's Web site

Contact ATSDR's toll-free information line: (888) 42-ATSDR or (888) 422-8737.

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Scientists Find Geochemical Fingerprint of World Trade Center Collapse Recorded in New York Harbor Sediments

Dust and debris deposits associated with the September 11, 2001, terrorist attack on the World Trade Center have left a distinct fingerprint on the sedimentary record in New York Harbor, scientists have found. Their results appear in the January 21, 2003, issue of the journal *EOS*, a publication of the American Geophysical Union. This geochemical fingerprint, the researchers believe, may facilitate a better understanding of the short-to-medium term processes that affect the input, dispersal, and fate of particles and contaminants in the lower Hudson River.

The results, says scientist Curtis Olsen of the University of Massachusetts at Boston (UMB), an author of the *EOS* paper along with university colleagues and scientists from the U.S. Department of Energy and the U.S. Geological Survey, provide new information for assessing the potential environmental and human health impact of the World Trade Center catastrophe, and for validating sediment and contaminant transport models already developed for the lower Hudson River estuary (an estuary is the meeting ground of freshwater flowing downstream from rivers, and currents carrying saltwater inland from the ocean).

Explains Larry Clark of the National Science Foundation (NSF)'s division of ocean sciences, which funded the research, "The destruction of the World Trade Center and the resulting deposition of dust and ash into the Hudson River have provided scientists with a definitive geochemical signal. This research provides valuable information on geochemical processes in New York Harbor and the Hudson River estuary, and has applications to other estuaries and coastal oceans, as well."

NSF is an independent federal agency that funds research and education in all fields of science and engineering.

The combination of the collapse of the towers, the fires that burned at the excavation site for three months after the World Trade Center attack, and subsequent site-remediation activities, released dust, debris, and associated contaminants into the surrounding urban environment. Explains Olsen, "Determining the variations in particle and contaminant dynamics can be difficult, since fine-particle transport involves numerous short-term episodes of deposition and resuspension, and because intense, short-term events [storms and catastrophes] are often more important than those that occur during

normal flow conditions. One of the tools available for finding out the fate of fine particles and contaminants released into estuarine systems is the measurement of geochemical 'tracers' that have known sources and histories of input into the system, such as those from the World Trade Center."

The legacy of the World Trade Center attack, Olsen and colleagues found, is recorded in New York Harbor sediments as a layer containing high concentrations of several elements, copper, zinc, calcium, strontium, and others. Results indicate that the deposition of World Trade Center ash, via fall-out from the atmosphere, urban runoff in streams or site remediation activities, could account for all of these elevated concentrations.

The samples of ash and debris were collected near Ground Zero a week after the collapse, and sediment cores were collected on October 12, 2001, in two inactive New York Harbor slips, Pier 32 and Pier 40, along the lower West Side of Manhattan. The high levels of calcium, strontium, and sulfur concentrations found in the near-surface sediments of the cores, are consistent with presence of gypsum as a parent material. Gypsum is extensively used as drywall in building construction. Copper and zinc are also common components of building materials. The scientists observed that this near-surface sediment layer also contained silica-rich fibers and rods, which may reflect the input of fiberglass from ceiling tiles and other materials in the World Trade Center towers.

"We also found, unexpectedly, short-lived radioactive iodine, produced for medical treatments and diagnostic procedures, in New York Harbor sediments," says Sarah Oktay of UMB, lead author of the *EOS* paper. "This is most likely related to urban waste-water discharges and appears to be unrelated to the collapse of the trade center buildings."

The scientists believe that the fingerprint of the World Trade Center attack will provide a better understanding of the processes that affect the dispersal and fate of particles and contaminants in New York harbor. In the future, they plan to extend the framework of their study to determine whether the legacy of the terrorist attack on the World Trade Center has been preserved in the sedimentary record of New York harbor, or resuspended and dispersed by coastal currents.

-NSF-

NSF is an independent federal agency that supports fundamental research and education across all fields of science and engineering, with an annual budget of nearly $5 billion. NSF funds reach all 50 states through grants to nearly 2,000 universities and institutions. Each year, NSF receives about 30,000 competitive requests for funding, and makes about 10,000 new funding awards. NSF also awards over $200 million in professional and service contracts yearly.

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WTC Geochemical Fingerprint Recorded in New York Harbor Sediments

PAGES 21, 24–25

By Sarah D. Oktay, Daniel J. Brabander, Joseph P. Smith, John Kada, Thomas Bullen, and Curtis R. Olsen

The terrorist-instigated collapse of the World Trade Center (WTC) towers in New York City on 11 September 2001; the resultant fires that burned at the excavation site for three months afterward; and subsequent site-remediation activities released dust, debris, and a wide variety of particle-associated contaminants to the surrounding urban environment.

Although there is a general understanding of fine-particle and contaminant transport and accumulation in coastal areas such as the Hudson River estuary, determining the spatial and temporal variations in particle and contaminant dynamics can be difficult, since fine-particle transport usually involves numerous short-term episodes of deposition and resuspension, and because intense, short-term events (storms and catastrophes) are often more important than those that occur during normal flow conditions [*Olsen et al.*, 1984; *Olsen et al.*, 1993; *Bopp et al.*, 1998; *Woodruff et al.*, 2001].

> **"The WTC 'geochemical fingerprint' provides a potential tool for assessing the environmental and health impacts of the catastrophe."**

One of the tools available for elucidating the fate of fine particles and contaminants in estuarine systems is through the measurement of a suite of geochemical tracers that have known sources and histories of input into the system.

Using a multi-tracer approach, a textural/geochemical fingerprint was characterized, and a measurable event horizon was documented in New York Harbor (NYH) sediments for the WTC catastrophe. Samples of ash and debris were collected near Ground Zero (approximately one week after the collapse), and sediment cores were collected in two inactive NYH slips (Pier 32 and Pier 40) along the lower west side of Manhattan on 12 October 2001. These samples were analyzed using radioisotopic, bulk-elemental, and textural techniques.

The legacy of the attack on the WTC is recorded in NYH sediments as a stratigraphic layer containing elevated concentrations of several elements, including Ca, S, Sr, Cu, and Zn. Textural and analytical results indicate that the deposition of WTC ash (via atmospheric input or urban runoff) could account for all of these elevated elemental concentrations. This "geochemical fingerprint" provides a potential tool for assessing the environmental and health impacts of the WTC catastrophe, and for quantifying particle and contaminant dynamics in the Lower Hudson River estuary.

Individual particles in the ash and sediment samples were analyzed for size, texture, and composition using a scanning electron microscope (SEM) equipped with an energy-dispersive X-ray analysis system (EDS). The bulk elemental compositions of these samples were determined by polarized energy-dispersive X-ray fluorescence (EDXRF), and $^{87}Sr/^{86}Sr$ isotopic ratios were determined at the USGS Isotope Laboratory in Menlo Park, California, by Thermal Ionization Mass Spectrometry (TIMS). Sediment cores (38–48 cm in length) were collected in areas of suspected particle focusing and accumulation [*Olsen et al.*, 1993], which were verified in this study by gamma-spectrometric measurements of the vertical sediment distribution of naturally occurring ^{7}Be ($t_{1/2}$ = 53.2 d) and other radionuclides.

Textural, Chemical Analysis of WTC Ash and Hudson River Sediments

The textural and chemical signature of the WTC terrorist attack is illustrated in a photomosaic of backscatter SEM photomicrographs (BSE) and energy dispersive spectroscopy (EDS) element maps (Figure 1). The BSE photomicrograph in Figure 1A shows representative textures seen in ash/debris collected near Ground Zero. Numerous bundles of fibers and individual rods 40–200 micrometers in length are apparent in the image. This sample was element-mapped using EDS, and the results for Si and Ca are also shown (Figure 1A). It is apparent from the EDS X-ray element mapping that there are two chemically distinct rod-like features (Si-rich and Ca-rich) in both the ash and sediment samples (Figure 1, A-C). The Si-rich rods are consistent with a fiberglass parent material, while the Ca-rich fibers likely originate from gypsum ($CaSO_4$) contained within drywall building materials. Additional SEM-EDS element map images (not shown here for brevity) showed that Ca and S co-map, further substantiating a gypsum-like parent material, while the prominent Si-rich rods are relatively Ca-poor.

The fibrous nature of the ash and debris has created concerns about potentially adverse health effects. Since the majority of the particles observed in this study are relatively large (>80 μm), they would typically be trapped in the nasal passages and upper respiratory tract rather than enter the lungs, therefore posing less of a human health threat [*WHO*, 1997]. However, the depth of penetration of a fiber (defined as a particle with an aspect ratio, or length versus diameter of ≈ ≥ 3:1) into the lung depends mainly on its diameter, not its length. As a consequence, fibers as long as 100 μm have been found in the pulmonary spaces of the respiratory system [*WHO*, 1999]. The ash fibers seen in Figure 1A clearly have aspect ratios greater than three, and should be evaluated for their respiratory penetration capability and potential human health impact.

In addition to the use of textural criteria to identify WTC-derived materials, bulk elemental analysis (by EDXRF) established that the ash material contains substantial amounts of Ca (19 wt%), S (6 wt%), Sr (635 μg/g), Zn (1,500 μg/g), and Cu (140 μg/g). The relatively high concentrations of Ca, S, and Sr are consistent with gypsum, which typically has a distinct Ca/Sr weight ratio of approximately 230, as the parent material. A $^{87}Sr/^{86}Sr$ ratio of 0.7088 (n=2) coupled with a Ca/Sr (weight ratio) of 260–300 measured in the ash also suggests that approximately 70% of the ash material is gypsum, presumably from drywall used in WTC construction.

Establishing the ^{7}Be Stratigraphic Horizon

To link the deposition of the WTC ash to the sedimentary record, the vertical distribution of short-lived ^{7}Be was measured in NYH sediments. Like other atmospherically-derived

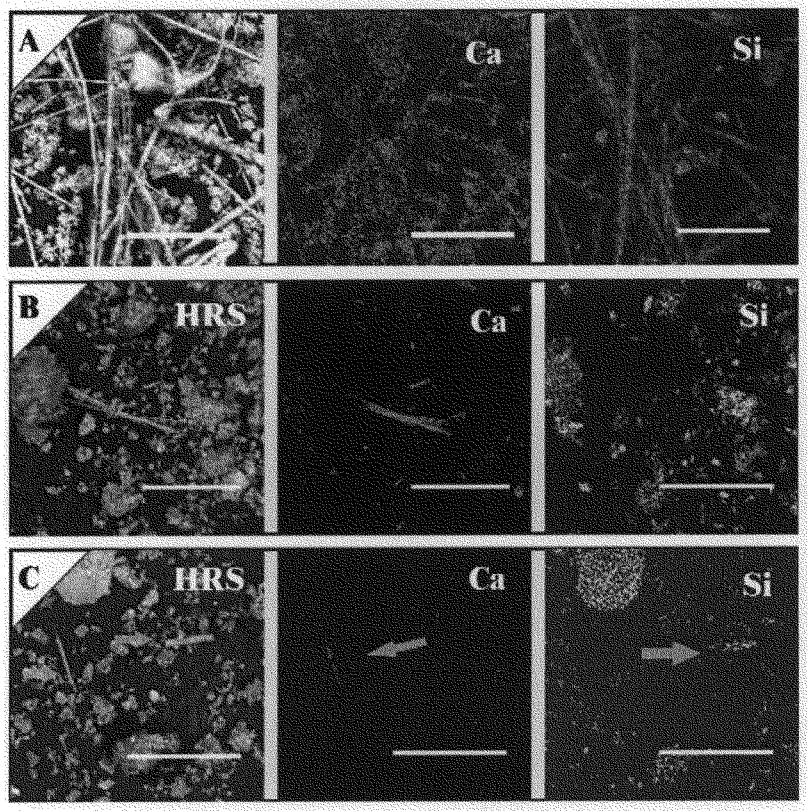

*Fig. 1. Backscatter (BSE) SEM photomicrographs and EDS element maps of WTC ash and Hudson River sediments (HRS). All scale bars are 100 μm. (A) Ash and debris collected approximately one block from the WTC show fibers and rods that are texturally and elementally similar to those reported by others [*Clark et al., *2001]. Element mapping reveals both Ca-rich and Si-rich, rod-like textural features that have aspect ratios >3; (B) In sediments from the 1–2 cm depth interval of the Pier 32 core, Ca-rich, rod-like structures (100 μm in length), similar to those found in WTC ash, were observed; (C) Sediment from the same depth interval as (B) showing the presence of both Ca-rich and Si-rich rods. Note: All SEM images and element maps were collected on "as is" material using a variable pressure SEM. All sediments were dried, pulverized, and homogenized prior to SEM analysis. Fibers and rods were not observed in selected sediment samples analyzed below the ^{7}Be stratigraphic horizons in both cores.*

and particle-reactive radionuclides, ^{7}Be becomes associated with aerosols and is primarily deposited on the Earth's surface via precipitation scavenging. Once deposited, ^{7}Be is sorbed quickly by vegetation and soils in watersheds, by materials in urban areas, and by suspended particles in turbid aquatic systems. Previous studies in estuarine systems have shown that ^{7}Be is an unequivocal indicator of particles that have been recently deposited (on a time scale of days to months), and an effective tracer for identifying areas of particle and contaminant accumulation [*Olsen et al.*, 1986; *Dibb and Rice*, 1989]. It has also been shown that neither diffusion nor bioturbation can significantly affect radionuclide or contaminant profiles in estuarine and harbor areas where sediments are accumulating rapidly (>1 cm/yr) [*Olsen et al.*, 1981].

Figure 2 shows that ^{7}Be penetrates to 15 cm in the sediments at Pier 32 and to 6 cm in the sediments at Pier 40. The total ^{7}Be inventory in the Pier 32 core is 2-to-3 times larger than projected from its atmospheric input, indicating an area of sediment focusing and rapid accumulation of recently deposited sediments. This conclusion is further supported by the unexpected detection of the short-lived, anthropogenically-produced radionuclide ^{129}I ($t_{1/2}$ = 8.04 d) in the surface (0–1 cm) sediments at both core sites at activities of 5.5 ± 0.8 Bq/kg, corresponding to a total ^{129}I inventory of about 2 mBq/ cm^{2}. Although ^{129}I is a product of nuclear fission, the Indian Point Nuclear Facility, located approximately 65 km upstream from the sampling site, was ruled out as a potential source, because elevated levels of other gamma-emitting radionuclides that would indicate leakage from reactor-core materials were not detected in NYH surface sediments. Other possible sources, such as the introduction of ^{129}I used in medical treatments through municipal waste streams, are being investigated.

Although the ^{7}Be profiles in Figure 2 may be affected by changes in sediment type or short-term physical processes, porosity, Al, and ^{40}K profiles do not support any significant change in sediment mineralogy within the measured ^{7}Be sediment horizons, and the distribution of fallout and reactor-released ^{137}Cs ($t_{1/2}$ = 30 yr) throughout both sediment cores implies annual sedimentation rates of >1 cm/yr. As a result, our approach of coupling the stratigraphic horizons established by the ^{7}Be sediment profiles with our textural and elemental analyses of WTC ash samples and NYH sediments provides a viable technique for prospecting event-horizons that can be used to establish the geochemical fingerprint of the WTC catastrophe and to trace and quantify sediment dynamics in the Hudson River estuary.

Sediment Core Element Profiles

By correlating the down-core profiles of ^{7}Be activities with measured Ca/Sr weight ratios and ^{87}Sr/^{86}Sr ratios in Pier 32 sediments, it is possible to constrain the composition and amount of WTC ash material input to NYH sediments, as well as establish a sedimentary horizon based on the timing of the event. Figure 3A illustrates the distribution of Ca/Sr ratios with sediment depth in the Pier 32 core, and indicates a subsurface maximum at the 1–2 cm depth increment. Preliminary mixing calculations based on Ca/Sr and ^{87}Sr/^{86}Sr ratios suggest between <1–5% WTC derived materials can be identified within the upper layer of sediments (0–5 cm), depending on the choice of the bulk chemistry and isotopic ratio of the Hudson River sedimentary end member. These estimates of mixing proportions are qualitatively supported by both SEM photomicrographs and preliminary X-ray diffraction data.

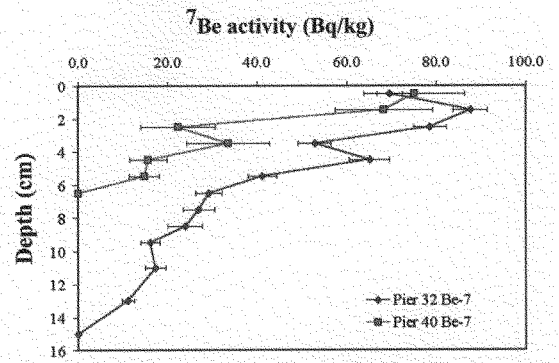

*Fig. 2. Vertical distributions (penetration depths) of ^{7}Be in sediment cores collected at Pier 32 and Pier 40. These profiles define a recently deposited sedimentary horizon that can be used with textural and elemental data to discern the event-horizon associated with the WTC catastrophe. The total sediment inventory of ^{7}Be is 140 ± 8 mBq/cm^{2} in the Pier 32 core and 67 ± 3 mBq/cm^{2} in the Pier 40 core. Atmospheric deposition typically support ^{7}Be inventories between 40 to 80 mBq/cm^{2} in coastal areas along the eastern U.S. [*Olsen et al., 1986*]. Error bars are ± 1 sigma.*

Figure 3B shows the profiles of Cu and Zn (common components of building materials and prominent in WTC ash) normalized to Al in the Pier 32 core. Note that both Cu and Zn exhibit similar subsurface maxima at the 1–2 and 2–3 cm depth increments, further substantiating that WTC ash is a chemically viable parent material for this signal. Note also that the 1–2 cm peaks in the Ca/Sr weight ratio (Figure 3A) and Cu/Al and Zn/Al weight ratios (Figure 3B) correlate with the subsurface peak of precipitation-derived ^{7}Be in the sediments at Pier 32 (Figure 2). These correlations suggest that the input of ash, debris, and contaminants to NYH, via urban stormwater runoff following the first major precipitation event after the WTC catastrophe (4.83 cm, on 14 September 2001; from National Climatic Data Center, Weather Station #305801/94728), may have provided a more definitive fingerprint and event horizon in NYH sediments than that associated with the WTC collapse itself.

In contrast, Figure 3C shows that stable iodine concentrations [I] are also elevated (50–70 μg/g) in the ^{7}Be horizon of the Pier 32 sediments relative to values (30–50 μg/g) measured below 15 cm. Iodine concentrations were significantly lower in the WTC ash (1–7 μg/g), indicating that the ash/debris is not the source material for the elevated [I] in NYH surface sediments. The iodine profile exhibits a distinct reduction in concentrations in the 1–2 and 2–3 cm increments compared to concentrations above and below these layers, supporting our previous textural and bulk chemical estimates that the WTC ash/debris component exists in the sedimentary material at this depth. The examination of other sediment attributes such as percent organic carbon, rare earth elemental concentrations, and organic contaminant load versus the presence or absence of these constituents in the WTC ash should help quantitatively establish the percentage of ash and debris that is preserved in the upper sedimentary layers.

Concluding Remarks

Our results show that the deposition of dust/debris associated with the WTC has left a distinct textural and elemental (Ca, S, Sr, Cu, and Zn) fingerprint on the sedimentary record in NYH. The textural/geochemical fingerprint of this event-horizon recorded in NYH sediments may facilitate a better understanding of the short-to-medium-term processes that affect the input, dispersal, and fate of particles and contaminants in the Lower Hudson River estuary, and thus provide a potential tool for assessing the environmental and human health impact of the WTC catastrophe, and for validating sediment and contaminant transport models for this system.

