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Limited Background Data Validation Report

Background Sampling Period
3/27/07 to 4/10/07

The Remediation and Deconstruction of Fiterman Hall
30 West Broadway
New York, New York

Prepared By:

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General:

This report provides a summary of the limited data validation conducted in support of the Background Sampling Phase (BSP) of the project being conducted at 30 West Broadway, New York, NY per the approved Environmental Community Air Monitoring Plan (ECAMP) dated March 16, 2007 and the associated Quality Assurance Project Plan (QAPP) dated March 16, 2007. The BSP was conducted from March 27th through to and including April 10th, 2007.

Per the ECAMP and QAPP, sampling has been conducted for the following parameters:

- Airborne Particulate PM-2.5
- Reference Method for PM-2.5
- Airborne Particulate PM-10
- Reference Method for PM-10
- Asbestos
- Mercury (Vapor and Total)
- Metals
- Silica
- Dioxins/Furans
- PAHs
- PCBs

Project Quality Objectives:

The project quality objectives (POQs) detailed in the QAPP for the project were met in all cases, except the following:

1. Total Mercury: Equipment failures on the first day of sampling (March 27th, 2007) resulted in the voiding of three samples (FH-032707-12, FH-032707-15, and FH-032707-16) at sample stations #2, #5 and #6 respectively due to unknown sample volumes, and the reporting of estimated volumes for three additional samples (FH-032707-11, FH-032707-13, FH-032707-14 and FH-032707-66) at sample stations #1, #3, #4 and #1 (duplicate) respectively. Although the data loss and the data estimation do not result in failure to meet the field sampling completeness objectives outlined in the QAPP, an additional (15th) day of background sampling was conducted to provide a more complete background data set. The equipment failure was reported to EPA by telephone shortly after the event.

2. Silica – Primary Peak Interference: Due to primary peak interference in the laboratory, Quantification Limits (QL) for Silica (Quartz) were greater than the Target Air Quality Levels and EPA Trigger Levels for that analyte in three samples (FH-032807-29, FH-032807-37 (Field Blank), and FH-041007-34. (Reference: EMSL Analytical Inc. Technical Document: #SILICA-2006-01)

3. EBAM – PM-2.5 Pump Failure: The EBAM PM-2.5 unit located at Station #1 (NW Corner Sidewalk Bridge) did not operate properly on the first day of sampling (March 27th, 2007). The unit was replaced and was fully operational by 13:00 on March 28th, 2007.

4. EBAM - PM-10 Flow Fluctuations: Two of the six PM-10 EBAMs (Stations #3 and #4) recorded flow fluctuations in excess of 2% from the flow set-rate periodically during the BSP. These units have been replaced. Based on discussions with the manufacturer, the data associated with the fluctuating flows is valid for all cases where the flow fluctuated below the 16.7 lpm set-rate. For all cases where the flow fluctuated more than 2% above the 16.7 lpm set-rate the data is considered spurious. This data has been reported in the attached data files, but has been excluded from the calculation of the 24-hour averages. The resulting data loss is as follows:

   Station #3 (Sidewalk Bridge Level SE Corner):

   - April 2nd, 2007: Daily average does not include five hours and 40 minutes of data.
   - April 3rd, 2007: Daily average does not include two hours and 10 minutes of data.
   - April 7th, 2007: Daily average does not include eight hours and 10 minutes of data.
   - April 9th, 2007: Daily average does not include five hours of data.
   - April 10th, 2007: Daily average does not include eight hours and 50 minutes of data.

   Station #4 (Sidewalk Bridge Level NE Corner):

   Flow fluctuated only below the 16.7 lpm set-rate for all data during the BSP. As such, the data is considered valid. On April 9th, 2007 there was a small data loss (30 minutes; from 13:10 to 13:40) due to the fact that the EBAM was replaced to correct the flow fluctuations.

QA Reviews:

Data from the BSP has been subjected to the following QA reviews:

Field Technician (Joseph Walsh): 100% of field sampling data and field analysis data have been reviewed and verified by the field technician recording the data. This includes review and signature on the chains-of-custody, and review and signature on the field calibration manual.

Field Sampling Coordinator (designee – Christine Chen): 100% field calibration manual notes, field sampling forms, and COCs reviewed/verified. Sample calibration, collection, handling, preservation, and storage procedures were reviewed for compliance with the protocols described in the QAPP. Deviations were documented and Project QA Officer notified.

Data Manager (designee – Christine Chen): 100% of documentation provided by each analytical laboratory supporting the project reviewed. Deviations are documented, Project QA Officer notified.

