

APPENDIX D

Metals and PAHs Data Validation Technical Memorandum



Technical Memorandum

Date: June 4, 2013

To: Jenee Colton, King County Toxicology and Contaminant Assessment Group
Richard Jack, King County Toxicology and Contaminant Assessment Group

From: Scott Mickelson, King County Marine and Sediment Assessment Group

Subject: Data Validation Report
Bulk Air Deposition Samples

This technical memorandum summarizes the data validation review performed on bulk air deposition samples, collected between August 25, 2011 and October 24, 2012. These samples were submitted for analysis of total mercury, total ICP-MS metals, and polycyclic aromatic hydrocarbons (PAHs).

1.0 INTRODUCTION

This data validation review has been based, in part, on guidance found in *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (EPA 2008) and *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (EPA 2010), as well as the project SAP (King County 2011). Materials reviewed included Batch Reports and Analytical Quality Control (QC) Reports downloaded from the King County Laboratory Information System (LIMS) database, along with data anomaly forms, all of which are attached to this memorandum. The QC parameters reviewed during this data validation include; holding time, method blanks, spike blanks, spike blank duplicates, matrix spikes, matrix spike duplicates, laboratory duplicates, and surrogates, which are described below.

1.1 Holding Time

The analytical holding time is a method-specific timeframe, during which sample preparation and analysis should occur to provide valid data. All samples should be analyzed within this prescribed holding time.

1.2 Method Blank

A method blank is an aliquot of clean reference matrix that is generally processed through the entire analytical procedure. Analysis of the method blank is used to evaluate the levels of contamination that might be associated with the processing and analysis of samples. All method blank results should be less than the method detection limit (MDL). Method blanks were included with all analyses.

1.3 Spike Blank

A spike blank is an aliquot of the clean reference matrix used for the method blank, to which a known concentration of target analyte(s) has been added. The spiked aliquot is processed through the entire analytical procedure. Analysis of the spike blank is used as an indicator of method accuracy. Spike blanks were used as part of the QC regimen for all analyses. Spike blanks are not addressed in the *National Functional Guidelines*, however, King County has method-defined or empirically-derived control limits for spike blank analytes, which are shown on the attached QC reports. Spike blank results should be within these control limits. During the planning phase of this project, the King County Environmental Laboratory presumptively set the laboratory QC limits for PAH spike blank recoveries at 40 – 160%, due to a lack of sufficient data to control chart the spike blank recoveries for this analytical method. These are the control limits shown on the attached QC report for PAHs (Attachment C). During the course of the project, the large number of samples (> 125) provided enough data to allow control charting and derivation of empirical QC limits. The new empirically-derived PAH spike blank control limits are shown in the following table.

PAH Compound	Lower QC Limit (%)	Upper QC Limit (%)
Acenaphthene	26	122
Acenaphthylene	20	117
Anthracene	20	99
Fluorene	32	141
2-Methylnaphthalene	20	146
Naphthalene	21	110
Phenanthrene	49	100
Benzo(a)anthracene	77	110
Benzo(a)pyrene	20	116
Benzo(b,j,k)fluoranthene	69	129
Benzo(g,h,i)perylene	46	133
Chrysene	75	111
Dibenzo(a,h)anthracene	51	136
Fluoranthene	70	115
Indeno(1,2,3-c,d)pyrene	50	134
Pyrene	65	133

1.4 Spike Blank Duplicate

A spike blank duplicate is a second aliquot of clean reference matrix fortified with a known concentration of a target analyte(s). The spiked blank is processed through the entire analytical procedure. Spike blank duplicates were analyzed as part of the QC regimen for PAH analysis. Analysis of the spike blank duplicate is used as an additional indicator of method accuracy as well as an indicator of method precision. The relative percent difference (RPD) between spike blank duplicate results is not addressed in the *National Functional Guidelines*. King County used a project-specific QC limit of 40% for the RPD between spike blank duplicate results (King County 2011). The RPD for spike blank duplicate results should be less than this QC limit.

1.5 Matrix Spike

A matrix spike is a sample aliquot fortified with a known concentration of a target analyte(s). The spiked sample is processed through the entire analytical procedure. Analysis of the matrix spike is used as an indicator of sample matrix effect on the recovery of target analyte(s). Matrix spike analysis was used as part of the QC regimen for mercury and ICP-MS metals analyses. Matrix spike recoveries for all metals should be within 75 to 125% (EPA 2010).

1.6 Matrix Spike Duplicate

A matrix spike duplicate is a second sample aliquot fortified with a known concentration of a target analyte(s). The spiked sample is processed through the entire analytical procedure. Matrix spike duplicates were analyzed as part of the QC regimen for mercury and ICP-MS analyses. Analysis of the matrix spike duplicate is used as an additional indicator of sample matrix effect on the recovery of target analyte(s) as well as an indicator of method precision. The RPD between matrix spike/matrix spike duplicate results should be less than 20% for all metals analyses (EPA 2010).

1.7 Laboratory Duplicate

A laboratory duplicate is a second aliquot of a sample, processed concurrently and in an identical manner with the original sample. Analysis of the laboratory duplicate is used as an indicator of method precision. The laboratory duplicate can also be used to provide information regarding the homogeneity of the sample matrix. QC results are reported as an RPD between the sample and laboratory duplicate results. Laboratory duplicates were used in lieu of matrix spike duplicates in two of the ICP-MS analytical work groups. The RPD between laboratory duplicate results should be less than 20% for all metals analyses (EPA 2010).

1.8 Surrogates

A surrogate is a known concentration of non-target analyte which is added to each sample (both analytical and QC samples) prior to extraction and analysis for all trace organic analyses. Surrogate recovery is used as a sample-specific indication of method or matrix bias for target analytes. The surrogate is selected to behave in a similar manner to the target analytes.

The King County Environmental Laboratory used two surrogate compounds during analysis of PAHs, 2-fluorobiphenyl and d14-terphenyl. During the planning phase of this project, the King County Environmental Laboratory presumptively set the laboratory QC limits for surrogate recoveries at 40 – 160%, due to a lack of sufficient data to control chart the surrogate recoveries for this analytical method. These are the control limits shown on the attached QC report for PAHs (Attachment C). During the course of the project, the large number of samples (> 125) provided enough data to allow control charting and derivation of empirical QC limits. The empirically-derived surrogate recovery limits are 37 to 113% for 2-fluorobiphenyl and 64 to 162% for d14-terphenyl. Surrogate recoveries for all analytical and QC samples should be within these control limits. These two surrogate compounds are not addressed in *National Functional Guidelines*.

2.0 METALS

2.1 Mercury Analysis

A total of 129 samples were submitted for analysis of total mercury by cold-vapor atomic fluorescence spectrometry (CVAF) following EPA Method 1631E (EPA 2002). These 129 samples included 127 bulk air deposition samples, a field spike blank, and a field rinsate blank. Associated QC samples analyzed with each work group included three method blanks, a spike blank, and one or two matrix spike/matrix spike duplicate pair(s), depending on the number of samples in the work group.

2.1.1 Holding Time

All 129 mercury samples were analyzed within the method-specified 90-day holding time.

2.1.2 Method Blanks

All mercury method blank results were less than the MDL, indicating that laboratory contamination was not an issue during sample digestion and analysis.

2.1.3 Spike Blanks

All mercury spike blank results were within the empirically-derived laboratory QC limits of 77 to 123%, ranging from 80 to 102%, indicating acceptable overall method accuracy.

2.1.4 Matrix Spikes/Matrix Spike Duplicates

All matrix spike and matrix spike duplicate recoveries were within the 75 to 125% laboratory QC limits recommended in *National Functional Guidelines*, ranging from 79 to 120%, indicating acceptable matrix-specific method accuracy. Note that the method-specific laboratory QC limits are 71 to 125%. The RPDs between matrix spike and matrix spike duplicate recoveries were all less than the 20% laboratory QC limit recommended in *National Functional Guidelines*, ranging from 0 to 16%, indicating acceptable method precision. Note that the method specific laboratory QC limit is 24%.

2.1.5 Sample Handling Issue

A data anomaly form indicated that sample L55530-19 overflowed slightly when it was deployed in the field. The mercury result for sample L55530-19 should be qualified with a “J” flag and considered estimated, with an unknown bias.

2.2 ICP-MS Metals Analysis

A total of 130 samples were submitted for analysis of total metals by inductively coupled plasma-mass spectrometry following EPA Method 200.8 (EPA 1994). These 130 samples included 128 bulk air deposition samples, a field spike blank, and a field rinsate blank. Metals analyzed included arsenic, cadmium, chromium, copper, lead, nickel, silver, vanadium, and zinc. Associated QC samples analyzed with each work group included a method blank, a spike blank, and one matrix spike/matrix spike duplicate pair or a matrix spike and a laboratory duplicate.

2.2.1 Holding Time

All 130 total metals samples were analyzed within the method-specified 6-month holding time.

2.2.2 Method Blanks

All total metals method blank results were less than the MDL, indicating that laboratory contamination was not an issue during sample digestion and analysis.

2.2.3 Spike Blanks

All total metals spike blank results were within the empirically-derived laboratory QC limits of 85 to 115%, ranging from 95 to 112%, indicating acceptable overall method accuracy.

2.2.4 Matrix Spikes/Matrix Spike Duplicates

The 129% recovery for zinc in the matrix spike associated with work group WG123018 exceeded the upper laboratory QC limit of 125% recommended in *National Functional Guidelines*. The matrix spike duplicate recovery of 97%, however, was within the 75 to 125% QC limits and the 3% RPD between recoveries was below the 20% QC limit. As a result, associated zinc sample data will not be qualified based on this matrix spike recovery. All other total metals matrix spike and matrix spike duplicate recoveries were within the 75 to 125% laboratory QC limits, ranging from 76 to 109%, indicating acceptable matrix-specific method accuracy. The RPDs between matrix spike and matrix spike duplicate recoveries were all less than the 20% laboratory QC limit, ranging from 0 to 4%, indicating acceptable method precision.

2.2.5 Laboratory Duplicates

The RPDs between total metals laboratory duplicate results were all less than the 20% QC limit recommended in *National Functional Guidelines*, ranging from 0 to 19%

2.2.6 Sample Handling Issue

A data anomaly form indicated that sample L55530-19 overflowed slightly when it was deployed in the field. All ICP-MS metals results for sample L55530-19 should be qualified with a “J” flag and considered estimated, with an unknown bias.

3.0 POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

A total of 126 samples were submitted for analysis of 16 PAH compounds by gas chromatography with mass spectroscopy (GC-MS) following EPA Methods 3520C/8270D – SW846 (EPA 2007). This method was modified by the use of a large volume injector (LVI) and analysis using selected ion monitoring (SIM). These 126 samples included 124 bulk air deposition samples and two PAH wipe test samples. Associated QC samples analyzed with each bulk air deposition sample work group included a method blank and a spike blank/spike blank duplicate pair. The QC samples analyzed with the two wipe test sample work groups included only a method blank and spike blank. Surrogates were included with every PAH sample analysis, both for analytical and QC samples.

3.1 Holding Time

All 126 samples were extracted within the 14-day holding time and analyzed within the subsequent 40-day holding time.

3.2 Method Blanks

Between one and nine PAH compounds were detected in every method blank associated with this data set. All of the positive PAH method blank results were detected at concentrations less than the reporting detection limit (RDL), which is the limit of practical quantitation. Based on the recommendations in *National Function Guidelines* (EPA 2008), the following data qualification regime should be employed as a result of method blank contamination:

- When both the method blank concentration and the sample concentration are less than the RDL, the sample value should be reported as the numeric RDL value and the result should be qualified with a “U” flag and considered undetected.
- When the method blank concentration is less than the RDL and the sample concentration is greater than the RDL but less than 10 times the method blank concentration, the sample value should be used as reported but the result should be qualified with a “U” flag and considered undetected.
- When the method blank concentration is less than the RDL and the sample concentration is greater than the RDL and greater than 10 times the method blank concentration, the sample result may be used as reported, without qualification.

3.3 Spike Blanks/Spike Blank Duplicates

The RPDs between spike blank and spike blank duplicate results for acenaphthene, acenaphthylene, anthracene, fluorene, 2-methylnaphthalene, naphthalene, and phenanthrene in work group WG117143 all exceeded the 40% QC limit, ranging from 43 to 63%. This was due to a poor recovery of the surrogate 2-fluorobiphenyl, associated with these lower-molecular weight PAH compounds in the spike blank duplicate. Detected results for these seven compounds in samples L53760-2, -6, -7, -13, -16, -19, and -24 should be qualified with a “J” flag and considered estimated with an unknown bias.

The RPDs between spike blank and spike blank duplicate results for acenaphthylene, anthracene, and benzo(a)pyrene in work group WG118360 all exceeded the 40% QC limit, ranging from 47 to 139%. Detected results for these three compounds in samples L54414-1, -4, -7, -10, and -13 should be qualified with a “J” flag and considered estimated with an unknown bias.

The RPDs between spike blank and spike duplicate results for anthracene and benzo(a)pyrene in work group WG118586 exceeded the 40% QC limit, at 42 and 56%, respectively. Detected results for these two compounds in samples L54294-2, -5, -9, -14, and -17 should be qualified with a “J” flag and considered estimated with an unknown bias.

The RPD of 53% between spike blank and spike blank duplicate results for benzo(a)pyrene in work group WG119193 exceeded the QC limit of 40%. Detected benzo(a)pyrene results in samples L54719-1, -5, -9, -12, and -16 should be qualified with a “J” flag and considered estimated with an unknown bias.

Spike blank and spike blank duplicate recoveries of 0 and 1% were reported for benzo(a)pyrene in work group WG119384. Detected benzo(a)pyrene results in samples L54845-2, -6, -9, -12,

and -15 should be qualified with a “J” flag and considered estimated with a low bias. Non-detect results in these samples should be rejected.

The RPD of 67% between spike blank and spike blank duplicate results for benzo(a)pyrene in work group WG119479 exceeded the QC limit of 40%. Detected benzo(a)pyrene results in samples L54922-1, -4, -7, -10, and -13 should be qualified with a “J” flag and considered estimated with an unknown bias.

The spike blank and spike duplicate recoveries of 151 and 147% for pyrene in work group WG119681 both exceeded the upper, empirically-derived QC limit of 133%. Detected results for pyrene in samples L54980-1, -4, -8, -11, and -15 should be qualified with a “J” flag and considered estimated with a high bias.

The RPD of 55% between spike blank and spike blank duplicate results for benzo(a)pyrene in work group WG119882 exceeded the QC limit of 40%. Detected benzo(a)pyrene results in samples L55079-1, -4, -7, -10, -13, and -16 should be qualified with a “J” flag and considered estimated with an unknown bias.

Spike blank and spike blank duplicate recoveries of 4 and 0% were reported for benzo(a)pyrene in work group WG120394. Detected benzo(a)pyrene results in samples L55316-2, -5, -12, and -15 should be qualified with a “J” flag and considered estimated with a low bias. Non-detect results in these samples should be rejected.

Spike blank and spike blank duplicate recoveries of 168 and 160% for fluorene were reported in work group WG121371, both of which exceeded the upper QC limit of 141%. Spike blank and spike blank duplicate recoveries of 131 and 128% for benzo(a)anthracene were also reported in the same work group, both of which exceeded the upper QC limit of 110%. Detected results for benzo(a)anthracene in samples L55594-1, -4, -7, -10, and -13 should be qualified with a “J” flag and considered estimated with a high bias. A detected fluorene result in sample L55594-10 should also be qualified with a “J” flag and considered estimated with a high bias. Detected fluorene results in samples L55594-1, -4, -7, and -13 should be qualified with a “J” flag and considered estimated with an unknown bias. The unknown bias for fluorene is based on conflicting QC results between high spike blank and spike duplicate recoveries and low surrogate recoveries within the same work group (see Section 3.4).

