

Gilsenan, Michael

From: Bennett, Paul [NYCDEP/QUEENS/PAULB]
Sent: Tuesday, January 15, 2002 5:17 PM
To: Gilsenan, Michael
Subject: 1/15/02 Contractor H&S Meeting handouts

The attached was distributed at the meeting.

3/7/2003

Bovis Lend Lease/AMEC
WTC Disaster Recovery Project
Weekly EHS Meeting Minutes
Distribution List

MINUTES FROM JANUARY 8, 2002

All Meeting Attendees

M Burton, DDC

B. Coti, DDC

L. Mendes, DDC

B. Adams, DDC

B. Rottner, DDC

J. Rabovsky, LM

J. Abadie, BLL/AMEC

P. Ashlin, BLL/AMEC

P. Muldoon, BLL/AMEC

B. Peters, BLL/AMEC

J. Tasca, BLL/AMEC

B. Ryan, EROC

All Bovis/AMEC Supervision

All Subcontractors

All Union Stewards

FDNY

PAPD

NYPD

OSHA

EPA

DEC

OEM

DOH

**CONSTRUCTION EMPLOYERS ARE REQUIRED TO INCORPORATE THESE
MINUTES INTO TOOLBOX MEETINGS AND RETURN SIGNED
ATTENDANCE SHEETS TO BLL/AMEC EHS GROUP**

**ALL PROJECT EMPLOYERS/AGENCIES ARE ENCOURAGED TO
DISTRIBUTE THESE MINUTES AMONG THEIR STAFF FOR REVIEW**

Please contact Ray Master 646.235.5642 to be added to this distribution list

**Bovis Lend Lease/AMEC
WTC Disaster Recovery Project
Weekly Site EHS Meeting
AMEX Building, 26th Floor, Room 5**

On January 8, 2002, Bruce Rottner, DDC EHS Director and Ray Master, BLL/AMEC EHS Director conducted the weekly site EHS meeting. The following items were discussed:

Site EHS orientation training is scheduled at 10:00 AM, 1:00 PM, 4:00 PM and 7:30 PM on Wednesday, January 9, 2002, American Express Building, 26th floor, Room 5. Reservations are not needed and all you need to do is just show up. As of Thursday, January 10, 2001, all personnel will be required to produce evidence of their respiratory fit test and a **site orientation badge**, in addition to the beige Site pass and photo ID badge.

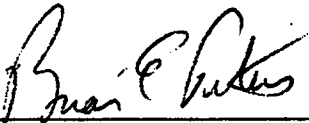
2. The regularly scheduled EHS meeting will only be meeting one day per week, on Tuesday, 8:00 AM, 26th floor, room 5, American Express Building until further notice. Representatives from all site stakeholders (i.e., contractors, agencies, uniformed services, etc.) are requested to take note of the time changes.
3. There have been several instances wherein **heavy industrial equipment** has come in **contact with personnel**, who have been in **close proximity** to the operation. It is mandatory for all personnel **walking/working near equipment** to remain **50' feet** from the operations, to wear **reflective vests**, and to be **aware of their surroundings**.
4. **Fall protection** is an ongoing challenge. Exposure to fall hazards greater than 6 feet requires fall protection. Fall protection consists of physical barriers, guardrails, or personal fall arrest systems (i.e. full-body harness with shock absorbing lanyard). An evaluation of fall exposure on the site shall be conducted and finalized.
5. **Air sampling** is ongoing by both ATC/Liberty Mutual and by OSHA. A presentation is scheduled after this meeting by both Liberty Mutual and OSHA to **summarize air sampling results to date** project wide.
6. Workers engaged in **burning and cutting** operations are encouraged to use **work practice controls** such as **body positioning** in addition to respiratory protection to **avoid exposure**. Specifically, when burning, workers should avoid standing directly in or near the **smoke plume** and to request long handled torches to **increase the distance** from the potential exposure.

