

Gilsenan, Michael

From: Gilsenan, Michael (ex)
Sent: Friday, July 19, 2002 12:33 PM
To: Radhakrishnan, Krish
Cc: Avaltroni, Robert
Subject: FW: Updated SOWs



Monitoring_SOW#4
.IED.wpd

FYI- Latest update on sow.s.Pls. note comment regarding leaf blowers.
Krish you were on the mark yet again.

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

From: Girman.John@epamail.epa.gov [mailto:Girman.John@epamail.epa.gov]
Sent: Thursday, July 18, 2002 5:55 PM
To: LaPosta.Dore@epamail.epa.gov
Cc: apotiev@dcas.nyc.gov; axb9@cdc.gov; barry.benjamin@epamail.epa.gov;
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jprudhom@health.nyc.gov; callahan.kathy@epamail.epa.gov;
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michaelgi@dep.nyc.gov; njeffery@health.nyc.gov;
nkk01@health.state.ny.us; giardina.paul@epamail.epa.gov;
simon.paul@epamail.epa.gov; grevatt.peter@epamail.epa.gov;
basso.ray@epamail.epa.gov; rcwl@cdc.gov; rjt03@health.state.ny.us;
rlc07@health.state.ny.us; fitzpatrick.robert@epamail.epa.gov;
robert.tranter@fema.gov; sbenson@oem.nyc.gov; spryce@dcas.nyc.gov;
svrl@cdc.gov; sxj6@cdc.gov; smith.terry@epamail.epa.gov;
thomas.llieber@epamail.epa.gov; Feldman.Elissa@epamail.epa.gov;
Kruger.Mary@epamail.epa.gov; Thompson.Bob@epamail.epa.gov
Subject: Re: Updated SOWs

Thanks for the opportunity to provide comments on the SOW for monitoring. Attached is a file with our comments in redline/strikeout. We continue to have concerns regarding the use of a leaf blower (or similar equipment inside residences). Most of the other comments relate to clarifying and refining the SOW. Please contact me if you have questions regarding our comments.

(See attached file: Monitoring_SOW#4.IED.wpd)

Indoor Air Residential Assistance Program
Monitoring Contract Scope of Work
DRAFT - 7/10/02

A. Introduction

All work performed under this contract must be in compliance with all applicable, relevant, and appropriate regulations and this Scope of Work, including but not limited to those of 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 (NYSDOL), the New York State Department of Health Environmental Laboratory Approval Program (ELAP) and the New York City Department of Environmental Protection (NYCDEP).

The USEPA 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 apartments may have debris/dust from the collapse of the World Trade Center (WTC). A DEP/USEPA telephone hotline has been established to receive requests from the public. The assistance will include various options, including the cleaning within apartments 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 clean-up 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 building apartments impacted by the collapse of the World Trade Center.

B. Roles and Responsibilities

The USEPA has overall responsibility for insuring that work conducted as part of the Indoor Air Residential Assistance Program is completed safely, efficiently and in a compliance with the Scope of Work. As such, EPA shall have the following authorities relating to work conducted under this contract:

1. The authority to stop work for health and safety reasons or for non-compliance with the Scope of Work.
2. The authority to direct the contractor in the performance of the work.
3. The authority to review and approve or disapprove of the qualifications of all contractor personnel involved in the work.

4. The right to receive, 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.

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.

ALL analytes and methods should be listed here

Sampling Parameters

1. Asbestos
2. Total Metals
3. Mercury

Methods

- NIOSH Methods 7400 & 7402
 EPA Method SW-846 6010B
 EPA Method SW-846 7471A

D. Specifications

Clean-up activities shall be scheduled for 20 units per day. Air sampling shall be scheduled and completed in these units within 24 hours of successful visual inspection by the Project Monitor. Air sampling shall also be provided at 10 to 20 units where clean-up activities are not scheduled. Sufficient personnel shall be available for project monitoring and sampling.

The 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 prepare a Health and Safety Plan (HASP) in accordance with 29 CFR 1910.1001 and 29 CFR 1926.58. All personnel involved in residential cleaning and monitoring activities shall follow the Health and Safety Plan (HASP) prepared by their employer. EPA shall be provided with a copy of the employer HASP prior to the start of work.

