

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 and 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 the 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), 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

- 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.

- 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.
 - 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.
- c. For studio apartments 3 samples shall be collected. For 1-bedroom apartments and above 5 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.
- 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 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, as instructed by EPA. **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.**
- 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

- 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. 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.**
- 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. 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 individual residential unit, portions of the HVAC system dedicated to that unit will be evaluated. 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 errors.

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.

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.
8. 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 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 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.

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