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WTC EMERGENCY SITE

HEALTH MONITORING AND SAMPLING RFP

10/01/01

NYC-WTC_000188121

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STATEMENT OF WORK: EXPOSURE MONITORING

General

Site monitoring shall be performed as necessary for site demolition and construction work. This statement of work covers general site monitoring for physical and chemical hazards including air contaminants (dust, metals, volatile organic compounds, and other specific compounds) heat stress, cold stress and noise.

Federal EPA, NIOSH, New York City DDC, New York DEC, and New York City Health Department may determine minimum site monitoring requirements. The Contractor is expected to conduct exposure monitoring for, WTC Disaster Project employees as required by OSHA or local requirements. All exposure data must be provided to site ES&H Director or his designee daily. Site ES&H Director will present accumulated data to the various Agencies as requested.

Specific Conditions

The work schedule at the WTC is 24 hours a day/7 days a week. Sampling may be required at any time and sampling schedules should be designed to characterize the 24/7 schedule. Project duration is to be determined; but sampling schedule and number may be changed depending on planned tasks.

The Contractor must follow all provisions and conditions of the WTC Disaster Project. Site access will be determined by WTC site controller and the Contractor will be required to comply with all site access and security requirements.

The Contractor must supply the following information in the bid response:

(1) Description of last 5 years of industrial hygiene sampling experience
(2) Identification of analytical laboratory including certifications.
(3) Qualifications of Contractor Project Manager
(4) Quality Assurance Plan
(5) List of proposed sampling equipment and instruments
(6) Time and Material rates for sampling technician, sampling equipment use rates and lab sample cost (based on 24-hour report of results).

A list of samples collected and any direct reading instrument results must be provided to the DDC Safety Representative at the end of each day (note safety reps are on-site 24/7).

Contractor will develop a Sampling Plan including Data Quality Objectives as a deliverable within 3 days of contract award. The Sampling Plan will be reviewed within 2 days after receipt. Contractor will mobilize sampling technicians within 2 days of approval of Sampling Plan. The site ES&H Director or his designee will advise the Contractor Project Manager of planned site activities, as information is available.

CITY_21MC100_007083333

NYC-WTC_000188122

NYC 9/11 Public Portal Document

Schedule will include both twenty-four (24) hour a day monitoring, seven (7) days per week until directed to change by the site ES&H Director. Notice of additional changes to schedule will be made at least one week prior to anticipated change. Contractor is responsible for maintenance of sample and monitoring database for all data collected during the project. The Contractor is expected to provide sample analysis results to the overall WTC database in a format compatible with the selected format at no additional cost.

Site ES&H Director reserves the right to reject data not meeting Data Quality Objectives at no cost to the project. Site ES&H Director reserves the right to audit the Contractor facility and procedures. Deficiencies between stated qualifications and audit results will be corrected at no cost to the project. Contractor may substitute equivalent methods or procedures with approval of site ES&H Director.

Required Site Monitoring

Site monitoring is required under the following conditions.

- When required by the Subcontract, or task-specific HASP
- When required by specific OSHA standards (e.g., asbestos, benzene, , lead, , carbon monoxide)
  - When worker exposure is reasonably anticipated to be greater than 50% of the OSHA Permissible Exposure Limit (PELs), ACGIH TLV, or other recognized occupational exposure limit
  - When necessary to verify the adequacy of hazard control measures and/or personal protective equipment, including respiratory protection
  - When necessary to assess and evaluate worker exposure, or to resolve worker complaints or concerns.

With the approval of the site ES&H Director, site monitoring may be discontinued after representative initial monitoring is conducted and worker exposures are shown to be adequately controlled through the use of engineering, work practice, or personal protective equipment control measures. If work activities change so that the initial monitoring is no longer representative of worker exposure, monitoring must be reinitiated.

Monitoring Strategy

The Contractor is expected to submit to the site ES&H Director an employee-Monitoring Plan that will provide the required information to identify and control workplace hazards. . Where monitoring is required, the Contractor shall develop and implement a monitoring program that considers the factors that may affect worker exposure and the following elements.

- Monitoring requirements, contaminants, and monitoring equipment limitations
  - Subcontractor-specific work locations, work activities, work practices, personnel, and equipment to be used on site
  - Any additional site-specific hazard information gathered by the Subcontractor during development of the task-specific HASP

NYC-WTC_000188123

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The anticipated monitoring outline is shown in Table 1. The requirements may change as new hazards are identified. The Contractor will be notified in writing of any requested changes and will be expected to prepare a revised monitoring strategy within 2 days after receipt of request.

Requested Site Monitoring

Direct Reading Exposure Monitoring

The following are some of the instruments that could be required by the Contractor for exposure monitoring at the WTC site.

