

Gilsenan, Michael

From: Gilsenan, Michael (ex)
Sent: Thursday, August 01, 2002 4:10 PM
To: 'jleight@health.nyc.gov'
Subject: FW: WTC Indoor Dust Cleaning Program



Monitoring_SOW#5c.wpd



CLEANING_SOW#5c.wpd

Jessice,

Would you please review the attached scopes of work - specifically the mold section. Just wanted to be sure you were comfortable with it, also is there another process that can be done?

Will call you in the morning or, if you prefer, I'll speak to Nancy.

Thanks,

Mike

-----Original Message-----

From: Wilson.EricJ@epamail.epa.gov [mailto:Wilson.EricJ@epamail.epa.gov]

Sent: Wednesday, July 31, 2002 4:14 PM

To: michaelgi@dep.nyc.gov; krishr@dep.nyc.gov

Subject: WTC Indoor Dust Cleaning Program

Michael and Krish,

Attached are the most recent copies of the SOW for the monitoring and cleaning contracts. These are still works in progress. We will fill you in on any additional changes contemplated when we meet tomorrow.

Eric

(See attached file: Monitoring_SOW#5c.wpd) (See attached file: CLEANING_SOW#5c.wpd)

World Trade Center Indoor Dust Cleaning Program
Monitoring Contract Scope of Work
DRAFT - 7/30/02

A. Introduction

All work performed under this contract entered into between the New York City Department of Environmental Protection (DEP) and the cleaning contractor must be in compliance with all applicable laws and regulations, including but not limited to regulations issued by the United States Environmental Protection Agency (EPA), the United States Department of Labor Occupational Safety and Health Administration (OSHA), the New York State Department of Labor (NYS DOL), and the New York City Department of Environmental Protection (DEP).

The EPA and DEP will solicit participation in a direct assistance program for residents and residential building owners south of Canal Street who are concerned that their residences may have debris/dust from the collapse of the World Trade Center (WTC). A DEP/EPA telephone hotline has been established to receive requests from the public. The assistance will include various options, including cleaning within residences and common spaces by licensed asbestos contractors with follow-up asbestos sampling, asbestos air sampling only, and providing high efficiency particulate air (HEPA) vacuums.

NYS DOL licensed asbestos contractors shall perform cleaning activities for residents who wish to have their homes cleaned.

The purpose of this contract is to acquire project monitoring services including site inspections, surveys and assessments, scheduling, coordinating and monitoring the clean-up of dust/debris, and collecting samples from residences impacted by the collapse of the World Trade Center. The scope of work for the monitoring activities are identified below. The monitoring contractor shall supply all equipment and supplies necessary to perform the work specified in this contract.

B. Roles and Responsibilities

Under DEP's contract with the cleaning contractor, any disputes or claims related to the cleaning contract shall be submitted to DEP's Contracting Officer. DEP's Project Manager will provide overall technical oversight for the project. The EPA will provide technical assistance to ensure that the work conducted as part of the World Trade Center Indoor Dust Cleaning Program is completed safely, efficiently and in compliance with the applicable Scope of Work and all applicable laws, rules and regulations. As such, the contract between DEP and the cleaning contractor provides that EPA in coordination with the City's Contracting Officer, or his or her designee, shall have the following authority related to cleaning work conducted under this contract:

1. The authority to stop work for health and safety reasons.

2. The authority to stop work for non-compliance with the Scope of Work.
3. The authority to give technical direction to the contractor in the performance of the work.
4. The authority to review and approve or disapprove of the qualifications of the cleaning personnel involved in the work.
5. The right to inspect and accept or reject any work .

C. Qualifications

Proof of qualifications must be presented upon request, including qualifications for wipe sampling, personal monitoring and HVAC evaluations.

Project Monitors

The Project Monitors must possess valid NYS Asbestos Project Monitor certificates. The Project Monitors must have served as a third party project monitor on at least 20 asbestos abatement projects. Project Monitor must have performed final clearance inspections on at least 50 asbestos abatement projects. The Project Monitor must have access to translation services to schedule pre-cleaning unit inspections with residents.

Air Monitoring Technicians

Air monitoring technicians must possess valid NYS Asbestos Project Sampling Technician (APST) certificates. Technicians must have performed air sampling for at least 6 months.

HVAC System Inspectors

HVAC assessments and cleanliness inspections shall be conducted by qualified personnel. At a minimum such personnel shall have an understanding of HVAC system operation and experience in utilizing accepted indoor environmental sampling practices, current industry HVAC cleaning procedures, and applicable industry standards.

Background Investigations

All contractors and subcontractors involved in the monitoring activities at residential buildings under this contract are responsible for completing a background check on their employees prior to employees beginning on-site work and for screening unacceptable candidates from the pool of on-site workers. Contractors are required to maintain records of background checks for 4 years and to make them available to the DEP and EPA when requested. At a minimum, the background check must include:

1. Law enforcement checks (5 years)
2. Professional license and certification

D. Specifications

This contract between DEP and the monitoring contractor shall be in force for 24 consecutive months from the commencement date. The monitoring contractor must be prepared to mobilize within 72 hours of the contract award. Cleaning activities shall be scheduled for 20 residences per day. Air sampling shall be scheduled and completed within 24 hours of successful visual inspection by the project monitor. Air sampling shall also be provided at an additional 10 to 20 residences per day where cleaning activities are not scheduled, (i.e. where residents have requested sampling only). Work shall be scheduled 7 days per week between the hours of 8 am and 6 pm. A sufficient number of properly trained and certified personnel shall be available for project monitoring and sampling.

The Monitoring Contractor shall have available sufficient quantities of sampling equipment to provide the amount and type of samples required for this project. At a minimum the following equipment is required: air-sampling pumps with maximum flow rate capacities of 15 liters per minute, tripods, rotometers, sample cassettes with mixed cellulose ester filters having pore size of 0.8um.

