Batta Data Package Checklist

Company:	Batta Laboratories, Inc.	**EPA ID#:**	DE 004
EPA CASE#:	RFP 279	**LAB PROJ#:**	L6888F
EPA SDG#:	FB-A-030414	**Date Received:**	MULTIPLE
Total Units:	27	**Revision #:**	INITIAL

Data Package Type: ☐ Particle Size ☐ Moisture ☐ PLM ☐ PCM ☒ TEM

Sample Matrix: ☐ Bulk ☐ Soil ☒ Air ☐ Water

X	COC	X	Prep Sheet	X	EDD
X	QA Data	X	Bench Sheet	X	MISC.

Case Narrative:

This data package is pertinent to 4 sample shipment events under the EPA order RFP# 279 through Weston Solutions, Inc. Date of sample receiving and sample conditions, together with sample matrix information are documented on the client provided COC(s), EPA Region 2 SDG forms and/or custody forms. There are total of 27 ambient air samples received for analysis using the NIOSH 7402 and NIOSH 7402 (TEM) methods. Of the 27 units, only 18 were analyzed. And the rest were either overloaded or damaged during the sample collection. Please refer to attached COCs and EPA Region 2 DC-1 for details.

This data package contains analysis only by the NIOSH 7402 TEM method. Data package of NIOSH 7400 by PCM was submitted prior to this package. The detection limit defined by the method is is not defined; however, the reporting limit of the method is based on 0.5 fiber observed because it is the basic counting unit by this method. The limit of reporting by 5.5 fibers given in NIOSH 7400 does not apply due to the instrumentation difference, mainly by the resolution.

It is worth to note that the analytical sensitivity and the reporting limit by NIOSH 7402 are two different concept. The analytical sensitivity is calculated based on 1 single fiber observed for a given number of grid openings analyzed at a given air volume collected in the field. However, the reporting limit and the air concentration based on which are calculated not only according to the variables used for analytical sensitivity calculation, but also according to the conversion of asbestos fibers detected vs. none-asbestos detected by TEM multiplied by their original fiber concentration by PCM. Please refer to the Data Validation section for further explanations and demos.

The data package contains a hardcopy report and two data DVD/CD discs. The data discs contain a copy of the hardcopy report package in PDF format, plus EPA Region 2 EDDs or NADES EDDS whichever appropriate for each analysis. NADES EDD does not apply to this package. The hardcopy data package is organized with sections in the following manner: EPA Region 2 DC-2 Form, Batta Check List (w/ case narratives), SDG Cover Sheet, Summary Report of Analysis, EPA Region 2 DC-1 Form, Field COC, Communications, Miscellaneous, Nomenclature, Analytical Method, Counting Rules, and Data Validation Reanalysis and Blank Analysis, Standard Analysis, Calibrations and Routines, and Analytical Benchsheets.

Please direct all technical inquiries to: Bo Li, Ph. D., Batta Laboratories, Inc., Delaware Industrial Park, 6 Garfield Way, Newark, DE 19713; or at E-mail: bo.li@battaenv.com.

Signature:		**Title:**	Manager
Print Name:	Bo Li	**Date:**	03/26/2014

SUMMARY REPORT OF ANALYSIS

BY

NIOSH 7402, ISSUE 2: 15 AUGUST, 1994

Dedicated to a Cleaner Environment Since 1982

BATTA

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E.P.A. LAB ID# DE004

A.I.H.A./NLLAP #100448

NVLAP #101032

SAMPLE SUMMARY REPORT

Revision#: 1

COC#: 2-030514-142736-0021

Batch # : 5243 Test Method: NIOSH 7402 - Asbestos by TEM Prep Method: NIOSH 7402 - Asbestos by TEM

General Information

Instruments: Scope Model: JEM100CXII Magnification: 19,000 Operational Condition: Normal
Analyzer: Kevex Det. Area: 10 mm² Det. Window: 0.008 mm

BLI Project #: L6888F

Project Name: WESTON SOLUTIONS,INC.-RST 2 RFP NO. 279 Sampling Location: 0029-0122

Date Sampled: 3/4/2014 Sampled by: CLIENT Date Received: 3/6/2014 Report Date: 4/7/2014

Analytical Data

Note: Results provided in this summary report do not have to agree with those obtained from the EPA NADES EDD report.