Spike blank and spike blank duplicate recoveries of 0% were reported for benzo(a)pyrene in work group WG121776. Detected benzo(a)pyrene results in samples L55793-1, -4, -7, -10, -14, and -17 should be qualified with a “J” flag and considered estimated with a low bias. Non-detect results in these samples should be rejected.

The RPD of 45% between spike blank and spike blank duplicate results for benzo(a)pyrene in work group WG122105 exceeded the QC limit of 40%. Detected benzo(a)pyrene results in samples L55963-1, -4, -5, -8, -12, -18, and -22 should be qualified with a “J” flag and considered estimated with an unknown bias.

The RPD of 83% between spike blank and spike blank duplicate results for benzo(a)pyrene in work group WG122333 exceeded the QC limit of 40%. Detected benzo(a)pyrene results in samples L56076-2,-6, -10, -14, and -18 should be qualified with a “J” flag and considered estimated with an unknown bias.

The King County Environmental Laboratory observed sporadically poor recovery (<10%) of benzo(a)pyrene in spike blanks and spike blank duplicates over the course of the study. This is suspected to be related to the analytical extraction method which used a solid-phase extraction (SPE) disc. The spike recoveries of benzo(a)pyrene using a comparable analytical method, which differs only by using liquid-liquid instead of SPE extraction, are consistently high. Thus, some unknown aspect of the SPE extraction procedure appears to result in sporadically poor recovery. Each sample is extracted on its own SPE disc. Therefore, the performance of the spike blank or its duplicate is no indication of the performance of benzo(a)pyrene in samples of the same analytical batch.

Because of this uncertainty in the recovery of benzo(a)pyrene, it was decided during validation that all detected results should be qualified with a “J” flag as an estimate with low bias. All undetected results which were not rejected should be qualified with a “UJ” flag with low bias. Therefore, all benzo(a)pyrene data may be biased low and this bias should be weighed during interpretation of HPAH results. In the future, King County will consider collecting an additional sample to allow analysis of a matrix spike (MS) and matrix spike duplicate (MSD) and provide an additional QC metric for this method. Blank spike recoveries can differ significantly from MS/MSD samples. MS/MSD samples could not be analyzed in this study because the entire sample volume collected is extracted for the primary sample.

3.4 Surrogates

The 27% recovery of the surrogate 2-fluorobiphenyl in the spike blank duplicate associated with work group WG117143 was below the lower, empirically-derived QC limit of 37%. The 88% recovery of the other surrogate, d14-terphenyl, in the spike blank duplicate was within the 64 to 162% QC limits. Both surrogates were within control limits in the spike blank. The low recovery of 2-fluorobiphenyl in the spike blank duplicate, coupled with the 50% recovery in the spike blank, resulted in RPDs between spike blank and spike blank duplicate results that exceeded the 40% QC limit for all seven of the lower-molecular weight PAH compounds, which are associated with the surrogate 2-fluorobiphenyl. This QC situation has been addressed in Section 3.3.

Recoveries of 2-fluorobiphenyl in four of five analytical samples associated with work group WG121371 were below the lower QC limit of 37%, ranging from 27 to 30%. Detected results for acenaphthene, acenaphthylene, anthracene, 2-methylnaphthalene, naphthalene, and phenanthrene in samples L55594-1, -4, -7, and -13 should be qualified with a “J” flag and considered estimated with a low bias. Non-detect results should be qualified with a “UJ” flag. Detected results for fluorene in these samples should be qualified with a “J” flag and considered estimated with an unknown bias. The unknown bias for fluorene is based on conflicting QC results between high spike blank and spike duplicate recoveries and low surrogate recoveries within the same work group (see Section 3.3).

All other surrogate recoveries in both analytical and QC samples were with the empirically-derived QC limits.

3.5 Sample Handling Issues

Data anomaly forms indicated that samples L53845-13 and L55530-18 overflowed slightly when they were deployed in the field. All PAH results for samples L53845-13 and L55530-18 should be qualified with a “J” flag and considered estimated, with an unknown bias.

3.6 Miscellaneous QC Issue

A data anomaly form indicated that field spike sample L55079-16 returned recoveries for acenaphthylene, anthracene, and benzo(a)pyrene that were below their lower QC limits. Acenaphthylene, anthracene, and benzo(a)pyrene results in sample L55079-16 should be qualified with a “J” flag and considered estimated with a low bias.

4.0 DATA USABILITY

As a general data reporting format, metals and PAH sample results that are reported as “<MDL” should be assigned a “U” flag in all cases and considered undetected. Metals and PAH sample results that are reported as “<RDL” should be assigned a “J” flag in all cases and considered estimated with an unknown bias. Tables 1 and 2 at the end of this narrative provide the appropriate data qualifier flags, if required, for every sample/analyte in this data set. These flags are based on the data quality issues summarized in Sections 2.0 and 3.0. LIMS Batch and QC reports and data anomaly forms are provided as Attachments A, B, and C for mercury, ICP-MS metals, and PAHs, respectively.

5.0 REFERENCES

EPA 1994. *Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma – Mass Spectrometry. Method 200.8, Revision 5.4.* United States Environmental Protection Agency, Office of Research and Development. Cincinnati, Ohio.

EPA 2002. *Method 1631, Revision E: Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry.* EPA-821-R-02-019. United States Environmental Protection Agency, Office of Water. Washington, D.C. August 2002.

EPA 2007. *Test Methods for Evaluating Solid Waste. Laboratory Manual – Physical/Chemical Methods, SW-846, 3rd Edition, Update IVB.* United State Environmental Protection Agency, Office of Solid Waste and Emergency Response. Washington, D.C.

EPA 2008. *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review.* OSWER 9240.1-48, USEPA-540-R-08-01. United States Environmental Protection Agency. Washington, D.C. June 2001.

EPA 2010. *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Data Review*. OSWER 9240.1-51, USEPA-540-R-10-011. United States Environmental Protection Agency. Washington, D.C. January 2010.

King County 2011. *Lower Duwamish Waterway Bulk Atmospheric Deposition Study Sampling and Analysis Plan*. King County Department of Natural Resources and Parks. Seattle, Washington.

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Should you have questions regarding any of the information contained in this data validation memorandum, please don't hesitate to contact me.

Sincerely,

Scott Mickelson
Senior Water Quality Project Manager
King County Marine and Sediment Assessment Group
206-296-8247
scott.mickelson@kingcounty.gov

ATTACHMENT A

MERCURY ANALYSIS LIMS BATCH AND QC REPORTS

LIMSView Batch Report for Bulk Air Deposition Samples - Data Validation for Mercury

WG117747 - CVAF Mercury

Sample	Project	Project Description	List Type	Matrix	Coll. Date	Prep. Date	Anal. Date	Comments
L53760-4	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	08/25/11	10/04/11	10/05/11	
L53760-10	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	08/25/11	10/04/11	10/05/11	
L53760-11	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	08/25/11	10/04/11	10/05/11	FREP@L53760-10
L53760-15	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	08/25/11	10/04/11	10/05/11	
L53760-18	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	08/25/11	10/04/11	10/05/11	
L53760-21	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	08/25/11	10/04/11	10/05/11	
L53845-3	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	09/21/11	10/04/11	10/05/11	
L53845-6	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	09/21/11	10/04/11	10/05/11	
L53845-9	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	09/21/11	10/04/11	10/05/11	
L53845-15	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	09/21/11	10/04/11	10/05/11	
WG117747-1	MB		MTHG-CVAF	BLANK WTR		10/04/11	10/05/11	METHOD BLANK #1
WG117747-2	MB		MTHG-CVAF	BLANK WTR		10/04/11	10/05/11	METHOD BLANK #2
WG117747-3	MB		MTHG-CVAF	BLANK WTR		10/04/11	10/05/11	METHOD BLANK#3
WG117747-4	SB		MTHG-CVAF	BLANK WTR		10/04/11	10/05/11	WG117747-1 AF-SB
WG117747-5	MS		MTHG-CVAF	AIRDEPBULK		10/04/11	10/05/11	L53845-15 AF-MS
WG117747-6	MSD		MTHG-CVAF	AIRDEPBULK		10/04/11	10/05/11	WG117747-5 L53845-15 AF-MSD

WG118137 - CVAF Mercury

Sample	Project	Project Description	List Type	Matrix	Coll. Date	Prep. Date	Anal. Date	Comments
L53845-12	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	09/21/11	10/20/11	10/19/11	
L54175-6	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	09/29/11	10/20/11	10/19/11	
L54175-9	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	09/29/11	10/20/11	10/19/11	
L54175-13	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	09/29/11	10/20/11	10/19/11	
L54175-18	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	09/29/11	10/20/11	10/19/11	
L54175-21	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	09/29/11	10/20/11	10/19/11	
L54380-4	421186B	RTP INPLNT 3 DAY INT (inf,eff,sl)	MTHG-CVAF	EFFLUENT	10/11/11	10/20/11	10/19/11	
L54380-6	421186B	RTP INPLNT 3 DAY INT (inf,eff,sl)	MTHG-CVAF	BLANK WTR	10/11/11	10/20/11	10/19/11	
WG118137-1	MB		MTHG-CVAF	BLANK WTR		10/20/11	10/19/11	METHOD BLANK#1
WG118137-2	MB		MTHG-CVAF	BLANK WTR		10/20/11	10/19/11	METHOD BLANK#2
WG118137-3	MB		MTHG-CVAF	BLANK WTR		10/20/11	10/19/11	METHOD BLANK#3
WG118137-4	SB		MTHG-CVAF	BLANK WTR		10/20/11	10/19/11	WG118137-1 AF-SB
WG118137-5	MS		MTHG-CVAF	AIRDEPBULK		10/20/11	10/19/11	L53845-12 AF-MS
WG118137-6	MSD		MTHG-CVAF	AIRDEPBULK		10/20/11	10/19/11	WG118137-5 L53845-12 AF-MSD

LIMSView Batch Report for Bulk Air Deposition Samples - Data Validation for Mercury

WG118773 - CVAF Mercury

Sample	Project	Project Description	List Type	Matrix	Coll. Date	Prep. Date	Anal. Date	Comments
L54294-4	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	10/19/11	11/28/11	11/29/11	
L54294-7	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	10/19/11	11/28/11	11/29/11	
L54294-11	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	10/19/11	11/28/11	11/29/11	
L54294-16	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	10/19/11	11/28/11	11/29/11	
L54294-19	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	10/19/11	11/28/11	11/29/11	
L54414-3	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	11/02/11	11/28/11	11/29/11	
L54414-6	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	11/02/11	11/28/11	11/29/11	
L54414-9	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	11/02/11	11/28/11	11/29/11	
L54414-12	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	11/02/11	11/28/11	11/29/11	
L54414-15	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	11/02/11	11/28/11	11/29/11	
WG118773-1	MB		MTHG-CVAF	BLANK WTR		11/28/11	11/29/11	METHOD BLANK#1
WG118773-2	MB		MTHG-CVAF	BLANK WTR		11/28/11	11/29/11	METHOD BLANK#2
WG118773-3	MB		MTHG-CVAF	BLANK WTR		11/28/11	11/29/11	METHOD BLANK#3
WG118773-4	SB		MTHG-CVAF	BLANK WTR		11/28/11	11/29/11	WG118773-1 AF-SB
WG118773-5	MS		MTHG-CVAF	AIRDEPBULK		11/28/11	11/29/11	L54414-9 AF-MS
WG118773-6	MSD		MTHG-CVAF	AIRDEPBULK		11/28/11	11/29/11	WG118773-5 L54414-9 AF-MSD

WG118804 - CVAF Mercury

Sample	Project	Project Description	List Type	Matrix	Coll. Date	Prep. Date	Anal. Date	Comments
L54379-1	421185	WP INPLANT 3 Day INTENSIVE	MTHG-CVAF	BLANK WTR	11/16/11	12/06/11	12/07/11	
L54379-2	421185	WP INPLANT 3 Day INTENSIVE	MTHG-CVAF	BLANK WTR	11/16/11	12/06/11	12/07/11	
L54542-4	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	11/16/11	12/06/11	12/07/11	
L54542-7	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	11/16/11	12/06/11	12/07/11	
L54542-11	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	11/16/11	12/06/11	12/07/11	
L54542-16	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	11/16/11	12/06/11	12/07/11	
L54542-18	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	11/16/11	12/06/11	12/07/11	
L54658-2	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	11/23/11	12/06/11	12/07/11	
L54658-5	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	11/23/11	12/06/11	12/07/11	
L54658-8	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	11/23/11	12/06/11	12/07/11	
L54658-11	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	11/23/11	12/06/11	12/07/11	
L54658-14	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	11/22/11	12/06/11	12/07/11	
L54667-4	421185	WP INPLANT 3 Day INTENSIVE	MTHG-CVAF	EFFLUENT	11/22/11	12/06/11	12/07/11	
L54667-7	421185	WP INPLANT 3 Day INTENSIVE	MTHG-CVAF	BLANK WTR	11/23/11	12/06/11	12/07/11	
L54697-3	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	11/29/11	12/06/11	12/07/11	
L54697-6	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	11/29/11	12/06/11	12/07/11	
L54697-9	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	11/29/11	12/06/11	12/07/11	
L54697-12	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	11/29/11	12/06/11	12/07/11	

LIMSView Batch Report for Bulk Air Deposition Samples - Data Validation for Mercury

L54697-14	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	11/29/11	12/06/11	12/07/11	
WG118804-1	MB		MTHG-CVAF	BLANK WTR		12/06/11	12/07/11	METHOD BLANK
WG118804-2	MB		MTHG-CVAF	BLANK WTR		12/06/11	12/07/11	METHOD BLANK
WG118804-3	MB		MTHG-CVAF	BLANK WTR		12/06/11	12/07/11	METHOD BLANK
WG118804-4	SB		MTHG-CVAF	BLANK WTR		12/06/11	12/07/11	WG118804-1 AF-SB
WG118804-5	MS		MTHG-CVAF	AIRDEPBULK		12/06/11	12/07/11	L54542-18 AF-MS
WG118804-6	MSD		MTHG-CVAF	AIRDEPBULK		12/06/11	12/07/11	WG118804-5 L54542-18 AF-MSD
WG118804-7	MS		MTHG-CVAF	AIRDEPBULK		12/06/11	12/07/11	L54697-6 AF-MS
WG118804-8	MSD		MTHG-CVAF	AIRDEPBULK		12/06/11	12/07/11	WG118804-7 L54697-6 AF-MSD