The Monitoring Contractor shall attend a kick off meeting prior to commencement of sampling activities. At this time, the Monitoring Contractor shall participate in discussions regarding the scope of work, sampling logistics and resource requirements and procedures for data acquisition and submittal. In addition, the monitoring contractor will demonstrate data acquisition procedures and software to be employed for this project. The Monitoring Contractor shall attend meetings or conference calls with EPA to coordinate field activities, as requested.

The Monitoring Contractor shall adopt and follow the Quality Assurance Project Plan prepared by EPA for all environmental data collection activities performed under this contract. All appropriate data, original field forms/data sheets, and chain-of-custody forms shall be collected and completed in accordance with the instructions contained in the contract and provided to EPA. This information shall be provided via FormsII Lite (F2L) or an alternative electronic format that is accessible by the laboratory. All clearance air samples and copies of necessary documentation shall be hand delivered daily to EMSL Laboratories at: 307 W. 38th St., New York, New York 212-290-0051. All wipe samples and copies of necessary documentation shall be shipped daily by courier for next day delivery to Paradigm Analytical Laboratories at: 2627 Northchase Parkway SE, Wilmington NC 28405, 910-350-2839.

Copies of all invoices for work conducted under this contract shall be provided to EPA and DEP. Decisions regarding the reimbursement of costs will be made by DEP.

Deliverables

All deliverables shall be provided via F2L or an agreed upon alternative electronic format approved by EPA and DEP. The Project Monitor shall also maintain a copy of each deliverable and all field documentation submitted under this contract for 365 days. The Project Monitor shall review all deliverables prior to submission to EPA. The review shall assure that each deliverable is accurate and complete, technically sound, and free of clerical errors

The Project Monitor shall direct and coordinate all services and report all findings to EPA. The scope of this project will be as follows:

1. The Project Monitor shall be responsible for accessing a secure EPA Website (url, user name and password to be provided by EPA) to obtain requestor information (address, building identification numbers, etc.). In coordination with the EPA, the Project Monitor will access residential services requested from the Website and schedule cleaning activities and air sampling with the tenants/owners, asbestos abatement contractors and air monitoring technicians for the various residences. The Project Monitor will then supply relevant information on activities for the EPA Indoor Air database via the secure EPA website. Data to be input may include, but is not limited to start and completion dates for the cleaning, sampling dates and sample identification numbers. All data shall be maintained as confidential.

Deliverable

The Project Monitor shall provide validated addresses and scheduling information into the EPA Indoor Air web database via F2L or an agreed upon alternative electronic format or website approved by EPA within 24 hours of activity.

2. The Project Monitor will schedule and conduct pre-cleaning or pre-sampling inspections of the residences, common spaces and heating, ventilation and air conditioning systems (HVAC) based on the requests for assistance from individual residents and building owners made through the DEP/EPA hotline.
 - a. Residents will be provided with a fact sheet and information prepared by EPA regarding sampling options (aggressive and modified aggressive air sampling protocols) and the handling of valuable personal items (money, jewelry, heirlooms, etc.) and fragile objects during work.
 - b. The Project Monitor will obtain written authorization for access and all work to be performed for this project including inspection, sampling and cleaning of residences, common spaces and HVAC systems using the Access Agreement (to be provided).
 - c. The Project Monitor will advise EPA if any of the following conditions are observed:
 - i. mixed residential and commercial use within a building;
 - ii. dust and/or debris in common spaces;
 - iii. the presence of mold on building components (walls, support beams, ceiling tiles, HVAC systems); the presence of peeling, flaking or chalking lead paint;
 - iv. the presence of potential asbestos-type insulation (e.g., fibrous materials);
 - v. residents with special needs; or
 - vi. other circumstances that may require deviation from the procedures specified in the scopes of work for the cleaning and monitoring contracts.
 - d. In consultation with EPA, the Project Monitor will make a determination of the appropriate

Cleaning Contract Scope of Work (i.e. Scope A or B) to be implemented. This determination is to be made based on the descriptions included in the Cleaning Contract Scope of Work and best professional judgement.

Deliverables

All deliverables shall be provided in the EPA Indoor Air web database via F2L or an agreed upon alternative electronic format or website approved by EPA within 24 hours of activity.

The Project Monitor shall record all pre-cleaning and pre-sampling inspection information in the EPA Indoor Air database or using an agreed upon electronic format. This information shall include, but is not limited to, exterior evaluation (pass/fail), type of HVAC system (central, individual or none), HVAC impacted (Y/N), occupant present (Y/N), written access obtained (Y/N), space occupied (Y/N), dust present (low/high), mold present (Y/N), peeling /flaking/chalking paint present (Y/N), ACM present (Y/N) residential use (commercial/residential), residents with special needs, cleaning method (Scope A or B). Dates and times shall be associated with all activities including start and finish date.

3. In the event that mold is observed on building components (walls, support beams, ceiling tiles, HVAC systems) in area where work has been requested, the Monitoring Contractor will notify EPA and contact the NYCDOH at 212-442-3372 for assistance in evaluating potential hazard to workers. Cleaning will not proceed in areas where mold is observed until potential hazards are evaluated and addressed if necessary.

Deliverables

The Project Monitor shall record if mold is present and notify the NYCDOH and EPA. This information shall be provided via EPA Indoor Air web database or an agreed upon alternative electronic format or website approved by EPA within 24 hours of activity.

4. In the event that suspected ACM or flaking, peeling or chalking paint is observed, the Monitoring Contractor will notify EPA. Cleaning will not proceed in areas where suspected ACM or flaking, peeling or chalking paint is observed until instructed otherwise.