Primary Filter Area (mm²): 385 2nd Filter Area (mm²): N/A Media: MCE Grid Area (mm²): 0.0094

Date Prepped: 3/6/2014 Prepped By: AY Date Analyzed: 3/6/2014 Analyzed By: AY

Sample ID and Prep Information					Analytical Data				Results		
Lab Sample Number	Field Sample Number	Sample QA Type-Prep Type	Dilution Factor	Air Volume (L) / PCM Fields / PCM Fibers	# of Grid Openings / Area Analyzed (mm²) / Total # of TEM PCME Fibers	Total # of Asb. by TEM / Asb. Fiber Ratio / f/cc by PCM	Asbestos Mineral Type Detected	Target Sensitivity (f/cc)	Reported Sensitivity (f/cc)	Reported Air Concentration (f/cc)	Reported Filter Density (f/mm²)
786565	FB-A-030414	FIELD SAMPLE DIRECT	1	0 / 100 / 1.0	40 / 0.3760 / 0.0	0.0 / < 0.091 / N/A	NON-DETECTED	0.00040	N/A	N/A	< 0.63694
786566	LB-A-030414	FIELD SAMPLE DIRECT	1	0 / 100 / 1.0	40 / 0.3760 / 0.0	0.0 / < 0.091 / N/A	NON-DETECTED	0.00040	N/A	N/A	< 0.63694
786567	P0006-AS01-030414	FIELD SAMPLE		3646.8 / 0 / 0.0	0.0000	N/A	NDT ANALYZED	0.00040	NOT ANALYZED	NOT ANALYZED	NOT ANALYZED
786568	P0006-AS02-030414	FIELD SAMPLE		3634.2 / 0 / 0.0	0.0000	N/A	NDT ANALYZED	0.00040	NOT ANALYZED	NOT ANALYZED	NOT ANALYZED
786569	P0006-AS03-030414	FIELD SAMPLE		3632.4 / 0 / 0.0	0.0000	N/A	NOT ANALYZED	0.00040	NOT ANALYZED	NOT ANALYZED	NOT ANALYZED
786570	P0047-AS01-030414	FIELD SAMPLE DIRECT	1	3639.6 / 100 / 27.0	40 / 0.3760 / 13.0	1.0 / 0.077 / 0.004	CH	0.00040	0.00028	0.00026	2.64576
786571	P0047-AS02-030414	FIELD SAMPLE DIRECT	1	3596.4 / 100 / 25.0	40 / 0.3760 / 4.0	1.0 / 0.250 / 0.003	CH	0.00040	0.00028	0.00065	7.96178
786572	P0047-AS03-030414	FIELD SAMPLE DIRECT	1	3652.2 / 100 / 41.5	40 / 0.3760 / 7.5	0.0 / < 0.07 / 0.006	NON-DETECTED	0.00040	0.00028	< 0.00037	< 3.52442

Rev. 1: The report format changed, which may have impact on the reporting or detection limit reported previously. Please use this report to replace all versions previously received.

Note: Reported Sensitivity is calculated based on the actual number of asbestos fibers detected in TEM. Asb. (asbestos) Fiber Ratio is the ratio of the number of asbestos over the total number of fibers detected in TEM.

Analyst(s): AY

Reviewed By:

*NOTE:

1. LA: Libby Amphibole; AC: Actinolite; TR: Tremolite; CH: Chrysotile; CR: Crocidolite; AN: Anthophyllite; AM: Amosite
2. Indirect sample prep is based on ISO 13794:1999(E): Ambient air-Determination of asbestos fibers-indirect-transfer transmission electron microscopy method. Refer to sample prep sheets for dilution details.
3. Some samples may be analyzed and/or prepped by multiple instruments, analysts, or on multiple dates. Please refer to the sample prep sheets and analytical benchsheets for details.
4. This summary report may not included all information submitted by clients. Furthermore, Batta will not be responsible for results that are due to improper sample collection and inaccurate data provided by clients.
5. This summary report precedes all electronic versions of any kinds, including copies in full or in part.
6. This summary report does not constitute endorsement by NVLAP and/or any other U.S. government agencies. The test data pertain only to the items tested. No assumptions or conclusions should be made to materials or samples not analyzed.