Fixed Laboratory QA Review: It is Airtek's belief that 100% of all fixed laboratory data has been subject to internal review as detailed in Section 16.1.3.1 of the QAPP.

Project QA Officer (Clifford Cooper, CIH): 100% evaluation of data and potential usability issues related to deviations and deficiencies documented by staff reviews as detailed in this document. Overall review of BSP data.

Project Manager (Benn Lewis): Overall review of field operations, field documentation, field equipment function, fixed laboratory performance, data collection and presentation.

Conclusions:

1. Minor deviations from the QAPP were noted in field equipment performance as noted and explained in this document. Minor errors in the QAPP were revealed by the execution of the BSP and have been noted for QAPP revision to be submitted shortly to EPA. Fixed laboratory deviations were identified, and have been reported. Related technical documentation has been provided (attached).

2. Neither the individual deviations, nor the sum total of the impact of all deviations have a significant impact on the BSP data set. This is due in part to the minor nature of the deviations, and in part to the generally low readings for most analytes.

3. It is our conclusion that the execution of the BSP has served the purpose of identifying program deviations and deficiencies for correction. Per Section 16.2 of the QAPP, the following data usability parameters have been met:

   Precision: No duplicate sample sets resulted in values above the quantitation limits of the methodologies employed. Valid precision values cannot be calculated.

   Accuracy: Where applicable, laboratory percent recoveries were within tolerance per the QAPP.

   Sensitivity and Quantitation Limits: As noted in this document, Quantitation limits for Silica (Quartz) were above the Target and Trigger

levels in three samples due to primary peak interference. An explanatory technical document is attached.

Completeness:

Both Field Data and Lab Data: No single analytical parameter resulted in a completeness ratio of less than 95%. The BSP as a whole exceeded 99%.

4. Elevated Background Contaminant Levels:

Silica: The BSP revealed that localized background levels of silica can exceed the USEPA Trigger and Target levels irrespective of site activity at Fiterman Hall. Elevated background levels of Silica were recorded on the following dates:

March 28th, 2007 – Station #4= 20 ug/m^3
April 3rd, 2007 – Station #4 = 11 ug/m^3
April 4th, 2007 – Station #4 = 11 ug/m^3

PM-10: Although no PM-10 data exceeded the USEPA Target or Trigger levels for PM-10, readings were significantly elevated at Station #4 (NE Sidewalk Bridge – Corner of West Broadway and Park Place). It should be noted that this is the same station where all of the above-mentioned Silica exceedances occurred. There is no reason to expect that this background interference will abate during the project despite housekeeping planned for this corner of the project site. It has been noted by field staff that this intersection is heavily traveled by truck and other vehicular traffic.

PM-2.5: Background exceedances of the Target Air Quality Levels for PM-2.5 (40 ug/m^3) were noted as follows:

FH-03040207-EBAM2.5-03 = 41.44 ug/m^3
FH-03040207-EBAM2.5-03 = 42.89 ug/m^3
FH-03040207-EBAM2.5-03 = 40.12 ug/m^3

Contaminant-Specific Narratives:

Airborne Particulate PM-2.5:

PM-2.5 particulate sampling was conducted using six Met-One EBAM monitors, one at each of the community monitoring stations designated by the ECAMP/QAPP. All six monitors were calibrated prior to the fifteen-day BSP. Data collected as ten-minute averages are attached. A summary sheet providing EBAM PM-2.5 24-hour averages is included in the attached Background Data Summary. One EBAM PM-2.5 unit did not function properly on the first day of sampling (March 27th, 2007). This unit was replaced and was fully operational by 13:00 on March 28th, 2007. The collocated TEOM PM-2.5 operated during this period. As discussed above, background exceedances of the Target Air Quality Levels for PM-2.5 (40 ug/m^3) were noted as follows:

FH-03040207-EBAM2.5-03 = 41.44 ug/m^3
FH-03040207-EBAM2.5-03 = 42.89 ug/m^3
FH-03040207-EBAM2.5-03 = 40.12 ug/m^3

Reference Method for PM-2.5:

A Rupprecht & Patashnick TEOM PM-2.5 monitor was collocated with the EBAM PM-2.5 monitor at Sampling Station #1 (NW Sidewalk Bridge) and operated for the BSP to comply with the ECAMP/QAPP requirement for determination of a correction factor for EBAM data. TEOM PM-2.5 data collected as thirty-minute averages is attached (TEOM PM-2.5 data March 27th to April 10th, 2007). A summary sheet providing TEOM PM-2.5 24-hour averages is included in the attached Background Data Summary. Based on review of the data to date, it has been determined that application of a correction factor is not necessary at this time.