Deliverables

The Project Monitor shall record if suspected ACM or flaking, peeling or chalking lead based is observed and notify EPA. This information shall be provided via EPA Indoor Air web database or an agreed upon alternative electronic format or website approved by EPA within 24 hours of activity.

5. The Monitoring Contractor shall evaluate all HVAC systems in all residential buildings where cleaning will take place to determine if these systems have been impacted by dust or debris from

the collapse of the World Trade Center and if these systems require cleaning.

- a. In cases where cleaning is requested for an individual residence, portions of the HVAC system dedicated to that residence will be evaluated.
- b. In cases where cleaning is requested for a whole building, the building's HVAC system will be evaluated as a whole.
- c. HVAC assessments shall be conducted in accordance with the National Air Duct Cleaners Association (NADCA) General Specification for the Cleaning of Commercial Heating, Ventilating and Air Conditioning Systems and the NADCA Assessment, Cleaning and Restoration Standard (ACR 2002).
- d. The results of the whole building HVAC system evaluations shall be documented in a letter report. This report shall be provided to DEP and EPA within 2 business days of the completion of the evaluation. This report shall include the name and qualifications of inspector, date of inspection, building location, a description of the HVAC system, the basis for the determining whether or not the system was impacted by the collapse of the WTC and if the system requires cleaning.

Deliverables

The Project Monitor shall record if the HVAC systems has been impacted by dust or debris from the collapse of the WTC, if the HVAC system has been evaluated and cleaned subsequent to September 11, 2001 (if yes, then when and by whom) and if the HVAC system requires cleaning. This information shall be provided via F2L or an agreed upon alternative electronic format or website approved by EPA within 24 hours of activity.

6. HVAC systems that have been impacted by dust or debris from the collapse of the World Trade Center will be cleaned. In the event that a HVAC system for an entire building requires cleaning, a separate, site specific contract will be awarded by DEP for this work. If only a portion of a HVAC system requires cleaning, then the cleaning contractor will conduct the cleaning utilizing specialized labor trained and experienced in duct cleaning.
 - a. The monitoring contractor shall schedule and oversee the cleaning of HVAC systems.
 - b. The Monitoring Contractor shall inspect HVAC systems or portions thereof cleaned to verify cleanliness. If visible dust or other contaminants are evident through visual inspection or testing, then the Monitoring Contractor will direct the HVAC cleaning contractor to relean those portions of the system where dust or other contaminants are present and reinspect.
 - c. HVAC cleaning, and cleanliness inspections shall be conducted in accordance with the National Air Duct Cleaners Association (NADCA) General Specification for the Cleaning of Commercial Heating, Ventilating and Air Conditioning Systems and the NADCA Assessment, Cleaning and Restoration Standard (ACR 2002).
7. Sampling of residences and common spaces where cleaning has not been requested
 - a. Based on consultation with resident, aggressive or modified aggressive air sampling will be

conducted. Residents shall not be present in their residence during aggressive air sampling activities.

- i. Before beginning aggressive air sampling, a 1 horsepower electric leaf blower shall be used to direct exhaust air against walls, ceilings, floors and other surfaces. This shall continue for at least five minutes per 1,000 square feet of floor. When directing the exhaust, caution shall be taken to minimize disturbance and potential damage to furnishings and personal belongings.
 - ii. HVAC systems shall be shut down or isolated locally during aggressive air sampling.
 - iii. Room and window air conditioners shall not be operated during aggressive air sampling.
 - iv. Leaf blowers shall not be employed for modified aggressive air sampling.
 - v. All other procedures are identical for aggressive and modified aggressive air sampling, unless otherwise noted.
- b. At least one 20-inch fan shall be placed in the center of each room sampled. One fan per 10,000 cubic feet of room space shall be used. The fans shall be operated on slow speed and pointed toward the ceiling. The fans shall run for at least 15 minutes prior to the start of sampling. The fans shall operate continuously throughout sampling and shall not be turned off until sampling is completed.
 - c. For studio apartments 3 air samples shall be collected. For 1-bedroom apartments and above, 5 air samples shall be collected. Sampling equipment shall be placed in living areas and away from obstructions. The sampling cassette must be placed on a tripod, not taped to existing surface and should be directed downward at a 45 degree angle.
 - d. Common spaces will be sampled without the use of forced air devices (fans, leaf blowers etc). For small spaces, less than 160 square feet, 3 samples will be collected. For large spaces greater than 160 square feet and less than 25,000 square feet 5 samples will be collected. For spaces greater than 25,000 square feet, 1 sample will be collected for each 5,000 square feet. Sampling equipment shall be placed away from obstructions. The sampling cassette must be placed on a tripod, not taped to existing surfaces and directed downward at a 45 degree angle and
 - e. Air samples will be collected in accordance with the procedures specified in NIOSH 7400 Method for PCM and 7402 for TEM. Air sampling cassettes need to be monitored to ensure that cassettes are not clogging by monitoring flow rates. The minimum sample volume required is 3600 liters. All clearance air samples and copies of necessary documentation shall be hand delivered daily to EMSL Laboratories at: 307 W. 38th St., New York, New York 212-290-0051.
 - f. Wipe samples will be collected at 10 percent of the residences where sampling only has been requested, up to a maximum of 50 residences, as instructed by EPA. This sampling will consist of the collection of 3 wipe samples each for dioxin, total metals and mercury (Note: a separate wipe sample is required for each parameter at each location). Metals and mercury wipe samples will be collected in accordance with procedures specified in

HUD Appendix 13.1. Dioxin wipe samples will be collected in accordance with the procedures specified in ASTM D 6661-01. Wipe samples and copies of necessary documentation will be packed, sealed and shipped daily by courier for next day delivery to Paradigm Analytical Laboratories at: 2627 Northchase Parkway SE, Wilmington NC 28405

- g. 24-hour turn-around time shall be specified for the analysis of all samples collected using the aggressive air sampling method. Standard turn-around time will be used for all other samples.
- h. The Monitoring Contractor will document all the necessary information regarding sampling activities, fill out all field logs, data sheets, and chain-of-custody forms. The Monitoring Contractor will use F2L for all sample and chain-of-custody documentation. Samples must be labeled and accompanied with completed chain-of-custody forms before shipping to the designated laboratory. The label must include the EPA Project Tracking Number.
- i. All information must be maintained using the secure EPA website (url, user name and password to be provided by EPA). Information on sampling activities (date, sample ID) shall be provided to EPA, via the website, within 24 hours of completion of sampling. All data shall be maintained as confidential.