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E.P.A. LAB ID# DE004

A.I.H.A./NLLAP #100448

NVLAP #101032

SAMPLE SUMMARY REPORT

Revision#: 1

COC#: 2-030614-131636-0023

Batch # : 5248 Test Method: NIOSH 7402 - Asbestos by TEM Prep Method: NIOSH 7402 - Asbestos by TEM

General Information

Instruments: Scope Model: JEM 100CX II Magnification: 19,000 Operational Condition: Normal
Analyzer: Kevex Det Area: 10 mm² Det Window: 0.008 mm

BLI Project #: L6888F

Project Name: WESTON SOLUTIONS,INC.-RST 2 RFP NO. 279 **Sampling Location:** 0029-0122

Date Sampled: 3/5/2014 **Sampled by:** CLIENT **Date Received:** 3/7/2014 **Report Date:** 4/7/2014

Analytical Data

Note: Results provided in this summary report do not have to agree with those obtained from the EPA NADES EDD report.

Primary Filter Area (mm²): 385 **2nd Filter Area (mm²):** N/A **Media:** MCE **Grid Area (mm²):** 0.0094

Date Prepped: 3/7/2014 **Prepped By:** AY **Date Analyzed:** 3/7/2014 **Analyzed By:** AY

Sample ID and Prep Information					Analytical Data					Results					
Lab Sample Number	Field Sample Number	Sample QA Type-Prep Type	Dilution Factor	Air Volume (L) / PCM Fields / PCM Fibers	# of Grid Openings / Area Analyzed (mm²) / Total # of TEM PCME Fibers		Total # of Asb. by TEM / Asb. Fiber Ratio / f/cc by PCM	Asbestos Mineral Type Detected	Target Sensitivity (f/cc)	Reported Sensitivity (f/cc)		Reported Air Concentration (f/cc)		Reported Filter Density (f/mm²)
786584	P0050-AS01-030514	FIELD SAMPLE DIRECT	1	3657.6 / 100 / 19.0	40 / 0.3760 / 9.0	<	0.0 / 0.056 / 0.003	NON-DETECTED	0.00040	0.00028	<	0.00014	<	1.34466
786585	P0050-AS02-030514	FIELD SAMPLE DIRECT	1	3753 / 100 / 14.0	40 / 0.3760 / 5.0	<	0.0 / 0.100 / 0.002	NON-DETECTED	0.00040	0.00027	<	0.00018	<	1.78344
786586	P0050-AS03-030514	FIELD SAMPLE DIRECT	1	3778.2 / 100 / 20.0	40 / 0.3760 / 8.5	<	0.0 / 0.059 / 0.003	NON-DETECTED	0.00040	0.00027	<	0.00015	<	1.49869

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Note: Reported Sensitivity is calculated based on the actual number of asbestos fibers detected in TEM. Asb. (asbestos) Fiber Ratio is the ratio of the number of asbestos over the total number of fibers detected in TEM.

Analyst(s): AY

Reviewed By:

*NOTE:

1. LA: Libby Amphibole; AC: Actinolite; TR: Tremolite; CH: Chrysotile; CR: Crocidolite; AN: Anthophyllite; AM: Amosite
2. Indirect sample prep is based on ISO 13794:1999(E): Ambient air-Determination of asbestos fibers-Indirect-transfer transmission electron microscopy method. Refer to sample prep sheets for dilution details.
3. Some samples may be analyzed and/or prepped by multiple instruments, analysts, or on multiple dates. Please refer to the sample prep sheets and analytical benchsheets for details.
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E.P.A. LAB ID# DE004

A.I.H.A./NLLAP #100448

NVLAP #101032

SAMPLE SUMMARY REPORT

Revision#: 1

COC#: 2-030714-125911-0026

Batch # : 5247 Test Method: NIOSH 7402 - Asbestos by TEM Prep Method: NIOSH 7402 - Asbestos by TEM