7. Recent **noise exposure** sampling results indicate overexposure potential for **jack hammering, core drilling, concrete saw cutting**, and working in **near heavy equipment** operations. Workers are encouraged to wear hearing protection such as **earplugs**. In some instances, such as **jack hammering, double protection** (i.e., ear plugs and muffs) should be worn.
8. During the regularly scheduled **maintenance** of heavy industrial equipment, flatbeds, backhoes and dump trucks, it must be insured that the **back-up alarms** and **rear view mirrors** are in good working order. This is critical that operators have all the necessary **safety equipment** in place and working properly in order to assist them in identifying and avoiding pedestrian **struck-by hazards**.
9. **Personnel access** to the pit is tight and the construction site is continuing to shrink. Bruce Rottner reported that a method of ensuring **pedestrian routes** is becoming critically important. Everyone, including the operators when out of their equipment, should be wearing **reflective vests**, as well as other required PPE.
10. Bruce Rottner reemphasized that **Gators**, unless hauling equipment, are **not allowed** in the pit area. The discussion continued regarding the use of Gators off site. OEM recommended that Gators not be allowed to leave site. Jeff Tasca, BLL/AMEC reported that Gators were used to access Piers 6 and 25. Bruce Rottner of DDC stated that the convenience and privilege of driving Gators may be lost if not used appropriately.
11. In reference to **mercury levels**, Bruce Rottner expressed the need for qualified data and the presentation of such data. The EPA has ongoing sampling operations. Only two samples at grade level resulted in .1 and .4 PPM. OSHA has sampled for mercury and found only 1 result of .9 PPM west of Building 6. OSHA is awaiting the results from 87 samples and will report ASAP. Mike Smith, Shop Steward with Tully reported that ironworkers were doing an independent study. DDC continues to stress avoiding panic over rumors, which may not be the result of significant and qualified data. A request was made for a sampling at 90 Church.
12. Ray Master, BLL/AMEC reported that the **parking on West Street** would be lost in the very near future. West Street is being cleared for it's upcoming **opening** to vehicular traffic.
13. All contractors and other affected parties should be ready to address **inclement weather** and the impact of those conditions on safe project operations. DOS has been salting areas outside the site and may be including West Street. Liberty Mutual requested that DOS focus on all areas, including areas used by the Salvation Army. Bruce Rottner stressed that we all need to

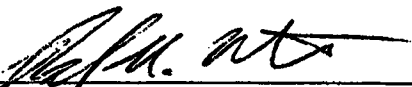
be proactive when it comes to salting. **Haul Road Safety, Bulletin 12**, is attached.

14. FDNY reports that new FDNY personnel are on site and currently proceeding through orientation and fit testing.

The next site EHS meeting will be held on January 15 at 8:00a.m. in Training Room 5, 26th Floor, AMEX Building.



Jim Abadie, BLL/AMEC
Principle in Charge *for*



Ray Master, BLL/AMEC EHS Director

Attached:

- (1) OSHA Sampling Results Summary As of 12/22
- (2) Haul Road Safety, Bulletin 12

OSHA SAMPLING RESULTS SUMMARY AS OF 12/22

Asbestos:	A total of 910 air monitoring samples for asbestos have been taken. From 9/11-9/21, 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 (none detected) to .037 f/cc., well below OSHA's permissible exposure limit (PEL) of .1 f/cc. After 9/21, sampling focused on the rubble pile and those workers working on or immediately next to it. 82 of the samples analyzed 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:	A total of 77 personal samples of workers on the rubble pile showed results ranging from 1 ppm to 34 ppm which are well below the OSHA 50 ppm permissible exposure limit.
Noise:	OSHA has been conducting noise monitoring in the rubble pile. 41 personal samples have been conducted on employees performing (or working near) various operations such as jack hammering, drilling and equipment operations. Employee's exposure to the noise range from 73.7 dBA to 94.5 dBA. OSHA's permissible noise exposure for construction is 90 dBA. One personal sample and one area sample during core drilling operations exceeded the OSHA noise PEL of 90 dBA. OSHA continues to recommend the use of appropriate hearing protection for workers performing tasks where high noise levels are likely to be encountered.
Respirable Silica:	The overwhelming majority of the 408 silica samples show no detectable levels of airborne silica. However, fourteen exposures exceeded the PEL. The highest sample result was approximately nine times the OSHA limit (pre-drillers working on the slurry or "bathtub" wall). The other twelve elevated exposures were approximately one to seven times the OSHA limit. These exposures occurred during: 1) rubble removal and loading operations near the Winter Garden; 2) during the breaking up of concrete in the pit; 3) while core drilling the concrete slurry wall, and 4) while chipping concrete with power tools during demolition activities at 7 WTC's parking garage. Most of the work areas where apparent overexposures to silica occurred were in the rubble pile; an area where OSHA continues to encourage the use of respiratory protection.
Volatile Organic Compounds:	OSHA has taken 608 samples for (VOCs) such as acetaldehyde, acrolein, acrylonitrile, benzene, 2-butanone, carbofurans, chlorodiphenyl (PCB), ethyl benzene, formaldehyde, Freon R-22 (chlorodifluoromethane), hexone, isocyanates (e.g. MDI, TDI), perchloroethylene, phosgene, styrene, toluene, 1-3 butadiene, trichloroethylene, vinyl chloride, glutaraldehyde, 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 8-hr. OSHA Allowable Limit concentration of 1 ppm. This was found on a backhoe operator moving debris. See information below for polynuclear aromatics, Freon R-22, phosgene and dioxin.

