

OSHA SAMPLING RESULTS SUMMARY AS OF 10/24

Asbestos: A total of 587 air monitoring samples for asbestos have been taken. From 9/13 -9/22, 177 samples were taken in the financial district. They were taken on OSHA personnel as they walked within certain predetermined zones. Results revealed asbestos concentrations ranging from ND to .037 f/cc., well below OSHA's permissible exposure limit (PEL) of .1 f/cc.

After 9/22, sampling focused on the rubble pile and those workers working on or immediately next to it. 53 of 410 samples exceeded OSHA's limit via PCM analysis. However, upon further analysis using discriminating counting methods and/or TEM analysis, the number of asbestos fibers found dropped dramatically to below detectable levels or well below .1 f/cc.

Carbon Monoxide: 41 personal samples of workers on the rubble pile showed results ranging from 1 ppm to 34 ppm well below the OSHA 50 ppm permissible exposure limit

Noise: OSHA has been conducting noise monitoring in the rubble pile. Twelve personal samples have been conducted on employees performing (or working near) various operations such as jack hammering. Employee's exposure to the noise range from 80.6 dBA to 89 dBA. OSHA's permissible noise exposure for construction is 90 dBA

Respirable Silica: As of October 22, the overwhelming majority of the 189 silica samples show no detectable levels of airborne silica. The highest sample result was approximately twice the OSHA limit, whereas the next highest level was less than half of this limit. Both of these levels were found on personnel working in the rubble pile; an area where OSHA continues to encourage the use of respiratory protection.

Volatile Organic Compounds: OSHA has taken 173 samples for (VOCs) such as acetaldehyde, acrylonitrile, acrolein, benzene, 2-butanone, chlorodiphenyl (PCB), ethyl benzene, formaldehyde, hexone, isocyanates e.g. (MDI)(HDI), perchloroethylene, styrene, toluene, trichloroethylene, vinyl chloride and xylene. Screening samples initially showed elevated levels of some organic chemicals resulting from the fires burning in the rubble pile. Subsequent personal and area samples show worker exposure levels to be below OSHA limits. However, one personal sample result for benzene was found to be at the 8hr OSHA Allowable Limit concentration of 1ppm. This was found on a backhoe operator moving debris.

Oxides of Nitrogen: Sampling on employees manning the truck wash stations found no detectable levels of nitrous or nitric oxide

Metals: As of 10/19 OSHA has taken 261 air samples to monitor worker exposures to dusts, fumes, oxides, and other compounds of metals such as antimony, beryllium, chromium, cobalt, copper, iron, lead, manganese, molybdenum, nickel, vanadium, zinc, cadmium, magnesium, arsenic, and mercury. Results from these samples are generally well below the applicable OSHA limits. However, torch cutting and burning structural steel at the pile have resulted in instances of overexposures as follows: copper (6); iron oxide (6); lead (1); and cadmium (3). Accordingly, OSHA is recommending that workers engaged in these operations wear appropriate respiratory protection.

Ionizing Radiation: A survey of the rubble pile was conducted on 10/22-10/23 to check for latent radiation with particular attention to alpha radiation. Preliminary results show no elevated levels.

Dioxins: The single sample taken by OSHA and analyzed by the EPA, representing exposure on the pile, showed elevated levels of dioxins. These levels were substantially higher than background levels but comparable to levels found by the EPA on the rubble pile. The dioxins found here are emitted from the on-going rubble fire. OSHA does not have a worker standard for dioxins. Dioxins are considered collectively as suspect human carcinogens. Some of the individual compounds are considered to be known human carcinogens. OSHA is performing additional sampling and will coordinate with EPA to more fully characterize exposure around the rubble pile.

Polynucleated Aromatic

Hydrocarbons: OSHA identified several elevated samples, three of which reached or exceeded OSHA's PEL of $.2\text{mg}/\text{M}^3$. These samples were taken on the pile. OSHA continues to strongly recommend the use of respiratory protection when working on the rubble pile.

Pending Analysis: In response to information about exposure to the combustion by-products of Freon 22 used in the air conditioning systems of WTC towers, OSHA conducted sampling for fluorides as HF. Results are pending.