Acknowledgments

We thank Floating the Apple for their assistance during our sediment collection, and Gordon Wallace of the University of Massachusetts-Boston and other anonymous reviewers for their thoughtful comments on

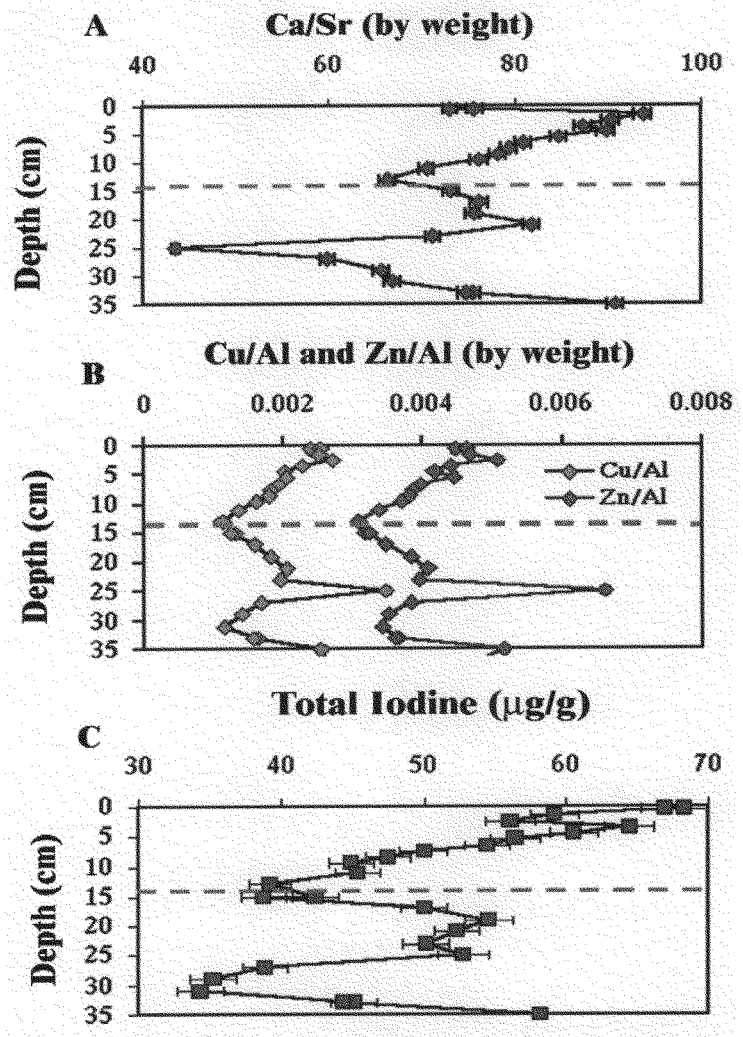

Fig. 3. Elemental profiles from ED-XRF analysis of the Pier 32 sediment core. (A) Vertical distributions of Ca/Sr weight ratios showing a peak at 1–2 cm, indicating a potential input of building materials from the WTC; (B) Zn/Al and Cu/Al weight ratio profiles versus depth also showing elevated values at the 1–3 cm depth increments. Sediment elemental profiles are similar in the Pier 40 core, but are confined to the shallower 6 cm depth of ^{7}Be penetration (Figure 2); (C) Total iodine concentration versus sediment depth in the Pier 32 core showing elevated iodine levels near the surface and a subsurface minimum at the 1–3 cm depth increments where the input of WTC materials appears to be at a maximum. Note: dotted line denotes the maximum depth of ^{7}Be penetration. The geochemical variations observed at the 25-cm depth increment are not related to the WTC event but do, however, highlight the complex nature of this depositional environment. Bulk chemical replicates were randomly run at intervals throughout the cores; these points are shown above.

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Recent Reports on Earth and Space Science Doctorates

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Two newly published surveys of recent doctoral degree recipients, the *Science and Engineering Doctorate Awards, 2001* (National Science Foundation, 2002) and the *Earth and Space Science PhDs, Class of 2001* (AGU/AGI, 2002), reveal a generally healthy status for the production of and job market for Earth and space sciences Ph.D.s. The NSF report, which is based on the detailed statistical data obtained in the annual *Survey of Earned Doctorates* (NSF, 2001), highlights these key findings:

- The total number of science and engineering (S&E) doctorates awarded by U.S. universities has dropped 7% from a high point in 1998, to 25,500 degrees in 2001. Of these, doctorates in the physical sciences dropped from 3,825 in 1998 to 3,389 in 2001, after experiencing modest increases between 1992 and 1998.
- Ph.D.s awarded in the combined Earth, atmospheric, and ocean (EAO) sciences category, which comprises ~22% of the degrees in the physical sciences, have shown similar behavior over this time period, with a rapid (15%) drop from a maximum of 878 degrees in 1997 to 749 in 2001.
- Women recipients have made steady progress over the past nine years in increasing their proportion of the physical sciences doctorates (from 20.4% in 1992 to 24.6% in 2001). The greatest improvements have occurred in the fields of chemistry (from 26.2% to 32%) and the EAO sciences (23.7% to 31.5%), particularly in the sub-disciplines of oceanography and environmental science, where women received nearly 40% of the Ph.D.s in 2001. In contrast, physics and the atmospheric sciences sub-disciplines have seen little change, with a decadal increase of only ~1–2% in the total number of women doctorates.
- African-Americans, Hispanics, and Native Americans continue to be highly underrepresented in the physical sciences overall, and the EAO sciences specifically, in comparison to their proportions in the general population.
- For all S&E doctorates and those in the EAO sciences fields, a little less than 59% of the doctorate degree recipients in 2001 were U.S. citizens; this represents a slight decline over previous years.

Additional details of the education and employment of recent doctorate degree recipients in the Earth, atmospheric, and ocean sciences are revealed in the second survey, conducted annually by the American Institute of Physics on behalf of AGU and the American Geological Institute. Data for the Ph.D. class of 2001, when combined with data from the previous five years, reveal the following trends:

- EAO Ph.D.s are the oldest of the natural sciences and engineering students when they receive their degree (median age of 33.2 years, compared with physics and chemistry, at 30.2 and 29.7 years, respectively). This age difference is primarily due to the fact that EAO students tend to postpone the onset of their graduate studies for a few years after the baccalaureate and does not reflect intrinsically longer graduate study (which averaged ~6 years, regardless of when the degree program was started).
- The job market for recent Ph.D.s in the geosciences continues to be as strong as any in the previous five years. More than two-thirds (78%) of the 2001 Ph.D. recipients found work within the Earth and space sciences (98% were employed in a science- or engineering-related job), and the time to initial employment after completing the degree averaged only 3.6 months (compared with 5.5 months in 1998).
- Most survey respondents found employment in academe (33% as postdocs, 24% as non-postdocs), with government (24% postdocs and non-postdocs combined) as the second largest employing sector. The remaining Ph.D.s found jobs with industry (16%) or non-profit organizations (3%).
- For all employment sectors, starting salaries for Ph.D. recipients in the Earth and space sciences were distinctly higher in 2001 compared with previous years. Median starting salaries ranged from about $50,000 for full-time university and government employees (non-postdoctoral), to just under $70,000 for those beginning work in industry.

The full text of these reports can be found at http://www.nsf.gov/sbe/srs/nsf03300/start.htm and http://www.agu.org/sci_soc/cpst/2001FinalReport.PDF

—JILL KARSTEN, Manager, AGU Education & Career Services

Determination of a Diagnostic Signature for World Trade Center Dust using Scanning Electron Microscopy Point Counting Techniques

By Gregory P. Meeker, Amy M. Bern*, Heather A. Lowers, and Isabelle K. Brownfield

Open-File Report 2005 - 1031

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Introduction

The tragedy of the September 11, 2001, collapse of the World Trade Center (WTC) towers and other buildings in and adjacent to the WTC site produced a dust cloud that was visible from space and covered much of lower Manhattan in millimeters to centimeters of extremely fine powdered material. This material was inhaled and ingested by thousands of people on the day of the event and for several days afterward. In addition, thousands of apartments, offices, and public buildings were contaminated by the dust through a variety of pathways. The short-term medical effects of this exposure were manifested in what became known as the World Trade Center (WTC) cough, documented as respiratory and other health problems among many of those who were exposed (Gavett and others, 2003; Prezant and others, 2002). Potential long-term medical effects of this event may not be known for many years. Several studies have examined various components of the dusts generated by the collapse of the WTC (Meeker and others, 2005; Plumlee and others, 2005; Badger and others, 2004; Yiin and others, 2004; McGee, 2003; Offenberg and others, 2003; Chatfield and Kominsky, 2002; Lioy and others, 2002, Millette and others, 2002; Clark and others, 2001).

Concerns remain about the possible presence of WTC dust in indoor and outdoor environments in Lower Manhattan and surrounding areas. Identification of contamination from WTC dust more than 3 years after the event is complicated by dilution and possible variations in relative abundance of dust components arising from factors such as exposure to moisture, distance from the WTC site, and elevation. Detection of contaminants of potential concern (COPC) including asbestos, crystalline silica, lead, and man-made vitreous fibers (MMVF) originating from WTC dust is complicated by possible contributions of these materials from a variety of other unrelated sources including construction materials, asbestos-containing insulation, and lead-based paint.

Identification of WTC contamination would be easier if unique components or ratios of components were present in WTC dust that could be identified by routine analytical techniques. This preliminary report seeks to quantitatively define the fine-particle fraction of WTC dust for the purpose of identifying a diagnostic signature. The signature could then be used by those working on this and other aspects of the WTC dust contamination issue in order to identify low levels of residual WTC dust. The analytical procedures in this report are not intended to be used as routine methods for analysis of samples; they were developed to obtain an accurate quantitative determination of the relative abundances of components in bulk WTC dust. It is anticipated that a final report will follow after background samples are collected and analyzed for possible WTC dust signature components.

Sample Preparation

Samples were collected from outdoor and indoor locations at various distances from the WTC site. Samples USGS 4, 6, and 12 were collected from ground level between September 16 – 17, 2001, at distances of 0.80, 0.60, and 0.55 km, respectively, from the

center of the WTC site. These samples were wetted by one rain storm prior to collection. Sample USGS 36, collected on September 12, 2001, was obtained inside an apartment on the 30th floor of a building 2 blocks (0.40 km) from the WTC site. Details of sample collection procedures and locations for the above samples are given in Clark and others (2001) and Swayze and others (2005). Sample LM2 is an outdoor sample collected on September 16 – 17, 2001, approximately 0.70 km east of the WTC site. Sample L18-2 was collected indoors on November 19, 2001, from an area adjacent to the WTC site (0.25 km west). For further details on samples LM2 and L18-2 see Lioy and others (2002).

Sample preparation methods follow a modified version of the approach outlined in Bern and others (2005). Representative aliquots of WTC bulk dust samples were dry sieved through a 150 μm (100 mesh) ultrasonic sieve. A 0.2 g aliquot of the sieved sample was suspended in 125 mL of isopropanol alcohol. Using an Eppendorf pipette with 1 mm diameter tip opening, six 20 μL drops of the suspension were added to a Millipore filter apparatus with several milliters of alcohol in the funnel and a carbon coated 25 mm cellulose filter having a 0.4 μm pore size. The amount of sample was adjusted to yield coverage of approximately 2 – 4 percent on the filter. Coverage greater than about 10 percent causes particles to overlap, which can cause analytical errors. The filter was placed on a scanning electron microscope (SEM) stub using carbon adhesive tab. After drying, the stub was carbon coated using a carbon evaporator prior to analysis in the SEM.

The above method worked well for all components except MMVF. For some sample preparations, the abundance of MMVF particles was significantly reduced on the analytical filters relative to their abundance in bulk dust as observed by optical microscopy. The reason for fiber loss is unknown but may result from charging of the glass fibers by the electron beam during analysis in the SEM. To more accurately determine MMVF abundances, new aliquots of the samples were prepared by pipetting the suspension directly onto conductive carbon tape and analyzed in the SEM as described below.

Analytical Methods

Analyses were performed using a JEOL 5800LV electron microscope equipped with an Oxford ISIS energy dispersive x-ray spectrometer (EDS) and analysis system. Typical analytical conditions were 15 KeV accelerating voltage, 0.5-5 nA beam current, and zero-degree tilt. Data were processed using standardless quantitative analysis and compared to values obtained for BIR-1G glass (Meeker and others, 1998). Precision and accuracy vary for each element. Elemental values depend on particle size and shape but generally did not exceed 10 percent relative error for accuracy and 5 percent relative error for precision for Si, Al, Mg, Ca, and Fe, and 20 percent relative error for accuracy and 10 percent relative error for precision for Na, K, Ti, and Mn (Bern and others, 2005; Meeker and others, 2003).

For the filter samples, area-percentage coverage of total sample was determined using binary representations of backscattered electron images. Area fraction of individual particles was determined by direct measurement using digital images. The chemistry of each particle equal to or larger than 3 μm in the 500X magnification field of view (FOV) was determined and binned according to particle type. This process was also performed at 2,000 times magnification for all particles less than 3 μm. Twenty randomly selected fields of view at each magnification were analyzed for each sample. The number of particles counted on each sample ranged from 900 to over 3,000 depending on the density of filter coverage. The results for each magnification were normalized to equal area and combined to quantify particle abundances.

Particles were binned by type based on extensive analysis of WTC dust by multiple analytical techniques (Meeker and others, 2005, and references therein). Typical particle fields are shown in Figure 1. Particle types used in this study are listed in Table 1.

The area percentage of MMVF was determined separately for each sample by analyzing one field at 100 times magnification on a separate aliquot of sample prepared as described above. In addition, five fields on two samples (WTC 4 and WTC 6) were analyzed for all particles. These results were compared to the results obtained by the filter method. Particle size (length x width) distributions for the major components in each sample (< 150 μm size fraction) were also determined.

Results

Component analysis for the six WTC bulk samples is summarized in Table 1 and Figures 2 - 7. All of the samples show three primary components – gypsum, phases compatible with concrete, and MMVF. The additional particle types shown in Table 1 were found in most samples. The data demonstrate that the most consistent particle-type abundance ratios occur within the MMVF, i.e., slag wool, rock wool, and soda-lime glass. In all samples, slag wool is the dominant MMVF component while rock wool and soda-lime glass fibers occur in all samples at similar relative abundances below approximately 10 to less than 1 percent total MMVF (Table 1). One exception to this observation was identified in a single field counted at 100 times magnification on sample L18-2. In this field, a single large soda-lime glass fiber and a single large rock wool fiber were found; these two fibers significantly affected MMVF relative particle abundances. If these two fibers are not included, the relative MMVF abundances for this sample are similar to those for the other samples. A second field on this sample was counted at 100 times magnification; the resulting data were consistent with the other samples (Table 2). In all samples, the relative abundances of rock wool and soda-lime glass fibers are based on a small number of fibers; thus, the statistical significance of reported proportions of these fiber types is correspondingly low.

Table 1. Range in area percent of major and minor components for all samples.

Particle Type	Comment	Percent Range, Outdoor	Percent Range, Indoor
Gypsum	Includes all Ca sulfate particles	26.3 – 53.3	63.3 – 63.7
Concrete	All phases compatible with hydrated cement	19.3 – 30.8	14.0 – 21.0
MMVF* Total		20.3 – 40.6	9.5 – 19.2
Slag wool	Based on table 2, field 2	91.7 – 98.1	89.5 – 93.3
Rock wool	Based on table 2, field 2	0 – 6.6	5.2 – 5.8
Soda-lime glass	Based on table 2, field 2	0 – 6.0	0.9 – 5.3
Chrysotile	Bundles and single fibers	0.4 – 1.8	0 – 0.1
Silica	Primarily crystalline	0.8 – 3.4	0.4 – 0.7
Ti-rich	Primarily Ti and Ti oxide	0 – 0.1	0 – 0.6
Zn-rich	Primarily Zn and Zn oxide	0.2 – 0.4	0.1 – 0.6
Pb-rich	Primarily Pb and Pb oxide	N.D.	0 – 0.03
Fe-rich	Primarily Fe and Fe oxide	0.2 – 1.3	0.1 – 1.1
Other	Identified but not binned	2.6 – 5.9	1.4 – 2.6
Unidentified	Could not be classified based on bulk chemistry	0.2 – 1.4	0 – 0.1

*Man-made vitreous fibers (MMVF)

All samples also contain gypsum and concrete phases. In the outdoor samples, these components, along with total MMVF, vary in relative abundance. This variation is likely related to samples having been exposed to moisture and precipitation, which caused varying amounts of gypsum dissolution prior to sample collection. The two indoor samples, unaffected by precipitation, have much less variable compositions.

By far, the most abundant nonfibrous particles in all samples are gypsum and concrete. Particle size distributions for these components (Figs. 8 and 9) suggest relationships to distance and elevation. Percent frequency is compared to area and maximum diameter, as measured on the SEM. The majority of these nonfibrous particles in each sample have similar particle area distributions with the majority of particles in the range from 0.3 to 3 μm^2. Sample L18-2, collected adjacent to the WTC site, is characterized by a somewhat higher concentration of particles in the 3 to 300 μm^2 size range. Particles in samples USGS 4 and 6 fall at slightly higher values of total area, between 1 and 300 μm^2, than in the other outdoor samples. The effect of particle-size distribution as a function of distance is most clearly seen in Figure 9 where samples L18-2 and USGS 36 clearly deviate from the other samples with respect to size distribution. Sample L18-2, the closest sample to the WTC site, shows a higher abundance of larger diameter particles. Sample USGS 36, collected on the 30th floor of a building, shows a higher abundance of smaller diameter particles. MMVF diameters for all samples combined are given in Table 3. The distributions of MMVF diameters display no clear relationship to distance from the WTC site.

Table 2. Results from sample L18-2

Component	Comment	Area Percentage
Slag wool	Field 1, all fibers counted	52.1
Rock wool	Field 1, all fibers counted	9.6
Soda-lime glass	Field 1, all fibers counted	38.3
Slag wool	Field 1, two large fibers removed	86.5
Rock wool	Field 1, two large fibers removed	2.9
Soda-lime glass	Field 1, two large fibers removed	10.7
Slag wool	Field 2, all fibers counted	89.5
Rock wool	Field 2, all fibers counted	5.2
Soda-lime glass	Field 2, all fibers counted	5.3

Table 3. Diameter data for man-made vitreous fibers
All Samples Combined

	Rock wool	Slag wool	Soda-lime glass
Minimum	0.2	0.1	0.1
Maximum	15.6	21.0	13.0
Average	3.8	4.7	4.0

Conclusions

Six bulk WTC dust samples, collected from locations in different directions, elevations, and from outdoor and indoor environments show relatively consistent abundance ratios of major and minor components. For the purposes of identification of WTC dust, these abundance ratios appear to be within the necessary limits of variability. Furthermore, the critical dust components can be identified easily and quickly using routine SEM and x-ray microanalysis techniques.

Data presented here suggest that the presence and relative abundance of the three MMVF components – slag wool, rock wool, and soda-lime glass – along with the presence of concrete particles and gypsum could be used as a primary diagnostic signature for WTC dust. Secondary signature components could include FeO_x, ZnO_x, silica, and chrysotile.

An analysis strategy for routine samples could evolve using rapid scans of settled dust by SEM to look for the presence of MMVF. If found, these fibers could then be analyzed using EDS to determine fiber compositions. If the majority of fibers (> 85 percent) detected were of slag wool composition, or if slag wool was found at a predetermined critical concentration, the sample would then be searched for gypsum and concrete particles along with the other two MMVF components. Further confirmation of the presence of WTC dust could then be reached by looking for secondary components in the approximate abundances found in this study. Alternatively, if slag wool, gypsum, and concrete were present, the sample could then be analyzed for contaminants of potential concern such as asbestos, lead, and potentially problematic organic compounds.

Because the dust component ratios are shown here to be relatively constant from sample to sample, it should be possible for health workers to establish conservative health-based criteria for COPC relative to the abundance of slag wool. If slag wool fibers are not found in settled dust samples above a predetermined critical level, it is unlikely that COPC derived from the WTC could be present at significant levels in the samples.

A successful application of these data to the WTC dust contamination problem in specific environments will depend on the degree to which WTC dust components are found in typical background samples. For example, MMVF are a major component of some acoustical ceiling tiles. Indoor environments with these tiles would be more likely to contain MMVF in settled dust than environments with other ceiling materials. Recently remodeled buildings are more likely to contain settled dust with gypsum and even concrete. In difficult cases, the size distribution data presented here might prove useful in distinguishing WTC source materials from similar materials from other sources. Dilution effects and any variations that might occur at greater distances from the WTC site must also be considered.

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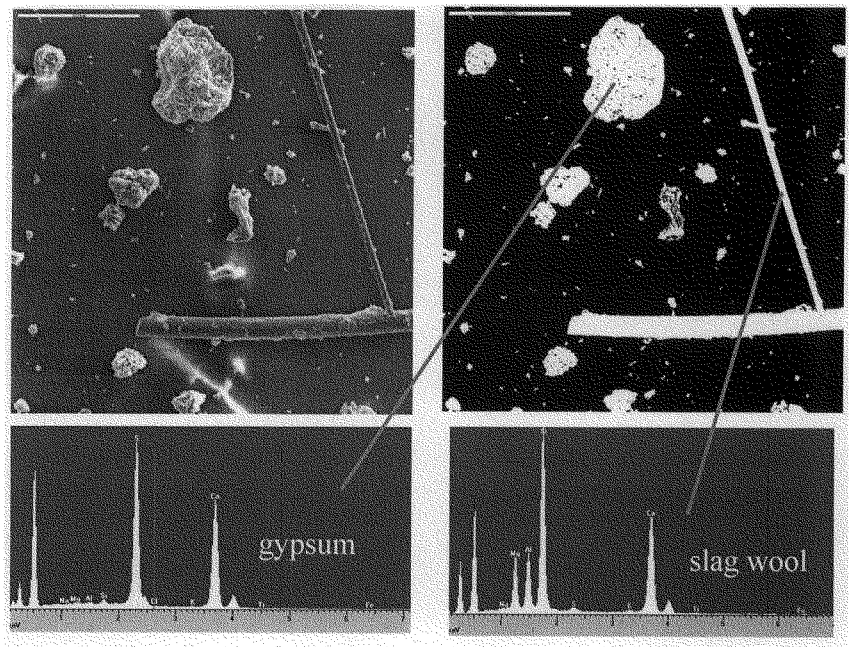


Figure 1. Secondary electron image of a typical field at 500 times magnification (left). The same image shown in binary backscatter mode is on the right. EDS spectra are shown for gypsum and slag wool.

