

QAPP AMENDMENT FORM: Issue 2

DATE FORM SUBMITTED: 4/5/06

QAPP Title **Quality Assurance Project Plan for the Ambient Air Monitoring Program**
130 Liberty Street Deconstruction Project
September 7, 2005

AMENDMENT #1

Weekly flow rate checks of low-flow sampling pumps for asbestos, mercury, PCBs, and silica will be replaced with daily checks. A criterion of ≤ 20 will be introduced for the RPD between the initial and final flow rate readings.

Reason for Amendment:

Since the flow rates are verified on a daily basis, the weekly flow checks are redundant and therefore have been eliminated. In order to assess the precision of sample collection, the RPD criterion for initial and final flow rate readings has been introduced as a means of evaluating initial and final flow differences. This evaluation will serve as an additional measure to verify the accuracy of the reported volumes. If RPDs are greater than 20, associated data will be flagged as estimated. This criterion is consistent with the high-volume pump daily flow rate checks.

Sections of QAPP Affected:

13.1.1, Field Equipment, Page 89, Asbestos, Mercury, and PCBs using a Personal Sampling Pump: The second bullet will be changed to reflect the performance of the flow rate verification on a daily basis instead of a weekly basis. An RPD criterion of ≤ 20 will be introduced as a means of evaluating the initial and final flow rate readings. The corrective action will be to flag the associated data as estimated if the RPD criterion is exceeded.

13.1.1, Field Equipment, Page 90, Respirable Silica using a Personal Sampling Pump: The second bullet will be changed to reflect the performance of the flow rate verification on a daily basis instead of a weekly basis. An RPD criterion of ≤ 20 will be introduced as a means of evaluating the initial and final flow rate readings. The corrective action will be to flag the associated data as estimated if the RPD criterion is exceeded.

Date Implemented:

January 2006 (Phase I)

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AMENDMENT #2

Two new field spike compounds, $^{13}\text{C}_6$ -chrysene and $^{13}\text{C}_6$ -dibenz(a,h)anthracene, were added to the PAH sampling media to replace the one field spike compound $^{13}\text{C}_6$ -fluorene. The recovery limits for the new field spike compounds will be consistent with the field spike recovery requirements currently listed in Table 8-3 in the QAPP.

Reason for Amendment:

The field spike compound originally used and listed in the QAPP, $^{13}\text{C}_6$ -fluorene, was exhibiting low recoveries; these recovery data, however, while lower than expected were generally found to be within the acceptable range defined in Table 8-3 of the September 7 2005 QAPP (i.e., 66% of the data exhibited acceptable recoveries). After review of the data, it appeared that the low recovery of the field spike was isolated to the field spike compound and did not affect the target compounds or extraction surrogates. The decision was made to use less volatile compounds for the field spikes which eluted in the range of the carcinogenic PAHs being analyzed for this program. These new compounds are more representative of the behavior of the target PAHs during the sample collection and analysis process. As a result, two new field spike compounds were chosen.

Sections of QAPP Affected:

Table 8-3: The field spike compounds will be changed as described above.

Date Implemented:

November 2005 (Phase I)

AMENDMENT #3

Either white cotton gloves or nitrile gloves can be used to handle the filters and/or cartridges associated with dioxin/furan, PCB, and PAH sampling.

Reason for Amendment:

The QAPP listed only the option for white cotton gloves but nitrile gloves were also deemed to be acceptable for handling the sample media and easier to work with. SOPs written subsequent to the QAPP provided an option for nitrile or white cotton gloves. Therefore, this QAPP amendment has been issued so as to be consistent with the project SOPs and also provide this option.

Sections of QAPP Affected:

Section 10.2.5, Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs): Nitrile gloves will be included as an option to the white cotton gloves.

Section 10.2.6, Polychlorinated Biphenyls (PCBs): Nitrile gloves will be included as an option to the white cotton gloves.

Section 10.2.7, Polycyclic Aromatic Hydrocarbons (PAHs): Nitrile gloves will be included as an option to the white cotton gloves.

Date Implemented:

November 2005 (Phase I)

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AMENDMENT #4

The flow rate used to collect samples for silica analysis was increased from approximately 2 to 2.5 L/minute for an estimated total volume of 3.5 m³ instead of 2.9 m³.