Deliverables

The Project Monitor will record equipment used to collect the samples (leaf blower, fan, etc.) and size of space daily in the field notebook. In addition, date, start and completion dates for the cleaning, sample media, flow media type, flow rates (start/final), flow rate (average), time (start/finish), total elapsed time (min), calculated sample volume (L), pump fault, weather, units, quality assurance samples (lot blank) sampling dates and sample identification numbers (sample IDs), complete chain-of-custody forms, EPA Project Tracking Numbers and laboratory address shall be entered into an agreed upon electronic format or website approved by EPA within 24 hours of activity.

8. Pre-cleaning and Post-cleaning Wipe Sampling Procedures

- a. The Project Monitor will collect pre-cleanup and post-cleanup wipe samples at 5 percent of the residences cleaned up to a maximum of 50 residences per quadrant as instructed by EPA. This sampling will consist of the collection of 3 pre cleaning and 3 post cleaning wipe samples for dioxin, total metals and mercury (Note: a separate wipe sample is required for each parameter). Metals and mercury wipe samples will be collected in accordance with procedures specified in HUD Appendix 13.1. Dioxin wipe samples will be collected in accordance with the procedures specified in ASTM D 6661-01.

- b. The Monitoring Contractor will document all the necessary information regarding sampling activities, fill out all field logs, data sheets, and chain-of-custody forms. The Monitoring Contractor shall use F2L for all sample and chain-of-custody documentation. Samples must be labeled and accompanied with completed chain-of-custody forms before shipping to the designated laboratory. The label must include the EPA Project Tracking Number. Samples will be packed, sealed and shipped daily by courier for next day delivery to Paradigm Analytical Laboratories at: 2627 Northchase Parkway SE, Wilmington NC 28405

Deliverables

- The Project Monitor shall complete chain-of-custody forms and record the number of wipe samples, EPA Project Tracking Numbers, the laboratory address, date, and sample IDs in an agreed upon electronic format or website approved by EPA within 24 hours of activity.
9. The Project Monitor shall schedule and oversee the cleaning operations of the Cleaning Contractor. No residential, common space or HVAC system shall be cleaned until the exterior of the building has been cleaned or has been inspected and found to be free of dust or debris from the collapse of the WTC. No residential or common space shall be cleaned until the HVAC system has been evaluated and cleaned as necessary. If a scheduling problem arises the Project Monitor should contact EPA. The Project Monitor shall coordinate daily access for cleaning and sampling with residents, owners, the Cleaning Contractor and sampling technicians.
 10. The Monitoring Contractor shall provide sufficient personnel to provide periodic (3-4 hours/unit) oversight of the Cleaning Contractor to verify that work is being conducted in accordance with the Cleaning Contract Scope of Work.
 11. The Project Monitor shall verify that the Cleaning Contractor is using properly trained and certified NYSDOL and NYCDEP certified workers.
 12. The Project Monitor shall conduct routine quality assurance inspections during the course of cleaning and concur by initialing the Cleaning Checklist (to be developed) for tasks completed in compliance with the Cleaning Contract Scope of Work.

Deliverables

- The Project Monitor shall submit the completed Cleaning Checklist via F2L or an agreed upon alternative electronic format or website approved by EPA within 24 hours of activity.
13. **Personal Air Monitoring**
Personal air monitoring shall be performed by the Monitoring Contractor in accordance with

USDOL OSHA requirements. The person who conducts sampling shall possess a valid NYS DOL certificate. Personal air monitoring will be performed on a minimum of one worker per shift per residence during for the first 6 weeks of cleaning operations. This may be extended based on a determination made by EPA, DEP and OSHA. Thereafter personal air monitoring samples will be taken at one sample per quadrant per day. All samples shall be collected and analyzed in accordance with NIOSH 7400 Method for PCM and 7402 for TEM. Analysis of these samples shall be the responsibility of the Monitoring Contractor. Results of analysis shall provided to EPA by the laboratory in an approved electronic format within 24 hours of collection. Copies of the results shall also be sent immediately to DEP, OSHA and the employer. The employer will make these results available to the employees or their designated representatives for their review in accordance with 29 CFR 1910.1020 and 29 CFR 1926.1101.

The Monitoring Contractor shall document all the necessary information regarding sampling activities, fill out all field logs, data sheets, and chain-of-custody forms. The Monitoring Contractor shall use F2L for all sample and chain-of-custody documentation. This data shall be provided to EPA within 24 hours of completion of the sampling.

Deliverables

The Project Monitor shall submit upon request a field package consisting of field sheets, field notes (copy), and chain-of-custody forms (copy) shall be delivered to the EPA via email, or an alternative format agreed upon. The Monitoring Contractor must sign and date all field sheets, field logbooks and chain-of-custody forms. This data shall be provided daily upon request at the activity completion.