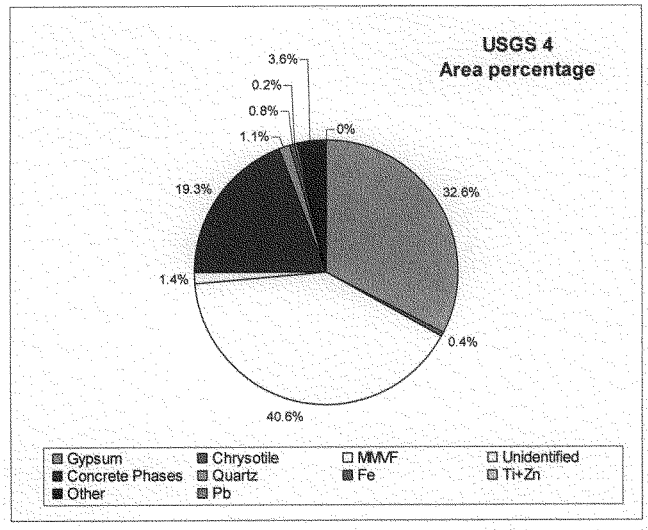


Figure 2. Relative abundances of dust components for outdoor sample USGS 4, collected 0.80 km south of the World Trade Center site. Components are shown in clockwise order as listed below each pie chart. Percentage of each component is given.

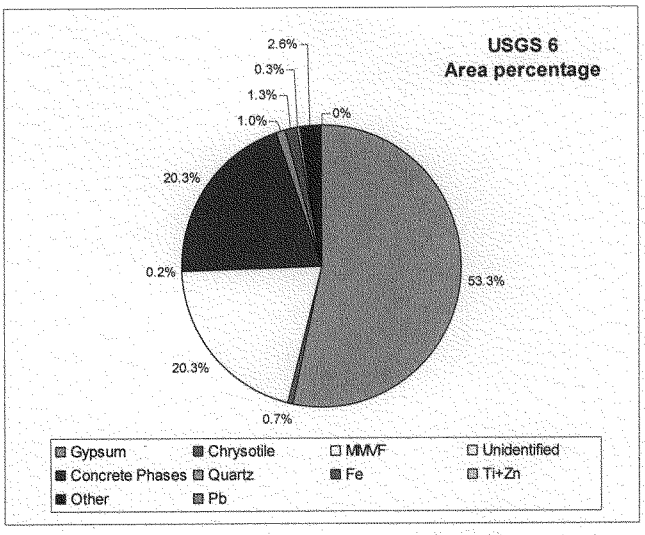


Figure 3. Relative abundances of dust components for outdoor sample USGS 6, collected 0.60 km south of the World Trade Center site. Components are shown in clockwise order as listed below each pie chart. Percentage of each component is given.

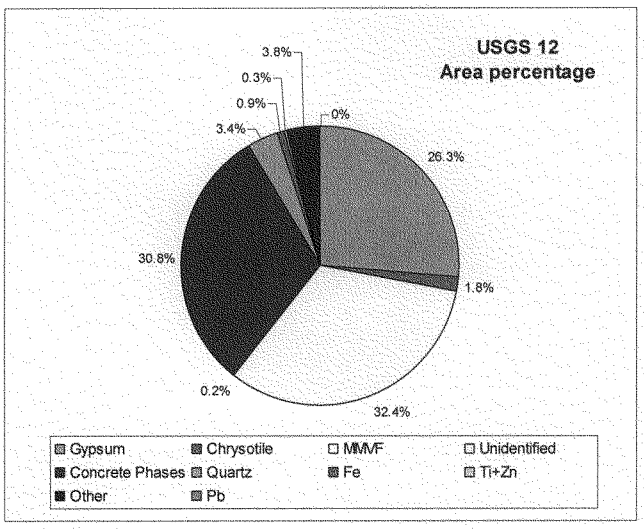


Figure 4. Relative abundances of dust components for outdoor sample USGS 12, collected 0.55 km south of the World Trade Center site. Components are shown in clockwise order as listed below each pie chart. Percentage of each component is given.

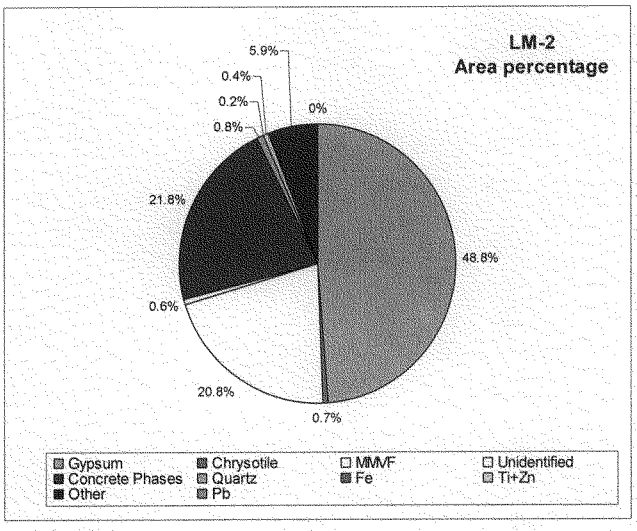


Figure 5. Relative abundances of dust components for outdoor sample LM-2, collected 0.70 km south of the World Trade Center site. Components are shown in clockwise order as listed below each pie chart. Percentage of each component is given.

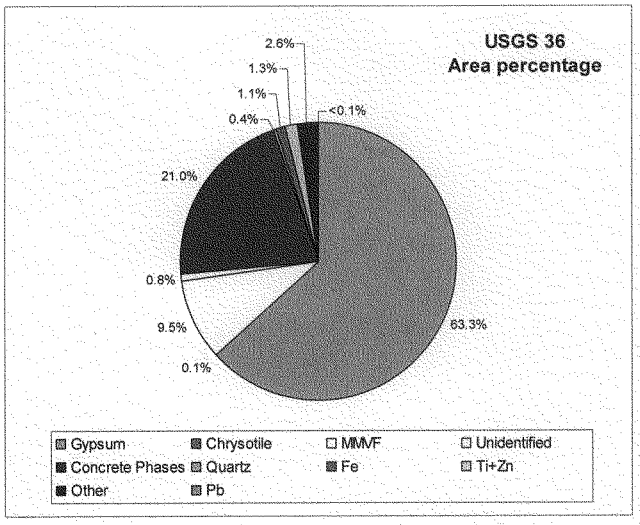


Figure 6. Relative abundances of dust components for indoor sample USGS 36, collected from a 30th floor apartment, 0.40 km south of the World Trade Center site. Components are shown in clockwise order as listed below each pie chart. Percentage of each component is given.

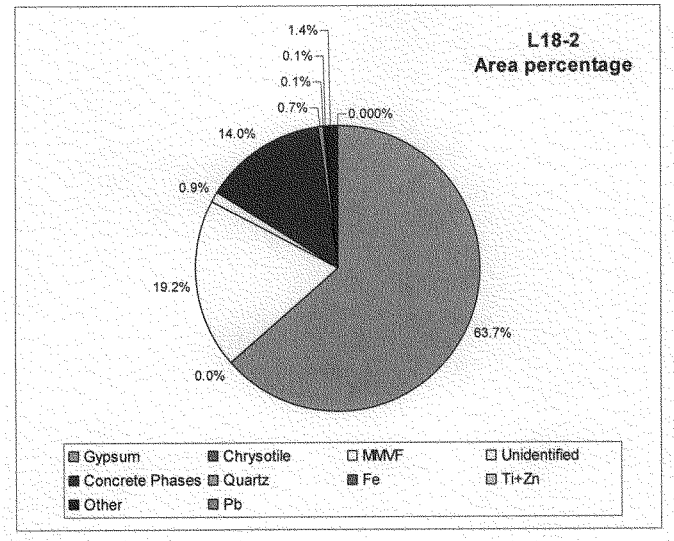


Figure 7. Relative abundances of dust components for indoor sample L18-2, collected on the west side of the World Trade Center site. Components are shown in clockwise order as listed below each pie chart. Percentage of each component is given.

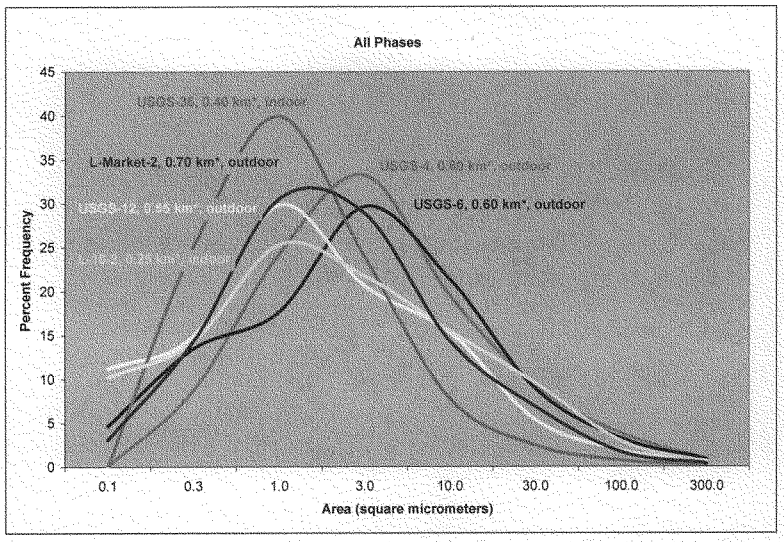


Figure 8. Particle size data for each sample presented as area (length x average width) vs. percentage frequency. *All distances are approximate kilometers from the center of WTC plaza.

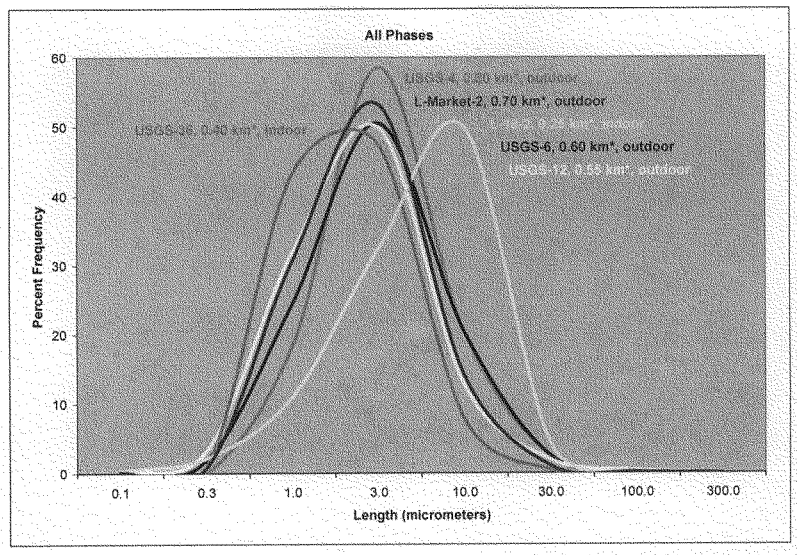


Figure 9. Particle size data for each sample presented as length vs. percentage frequency. *All distances are approximate kilometers from the center of WTC plaza.

Senator CLINTON. Two final things on some of what has been discussed about the EPA's authority.

The EPA has done indoor work in Libby, MT since 1992. In 1998, there was a Presidential directive put in place putting EPA in charge of building decontamination. That is one of the reasons why it was quite bewildering to us that there wasn't an immediate acceptance of responsibility by the EPA and I can only assume that that Presidential directive putting EPA in charge of indoor contamination was either not known of or disregarded.

Now, I want to go back to Ms. Bodine because you spoke at some length about the National Response Plan that the EPA put in place, I believe you said, in 2003, is that correct?

Ms. BODINE. Our National Approach to Response, correct.

Senator CLINTON. Right. Well, then, I would like to direct your attention to a report issued by the White House Homeland Security Advisor, Fran Townsend, in February 2006, about the Administration's response to Katrina. Again, I quote from it.

"Federal officials could have improved the identification of environmental hazards and communication of appropriate warnings to emergency responders and the public. There must be a comprehensive plan to accurately and quickly communicate this critical information to the emergency responders and area residents who need it. Had such a plan existed, the mixed messages from Federal, State and local officials on the re-entry into New Orleans could have been avoided. DHS, in coordination with EPA, HHS, OSHA and DOE, should develop an integrated plan to quickly gather environmental data and provide the public and emergency responders the most accurate information available to decide whether it is safe to operate in a disaster environment or return after evacuation. This plan should address how to best communicate risk as well as determine who is accountable for making the determination that an area is safe. It should also address the need for adequate laboratory capacity to support response to all hazards. The plan should be completed in 180 days."

Now, this was a finding in a report actually done by the White House. It certainly raises questions about the comprehensiveness and adequacy of the plan that EPA put into place. Has EPA worked with the Department of Homeland Security to respond to these requests that Fran Townsend made in her assessment of what the Government did after Katrina?

Ms. BODINE. The Agency has been working on a crisis communication plan. It is still in draft, it is still under review within the Agency. There is also under the National Response Plan an Emergency Support Function Number 15, which is called External Affairs, which talks about the coordination of communications among all the agencies.

Senator CLINTON. Well, Ms. Bodine, it has to be clear that if there were problems in communicating after 9/11, and as you have testified today, the Agency began to take steps to try to have a better plan in place, and yet Katrina comes along and the White House's own review finds that the communication system was inadequate, and it is now nearly 2 years after Katrina and there is still not a communication plan, that has to raise serious doubts about the urgency with which the Administration approaches these

issues. I would like to see a report from the EPA detailing where you are in response to this requirement to have a better plan and a further report as soon as you can get that to the committee.

[The referenced information follows:]

Recommendation 87 of the White House (Townsend) Report, "The Federal Response to Hurricane Katrina: Lessons Learned," referred to by Chairman Clinton, recommended that the Department of Homeland Security, in consultation with EPA and other Federal agencies, develop an integrated plan regarding communication of environmental and safety information to the public and emergency responders. The Department of Homeland Security is in a better position to report on its efforts to address this recommendation. Meanwhile, EPA has taken a number of actions to increase the Agency's ability to provide timely and accurate environmental data in future disaster environments, including establishing a crisis communications work group to identify and implement opportunities to strengthen crisis communication procedures and developing a draft crisis communications plan.

Let me now turn to GAO, because GAO has done a very thorough job in trying to make sense out of many of the contradictory statements and actions that have marked the 9/11 experience. EPA's testimony notes a very low exceedance rate for asbestos in its first indoor test and clean program. Your testimony suggests that EPA used this data in a misleading way. Can you elaborate on this point, and does GAO have any other criticisms about EPA's risk communication after 9/11? Mr. Stephenson?

Mr. STEPHENSON. First, you have to remember that the first program, as was the second, was a voluntary program. Air samples were taken largely after the apartments had been cleaned. There was an option for residents to select tests only or test and clean. Eighty percent of them, I believe, chose the latter option, to clean first and then test. But you have to assume that the others who tested only were not sitting around not cleaning their apartments.

Our only point was that including that information with any public communication might have been heard differently by residents deciding to participate in the program or not.

Senator CLINTON. Let me follow up on that. EPA's December 2006 press release announcing the current test and clean program included the following statement from Dr. George Gray: "We believe the potential for exposure related to dust that may remain from the collapse of the World Trade Center buildings is low."

In your judgment, is this statement by Dr. Gray supported by the data that the Agency has collected?

Mr. STEPHENSON. Well, EPA doesn't have, has never done a comprehensive assessment of a single building. It is all based on voluntary samples from individual residences. It was done without benefit of looking for dust in HVAC areas, hard to access areas, et cetera. There was an aggressive test approach where they would go into the apartment and blow the air out. But it wasn't clear which of the samples were done in that manner versus the samples simply taken after cleaning. So we think the data is quite inconclusive, and we don't think EPA has ever done a comprehensive assessment of the extent of damage in a building, let alone in the lower Manhattan area.

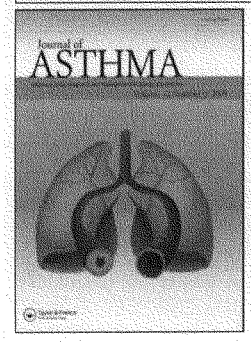
Senator CLINTON. I certainly agree with that, and I think that is the fair conclusion, that EPA has not done a comprehensive study. I think it's clear that we don't have an accurate base of in-

formation to try to determine the causation behind a lot of the illnesses that people are suffering. We know people are getting sick.

I mentioned a number of studies in my opening statement. Here is another one. Just this month, a study published by researchers from the New York State Department of Health, the New York University School of Medicine and the State University of New York at Albany concluded that residents who were exposed to contamination generated by the collapse that had been deposited in their homes had a significantly elevated rate of persistent airway disease. The study also found a strong correlation between reactive airway disease and exposures to indoor contamination for a period of 3 months or longer.

I would like to enter this report into the record, because really this all comes back to my concern that we were never fully focused on what we needed to do at the time and instead of going forward and saying, well, maybe in the immediate aftermath, which I absolutely agree was confusing and difficult, we missed some points, we weren't as clear as we needed to be, let's regroup and go forward. I think the evidence is very clear that we never did what was required. The EPA never did it, the Council on Environmental Quality never required it. I think it is critical to do the oversight and have a detailed evaluation of EPA's readiness to respond to releases of hazardous substances in disasters.

[The referenced material follows:]



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ORIGINAL ARTICLE

Reported Respiratory Symptoms and Adverse Home Conditions after 9/11 among Residents Living near the World Trade Center

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This study investigated whether self-reported damage, dust, and odors in homes near the World Trade Center (WTC) after September 11, 2001, were related to increased rates of respiratory symptoms among residents and if multiple sources of exposure were associated with greater health risk. We mailed questionnaires to homes within 1.5 km of the WTC site (affected area) and in upper Manhattan (control area). Surveys asked about respiratory symptoms, unplanned medical visits, physician diagnoses, medication use, and conditions in the home after 9/11. Adverse home conditions were associated with new-onset (i.e., began after 9/11) and persistent (i.e., remained 1 year after 9/11) upper and lower respiratory symptoms in the affected area (Cumulative Incidence Ratios [CIRs] 1.20–1.71). Residents reporting longer duration of dust/odors or multiple sources of exposure had greater risk for symptoms compared to those reporting shorter duration and fewer sources. These data suggest that WTC-related contamination in the home after 9/11 was associated with new and persistent respiratory symptoms among residents living near the site. While we cannot eliminate potential biases related to self-reported data, we took strategies to minimize their impact, and the observed effects are biologically plausible.

Keywords World Trade Center, 9/11, respiratory health, asthma, community health

INTRODUCTION

The attacks on the World Trade Center (WTC) on September 11, 2001 (9/11), resulted in extensive environmental contamination of the surrounding area. The collapse of the towers and combustion products from the fires resulted in dust and odors that lasted for months afterward. Dust particles released into the air contained known respiratory irritants, including cement, asbestos, and glass fibers (1). Subsequently, as WTC dust eventually settled on surfaces and inside buildings, the indoor environment of homes around the site was contaminated (2). Residents near the site who were home on 9/11 were evacuated through the dust and smoke and may have had significant exposure to pollutants. Official recommendations for cleaning after residents returned included the use of high-efficiency particulate air (HEPA) filter vacuums, wet mops, and other self-cleaning methods (3).

Surface dust can be suspended in the air and inhaled and may stimulate or exacerbate respiratory symptoms or allergies. Dusts and other indoor contaminants have been associated with increased rates of respiratory symptoms (4, 5). Our previous studies found that residents in the affected area reported higher rates of new-onset (i.e., began after 9/11) upper and lower respiratory symptoms compared to residents in a control area and that most symptoms were persistent 1 year after 9/11 (6, 7). This finding was consistent with a study of New York City (NYC) transit workers who still had increased rates of lower respiratory symptoms 7 months after 9/11 (8). Studies of firefighters involved in the response showed positive associations between intensity of exposure and the development and persistence of airway hyper-reactivity (9, 10). No studies have specifically addressed the post-9/11 home environment and its relationship to respiratory health among residents living near the WTC site.