WG119850 - CVAF Mercury

Sample	Project	Project Description	List Type	Matrix	Coll. Date	Prep. Date	Anal. Date	Comments
L54719-2	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	12/28/11	02/27/12	02/28/12	
L54719-6	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	12/28/11	02/27/12	02/28/12	
L54719-10	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	12/28/11	02/27/12	02/28/12	
L54719-13	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	12/28/11	02/27/12	02/28/12	
L54719-17	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	12/28/11	02/27/12	02/28/12	
L54845-3	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	01/11/12	02/27/12	02/28/12	
L54845-7	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	01/11/12	02/27/12	02/28/12	
L54845-10	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	01/11/12	02/27/12	02/28/12	
L54845-13	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	01/11/12	02/27/12	02/28/12	
L54845-16	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	01/11/12	02/27/12	02/28/12	
L54922-2	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	01/24/12	02/27/12	02/28/12	
L54922-5	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	01/24/12	02/27/12	02/28/12	
L54922-8	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	01/24/12	02/27/12	02/28/12	
L54922-11	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	01/24/12	02/27/12	02/28/12	
L54922-14	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	01/24/12	02/27/12	02/28/12	
WG119850-1	MB		MTHG-CVAF	BLANK WTR		02/27/12	02/28/12	METHOD BLANK#1
WG119850-2	MB		MTHG-CVAF	BLANK WTR		02/27/12	02/28/12	METHOD BLANK#2
WG119850-3	MB		MTHG-CVAF	BLANK WTR		02/27/12	02/28/12	METHOD BLANK#3
WG119850-4	SB		MTHG-CVAF	BLANK WTR		02/27/12	02/28/12	WG119850-1 AF-SB
WG119850-5	MS		MTHG-CVAF	AIRDEPBULK		02/27/12	02/28/12	L54845-10 AF-MS
WG119850-6	MSD		MTHG-CVAF	AIRDEPBULK		02/27/12	02/28/12	WG119850-5 L54845-10 AF-MSD
WG119850-7	MS		MTHG-CVAF	AIRDEPBULK		02/27/12	02/28/12	L54922-5 AF-MS
WG119850-8	MSD		MTHG-CVAF	AIRDEPBULK		02/27/12	02/28/12	WG119850-7 L54922-5 AF-MSD

LIMSView Batch Report for Bulk Air Deposition Samples - Data Validation for Mercury

WG119938 - CVAF Mercury

Sample	Project	Project Description	List Type	Matrix	Coll. Date	Prep. Date	Anal. Date	Comments
L54980-2	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	02/07/12	02/29/12	03/02/12	
L54980-5	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	02/07/12	02/29/12	03/02/12	
L54980-9	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	02/07/12	02/29/12	03/02/12	
L54980-12	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	02/07/12	02/29/12	03/02/12	
L54980-16	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	02/07/12	02/29/12	03/02/12	
L54980-19	423589-310-4	LDWG Air Deposition	MTHG-CVAF	BLANK WTR	02/07/12	02/29/12	03/02/12	Metals Spike Blank
L54980-20	423589-310-4	LDWG Air Deposition	MTHG-CVAF	BLANK WTR	02/07/12	02/29/12	03/02/12	Metals 2nd Rinse @L54980-5
L55079-5	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	02/22/12	02/29/12	03/02/12	
L55079-8	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	02/22/12	02/29/12	03/02/12	
L55079-11	423589-310-4	LDWG Air Deposition	MTHG-CVAF	AIRDEPBULK	02/22/12	02/29/12	03/02/12	
WG119938-1	MB		MTHG-CVAF	BLANK WTR		02/29/12	03/02/12	METHOD BLANK#1
WG119938-2	MB		MTHG-CVAF	BLANK WTR		02/29/12	03/02/12	METHOD BLANK#2
WG119938-3	MB		MTHG-CVAF	BLANK WTR		02/29/12	03/02/12	METHOD BLANK#3
WG119938-4	SB		MTHG-CVAF	BLANK WTR		02/29/12	03/02/12	WG119938-1 AF-SB
WG119938-5	MS		MTHG-CVAF	AIRDEPBULK		02/29/12	03/02/12	L54980-2 AF-MS
WG119938-6	MSD		MTHG-CVAF	AIRDEPBULK		02/29/12	03/02/12	WG119938-5 L54980-2 AF-MSD

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for Mercury

Workgroup WG117747

Method Blank

MB:WG117747-1 Matrix: BLANK WTR Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAF	0.0002	0.0005	ug/L	<MDL	

Method Blank

MB:WG117747-2 Matrix: BLANK WTR Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAF	0.0002	0.0005	ug/L	<MDL	

Method Blank

MB:WG117747-3 Matrix: BLANK WTR Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAF	0.0002	0.0005	ug/L	<MDL	

Spike Blank

SB:WG117747-4 MB:WG117747-1 Matrix: BLANK WTR Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Mercury, Total, CVAF	0.0002	0.0005	ug/L	<MDL	0.005	0.00467	93		77--123

Matrix Spike/Matrix Spike Duplicate

MSD:WG117747-6 MS:WG117747-5 L53845-15 Matrix: AIRDEPBULK Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	SAMP Value	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
Mercury, Total, CVAF	0.0002	0.0005	ug/L	0.00271	0.005	0.00754	97		71--125	0.005	0.00764	99		1		0--24

Workgroup WG118137

Method Blank

MB:WG118137-1 Matrix: BLANK WTR Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAF	0.0002	0.0005	ug/L	<MDL	

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for Mercury

Method Blank

MB:WG118137-2 Matrix: BLANK WTR Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAF	0.0002	0.0005	ug/L	<MDL	

Method Blank

MB:WG118137-3 Matrix: BLANK WTR Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAF	0.0002	0.0005	ug/L	<MDL	

Spike Blank

SB:WG118137-4 MB:WG118137-1 Matrix: BLANK WTR Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Mercury, Total, CVAF	0.0002	0.0005	ug/L	<MDL	0.005	0.00465	93		77--123

Matrix Spike/Matrix Spike Duplicate

MSD:WG118137-6 MS:WG118137-5 L53845-12 Matrix: AIRDEPBULK Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	SAMP Value	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
Mercury, Total, CVAF	0.0002	0.0005	ug/L	0.00716	0.005	0.0118	92		71--125	0.005	0.0114	85		3		0--24

Workgroup WG118773

Method Blank

MB:WG118773-1 Matrix: BLANK WTR Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAF	0.0002	0.0005	ug/L	<MDL	

Method Blank

MB:WG118773-2 Matrix: BLANK WTR Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAF	0.0002	0.0005	ug/L	<MDL	

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for Mercury

Method Blank

MB:WG118773-3 Matrix: BLANK WTR Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAF	0.0002	0.0005	ug/L	<MDL	

Spike Blank

SB:WG118773-4 MB:WG118773-1 Matrix: BLANK WTR Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Mercury, Total, CVAF	0.0002	0.0005	ug/L	<MDL	0.005	0.00445	89		77--123

Matrix Spike/Matrix Spike Duplicate

MSD:WG118773-6 MS:WG118773-5 L54414-9 Matrix: AIRDEPBULK Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	SAMP Value	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
Mercury, Total, CVAF	0.0002	0.0005	ug/L	0.00873	0.005	0.0143	112		71--125	0.005	0.0146	118		2		0--24

Workgroup WG118804

Method Blank

MB:WG118804-1 Matrix: BLANK WTR Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAF	0.0002	0.0005	ug/L	<MDL	

Method Blank

MB:WG118804-2 Matrix: BLANK WTR Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAF	0.0002	0.0005	ug/L	<MDL	

Method Blank

MB:WG118804-3 Matrix: BLANK WTR Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAF	0.0002	0.0005	ug/L	<MDL	

Spike Blank

SB:WG118804-4 MB:WG118804-1 Matrix: BLANK WTR Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Mercury, Total, CVAF	0.0002	0.0005	ug/L	<MDL	0.005	0.00452	90		77--123

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for Mercury

Matrix Spike/Matrix Spike Duplicate

MSD:WG118804-6 MS:WG118804-5 L54542-18 Matrix: AIRDEPBULK Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	SAMP Value	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
Mercury, Total, CVAF	0.0002	0.0005	ug/L	0.0019	0.005	0.0067	96		71--125	0.005	0.00789	120		16		0--24

Matrix Spike/Matrix Spike Duplicate

MSD:WG118804-8 MS:WG118804-7 L54697-6 Matrix: AIRDEPBULK Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	SAMP Value	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
Mercury, Total, CVAF	0.0002	0.0005	ug/L	0.00236	0.005	0.00778	109		71--125	0.005	0.00781	109		0		0--24

Workgroup WG119850

Method Blank

MB:WG119850-1 Matrix: BLANK WTR Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAF	0.0002	0.0005	ug/L	<MDL	

Method Blank

MB:WG119850-2 Matrix: BLANK WTR Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAF	0.0002	0.0005	ug/L	<MDL	

Method Blank

MB:WG119850-3 Matrix: BLANK WTR Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAF	0.0002	0.0005	ug/L	<MDL	

Spike Blank

SB:WG119850-4 MB:WG119850-1 Matrix: BLANK WTR Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Mercury, Total, CVAF	0.0002	0.0005	ug/L	<MDL	0.005	0.0047	94		77--123

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for Mercury

Matrix Spike/Matrix Spike Duplicate

MSD:WG119850-6 MS:WG119850-5 L54845-10 Matrix: AIRDEPBULK Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	SAMP Value	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
Mercury, Total, CVAF	0.0002	0.0005	ug/L	0.00268	0.005	0.00769	100		71--125	0.005	0.00808	108		5		0--24

Matrix Spike/Matrix Spike Duplicate

MSD:WG119850-8 MS:WG119850-7 L54922-5 Matrix: AIRDEPBULK Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	SAMP Value	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
Mercury, Total, CVAF	0.0002	0.0005	ug/L	0.00266	0.005	0.00665	80		71--125	0.005	0.00659	79		1		0--24

Workgroup WG119938

Method Blank

MB:WG119938-1 Matrix: BLANK WTR Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAF	0.0002	0.0005	ug/L	<MDL	

Method Blank

MB:WG119938-2 Matrix: BLANK WTR Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAF	0.0002	0.0005	ug/L	<MDL	

Method Blank

MB:WG119938-3 Matrix: BLANK WTR Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	MB Value	Qual
Mercury, Total, CVAF	0.0002	0.0005	ug/L	<MDL	

Spike Blank

SB:WG119938-4 MB:WG119938-1 Matrix: BLANK WTR Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Mercury, Total, CVAF	0.0002	0.0005	ug/L	<MDL	0.005	0.00468	94		77--123

Matrix Spike/Matrix Spike Duplicate

MSD:WG119938-6 MS:WG119938-5 L54980-2 Matrix: AIRDEPBULK Listtype:MTHG-CVAF Method:EPA 1631E

Parameter	MDL	RDL	Units	SAMP Value	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
Mercury, Total, CVAF	0.0002	0.0005	ug/L	0.00227	0.005	0.00782	111		71--125	0.005	0.00748	104		4		0--24

ATTACHMENT B

**ICP-MS METALS ANALYSIS
LIMS BATCH AND QC REPORTS**

LIMSView Batch Report for Bulk Air Deposition Samples - Data Validation for Metals

WG117996 - ICPMS Metals

Sample	Project	Project Description	List Type	Matrix	Coll. Date	Prep. Date	Anal. Date	Comments
L53760-3	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	08/25/11	10/17/11	10/18/11	
L53760-8	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	08/25/11	10/17/11	10/18/11	
L53760-9	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	08/25/11	10/17/11	10/18/11	FREP@L53760-8
L53760-14	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	08/25/11	10/17/11	10/18/11	
L53760-17	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	08/25/11	10/17/11	10/18/11	
L53760-20	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	08/25/11	10/17/11	10/18/11	
L53845-2	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	09/21/11	10/17/11	10/18/11	
L53845-5	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	09/21/11	10/17/11	10/18/11	
L53845-8	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	09/21/11	10/17/11	10/18/11	
L53845-11	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	09/21/11	10/17/11	10/18/11	
L53845-14	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	09/21/11	10/17/11	10/18/11	
L54175-5	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	09/29/11	10/17/11	10/18/11	
L54175-8	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	09/29/11	10/17/11	10/18/11	
L54175-12	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	09/29/11	10/17/11	10/18/11	
L54175-17	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	09/29/11	10/17/11	10/18/11	
L54175-20	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	09/29/11	10/17/11	10/18/11	
WG117996-1	MB		MTICPMS-UL	BLANK WTR		10/17/11	10/18/11	METHOD BLANK
WG117996-2	SB		MTICPMS-UL	BLANK WTR		10/17/11	10/18/11	WG117996-1 MS-UL
WG117996-3	MS		MTICPMS-UL	AIRDEPBULK		10/17/11	10/18/11	L53845-14 MS-UL
WG117996-4	MSD		MTICPMS-UL	AIRDEPBULK		10/17/11	10/18/11	WG117996-3 L53845-14 MSD-UL

LIMSView Batch Report for Bulk Air Deposition Samples - Data Validation for Metals

WG118708 - ICPMS Metals

Sample	Project	Project Description	List Type	Matrix	Coll. Date	Prep. Date	Anal. Date	Comments
L54294-3	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	10/19/11	11/28/11	11/29/11	
L54294-6	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	10/19/11	11/28/11	11/29/11	
L54294-10	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	10/19/11	11/28/11	11/29/11	
L54294-15	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	10/19/11	11/28/11	11/29/11	
L54294-18	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	10/19/11	11/28/11	11/29/11	
L54414-2	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	11/02/11	11/28/11	11/29/11	
L54414-5	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	11/02/11	11/28/11	11/29/11	
L54414-8	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	11/02/11	11/28/11	11/29/11	
L54414-11	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	11/02/11	11/28/11	11/29/11	
L54414-14	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	11/02/11	11/28/11	11/29/11	
L54542-3	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	11/16/11	11/28/11	11/29/11	
L54542-6	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	11/16/11	11/28/11	11/29/11	
L54542-10	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	11/16/11	11/28/11	11/29/11	
L54542-15	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	11/16/11	11/28/11	11/29/11	
L54542-18	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	11/16/11	11/28/11	11/29/11	
L54658-2	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	11/23/11	11/28/11	11/29/11	
L54658-5	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	11/23/11	11/28/11	11/29/11	
L54658-8	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	11/23/11	11/28/11	11/29/11	
L54658-11	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	11/23/11	11/28/11	11/29/11	
L54658-14	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	11/22/11	11/28/11	11/29/11	
WG118708-1	MB		MTICPMS-UL	BLANK WTR		11/28/11	11/29/11	METHOD BLANK
WG118708-2	SB		MTICPMS-UL	BLANK WTR		11/28/11	11/29/11	WG118708-1 MS-UL
WG118708-3	MS		MTICPMS-UL	AIRDEPBULK		11/28/11	11/29/11	L54658-2 MS-UL
WG118708-4	MSD		MTICPMS-UL	AIRDEPBULK		11/28/11	11/29/11	WG118708-3 L54658-2 MSD-UL

LIMSView Batch Report for Bulk Air Deposition Samples - Data Validation for Metals

WG119439 - ICPMS Metals

Sample	Project	Project Description	List Type	Matrix	Coll. Date	Prep. Date	Anal. Date	Comments
L54697-2	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	11/29/11	01/23/12	01/24/12	
L54697-5	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	11/29/11	01/23/12	01/24/12	
L54697-8	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	11/29/11	01/23/12	01/24/12	
L54697-11	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	11/29/11	01/23/12	01/24/12	
L54697-14	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	11/29/11	01/23/12	01/24/12	
L54719-2	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	12/28/11	01/23/12	01/24/12	
L54719-6	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	12/28/11	01/23/12	01/24/12	
L54719-10	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	12/28/11	01/23/12	01/24/12	
L54719-13	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	12/28/11	01/23/12	01/24/12	
L54719-17	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	12/28/11	01/23/12	01/24/12	
L54845-3	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	01/11/12	01/23/12	01/24/12	
L54845-7	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	01/11/12	01/23/12	01/24/12	
L54845-10	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	01/11/12	01/23/12	01/24/12	
L54845-13	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	01/11/12	01/23/12	01/24/12	
L54845-16	423589-310-4	LDWG Air Deposition	MTICPMS-UL	AIRDEPBULK	01/11/12	01/23/12	01/24/12	
WG119439-1	MB		MTICPMS-UL	BLANK WTR		01/23/12	01/24/12	METHOD BLANK
WG119439-2	SB		MTICPMS-UL	BLANK WTR		01/23/12	01/24/12	WG119439-1 MS-UL
WG119439-3	MS		MTICPMS-UL	AIRDEPBULK		01/23/12	01/24/12	L54697-5 MS-UL
WG119439-4	MSD		MTICPMS-UL	AIRDEPBULK		01/23/12	01/24/12	WG119439-3 L54697-5 MSD-UL