14. The Project Monitor shall perform final visual inspections within 2 hours of the completion of the cleaning. If all areas are not dust free at that time, then the Project Monitor will direct the Cleaning Contractor to reclean as necessary. If all areas are dust free, then the Project Monitor will authorize final air sampling. Final inspections shall be documented using the Cleaning Checklist.

Deliverables

The Project Monitor shall submit to EPA, upon request, copies of the log book pages via e-mail, fax, or alternative agreed upon format.

15. Post Cleaning Air Sampling Procedures
 - a. Sampling shall not begin until a visual inspection confirms the absence of visible dust and debris. Post cleaning air sampling shall be performed upon successful visual inspection and completed within 24 hours. A successful visual inspection shall be an inspection that verifies the absence of dust and debris.
 - b. All surfaces must be completely dry prior to the start of sampling.

- c. Upon completion of the cleaning, air sampling will be conducted to verify attainment of the clean-up criteria. Based on consultation with the resident or owner, aggressive or modified aggressive air sampling will be conducted. Residents shall not be present during aggressive air sampling.
 - i. Before beginning aggressive air sampling, a 1 horsepower electric leaf blower will be used to direct exhaust air against walls, ceilings, floors and other surfaces. This shall continue for at least five minutes per 1,000 square feet of floor. When directing the exhaust, caution shall be taken to avoid disturbance and potential damage to furnishings and personal belongings.
 - ii. HVAC systems shall be shut down or isolated locally during aggressive air sampling.
 - iii. Room and window air conditioners shall not be operated during aggressive air sampling.
 - iv. Leaf blowers shall not be employed for modified aggressive air sampling.
 - v. All other procedures are identical for aggressive and modified aggressive air sampling, unless otherwise noted.
- d. At least one 20-inch fan shall be placed in the center of each room sampled. One fan per 10,000 cubic feet of room space shall be used. The fans shall be operated on slow speed and pointed toward the ceiling. The fans shall run for at least 15 minutes prior to the start of sampling. The fans shall operate continuously throughout sampling and shall not be turned off until sampling is completed.
- e. For studio apartments 3 air samples shall be collected. For 1-bedroom apartments and above, 5 air samples shall be collected. Sampling equipment shall be placed in living areas and away from obstructions. The sampling cassette must be placed on a tripod, not taped to existing surface and should be directed downward at a 45 degree angle.
- f. Common spaces will be sampled without the use of forced air devices (fans, leaf blowers etc). For small spaces, less than 160 square feet, 3 samples will be collected. For large spaces greater than 160 square feet and less than 25,000 square feet 5 samples will be collected. For spaces greater than 25,000 square feet, 1 sample will be collected for each 5,000 square feet. Sampling equipment shall be placed away from obstructions. The sampling cassette must be placed on a tripod directed downward at a 45 degree angle and not taped to existing surfaces.
- g. Air samples shall be collected in accordance with the procedures specified in NIOSH 7400 Method for PCM and 7402 for TEM. Air sampling cassettes need to be monitored to ensure that cassettes are not clogging by monitoring flow rates. The minimum sampling volume required is 3600 liters. All clearance air samples and copies of necessary documentation shall be hand delivered daily to EMSL Laboratories at: 307 W. 38th St., New York, New York 212-290-0051.
- h. 24-hour turn-around time shall be specified for the analysis of all post-cleaning air samples for Scope B cleanups and for all samples collected using the aggressive air sampling method. Standard turn-around time will be used for all other samples.

- i. The Monitoring Contractor shall document all the necessary information regarding sampling activities, fill out all field logs, data sheets, and chain-of-custody forms. The Monitoring Contractor shall use F2L for all sample and chain-of-custody documentation. Samples must be labeled and accompanied with completed chain-of-custody forms before shipping to the designated laboratory. The label must include the EPA Project Tracking Number.
- j. All information must be maintained using the secure EPA website (url, user name and password to be provided by EPA). Dates for monitoring and/or cleaning shall be provided to EPA and DEP electronically in an EPA approved format within 24 hours. Information on sampling activities (date, sample ID) will be provided to EPA, via the website, within 24 hours of completion of evaluation. All data shall be maintained as confidential.

Deliverables

The Project Monitor shall record all post-cleaning information in the EPA Indoor Air database or an agreed upon electronic format. This information shall include, but is not limited to sampling technique (aggressive or modified aggressive), visually cleaned (Y/N), damage claim (Y/N), and post cleaning status (pass/fail). Dates and times shall be associated with all activities including start and finish date.

Additional information including but not limited to, absence of dust/debris, equipment used (leaf blower, fan etc.), size of space, start and completion dates for the cleaning, sample media, flow media type, flow rates (start/final, flow rate (average), time (start/finish), total elapsed time (min), calculated sample volume (L), pump fault, weather, units, QC samples (lot blank), sampling dates, sample IDs, complete chain-of-custody forms, EPA Project Tracking Numbers and laboratory address shall be entered into an agreed upon electronic format or website approved by EPA within 24 hours of activity. Dates and times shall be associated with all activities including start and finish date.

- 16. The Project Monitor will conduct a post-cleaning inspection of the residence with the resident at the completion of the sampling. The resident should inspect the residence and identify any damage at this time and sign-off on the Project Completion Form. Any damage or loss to a residence or its contents shall be documented on this form.

Deliverables

The Project Monitor shall submit upon request to the EPA copies of the log book as requested via fax or alternative format agreed upon and within two days of request. Final air sampling shall be performed with 24 hours of final visual inspection.

- 17. The Project Monitor will complete a daily report which documents cleaning starts, continuations, completions, air sampling, recleaning and any delays or difficulties encountered.

Deliverables

The Project Monitor shall submit upon request the completed Project Completion Form to the into the EPA Indoor Air web database or an agreed upon alternative electronic format or website approved by EPA within 24 hours of activity.