This study investigated whether specific adverse conditions in the home after 9/11 were related to increased incidence and persistence of upper and lower respiratory symptoms among residents near the former WTC site. Using home condition as a surrogate for exposure, we focused on characteristics that related to the disaster: settled dusts, odors, and building damage. We examined whether conditions in the home were associated with increases in medical care utilization, lower respiratory diagnoses, or respiratory medication use after 9/11. Furthermore, we examined whether duration, frequency, or multiple sources of exposure were associated with a greater risk for symptoms in residents.

METHODS

Study Design and Population

As described in our previous papers (6, 7), this retrospective cohort study was conducted among residents in selected "affected" and "control" areas during the 8- to 16-month period after 9/11. The affected area included 49 buildings within approximately 1.5 km of the WTC site, and control area residents lived in five buildings located further than 9 km north of the site (a map of our study areas has been published) (7). Self-administered individual and household questionnaires were mailed to residences in both areas, and study packets were delivered to residences or left in buildings where postal service was problematic. As described previously (6, 7), outreach and publicity to improve the response rate were intensive. To estimate potential selection bias, one building

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in the affected area and two buildings in the control area were targeted for additional outreach activities by staff. We compared information collected from these target areas to the rest of the cohort to determine if the associations remained.

All residents of the study buildings were eligible to participate. To reduce exposure misclassification and impacts from relocation, we excluded individuals who (1) were born after 9/11; (2) did not live at their current residence on 9/11; (3) moved from their residence and returned after December 31, 2001; and (4) lived in the control area but worked in the affected area. We also excluded individuals who reported a post-9/11 diagnosis of unspecified cardiovascular disease because symptoms might mimic respiratory illness. To minimize the effect of a potential reporting bias between the study areas, we restricted most analyses to the affected area only.

Study Procedures and Data Collection

Study packets containing a household survey and individual surveys were mailed and hand-delivered to 9,168 residences in the affected area and to 962 in the control area. The individual survey requested information on each resident's respiratory symptoms, unplanned medical visits, medication use, physician diagnoses of respiratory illness, and respiratory comfort. For each symptom, we asked whether it occurred in the past 12 months, started or worsened after 9/11, and about its frequency and severity. Surveys for children under 12 years of age were completed by an adult.

The household survey contained questions about conditions in the home immediately after 9/11, including physical damage, dusts, odors, and their frequency and duration. Residents also reported cleaning, sampling, and inspection activities in the home after 9/11.

Outcome Definitions

We defined health outcomes based on reported upper and lower respiratory symptoms and the time period when symptoms occurred. Upper respiratory symptoms included eye, nose or throat irritation, nasal or sinus congestion, nosebleeds, and recurring headaches. Lower respiratory symptoms included wheeze, chest tightness, shortness of breath, and cough. To estimate incidence of new disease, we assessed lower respiratory symptoms among "previously healthy" residents (i.e., no diagnoses of asthma, chronic obstructive pulmonary disease [COPD], chronic bronchitis, or other lung disease before 9/11). We defined "any new-onset" upper or lower respiratory symptom as at least one symptom that began after 9/11. "Any persistent new-onset" symptom was at least one new-onset symptom that bothered the respondent with some frequency in the past 4 weeks, i.e., "some" or "a lot" (upper respiratory symptoms), and "2 to 6 days each week" or "every day" (lower respiratory symptoms). Self-reported respiratory comfort at different levels of exertion included shortness of breath (SOB) when walking "up a slight hill," "with other people of your own age on level ground," and "at your own pace on level ground."

To reduce bias from self-reported information, we assessed more objective indicators of respiratory health among previously healthy individuals. These measures included unplanned medical visits after 9/11 (i.e., to a doctor, emergency room [ER] or urgent care center, or an overnight hospital stay because of asthma, wheezing, cough, shortness of breath, chest tightness, or other breathing problem) and new diagnoses of lower respiratory illness (i.e., a diagnosis of asthma, COPD, chronic bronchitis, or other lung disease after 9/11). We also obtained information on the initiation, increased dose, and frequency/continued use of oral or inhaled medication for relief of breathing symptoms. We assessed results from a screening spirometry test (including forced expiratory volume in 1 second [FEV_1], forced vital capacity [FVC],FEV_1/FVC, and forced expiratory flow [FEF_{25-75}]) in a subset of participants to determine if there was any association between reported conditions after 9/11 and lung function.

Exposure Definitions

Home conditions variables were created based on responses from the household questionnaire. "Any physical damage" included the report of any of the following: windows broken, broken building pieces present, and structural, interior wall, or furnishings damage. We also asked residents if they experienced dust or odors in the home that they perceived to be a result of the disaster or clean-up. Quantitative questions addressed the duration ("none," "less than 1 month," "1 to 3 months," "3 to 6 months," and "still going on") and frequency ("once in a while," "at least once a week," "at least once a day," and "all the time") of these dusts or odors after 9/11. Finally, we asked if the home had been "professionally cleaned," if a resident had "cleaned myself," if ventilation ducts were cleaned, and if any inspections were completed (i.e., by a city or other agency or building management) after 9/11.

To assess dose-response relationships between levels of exposure and respiratory symptoms, longer durations or greater frequency of exposure to dust or odors in the home were compared to the reference groups (answering "less than once per month" or "once in a while," respectively). A "combined exposure index" was defined as follows: (1) residence exposure only (live below [i.e., South of] Canal Street); (2) both live and physically present below Canal Street on 9/11; (3) all three exposures (live, work, and present below Canal Street on 9/11). The reference group included control area residents who did not work below Canal Street and were not present there on 9/11 (i.e., none of the three exposures). Other combinations of the exposure, including residents who worked but did not live in the affected area, were too few to be analyzed or met exclusion criteria.

Statistical Methods

The responses to the household questionnaire were linked to the individual surveys containing the health data. To ensure independent reporting of symptoms by home conditions, we randomly selected one individual per household for analysis (SAS Institute Inc., Cary, NC) (11).

In the bivariate comparisons, χ^2 analysis was applied to test for significant differences. We computed Cumulative Incidence Ratios (CIRs) and used 95% confidence intervals (95% CI) to estimate the precision of risk estimates. Reference groups included residents who did not report the conditions. We applied categorical tests for trend to assess dose-response relationships. Multivariate analysis was performed with unconditional logistic regression to control for

potential confounders, including age, gender, race, education, and smoking. The highest level of education attained in the household was used as an indicator of socioeconomic status (SES) because education was reported more completely than other indicators, such as income. Due to correlations between some of the home conditions, we introduced each exposure variable into the regression model separately. Because the respiratory outcomes measured are not rare events, odds ratios from logistic regression probably overestimate true risk. For this reason, we report crude CIRs and used logistic regression only to determine if the associations in the bivariate analyses remained significant after controlling for confounders. Significance was indicated if the association remained and $p < 0.05$.

RESULTS

Response and Resident Mobility

As reported previously, the household response rates were 22.3 and 23.3% in the affected and control areas, respectively, and 43.8 and 40.3% in the target areas (6,7). There were 1,480 respondents eligible for analysis, including 1,317 residents of the affected area and 113 in the control area. Occupational status (i.e., working or not) and physical presence below Canal Street on 9/11 was well-reported (2.8% and 0.9% missing, respectively), although work location among those employed on 9/11 was not (19.1% missing). Because many affected area residents were evacuated and some remained away for an extended period of time, we assessed their mobility patterns. The majority of affected area residents reported being home (84.3%) and present below Canal Street (90.8%) on 9/11. Of those who reported moving and who left the area on 9/11 (75.8%), 49.8% had returned by September 30th, 72.9% by October 31st, and 89.1% by November 30th. There was no association between time spent at the residence and reported respiratory symptoms.

Home Conditions and Respiratory Disease

A total of 30.7% of affected area residents reported some physical damage to their home after 9/11, in contrast to the control area, where there were no reports of damage (Table 1). Affected area residents reported significantly higher rates of dust present (86.4%) compared to control subjects (23.3%), higher rates of odors (77.9% vs. 39.9%), and duration of dust or odors for 3 months or longer (60.7% vs. 9.1%). Dust or odors present "all the time" was reported in 62.8% of affected area and 14.1% of control area residents. Differences in cleaning activities after 9/11 were also apparent, including professional cleaning (31.5% vs. 6.8%), self-cleaning (74.3% vs. 43.6%), and ventilation duct cleaning (28.8% vs. 8.6%). Finally, affected area residents reported more air sampling (10.0% vs. 0.6%), debris or dust sampling (5.6% vs. 0%), and inspections completed (20.3% vs. 2.5%) than control area residents.

Table 2 describes the association between reported conditions, cleaning, or inspections completed and new-onset respiratory symptoms among affected area residents (crude CIRs reported). After adjusting for multiple confounders, all conditions remained significantly associated with reporting any new-onset upper respiratory symptom (CIRs 1.20–1.35). Nosebleeds and recurring headaches had the highest CIRs (data not shown). Dust present showed the strongest association with any upper respiratory symptom (CIR 1.35, 95% CI: 1.18,1.54). Home conditions were also associated with new-onset lower respiratory symptoms (CIRs 1.31–1.50), and symptoms were most strongly associated with duration of dust or odor in the home for 3 months or longer (CIR 1.50, 95% CI:1.33,1.68). SOB and chest tightness were most strongly associated with these conditions (data not shown). Associations found in the target areas were generally similar or stronger (data not shown). Self-reported SOB (i.e., respiratory comfort) at varying levels of exertion was also significantly associated with home conditions. Cleaning and inspection activities were not significantly related to respiratory symptoms (CIRs 0.98–1.10).

TABLE 1.—Home conditions, cleaning, sampling and inspection activities after 9/11, by area.

Home conditions, cleaning, sampling and inspection activities	Affected (n = 1317)		Control (n = 163)		
	n	%	n	%	p*
Any physical damage†	404	30.7	0	0.%	<0.0001
Dust present on surfaces or in air	1138	86.4	38	23.3	<0.0001
Odor present	1026	77.9	65	39.9	<0.0001
Duration of dust or odors‡					<0.0001
<1 month	143	12.6	81	81.8	
1–3 months	305	26.8	9	9.1	
3–6 months	493	43.3	5	5.1	
>6 months	198	17.4	4	4.0	
Frequency of dust or odors‡					<0.0001
Once in a while	131	11.8	35	49.3	
Once a week	97	8.7	9	12.7	
Once a day	185	16.7	17	23.9	
All the time	697	62.8	10	14.1	
Home professionally cleaned	415	31.5	11	6.8	<0.0001
Home self-cleaned	978	74.3	71	43.6	<0.0001
Ventilation ducts cleaned	379	28.8	14	8.6	<0.0001
Air samples collected	132	10.0	1	0.6	<0.0001
Debris/dust samples collected	74	5.6	0	0.0	0.0019
Inspected by agency or professional	267	20.3	4	2.5	<0.0001

†Includes reports of broken windows, broken building pieces present inside, structural damage, and damage to interior walls or furniture immediately after the World Trade Center disaster.

*p values from χ^2 or Fisher's exact test.

‡N not equal to total for affected area due to missing data and because some categories are not mutually exclusive.

Adverse home conditions after 9/11 were also associated with the persistence of respiratory symptoms (Table 3). The rate of persistent new-onset upper respiratory symptoms was significantly higher among residents reporting any adverse home condition (CIRs 1.23–1.71), and physical damage was the strongest risk factor for persistence (CIR 1.71, 95% CI: 1.52,1.92). Residents reporting any of these conditions also had higher rates of at least one persistent new-onset lower respiratory symptom (CIRs 1.38–1.61), which were most strongly associated with duration of dust or odors for 3 months or longer (CIR 1.61, 95% CI: 1.39,1.86). The persistent symptoms most strongly associated with any of the conditions were nosebleed, SOB, and chest tightness.

Other Measures of Outcomes

The relationship between home conditions after 9/11 and unplanned medical visits (n = 1,085) or new diagnoses of

TABLE 2.—New-onset upper and lower respiratory symptoms among affected area residents, by home conditions, cleaning, and inspection activities after 9/11.

Home conditions, cleaning and inspections	Any new-onset upper respiratory symptoms*		Any new-onset lower respiratory symptoms†	
	n (%)	CIR (95% CI)	*n* (%)	CIR (95% CI)
Any physical damage‡	343 (84.9%)	1.27 (1.19–1.34)§	225 (67.6%)	1.31 (1.18–1.45)§
Dust present on surfaces or in air	856 (75.2%)	1.35 (1.18–1.54)§	548 (58.9%)	1.41 (1.16–1.70)§
Odor present	778 (75.8%)	1.24 (1.12–1.37)§	503 (60.2%)	1.37 (1.18–1.59)§
Dust/odor duration ≥ 3 months	562 (81.3%)	1.29 (1.21–1.39)§	370 (66.9%)	1.50 (1.33–1.68)§
Dust/odor frequency at least once a day	674 (76.4%)	1.20 (1.10–1.31)§	445 (62.0%)	1.35 (1.17–1.56)§
Ventilation ducts cleaned	282 (74.4%)	1.04 (0.96–1.11)	181 (56.9%)	1.01 (0.90–1.13)
Self-cleaned	717 (73.3%)	1.04 (0.96–1.13)	462 (57.0%)	1.04 (0.92–1.17)
Professionally cleaned	307 (74.0%)	1.03 (0.96–1.10)	189 (55.6%)	0.98 (0.87–1.09)
Inspected by agency or professional	209 (78.3%)	1.10 (1.02–1.19)	129 (59.2%)	1.06 (0.94–1.20)

*Includes reports of eye, nose or throat irritation, nasal or sinus congestion, nosebleeds, and recurring headaches.
†Includes reports of wheezing, chest tightness, shortness of breath, and coughing among previously healthy (no physician diagnosis of asthma, chronic obstructive pulmonary disease, chronic bronchitis, or other lung disease before 9/11).
‡Includes reports of broken windows, broken building pieces present inside, structural damage, and damage to interior walls or furniture.
§The effect was still statistically significant ($p < 0.05$) after adjustment for age, race, education, gender, and smoking.
The reference group includes residents who did not report the specific home condition.

respiratory disease ($n = 245$) in previously healthy residents of the affected area is presented in Table 4. The incidence of unplanned medical visits was associated with physical damage (CIR 1.68, 95% CI: 1.26,2.24), dust present (CIR 1.85, 95% CI: 1.07,3.17), and duration of dust or odors for 3 months or longer (CIR 1.88, 95% CI: 1.37,2.57). Rates of new lower respiratory disease diagnoses were significantly higher among individuals reporting a frequency of dust or odors in the home of at least once a day (CIR 1.85, 95% CI: 1.03,3.34).

Adverse home conditions were also associated with respiratory medication use (Table 5). Physical damage was significantly associated with medication use that began after 9/11 (CIR 1.47, 95% CI: 1.12,1.94), increased after 9/11 (CIR 2.10, 95% CI 1.08,4.10), and with use in the past 4 weeks (CIR 1.72, 95% CI: 1.28,2.32). Duration of dust and odors for 3 months or longer was associated with medication use that began after 9/11 (CIR 1.39, 95% CI: 1.04,1.85), but not with increased or recent use. There were no significant differences in lung function measures between residents reporting adverse home conditions and those who did not (data not shown).

Dose-Response

Since positive associations were found between reported home conditions after 9/11 and respiratory symptoms, we assessed potential dose-response relationships. As demonstrated in Figure 1, a dose-response curve was found for reported duration of dust or odors and all four disease indicators, including new-onset and persistent upper and lower respiratory symptoms. Equivalently, as the reported length of time of dust or odors in the home increased, so did the risk for respiratory symptoms. Similar trends were observed for the association between respiratory symptoms and an increasing frequency of dust or odors but were not significant after adjusting for multiple confounders (data not shown).

Using the combined exposure index, we assessed the association between exposure proxies and respiratory symptoms (Table 6). Residence in the affected area was an important risk factor, and the risk for respiratory symptoms increased

TABLE 3.—Persistent new-onset upper and lower respiratory symptoms among residents of the affected area, by home conditions, cleaning, and inspection activities after 9/11.

Home conditions, cleaning and inspections	Any persistent new-onset upper respiratory symptoms*		Any persistent new-onset lower respiratory symptoms†	
	n (%)	CIR (95% CI)	*n* (%)	CIR (95% CI)
Any physical damage‡	243 (60.2%)	1.71 (1.52–1.92)§	192 (57.7%)	1.44 (1.27–1.64)§
Dust present on surfaces or in air	512 (45.0%)	1.52 (1.20–1.92)§	440 (47.3%)	1.38 (1.10–1.74)§
Odor present	471 (45.9%)	1.42 (1.19–1.70)§	408 (48.9%)	1.44 (1.19–1.73)§
Dust/odor duration ≥3 months	350 (50.7%)	1.51 (1.32–1.73)§	306 (55.3%)	1.61 (1.39–1.86)§
Dust/odor frequency at least once a day	401 (45.6%)	1.23 (1.05–1.46)§	364 (50.7%)	1.45 (1.21–1.74)§
Ventilation ducts cleaned	154 (40.6%)	0.93 (0.81–1.07)	162 (50.9%)	1.18 (1.03–1.35)
Self-cleaned	423 (43.3%)	1.03 (0.89–1.19)	378 (46.7%)	1.12 (0.95–1.31)
Professionally cleaned	171 (41.2%)	0.94 (0.82–1.08)	152 (44.7%)	0.98 (0.85–1.13)
Inspected by agency or professional	122 (45.7%)	1.08 (0.93–1.26)	108 (49.5%)	1.12 (0.96–1.30)

*Includes reports of eye, nose or throat irritation, nasal or sinus congestion, nosebleeds, and recurring headaches.
†Includes reports of wheezing, chest tightness, shortness of breath, and coughing among previously healthy (no physician diagnosis of asthma, chronic obstructive pulmonary disease, chronic bronchitis, or other lung disease before 9/11).
‡Includes reports of broken windows, broken building pieces present inside, structural damage, and damage to interior walls or furniture.
§The effect was still statistically significant ($p < 0.05$) after adjustment for age, race, education, gender, and smoking.
The reference group includes residents who did not report the specific home condition.

TABLE 4.—Unplanned medical visits* and new diagnoses of lower respiratory disease†, among previously healthy‡ residents of the affected area, by home conditions after 9/11.

Home conditions	Unplanned medical visit(s) for respiratory problems in past 12 months		New (since 9/11) diagnosis of lower respiratory disease	
	n (%)	CIR (95% CI)	*n* (%)	CIR (95% CI)
Any physical damage§	67 (20.1)	1.68 (1.26–2.24)**	36 (32.1)	0.97 (0.68–1.40)
Dust present on surfaces or in air	144 (15.5)	1.85 (1.07–3.17)**	72 (33.3)	1.21 (0.65–2.24)
Odor present	127 (15.2)	1.27 (0.87–1.83)	66 (36.9)	1.74 (1.05–2.87)
Dust/odor duration ≥3 months	105 (19.0)	1.88 (1.37–2.57)**	53 (37.3)	1.38 (0.92–2.04)
Dust/odor frequency at least once a day	114 (15.9)	1.25 (0.87–1.79)	61 (36.3)	1.85 (1.03–3.34)**

*Includes unplanned visits to a doctor, an emergency room or urgent care center, or overnight hospital stays because of asthma, wheezing, cough, shortness of breath, chest tightness, or other breathing problem.

†Includes asthma, chronic obstructive pulmonary disease, chronic bronchitis, or other lung disease.

‡No physician diagnosis of asthma, chronic obstructive pulmonary disease, chronic bronchitis, or other lung disease before 9/11.

§Includes reports of broken windows, broken building pieces present inside, structural damage, and damage to interior walls or furniture.

**The effect was still statistically significant ($p < 0.05$) after adjustment for age, race, education, gender, and smoking.

The reference group includes residents who did not report the specific home condition.

with each additional exposure reported. Residents reporting all three exposure proxies had the highest risk of respiratory symptoms (CIRs 2.98–5.14).

DISCUSSION

Home Environment and Respiratory Disease

The 9/11 attacks on the WTC generated dusts that settled into buildings nearby. Over one third of the homes in the affected area reported physical damage, and rates of dust and odors in the home after 9/11 were three to four times higher among affected area residents compared to control subjects. Over 40% of residents in the affected area reported dust and odors remaining for 3 to 6 months after 9/11. Rates of any new-onset upper respiratory symptom were 20% to 35% higher among affected area residents reporting dust and odors exposure, and rates of new lower symptoms were 31% to 50% higher compared to those not reporting such exposures. Studies showing that dust from the WTC contained a mix of particulate matter and potential respiratory irritants, including synthetic vitreous fibers, heavy metals, and other inorganic substances(12,13), provide biologic plausibility. These findings are also consistent with increased rates of new-onset and persistent respiratory symptoms in affected area residents (6, 7) and increased respiratory health problems in workers involved in the recovery and clean-up at the WTC site (9, 14).

TABLE 5.—Respiratory medication use* among previously healthy† residents of the affected area, by home conditions after 9/11.