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for Metals

Workgroup WG117996

Method Blank

MB:WG117996-1 Matrix: BLANK WTR Listtype:MTICPMS-UL Method:EPA 200.8 (UL)

Parameter	MDL	RDL	Units	MB Value	Qual
Vanadium, Total, ICP-MS	0.025	0.125	ug/L	<MDL	
Chromium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	
Nickel, Total, ICP-MS	0.05	0.25	ug/L	<MDL	
Copper, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Zinc, Total, ICP-MS	0.5	2.5	ug/L	<MDL	
Arsenic, Total, ICP-MS	0.01	0.05	ug/L	<MDL	
Silver, Total, ICP-MS	0.01	0.05	ug/L	<MDL	
Cadmium, Total, ICP-MS	0.01	0.05	ug/L	<MDL	
Lead, Total, ICP-MS	0.025	0.125	ug/L	<MDL	

Spike Blank

SB:WG117996-2 MB:WG117996-1 Matrix: BLANK WTR Listtype:MTICPMS-UL Method:EPA 200.8 (UL)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Vanadium, Total, ICP-MS	0.025	0.125	ug/L	<MDL	1.38	1.38	100		85--115
Chromium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	2	1.97	99		85--115
Nickel, Total, ICP-MS	0.05	0.25	ug/L	<MDL	1.5	1.59	106		85--115
Copper, Total, ICP-MS	0.1	0.5	ug/L	<MDL	3	3.16	105		85--115
Zinc, Total, ICP-MS	0.5	2.5	ug/L	<MDL	3.5	3.61	103		85--115
Arsenic, Total, ICP-MS	0.01	0.05	ug/L	<MDL	1.5	1.44	96		85--115
Silver, Total, ICP-MS	0.01	0.05	ug/L	<MDL	1.25	1.27	102		85--115
Cadmium, Total, ICP-MS	0.01	0.05	ug/L	<MDL	1.25	1.28	102		85--115
Lead, Total, ICP-MS	0.025	0.125	ug/L	<MDL	1.5	1.55	103		85--115

Matrix Spike/Matrix Spike Duplicate

MSD:WG117996-4 MS:WG117996-3 L53845-14 Matrix: AIRDEPBULK Listtype:MTICPMS-UL Method:EPA 200.8 (UL)

Parameter	MDL	RDL	Units	SAMP Value	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
Vanadium, Total, ICP-MS	0.025	0.125	ug/L	0.966	1.38	2.39	104		75--125	1.38	2.4	104		0		0--20
Chromium, Total, ICP-MS	0.05	0.25	ug/L	0.44	2	2.48	102		75--125	2	2.46	101		1		0--20
Nickel, Total, ICP-MS	0.05	0.25	ug/L	0.681	1.5	2.21	102		75--125	1.5	2.23	104		1		0--20
Copper, Total, ICP-MS	0.1	0.5	ug/L	2.76	3	5.79	101		75--125	3	5.8	101		0		0--20

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for Metals

Zinc, Total, ICP-MS	0.5	2.5	ug/L	6.25	3.5	9.7	98	75--125	3.5	9.87	103	2	0--20
Arsenic, Total, ICP-MS	0.01	0.05	ug/L	0.636	1.5	2.12	99	75--125	1.5	2.16	101	2	0--20
Silver, Total, ICP-MS	0.01	0.05	ug/L	<MDL	1.25	1.28	102	75--125	1.25	1.28	102	0	0--20
Cadmium, Total, ICP-MS	0.01	0.05	ug/L	0.0634	1.25	1.33	101	75--125	1.25	1.3	99	3	0--20
Lead, Total, ICP-MS	0.025	0.125	ug/L	1.26	1.5	2.8	102	75--125	1.5	2.81	103	0	0--20

Workgroup WG118708

Method Blank

MB:WG118708-1 Matrix: BLANK WTR Listtype:MTICPMS-UL Method:EPA 200.8 (UL)

Parameter	MDL	RDL	Units	MB Value	Qual
Vanadium, Total, ICP-MS	0.025	0.125	ug/L	<MDL	
Chromium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	
Nickel, Total, ICP-MS	0.05	0.25	ug/L	<MDL	
Copper, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Zinc, Total, ICP-MS	0.5	2.5	ug/L	<MDL	
Arsenic, Total, ICP-MS	0.01	0.05	ug/L	<MDL	
Silver, Total, ICP-MS	0.01	0.05	ug/L	<MDL	
Cadmium, Total, ICP-MS	0.01	0.05	ug/L	<MDL	
Lead, Total, ICP-MS	0.025	0.125	ug/L	<MDL	

Spike Blank

SB:WG118708-2 MB:WG118708-1 Matrix: BLANK WTR Listtype:MTICPMS-UL Method:EPA 200.8 (UL)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Vanadium, Total, ICP-MS	0.025	0.125	ug/L	<MDL	1.38	1.43	104		85--115
Chromium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	2	2.01	101		85--115
Nickel, Total, ICP-MS	0.05	0.25	ug/L	<MDL	1.5	1.56	104		85--115
Copper, Total, ICP-MS	0.1	0.5	ug/L	<MDL	3	3.15	105		85--115
Zinc, Total, ICP-MS	0.5	2.5	ug/L	<MDL	3.5	3.62	103		85--115
Arsenic, Total, ICP-MS	0.01	0.05	ug/L	<MDL	1.5	1.52	101		85--115
Silver, Total, ICP-MS	0.01	0.05	ug/L	<MDL	1.25	1.32	106		85--115
Cadmium, Total, ICP-MS	0.01	0.05	ug/L	<MDL	1.25	1.31	105		85--115
Lead, Total, ICP-MS	0.025	0.125	ug/L	<MDL	1.5	1.57	104		85--115

LIMSVIEW QC Report for Bulk Air Deposition Samples - Data Validation for Metals

Matrix Spike/Matrix Spike Duplicate

MSD:WG118708-4 MS:WG118708-3 L54658-2 Matrix: AIRDEPBULK Listtype:MTICPMS-UL Method:EPA 200.8 (UL)

Parameter	MDL	RDL	Units	SAMP Value	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
Vanadium, Total, ICP-MS	0.025	0.125	ug/L	0.229	1.38	1.63	102		75--125	1.38	1.62	101		1		0--20
Chromium, Total, ICP-MS	0.05	0.25	ug/L	0.17	2	2.15	99		75--125	2	2.2	101		2		0--20
Nickel, Total, ICP-MS	0.05	0.25	ug/L	0.296	1.5	1.82	102		75--125	1.5	1.83	102		1		0--20
Copper, Total, ICP-MS	0.1	0.5	ug/L	1.93	3	5.02	103		75--125	3	4.96	101		1		0--20
Zinc, Total, ICP-MS	0.5	2.5	ug/L	9.4	3.5	12.5	88		75--125	3.5	12.1	76		4		0--20
Arsenic, Total, ICP-MS	0.01	0.05	ug/L	0.0509	1.5	1.55	100		75--125	1.5	1.56	101		1		0--20
Silver, Total, ICP-MS	0.01	0.05	ug/L	<MDL	1.25	1.31	105		75--125	1.25	1.31	105		0		0--20
Cadmium, Total, ICP-MS	0.01	0.05	ug/L	0.138	1.25	1.45	105		75--125	1.25	1.45	105		0		0--20
Lead, Total, ICP-MS	0.025	0.125	ug/L	0.538	1.5	2.07	102		75--125	1.5	2.07	102		0		0--20

Workgroup WG119439

Method Blank

MB:WG119439-1 Matrix: BLANK WTR Listtype:MTICPMS-UL Method:EPA 200.8 (UL)

Parameter	MDL	RDL	Units	MB Value	Qual
Vanadium, Total, ICP-MS	0.025	0.125	ug/L	<MDL	
Chromium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	
Nickel, Total, ICP-MS	0.05	0.25	ug/L	<MDL	
Copper, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Zinc, Total, ICP-MS	0.5	2.5	ug/L	<MDL	
Arsenic, Total, ICP-MS	0.01	0.05	ug/L	<MDL	
Silver, Total, ICP-MS	0.01	0.05	ug/L	<MDL	
Cadmium, Total, ICP-MS	0.01	0.05	ug/L	<MDL	
Lead, Total, ICP-MS	0.025	0.125	ug/L	<MDL	

Spike Blank

SB:WG119439-2 MB:WG119439-1 Matrix: BLANK WTR Listtype:MTICPMS-UL Method:EPA 200.8 (UL)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Vanadium, Total, ICP-MS	0.025	0.125	ug/L	<MDL	1.38	1.35	98		85--115
Chromium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	2	2.06	103		85--115
Nickel, Total, ICP-MS	0.05	0.25	ug/L	<MDL	1.5	1.6	107		85--115
Copper, Total, ICP-MS	0.1	0.5	ug/L	<MDL	3	3.19	106		85--115

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for Metals

Zinc, Total, ICP-MS	0.5	2.5	ug/L	<MDL	3.5	3.84	110	85--115
Arsenic, Total, ICP-MS	0.01	0.05	ug/L	<MDL	1.5	1.53	102	85--115
Silver, Total, ICP-MS	0.01	0.05	ug/L	<MDL	1.25	1.3	104	85--115
Cadmium, Total, ICP-MS	0.01	0.05	ug/L	<MDL	1.25	1.32	105	85--115
Lead, Total, ICP-MS	0.025	0.125	ug/L	<MDL	1.5	1.58	105	85--115

Matrix Spike/Matrix Spike Duplicate

MSD:WG119439-4 MS:WG119439-3 L54697-5 Matrix: AIRDEPBULK Listtype:MTICPMS-UL Method:EPA 200.8 (UL)

Parameter	MDL	RDL	Units	SAMP Value	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
Vanadium, Total, ICP-MS	0.025	0.125	ug/L	0.414	1.38	1.83	103	75--125	1.38	1.81	102	1	0--20			
Chromium, Total, ICP-MS	0.05	0.25	ug/L	0.436	2	2.49	102	75--125	2	2.44	100	2	0--20			
Nickel, Total, ICP-MS	0.05	0.25	ug/L	0.427	1.5	2.03	107	75--125	1.5	2.04	108	1	0--20			
Copper, Total, ICP-MS	0.1	0.5	ug/L	3.97	3	7.21	108	75--125	3	7.12	105	1	0--20			
Zinc, Total, ICP-MS	0.5	2.5	ug/L	12.9	3.5	16.6	106	75--125	3.5	16.4	100	1	0--20			
Arsenic, Total, ICP-MS	0.01	0.05	ug/L	0.156	1.5	1.64	99	75--125	1.5	1.63	98	1	0--20			
Silver, Total, ICP-MS	0.01	0.05	ug/L	<MDL	1.25	1.3	104	75--125	1.25	1.3	104	0	0--20			
Cadmium, Total, ICP-MS	0.01	0.05	ug/L	0.0525	1.25	1.32	102	75--125	1.25	1.35	103	2	0--20			
Lead, Total, ICP-MS	0.025	0.125	ug/L	1.11	1.5	2.71	107	75--125	1.5	2.67	104	1	0--20			

ATTACHMENT C

**PAH ANALYSIS
LIMS BATCH AND QC REPORTS**

LIMSView Batch Report for Bulk Air Deposition Samples - Data Validation for PAHs

WG117143 - PAHs

Sample	Project	Project Description	List Type	Matrix	Coll. Date	Prep. Date	Anal. Date	Comments
L53760-2	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	08/25/11	08/29/11	09/16/11	
L53760-6	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	08/25/11	08/29/11	09/16/11	
L53760-7	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	08/25/11	08/29/11	09/16/11	FREP@L53760-6
L53760-13	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	08/25/11	08/29/11	09/16/11	
L53760-16	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	08/25/11	08/29/11	09/16/11	
L53760-19	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	08/25/11	08/29/11	09/16/11	
L53760-24	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	08/25/11	08/29/11	09/16/11	Equipment Blank @ KCEL
WG117143-1	MB		ORPAH-SIM-LVI-SPE	BLANK WTR		08/29/11	09/16/11	MB20110829
WG117143-2	SB		ORPAH-SIM-LVI-SPE	BLANK WTR		08/29/11	09/16/11	WG117143-1
WG117143-3	SBD		ORPAH-SIM-LVI-SPE	BLANK WTR		08/29/11	09/16/11	WG117143-2 WG117143-1

WG117620 - PAHs

Sample	Project	Project Description	List Type	Matrix	Coll. Date	Prep. Date	Anal. Date	Comments
L53845-1	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	09/21/11	09/26/11	10/31/11	
L53845-4	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	09/21/11	09/26/11	10/31/11	
L53845-7	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	09/21/11	09/26/11	10/31/11	
L53845-10	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	09/21/11	09/26/11	11/02/11	
L53845-13	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	09/21/11	09/26/11	10/31/11	
WG117620-1	MB		ORPAH-SIM-LVI-SPE	BLANK WTR		09/26/11	10/31/11	MB20110926
WG117620-2	SB		ORPAH-SIM-LVI-SPE	BLANK WTR		09/26/11	10/31/11	WG117620-1
WG117620-3	SBD		ORPAH-SIM-LVI-SPE	BLANK WTR		09/26/11	10/31/11	WG117620-2 WG117620-1

LIMSView Batch Report for Bulk Air Deposition Samples - Data Validation for PAHs

WG117760 - PAHs

Sample	Project	Project Description	List Type	Matrix	Coll. Date	Prep. Date	Anal. Date	Comments
L54175-4	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	09/29/11	10/04/11	11/02/11	
L54175-7	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	09/29/11	10/04/11	10/31/11	
L54175-11	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	09/29/11	10/04/11	11/02/11	
L54175-16	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	09/29/11	10/04/11	11/02/11	
L54175-19	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	09/29/11	10/04/11	11/02/11	
WG117760-1	MB		ORPAH-SIM-LVI-SPE	BLANK WTR		10/04/11	10/31/11	MB20111004
WG117760-2	SB		ORPAH-SIM-LVI-SPE	BLANK WTR		10/04/11	10/31/11	WG117760-1
WG117760-3	SBD		ORPAH-SIM-LVI-SPE	BLANK WTR		10/04/11	10/31/11	WG117760-2 WG117760-1

WG118114 - PAHs

Sample	Project	Project Description	List Type	Matrix	Coll. Date	Prep. Date	Anal. Date	Comments
L54294-2	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	10/19/11	10/20/11	11/02/11	
L54294-5	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	10/19/11	10/20/11	11/02/11	
L54294-9	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	10/19/11	10/20/11	11/02/11	
L54294-14	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	10/19/11	10/20/11	11/02/11	
L54294-17	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	10/19/11	10/20/11	11/03/11	
WG118114-1	MB		ORPAH-SIM-LVI-SPE	BLANK WTR		10/20/11	11/02/11	MB111020
WG118114-2	SB		ORPAH-SIM-LVI-SPE	BLANK WTR		10/20/11	11/02/11	WG118114-1
WG118114-3	SBD		ORPAH-SIM-LVI-SPE	BLANK WTR		10/20/11	11/02/11	WG118114-2 WG118114-1