18. EPA will notify residents of the results of sampling conducted as part of this project. No other party is authorized to release residential or common area sampling results.
19. Any damage to or loss of private property that occurs during sampling or is caused by the Monitoring Contractor or its' employees while engaged in activities covered by this scope of work is the responsibility of the Monitoring Contractor. The Monitoring Contractor is not responsible for damage or loss caused by the acts of third parties not involved in activities covered by this scope of work.
20. Copies of all reports, Cleaning Checklist, Project Completion Forms and chain-of-custody forms shall be submitted daily to the EPA and DEP.

World Trade Center Indoor Dust Cleaning Program
Cleaning Contract Scope of Work
DRAFT - 7/30/02

A. Introduction

All work performed under this contract entered into between the New York City Department of Environmental Protection (DEP) and the cleaning contractor must be in compliance with all applicable laws and regulations, including but not limited to regulations issued by the United States Environmental Protection Agency (EPA), the United States Department of Labor Occupational Safety and Health Administration (OSHA), the New York State Department of Labor (NYS DOL), and the New York City Department of Environmental Protection (DEP).

The EPA and DEP will solicit participation in a direct assistance program for residents and residential building owners south of Canal Street who are concerned that their residences may have debris/dust from the collapse of the World Trade Center (WTC). A DEP/EPA telephone hotline has been established to receive requests from the public. The assistance will include various options, including cleaning within residences and common spaces by licensed asbestos contractors with follow-up asbestos sampling, asbestos air sampling only, and providing high efficiency particulate air (HEPA) vacuums.

NYS DOL licensed asbestos contractors shall perform cleaning activities for residents who wish to have their homes cleaned. An independent Monitoring Contractor will schedule and monitor the work, perform a visual inspection, and perform asbestos air sampling when the cleaning is completed.

The purpose of this contract is to acquire the services of a NYS DOL licensed asbestos contractor with DEP and NYS DOL certified workers for the performance of cleaning activities at residential buildings impacted by the collapse of the World Trade Center. The scope of work for the cleaning activities is attached. The cleaning contractor shall supply all equipment and supplies necessary to perform the work specified in this contract.

B. Roles and Responsibilities

Under DEP's contract with the cleaning contractor, any disputes or claims related to the cleaning contract shall be submitted to DEP's Contracting Officer. DEP's Project Manager will provide overall technical oversight for the project. The EPA will provide technical assistance to ensure that the work conducted as part of the World Trade Center Indoor Dust Cleaning Program is completed safely, efficiently and in compliance with the applicable Scope of Work and all applicable laws, rules and regulations. As such, the contract between DEP and the cleaning contractor provides that EPA in coordination with the City's Contracting Officer, or his or her designee, shall have the following authority related to cleaning work conducted under this contract:

1. The authority to stop work for health and safety reasons.

2. The authority to stop work for non-compliance with the Scope of Work.
3. The authority to give technical direction to the contractor in the performance of the work.
4. The authority to review and approve or disapprove of the qualifications of the cleaning personnel involved in the work.
5. The right to inspect and accept or reject any work .

An independent Monitoring Contractor will perform air monitoring. Personal air monitoring will be performed on a minimum of one worker per shift per apartment during the first 6 weeks of cleaning operations. Thereafter, personal air samples will be taken randomly at a rate of one sample per quadrant per day. The results of this sampling shall be sent immediately to EPA, DEP, OSHA and the cleaning contractor. The cleaning contractor shall make these results available to the employees or their designated representatives for their review in accordance with 29 CFR 1910.1020 and 29 CFR 1926.1101.

C. Qualifications

This contract requires that only a NYS DOL licensed asbestos contractor and only NYC DEP and NYS DOL certified workers will be allowed to perform any of the cleaning activities at residential buildings under this contract. This requirement also applies to any subcontractors involved in the cleaning with the exception of HVAC system cleaning contractors. Proof of qualifications must be presented upon request.

The HVAC system cleaning contractors shall be a certified members of the National Air Duct Cleaners Association (NADCA) or shall maintain membership in a nationally recognized non-profit industry organization dedicated to the cleaning of HVAC systems.

All contractors and subcontractors involved in the cleaning activities at residential buildings under this contract are responsible for completing a background check on their employees prior to employees beginning on-site work and for screening unacceptable candidates from the pool of on-site workers. Contractors are required to maintain records of background checks for 4 years and to make them available to the DEP and EPA when requested. At a minimum, the background check must include:

1. Law enforcement checks (5 years)
2. Professional license and certification

D. Specifications

This contract between DEP and the cleaning contractor shall be in force for 24 consecutive months from the commencement date. The cleaning contractor must be prepared to mobilize within 72 hours of the contract award. The contractor shall have on staff and assigned to this contract a sufficient number of properly trained and certified workers to clean 20 units simultaneously and complete the cleaning activities in each residence within no more than 2 days. The contractor shall be prepared to work 7 days per

week between the hours of 8 am and 6 pm. Activities shall be coordinated with the Monitoring Contractor to ensure that the visual inspection is performed within two hours of the completion of cleaning activities. Cleaning activities shall be considered completed upon successful visual inspection by the Monitoring Contractor. Copies of all invoices for work conducted under this contract shall be provided to EPA and DEP. Decisions regarding the reimbursement of costs will be made by DEP.

All cleaning operations will be conducted in accordance with either Scope A or Scope B as described below.

HEPA means a filter system capable of trapping and retaining 99.97% of all mono-dispersed particles of 0.3 micrometers in diameter.

HEPA vacuum means a vacuum cleaner equipped with a HEPA filter, with a static water lift of 95 to 100 inches.