Home conditions	Med use started after 9/11 CIR (95% CI)	Med use increased after 9/11 CIR (95% CI)	Med use in past 4 weeks CIR (95% CI)
Any physical damage‡	1.47 (1.12–1.94)§	2.10 (1.08–4.10)§	1.72 (1.28–2.32)§
Dust present on surfaces/air	1.41 (0.89–2.22)	5.28 (0.73–38.3)	2.04 (1.13–3.68)
Odor present	1.18 (0.83–1.67)	0.91 (0.42–2.00)	1.30 (0.88–1.92)
Dust/odor duration ≥3 months	1.39 (1.04–1.85)§	2.25 (1.05–4.82)	1.64 (1.18–2.27)
Dust/odor frequency at least once a day	1.46 (1.01–2.10)	2.33 (0.82–6.61)	1.47 (0.98–2.20)

*Includes medicine, pills, pump, or inhaler for relief of breathing symptoms.

†No physician diagnosis of asthma, chronic obstructive pulmonary disease, chronic bronchitis, or other lung disease before 9/11.

‡Includes reports of broken windows, broken building pieces present inside, structural damage, and damage to interior walls or furniture.

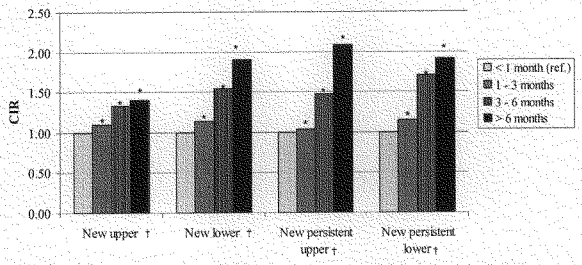
§The effect was still statistically significant ($p < 0.05$) after adjustment for age, race, education, gender, and smoking.

**The reference group includes residents who did not report the specific home condition.

In addition to new-onset symptoms, we found a 23% to 71% elevation in persistent upper respiratory symptoms and a 38% to 61% elevation in persistent lower symptoms among residents reporting adverse home conditions related to 9/11. Residence in the affected area may reflect a potential for greater dust and odor exposures, as many residents reported dust or odor lasting for several months. Building condition and its relationship to persistent respiratory symptoms is well documented in working populations (15, 16) where identified sources of exposure include dust and mold, chemicals from cleaning products, and building materials such as cement and asbestos. Similar irritants were present in the dust that resulted from the attacks on the WTC (2) and may have contributed to symptoms that continued to bother residents with considerable frequency nearly a year after 9/11. This finding is supported by the persistence of respiratory symptoms in firefighters 6 months after 9/11 (9).

Because self-reported symptoms may be biased, we investigated whether more objective indicators of respiratory health would yield similar associations with home conditions. We identified a significantly higher rate of new, increased, and recent respiratory medication use for relief of symptoms among residents reporting damage to the home. Unplanned medical visits were elevated by 88% with respect to some conditions. This is consistent with findings from Szema et al. (17), showing that clinic visits and medication use for asthma increased in a pediatric population of asthmatics after 9/11. New lower respiratory diagnoses were associated with reported frequency of dust or odor in the home, indicating a consistent relationship between respiratory health and persisting exposure.

We also observed a positive dose-response between surrogates for exposure and both new and persistent respiratory symptoms. As the reported duration or frequency of dust or odors in the home increased, so did the rate of respiratory symptoms, indicating a relationship between symptoms and exposure intensity. The combined exposure index analyses also indicated a positive trend; residents reporting several potential exposure sources had as much as twice the rate of new and persistent symptoms as those reporting a single source. Despite the absence of objective exposure measurements,



[1]Includes reports of eye, nose or throat irritation, nasal or sinus congestion, nosebleeds, and recurring headaches.
[2]Includes reports of wheezing, chest tightness, shortness of breath, and coughing among previously healthy (no physician diagnosis of asthma, chronic obstructive pulmonary disease, chronic bronchitis, or other lung disease before 9/11).
*The effect was still statistically significant ($p < 0.05$) after adjustment for age, race, education, gender, and smoking.
†Trend test (using categorical variable) was statistically significant ($p < 0.05$).

FIGURE 1.—New-onset and persistent new-onset upper[1] and lower[2] symptoms, by duration of dust or odors in home.

these findings suggest that residents who experienced multiple exposures may have had greater risk of respiratory symptoms than those with single or no exposures.

We did not find cleaning activities to be significantly associated with respiratory symptoms. One explanation for our results might be that the questions related to cleaning were not specific enough to differentiate between protective (e.g., removal of an irritant) and harmful (e.g., disturbing settled dust) cleaning activity. More detailed information on use of cleaning products, timing of dust removal, methods (wet or dry dust removal), or use of dust masks while cleaning might prove useful in identifying potential hazards, as observed in working populations (15, 18).

Strengths and Limitations

This was a large community survey and is one of the few studies of residents living near the WTC site. Despite a lack of baseline health or exposure data, we undertook several strategies to minimize bias in both study design and in the data analysis, as partially described previously (19). The low household response rate, although similar between the areas, raises concerns of selection bias. We estimated the impact of this bias by comparing the results from the entire affected area to the target areas, where the response rate was nearly double that of the original survey. In these areas, similar and stronger positive associations were found between home conditions and respiratory symptoms. In addition, we encouraged people with and without respiratory symptoms to participate.

Reporting bias was addressed in several ways. Many affected area residents were concerned about health risks related to the disaster and may have been more likely than control subjects to report both symptoms and poor conditions in the home. To minimize the impact of this bias, we limited our analyses to the affected area. We also randomly selected one individual survey per household to reduce the effect of potential intra-household correlation between respiratory

TABLE 6.—New-onset and persistent new-onset upper and lower respiratory symptoms among affected area residents, by combined exposure index (residence, work location, and presence below Canal Street on 9/11) ($n = 1,232$)*.

	Any new-onset		Any persistent new-onset	
Combined exposure index	*n* (%)	CIR (95% CI)	*n* (%)	CIR (95% CI)
Upper respiratory symptoms[1]				
Resident + work + below Canal St.	174 (78.0)	2.98 (2.15–4.13)[§]	98 (44.0)	3.62 (2.13–6.15)[§]
Resident + no work + below Canal St.	496 (72.1)	2.76 (2.00–3.80)[§]	308 (44.8)	3.68 (2.20–6.17)[§]
Resident + no work + not below Canal St.	46 (66.7)	2.55 (1.78–3.65)[§]	21 (30.4)	2.51 (1.34–4.67)[§]
Not resident + no work + not below Canal St.	28 (26.2)	1.00 (reference)	13 (12.2)	1.00 (reference)
Lower respiratory symptoms[1]				
Resident + work + below Canal St.	115 (63.5)	4.02 (2.50–6.49)[§]	98 (54.1)	5.14 (2.82–9.39)[§]
Resident + no work + below Canal St.	320 (57.0)	3.61 (2.26–5.78)[§]	241 (43.0)	4.08 (2.25–7.39)[§]
Resident + no work + not below Canal St.	26 (44.1)	2.79 (1.61–4.82)[§]	23 (39.0)	3.70 (1.90–7.22)[§]
Not resident + no work + not below Canal St.	15 (15.8)	1.00 (reference)	10 (10.5)	1.00 (reference)

*Included only participants 18 years of age or older.
[1]Includes reports of eye, nose or throat irritation, nasal or sinus congestion, nosebleeds, and recurring headaches.
[2]Includes reports of wheezing, chest tightness, shortness of breath, and coughing among previously healthy (no physician diagnosis of chronic obstructive pulmonary disease, chronic bronchitis, or other lung disease before 9/11).
[§]The effect was still statistically significant ($p < 0.05$) after adjustment for age, race, education, gender, and smoking.
**Trend test (using categorical variable) was statistically significant ($p < 0.05$).

symptoms and a shared home environment. The symptom questions were separate from the household questionnaire and were never open-ended. We specifically asked about the home conditions "immediately after the World Trade Center disaster," and asked symptom frequency, severity, and exacerbation questions, which are less prone to bias because of their specificity. We removed individuals who responded affirmatively to every question. In addition, we assessed lower respiratory symptoms among previously healthy residents to minimize misclassification of disease status. To estimate reporting bias, we compared the proportion of unplanned medical visits among participants with specific respiratory symptoms and found them to be similar among those reporting or not reporting exposures. We found no correlation between building proximity to the site and reporting of symptom frequency and found no differences in variables not likely related to 9/11 (i.e., physical disabilities) between those reporting and not reporting adverse home conditions, suggesting there were no significant reporting biases.

Assessing exposures related to the WTC disaster was a challenge for this study. As reported previously (6, 7), the air monitoring site near the WTC was destroyed on 9/11. Available ambient air monitoring data from government and local agencies was limited and could not provide adequate information from monitors closest to the study buildings. Therefore, we could not use monitoring or indoor sampling data to objectively represent exposure in the home environment. Baseline health information and objective health measures were likewise unavailable. Lung function testing conducted 1 year after 9/11 would not be a sensitive indicator of reactive airway disease related to the event. For these reasons, we relied on self-reported information for both exposure and health outcome data. To reduce exposure misclassification, we excluded individuals who were not in the area immediately afterward or who returned to the area after several months. Although our combined exposure index can only serve as a surrogate for exposure, the results consistently suggest that the risk of respiratory symptoms was greater for residents reporting multiple sources of exposure. These analyses are also probably limited by the nature of the questions asked; e.g., work location rather than if they actually were able to go to work after 9/11. In addition, reporting of work location was poor and some residents were not employed, so sample sizes were small. Because of these limitations, our crude measure does not capture activities that may have altered their exposure.

Finally, we do not know what role psychological stress may have played in respiratory symptoms. Stress is a suspected contributor to respiratory illness, including asthma (20, 21), and has been attributed to an increase in cardiac events and posttraumatic stress disorder after 9/11 (22, 23). We collected information about stress in a follow-up survey and will report on the relationship between stress and respiratory health in this cohort at a later date.

Conclusion

This study suggests that adverse conditions in the home immediately after 9/11, including physical damage and the presence of dust or odors, were related to new-onset upper and lower respiratory symptoms in residents living near the site. More importantly, these conditions were also associated with symptom persistence in residents nearly 1 year later. Additionally, the dose-response observed suggests a relationship between exposure intensity and symptom risk. We also suggest that residents reporting multiple sources of potential exposure had a greater risk for new and persistent respiratory symptoms compared with those reporting a single source. We cannot rule out the potential contribution of reporting and selection biases on our results, but several measures were used to minimize their impact, and the findings are both plausible and consistent with other publications.

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Senator CLINTON. Mr. Stephenson, I will soon submit a request to GAO to look into this issue of EPA preparedness more broadly. Because my concern is intensified by the White House's own findings about EPA's failures in the wake of Katrina. I don't know how any of us can sit here and be satisfied that if something disastrous happened tomorrow, we would not once again be facing confusion, misstatements, failures, that are going to cost people their lives and/or their health.

So we will be submitting additional questions to each of the witnesses. I look forward to your cooperation. Because for me, this is about how do we know we are doing better. That is a duty we owe to all of our citizens, and I think it is a duty we have not met.

I would also submit to the record the decision by Judge Batts in the case that I referenced in New York that found that Administrator Whitman certainly knew better than the statements that she made. On the contrary, the judge found, after looking at extensive evidence, that Governor Whitman's statements were deliberate and misleading, and in fact, they shock the conscience. No argument can be made that Whitman could not have understood from existing law that her conduct was unlawful. That is not me, that is not Inspector General, that is not a political person, that is a Federal judge.

So we have to do much better. We owe it to the people that look to their Government to protect them and I hope that we will be able to come up with some lessons learned that will plug holes in legislation and regulation.

Senator Lautenberg, do you have any other questions for this panel?

Senator LAUTENBERG. Just if I might, and I thank the panel for their continuing to be with us. I want to ask Ms. Bodine about whether or not EPA today is prepared to make clear and consistent statements about the potential short-term and long-term risks posed by toxics and dust during an incident that would produce that kind of an after effect. Does EPA have a communications program in place to make the kind of, that kind of statement on an issue of environmental protection health, really alerting the people who could be affected to the risks that are posed by the consequence of this type?

Ms. BODINE. Senator, I believe that we do. I would like to point out the review of EPA's communications during Katrina by our EPA Inspector General. There was a May 2, 2006 report, the title is "EPA Provided Quality and Timely Information on Hurricane Katrina, Hazardous Materials Releases and Debris Management." The Agency did a fabulous job during Katrina in collecting data and making that data available to the public, so that they could make decisions about their own safety.

Senator LAUTENBERG. So you feel that we are in better shape today as a result of the post-Katrina data flow than we were at the time of 9/11?

Ms. BODINE. Yes. As has been described, at the time the World Trade Center event was unprecedented in terms of the amount of environmental information we were collecting, analyzing, making available. Katrina was even greater in magnitude. Yet our Agency employees have developed ways of getting, creating portals, cre-

ating data bases, getting information out far more quickly than we were able to during the World Trade Center response. So yes, we are in a better position to communicate.

Senator LAUTENBERG. Thanks. Mr. Connaughton, we know that CEQ was involved in editing EPA press releases to minimize the concern that a more candid assessment of health risks from toxic dust might have done. Why does the White House, why do they seem so focused on preventing the raw truth to the public? Why did you feel it necessary in CEQ to review press statements and change things that were in there that might have been of more concern but more candid?

Mr. CONNAUGHTON. We don't.

Senator LAUTENBERG. Well, you did then, according to the reports that we see, that there were modifications of words and statements that you were the final decisionmaker in terms of what was allowable, what could go to the press. There are lots of things that stress the fact that no releases were to go out without the approval of the Administration, and that would have been you.

Mr. CONNAUGHTON. I disagree with your conclusion, Senator.

Senator LAUTENBERG. All right. Well, we are going to examine the record closely and maybe sharpen your recollection. Thanks very much.

Senator CLINTON. Thank you very much, Senator Lautenberg. Thanks to the panel. I appreciate all of you being here. We will follow up with some specific requests that we hope will get your prompt attention. Thank you all.

Our next panel, as they are coming forward, includes two people with direct experience in New York with respect to the issues we are examining. David Newman is from the New York Committee for Occupational Safety and Health. Nina Lavin is a resident of the World Trade Center area. I thank them both very much for being part of this investigation and oversight hearing.

Nina, we are going to start with you. I thank you for taking your time to be with us. I look forward to your testimony.

STATEMENT OF NINA LAVIN, RESIDENT

Ms. LAVIN. Chairman Clinton, Senator Lautenberg, thank you for inviting me here to testify today.

My name is Nina Lavin and I have resided for the past 5 years at 105 Duane Street, which is situated seven blocks directly north of the World Trade Center. I was home on September 11th and witnessed the collapse of both Towers. Stunned, I evacuated that afternoon.

The next day I returned home to rescue my pets and collect a few belongings. Ten days later, when I returned home to stay, a fine, glittery dust had settled on virtually every surface and belonging throughout my apartment.

The fabric wallpaper in our hallways had grayed throughout the building. I also noticed dust accumulating around the door frame of the entrance to my apartment, which looked completely different from the standard, grimy dust I was familiar with from housecleaning.

Christie Todd Whitman's statement on September 18, 2001, that "the air is safe to breathe" set dangerous chaos in motion in lower

Manhattan. For 8 months, EPA insisted they had no responsibility for indoor cleanup. Instead, city agencies were left to take the lead. But city agencies weren't set up to handle the fall-out of what was in truth a Superfund site. They also had longstanding, inbred relationships with real estate interests.

The City Department of Environmental Protection allowed landlords to self-certify that their buildings were safe and looked the other way when landlords mis-used testing methods to obtain artificially low results, or failed to test at all. When residents sought guidance on how to clean up from EPA, they were directed to the City Department of Health Web site, where they were instructed to clean up World Trade Center dust themselves, by wet wiping. That is what I did.

Later, to protect myself as best I could, I also purchased a HEPA vacuum and ran a HEPA air filtration device. For months, noxious fumes from the site entered our homes, so that even inside my apartment, the fumes were so intense, it was as though I had stuck my head inside an oil drum full of burning industrial materials. Consequently, I experienced headaches, burning in my eyes, nose and throat, and developed a painful, hacking cough.

By July 2002, I was diagnosed with chronic bronchitis by a pulmonologist at NYU Medical Center and was moved out of my apartment for almost 10 months with funding from FEMA. Currently, I am receiving treatment at the Bellevue World Trade Center Environmental Health Clinic.

Today, 5½ years after the event, like so many other residents, I have sinusitis and esophagitis, which are conditions of chronic inflammation, and acid reflux, all of which are now recognized as being linked to World Trade Center exposures. These symptoms are not diminishing, and while they may not be life-threatening, no one knows what is in store down the road.

The big questions remain: What were we exposed to, for how long, and are we still being exposed? Unfortunately, we have no answers to any of these questions, in large part because the EPA refused to take its responsibility for assessing and cleaning up indoor contamination.

In 2002, since EPA wasn't doing any indoor testing at that point to protect residents, I took matters into my own hands. I privately hired a certified industrial hygienist to conducted asbestos testing inside my apartment. My building was constructed in the early 1990s and therefore, can be presumed to have been constructed free of asbestos-containing materials. Testing using the microvac method revealed highly elevated concentrations of asbestos in dust clumps formed in the front doorway of my apartment, which opens into an interior hallway of the building. Significant but lesser levels were found deep inside the two HVAC units.

Because of these findings, I chose to participate in the voluntary cleanup program EPA offered in 2002. I am not a scientist, but common sense tells me this program was woefully inadequate. First, the cleanup was voluntary and many of my neighbors took this as a sign that participation was unnecessary and a waste of time. Second, cleanup of building common areas, hallways, lobbies, et cetera, was entirely left to the discretion of building owners, posing a serious recontamination scenario.

Third, cleaning of HVAC systems was flawed and based exclusively upon an unscientific evaluation of dust color. Very few HVACs were ever cleaned.

Finally, the cleanups were performed by seemingly untrained workers, using poor equipment. In my apartment, the cleaning crew used cheap, dark-colored, non-absorbent, synthetic bathroom towels, which moved the wet dirt around without picking it up. Luckily, though, on the advice of cleanup professionals I had spoken with, I had a backup plan: Huggie wipes. I gave these to the cleaners and once they began using them, the dust and dirt started coming off, and coming off—the same surfaces that had previously been cleaned using the cheap, synthetic towels.

Six months after the EPA cleanup of my apartment, I had testing done again for asbestos, lead and numerous heavy metal analytes. While asbestos was found in a low level in one window well, the lead was found to be elevated in both windows and in one of them, just below the cutoff point for which immediate lead remediation would have been required.

To quote the written report on the finding of heavy metals, "The heavy metal sampling revealed the presence of various heavy metals found in the apartment. Published standards for acceptable levels of heavy metals on surfaces within the space do not exist. Standards have not been developed because the presence of most of these contaminants is neither a normal nor an acceptable condition in commercial or residential space."

It is now 2007. Is the air safe to breathe? No one knows. Lessons learned by EPA? I have learned the latest EPA cleanup plan is as poor as the last.

Thank you for allowing me to speak today.

[The prepared statement of Ms. Lavin follows:]

STATEMENT OF NINA LAVIN, RESIDENT

Chairman Clinton, Ranking Member Craig, and members of the Committee:

My name is Nina Lavin. I am a resident of lower Manhattan who experienced first hand the devastation that the collapse of the World Trade Center wreaked upon my neighborhood. I would like to tell you my story with the understanding that it is a stand-in for thousands of others like it. I also want you to know of our serious lingering concerns that toxic contaminants still remain in our homes.

I do not always remember the precise dates of events anymore and the story of what happened downtown is hard to summarize in one statement. But what remains crystal clear is that Christie Todd Whitman's words on September 18, 2001, assuring New York and the nation that "the good news is the air is safe to breathe," was reckless and false and set dangerous chaos in motion for all of us living downtown.

Her statement is directly at odds with what she, her agency, and the administration already knew: that out of 143 bulk samples collected out of doors in the days immediately following 9/11, 76% of the tests contained asbestos and 34% of those tests met the regulatory definition of asbestos containing materials, or ACMs as they are known.

And EPA would also have understood that while outdoor toxins may dissipate over time with wind, rain and sunlight, those that make their way indoors can build up and remain in high concentrations, settling on surfaces only to be stirred up over and over, often invisibly, as people go about their daily lives. In addition, and importantly, those results were only for asbestos, the tip of the iceberg in terms of what we were exposed to down here.

Once the EPA shirked its responsibility to protect us at the federal level, there was an immediate trickle down effect to our local EPA Region 2, and to the City Department of Environmental Protection (DEP) and the City Department of Health (DOH). As a resident, I saw the way deception starting at the federal level, where

policy-making begins, then permeated local policy making in all three of these agencies, putting the health and lives of so many people at risk.