WG118360 - PAHs

Sample	Project	Project Description	List Type	Matrix	Coll. Date	Prep. Date	Anal. Date	Comments
L54414-1	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	11/02/11	11/03/11	11/14/11	
L54414-4	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	11/02/11	11/03/11	11/14/11	
L54414-7	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	11/02/11	11/03/11	11/14/11	
L54414-10	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	11/02/11	11/03/11	11/14/11	
L54414-13	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	11/02/11	11/03/11	11/14/11	
WG118360-1	MB		ORPAH-SIM-LVI-SPE	BLANK WTR		11/03/11	11/15/11	MB111103
WG118360-2	SB		ORPAH-SIM-LVI-SPE	BLANK WTR		11/03/11	11/14/11	WG118360-1
WG118360-3	SBD		ORPAH-SIM-LVI-SPE	BLANK WTR		11/03/11	11/15/11	WG118360-2 WG118360-1

LIMSView Batch Report for Bulk Air Deposition Samples - Data Validation for PAHs

WG118586 - PAHs

Sample	Project	Project Description	List Type	Matrix	Coll. Date	Prep. Date	Anal. Date	Comments
L54542-2	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	11/16/11	11/17/11	12/07/11	
L54542-5	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	11/16/11	11/17/11	12/07/11	
L54542-9	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	11/16/11	11/17/11	12/07/11	
L54542-14	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	11/16/11	11/17/11	12/07/11	
L54542-17	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	11/16/11	11/17/11	12/07/11	
WG118586-1	MB		ORPAH-SIM-LVI-SPE	BLANK WTR		11/17/11	12/07/11	MB111117
WG118586-2	SB		ORPAH-SIM-LVI-SPE	BLANK WTR		11/17/11	12/07/11	WG118586-1
WG118586-3	SBD		ORPAH-SIM-LVI-SPE	BLANK WTR		11/17/11	12/07/11	WG118586-2 WG118586-1

WG118727 - PAHs

Sample	Project	Project Description	List Type	Matrix	Coll. Date	Prep. Date	Anal. Date	Comments
L54658-1	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	11/23/11	11/29/11	12/07/11	
L54658-4	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	11/23/11	11/29/11	12/07/11	
L54658-7	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	11/23/11	11/29/11	12/07/11	
L54658-10	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	11/23/11	11/29/11	12/07/11	
L54658-13	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	11/22/11	11/29/11	12/07/11	
WG118727-1	MB		ORPAH-SIM-LVI-SPE	BLANK WTR		11/29/11	12/07/11	MB111129
WG118727-2	SB		ORPAH-SIM-LVI-SPE	BLANK WTR		11/29/11	12/07/11	WG118727-1
WG118727-3	SBD		ORPAH-SIM-LVI-SPE	BLANK WTR		11/29/11	12/07/11	WG118727-2 WG118727-1

WG118822 - PAHs

Sample	Project	Project Description	List Type	Matrix	Coll. Date	Prep. Date	Anal. Date	Comments
L54697-1	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	11/29/11	12/06/11	12/09/11	
L54697-4	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	11/29/11	12/06/11	12/09/11	
L54697-7	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	11/29/11	12/06/11	12/09/11	
L54697-10	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	11/29/11	12/06/11	12/09/11	
L54697-13	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	11/29/11	12/06/11	12/09/11	
WG118822-1	MB		ORPAH-SIM-LVI-SPE	BLANK WTR		12/06/11	12/09/11	MB111206
WG118822-2	SB		ORPAH-SIM-LVI-SPE	BLANK WTR		12/06/11	12/09/11	WG118822-1
WG118822-3	SBD		ORPAH-SIM-LVI-SPE	BLANK WTR		12/06/11	12/09/11	WG118822-2 WG118822-1

LIMSView Batch Report for Bulk Air Deposition Samples - Data Validation for PAHs

WG119193 - PAHs

Sample	Project	Project Description	List Type	Matrix	Coll. Date	Prep. Date	Anal. Date	Comments
L54719-1	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	12/28/11	12/29/11	02/02/12	
L54719-5	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	12/28/11	12/29/11	02/02/12	
L54719-9	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	12/28/11	12/29/11	02/02/12	
L54719-12	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	12/28/11	12/29/11	02/02/12	
L54719-16	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	12/28/11	12/29/11	02/02/12	
WG119193-1	MB		ORPAH-SIM-LVI-SPE	BLANK WTR		12/29/11	02/02/12	MB111229
WG119193-2	SB		ORPAH-SIM-LVI-SPE	BLANK WTR		12/29/11	02/02/12	WG119193-1
WG119193-3	SBD		ORPAH-SIM-LVI-SPE	BLANK WTR		12/29/11	02/02/12	WG119193-2 WG119193-1

WG119384 - PAHs

Sample	Project	Project Description	List Type	Matrix	Coll. Date	Prep. Date	Anal. Date	Comments
L54845-2	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	01/11/12	01/12/12	02/02/12	
L54845-6	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	01/11/12	01/12/12	02/02/12	
L54845-9	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	01/11/12	01/12/12	02/02/12	
L54845-12	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	01/11/12	01/12/12	02/02/12	
L54845-15	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	01/11/12	01/12/12	02/02/12	
WG119384-1	MB		ORPAH-SIM-LVI-SPE	BLANK WTR		01/12/12	02/02/12	MB120112
WG119384-2	SB		ORPAH-SIM-LVI-SPE	BLANK WTR		01/12/12	02/02/12	WG119384-1
WG119384-3	SBD		ORPAH-SIM-LVI-SPE	BLANK WTR		01/12/12	02/02/12	WG119384-2 WG119384-1

WG119479 - PAHs

Sample	Project	Project Description	List Type	Matrix	Coll. Date	Prep. Date	Anal. Date	Comments
L54922-1	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	01/24/12	01/25/12	02/15/12	
L54922-4	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	01/24/12	01/25/12	02/15/12	
L54922-7	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	01/24/12	01/25/12	02/15/12	
L54922-10	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	01/24/12	01/25/12	02/15/12	
L54922-13	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	01/24/12	01/25/12	02/15/12	
WG119479-1	MB		ORPAH-SIM-LVI-SPE	BLANK WTR		01/25/12	02/15/12	MB120125
WG119479-2	SB		ORPAH-SIM-LVI-SPE	BLANK WTR		01/25/12	02/15/12	WG119479-1
WG119479-3	SBD		ORPAH-SIM-LVI-SPE	BLANK WTR		01/25/12	02/15/12	WG119479-2 WG119479-1

LIMSView Batch Report for Bulk Air Deposition Samples - Data Validation for PAHs

WG119681 - PAHs

Sample	Project	Project Description	List Type	Matrix	Coll. Date	Prep. Date	Anal. Date	Comments
L54980-1	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	02/07/12	02/09/12	02/15/12	
L54980-4	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	02/07/12	02/09/12	02/15/12	
L54980-8	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	02/07/12	02/09/12	02/15/12	
L54980-11	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	02/07/12	02/09/12	02/15/12	
L54980-15	423589-310-4	LDWG Air Deposition	ORPAH-SIM-LVI-SPE	AIRDEPBULK	02/07/12	02/09/12	02/15/12	
WG119681-1	MB		ORPAH-SIM-LVI-SPE	BLANK WTR		02/09/12	02/15/12	MB120209
WG119681-2	SB		ORPAH-SIM-LVI-SPE	BLANK WTR		02/09/12	02/15/12	WG119681-1
WG119681-3	SBD		ORPAH-SIM-LVI-SPE	BLANK WTR		02/09/12	02/15/12	WG119681-2 WG119681-1

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for PAHs

Workgroup WG117143

Method Blank

MB:WG117143-1 Matrix: BLANK WTR Listtype:ORPAH-SIM-LVI-SPE Method:SW846 3535A*8270D SIM LVI

Parameter	MDL	RDL	Units	MB Value	Qual
Naphthalene	0.00025	0.01	ug/L	0.00052	B
2-Methylnaphthalene	0.00025	0.005	ug/L	0.0003	B
Acenaphthylene	0.00025	0.00125	ug/L	<MDL	
Acenaphthene	0.00025	0.00125	ug/L	<MDL	
Fluorene	0.00028	0.00138	ug/L	<MDL	
Phenanthrene	0.00025	0.0025	ug/L	0.00064	B
Anthracene	0.00013	0.000625	ug/L	<MDL	
Fluoranthene	0.00016	0.00163	ug/L	0.00023	B
Pyrene	0.00013	0.00125	ug/L	0.00022	B
Benzo(a)anthracene	0.00013	0.000625	ug/L	<MDL	
Chrysene	0.000063	0.000313	ug/L	<MDL	
Benzo(b,j,k)fluoranthene	0.00013	0.00125	ug/L	<MDL	
Benzo(a)pyrene	0.000063	0.000313	ug/L	<MDL	
Indeno(1,2,3-Cd)Pyrene	0.000063	0.000313	ug/L	<MDL	
Dibenzo(a,h)anthracene	0.00013	0.000625	ug/L	<MDL	
Benzo(g,h,i)perylene	0.000063	0.000313	ug/L	<MDL	
Total LPAHs	0.00013	0.000625	ug/L	0.00116	
Total HPAHs	0.000063	0.000313	ug/L	0.00045	

Spike Blank/Spike Blank Duplicate

SBD:WG117143-3 SB:WG117143-2 MB:WG117143-1 Matrix: BLANK WTR Listtype:ORPAH-SIM-LVI-SPE Method:SW846 3535A*8270D SIM LVI

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit	TrueValue	SBD Value	% Rec.	Qual	RPD	Qual	LabLimit
Naphthalene	0.00025	0.01	ug/L	0.00052	0.025	0.0089	34	*	40--160	0.025	0.0057	21	*	43	*	0--40
2-Methylnaphthalene	0.00025	0.005	ug/L	0.0003	0.025	0.00934	36	*	40--160	0.025	0.00579	22	*	47	*	0--40
Acenaphthylene	0.00025	0.00125	ug/L	<MDL	0.025	0.0118	47		40--160	0.025	0.00615	25	*	63	*	0--40
Acenaphthene	0.00025	0.00125	ug/L	<MDL	0.025	0.0125	50		40--160	0.025	0.0069	28	*	57	*	0--40
Fluorene	0.00028	0.00138	ug/L	<MDL	0.025	0.015	60		40--160	0.025	0.00822	33	*	59	*	0--40
Phenanthrene	0.00025	0.0025	ug/L	0.00064	0.025	0.017	66		40--160	0.025	0.0108	41		45	*	0--40
Anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0152	61		40--160	0.025	0.00973	39	*	44	*	0--40
Fluoranthene	0.00016	0.00163	ug/L	0.00023	0.025	0.0219	87		40--160	0.025	0.0199	79		10		0--40

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for PAHs

Pyrene	0.00013	0.00125	ug/L	0.00022	0.025	0.0196	78	40--160	0.025	0.0186	74	5	0--40
Benzo(a)anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0241	96	40--160	0.025	0.0228	91	6	0--40
Chrysene	0.000063	0.000313	ug/L	<MDL	0.025	0.0217	87	40--160	0.025	0.0204	82	6	0--40
Benzo(b,j,k)fluoranthene	0.00013	0.00125	ug/L	<MDL	0.05	0.0491	98	40--160	0.05	0.046	92	7	0--40
Benzo(a)pyrene	0.000063	0.000313	ug/L	<MDL	0.025	0.0203	81	40--160	0.025	0.0189	76	7	0--40
Indeno(1,2,3-Cd)Pyrene	0.000063	0.000313	ug/L	<MDL	0.025	0.0254	101	40--160	0.025	0.0233	93	9	0--40
Dibenzo(a,h)anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0262	105	40--160	0.025	0.0239	96	9	0--40
Benzo(g,h,i)perylene	0.000063	0.000313	ug/L	<MDL	0.025	0.0243	97	40--160	0.025	0.0222	89	9	0--40

Surrogates

Surrogate: (Lab Limits)	2-Fluorobiphenyl 40--160	d14-Terphenyl 40--160
L53760-2	72	92
L53760-6	57	101
L53760-7	50	98
L53760-13	67	109
L53760-16	80	108
L53760-19	62	97
L53760-24	91	94
WG117143-1	49	95
WG117143-2	50	93
WG117143-3	27 *	88

Workgroup WG117620

Method Blank

MB:WG117620-1 Matrix: BLANK WTR Listtype:ORPAH-SIM-LVI-SPE Method:SW846 3535A*8270D SIM LVI

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Naphthalene	0.00025	0.01	ug/L	0.00092	B
2-Methylnaphthalene	0.00025	0.005	ug/L	0.00056	B
Acenaphthylene	0.00025	0.00125	ug/L	<MDL	
Acenaphthene	0.00025	0.00125	ug/L	<MDL	
Fluorene	0.00028	0.00138	ug/L	<MDL	
Phenanthrene	0.00025	0.0025	ug/L	0.00076	B

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for PAHs

Anthracene	0.00013	0.000625	ug/L	<MDL	
Fluoranthene	0.00016	0.00163	ug/L	0.00029	B
Pyrene	0.00013	0.00125	ug/L	<MDL	
Benzo(a)anthracene	0.00013	0.000625	ug/L	<MDL	
Chrysene	0.000063	0.000313	ug/L	<MDL	
Benzo(b,j,k)fluoranthene	0.00013	0.00125	ug/L	<MDL	
Benzo(a)pyrene	0.000063	0.000313	ug/L	<MDL	
Indeno(1,2,3-Cd)Pyrene	0.000063	0.000313	ug/L	<MDL	
Dibenzo(a,h)anthracene	0.00013	0.000625	ug/L	<MDL	
Benzo(g,h,i)perylene	0.000063	0.000313	ug/L	<MDL	
Total LPAHs	0.00013	0.000625	ug/L	0.00168	
Total HPAHS	0.000063	0.000313	ug/L	0.00029	

Spike Blank/Spike Blank Duplicate

SBD:WG117620-3 SB:WG117620-2 MB:WG117620-1 Matrix: BLANK WTR Listtype:ORPAH-SIM-LVI-SPE Method:SW846 3535A*8270D SIM LVI

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit	TrueValue	SBD Value	% Rec.	Qual	RPD	Qual	LabLimit
Naphthalene	0.00025	0.01	ug/L	0.00092	0.025	0.0204	78		40--160	0.025	0.0195	74		5		0--40
2-Methylnaphthalene	0.00025	0.005	ug/L	0.00056	0.025	0.0217	84		40--160	0.025	0.0207	81		4		0--40
Acenaphthylene	0.00025	0.00125	ug/L	<MDL	0.025	0.0221	88		40--160	0.025	0.0206	82		7		0--40
Acenaphthene	0.00025	0.00125	ug/L	<MDL	0.025	0.0204	82		40--160	0.025	0.0193	77		6		0--40
Fluorene	0.00028	0.00138	ug/L	<MDL	0.025	0.0226	90		40--160	0.025	0.0213	85		6		0--40
Phenanthrene	0.00025	0.0025	ug/L	0.00076	0.025	0.0203	78		40--160	0.025	0.0193	74		5		0--40
Anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0134	54		40--160	0.025	0.0122	49		9		0--40
Fluoranthene	0.00016	0.00163	ug/L	0.00029	0.025	0.0253	100		40--160	0.025	0.0242	96		5		0--40
Pyrene	0.00013	0.00125	ug/L	<MDL	0.025	0.0231	93		40--160	0.025	0.0222	89		4		0--40
Benzo(a)anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0247	99		40--160	0.025	0.0235	94		5		0--40
Chrysene	0.000063	0.000313	ug/L	<MDL	0.025	0.0233	93		40--160	0.025	0.0224	90		4		0--40
Benzo(b,j,k)fluoranthene	0.00013	0.00125	ug/L	<MDL	0.05	0.0533	107		40--160	0.05	0.0523	105		2		0--40
Benzo(a)pyrene	0.000063	0.000313	ug/L	<MDL	0.025	0.0156	62		40--160	0.025	0.0141	56		10		0--40
Indeno(1,2,3-Cd)Pyrene	0.000063	0.000313	ug/L	<MDL	0.025	0.0261	104		40--160	0.025	0.0239	96		9		0--40
Dibenzo(a,h)anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0268	107		40--160	0.025	0.0241	96		11		0--40
Benzo(g,h,i)perylene	0.000063	0.000313	ug/L	<MDL	0.025	0.0254	102		40--160	0.025	0.0236	94		7		0--40