- Photo-ionization detector, (PID)
- Flame-ionization detector (FID)
- Combustible gas indicator (CGI)
- Specific gas monitors (e.g. oxygen, carbon monoxide, hydrogen sulfide)
- Real-time aerosol monitor (RAM)
- Radiation detection instruments
- Colorimetric indicating tubes (e.g. Draeger tubes)
- Mercury vapor analyzer
- Infrared analyzers (MIRAN)
- Noise dosimeter
- Sound level meter (SLM)

When required to support a specific task (based on Job Hazard Analyses) direct reading monitoring results (date/time, calibration information, results, and activities monitored) shall be recorded on an appropriate data sheet. Monitoring results shall be recorded initially and periodically throughout the monitoring period (e.g., every 15 minutes, when results are above background levels, when site operations or locations change, or when unexpected site conditions arise). Results of routine direct reading monitoring should be summarized and documented on the Direct Reading Monitoring Report (Figure 1 or equivalent). These reports shall be submitted to the DDC as part of the daily safety report.

Integrated Personal Air Monitoring

Integrated personal air monitoring refers to the continuous collection of a sample over a period of time for subsequent analysis, usually by a laboratory. This monitoring typically involves the use of portable sampling pumps and an appropriate collection media such as filters, or adsorption tubes. Integrated monitoring can also be performed using organic vapor monitors and other passive sampling devices.

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NYC-WTC_000188124

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Personal sampling and analysis will be performed in accordance with the OSHA Industrial Hygiene Technical Manual, the National Institute for Occupational Safety and Health (NIOSH) Manual of Analytical Methods, or other acceptable industrial hygiene practices. Only analytical laboratories accredited by the American Industrial Hygiene Association shall perform sample analysis. The laboratory analysis will include field blanks, as required by the individual method or laboratory. The laboratory shall also be successful participants in the NIOSH Proficiency Analytical Testing program for the appropriate analytical category. Prior to sampling, the specific sampling and analytical method should be discussed with the receiving laboratory to determine any special requirements or variations to established methods necessary to collect an acceptable sample (note this may be required for high dust loaded samples).

7.1.1 Noise Monitoring

Noise monitoring shall be conducted for operations, which may exceed an 8-hour time weighted average sound level of 85 dBA (Refer also to Section). Noise monitoring shall be performed in accordance with 29 CFR 1910.95 using a SLM or noise dosimeter as appropriate.

Heat stress monitoring shall be conducted as necessary to assist in determining and maintaining appropriate work/rest regimens.

Other Site Monitoring

Other site monitoring may be necessary depending on the job task or site location of the work. The Contractor may be requested to provide additional area monitoring necessary to adequately assess and control worker exposure. Area monitoring will include asbestos and lead monitoring plus respirable and total dust in selected break and rest areas.

Sampling Quality

Persons conducting site monitoring shall have adequate training and/or experience commensurate with the type and complexity of the monitoring program. They should be able to understand the limitations of the equipment they use, proper methods of calibration, proper methods of sealing and shipping samples and the importance of chain-of-custody.

All instruments shall be calibrated or checked for proper function if appropriate before use for each shift. Instrument checks may be necessary during the day and at the end of use to confirm instrument accuracy. Duplicate readings may be taken to confirm individual instrument response. Air sampling pumps will be calibrated with primary standards (e.g., dry calibrator or bubble-tube method). Instruments shall be operated and maintained in accordance with the manufacturer's specifications. The manufacturer's operation and maintenance manual will be kept at the site work location for each type of instrument that is being used.

Samples sent to a laboratory for analysis shall be packaged to prevent damage, spillage, or leaks. An air or bulk sample data sheet with chain-of-custody information must accompany any sample shipped.

CITY_21MC100_007083336

NYC-WTC_000188125

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- Filter Cassettes – Filter cassettes should be mailed in a cardboard box and packed with paper. Avoid using packaging peanuts or other static producing material because the static charge will draw material away and off the filter surface. This is especially true for asbestos fiber samples. Filter cassettes shall be taped over the top and bottom to keep the plugs on the end of the cassette and to prevent sample tampering prior to analysis.
- Charcoal Tubes – Charcoal tubes should be mailed in a cardboard box and adequately packaged to prevent breakage during shipment. Bulk solutions must never be shipped in the same package as charcoal tubes.
- Bulk Samples – Bulk samples shall be packaged in labeled containers compatible with the sample and tightly sealed to prevent leaks and spills. Keep in mind that some bulk samples may be considered as hazardous materials by the Department of Transportation and have special requirements for packaging, labeling, and method of shipment.

Data Review

The Contractor will assess and interpret monitoring data and results based on standard industry practices and professional judgment. All calculations performed on raw data (e.g. time-weighted-average calculations) shall be documented and reviewed by a Certified Industrial Hygienist.

Additional Site Monitoring Requirements

Monitoring Frequency

Monitoring or sampling frequency will be influenced by a number of factors including the following:

- frequency of contaminant release (i.e., continuously, intermittently, one time release)
- frequency of operation
- number of samples required
- number of different work groups requiring assessment
- number of work shifts requiring monitoring.

Each of these factors should be considered to determine the monitoring frequency.