This trickle down was demonstrated over and over in testimony given during the February 23, 2002 hearing convened by the EPA Ombudsman's office, an independent internal watchdog that no longer exists. Indeed, the only two EPA employees I witnessed trying to protect our health here in New York were Ombudsman Robert Martin and his Chief Investigator Hugh Kaufman, who were stripped of their jobs while trying to expose the failures of the EPA after 9/11.

Without EPA acting as the lead agency, it was left to the city agencies to take the lead; but the city agencies weren't set up to handle the fall-out of what was in truth a super fund site. And those agencies have long standing, inbred relationships with real-estate interests so that they looked the other way and sanctioned use of passive air testing methods for indoor use, guaranteed to produce artificially low estimates of asbestos in indoor environments.

I was asked to tell you about ways in which the collapse of the Towers impacted my residence, my health, and to describe the EPA cleanup I received in 2003. Here is my history.

RESIDENTIAL IMPACT

I have resided for the past 12 years at 105 Duane St, which is located in Tribeca and situated seven blocks directly north of the WTC site. I was home on September 11 and witnessed the collapse of both towers. I closed the windows and HVAC flu vents before the buildings fell; (little did I know that they even would). I closed them in an effort to keep the fumes from burning fuel, and the glass which visibly sparkled in the sky, from entering my apartment. After the collapse I waited a couple of hours to make sure my two cats would be all right—the sky outside had turned the most apocalyptic color I have ever seen, and I had the fear I might return home to find them dead, like canaries in a mine. Ultimately, having just witnessed the collapse of an urban Mt. Fuji before my very eyes, I was numb with shock, and fled. The next day I returned, making my way through pitch black hallways with a flashlight to rescue my pets, and collected a few belongings. When I returned home ten days later, a fine, glittery dust had settled on virtually every surface and belonging throughout my apartment. The wallpaper in the building, made of some type of synthetic fabric, was grayed throughout the building. I also noticed a dust accumulating around the doorframe to the entranceway of my apartment which looked completely different from the standard grimy dust I was familiar with periodically wiping away when house cleaning. Adding to the impact of the collapse, our recently hired building superintendent, the father of two small children who no doubt had panicked himself on 9/11, had failed to shut down the building's centralized HVAC system, which continued to run until mid afternoon, when the entire neighborhood finally lost power.

There were also noxious fumes we all inhaled indoors and out for months. Although I live seven blocks north of the site, the fumes were so intense indoors it was sometimes almost as though I had stuck my head inside an oil drum full of burning industrial materials, office furniture and whatever else was incinerating on that pyre. I knew several people who were having nosebleeds and I experienced headaches, burning in my eyes, nose, throat, and developed a painful hacking cough.

I did the best I could to clean my apartment using whatever information I could find at that time; I used wet wipe cleaning methods to avoid stirring up the dust, I purchased a HEPA vacuum cleaner, and ran a HEPA air filtration device.

In December 2001, a resident on the 10th floor of my building hired Ed Olmsted, a Certified Industrial Hygienist, to test the public air supply grille on that floor. Olmsted conducted a microvac test that revealed 550,000 structures of asbestos per cubic centimeter, a high finding, especially for a building built free of ACM's.

Meanwhile, the building owner, Related Management, hired Air Tech to do a standard air shaft cleaning. Not only was Air Tech not certified to do asbestos remediation, they had never cleaned a building this size.

Since stirring up the dust in the air supply duct would send the dust straight into hallways throughout the building, Joel Kupferman, an environmental attorney to whom one of my neighbors had turned for help, contacted the DEP and DOH and notified them of the asbestos finding. He also contacted Related Management and insisted that representatives of the two agencies be admitted to do an inspection.

Along with another tenant, I attended the walk-through of several hallways, pointing out the dust on the HVAC grille to the DEP and DOH inspectors and to Related Management's Head of Engineering Peter Hoyle. It should be noted that Related Management is one of the wealthiest and most politically powerful real estate entities in New York. In the meeting, Hoyle asked Carlstein Lutchmedial, a senior

member of DEP's asbestos enforcement team, "Is it not so that Related Management has done everything which it is legally mandated to do?" Lutchmedial replied, "Yes, Related Management has done everything which is legally mandated."

Both agencies then permitted the cleanup to go forward in a building full of residents coming and going, who were largely unaware that this was even an issue.

By July of 2002 I finally had developed such a serious cough I felt as though my throat would fly out of my mouth. Since EPA wasn't doing any indoor testing to protect residents, the air being safe to breathe, I realized it was time for me to do what should have been the government's job. I privately hired Certified Industrial Hygienist Ed Olmsted, who had tested the 10th floor grille back in December and who headed air monitoring oversight at the Fresh Kills 9/11 debris removal site in Staten Island, to conduct asbestos testing inside my apartment.

I reside in a one bedroom apartment in which the windows and two individual HVAC units, located in my living room and bedroom, directly face the World Trade Center site. My building was constructed in the early 1990's and therefore can be presumed to have been constructed free of asbestos containing materials and likewise free of corrosive lead containing paint and pipes. Due to the highly cost prohibitive nature of such testing (a written report, three asbestos tests plus one blank for control cost $1,700.00) I tested for asbestos alone.

Testing using the microvac method revealed highly elevated concentrations of asbestos in dust clumps formed in the front doorway of my apartment which opens into an interior hallway of the building, and lesser levels deep inside the two HVAC units. The interior doorway finding is particularly significant because due to the design of airflow in the building, it definitively implicates the central air intake shaft as being the source of the contamination. Presumably it therefore entered other apartments as well.

I took my test report to FEMA in late July, believing they would move me with these results in hand. But again, because "the air was safe to breathe," and because the building was structurally sound, FEMA would not move me. FEMA was not willing to move anyone without a doctor's note, which meant people had to wait until they became sufficiently sick to obtain a doctor's note before being moved. What I needed was not proof of exposure, it was a doctor's note, and as I was becoming sick, that was my next step.

HEALTH IMPACT

In July of 2002 I was diagnosed with chronic bronchitis by a pulmonologist at NYU Medical Center, a diagnosis corroborated by my primary care physician. Doctor's letter in hand, I was finally moved out of my apartment for almost ten months with funding from FEMA. I should add that even with this letter, it took the intervention of Congressman Nadler's office to get FEMA to comply in a timely manner and relocate me. (I wonder how many others whose health was impacted didn't know they could turn to their elected officials for help.) By the time I was moved out I had an uncontrollable racking, painful cough and my sinuses and esophagus were chronically inflamed. I had also developed acid reflux.

Currently I am receiving treatment at the Bellevue WTC Clinic from its medical director Dr. Joan Riebman. Initially I had hoped my symptoms might begin to subside, but unfortunately, five and a half years after the event, I like so many others continue to have a lingering group of symptoms, now recognized by the medical community as being linked to WTC exposure. My particular symptoms are sinusitis, esophagitis and acid reflux. My voice has changed slightly and I frequently become horse at night; I do not have asthma, but subtle changes in my small airways have shown up on x-rays. I am sorry to say I am not seeing diminishment of symptoms.

These health problems are not life threatening at the moment but no one knows what's in store down the road. We certainly know of the exposure related deaths of first responders and recovery workers. The big questions remain: what were we exposed to, for how long, and does the exposure continue?

EPA CLEANUP

Months after the collapse, in May of 2002, EPA finally announced they were offering a voluntary residential cleanup program. Comprehensive testing and remediation of indoor residences and office spaces should have been mandatory to protect the health of citizens and to prevent recontamination of cleaned spaces by nearby un-remediated spaces.

Voluntary enrollment implied there was no problem; I spoke with neighbors who trusted the government assurances and who read "voluntary" to mean having their homes cleaned was unnecessary and a waste of time. To also quote from one of the outreach fliers created by EPA for public distribution: "While scientific data does not

point to any significant long-term health risks, people should not have to live with uncertainty about the future." http://www.epa.gov/wtc/flyers/onepagead.pdf This quote implies there is no problem with air quality because if there were, there would be long-term health risks.

Another voluntary choice thrust upon residents by EPA was between two different options, with no explanation given for choosing one over the other. They were:

• "To have your residence professionally cleaned and then tested for asbestos in air."

• "To have your residence tested for asbestos in air without professional cleaning. (If—and only if—asbestos is found during testing, you many then ask that your residence be professionally cleaned.") Again, the air testing methods used for this determination were of questionable use in revealing presence of asbestos, and were not adequate for uncovering other kinds of contamination.

While individuals could elect to have their homes cleaned, cleanup of building common areas, hallways, lobbies, laundry rooms, etc. was entirely at the discretion of building owners. Many landlords did not want to participate in the EPA cleanup since this could be seen as suggesting that their buildings were contaminated, potentially setting off tenants' fears and even flight, raising the specter of litigation or possible devaluation of their property.

There was the further, key issue of residual contamination in central HVAC systems. EPA and DEP avoided cleaning those by devising a visual inspection method. Sometime in early 2003 I witnessed the inspection in my building. A duct cleaning contractor climbed up a ladder and peered into several of the building's 10" x 10" hallway vent openings, using a home owner's flashlight. The evaluation was based on the color of the dust. Looking inside the dark air shaft, my contractor described our dust as, "kind of brownish grey. . . ." Later I was extremely dismayed to learn that this description was being used by EPA to claim that our HVAC was free of WTC dust.

Not content to accept this conclusion based on this preposterous and unscientific determination, a neighbor of mine and I reached out to Congressman Nadler for help. So Linda Rosenthal of Congressman Nadler's staff accompanied us to a meeting with Kathy Callahan, EPA Region 2 Assistant Administrator. We argued that EPA was required to clean the ductwork, particularly since testing of the duct, seven months after Related Management's supposed cleanup job, again showed the presence of asbestos. Kallahan acknowledged she was aware of the asbestos in our building and stated she knew it originated from the collapse of the World Trade Center. Nonetheless, she staunchly refused to remediate the building's air supply duct. I believe this refusal stemmed from her awareness that it would set a precedent for cleaning of duct work in other buildings, particularly large ones.

On the day of my cleanup in late April of 2003, several work crews arrived on my floor, the goal being for several units to be cleaned simultaneously per day. Many of the workers appeared to be quite young. They were not equipped with dual cartridge respirators as this was conceived of as a "courtesy cleanup," not a remediation. My apartment was an exception; armed with my test results, I was able to make the case that the workers wear respirators; cleaning crews elsewhere on the same floor wore none. The contractor had not supplied the crew with sufficient amounts of filter cartridges on hand, so I distributed some of my own.

Towards the end of the day the On Scene Coordinator (OSC) stopped by my apartment to check on the proceedings; I learned the mandatory air filtration device in my apartment, required in order to capture airborne particulates during cleanup, had been improperly set-up; so no air filtration had occurred. It is a good thing we were all wearing respirators.

And the wet wiping methods used to clean surfaces in my home? They were all dark colored, cheap synthetic bathroom towels, purple and forest green, which just dragged the wet dust around without picking it up. The same was true for their disposable, synthetic paper towels.

But on advice I had previously gathered from environmental cleanup professionals, I had a backup cleaning plan—Huggy Wipes. When I purchased my respirator from a major supplier to the environmental cleanup industry I explained to them my apartment had been impacted by the WTC; they advised me the very best thing I could use for wet wiping cleanup was Huggy Wipes. And they were right.

I brought out the Huggy Wipes and once the crew began using them, the dust and dirt just kept coming off and coming off—the same surfaces that had already been "cleaned" with the cheap supplies they had brought.

They cleaned wall surfaces and floors, and objects, but they didn't clean interiors of closets, cabinets or drawers, because the EPA protocol excluded those places. And they didn't remove the HVAC units from the walls to get at the contamination behind them that had penetrated from outdoors.

When the cleanup crew left at the end of the day, I looked down at the door jam and saw a large clump of dust, fallen from around the same doorway where independent testing had found the asbestos.

And it stands to reason that dust was left behind in hard to reach places. The cleanup protocol had no provision for inclusion of window tracks, so my sliding windows were not removed from their tracks, and the dust reservoirs were left untouched.

That has ramifications to this day. The exterior of my windows are depressingly dirty, but they must be removed from their tracks in order for the exteriors to be cleaned. Removal of them for standard cleanup may well re-contaminate my apartment with underlying dust deposits; if dust is still there, it may be seeping into my apartment slowly instead.

Six months after the EPA cleanup of my apartment I had testing done again, for asbestos, lead and numerous heavy metal analytes. While asbestos was found in a low level in one window well, lead was found to be elevated in both window wells and in one of them, just below the cutoff point for which immediate lead remediation would have been required. To quote the written report on the finding of heavy metals, "The heavy metal sampling revealed the presence of various heavy metals found in the apartment. Published standards for acceptable levels of heavy metals on surfaces within the space do not exist. Standards have not been developed because the presence of most of these contaminants is neither a normal nor an acceptable condition in commercial or residential space."

It is now 2007. Is the air safe to breathe? No one knows and the newly devised cleanup plan is as poor as the last. Members, I implore you to see to it we get the science based, effective cleanup we so desperately need and thank you for reading my testimony.

Senator CLINTON. Thank you very much for your very thorough and informative testimony.

I want to turn now to David Newman. I want to thank Mr. Newman for your work on the EPA World Trade Center Expert Technical Review Panel, and for all of your efforts to address these important and difficult issues in New York.

Mr. Newman.

STATEMENT OF DAVID M. NEWMAN, M.A., M.S., NEW YORK COMMITTEE FOR OCCUPATIONAL SAFETY AND HEALTH

Mr. NEWMAN. Thank you. Good afternoon, Chairperson Clinton and Senator Lautenberg. My name is David Newman. I am an industrial hygienist with the New York Committee for Occupational Safety and Health. I also had the privilege of serving on the EPA World Trade Center Expert Technical Review Panel.

The attacks of September 11, 2001, produced not only an initial catastrophic loss of life but also a lingering environmental disaster, with adverse health consequences for responders at Ground Zero as well as for workers and residents in a much larger geographic area. Toxic contaminants were dispersed over a wide area of lower Manhattan and Brooklyn and beyond. We now know that those caught in the dust cloud and/or those responding at the World Trade Center site in the first hours or days have higher incidences and greater severities of health impacts. Presumably the intensity and duration of exposure and lack of respiratory protection were significant factors.

These early exposures were unavoidable. However, EPA's inappropriately reassuring pronouncements that the air was safe to breathe were counter-productive to efforts at implementation of respiratory protection programs by employers and counter-productive to respirator use by rescue recovery and cleanup workers. EPA's actions contributed to unnecessary exposures to toxic contaminants by thousands of workers and volunteers. Similarly,

EPA's risk communications served as disincentives to landlords, employers and Government agencies regarding the suitability of conducing indoor environmental testing and cleanup.

The failure of EPA to provide environmental assessment and cleanup in commercial and government buildings, coupled with the Agency's limited and inadequate sampling and cleanup in residences, is likely to have subjected area workers and area residents to additional unnecessary and unavoidable exposures.

Because EPA contended for the first 8 months that it had no legal responsibility for addressing indoor contaminants, sampling and remediation efforts during that time occurred only on a limited, haphazard and often ineffectual basis. The single EPA indoor cleanup effort was modest, limited to residences and of questionable effectiveness and scientific merit. The current EPA program fundamentally replicates the prior program and disregards virtually all of the recommendations of the members of the WTC Panel. This program, like its predecessor, is technically and scientifically flawed, and is unlikely to adequately identify or cleanup 9/11 contaminants if and where they still exist.

The geographic boundaries of the current program are arbitrary and not scientifically determined. EPA used aerial photographs of debris deposition to establish the boundaries. However, aerial photographs do not show the invisible smaller particles that are of considerable health concern and are likely to have been dispersed over a wider geographic area. The World Trade Center Expert Panel strongly recommended that the program's geographic boundaries be expanded further north in Manhattan and east into parts of Brooklyn. EPA agreed to do so in May 2005, but has reneged on that commitment.

There is no scientific justification for the exclusion of workplaces. There is no evidence that workplaces were impacted differently or less severely than residences. There is no evidence that a significant number or any number of workplaces benefited from employer-conducted cleanup efforts or that such efforts were effective. Most workplaces were not and will never be tested or cleaned.

The EPA program is designed to avoid finding contaminants. It is biased toward sampling cleaner areas and it de-emphasizes sampling in dirtier areas. It excludes testing in precisely the spaces that are most likely to harbor residual contaminants, such as mechanical ventilation systems and ceiling plenums. This is problematic for two reasons. First, maintenance workers regularly access these spaces and inadvertently disturb settled dust, resuspending it into the air, where it is available for inhalation by workers and tenants. Second, contaminants in the mechanical ventilation system can lie dormant indefinitely. If they are disturbed at a later date by maintenance activities or other causes, the ventilation system will provide a very efficient mechanism for distribution of contaminants throughout occupied indoor spaces.

The EPA program, the current program, diverges significantly from established regulatory and best work practices. The plan establishes different triggers for cleanup of asbestos in different parts of residences. It permits higher levels of asbestos to remain on top of bookcases or behind large objects of furniture. It is ill-advised to remove asbestos from the living room floor and allow it to remain

behind the refrigerator. City and State asbestos regulations require that all areas of a contaminated space be cleaned to a single protective standard.

The potential consequences of these shortcomings are worrisome. Scientists may received skewed data on the extent of geographic dispersion of 9/11 contaminants. Residents may receive inaccurate assessments of the presence or absence of 9/11 contaminants in their living spaces, and may receive inadequately supported assurances of safety. Workers and employers will continue to lack effective access to environmental testing and clean-up.

Thank you very much.

[The prepared statement of Mr. Newman follows:]

STATEMENT OF DAVID M. NEWMAN, M.A., M.S., NEW YORK COMMITTEE FOR OCCUPATIONAL SAFETY AND HEALTH

Good morning, Chairperson Clinton, Ranking Member Craig, and other members of the Superfund and Environmental Health Subcommittee. Thank you for this opportunity to present testimony. My name is David Newman. I am an industrial hygienist with the New York Committee for Occupational Safety and Health (NYCOSH). NYCOSH is a nongovernmental, nonprofit organization that has provided technical assistance and comprehensive training in occupational safety and health to unions, employers, government agencies, and community organizations for over 25 years.

The attacks of September 11, 2001 produced not only an initial catastrophic loss of life at the World Trade Center (WTC) site, but also a lingering environmental disaster, with adverse health consequences for responders at Ground Zero as well as for workers and residents in a much larger geographic area. Because we may unfortunately be faced with a similar situation again, it is imperative to examine and learn from government efforts to protect public and worker health in 9/11 response efforts.

Since the tragic events of September 11, 2001 and continuing to this day, NYCOSH, in partnership with the National Disaster Ministries of the United Church of Christ, has worked closely with unions, employers, and community and tenant organizations at Ground Zero and throughout Lower Manhattan. This work has included outdoor and indoor environmental sampling, technical assistance with the design or evaluation of sampling, cleanup, and re-occupancy protocols and with mechanical ventilation and filtration issues. Within days of 9/11, NYCOSH produced and distributed the first fact sheets describing respiratory hazards at Ground Zero and outlining appropriate respiratory protection. We provided technical assistance to unions at, under, and around Ground Zero. NYCOSH, in collaboration with the Queens College Center for the Biology of Natural Systems and the Latin American Workers Project, operated a mobile medical unit near Ground Zero which provided medical screenings to hundreds of immigrant day laborers engaged in the cleanup of contaminated offices and residences. We also provided respirators to these cleanup workers, along with changeout filter cartridges, fit-testing, and training in proper respirator use. NYCOSH also trained additional hundreds of Lower Manhattan workers about 9/11-related occupational and environmental health issues. NYCOSH continues to work closely with the health care centers of excellence and with unions, employers, and tenant and community organizations to ensure that their constituents are informed about and have access to appropriate medical care for 9/11 health conditions.

In addition, I had the privilege of serving on the U.S. Environmental Protection Agency (EPA) World Trade Center Expert Technical Review Panel. I also served on the Exposure Assessment Working Group of the World Trade Center Worker and Volunteer Medical Screening Program and on the Advisory Board of Columbia University's Mailman School of Public Health World Trade Center Evacuation Study. I currently serve on the Community Advisory Committee of the World Trade Center Environmental Health Center at Bellevue Hospital and on the Labor Advisory Committee of the New York City Department of Health and Mental Hygiene's World Trade Center Health Registry.

My testimony will focus on five issues:

1. Whether the data available to EPA at the time of the 9/11 attacks and during subsequent recovery operations indicated a potential for elevated risk from environmental exposures;

2. Whether the actions of EPA were consistent with regulatory requirements for risk assessment and protection of human health;
3. Whether EPA's test and clean programs provide effective assessment and remediation of indoor environmental contaminants;
4. Whether exposure to 9/11 contaminants resulted in harm to human health, and, if so, whether this harm was avoidable; and
5. What lessons have been, or remain to be, learned from EPA's 9/11 response and recovery efforts.

