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Headlines Index

Last 6 Days

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Shopping

Career

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**EXCLUSIVE**

# A Toxic Nightmare At Disaster Site

## Air, water, soil contaminated

**T**oxic chemicals and metals are being released into the environment around lower Manhattan by the collapse of the World Trade Center towers and by the fires still burning at Ground Zero, according to internal government reports obtained by the Daily News.



**JUAN GONZALEZ**

Dioxins, PCBs, benzene, lead and chromium are among the toxic substances detected in the air and soil around the WTC site by Environmental Protection Agency equipment — sometimes at levels far exceeding federal levels, the documents show.



AP

**The WTC site continues to release harmful contaminants.**

EPA monitoring devices also have found considerable contaminants in the Hudson River — in the water and in the sediment — especially after it rains.

Six weeks after the WTC attack, benzene — a colorless liquid that evaporates quickly and can cause leukemia, bone marrow damage and other diseases in long-term exposure — continues to be released into the air in plumes from the still-burning fires at relatively high levels.

The federal Occupational Safety and Health Administration's permissible exposure limits for workers handling benzene over an eight-hour day is 1 part per million.

But the EPA documents reveal that the standard has been exceeded by considerable margins.

On Oct. 2, for example, benzene levels from three spots around Ground Zero were measured at 42, 31 and 16 times higher than the OSHA standard. On Oct. 12, one reading measured 21 times higher.

The highest benzene level was recorded Oct. 11 — 58 times higher than OSHA's permissible exposure limit.

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The documents obtained by The News detail the presence of many hazardous substances — many of them odorless — in levels above or approaching EPA or OSHA safety standards.

"Yes, they are high," said EPA spokeswoman Mary Mears, when asked to comment on the hazardous-substance readings contained in her agency's documents. "But you get a little distance from the plume and they go dramatically down."

When questioned, though, Mears conceded that shifting winds sometimes blow the plume directly at workers at the site.

Because emissions of substances like benzene have exceeded OSHA levels, the EPA has urged rescue and cleanup workers to use respirators.

### **Compounding the Effects**

The effects of exposure to any hazardous substance depend on dose, duration, how the person is exposed, personal traits and habits, and whether other chemicals are present, according to the Agency for Toxic Substances and Disease Registry, a branch of the Department of Health and Human Services.



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**Hazardous substances are at levels well above EPA standards.**

In many instances, government scientists believe, short-term exposure is not a real concern, though other experts believe small amounts of certain carcinogenic substances eventually can cause serious disease.

The EPA documents, which include hundreds of pages of daily monitoring reports, were obtained under a Freedom of Information Act request by the New York Environmental Law and Justice Project and made available to The News.

Until now, public attention has focused largely on the potential hazards of asbestos in the air.

But the EPA records reveal that the release of toxic chemicals from the collapse of the twin towers and the subsequent subterranean fires has been far more extensive than first believed.

Among the findings contained in the EPA documents:

- Water discharged into the Hudson River from a sewer pipe at Rector St. on Sept. 18 showed dioxin levels more than five times higher than any previously recorded in New York Harbor by the state Department of Environmental Conservation. Monitors also found PCBs and dioxin levels in river sediment that were several times higher than a previous study of the river done in 1993.
- A test of toxic metals in water discharged into the Hudson

showed chromium, copper, lead and zinc at levels "elevated to several orders of magnitude above ambient water-quality criteria for most metals," according to the state monitoring agent who conducted the test. Because it was not raining that day, the inspector noted that the discharge was small and appeared to dilute quickly in the river.

- On Sept. 23, lead levels in the air at three sites in lower Manhattan — Barclay and West Sts., Church and Dey Sts. and at Ground Zero — registered above the EPA standard for ambient air quality. At Barclay and West, the level of lead in the air was nearly three times the EPA standard. Exposure to lead can damage the central nervous system, kidneys and other organs.
- On numerous days, sulfur dioxide readings in the air at a half-dozen sites in lower Manhattan have been far higher than the EPA's ambient air quality standards. High levels of sulfur dioxide can aggravate health problems for asthmatics or people with respiratory problems and trigger allergic reactions in others. On Sept. 18, sulfur dioxide levels were so high that, according to one industrial hygienist, they were above the EPA's standard for a classification of "hazardous."

"What I've seen of the data is troubling," said Paul Bartlett, an expert on PCBs and dioxins at the Queens College Center for the Biology of Natural Systems. He added that in his opinion, whatever monitoring the EPA has conducted has been inadequate.

"Their detection limits are aimed at threshold levels for occupational exposure," Bartlett said. "They aren't treating this as a disaster, so they're not asking what extent and how far are people being exposed or who is possibly being affected by the releases of chemicals. They're just checking what emissions are exceeding regulations."

"I'm most concerned about the soup effect of all these toxic chemicals," said Monona Rossol, an industrial hygienist who works with the Environmental Law and Justice Project. "No one's worrying about the combination of these things on the workers."

"When we are finding these readings that have some significant level to them, they are primarily within the work area," said EPA spokeswoman Mary Helen Cervantes. "As for the cumulative impact of these chemicals, that is an area of science and study and research that we really have not developed methodologies to do that kind of assessment."

"I don't know how the government defines a Superfund site," Bartlett said. "But I'd certainly treat Ground Zero like one."

## Toxic Definitions

- Benzene: A colorless liquid with sweet odor that evaporates into the air quickly, benzene is a highly flammable carcinogen.

Breathing benzene can cause drowsiness, dizziness, confusion, headaches, rapid heart rate, vomiting, infection or tremors. Long-term exposure affects bone marrow and can cause anemia and leukemia. Breathing very high levels can cause death.

- Chlorinated dioxins: A group of 75 chemically related compounds that are crystals or colorless solids; chlorinated dioxins are odorless and carcinogenic. Health risks include several kinds of cancer, liver damage and severe skin disease, such as lesions. A single exposure to some dioxins can kill animals. Chlorinated dioxins can travel long distances in the air.
- Chromium: Has no taste or odor, and at high levels this carcinogen can damage the nose and cause cancer, particularly in the lungs. Contact can cause skin ulcers. Ingesting large amounts can cause an upset stomach, convulsions, kidney and liver damage, even death.
- Copper: Small amounts are necessary for good health, but large amounts can cause dizziness, headaches, vomiting, diarrhea and liver and kidney damage.
- Lead: While lead can be found in all parts of the environment, exposure can damage the nervous system, kidneys and reproductive system. At high levels, lead can decrease a person's reaction time and memory, and cause anemia, as well as weakness in fingers, wrists or ankles. Children are more vulnerable to lead poisoning than adults.
- PCBs: Polychlorinated biphenyls, a mixture of chemicals that have no smell or taste, cause cancer in animals and are considered a likely human carcinogen. Health risks include liver, stomach and thyroid damage, and anemia. PCBs also can cause acne in adults, and behavioral and immunological changes in children. They can travel long distances in the air.
- Sulfur Dioxide: A colorless gas with a pungent smell; breathing high levels can cause severe airway obstructions, and burn the nose and throat.

*SOURCE: Agency for Toxic Substances and Disease Registry*

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