The Project Monitor shall attend a kick off meeting prior to commencement of sampling activities. At this time, the Contractor shall, but not be limited to, participate in scope of work discussions, sampling logistics,

obtain resources for residential information provided by EPA and DEP, and demonstrate data acquisition procedures and software.

The Contractor shall attend meetings or conference calls with EPA and coordinate field activities, as requested.

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. All samples and copies of necessary documentation shall be hand delivered to EMSL laboratories at: 307 W. 38th St., New York, New York 212-290-0051. This information may also be provided via FormsII Lite (F2L) or an alternative electronic format that is accessible by the laboratory.

Deliverables

All deliverables shall be provided via F2L or an agreed upon alternative electronic format approved by USEPA and DEP.

The Project Monitor shall also maintain a copy of each deliverable and all filed documentation submitted under this contract for 365 days.

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 clean-up activities and air sampling with the tenants/owners, asbestos abatement contractors and air monitoring technicians for the various apartments. 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.

Deliverable

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 provide a validated address 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 building inspections of the residential units, heating, ventilation and air conditioning systems (HVAC) and common spaces based on the information and requests from the residents and building owners. Residents will be provided with information **prepared by EPA** regarding sampling options (aggressive and modified aggressive sampling protocols) and the handling of valuable personal items (money, jewelry, heirlooms, etc.) and fragile objects during work. **The Project Monitor will obtain written access and authorization for all work to be performed for this project including sampling an cleaning the apartments, HVAC systems and common spaces using the EPA Access Agreement (to be provided).** The Project Monitor will advise EPA if any of following conditions are observed: mixed residential and commercial use within a building; dust and/or debris in common spaces; the presence of mold that may pose a hazard to residents or workers (guidelines to be provided); residents with special needs; potential asbestos-type insulation (e.g., fibrous materials); or other circumstances that may require deviation from the procedures specified in the Scope of Work. 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

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.

Data to be input shall include, but is not limited to, start and completion dates for cleaning the 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 identification numbers, sampling technique (aggressive or modified aggressive), residential use (commercial/residential), dust (low/high), mold, residents with special needs, clean-up method (Scope A or B) Scope A or B is not defined or referenced, written access authorizations, and identification of areas to be cleaned.

The Project Monitor shall record all pre-cleaning and pre-inspection information in the EPA Indoor Air database or using an agreed upon electronic format. This information shall include, but is not limited to, actual sampling date and time, exterior evaluation (pass/fail), type of HVAC system (central, individual or none), HVAC impacted (Y/N), occupant present (Y/N), written access authorizations (Y/N), EPA approval (Y/N), space occupied (Y/N), mold present (Y/N). Dates and times shall be associated with all activities including start and finish date.

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.

3. Sampling without cleaning Not clear what this heading means. Are these residences that will not be cleaned, i.e., serving as controls?

- a. Based on consultation with resident or owner, aggressive or modified aggressive air sampling will be conducted. Residents shall not be present in their apartment during aggressive air sampling activities.

We do not see the benefit or need to use a leaf blower to aggitate the indoor environment to this extent during sampling. An electric leaf blower is capable of producting air velocities of 155 to 210 mph according to Sears. These air velocities are far removed from any air velocities that occur in indoor environments. (And, yes, you can reduce the air velocities from a leaf blower to some extend, but what is the point?) We understand that such a technique was used in miners' cabins in Montana but this is less than pursuasive given the differences between those indoor environments and those of occupied apartments in Manhatten. Why would we do this? What is the benefit? We are not aware of any expert on indoor air quality who has used or would advocate the use of such high air velocities. In addition, the fact that we propose that the resident or owner decide whether to use aggressive (leaf blower) or modified aggressive sampling protocols suggests that the aggressive protocol is not core or key to our study. Moreover, it will add another stratification to our study and reduce our power to interpret the study results. There is also the potential to damage furnishings in the dwellings throug the use of this technique. It will only take a few highly publicized incidence to tarnish our whol effort. We recommend that we do not propose the use of the aggressive sampling protocol.