Reason for Amendment:

The quantitation limit for silica prior to the increase in flow rate was approximately 2 ug/m³, which is a factor of 5 below the Target Air Quality Level of 10 ug/m³. The flow rate was increased to obtain a lower quantitation limit for silica. The new quantitation limit for quartz silica is 1 ug/m³ (6 ug/m³ for the rare forms of crystalline silica [cristobalite and tridymite]) which is a factor of 10 below the Target Air Quality Level. Therefore, this reduces the potential for false positive results (e.g., quantitation limits greater than or approaching the action levels), enhances the quantitation limits for all forms of crystalline silica, and enhances the quantitation limits when secondary peak interference is present.

Sections of QAPP Affected:

QAPP Amendment #2 (10/7/05 QAPP Amendment Form): The previous QAPP Amendment will be modified with the new sample volume.

Table 8-1: The estimated volume to be collected for silica will increase from 2.88 m³ to 3.5 m³. The quantitation limit for silica will decrease from 2 ug/m³ to 1 ug/m³ (with quantitation limits of 6 ug/m³ for the rare forms of crystalline silica [cristobalite and tridymite]).

Section 10.2.4, Respirable Crystalline Silica and Dust: The flow rate will increase from approximately 2 to 2.5 L/minute for an estimated total volume of 3.5 m³.

Table 12-1: The flow rate will increase from approximately 2 to 2.5 L/minute for an estimated total volume of 3.5 m³.

Date Implemented:

November 2005 (Phase I)

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AMENDMENT #5

The E-BAM flow calibration and flow audit criteria listed in the SOP were changed. An additional accuracy check on the flow audit was introduced.

Reason for Amendment:

The E-BAM flow audit and flow calibration criteria listed in the SOP were modified to be in accordance with EPA requirements found in the Reference QA Guidance Document, Volume II of Handbook, Section 2.12, *Monitoring PM_{2.5} in Ambient Air Using Designated Reference Methods or Class I Equivalent Methods*, November 1998. Section 13.1 of this reference discusses the flow rate audit criteria which require the accuracy of the flow rate to be within $\pm 4\%$ of the value indicated by the flow audit device and within $\pm 5\%$ of the sampler required flow rate of 16.67 liters per minute.

Sections of QAPP Affected:

Attachment C, SOP for Met One E-BAM Particulate Monitor, Section 4.2: This section of the SOP has been revised to require that the flow rate be within $\pm 4\%$ (and not $\pm 2\%$) of the value indicated by the flow audit device. In addition, the requirement for the flow rate of the E-BAM to be within $\pm 5\%$ of the designated flow rate of 16.67 liter per minute has been introduced. This SOP has been reissued as Revision 1, February 2006.

Attachment C, SOP for Met One E-BAM Particulate Monitor, Section 4.3: This section of the SOP has been revised to require that the flow rate be within $\pm 4\%$ (and not $\pm 2\%$) of the value indicated by the flow audit device. This SOP has been reissued as Revision 1, February 2006.

Date Implemented:

January 2006 (Phase I)

AMENDMENT #6

Including media in line during the flow rate check of the PCB pump is now an option in the SOP instead of a requirement.

Reason for Amendment:

In order to determine the effect of the removal of media in line during the flow rate check, flow rates of all pumps were checked with and without media in line. The change in the flow rate was negligible, thereby justifying the flow rate check without the media in line. The data for these flow rate verifications with and without media are on file at TRC.

Sections of QAPP Affected:

Attachment C, SOP for SKC Leland Legacy Pump for PCBs, Section 4.1: This section of the SOP has been revised to make the inclusion of media in line during the flow rate check an optional procedure. This SOP has been reissued as Revision 1, February 2006.

Date Implemented:

January 2006 (Phase I)

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AMENDMENT #7

The use of the Ohio Lumex RA-915+ for the monitoring of gaseous mercury will be discontinued in cold temperatures and in extreme rain conditions. Cold temperatures will be defined as $< 34^{\circ}\text{F}$. Results for total mercury analyses on iodated carbon traps on all days are still available within four days of testing and will supplement the gaseous mercury results on days when these measurements are not possible.

Reason for Amendment:

The field team started to experience erratic operation of the instrument under cold temperatures and during extreme rain. Erratic operation included the lamp not igniting or intermittently shutting off resulting in very high relative deviation (R) values during the field verification test. The operating range of the instrument as cited by the manufacturer is 0 to 40°C , thereby the reason for the erratic operation. Due to the sensitive nature and expense of the equipment, the use of the equipment during extreme rainfall is not practical.

Sections of QAPP Affected:

Section 10.2.2, Mercury (Gas): Conditions under which gaseous mercury analysis should not be performed will be added to this section.

Date Implemented:

January 2006 (Phase I)