Scope of Work A

Application: These procedures apply to the cleaning of minimal dust accumulations (light coating). If a visual inspection indicates the presence of significant accumulations of dust and/or debris from the collapse of the WTC, Scope B procedures shall applied (refer to Scope of Work B). Residents may be present during Scope A cleaning procedures.

1. Cleaning of Common Spaces

Common spaces including hallways, stairways and elevator interiors will be cleaned, if requested by the building owner. The Monitoring Contractor in consultation with EPA, or EPA's designee will evaluate and determine if other common areas including utility rooms, laundry rooms, compactor rooms require cleaning. If elevator shafts are determined to contain significant WTC dust and or debris, cleaning will proceed under the Scope B site specific work plan. Work will begin from the entrance and continue through all common spaces in an orderly fashion. A detailed description of the minimum cleaning requirements for common space is as follows:

- a. Vacuuming will begin with the ceiling, continue down the walls and include floors.
- b. Impermeable walls and floors will be wet wiped using disposable wipes, after consultation with and approval by owner. Wet wiping will not be conducted if it is determined that it would cause damage to the surface.
- c. Carpets will be cleaned with a hot water extraction cleaner. The cleaner shall be equipped with a motorized agitator brush and have a static water lift of 95 to 110 inches.

2. Cleaning of HVAC Systems

HVAC systems that are determined to be impacted by dust or debris from the collapse of the World Trade Center will be cleaned. HVAC systems cleaning, if warranted, shall be completed prior to the initiation of the cleaning of common space or residences within an affected building. In the event that the HVAC system for an entire building requires cleaning, a separate, site specific contract will be awarded by DEP for this work. If only a portion of an HVAC system requires cleaning, then the

cleaning contractor will conduct the cleaning utilizing specialized labor trained and experienced in duct cleaning. HVAC cleaning will be conducted in accordance with National Air Duct Cleaners Association (NADCA) General Specification for the Cleaning of Commercial Heating, Ventilating and Air Conditioning Systems and the NADCA Assessment, Cleaning and Restoration Standard (ACR 2002). Verification of the effectiveness of HVAC system cleaning will be determined by the Monitoring Contractor. If visible dust or other contaminants are evident through visual inspection or testing, those portions of the system where dust or other contaminants are present shall be recleaned and subjected to reinspection for cleanliness.

3. Cleaning of Residential Spaces

Residences will be cleaned using HEPA vacuums, hot water extraction cleaners and wet wipes as described below. Surfaces to be cleaned include but are not limited to walls, floors, ceilings, ledges, trims, furnishings, appliances, equipment, etc. Encapsulating agents shall not be applied. Dry sweeping is prohibited. The cleaning contractor will not clean inside drawers, cabinets, breakfronts, etagers and similar enclosed storage and display spaces. Cleaning of clothing and accessories (handbags, shoes etc.) shall be the responsibility of the occupant. A detailed description of the minimum cleaning requirements is as follows:

- a. Terraces, balconies, exterior window sills, window wells and window guards that are accessible from the interior of the dwelling, will be cleaned.
- b. Interior windows, screens, window sills and window guards will be cleaned
- c. Vacuuming will begin with the ceiling, continue down the walls and include the floor.
- d. Impermeable walls and floors will be wet wiped using disposable wipes, after consultation with and approval by owner. Wet wiping will not be conducted if it is determined that it would cause damage to the surface.
- e. Carpets will be cleaned with a hot water extraction cleaner after consultation with and approval by owner. The cleaner shall be equipped with a motorized agitator brush and have a static water lift of 95 to 110 inches. After cleaning, red rosin construction paper will be applied to high traffic areas to protect carpets from soiling. Hot water cleaning will not be conducted if it would cause damage to the carpet.
- f. Fabric covered furniture will be cleaned with a hot water extractions cleaner after consultation with and approval by owner. Hot water cleaning will not be conducted if it would cause damage to the furniture.
- g. Curtains, fabric window treatments, upholstery and other materials that are not cleaned by wet methods (wet wiping and hot water extraction cleaning) will be HEPA vacuumed two times. Fabric covered furniture that is not cleaned by wet methods will be vacuumed using a stiff brush attachment.
- h. Intake/discharge registers of HVAC systems (if present) will be removed/cleaned. The first foot of duct work will also be vacuumed; then the register will be reinstalled and covered with plastic.
- i. Window and room air conditioners will be vacuumed and removed from their housing to allow access to internal portions of the air conditioner. The internal portions of the air

conditioner and housing will then be vacuumed. Filters will be vacuumed and reinstalled. Air conditioners will be reassembled and reinstalled after cleaning.

- j. Paperwork and books will be HEPA vacuumed.
 - k. Electrical outlets will be vacuumed.
 - l. Appliances such as refrigerators and stoves will be cleaned and moved. The floor footprint of the appliances will be cleaned and the appliance will be reinstalled in their original positions.
 - m. Refrigerator cooling tubes will be brushed and vacuumed.
 - n. Stove storage drawers, will be vacuumed if present. Stove cook tops will be opened and vacuumed. Stove exhaust fan filters will be cleaned.
 - o. The first foot of all exhaust duct work (including stove, dryer and bathroom vents) will be vacuumed. Exhaust fans will be vacuumed and wiped.
 - p. Closet floors will be vacuumed.
 - q. Solid objects (electrical equipment, exercise equipment, etc.) will be wet wiped, moved to allow cleaning of the underlying surface and will be returned to their original location.
 - r. Dishwasher toe plates will be removed and the floor beneath the appliance will be cleaned.
 - s. Baseboard heaters will be cleaned. Protective covers on finned radiant heaters and baseboard heaters will be removed to expose heat elements. Fins are to be brushed and vacuumed to remove dust.
 - t. All cleaning equipment will be vacuumed and/or wet wiped after completion of the cleaning and before removal from the work area.
4. HEPA air filtration devices (AFDs) will run continuously during all cleaning activities, as appropriate given site conditions. One standard 1200 cubic feet per minute (CFM) device shall be installed per 36,000 cubic feet.
 5. A minimum of one asbestos supervisor shall be present in each building during work.
 6. A Cleaning Checklist (to be developed by EPA) will be completed by the cleaning contractor as tasks are completed to document the progress of the cleaning.
 7. The cleaning contractor shall notify the monitoring contractor immediately upon completion of the cleaning. The Monitoring Contractor will conduct a thorough visual inspection to verify the absence of visible dust accumulations. If dust is observed the cleaning contractor will reclean as necessary at no additional cost.
 8. Air sampling shall be performed by the Monitoring Contractor after the area is free of dust accumulations as determined by the Monitoring Contractor.
 9. Any damage or loss that occurs during cleaning is the responsibility of the cleaning contractor. The cleaning contractor is not responsible for damage or loss caused by the acts of third parties not