- i. ~~Before beginning aggressive air sampling, forced air equipment (such as a 1 horsepower electric leaf blower) shall be used to direct exhaust air against walls, ceilings, floors and other surfaces. When directing the exhaust, caution shall be taken to minimize disturbance and potential damage to furnishings and personal belongings.~~
- ii. ~~For modified aggressive air sampling forced air equipment shall not be employed. The terminology used here is incorrect and confusing because a 20-in fan is a form of forced air equipment.~~
- iii. ~~All other procedures are identical for aggressive and modified aggressive air sampling.~~
- b. One 20-inch fan shall be installed per 10,000 cubic feet of room space and run at low speed. The fan shall operate continuously throughout sampling and shall not be turned off until sampling is completed. How long before sampling should the fan be turned on? This is an important issue because we want to sample at or near steady state and the air moved by the fan has a time constant the will partially determine how long it will take to achieve steady state. At a minimum, the time prior to sampling when the fan should be turn on should be specified.
- 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 directed downward at a 45 degree angle and not taped to existing surfaces.
- 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 air samples will be collected. For large

spaces greater than 160 square feet and less than 25,000 square feet 5 air samples will be collected. For spaces greater than 25,000 square feet, 1 air 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.

- e. 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 pumps are not clogging by monitoring flow rates. The minimum sample volume required is 3600 liters.
- f. Wipe samples will be collected at 10 percent of the residences where sampling only has been requested, up to a maximum of 50 units Units should be defined, as instructed by EPA. What are the criteria for selection? This sampling will consist of the collection of one wipe sample each for dioxin, total metals and mercury (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. What are the criteria for where in the residence the wipe sample is collected? The methods and analytes should also be listed in the second page as noted previously.
- g. The contractor shall document all the necessary information regarding sampling activities, fill out all field logs, data sheets, and chain-of-custody forms. The 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 to EPA Contract Laboratory for analysis.
- h. 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 electronically in an EPA approved format within 24 hours. Information on sampling activities (date, sample ID) shall be provided to EPA, via the website, within 24 hours of completion of sampling.

Deliverables

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 record equipment used to collect the sample (~~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, QC 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.

4. Pre-cleaning and Post-cleaning Wipe Sampling Procedures How does this section relate to Sections 3. f and g above? It looks like we are saying to monitor a set of residences where no clean up will occur and that is what Section 3 is all about. If so, the title for Section 3 should reflect that, e.g., Sampling Of Residences That Will Not Be Cleaned. Then Section 4 should be titled something like, Sampling Of Residences That Will Be Cleaned., followed by a statement that the directions in Section 3 will be followed for these residences with the exception of sections f and g for which sections a and b should be substituted.

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 units per quadrant as instructed by EPA. Units and quadrants should be defined. Why are only 5 % being sampled rather than the 10% as done in Section 3? Is this because the set of cleaned residences is much larger than that of the residences that will not be cleaned? What are the criteria for selection? This sampling will consist of the collection of 3 pre clean-up and 3 post clean-up 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.** What are the criteria for selecting 5% of the residences?

- b. The contractor shall document all the necessary information regarding sampling activities, fill out all field logs, data sheets, and chain-of-custody forms. The 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 hand-delivered for analysis to EMSL laboratories at: 307 W. 38th St., New York, New York 212-290-0051. Metals samples will be analyzed using EPA Method SW-846 6010B. Mercury samples will be analyzed using EPA Method SW-846 7471A.

Deliverables

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 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.

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. This evaluation should occur prior to any of the residence. In cases where cleaning is requested for a whole building, the building's

HVAC system will be evaluated as a whole. In cases where cleaning is requested for an individual residential unit, portions of the HVAC system dedicated to that unit will be evaluated. Why is there a distinction being made between those cases where cleaning is requested for an individual residential unit and for a whole building. When only a fraction of the building's HVAC system is cleaned, it would seem likely that the uncleaned (contaminated) section of the building's HVAC system would quickly contaminate the other previously cleaned section. (If this were not the case, it implies that contaminants once in the HVAC system do not migrate, hence there is no problem with any part of the system and we shouldn't bother to clean it.) No residential or common space shall be cleaned until the HVAC system has been evaluated and cleaned as necessary.

The Monitoring contractor shall inspect HVAC systems or portions thereof cleaned to verify cleanliness.

HVAC assessments, 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). Qualified personnel shall perform the HVAC evaluation and cleanliness inspections. At a minimum such personnel shall have an understanding of HVAC system design and experience in utilizing accepted indoor environmental sampling practices, current industry HVAC cleaning procedures, and applicable industry standards.