**Oxides of Nitrogen/
Sulfur:**

Sampling on grappler operators on the rubble pile, and on employees manning truck wash stations revealed trace levels of nitric oxide and nitrogen dioxide. SO₂ personal and area results were found to be below OSHA limits.

Metals:

OSHA has taken 653 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 rubble pile have resulted in instances of overexposures as follows: copper (10); iron oxide (21); lead (12); and cadmium (2). 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:

OSHA has taken samples for dioxin and these samples were analyzed by EPA. One initial sample, representing exposure directly on the pile, showed elevated levels of dioxins when compared to ambient background levels. This value was comparable to the levels found by EPA sampling. The dioxins at this location are being emitted from the on-going rubble fire. Additional sampling was conducted around the perimeter of the pile and revealed levels that were considerably lower than those on the rubble pile. Dioxins are considered collectively as suspect human carcinogens. OSHA does not have a worker standard for dioxins. OSHA is coordinating with EPA, and the Salt Lake City Analytical Laboratory to fully assess the risk posed by the elevated levels of dioxins.

**Polynuclear Aromatic
Hydrocarbons**

OSHA has taken 132 samples. The majority of the samples have not shown the presence of benzo(a)pyrene and/or one or more of five additional fused polycyclic hydrocarbons: anthracene, acridine, pyrene, chrysene and phenanthrene. Sample results to date have identified seven samples which reached or exceeded OSHA's coal tar pitch volatile PEL of 0.2mg/m³. These personal samples were taken on the pile on iron workers and grappler operators. OSHA continues to strongly recommend the use of respiratory protection when working on the rubble pile.

**Freon R-22,
Hydrogen Fluoride
& Phosgene:**

OSHA has taken 105 samples for Freon R-22 (chlorodifluoromethane). The majority of sample results received to December 17th reveal non-detectable airborne levels. During operations involving Freon removal from the auxiliary chiller that started on 12/5/01, direct reading instrument revealed readings ranging from 100 ppm to one peak near a leaky valve of 500 ppm. SCBA tanks were and are being worn by workers, and masks are to be worn only when direct reading instruments reveal 850 ppm Freon and/or less than 20.4% Oxygen. OSHA does not have an exposure limit for Freon R-22. (The NIOSH REL for Freon is 1000ppm..) In response to information about exposure to the decomposition by-products of Freon R-22 used in the air conditioning systems of WTC towers, sampling for hydrofluoric acid (HF) had been conducted. Results for HF revealed non-detectable levels. Sample results for phosgene to date show non-detectable levels.



City of New York Department of Design and Construction

WTC EMERGENCY PROJECT

Environmental Health and Safety Bulletin

Bulletin # 12

HAUL ROAD SAFETY

Snowstorm and icy conditions, which commonly occur during this time of the year, can adversely impact haul road conditions and safety at Ground Zero. Poor road conditions can make it difficult to operate equipment safely and can lead to loss of control of the vehicles, collisions with other vehicles, runaway vehicles, and vehicles going off the roadway and overturning. The Prime Contractors/Subcontractors and vehicle operators must be prepared for these conditions and take precautions. Prior to a potential snow/ice storm, lay a sufficient amount of salt and/or milling on all traffic roadways at Ground Zero. The Department of Sanitation (DOS) will handle roadways to Piers 6 and 25 outside of the inner zone; however, contractor supervisors should travel the route periodically to assess conditions. Supervisors should contact DOS for additional salting as needed.

Furthermore, roadways should be inspected and maintained regularly. Special checks should be made after changes in weather conditions. The Prime Contractors/Subcontractors and vehicle operators should be alert to, and anticipate, changes in road conditions, especially with changes in the weather. The Prime Contractors/Subcontractors and vehicle operators should also inform Incident Command (DDC/FDNY) of any unusual or potentially dangerous road conditions such as:

- Ice and snow drifts (including “black ice” that is not easily detected on roadways);
- Poor drainage areas;
- Cracks or unstable slopes above or below the roadways;
- Washed out areas, ruts and gullies; or
- Debris on roadways.