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for PAHs

Surrogates

Surrogate: (Lab Limits)	2-Fluorobiphenyl 40--160	d14-Terphenyl 40--160
L53845-1	74	101
L53845-4	76	108
L53845-7	81	114
L53845-10	86	95
L53845-13	73	103
WG117620-1	86	103
WG117620-2	96	107
WG117620-3	90	105

Workgroup WG117760

Method Blank

MB:WG117760-1 Matrix: BLANK WTR Listtype:ORPAH-SIM-LVI-SPE Method:SW846 3535A*8270D SIM LVI

Parameter	MDL	RDL	Units	MB Value	Qual
Naphthalene	0.00025	0.01	ug/L	0.0013	B
2-Methylnaphthalene	0.00025	0.005	ug/L	0.00069	B
Acenaphthylene	0.00025	0.00125	ug/L	<MDL	
Acenaphthene	0.00025	0.00125	ug/L	<MDL	
Fluorene	0.00028	0.00138	ug/L	<MDL	
Phenanthrene	0.00025	0.0025	ug/L	0.00066	B
Anthracene	0.00013	0.000625	ug/L	<MDL	
Fluoranthene	0.00016	0.00163	ug/L	0.00024	B
Pyrene	0.00013	0.00125	ug/L	0.00025	B
Benzo(a)anthracene	0.00013	0.000625	ug/L	<MDL	
Chrysene	0.000063	0.000313	ug/L	<MDL	
Benzo(b,j,k)fluoranthene	0.00013	0.00125	ug/L	<MDL	
Benzo(a)pyrene	0.000063	0.000313	ug/L	<MDL	
Indeno(1,2,3-Cd)Pyrene	0.000063	0.000313	ug/L	<MDL	
Dibenzo(a,h)anthracene	0.00013	0.000625	ug/L	<MDL	
Benzo(g,h,i)perylene	0.000063	0.000313	ug/L	<MDL	
Total LPAHs	0.00013	0.000625	ug/L	0.00196	
Total HPAHS	0.000063	0.000313	ug/L	0.00049	

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for PAHs

Spike Blank/Spike Blank Duplicate

SBD:WG117760-3 SB:WG117760-2 MB:WG117760-1 Matrix: BLANK WTR Listtype:ORPAH-SIM-LVI-SPE Method:SW846 3535A*8270D SIM LVI

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit	TrueValue	SBD Value	% Rec.	Qual	RPD	Qual	LabLimit
Naphthalene	0.00025	0.01	ug/L	0.0013	0.025	0.0183	68		40--160	0.025	0.019	71		4		0--40
2-Methylnaphthalene	0.00025	0.005	ug/L	0.00069	0.025	0.0194	75		40--160	0.025	0.0201	77		3		0--40
Acenaphthylene	0.00025	0.00125	ug/L	<MDL	0.025	0.0201	81		40--160	0.025	0.0202	81		0		0--40
Acenaphthene	0.00025	0.00125	ug/L	<MDL	0.025	0.0185	74		40--160	0.025	0.0188	75		2		0--40
Fluorene	0.00028	0.00138	ug/L	<MDL	0.025	0.0207	83		40--160	0.025	0.0209	84		1		0--40
Phenanthrene	0.00025	0.0025	ug/L	0.00066	0.025	0.0187	72		40--160	0.025	0.0189	73		1		0--40
Anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0134	54		40--160	0.025	0.0128	51		5		0--40
Fluoranthene	0.00016	0.00163	ug/L	0.00024	0.025	0.0235	93		40--160	0.025	0.0238	94		1		0--40
Pyrene	0.00013	0.00125	ug/L	0.00025	0.025	0.0237	94		40--160	0.025	0.0242	96		2		0--40
Benzo(a)anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0237	95		40--160	0.025	0.024	96		1		0--40
Chrysene	0.000063	0.000313	ug/L	<MDL	0.025	0.022	88		40--160	0.025	0.0223	89		1		0--40
Benzo(b,j,k)fluoranthene	0.00013	0.00125	ug/L	<MDL	0.05	0.0504	101		40--160	0.05	0.0517	103		3		0--40
Benzo(a)pyrene	0.000063	0.000313	ug/L	<MDL	0.025	0.0159	64		40--160	0.025	0.0151	60		5		0--40
Indeno(1,2,3-Cd)Pyrene	0.000063	0.000313	ug/L	<MDL	0.025	0.0227	91		40--160	0.025	0.0233	93		3		0--40
Dibenzo(a,h)anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0229	91		40--160	0.025	0.0238	95		4		0--40
Benzo(g,h,i)perylene	0.000063	0.000313	ug/L	<MDL	0.025	0.0225	90		40--160	0.025	0.0226	90		0		0--40

Surrogates

Surrogate: (Lab Limits)	2-Fluorobiphenyl 40--160	d14-Terphenyl 40--160
L54175-4	92	113
L54175-7	71	112
L54175-11	80	106
L54175-16	88	100
L54175-19	87	101
WG117760-1	87	107
WG117760-2	82	103
WG117760-3	83	103

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for PAHs

Workgroup WG118114

Method Blank

MB:WG118114-1 Matrix: BLANK WTR Listtype:ORPAH-SIM-LVI-SPE Method:SW846 3535A*8270D SIM LVI

Parameter	MDL	RDL	Units	MB Value	Qual
Naphthalene	0.00025	0.01	ug/L	0.0017	B
2-Methylnaphthalene	0.00025	0.005	ug/L	0.0007	B
Acenaphthylene	0.00025	0.00125	ug/L	<MDL	
Acenaphthene	0.00025	0.00125	ug/L	0.00028	B
Fluorene	0.00028	0.00138	ug/L	<MDL	
Phenanthrene	0.00025	0.0025	ug/L	0.001	B
Anthracene	0.00013	0.000625	ug/L	<MDL	
Fluoranthene	0.00016	0.00163	ug/L	0.00036	B
Pyrene	0.00013	0.00125	ug/L	0.00029	B
Benzo(a)anthracene	0.00013	0.000625	ug/L	<MDL	
Chrysene	0.000063	0.000313	ug/L	<MDL	
Benzo(b,j,k)fluoranthene	0.00013	0.00125	ug/L	<MDL	
Benzo(a)pyrene	0.000063	0.000313	ug/L	<MDL	
Indeno(1,2,3-Cd)Pyrene	0.000063	0.000313	ug/L	<MDL	
Dibenzo(a,h)anthracene	0.00013	0.000625	ug/L	<MDL	
Benzo(g,h,i)perylene	0.000063	0.000313	ug/L	<MDL	
Total LPAHs	0.00013	0.000625	ug/L	0.00298	
Total HPAHs	0.000063	0.000313	ug/L	0.00065	

Spike Blank/Spike Blank Duplicate

SBD:WG118114-3 SB:WG118114-2 MB:WG118114-1 Matrix: BLANK WTR Listtype:ORPAH-SIM-LVI-SPE Method:SW846 3535A*8270D SIM LVI

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit	TrueValue	SBD Value	% Rec.	Qual	RPD	Qual	LabLimit
Naphthalene	0.00025	0.01	ug/L	0.0017	0.025	0.0201	73		40--160	0.025	0.0186	68		7		0--40
2-Methylnaphthalene	0.00025	0.005	ug/L	0.0007	0.025	0.0184	71		40--160	0.025	0.0166	64		10		0--40
Acenaphthylene	0.00025	0.00125	ug/L	<MDL	0.025	0.0206	83		40--160	0.025	0.0196	78		5		0--40
Acenaphthene	0.00025	0.00125	ug/L	0.00028	0.025	0.0184	73		40--160	0.025	0.0174	68		6		0--40
Fluorene	0.00028	0.00138	ug/L	<MDL	0.025	0.0203	81		40--160	0.025	0.0191	77		6		0--40
Phenanthrene	0.00025	0.0025	ug/L	0.001	0.025	0.019	72		40--160	0.025	0.0179	68		6		0--40
Anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0169	67		40--160	0.025	0.0162	65		4		0--40
Fluoranthene	0.00016	0.00163	ug/L	0.00036	0.025	0.0252	99		40--160	0.025	0.024	95		5		0--40

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for PAHs

Pyrene	0.00013	0.00125	ug/L	0.00029	0.025	0.0242	96	40--160	0.025	0.0234	92	3	0--40
Benzo(a)anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0237	95	40--160	0.025	0.023	92	3	0--40
Chrysene	0.000063	0.000313	ug/L	<MDL	0.025	0.0218	87	40--160	0.025	0.0211	84	3	0--40
Benzo(b,j,k)fluoranthene	0.00013	0.00125	ug/L	<MDL	0.05	0.0521	104	40--160	0.05	0.0507	101	3	0--40
Benzo(a)pyrene	0.000063	0.000313	ug/L	<MDL	0.025	0.0205	82	40--160	0.025	0.0201	81	2	0--40
Indeno(1,2,3-Cd)Pyrene	0.000063	0.000313	ug/L	<MDL	0.025	0.0201	80	40--160	0.025	0.0192	77	4	0--40
Dibenzo(a,h)anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0224	90	40--160	0.025	0.0213	85	5	0--40
Benzo(g,h,i)perylene	0.000063	0.000313	ug/L	<MDL	0.025	0.0165	66	40--160	0.025	0.0157	63	5	0--40

Surrogates

Surrogate:	2-Fluorobiphenyl	d14-Terphenyl
(Lab Limits)	40--160	40--160
L54294-2	69	112
L54294-5	62	105
L54294-9	65	104
L54294-14	92	95
L54294-17	94	102
WG118114-1	86	100
WG118114-2	104	105
WG118114-3	93	98

Workgroup WG118360

Method Blank

MB:WG118360-1 Matrix: BLANK WTR Listtype:ORPAH-SIM-LVI-SPE Method:SW846 3535A*8270D SIM LVI

Parameter	MDL	RDL	Units	MB Value	Qual
Naphthalene	0.0005	0.02	ug/L	0.0011	B
2-Methylnaphthalene	0.0005	0.01	ug/L	0.00051	B
Acenaphthylene	0.0005	0.0025	ug/L	<MDL	
Acenaphthene	0.0005	0.0025	ug/L	<MDL	
Fluorene	0.00055	0.00275	ug/L	<MDL	
Phenanthrene	0.0005	0.005	ug/L	0.00093	B
Anthracene	0.00025	0.00125	ug/L	<MDL	
Fluoranthene	0.00033	0.00325	ug/L	<MDL	
Pyrene	0.00025	0.0025	ug/L	0.0003	B

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for PAHs

Benzo(a)anthracene	0.00025	0.00125	ug/L	<MDL
Chrysene	0.00013	0.000625	ug/L	<MDL
Benzo(b,j,k)fluoranthene	0.00025	0.0025	ug/L	<MDL
Benzo(a)pyrene	0.00013	0.000625	ug/L	<MDL
Indeno(1,2,3-Cd)Pyrene	0.00013	0.000625	ug/L	<MDL
Dibenzo(a,h)anthracene	0.00025	0.00125	ug/L	<MDL
Benzo(g,h,i)perylene	0.00013	0.000625	ug/L	<MDL
Total LPAHs	0.00025	0.00125	ug/L	0.00203
Total HPAHs	0.00013	0.000625	ug/L	0.0003

Spike Blank/Spike Blank Duplicate

SBD:WG118360-3 SB:WG118360-2 MB:WG118360-1 Matrix: BLANK WTR Listtype:ORPAH-SIM-LVI-SPE Method:SW846 3535A*8270D SIM LVI

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit	TrueValue	SBD Value	% Rec.	Qual	RPD	Qual	LabLimit
Naphthalene	0.00025	0.01	ug/L	0.0011	0.025	0.0193	73		40--160	0.025	0.0209	79		8		0--40
2-Methylnaphthalene	0.00025	0.005	ug/L	0.00051	0.025	0.0178	69		40--160	0.025	0.0191	74		7		0--40
Acenaphthylene	0.00025	0.00125	ug/L	<MDL	0.025	0.0109	43		40--160	0.025	0.0063	25	*	53	*	0--40
Acenaphthene	0.00025	0.00125	ug/L	<MDL	0.025	0.0177	71		40--160	0.025	0.0195	78		9		0--40
Fluorene	0.00028	0.00138	ug/L	<MDL	0.025	0.0195	78		40--160	0.025	0.021	84		7		0--40
Phenanthrene	0.00025	0.0025	ug/L	0.00093	0.025	0.0185	70		40--160	0.025	0.0203	77		9		0--40
Anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0114	46		40--160	0.025	0.00707	28	*	47	*	0--40
Fluoranthene	0.00016	0.00163	ug/L	<MDL	0.025	0.0247	99		40--160	0.025	0.0266	106		7		0--40
Pyrene	0.00013	0.00125	ug/L	0.0003	0.025	0.023	91		40--160	0.025	0.0264	104		14		0--40
Benzo(a)anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0204	82		40--160	0.025	0.0215	86		5		0--40
Chrysene	0.000063	0.000313	ug/L	<MDL	0.025	0.0201	80		40--160	0.025	0.0232	93		14		0--40
Benzo(b,j,k)fluoranthene	0.00013	0.00125	ug/L	<MDL	0.05	0.0572	114		40--160	0.05	0.0548	110		4		0--40
Benzo(a)pyrene	0.000063	0.000313	ug/L	<MDL	0.025	0.0136	54		40--160	0.025	0.00246	10	*	139	*	0--40
Indeno(1,2,3-Cd)Pyrene	0.000063	0.000313	ug/L	<MDL	0.025	0.0263	105		40--160	0.025	0.0277	111		5		0--40
Dibenzo(a,h)anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0273	109		40--160	0.025	0.0268	107		2		0--40
Benzo(g,h,i)perylene	0.000063	0.000313	ug/L	<MDL	0.025	0.0254	102		40--160	0.025	0.0287	115		12		0--40

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for PAHs

Surrogates

Surrogate: (Lab Limits)	2-Fluorobiphenyl 40--160	d14-Terphenyl 40--160
L54414-1	92	102
L54414-4	75	100
L54414-7	73	99
L54414-10	78	104
L54414-13	85	96
WG118360-1	112	128
WG118360-2	94	99
WG118360-3	100	113

Workgroup WG118586

Method Blank

MB:WG118586-1 Matrix: BLANK WTR Listtype:ORPAH-SIM-LVI-SPE Method:SW846 3535A*8270D SIM LVI

Parameter	MDL	RDL	Units	MB Value	Qual
Naphthalene	0.00025	0.01	ug/L	0.001	B
2-Methylnaphthalene	0.00025	0.005	ug/L	0.00048	B
Acenaphthylene	0.00025	0.00125	ug/L	<MDL	
Acenaphthene	0.00025	0.00125	ug/L	<MDL	
Fluorene	0.00028	0.00138	ug/L	<MDL	
Phenanthrene	0.00025	0.0025	ug/L	0.001	B
Anthracene	0.00013	0.000625	ug/L	<MDL	
Fluoranthene	0.00016	0.00163	ug/L	0.00032	B
Pyrene	0.00013	0.00125	ug/L	0.00029	B
Benzo(a)anthracene	0.00013	0.000625	ug/L	<MDL	
Chrysene	0.000063	0.000313	ug/L	<MDL	
Benzo(b,j,k)fluoranthene	0.00013	0.00125	ug/L	<MDL	
Benzo(a)pyrene	0.000063	0.000313	ug/L	<MDL	
Indeno(1,2,3-Cd)Pyrene	0.000063	0.000313	ug/L	<MDL	
Dibenzo(a,h)anthracene	0.00013	0.000625	ug/L	<MDL	
Benzo(g,h,i)perylene	0.000063	0.000313	ug/L	<MDL	
Total LPAHs	0.00013	0.000625	ug/L	0.002	
Total HPAHS	0.000063	0.000313	ug/L	0.00061	