Airborne Particulate PM-10:

PM-10 particulate sampling was conducted using six Met-One EBAM monitors, one at each of the community monitoring stations designated by the ECAMP/QAPP. All six monitors were calibrated prior to the fifteen-day BSP. Data collected as ten-minute averages are attached. A summary sheet providing PM-10 24-hour averages is included in the attached Background Data Summary. As detailed above, two of the EBAM PM-10 units experienced flow fluctuations. This equipment variation has been corrected.

Reference Method for PM-10:

A Rupprecht & Patashnick TEOM PM-10 monitor was collocated with the EBAM PM-10 monitor at Sampling Station #2 (Sidewalk Bridge Level SW Corner) and operated for the BSP to comply with the ECAMP/QAPP requirement for determination of a correction factor for EBAM data. TEOM PM 10 data collected as 30-minute averages is attached (TEOM PM-10 data March 27th to April 10th, 2007). A summary sheet providing TEOM PM-10 24-hour averages is included in the attached Background Data Summary. Based on review of the data to date, it has been determined that application of a correction factor is not necessary at this time.

Asbestos:

Asbestos air samples were collected as provided for in the ECAMP/QAPP. All samples were delivered in good condition to the contract Laboratory (EMSL). Analyses were conducted by TEM (AHERA) and PCMe methodologies. Field blanks are analyzed and reported only in the case where asbestos is detected in the field samples for the subject time period. No asbestos was detected during the BSP; no field blanks were analyzed or reported. Method blanks were provided by the laboratory as required by the methodology. A summary of all asbestos data is included in the attached Background Data Summary.

Mercury:

Per the ECAMP/QAPP, monitoring was conducted for both mercury vapor and mercury particulate (total) throughout the BSP.

Mercury Vapor: Mercury Vapor was monitored per the ECAMP/QAPP with an Ohio Lumex RA 915+ real-time monitor. A summary of the data recorded in the field is included in the attached Background Data Summary.

Particulate Mercury: Particulate mercury was monitored by the use of Iodated Carbon Traps (ICT). Per the ECAMP/QAPP, four "Spike" samples were run during the BSP. Due to a field oversight a fifth Spike sample, which was not required by the QAPP, was run during the BSP. All data was reported.

Notes:

1. Sample #s FH-032707-12, FH-032707-15, and FH-032707-16 were voided due to equipment failure.
2. Sample #s FH-032707-11, FH-032707-13, FH-022707-14 and FH-032707-66 were reported with estimated air collection volumes due to equipment failure.

The analytical laboratory ran breakthrough checks as required by the QAPP on the BSP samples for March 28th, 2007.

Metals:

Metals sample collection was conducted in accordance with the ECAMP/QAPP. All samples were received in good condition at Severn Trent Laboratories. All Lab QA criteria were met. No further qualification of data was required. A summary of the data recorded in the field is included in the attached Background Data Summary. Copies of the laboratory data packages are attached.

Silica:

Per the ECAMP/QAPP, a composite bulk dust sample for silica analysis was collected from each floor of each building as reference data for Silica Phases, and interferences. A summary of the results is included in the attached Background Data Summary. A copy of the laboratory data package is attached.

Silica air sample collection was conducted in accordance with the ECAMP/QAPP. All samples were received in good condition at EMSL Laboratories. All Lab QA criteria were met. No further qualification of data was required. A summary of the data recorded in the field is included in the attached Background Data Summary. Copies of the laboratory data packages are attached.

Background exceedance levels for Silica were detected as follows:

FH-032807-32	= 20 ug/m^3
FH-040307-32	= 11 ug/m^3
FH-040407-32	= 11 ug/m^3

Quantification Limits (QL) for Silica (Quartz) were greater than the Target Air Quality Levels and EPA Trigger Levels for that analyte in the following two samples due to primary peak interference:

FH-032807-29	<20 ug/m^3
FH-041007-34	<20 ug/m^3

An explanatory technical document is attached.

Organics:

Per the ECAMP/QAPP, samples were collected on 03-27-07 and 04-06-07 for Dioxin/Furans, PAHs, and PCBs. All samples were received in good condition at Severn Trent Laboratories. All Lab QA criteria were met. No further qualification of data was required. A summary of the data recorded in the field is included in the attached Background Data Summary. Copies of the laboratory data packages are attached.