NYCOSH is well situated to comment on these issues. In addition to our 9/11 efforts, we have provided training and technical assistance on respiratory protection, hazard assessment and control, confined space entry, and hazardous waste operations and emergency response, among other topics, to employers, unions, government agencies, and community-based organizations for several decades, often in collaboration with OSHA, the National Institute for Occupational Safety and Health (NIOSH), the National Institute for Environmental Health Sciences (NIEHS), the New York State Department of Labor, the New York City Department of Environmental Protection, and the New York City Department of Health and Mental Hygiene.

1. *What data were available to EPA at the time of the 9/11 attacks and during subsequent recovery operations? Did these data indicate a potential for elevated risk to human health from environmental exposures?*—Although the chemical composition and extent of dispersion of WTC dust remain poorly characterized, the current scientific literature is unambiguous as to its general nature and scope. Contaminants were dispersed over a wide area of Lower Manhattan and Brooklyn, and for "miles beyond." Hundreds of contaminants have been identified in air, dust, and bulk samples.[1,2,3] Toxic contaminants of concern include asbestos, PCBs (polychlorinated biphenyls), PAHs (polycyclic aromatic hydrocarbons), manmade vitreous fibers, dioxins, volatile organic compounds, crystalline silica, pulverized glass shards, highly alkaline concrete dust, and lead, mercury, and other heavy metals.

Credible, substantive data that indicated the presence of toxic substances in significant quantities at the WTC site were readily available to EPA prior to and on September 11, 2001.

Prior to and on 9/11, information on the documented presence of toxic substances at the WTC site was available in government databases that itemize storage of hazardous raw materials, as per the hazardous chemical storage reporting requirements of the federal Emergency Planning and Community Right to Know Act.[4] These data, readily available at the time, indicated at a minimum the probable presence of barium, lead, chloroform, chlordane, carbon tetrachloride, cadmium, chromium, mercury, hydrogen sulfide, arsenic, and other toxic raw materials at the offices of the United States Customs Service, 6 World Trade Center, and of mercury, tetrachloroethylene, PCBs, arsenic, ethane, and other toxic raw materials at the offices of the Port Authority of New York and New Jersey, 1 World Trade Center. The purpose of the hazardous raw materials databases is precisely to facilitate safe emergency response and effective containment and cleanup in the event of an unanticipated chemical release.

Additional information on hazardous in-place building materials and office furnishings was widely known in the regulatory and public health communities. Knowledge and use of this information was a prerequisite to appropriate preliminary risk assessment, design of safe and effective work methods, and selection of protective equipment, including respirators.

An estimated 400 or more tons of asbestos had been utilized in sprayed-on fireproofing during the construction of the WTC towers.[5,6] Additional unknown amounts of asbestos-containing material were used in pipe insulation. The extensive use of asbestos at the WTC site was well documented prior to September 11, 2001. In 1971, while the WTC was still under construction, New York City passed Local Law 49, which banned the use of sprayed-on fireproofing that contained asbestos, effective February 25, 1972. Application of structural fireproofing at the WTC continued with non-asbestos-based materials.[7] The 1993 bombing of the WTC again raised the issue of inadvertent releases of WTC asbestos during disaster events, and some WTC asbestos was abated (removed). Thus, the regulatory agencies were without doubt cognizant of the potential for the release of hundreds of thousands of pounds of asbestos into the ambient air during the collapse of the WTC towers on September 11, 2001.

Further essential, albeit imprecise, information about the potential for the release of additional toxic substances should have been intuitive to any environmental or occupational health professional. For example, computers and computer components contain significant amounts of lead.[8] It can be conservatively estimated that there were greater than 10,000personal computers in the WTC complex, each containing

4 or more pounds of lead, as well as numerous mainframe computers and servers. Consequently, it is likely that at least 40,000 pounds of lead were released into the general environment on 9/11, and very possibly a substantially larger amount.

Similarly, fluorescent light bulbs contain tiny but environmentally significant amounts of mercury.[9] Estimates of the amount of mercury in a single bulb range from 3 milligrams to 21 milligrams. The Port Authority acknowledges the presence of 500,000 fluorescent light bulbs in the WTC complex.[10] It is therefore possible that the amount of mercury released from fluorescent light bulbs only (and not including additional sources of mercury such as electric switches) ranged from 3 to 23 pounds. This is the approximate equivalent of 8% of the total daily mercury emissions from all coal-fired utility boilers in the United States or 26% of the daily mercury emissions from all municipal waste incinerators.[11]

Environmental sampling results obtained by or available to EPA subsequent to September 11 indicated the presence of toxic substances at levels of concern at Ground Zero as well as at other locations in Lower Manhattan, both outdoors and indoors.

Early environmental sampling data by EPA confirmed that asbestos was a constituent of WTC dust, at levels of concern. The EPA website posted data for 143 bulk samples of dust collected in Lower Manhattan, outside of the 16-acre collapse site. Asbestos was detected in 76% of the samples. Twenty-six percent of the samples contained asbestos at levels between 1.1% and 4.49%—i.e., at levels between 110% and 449% of the level at which legal requirements are triggered. Most of EPA's outdoor air samples found relatively low concentrations of asbestos or no asbestos above the detection limit of the sampling, but the EPA website listed at least 25 12-hour samples, obtained at 10 separate locations, that exceeded the EPA clearance standard established under the Asbestos Hazard Emergency Response Act, the benchmark that EPA was using for 9/11 asbestos measurements.

Additionally, 12 of 21 personal air samples obtained in September 2001 by the U.S. Public Health Service from workers sifting WTC debris at the Staten Island landfill exceeded the OSHA Permissible Exposure Limit for asbestos.[12] Sixty percent of asbestos air samples collected at Ground Zero by the International Union of Operating Engineers' National Hazmat Program exceeded the EPA clearance standard.[13] Twenty-seven percent of 177 bulk samples initially collected by EPA and OSHA at Ground Zero were greater than 1% asbestos, the level at which legal requirements are triggered.[14] Early independent air monitoring in two Lower Manhattan apartments found significantly elevated indoor levels of asbestos, including results 2 to 5 times the EPA 9/11 asbestos clearance level in one apartment and 89 to 151 times the clearance level in the other apartment.[15]

EPA test results for outdoor sampling for dioxin showed "unambiguous elevation" when compared to typical urban background levels. An EPA report noted:

> the concentrations to which individuals could potentially be exposed . . . within and near the WTC site found through the latter part of November are likely the highest ambient concentrations that have ever been reported. [emphasis added][16]

These findings indicated that workers and residents who returned to areas that were reopened to the public as safe one week after 9/11 were potentially exposed to concentrations of dioxin "nearly 6 times the highest dioxin level ever recorded in the U.S." The findings also indicated that the dioxin concentrations to which rescue and recovery workers were potentially exposed were between 100 and 1,500 times higher than the levels of dioxin typically found in urban air.[17]

In another example, benzene was detected at Ground Zero in 57 of 96 air samples, at levels from 5 to 86,000 parts per billion (ppb). (The OSHA permissible exposure limit (PEL) for benzene exposure averaged over 8 hours is 1,000 ppb. The OSHA short term exposure limit (STEL) for benzene exposure averaged over a 15-minute period is 5,000 ppb.)

> Even during November, readings exceeded the OSHA levels in half the tests conducted. . . . On November 8, an EPA grab sample at the North Tower plume detected 180,000 ppb of benzene—180 times above [sic] the OSHA limit. Even as late as January 7, benzene readings were as high as 5,300 ppb.[18]

The United States Geological Survey (USGS) reported the results of its WTC environmental studies to government response teams as early as September 18, 2001. USGS found that steel beams from the WTC site were coated with fireproofing containing chrysotile asbestos at concentrations up to 20%. It reported that in the "area around the WTC . . . potentially asbestiform minerals might be present in concentrations of a few percent to tens of percent" and may occur "in a discontinuous pattern radially in west, north, and easterly directions perhaps at distances greater than 3/4 kilometer from ground zero." USGS also found that WTC dusts "can be

quite alkaline," reaching a pH of 11.8. The agency warned government response teams that "cleanup of dusts and the WTC debris should be done with appropriate respiratory protection and dust control measures."[19]

2. *Were the actions of EPA consistent with regulatory requirements for risk assessment and protection of human health?*—Multiple federal statutes have applicability to the protection of public health during catastrophic environmental emergencies. The applicability of statutory requirements to disaster response efforts and to subsequent cleanup operations and the uses of agency discretionary power in the application of legal standards are central to assessing governmental response to 9/11.

EPA is clearly required to protect the public health against exposure to toxic environmental contaminants associated with catastrophic disasters.

EPA has legal authority and responsibility to respond to a hazardous substance release that presents or has the potential to present an imminent and substantial danger to public health. EPA is required to assume lead authority with regard to issues of environmental health by the National Contingency Plan, the National Response Plan, and Presidential Decision Directive 62 of 1998.

The National Emissions Standards for Hazardous Air Pollutants (NESHAPS), section 112 of the Clean Air Act, establishes standards for air pollutants that may cause fatalities or serious, irreversible, or incapacitating illness.[20, 21] Hazardous air pollutants regulated under the Clean Air Act are also regulated as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), known as Superfund. The National Contingency Plan (NCP), part of CERCLA, is the federal plan for responding to hazardous substance releases. The NCP assigns the authority to respond to the release of hazardous substances to EPA. In the event of a hazardous release, the NCP requires that the release site be assessed to characterize the source and type of the release, the pathways of exposure, and the nature and magnitude of the threat to public health. In addition, EPA is authorized to "enter any vessel, facility, establishment or other place, property, or location . . . and conduct, complete, operate, and maintain any response actions. . . . " Further, "the NCP applies to and is in effect when the Federal Response Plan and some or all of its Emergency Support Functions (ESFs) are activated."[22]

The National Response Plan (NRP) mandates a comprehensive response to terrorism incidents. (The Federal Response Plan[23] preceded the National Response Plan, was in effect on September 11, 2001, and was substantively similar to the NRP.) The NRP establishes protocols to protect the health and safety of the public, responders, and recovery workers. National Response Plan Emergency Support Function #10, the Oil and Hazardous Materials Response Annex, assigns explicit responsibility to EPA as both the primary agency and the emergency support function coordinator in response to an actual or potential discharge or uncontrolled release of hazardous materials.[24]

Presidential Decision Directive (PDD) 62 names EPA as the lead agency for responding to the release of hazardous materials in a terrorist attack and gives EPA specific responsibility for indoor remediation. [25, 26] Shortly after 9/11, then—EPA Administrator Christine Whitman confirmed EPA's responsibility under PDD 62: "Under the provisions of PDD 62 . . . EPA is assigned lead responsibility for cleaning up buildings and other sites contaminated by chemical or biological agents as a result of an act of terrorism."[27]

EPA's response actions were not consistent with its legal obligations to protect the health of the public against exposure to outdoor and indoor toxic environmental contaminants associated with a catastrophic disaster.

EPA's 9/11 response efforts were predicated on the agency's contention that environmental regulations were not applicable to natural or technological disasters or to terrorist incidents.[28] EPA minimized the issue of hazardous waste and chose not to consider the WTC site as either a Resource Conservation and Recovery Act (RCRA)[29] hazardous waste site or a Superfund site, even though the collapse and combustion of the WTC "must have released chemicals orders of magnitude times the reporting thresholds."[30, 31] According to an EPA senior policy analyst, this was the first major chemical or hazardous waste release in 20 years for which EPA did not conduct a site characterization for environmental hazards and risks.[32] In addition, the agency did not ensure that clearance tests were conducted at the conclusion of the waste and debris removal project to confirm that environmental contaminants had been effectively removed from the WTC site, and no such tests were conducted.[33]

EPA provided limited, and sometimes incorrect and hazardous, technical guidance to the impacted public. EPA press releases counseled residential and business tenants to clean their indoor spaces using "appropriate" equipment, following "recommended" and "proper" procedures, without defining these terms.[34] EPA's tech-

nical advice sometimes contradicted regulatory requirements and even common sense. In one instance EPA advised that "if dust or debris from the World Trade Center site has entered homes or offices, people should be sure to clean thoroughly and avoid inhaling dust while doing so."[35] The same press release referred readers to the website of the New York City Department of Health for further technical guidance. That website advised "residents and workers returning to homes and offices in Lower Manhattan" to clean up WTC dust (i.e., asbestos and other toxic substances, in many cases) with wet rags and HEPA vacuum cleaners, in violation of federal and city regulations. It further advised that respiratory protection was not necessary so long as these "guidelines" were followed.[36] The report of the EPA Inspector General ultimately concluded that advice such as this "may have increased the long-term health risks for those [tenants] who cleaned WTC dust."[37]

EPA's public statements mischaracterized or ignored sampling results. Its September 18 announcement that the "air is safe to breathe"[38] was not supported by the available data.[39] EPA risk communication statements were altered to conform to political directives from the White House. "Guidance for cleaning indoor spaces and information about the potential health effects from WTC debris were not included in EPA's issued press releases. . . . Reassuring information was added . . . and cautionary information was deleted" after intervention by the White House Council on Environmental Quality.[40] Other government agencies also issued inaccurate risk communication statements. EPA's unsupported assurances of lack of risk had the unfortunate effect of giving a green light to employers and workers not to use respiratory protection and to landlords, employers, and government agencies that remediation of contaminants was not necessary.

For eight months after 9/11, EPA contended that it had no legal responsibility for assessing or addressing indoor environmental contamination.[41, 42] Indoor environmental testing and remediation in common spaces were left to building owners; testing and remediation of private spaces were left to commercial and residential tenants.[43, 44] Because government financial assistance, reoccupancy guidelines, oversight, and enforcement were not provided, private environmental sampling and remediation efforts occurred only on an occasional, haphazard, limited, and often ineffectual basis. The single government-sponsored indoor cleanup effort that ultimately took place, EPA's 2002—2003 "test or clean" program, was modest, non-mandatory, limited to residences, and of questionable effectiveness and scientific and technical merit. Only 18% of eligible downtown apartments were cleaned or tested.[45] Approximately 1,500 Lower Manhattan buildings were excluded, including all schools, hospitals, firehouses, workplaces, businesses, and commercial and government buildings—even City Hall. Most of Chinatown and other impacted communities were also excluded. The failure of EPA to require or even encourage indoor environmental assessments, and cleanup where warranted, in commercial and government buildings, coupled with the agency's limited and inadequate sampling and cleanup in residential spaces, is likely to have subjected area workers and residents to unnecessary and avoidable exposures.

3. *Will EPA's December 2006 Lower Manhattan Indoor Dust Test and Clean Program provide effective assessment and remediation of indoor environmental contaminants*?—The current EPA test and clean program disregards virtually all of the recommendations and concerns expressed by members of the EPA WTC Expert Technical Review Panel in its 21 months of deliberations. The current program fundamentally replicates the ineffective 2002–2003 Residential Dust Cleanup Program. This program, like its predecessor, is technically and scientifically flawed and is unlikely to provide any significant public health or scientific benefit. It is unlikely to adequately identify or clean up 9/11 contaminants if and where they exist. It is probable that it will under-report any residual 9/11 contamination. The potential consequences of these shortcomings are worrisome. Scientists may receive skewed data on the extent of geographic dispersion of 9/11 contaminants. Residents may receive inaccurate assessments of the presence or absence of 9/11 contaminants in their living spaces and may receive inadequately supported assurances of safety. Workers and employers will continue to lack effective access to environmental testing or cleanup.

Among the many significant deficiencies of the current plan are the following:

• Insufficient financial resources are allocated for testing or cleaning, if warranted, of potentially affected residences and workplaces. According to EPA and FEMA, funds allocated for EPA's 2002–2003 program were in excess of $25 million, while funds allocated for the current program are capped at approximately $7 million. The geographic boundaries and eligibility criteria for the plans are virtually identical. That is, the current program is funded at a level approximately 28% of the prior program, yet is charged with providing sampling and cleanup in 100% of the geographic area served by the prior program.

• *The geographic boundaries of the program are arbitrarily determined.* EPA has cited images and mapping results from aerial photographs taken on September 13, 2001 as the basis for the geographic boundaries of the current program. However, EPA misinterprets or misuses that data, which actually indicate the "probable" and "possible" deposition of WTC dust and debris over a larger geographic area than that included in the current sampling program.[46] These data themselves are of limited scientific utility as they rely entirely on detection of visible dust. The Environmental Photographic Interpretation Center (EPIC) report acknowledges that its analysis is limited to "ground dust/debris deposition as an aggregate (paper, pulverized concrete and wall board, larger building materials, etc.)."[47] Smaller particles that are invisible to the naked eye or to the camera lens, such as PM_{10}, $PM_{2.5}$, and asbestos fibers, are likely to have been dispersed over a wider geographic area and are of considerable health concern. These are not addressed by these data. The EPIC report notes that "it is possible that dust/debris may extend beyond the boundaries as delineated in this report."[48] Members of the EPA WTC Panel strongly recommended that the program's geographic boundaries be expanded further north in Manhattan, including all of Chinatown, and east into parts of Brooklyn. EPA agreed to do so in May 2005 but has reneged on that commitment in its current program.[49]

• *There is no scientific or legal justification for the exclusion of workplaces and places of business from the current program.* EPA has not offered any evidence demonstrating that workplaces were impacted differently or less severely than residences. I believe no such data exist and no such assertion could be plausibly made. Nor has EPA presented any data that indicate that a significant number (or any number) of workplaces benefitted from employer-conducted and -financed cleanup efforts, or that these efforts were effective. Because the EPA program leaves employers to bear the financial and technical burden of testing and cleanup, it is likely that workplaces which have not yet been privately tested or cleaned will never be tested or cleaned.

Neither OSHA nor NIOSH can effectively address the issue of 9/11 contaminants in workplaces. Comments at the July 12, 2005 meeting of the EPA WTC Expert Technical Review Panel by representatives from OSHA and NIOSH made clear that while these agencies will continue to be responsive to queries from workers, unions, and employers, neither agency engages in or funds remediation of workplace contaminants. OSHA, if it finds violations of OSHA standards, may require employers to engage in cleanup, or in other protective measures short of cleanup, at employer expense. NIOSH may recommend but cannot require remediation, nor can it fund remediation. It is possible that indoor environmental conditions in downtown workplaces may not violate OSHA Permissible Exposure Limits (PELs), or that there may be no applicable OSHA standards (as is the case for PAHs), while at the same time they may exceed EPA benchmarks for settled 9/11 dust. In such situations, OSHA could not require remediation. Thus, contamination at levels that would compel remediation in residences will be allowed to remain in workplaces.

• *Because it de-emphasizes testing in indoor areas that are most likely to harbor residual contaminants and emphasizes testing in areas that are most likely to have been routinely and repeatedly cleaned, the EPA program has a built-in selection bias toward sampling cleaner areas. It is designed to avoid finding residual contaminants.*

The nature and extent of residual indoor WTC-derived contamination, if any, is unknown at this point in time. Residual indoor contamination, if present, will most likely be found in spaces that have been subjected to the least disturbance. Typically, these spaces include: infrequently cleaned areas such as those behind refrigerators, above suspended ceilings, and in cable chases; porous materials such as carpets and drapes that act as reservoirs or "sinks" for settled particulates; and "dead spots" where deposition occurs in mechanical ventilation systems, such as in areas of low velocity and at bends in high velocity areas in ducts.[50]

The current EPA program does include testing on porous materials like carpets and in infrequently cleaned spaces behind furniture and equipment such as refrigerators. However, it excludes without justification testing in what it mistakenly labels "inaccessible spaces," i.e, mechanical ventilation systems, ceiling plenums, cable chases, etc. This is problematic for two reasons.

First, so-called inaccessible spaces are accessed by maintenance and utility workers on a regular basis. These workers engage in activities that may disturb settled dust and resuspend it in the air, where it becomes available for inhalation both by the workers and by tenants. Although a particular "inaccessible space" may not be accessed regularly, workers routinely access these kinds of spaces repeatedly over the course of every work day.

Second, the ability of a mechanical ventilation system to capture contaminants in the dead spots of the duct work is well known. These settled particulates will lie dormant and cannot be identified or measured by sampling that is conducted outside the mechanical ventilation system. However, if the settled particulates are disturbed at a later date by maintenance activities or other causes, the mechanical ventilation system can provide a very efficient mechanism for the distribution of contaminants throughout occupied indoor spaces.

• *The EPA program diverges significantly from established regulatory and best work practices in industrial hygiene and environmental remediation.* For example, the plan establishes different benchmarks, or triggers, for cleanup of asbestos in different parts of residences. It permits higher levels of asbestos contamination to remain in "infrequently accessed areas" such as "out of reach shelving"[51] or "on top, beneath, or behind large objects of furniture such as bookcases."[52] By contrast, city[53] and state[54] asbestos regulations explicitly and appropriately require that all areas of a contaminated space be cleaned to a single protective standard.