When monitoring a worker's exposure for comparison to a published exposure limit value such as the OSHA PEL's or ACGIH TLV's, monitoring may need to be conducted over a full eight hour (or longer) work shift or a 10 to 15 minute period of time. For extended work shifts, samples should be for the shift duration and adjusted to reflect extended work duration. For asbestos, samples will be collected for maximum 8 hours during the highest expected fiber exposure, for a period of time in order to avoid overloading filters.

In some cases, monitoring may need to be continuous if there is the potential for build-up of a dangerous atmosphere. Monitoring duration can also be affected by the duration of the operation being monitored (i.e., it may only operate one hour a day) or by the length of time a worker performs an operation. Duration can also be affected by the contaminant concentration in air. Often times, higher concentrations of air contaminants will require the collection of shorter-term samples so as to avoid overloading the sample collection device being used.

CITY_21MC100_007083337

NYC-WTC_000188126

NYC 9/11 Public Portal Document

Data Base

The Contractor shall participate with the WTC Disaster Project database by allowing all quality reviewed data to be entered into the project database. This data may be published in public information releases and will not be the property of the Contractor. The Contractor may not release any data either preliminary or final without the approval of the site ES&H Director.

CITY_21MC100_007083338

NYC-WTC_000188127

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Figure 1 Direct Reading Monitoring Report Form

	World Trade Center Emergency	DIRECT READING MONITORING REPORT
Implementation Project:		Date:
Task Name:		Subcontractor(s):
Description of Activities:		Description of Potential Contaminant(s) and Source:

Monitoring Instrumentation

Instrumentation Description:	Calibration Method(s):

Site Monitoring Results

Time(s)	Monitoring Location (note distance from source, upwind/downwind, etc.)	Sample Type (source, breathing zone, area, etc.)	Instrument Reading (Units)	Comments

Review

Sampler:	Signature:	Date:
DCC Reviewer:	Signature:	Date:

CITY_21MC100_007083339

NYC-WTC_000188128

NYC 9/11 Public Portal Document

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NYC 9/11 Public Portal Document

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Figure 2 Air Monitoring Data Sheet

World Trade Center Emergency Project	**AIR MONITORING DATA SHEET** (Personnel Sampling) Page 1

Employee _____ Date _____

SSN _____ Project _____

Company _____ Task _____

Job Title _____ Site _____

Pump No.							Blank
Sample No.							
Media							
Time On							
Time Off							
Total Time							
Flow Rate							
Volume							
STP Corr Volume							

Laboratory Analysis	Laboratory Used:			Report Nos. (attach copies)		
Contaminant	Result	Result	Result	Result	Result	Result

Description of Job Duties and Activities Conducted _____

_____

_____

Continue on separate sheet if necessary

Control Measures _____

CITY_21MC100_00708341

NYC-WTC_000188130

NYC 9/11 Public Portal Document

Continue on separate sheet if

PPE Utilized

Continue on separate sheet if

CITY_21MC100_00708334 2

NYC-WTC_000188131

NYC 9/11 Public Portal Document

Figure -2 Air Monitoring Data Sheet

Calibration Data

Page 2

Pre-Calibration					Post-Calibration				
Pump No.	1st	2nd	3rd	Average	Pump No.	1st	2nd	3rd	Average

Chain of Custody

Relinquished by	Received by	Date & Time
Relinquished by	Received by	Date & Time
Relinquished by	Received by	Date & Time
Relinquished by	Received by	Date & Time

Additional Information (Diagrams, calculations, other employees represented by the sample)

Sampler*: _____ Signature _____ Date: _____

DCC Reviewer: _____ Signature _____ Date: _____

Form and calculations completed by sampler unless otherwise indicated.

CITY_21MC100_007083343

NYC-WTC_000188132

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WTC SAMPLING REQUIRMENTS

Compound	Task	Frequency	Sample Type	Per Area	Method
Lead	Torch cutting	1 per shift	Full shift-TWA	Each(4)	NIOSH 7300
Asbestos	(a) torch cutting (b) rubble removal	1 per shift	8 hour TWA	Each (4)	NIOSH 7400 with TEM confirmation
Crystalline silica	Rubble removal	1 per shift	8 hour TWA (respirable)	Each (4)	XRD 7500
Aromatic hydrocarbon	Rubble removal	2 per week	8 hour	Each (4)	NIOSH 1501
BTEX	Operators	2 per week	8 hour	Each (4)	NIOSH 1500
Diesel exhaust	Truck drivers	1 per week	8 hour	Each (4)	NIOSH 5040
Carbon Monoxide	(a) torch cutting (b) truck drivers	1 per shift	(a)Peak (c) Range (c) Avg.	Each (4)	DRI with data record
PAHs	Rubble removal	2 per week	Compound identification	Each (4)	GC/MS
Formaldehy de	Rubble removal	1 per week	8 hour	Each (4)	NIOSH 3500
Asbestos	Break area	2 per week	8 hour	2 per week	TEM
Crystalline Silica	Break area	2 per week	8 hour :Total and respirable	1 per week	XRD 7500

NYC-WTC_000188133