involved in the cleaning.

10. EPA, in consultation with the owner, may identify certain furnishings (e.g. carpets and fabric covered furniture) for disposal rather than cleaning. Disposal of residents' personal property shall not occur without prior written authorization by EPA and the owner. Disposal of all wastes generated during the cleaning shall be the responsibility of the contractor. All waste generated shall be treated as asbestos-containing material (ACM). Transportation and disposal of generated waste shall be in compliance with all applicable rules and regulations.
11. If mold, suspected ACM or peeling, flaking or chalking paint is observed in the work area, the cleaning contractor shall immediately contact the Monitoring Contractor.

Scope of Work B

Application: A visual inspection was performed and large or significant accumulations of dust or debris from the collapse of the WTC was observed in common areas, residences or portions thereof (such as windows, terraces or balconies).

Residents will not be allowed in the work area. Residents may be present in the residence during cleaning in cases where the work area can be isolated by the erection of isolation barriers. In all other applications of Scope B it is assumed that residents will not be present in the residence.

1. A site specific work plan will be prepared by the cleaning contractor for review and approval by EPA prior to the start of work. This work plan will include detailed procedures for the removal of dust and debris and the cleaning. At a minimum the procedures specified for a Scope A cleaning shall be implemented.
2. An asbestos project notification form (NYC form ACP-7) shall be submitted, as required by Title 15, Chapter 1 of the Rules of the City of New York (RCNY), directly to the NYC DEP Asbestos Control Program prior to the start of work. NYS DOL notification shall also be submitted.
3. At least one asbestos supervisor shall be present at each work place (work place is defined in Title 15, Chapter 1 RCNY as the work area and the decontamination enclosure system).
4. Personal protective equipment including disposable clothing, gloves, and respirators shall be worn during this cleaning activity.
5. Warning signs shall be posted at the approach to the work area.
6. A worker decontamination enclosure system shall be installed at the entrance to the work area. A remote decontamination enclosure system shall be considered when appropriate, i.e. inability to comply with the provision due to space limitation or other agency rules, such as for compliance with New York City Fire Department egress requirements.
7. HVAC systems shall be shut down and locked out or isolated locally. The site specific work plan shall provide additional information on the HVAC system and proposed procedures for shutdown or isolation.
8. Isolation barriers shall be installed with two layers of 6-mil polyethylene sheeting and sealed with tape.
9. Negative pressure ventilation equipment shall be installed and operated during all cleaning activities. Equipment shall run continuously until clearance air monitoring. A minimum of one air change every

30 minutes shall be provided. When ducting to the outside is not possible, a second negative pressure ventilation unit compatible with the primary unit may be connected in series.

10. All WTC debris shall be misted and double-bagged. Accumulation of water is prohibited. Water misting shall be sufficient to wet the material without water accumulations.
11. After the removal of debris, all surfaces will be cleaned in accordance with the procedures specified in Scope A. After all surfaces have been cleaned, a second cleaning shall be performed. This results in two full cleanings of all surfaces, with the following exception. Carpets and fabric covered furniture cleaned with hot water extraction cleaners shall be cleaned only once. Surfaces include but are not limited to walls, floors, ceilings, ledges, trims, appliances, equipment and furnishings.
12. EPA, in consultation with the owner, may identify certain furnishings (e.g. carpets and fabric covered furniture) for disposal rather than cleaning. Disposal of residents' personal property shall not occur without prior written authorization by EPA and the owner. Disposal of all wastes generated during the cleaning shall be the responsibility of the contractor. All waste generated shall be treated as asbestos-containing material (ACM). Transportation and disposal of generated waste shall be in compliance with all applicable rules and regulations.
13. A Cleaning Checklist (to be developed by EPA) will be completed by the cleaning contractor as tasks are completed to document the progress of the cleaning.
14. The cleaning contractor shall notify the monitoring contractor immediately upon completion of the cleaning. The Monitoring Contractor will conduct a thorough visual inspection to verify the absence of visible dust accumulations. If dust is observed the cleaning contractor will reclean as necessary at no additional cost.
15. Air sampling shall be performed by the Air Sampling Technician after the area is free of dust accumulations as determined by the Monitoring Contractor..
16. After successful clearance air monitoring, isolation barriers shall be removed in conjunction with the use of a HEPA vacuum.
17. Any damage or loss that occurs during cleaning is the responsibility of the cleaning contractor. The cleaning contractor is not responsible for damage or loss caused by the acts of third parties not involved in the cleaning.
18. All work shall be in compliance with all other applicable requirements of Title 15, Chapter 1 of the RCNY and New York Industrial Code Rule 56.
19. If mold, suspected ACM or peeling, flaking or chalking paint is observed, the cleaning contractor

shall immediately contact the Monitoring Contractor.