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for PAHs

Spike Blank/Spike Blank Duplicate

SBD:WG118586-3 SB:WG118586-2 MB:WG118586-1 Matrix: BLANK WTR Listtype:ORPAH-SIM-LVI-SPE Method:SW846 3535A*8270D SIM LVI

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit	TrueValue	SBD Value	% Rec.	Qual	RPD	Qual	LabLimit
Naphthalene	0.00025	0.01	ug/L	0.001	0.025	0.0179	67		40--160	0.025	0.0176	66		1		0--40
2-Methylnaphthalene	0.00025	0.005	ug/L	0.00048	0.025	0.0175	68		40--160	0.025	0.0172	67		2		0--40
Acenaphthylene	0.00025	0.00125	ug/L	<MDL	0.025	0.0112	45		40--160	0.025	0.0161	64		36		0--40
Acenaphthene	0.00025	0.00125	ug/L	<MDL	0.025	0.0179	72		40--160	0.025	0.0177	71		1		0--40
Fluorene	0.00028	0.00138	ug/L	<MDL	0.025	0.0194	78		40--160	0.025	0.0189	76		2		0--40
Phenanthrene	0.00025	0.0025	ug/L	0.001	0.025	0.0181	68		40--160	0.025	0.0178	67		1		0--40
Anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.00688	28	*	40--160	0.025	0.0105	42		42	*	0--40
Fluoranthene	0.00016	0.00163	ug/L	0.00032	0.025	0.0231	91		40--160	0.025	0.0227	89		2		0--40
Pyrene	0.00013	0.00125	ug/L	0.00029	0.025	0.0219	87		40--160	0.025	0.0212	84		3		0--40
Benzo(a)anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0207	83		40--160	0.025	0.0216	86		4		0--40
Chrysene	0.000063	0.000313	ug/L	<MDL	0.025	0.0215	86		40--160	0.025	0.0209	84		3		0--40
Benzo(b,j,k)fluoranthene	0.00013	0.00125	ug/L	<MDL	0.05	0.0587	117		40--160	0.05	0.053	106		10		0--40
Benzo(a)pyrene	0.000063	0.000313	ug/L	<MDL	0.025	0.00734	29	*	40--160	0.025	0.0131	52		56	*	0--40
Indeno(1,2,3-Cd)Pyrene	0.000063	0.000313	ug/L	<MDL	0.025	0.0282	113		40--160	0.025	0.0251	101		11		0--40
Dibenzo(a,h)anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0292	117		40--160	0.025	0.0261	105		11		0--40
Benzo(g,h,i)perylene	0.000063	0.000313	ug/L	<MDL	0.025	0.0269	108		40--160	0.025	0.0244	97		10		0--40

Surrogates

Surrogate: (Lab Limits)	2-Fluorobiphenyl 40--160	d14-Terphenyl 40--160
L54542-2	99	100
L54542-5	84	99
L54542-9	88	99
L54542-14	77	98
L54542-17	82	98
WG118586-1	85	101
WG118586-2	86	102
WG118586-3	89	104

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for PAHs

Workgroup WG118727

Method Blank

MB:WG118727-1 Matrix: BLANK WTR Listtype:ORPAH-SIM-LVI-SPE Method:SW846 3535A*8270D SIM LVI

Parameter	MDL	RDL	Units	MB Value	Qual
Naphthalene	0.00025	0.01	ug/L	0.0018	B
2-Methylnaphthalene	0.00025	0.005	ug/L	0.00079	B
Acenaphthylene	0.00025	0.00125	ug/L	<MDL	
Acenaphthene	0.00025	0.00125	ug/L	<MDL	
Fluorene	0.00028	0.00138	ug/L	<MDL	
Phenanthrene	0.00025	0.0025	ug/L	0.00094	B
Anthracene	0.00013	0.000625	ug/L	<MDL	
Fluoranthene	0.00016	0.00163	ug/L	0.00034	B
Pyrene	0.00013	0.00125	ug/L	0.00029	B
Benzo(a)anthracene	0.00013	0.000625	ug/L	<MDL	
Chrysene	0.000063	0.000313	ug/L	<MDL	
Benzo(b,j,k)fluoranthene	0.00013	0.00125	ug/L	<MDL	
Benzo(a)pyrene	0.000063	0.000313	ug/L	<MDL	
Indeno(1,2,3-Cd)Pyrene	0.000063	0.000313	ug/L	<MDL	
Dibenzo(a,h)anthracene	0.00013	0.000625	ug/L	<MDL	
Benzo(g,h,i)perylene	0.000063	0.000313	ug/L	<MDL	
Total LPAHs	0.00013	0.000625	ug/L	0.00274	
Total HPAHs	0.000063	0.000313	ug/L	0.00063	

Spike Blank/Spike Blank Duplicate

SBD:WG118727-3 SB:WG118727-2 MB:WG118727-1 Matrix: BLANK WTR Listtype:ORPAH-SIM-LVI-SPE Method:SW846 3535A*8270D SIM LVI

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit	TrueValue	SBD Value	% Rec.	Qual	RPD	Qual	LabLimit
Naphthalene	0.00025	0.01	ug/L	0.0018	0.025	0.0205	75		40--160	0.025	0.0194	70		5		0--40
2-Methylnaphthalene	0.00025	0.005	ug/L	0.00079	0.025	0.0198	76		40--160	0.025	0.0184	70		7		0--40
Acenaphthylene	0.00025	0.00125	ug/L	<MDL	0.025	0.0183	73		40--160	0.025	0.0181	72		1		0--40
Acenaphthene	0.00025	0.00125	ug/L	<MDL	0.025	0.0187	75		40--160	0.025	0.0178	71		5		0--40
Fluorene	0.00028	0.00138	ug/L	<MDL	0.025	0.0204	82		40--160	0.025	0.0194	78		5		0--40
Phenanthrene	0.00025	0.0025	ug/L	0.00094	0.025	0.0189	72		40--160	0.025	0.0179	68		5		0--40
Anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.00857	34	*	40--160	0.025	0.00987	39	*	14		0--40
Fluoranthene	0.00016	0.00163	ug/L	0.00034	0.025	0.0242	95		40--160	0.025	0.0229	90		5		0--40

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for PAHs

Pyrene	0.00013	0.00125	ug/L	0.00029	0.025	0.0237	94	40--160	0.025	0.0223	88	6	0--40
Benzo(a)anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0222	89	40--160	0.025	0.0214	86	4	0--40
Chrysene	0.000063	0.000313	ug/L	<MDL	0.025	0.0222	89	40--160	0.025	0.0208	83	6	0--40
Benzo(b,j,k)fluoranthene	0.00013	0.00125	ug/L	<MDL	0.05	0.0593	119	40--160	0.05	0.0516	103	14	0--40
Benzo(a)pyrene	0.000063	0.000313	ug/L	<MDL	0.025	0.0098	39	* 40--160	0.025	0.0115	46	16	0--40
Indeno(1,2,3-Cd)Pyrene	0.000063	0.000313	ug/L	<MDL	0.025	0.0273	109	40--160	0.025	0.0244	98	11	0--40
Dibenzo(a,h)anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0274	110	40--160	0.025	0.0253	101	8	0--40
Benzo(g,h,i)perylene	0.000063	0.000313	ug/L	<MDL	0.025	0.0263	105	40--160	0.025	0.0232	93	12	0--40

Surrogates

Surrogate: (Lab Limits)	2-Fluorobiphenyl 40--160	d14-Terphenyl 40--160
L54658-1	98	101
L54658-4	81	102
L54658-7	76	101
L54658-10	78	99
L54658-13	50	91
WG118727-1	82	102
WG118727-2	94	109
WG118727-3	90	100

Workgroup WG118822

Method Blank

MB:WG118822-1 Matrix: BLANK WTR Listtype:ORPAH-SIM-LVI-SPE Method:SW846 3535A*8270D SIM LVI

Parameter	MDL	RDL	Units	MB Value	Qual
Naphthalene	0.00025	0.01	ug/L	0.0025	B
2-Methylnaphthalene	0.00025	0.005	ug/L	0.0013	B
Acenaphthylene	0.00025	0.00125	ug/L	<MDL	
Acenaphthene	0.00025	0.00125	ug/L	<MDL	
Fluorene	0.00028	0.00138	ug/L	<MDL	
Phenanthrene	0.00025	0.0025	ug/L	0.00097	B
Anthracene	0.00013	0.000625	ug/L	<MDL	
Fluoranthene	0.00016	0.00163	ug/L	0.00032	B
Pyrene	0.00013	0.00125	ug/L	0.00029	B

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for PAHs

Benzo(a)anthracene	0.00013	0.000625	ug/L	<MDL
Chrysene	0.000063	0.000313	ug/L	<MDL
Benzo(b,j,k)fluoranthene	0.00013	0.00125	ug/L	<MDL
Benzo(a)pyrene	0.000063	0.000313	ug/L	<MDL
Indeno(1,2,3-Cd)Pyrene	0.000063	0.000313	ug/L	<MDL
Dibenzo(a,h)anthracene	0.00013	0.000625	ug/L	<MDL
Benzo(g,h,i)perylene	0.000063	0.000313	ug/L	<MDL
Total LPAHs	0.00013	0.000625	ug/L	0.00347
Total HPAHs	0.000063	0.000313	ug/L	0.00061

Spike Blank/Spike Blank Duplicate

SBD:WG118822-3 SB:WG118822-2 MB:WG118822-1 Matrix: BLANK WTR Listtype:ORPAH-SIM-LVI-SPE Method:SW846 3535A*8270D SIM LVI

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit	TrueValue	SBD Value	% Rec.	Qual	RPD	Qual	LabLimit
Naphthalene	0.00025	0.01	ug/L	0.0025	0.025	0.0201	70		40--160	0.025	0.0178	61		12		0--40
2-Methylnaphthalene	0.00025	0.005	ug/L	0.0013	0.025	0.0218	82		40--160	0.025	0.0175	65		22		0--40
Acenaphthylene	0.00025	0.00125	ug/L	<MDL	0.025	0.0188	75		40--160	0.025	0.017	68		10		0--40
Acenaphthene	0.00025	0.00125	ug/L	<MDL	0.025	0.0178	71		40--160	0.025	0.016	64		11		0--40
Fluorene	0.00028	0.00138	ug/L	<MDL	0.025	0.0206	82		40--160	0.025	0.0182	73		12		0--40
Phenanthrene	0.00025	0.0025	ug/L	0.00097	0.025	0.0184	70		40--160	0.025	0.0175	66		5		0--40
Anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0137	55		40--160	0.025	0.0136	55		0		0--40
Fluoranthene	0.00016	0.00163	ug/L	0.00032	0.025	0.0247	97		40--160	0.025	0.024	95		3		0--40
Pyrene	0.00013	0.00125	ug/L	0.00029	0.025	0.0239	95		40--160	0.025	0.0225	89		6		0--40
Benzo(a)anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.024	96		40--160	0.025	0.0239	95		1		0--40
Chrysene	0.000063	0.000313	ug/L	<MDL	0.025	0.0222	89		40--160	0.025	0.0219	87		1		0--40
Benzo(b,j,k)fluoranthene	0.00013	0.00125	ug/L	<MDL	0.05	0.0542	108		40--160	0.05	0.0629	126		15		0--40
Benzo(a)pyrene	0.000063	0.000313	ug/L	<MDL	0.025	0.0184	73		40--160	0.025	0.022	88		18		0--40
Indeno(1,2,3-Cd)Pyrene	0.000063	0.000313	ug/L	<MDL	0.025	0.0266	106		40--160	0.025	0.0307	123		14		0--40
Dibenzo(a,h)anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0274	110		40--160	0.025	0.0316	127		14		0--40
Benzo(g,h,i)perylene	0.000063	0.000313	ug/L	<MDL	0.025	0.0257	103		40--160	0.025	0.0298	119		15		0--40

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for PAHs

Surrogates

Surrogate: (Lab Limits)	2-Fluorobiphenyl 40--160	d14-Terphenyl 40--160
L54697-1	75	104
L54697-4	80	96
L54697-7	93	111
L54697-10	73	100
L54697-13	86	109
WG118822-1	80	106
WG118822-2	83	109
WG118822-3	80	108

Workgroup WG119193

Method Blank

MB:WG119193-1 Matrix: BLANK WTR Listtype:ORPAH-SIM-LVI-SPE Method:SW846 3535A*8270D SIM LVI

Parameter	MDL	RDL	Units	MB Value	Qual
Naphthalene	0.00025	0.01	ug/L	0.0013	B
2-Methylnaphthalene	0.00025	0.005	ug/L	0.00068	B
Acenaphthylene	0.00025	0.00125	ug/L	<MDL	
Acenaphthene	0.00025	0.00125	ug/L	<MDL	
Fluorene	0.00028	0.00138	ug/L	<MDL	
Phenanthrene	0.00025	0.0025	ug/L	0.0012	B
Anthracene	0.00013	0.000625	ug/L	<MDL	
Fluoranthene	0.00016	0.00163	ug/L	0.00033	B
Pyrene	0.00013	0.00125	ug/L	<MDL	
Benzo(a)anthracene	0.00013	0.000625	ug/L	<MDL	
Chrysene	0.000063	0.000313	ug/L	<MDL	
Benzo(b,j,k)fluoranthene	0.00013	0.00125	ug/L	<MDL	
Benzo(a)pyrene	0.000063	0.000313	ug/L	<MDL	
Indeno(1,2,3-Cd)Pyrene	0.000063	0.000313	ug/L	<MDL	
Dibenzo(a,h)anthracene	0.00013	0.000625	ug/L	<MDL	
Benzo(g,h,i)perylene	0.000063	0.000313	ug/L	<MDL	
Total LPAHs	0.00013	0.000625	ug/L	0.0025	
Total HPAHS	0.000063	0.000313	ug/L	0.00033	

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for PAHs

Spike Blank/Spike Blank Duplicate

SBD:WG119193-3 SB:WG119193-2 MB:WG119193-1 Matrix: BLANK WTR Listtype:ORPAH-SIM-LVI-SPE Method:SW846 3535A*8270D SIM LVI