4. *Did exposure to WTC-derived contaminants result in harm to human health, and was this exposure and harm avoidable?*—Within days of the attacks, EPA declared Lower Manhattan's air "safe to breathe."[55] EPA maintained until recently that "short-term health effects dissipated for most once the fires were put out [and] there is little concern about any long-term health effects."[56] Unfortunately, there is considerable evidence to the contrary. It is now well-established that a large and increasing number of people who were exposed to 9/11 contaminants, primarily rescue and recovery workers but also area workers and residents, are suffering serious and persistent adverse health outcomes.

The incidence and persistence of 9/11-induced respiratory illness among response workers and area workers is extensively documented in the scientific literature, including among rescue, recovery, and service workers,[57, 58] firefighters,[59, 60, 61, 62] transit workers,[63] and immigrant day laborer cleanup workers at buildings outside Ground Zero.[64] Although there is no question that, in general, those working on the pile experienced more severe exposures and health impacts than did community residents, students, and workers, it is of note that adverse health impacts have also been documented among these latter groups.[65, 66, 67, 68, 69]

Because Ground Zero workers and other exposed populations may have been exposed at varying levels to a robust array of carcinogens, including asbestos, dioxins, silica, benzene, PAHs, and PCBs, there is concern for the potential development of late-emerging cancers.[70] It is as yet unknown whether or when 9/11-derived exposures will produce late-emerging diseases, but it is prudent and scientifically appropriate to anticipate the possibility. While the latency period for solid tumors is 10 to 50 years, the latency period for hematologic and lymphatic malignancies can be as short as 4 to 5 years.[71] Although neither the World Trade Center Medical Monitoring Program nor the scientific literature has yet reported the occurrence of 9/11-related cancers, the Monitoring Program has begun the process of verification of self-reported cases among responder and recovery worker patients.[72]

We know now that there is an association between the chronology of firefighters' 9/11-related exposures and the severity of their adverse health effects; i.e., those caught in the dust cloud and/or those responding at the WTC site in the first hours or days tend to have higher incidences and greater severity of health impacts. Presumably, the intensity and duration of exposure and the lack of access to appropriate respiratory protection were significant factors in this association. These early exposures were unavoidable. However, EPA's early and inappropriately reassuring pronouncements that "the air is safe to breathe" were counterproductive to efforts at implementation of respiratory protection programs by employers and respirator use by rescue, recovery, and cleanup workers. EPA's actions thus contributed to the unnecessary and avoidable exposures to toxic WTC-derived contaminants incurred by thousands of workers and volunteers. Similarly, EPA's risk communications served as disincentives to landlords, employers, and government agencies regarding the suitability of conducting indoor environmental testing and remediation of contaminants, as appropriate. The failure of EPA to provide, require, or even encourage indoor environmental assessments, and cleanup where warranted, in commercial and government buildings, coupled with the agency's limited and inadequate sampling and cleanup in residential spaces, is likely to have subjected area workers and residents to additional unnecessary and avoidable exposures.

5. *What lessons have been, or remain to be, learned from the 9/11 response and recovery efforts?*—Less than four years after the disastrous events of September 11, 2001, Hurricane Katrina struck the Gulf Coast. Rescue, recovery, and cleanup efforts there sadly were hampered by a failure to learn from the WTC experience. In October 2005, a group of more than 100 of the Nation's foremost labor, religious, environmental, community, public health and public interest organizations and

more than 100 academic, medical, religious and public health leaders, including some of the nation's top experts in the fields of occupational and environmental medicine and industrial hygiene, called on Congress to give the highest priority to the protection of the health of cleanup workers and of the public at large during cleanup efforts.[73] Coupled with the recommendations of the report of the EPA Office of the Inspector General,[74] the following principles for disaster response, adapted in part from the call, provide a sound basis for lessons that, unfortunately, have yet to be learned:

• *Presume contamination until proven otherwise.*

Given the wide range and toxic nature of contaminants to which workers, volunteers, and residents may be exposed, it is imperative that work areas be presumed to be contaminated and that appropriate precautionary measures be implemented until the work environment is demonstrated to be safe.

• *Implement the National Response Plan provisions for worker and community environmental testing and monitoring.*

The worker and community environmental testing and monitoring provisions of the National Response Plan must be followed closely. They provide for hazard identification, environmental sampling, personal exposure monitoring, collecting and managing exposure data, development of site-specific safety plans, immunization and prophylaxis, and medical surveillance, medical monitoring and psychological support.

• *Enforce all OSHA and EPA regulations.*

Environmental and occupational health standards must be strictly enforced. We are distressed that OSHA has defined its role in Katrina response, as in 9/11, as advisory rather than enforcement.

• *Assess the hazards.*

EPA should conduct comprehensive environmental sampling to characterize the nature and extent of environmental hazards. NIOSH and OSHA must conduct a comprehensive assessment of the hazards posed to recovery workers. Hazard assessment should include evaluation of environmental hazards contaminants originating in external sources, in-place building materials, biological agents, and other potential sources. Environmental monitoring should be ongoing. Sampling results should be accessible to the public in a timely manner. Toxic materials should be catalogued, evaluated and tested, and any known or potential releases contained. Failure to act will threaten returning residents and workers and will increase long-term cleanup costs as toxic substances spread to larger areas.

• *Train and protect cleanup workers.*

All cleanup workers (public and private sector, paid and unpaid) should receive the appropriate OSHA-required training and equipment for protection against the hazards to which they may be exposed. OSHA should specify the minimum training that must be provided to workers engaged in clean-up and recovery. Training may include that which is required under OSHA's Hazard Communication, Respiratory Protection, Personal Protective Equipment, and Hazardous Waste Operations and Emergency Response standards. Protective equipment may include respirators and protective clothing and equipment.

• *Provide medical surveillance.*

Provision must be made for early detection and treatment of occupational, environmental, and psychological illnesses. To ignore the medical needs of potentially exposed workers and residents is asking them to be guinea pigs in a long-term experiment the consequences of which remain unknown. All public and private sector rescue, response, and cleanup workers, including volunteers, should be entered into a centralized database to facilitate medical surveillance.

• *Protect vulnerable workers.*

Special consideration must be given to protection of immigrant and temporary workers. In 9/11 response efforts, immigrant and temporary workers were the workers least likely to be provided with proper training and respiratory protection, and were the workers least likely to have medical insurance. As a result, they incurred high rates of illness without having access to medical treatment.

• *Adopt uniform reoccupancy standards.*

EPA must ensure that a protective health and safety standard for reoccupancy applies uniformly to all communities and also is sensitive to the needs of vulnerable populations. EPA has indicated that it will permit local authorities to determine reoccupancy criteria, but it is critical to ensure that all reoccupancy occurs according to standards that are adequately protective of public health.

Thank you for your concern on these matters.

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Senator CLINTON. Thank you very much, Mr. Newman.

I want to give you a chance to respond to the assertions made by the members of the first panel. Because clearly, your experience, your expertise and your testimony today directly contradict many of the claims that were made by the panelists, and I would like to ask you to respond to what you heard this morning.

Mr. NEWMAN. Thank you. Let me start with two areas.

First, with regard to the comments of Mr. Connaughton, I am quoting here from, selectively, of course, from a September 13, 2001 e-mail, it is an OSHA e-mail, and it says, "A conference call was held this morning with EPA regional and national, as well as representatives from the White House. They were concerned about the public understanding of the sample results that are forthcoming and our ability to reassure them with respect to air quality. The secondary purpose of the call was to discuss the financial market and who we can work toward allowing them into their buildings."

From a memo of September 28, 2001: "EPA stated that by orders of the White House, the EPA web page is not being updated with current sample results." So there are clear indications that the White House participated in discussions and decisions as to how to massage the data that was available to them at that time.

With regard to the ability and responsibility of the EPA to address the issue of indoor contamination, the National Contingency Plan is very clear. It assigns the authority to respond to the release of hazardous substances to EPA. It very specifically authorizes EPA to enter any vessel, facility, establishment or other place, property or location and conduct, complete, operate and maintain any response actions. Further, the NCP applies to and is in effect when the Federal Response Plan in some or all of its emergency support functions are activated. That is, the activation of the Federal or now the National Response Plan and its emergency support functions does not override or cancel EPA's responsibility for indoor contamination. This position was confirmed shortly after 9/11 by testimony given before Congress by then-EPA Administrator Christine Whitman, who stated, under the provisions of Presidential De-

cision Directive 62, EPA is assigned lead responsibility for cleaning up buildings and other sites contaminated by chemical or biological agents as a result of an act of terrorism.

Senator CLINTON. I will put into the record the 1998 Presidential Decision Directive, PDD 62, which did task EPA with the leadership role in cleaning up buildings and other sites contaminated by chemical or biological agents as a result of an act of terrorism.

[The referenced material follows:]

Presidential Decision Directive-62

The following is an unclassified abstract derived from Presidential Decision Directive-62 (PDD-62), "Protection Against Unconventional Threats to the Homeland and Americans Overseas," dated May 22, 1998.

The full text of PDD-62 is a CLASSIFIED document. State and local officials should understand that PDD-62 reaffirms PDD-39, "United States Policy on Counterterrorism," signed June 21, 1995. As such, the Federal Bureau of Investigation (FBI) will continue to serve as the Lead Federal Agency for "crisis management" and the Federal Emergency Management Agency (FEMA) will continue to serve as the Lead Federal Agency for "consequence management."

1. General

It is increasingly likely that terrorist groups, or individuals with criminal intent, may use unconventional methods to disrupt the Nation's critical infrastructure or use weapons of mass destruction (WMD) against our citizens.

As these types of threats mature, it is necessary to prepare to deter them, prevent them from occurring, or, if need be, limit the damage to a minimum. Success is dependent upon possessing the capability for an integrated response, and in the case of critical infrastructure protection, having public/private partnerships.

2. Present Achievements and Current Challenges

Present Achievements:

- An increased rate of apprehensions and convictions;
- An increase in counterterrorism legislative authorities;
- An increase in the funding for consequence management planning;
- An increase in the importance of terrorism on the diplomatic agenda;
- Growth of assistance to, and cooperation with, other democracies in combating terrorism; and
- Improving and expanding a professionally trained interagency cadre.

Current Challenges:

- Terrorist groups may choose asymmetrical attacks on our domestic and international vulnerabilities, through the use of WMD and/or cyber warfare;
- Terrorist groups possess the knowledge, skills, and abilities to use WMD;
- Former "cold war" civil defense programs have been downsized or dismantled, and cities are not prepared to deal with a large-scale event;
- Improvements in technology will make it difficult for law enforcement agencies to detect and prevent terrorist acts; and
- The Nation's critical infrastructure relies heavily on the use of computers, which are prone to cyber attacks.

3. Consequences Management

In the event of a terrorism incident, the Federal Government will respond rapidly, working with

State and local governments, to restore order and deliver emergency assistance. FEMA, the Lead Federal Agency for consequence management, is responsible for preparing for and responding to the consequences of a WMD incident with participation of other departments and agencies including the Public Health Service (PHS), Environmental Protection Agency (EPA), and Department of Energy (DOE), as necessary. The Department of Justice (DOJ), through the FBI, is the Lead Federal Agency for crisis management and operational response to a weapon of mass destruction incident.

Domestically, key Federal agencies and Departments, through interagency efforts, will continue training and providing equipment to first responders to prepare them for response to WMD incidents. Emphasis will be placed on preparing those responders in the largest 120 cities.

The Department of Defense, in coordination with other Federal Departments and agencies, will provide training to metropolitan first responders and will maintain trained military units to assist State and local responders. One example is the National Guard concept of initially forming 10 Rapid Assessment and Initial Detection (RAID) teams in each FEMA Region. These teams are designed to provide rapid response to a WMD incident and assist State and local responders.

PHS, in the Department of Health and Human Services, is the Lead Federal Agency in planning and preparing for response to WMD-related medical emergencies. PHS will continue supporting State and local governments in developing Metropolitan Medical Strike Teams; maintaining the National Disaster Medical System; and, in conjunction with the Department of Veterans Affairs, stockpiling antidotes and pharmaceuticals in the event of a WMD incident.

4. Equipment

DOJ, in coordination with FEMA, will provide equipment to State and local emergency responders.

5. Critical Infrastructure

It is imperative that the United States be adequately prepared to deal with attacks on critical infrastructure and cyber systems. As such, the President reviewed the recommendations of the Presidential Commission on Critical Infrastructure Protection and has signed PDD-63, entitled Protecting America's Critical Infrastructures (PDD-63 is For Official Use Only). A white paper, entitled "The Clinton Administration's Policy on Critical Infrastructure Protection: Presidential Decision Directive-63," is available at www.whitehouse.gov/WH/EOP/NSC/htm/NSCSDoo3.html. This white paper outlines the Administration's program to deal with threats to our Nation's critical infrastructure.

Senator CLINTON. Mr. Newman, GAO's testimony and their written reports suggest that EPA remains poorly prepared to address indoor contamination issues. Do you share this view and what is your view of EPA's state of preparedness?

Mr. NEWMAN. Well, I have to begin my remarks by clarifying that I do not work for EPA and I am not privy to internal discussions or documents that may exist within EPA. But if we use as a yardstick for lessons learned a comparison of EPA's sampling plans in 2002 and EPA's sampling plans in 2007, I see little, if any, significant change that indicates any lessons learned whatsoever.

Senator CLINTON. Mr. Newman, would you describe for the Committee and the record your work on the Expert Technical Review Panel, how you thought that the EPA was responding and at what point the panel disbanded and for what reason?

Mr. NEWMAN. The broad mandate, as you know, of the WTC Expert Technical Review Panel was to assess any remaining health risks posed from the events of 9/11 and to determine appropriate approaches to deal with questions of public health. The panel, I think, in my opinion, was faced with three major broad goals. No. 1, to assess the extent, if any, of remaining indoor contaminants. No. 2, to devise—and that was through a sampling plan—and the second was to devise an appropriate clean-up plan to address any remaining contamination. No. 3, to address broad issues of public health related to the events of 9/11.

We engaged in extensive collegial discussion over a lengthy period of time on these and other issues. The ultimate, unfortunate result was the determination by EPA to disregard virtually all of the suggestions and concerns expressed by the panel, shut down the panel and proceed with a sampling plan devised by EPA that was not reflective or responsive to the discussions and recommendations of the panel.

Senator CLINTON. At any time, did anyone from EPA advise you or advise the panel that they were disregarding your recommendations for financial reasons?

Mr. NEWMAN. The issue of finances was a big and continuing one throughout the course of the panel's meetings early on. A number of panel members, including myself but also others, questioned, asked for some guidance from EPA as to how we were to structure our discussions with regard to the question of finances. That is, are we operating under budgetary constraints in attempting to design a sampling and cleanup program, or are we to provide the best scientific advice that we were able to come up with, disregarding any financial constraints. They told us at the beginning and on several occasions thereafter that we were to disregard any budgetary constraints.

However, during the course of the panel process, it became very clear, in fact, the representative from FEMA who sat in an ex officio position on the panel told Panel members at a Panel meeting that the budget was in fact pre-determined and limited to the $7 million remaining in the FEMA fund from the prior cleanup, at which point we again attempted to enter into some substantive discussions as to how, should a sampling and cleanup plan be devised, how budgetary constraints would impact on the design of that plan. We were again told not to consider those factors. Then at the very

end, as we know today, that virtually the entire design of the plan is limited precisely by those budgetary constraints.

Senator CLINTON. Thank you, Mr. Newman.

Senator Lautenberg.

Senator LAUTENBERG. I won't keep the panel long, Mr. Chairman. But Mr. Newman and Ms. Lavin, thank you very much for your testimony. The contradiction to what we heard earlier is a contrast that has to be noted. It seems to me obvious that there was an attempt by the Administration to downplay the risks. You attribute it, Mr. Newman, I think primarily to the financial side.

But I think there was some other sinister motive that was there, and that was to not look like we weren't ready for anything, that it was done in many ways in an arrogant and almost boastful manner. When we see that there was any denial that there was an attempt to influence the press release, it just doesn't square with what we see. The precautionary statement, this was in the IG's report. In the draft version of September 13, 2001, press releases were removed and replaced with more reassuring statements, for example, second clause of the caption of the draft, the press release was noted that EPA was testing for environmental hazards was replaced with a statement reassuring the public about environmental hazards.

Did you see that in your work on your committee in assessing what had taken place there? Was there anything obvious to you that said they just didn't want people to know what was out there? Let me remove the coloration, you do it yourself.

Mr. NEWMAN. The panel did not review or assess EPA's early risk communications to the public. So with regard to that aspect of your question, I don't have an answer.

Senator LAUTENBERG. OK.

Mr. NEWMAN. But the panel did struggle with the broad mandate of assessing any remaining risks to public health. The form that that struggle took was, there were many members of the public who expressed in the public comment period at panel meetings a desire to not only address the issue of whether there was any residual contamination and the implementation of a sampling and cleanup program, but to also investigate the issue, broader issues of public health from 9/11 with, for example, the lack, at least initially, the lack of Government oversight as to the demolition of heavily contaminated high-rise buildings; the issue of various impacted populations who were exhibiting adverse health consequences and their inability to get access to proper medical care; the questions of additional research and funding for research that was needed. These issues, which were raised by members of the public during the meetings as well as by Panel members, including myself and others, were short-circuited and the panel did not consider those issues.

Senator LAUTENBERG. You said that EPA used a helicopter, if I understood, to assess the spread of the dust.

Mr. NEWMAN. They used aerial photographs. I don't know if it was from a helicopter or not.

Senator LAUTENBERG. How far did any of your research tell you physically was the spread of the dust from the fallen building?

Mr. NEWMAN. As a number of people have testified today, we don't have that data. It is now almost 6 years later. As the gentleman from GAO testified, there is yet to be a comprehensive, targeted, science-based assessment of the geographic extent of the dispersion of World Trade Center contaminants. So we do not have that answer.

So anybody who gets up here, myself included, and says either that it was widely dispersed or that it was not widely dispersed, that is not a science-based statement. We do not have that data. There is the potential for wider dispersion and we acknowledge that potential and we are concerned about that. But in terms of data, we don't have it.

Senator LAUTENBERG. I would like to ask, how many people died in the aftermath of 9/11 from their exposure to the dust and smoke? Have those deaths been officially recognized? Do you have any evidence to that effect?

Mr. NEWMAN. We have a fairly large number of anecdotally reported deaths, that is, deaths reported through the media, deaths reported by family members, et cetera. These are deaths of people who are, by their exposure history, at and around Ground Zero, are presumed to have had exposure to 9/11 contaminants. However, in terms of clinically confirmed deaths, the number is very, very low. We have the recent one that was referred to by Senator Clinton. We have, of course, Police Officer Cedroga.

Senator LAUTENBERG. How about the number who have put in their request for attention to their problems? Respiratory, people unable to work, there is a substantial number of people from the fire department who were unable to continue with their jobs.

Mr. NEWMAN. Absolutely. In terms of the medical monitoring programs that exist, that is the World Trade Center Medical Monitoring Program and the New York City Fire Department Medical Program, as the two primary in this case, we have tens of thousands of cases of clinically confirmed, clinically diagnosed persistent respiratory and other medical conditions, absolutely.

Senator LAUTENBERG. Madam Chairman, thanks for conducting this hearing and for bringing the attention that it deserves to the public forum. Thank you.

Senator CLINTON. Thank you very much, Senator Lautenberg.

Ms. Lavin, I just wanted to thank you for coming to testify. Also to ask you to describe your experience with the Bellevue program, because as I said at the very beginning, we are finally going to be able to provide some Federal support for the medical treatment program at Bellevue for residents. That has not been included before. We were able to obtain that in the last 48 hours, as a part of the appropriations bill.

Would you describe, if you can recall when you first went there and what the experience there was, and what their diagnosis and treatment for you has been going forward?

Ms. LAVIN. I first went there, I think it was March 2007. It was February or March, I don't recall the precise date. I am under the treatment of the Director, Dr. Reibman. So far, I am very pleased with the program, because it has been specifically designed, the doctors are coordinated there, and that is really a key element in

treatment of the different symptoms of what are now known as World Trade Center Syndrome.

So I think it is essential for them to have long-term funding and I hope that they will get more, because that will allow them to draw some of the best and the newest doctors, the strongest talent.

Senator CLINTON. I thank you for that.

I would like to ask both of you to respond to maybe further written questions as we review the testimony. It would be useful to try to help complete the record in that way. I also want to thank you for representing so many people who have been afflicted by, in the first instance, their exposures and the second instance, the failure to accurately describe the toxic dangers and then to respond to the legitimate health needs that tens of thousands of people, as Mr. Newman said, are confronting.

I am very grateful to everyone who participated in the hearing, and I want to thank you again, and we will continue with this, as I said in the beginning. Congressman Nadler will hold a companion hearing next week to focus on some additional issues, particularly concerned with the city and the city's response. So the hearing is adjourned.

[Whereupon, at 12:40 p.m., the subcommittee was adjourned.]

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