For further information on this subject contact your employer and refer to the WTC EMERGENCY PROJECT ENVIRONMENTAL, SAFETY, AND HEALTH PLAN



City of New York Department of Design and Construction

WTC EMERGENCY PROJECT

Environmental Health and Safety Protocol

January 6, 2002

FALL PROTECTION AND AWARENESS

The nature of the debris excavation frequently creates fall hazards from void openings, excavation sidewalls, slurry wall and other unprotected elevations. In addition, ladders, scaffolds and work at elevations may also create fall hazards. It shall be required that all contractors and agencies ensure that fall protection/prevention systems be provided at all locations where fall hazards of 6 feet or greater exist. Workers shall not be permitted to work on the top of a wall, excavation or other area with a fall distance of 6 feet or greater.

This protocol will address locations where fixed fall protection systems will be required. These locations include, but are not limited to excavations, holes, wall openings, slurry wall, leading edges of excavations and all other locations and operations with potential fall hazards that can be guarded with permanent / semi-permanent systems. Personal fall arrest systems are not covered in this protocol.

GUARDRAILS

1. Provide guardrail systems, when feasible, at all locations where a fall hazard of 6 feet or greater exists. Where guardrail systems are impractical, an alternative form of fall protection as outlined under "Guardrail Alternatives" must be provided.
2. Require that guardrail systems meet the following criteria:
 - a. Toprails must be installed so that the top edge of the rail is 42 ± 3 inches above the surface and capable of withstanding, without failure, a minimum force of 200 pounds in any outward or downward direction with no more than 3 inches of deflection.
 - b. Midrails must be installed midway between the toprail and the surface and be capable of withstanding, without failure, a minimum force of 150 pounds in any outward or downward direction.
 - c. Posts must be spaced not more than 8 feet apart on centers.
3. Do not use plastic or steel banding as toprail or midrail.
4. Erect guardrails on all sides when using guardrail systems around holes.
5. When guardrails are used around holes that are used for access, such as ladderways, provide a gate or offset the guardrail so that a person cannot walk directly into the hole.
6. When guardrails are used at hoisting areas, place a chain, gate, or removable guardrail section across the access point when hoisting operations are not taking place.

Safety Protocols are considered part of the WTC Emergency Project ESH Plan.

- 7 Erect guardrail systems on all unprotected sides or edges of ramps and runways when such systems are used.

GUARDRAIL ALTERNATIVES

1. In the absence of a fixed guardrail, the following may be used to provide fall protection or fall awareness:
 - a. Hole Covers
 - i. Provide surface hole covers that are capable of supporting at least twice the weight of employees, equipment, and materials that may be imposed on the cover at any one time.
 - ii. The covers must completely cover the opening.
 - iii. Secure covers at the time of installation to prevent displacement by the wind, equipment, or employees.
 - iv. Color code or mark all hole covers with the word "HOLE" or "COVER" to provide warning of the hazard.
 - v. Provide road plates in roadways and vehicle aisles that are capable of supporting at least twice the maximum axle load of the largest vehicle expected to cross over the cover. Road plates must be pinned and ramped.
 - b. Jersey Barriers
 - i. Jersey barriers may be used around the slurry wall and other excavation edges.
 - ii. Barriers should be placed approximately six feet (6') back the edge. If workers will be required to work inside the jersey barrier, the barrier must be equipped with anchorage points for use of personal fall arrest equipment.
 - iii. Plastic jersey barriers may not be used as fall protection.

FALL AWARENESS

- 1 A fall awareness barrier is NOT fall protection. It is an alert system to advise personnel of the presence of a fall hazard but must not be relied on to prevent a fall.
 - a. Fall awareness systems can include use of caution tape, plastic jersey barriers, cones and barrels.
 - b. Such systems must be place a minimum of 6' from the leading edge of a fall hazard.
 - c. These systems may be used when the fall hazard is temporary and will change with time.
2. Signage
 - a. Signs warning of potential fall hazards may be used if it is unsafe to install guardrails or other fall protection in an area due to structural stability or accessibility (such as the elevated areas around WTC 6).

Safety Protocols are considered part of the WTC Emergency Project ESH Plan.

PROTECTION FROM FALLING MATERIAL

1. Install toeboards along any leading edge where there is a potential for material to drop to a level below.
 - a. Toeboards must be a minimum of 5 inches in height.
 - b. Must be capable of withstanding at least 50 pounds of force applied in any downward or outward direction.

\\hp\wtc_docs\safety protocols\fallprotectionforedgesandholes.doc