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit	TrueValue	SBD Value	% Rec.	Qual	RPD	Qual	LabLimit
Naphthalene	0.00025	0.01	ug/L	0.0013	0.025	0.0218	82		40--160	0.025	0.0229	86		5		0--40
2-Methylnaphthalene	0.00025	0.005	ug/L	0.00068	0.025	0.0283	111		40--160	0.025	0.029	113		2		0--40
Acenaphthylene	0.00025	0.00125	ug/L	<MDL	0.025	0.0163	65		40--160	0.025	0.0174	69		6		0--40
Acenaphthene	0.00025	0.00125	ug/L	<MDL	0.025	0.023	92		40--160	0.025	0.0251	100		9		0--40
Fluorene	0.00028	0.00138	ug/L	<MDL	0.025	0.0237	95		40--160	0.025	0.0264	105		11		0--40
Phenanthrene	0.00025	0.0025	ug/L	0.0012	0.025	0.0223	84		40--160	0.025	0.0239	91		7		0--40
Anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0109	44		40--160	0.025	0.00924	37	*	17		0--40
Fluoranthene	0.00016	0.00163	ug/L	0.00033	0.025	0.0242	95		40--160	0.025	0.0245	97		1		0--40
Pyrene	0.00013	0.00125	ug/L	<MDL	0.025	0.0261	105		40--160	0.025	0.0256	102		2		0--40
Benzo(a)anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0228	91		40--160	0.025	0.0226	90		1		0--40
Chrysene	0.000063	0.000313	ug/L	<MDL	0.025	0.0253	101		40--160	0.025	0.0262	105		3		0--40
Benzo(b,j,k)fluoranthene	0.00013	0.00125	ug/L	<MDL	0.05	0.049	98		40--160	0.05	0.0522	104		6		0--40
Benzo(a)pyrene	0.000063	0.000313	ug/L	<MDL	0.025	0.00953	38	*	40--160	0.025	0.00555	22	*	53	*	0--40
Indeno(1,2,3-Cd)Pyrene	0.000063	0.000313	ug/L	<MDL	0.025	0.0267	107		40--160	0.025	0.0257	103		4		0--40
Dibenzo(a,h)anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0275	110		40--160	0.025	0.0266	106		3		0--40
Benzo(g,h,i)perylene	0.000063	0.000313	ug/L	<MDL	0.025	0.0263	105		40--160	0.025	0.0259	104		1		0--40

Surrogates

Surrogate: (Lab Limits)	2-Fluorobiphenyl 40--160	d14-Terphenyl 40--160
L54719-1	96	128
L54719-5	105	141
L54719-9	84	133
L54719-12	87	119
L54719-16	96	132
WG119193-1	94	117
WG119193-2	90	114
WG119193-3	86	117

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for PAHs

Workgroup WG119384

Method Blank

MB:WG119384-1 Matrix: BLANK WTR Listtype:ORPAH-SIM-LVI-SPE Method:SW846 3535A*8270D SIM LVI

Parameter	MDL	RDL	Units	MB Value	Qual
Naphthalene	0.00025	0.01	ug/L	0.0023	B
2-Methylnaphthalene	0.00025	0.005	ug/L	0.0011	B
Acenaphthylene	0.00025	0.00125	ug/L	<MDL	
Acenaphthene	0.00025	0.00125	ug/L	<MDL	
Fluorene	0.00028	0.00138	ug/L	<MDL	
Phenanthrene	0.00025	0.0025	ug/L	0.0012	B
Anthracene	0.00013	0.000625	ug/L	<MDL	
Fluoranthene	0.00016	0.00163	ug/L	0.00041	B
Pyrene	0.00013	0.00125	ug/L	0.00039	B
Benzo(a)anthracene	0.00013	0.000625	ug/L	<MDL	
Chrysene	0.000063	0.000313	ug/L	<MDL	
Benzo(b,j,k)fluoranthene	0.00013	0.00125	ug/L	<MDL	
Benzo(a)pyrene	0.000063	0.000313	ug/L	<MDL	
Indeno(1,2,3-Cd)Pyrene	0.000063	0.000313	ug/L	<MDL	
Dibenzo(a,h)anthracene	0.00013	0.000625	ug/L	<MDL	
Benzo(g,h,i)perylene	0.000063	0.000313	ug/L	<MDL	
Total LPAHs	0.00013	0.000625	ug/L	0.0035	
Total HPAHs	0.000063	0.000313	ug/L	0.0008	

Spike Blank/Spike Blank Duplicate

SBD:WG119384-3 SB:WG119384-2 MB:WG119384-1 Matrix: BLANK WTR Listtype:ORPAH-SIM-LVI-SPE Method:SW846 3535A*8270D SIM LVI

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit	TrueValue	SBD Value	% Rec.	Qual	RPD	Qual	LabLimit
Naphthalene	0.00025	0.01	ug/L	0.0023	0.025	0.0235	85		40--160	0.025	0.0223	80		5		0--40
2-Methylnaphthalene	0.00025	0.005	ug/L	0.0011	0.025	0.0261	100		40--160	0.025	0.0254	97		3		0--40
Acenaphthylene	0.00025	0.00125	ug/L	<MDL	0.025	0.00994	40		40--160	0.025	0.0123	49		21		0--40
Acenaphthene	0.00025	0.00125	ug/L	<MDL	0.025	0.0243	97		40--160	0.025	0.0234	94		4		0--40
Fluorene	0.00028	0.00138	ug/L	<MDL	0.025	0.0281	112		40--160	0.025	0.0266	106		6		0--40
Phenanthrene	0.00025	0.0025	ug/L	0.0012	0.025	0.0239	91		40--160	0.025	0.024	92		1		0--40
Anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.00668	27	*	40--160	0.025	0.00882	35	*	28		0--40
Fluoranthene	0.00016	0.00163	ug/L	0.00041	0.025	0.0252	99		40--160	0.025	0.0237	93		6		0--40

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for PAHs

Pyrene	0.00013	0.00125	ug/L	0.00039	0.025	0.029	114	40--160	0.025	0.0305	120	5	0--40
Benzo(a)anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0204	82	40--160	0.025	0.0227	91	11	0--40
Chrysene	0.000063	0.000313	ug/L	<MDL	0.025	0.0252	101	40--160	0.025	0.0265	106	5	0--40
Benzo(b,j,k)fluoranthene	0.00013	0.00125	ug/L	<MDL	0.05	0.0463	93	40--160	0.05	0.0513	103	10	0--40
Benzo(a)pyrene	0.000063	0.000313	ug/L	<MDL	0.025	<MDL	0	* 40--160	0.025	0.00021	1	* 141	* 0--40
Indeno(1,2,3-Cd)Pyrene	0.000063	0.000313	ug/L	<MDL	0.025	0.0231	92	40--160	0.025	0.0261	105	12	0--40
Dibenzo(a,h)anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0234	94	40--160	0.025	0.0267	107	13	0--40
Benzo(g,h,i)perylene	0.000063	0.000313	ug/L	<MDL	0.025	0.0228	91	40--160	0.025	0.0248	99	9	0--40

Surrogates

Surrogate:	2-Fluorobiphenyl	d14-Terphenyl
(Lab Limits)	40--160	40--160
L54845-2	76	128
L54845-6	82	112
L54845-9	79	126
L54845-12	82	137
L54845-15	84	116
WG119384-1	75	119
WG119384-2	95	117
WG119384-3	87	137

Workgroup WG119479

Method Blank

MB:WG119479-1 Matrix: BLANK WTR Listtype:ORPAH-SIM-LVI-SPE Method:SW846 3535A*8270D SIM LVI

Parameter	MDL	RDL	Units	MB Value	Qual
Naphthalene	0.00025	0.01	ug/L	0.0011	B
2-Methylnaphthalene	0.00025	0.005	ug/L	0.00067	B
Acenaphthylene	0.00025	0.00125	ug/L	<MDL	
Acenaphthene	0.00025	0.00125	ug/L	<MDL	
Fluorene	0.00028	0.00138	ug/L	<MDL	
Phenanthrene	0.00025	0.0025	ug/L	0.0011	B
Anthracene	0.00013	0.000625	ug/L	<MDL	
Fluoranthene	0.00016	0.00163	ug/L	0.00032	B
Pyrene	0.00013	0.00125	ug/L	0.0003	B

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for PAHs

Benzo(a)anthracene	0.00013	0.000625	ug/L	<MDL
Chrysene	0.000063	0.000313	ug/L	<MDL
Benzo(b,j,k)fluoranthene	0.00013	0.00125	ug/L	<MDL
Benzo(a)pyrene	0.000063	0.000313	ug/L	<MDL
Indeno(1,2,3-Cd)Pyrene	0.000063	0.000313	ug/L	<MDL
Dibenzo(a,h)anthracene	0.00013	0.000625	ug/L	<MDL
Benzo(g,h,i)perylene	0.000063	0.000313	ug/L	<MDL
Total LPAHs	0.00013	0.000625	ug/L	0.0022
Total HPAHs	0.000063	0.000313	ug/L	0.00062

Spike Blank/Spike Blank Duplicate

SBD:WG119479-3 SB:WG119479-2 MB:WG119479-1 Matrix: BLANK WTR Listtype:ORPAH-SIM-LVI-SPE Method:SW846 3535A*8270D SIM LVI

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit	TrueValue	SBD Value	% Rec.	Qual	RPD	Qual	LabLimit
Naphthalene	0.00025	0.01	ug/L	0.0011	0.025	0.0188	71		40--160	0.025	0.0134	49		34		0--40
2-Methylnaphthalene	0.00025	0.005	ug/L	0.00067	0.025	0.0246	96		40--160	0.025	0.0176	68		33		0--40
Acenaphthylene	0.00025	0.00125	ug/L	<MDL	0.025	0.015	60		40--160	0.025	0.0133	53		13		0--40
Acenaphthene	0.00025	0.00125	ug/L	<MDL	0.025	0.0212	85		40--160	0.025	0.0159	64		29		0--40
Fluorene	0.00028	0.00138	ug/L	<MDL	0.025	0.0207	83		40--160	0.025	0.0174	70		17		0--40
Phenanthrene	0.00025	0.0025	ug/L	0.0011	0.025	0.0212	80		40--160	0.025	0.0183	69		15		0--40
Anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.00933	37	*	40--160	0.025	0.012	48		25		0--40
Fluoranthene	0.00016	0.00163	ug/L	0.00032	0.025	0.0242	96		40--160	0.025	0.0232	92		4		0--40
Pyrene	0.00013	0.00125	ug/L	0.0003	0.025	0.0283	112		40--160	0.025	0.0277	110		2		0--40
Benzo(a)anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0218	87		40--160	0.025	0.0229	92		5		0--40
Chrysene	0.000063	0.000313	ug/L	<MDL	0.025	0.0241	97		40--160	0.025	0.0238	95		1		0--40
Benzo(b,j,k)fluoranthene	0.00013	0.00125	ug/L	<MDL	0.05	0.0473	95		40--160	0.05	0.0447	89		6		0--40
Benzo(a)pyrene	0.000063	0.000313	ug/L	<MDL	0.025	0.00636	25	*	40--160	0.025	0.0127	51		67	*	0--40
Indeno(1,2,3-Cd)Pyrene	0.000063	0.000313	ug/L	<MDL	0.025	0.0212	85		40--160	0.025	0.0199	79		7		0--40
Dibenzo(a,h)anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0217	87		40--160	0.025	0.02	80		8		0--40
Benzo(g,h,i)perylene	0.000063	0.000313	ug/L	<MDL	0.025	0.0214	86		40--160	0.025	0.0201	80		6		0--40

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for PAHs

Surrogates

Surrogate: (Lab Limits)	2-Fluorobiphenyl 40--160	d14-Terphenyl 40--160
L54922-1	76	124
L54922-4	61	145
L54922-7	57	145
L54922-10	62	144
L54922-13	72	139
WG119479-1	97	114
WG119479-2	84	113
WG119479-3	60	111

Workgroup WG119681

Method Blank

MB:WG119681-1 Matrix: BLANK WTR Listtype:ORPAH-SIM-LVI-SPE Method:SW846 3535A*8270D SIM LVI

Parameter	MDL	RDL	Units	MB Value	Qual
Naphthalene	0.00025	0.01	ug/L	0.0026	B
2-Methylnaphthalene	0.00025	0.005	ug/L	0.0016	B
Acenaphthylene	0.00025	0.00125	ug/L	<MDL	
Acenaphthene	0.00025	0.00125	ug/L	0.00026	B
Fluorene	0.00028	0.00138	ug/L	<MDL	
Phenanthrene	0.00025	0.0025	ug/L	0.0011	B
Anthracene	0.00013	0.000625	ug/L	<MDL	
Fluoranthene	0.00016	0.00163	ug/L	0.00032	B
Pyrene	0.00013	0.00125	ug/L	0.00046	B
Benzo(a)anthracene	0.00013	0.000625	ug/L	<MDL	
Chrysene	0.000063	0.000313	ug/L	<MDL	
Benzo(b,j,k)fluoranthene	0.00013	0.00125	ug/L	<MDL	
Benzo(a)pyrene	0.000063	0.000313	ug/L	<MDL	
Indeno(1,2,3-Cd)Pyrene	0.000063	0.000313	ug/L	<MDL	
Dibenzo(a,h)anthracene	0.00013	0.000625	ug/L	<MDL	
Benzo(g,h,i)perylene	0.000063	0.000313	ug/L	<MDL	
Total LPAHs	0.00013	0.000625	ug/L	0.00396	
Total HPAHS	0.000063	0.000313	ug/L	0.00078	

LIMSView QC Report for Bulk Air Deposition Samples - Data Validation for PAHs

Spike Blank/Spike Blank Duplicate

SBD:WG119681-3 SB:WG119681-2 MB:WG119681-1 Matrix: BLANK WTR Listtype:ORPAH-SIM-LVI-SPE Method:SW846 3535A*8270D SIM LVI

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit	TrueValue	SBD Value	% Rec.	Qual	RPD	Qual	LabLimit
Naphthalene	0.00025	0.01	ug/L	0.0026	0.025	0.0214	75		40--160	0.025	0.021	74		2		0--40
2-Methylnaphthalene	0.00025	0.005	ug/L	0.0016	0.025	0.0292	111		40--160	0.025	0.0278	105		5		0--40
Acenaphthylene	0.00025	0.00125	ug/L	<MDL	0.025	0.0223	89		40--160	0.025	0.0211	84		5		0--40
Acenaphthene	0.00025	0.00125	ug/L	0.00026	0.025	0.024	95		40--160	0.025	0.0233	92		3		0--40
Fluorene	0.00028	0.00138	ug/L	<MDL	0.025	0.0249	100		40--160	0.025	0.0234	94		6		0--40
Phenanthrene	0.00025	0.0025	ug/L	0.0011	0.025	0.0226	86		40--160	0.025	0.0219	83		3		0--40
Anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0169	68		40--160	0.025	0.016	64		6		0--40
Fluoranthene	0.00016	0.00163	ug/L	0.00032	0.025	0.0248	98		40--160	0.025	0.0235	93		5		0--40
Pyrene	0.00013	0.00125	ug/L	0.00046	0.025	0.0382	151		40--160	0.025	0.0372	147		2		0--40
Benzo(a)anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0259	104		40--160	0.025	0.0246	99		5		0--40
Chrysene	0.000063	0.000313	ug/L	<MDL	0.025	0.0254	102		40--160	0.025	0.0241	96		6		0--40
Benzo(b,j,k)fluoranthene	0.00013	0.00125	ug/L	<MDL	0.05	0.0461	92		40--160	0.05	0.0444	89		4		0--40
Benzo(a)pyrene	0.000063	0.000313	ug/L	<MDL	0.025	0.0177	71		40--160	0.025	0.0171	68		4		0--40
Indeno(1,2,3-Cd)Pyrene	0.000063	0.000313	ug/L	<MDL	0.025	0.02	80		40--160	0.025	0.0192	77		4		0--40
Dibenzo(a,h)anthracene	0.00013	0.000625	ug/L	<MDL	0.025	0.0208	83		40--160	0.025	0.02	80		4		0--40
Benzo(g,h,i)perylene	0.000063	0.000313	ug/L	<MDL	0.025	0.02	80		40--160	0.025	0.0186	74		7		0--40

Surrogates

Surrogate: (Lab Limits)	2-Fluorobiphenyl 40--160	d14-Terphenyl 40--160
L54980-1	72	148
L54980-4	93	147
L54980-8	60	146
L54980-11	89	153
L54980-15	87	148
WG119681-1	85	131
WG119681-2	91	135
WG119681-3	90	130