Deliverables

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 error. The contractor should document findings and report the results of the initial evaluation and the evaluation after the clean up.

The Project Monitor shall record if the HVAC systems have been evaluated and cleaned subsequent to September 11, 2001. If yes, when and by whom. 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. In the event that mold is observed in a residence during the pre-cleaning inspection, the Monitoring Contractor will contact the NYCDOH and EPA. Is any amount of mold sufficient to trigger this contact? Will clean up proceed regardless of finding mold? (And what will NYCDOH and EPA do about it?)

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.

7. 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 approved by EPA. 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. It would be useful for either EPA to furnish or EPA to require the contractor to develop a flowchart or decision tree for EPA approval that outlines the sequence of decisions or events for an individual residence or building.
8. The Monitoring Contractor shall provide sufficient personnel to provide periodic (3-4hours/unit) oversight of the Cleaning Contractor to verify that work is being conducted in accordance with the Cleaning Contact Scope of Work.
9. The Project Monitor shall verify that the Cleaning Contractor is using properly trained and certified NYSDOL and NYCDEP certified workers.
10. 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 satisfactorily.

Deliverables

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 submit the completed Cleaning Checklist via F2L or an agreed upon alternative electronic format or website approved by EPA within 24 hours of activity.

11. **Personal Air Monitoring**
 Personal air monitoring for asbestos 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 apartment 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 CFR1910.1001 and 29 CFR 1926.58.

The contractor shall document all the necessary information regarding sampling activities, fill out all field logs, data sheets, and chain-of-custody forms. The 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 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 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 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.

12. The Project Monitor shall perform final visual inspections upon completion of the cleaning. If all areas are not dust free 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 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 submit upon request to EPA copies of the log book pages via email, fax, or alternative format agreed upon.

13. The Project Monitor will conduct a post-cleaning inspection of the apartment with the resident at the completion of the sampling. The resident should inspect the apartment and identify any damage at this time and sign-off on the Project Completion Form. Any damage or loss to an apartment or its contents shall be documented on this form. Who will be liable for any damage, EPA or the contractor?

Deliverables

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 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.

14. Post Clean-up 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 Within 24 hours of what? 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. Window air conditioning units where applicable shall be run/operated at least 15 minutes prior to the start of sampling. The air conditioning units shall operate continuously throughout the sampling. Why is the air conditioning unit operated after clean up when it wasn't operated during sampling prior to clean up? It should be operated during sampling prior to clean up as well.
- d. ~~Upon completion of the cleaning, either aggressive or modified aggressive air sampling procedures will be conducted to verify attainment of the clean-up criteria. Aggressive or modified aggressive air sampling will be used for Scope A clean-ups, based on consultation with resident. In aggressive air monitoring sampling situations, before the start of sampling, a 1-horsepower electric leaf blower will be used to direct exhaust air against walls, ceilings, floors and other surfaces. When directing the exhaust, caution shall be taken to minimize disturbance and potential damage to furnishings and personal belongings. The procedure described below for modified aggressive sampling techniques will also be employed.~~
- e. In modified aggressive sampling, one 20-inch fan shall be installed per 10,000 cubic feet of room space and run at low speed. The fan shall operate continuously throughout sampling and shall not be turned off until sampling is completed. When should this fan be turned on?
- f. 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 and not taped to existing surfaces.
- g. ~~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 air samples will be collected. For large spaces greater than 160 square feet and less than 25,000 square feet 5 air samples will be collected. For spaces greater than 25,000 square feet, 1 air 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.
- h. 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 pumps are not clogging by monitoring flow rates. The minimum sampling volume required is 3600 liters.
- i. 24-hour turn-around-time shall be specified for the analysis of all post-cleaning air samples for Scope B cleanups.
- j. The contractor shall document all the necessary information regarding sampling activities, fill

out all field logs, data sheets, and chain-of-custody forms. The 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 for analysis to EMSL laboratories at: 307 W. 38th St., New York, New York 212-290-0051.

- k. 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.

Deliverables

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 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 clean-up 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.

- 15. 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 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 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.

16. EPA will notify residents and owners of results of sampling conducted as part of this project. No other party is authorized to release residential or common area sampling results.
17. Copies of all reports, Cleaning Checklist, Project Completion Forms and chain-of-custody forms shall be submitted daily to the EPA and DEP.