General Information

Instruments: Scope Model: JEM 100CX II Magnification: 19,000 Operational Condition: Normal
Analyzer: Kevex Det. Area: 10mm² Det. Window: 0.008mm

BLI Project #: L6888F

Project Name: WESTON SOLUTIONS,INC.-RST 2 RFP NO. 279 Sampling Location: 0029-0122

Date Sampled: 3/6/2014 Sampled by: CLIENT Date Received: 3/8/2014 Report Date: 4/7/2014

Analytical Data

Note: Results provided in this summary report do not have to agree with those obtained from the EPA NADES EDD report.

Primary Filter Area (mm^2): 385 2nd Filter Area (mm^2): N/A Media: MCE Grid Area (mm^2): 0.0094

Date Prepped: 3/17/2014 Prepped By: JX Date Analyzed: 3/8/2014 Analyzed By: JX

Sample ID and Prep Information					Analytical Data				Results		
Lab Sample Number	Field Sample Number	Sample QA Type-Prep Type	Dilution Factor	Air Volume (L) / PCM Fields / PCM Fibers	# of Grid Openings / Area Analyzed (mm^2) / Total # of TEM PCME Fibers	Total # of Asb. by TEM / Asb. Fiber Ratio / f/cc by PCM	Asbestos Mineral Type Detected	Target Sensitivity (f/cc)	Reported Sensitivity (f/cc)	Reported Air Concentration (f/cc)	Reported Filter Density (f/mm^2)
786629	P0009-AS01-030614	FIELD SAMPLE DIRECT	1	3805.5 / 63 / 100.0	40 / 0.3760 / 61.5	1.0 / 0.016 / 0.020	AC	0.00040	0.00027	0.00033	3.28787
786630	P0009-AS02-030614	FIELD SAMPLE DIRECT	1	3748.1 / 100 / 60.0	40 / 0.3760 / 30.5	0.0 / < 0.016 / 0.010	NON-DETECTED	0.00040	0.00027	< 0.00017	< 1.67067
786631	P0009-AS03-030614	FIELD SAMPLE DIRECT	1	3783.3 / 66 / 100.0	40 / 0.3760 / 32.5	0.0 / < 0.015 / 0.020	NON-DETECTED	0.00040	0.00027	< 0.00030	< 2.96943
786632	P0069-AS01-030614	FIELD SAMPLE		4024.8 / 0 / 0.0	0.0000	N/A	OVERLDAD	0.00040	NDT ANALYZED	NDT ANALYZED	NDT ANALYZED
786633	P0069-AS02-030614	FIELD SAMPLE		3927.3 / 0 / 0.0	0.0000	N/A	OVERLOAD	0.00040	NDT ANALYZED	NOT ANALYZED	NOT ANALYZED
786634	P0069-AS03-030614	FIELD SAMPLE		3896.1 / 0 / 0.0	0.0000	N/A	OVERLDAD	0.00040	NOT ANALYZED	NOT ANALYZED	NDT ANALYZED

Rev. 1: The report format changed, which may have impact on the reporting or detection limit reported previously. Please use this report to replace all versions previously received.

Note: Reported Sensitivity is calculated based on the actual number of asbestos fibers detected in TEM. Asb. (asbestos) Fiber Ratio is the ratio of the number of asbestos over the total number of fibers detected in TEM.

Analyst(s): JX

Reviewed By:

*NOTE:

1. LA: Libby Amphibole; AC: Actinolite; TR: Tremolite; CH: Chrysotile; CR: Crocidolite; AN: Anthophyllite; AM: Amosite
2. Indirect sample prep is based on ISO 13794:1999(E): Ambient air-Determination of asbestos fibers-Indirect-transfer transmission electron microscopy method. Refer to sample prep sheets for dilution details.
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E.P.A. LAB ID# DE004

A.I.H.A./NLLAP #100448

NVLAP #101032

SAMPLE SUMMARY REPORT

Revision#: 1

COC#: 2-031014-111810-0028

Batch # : 5248 Test Method: NIOSH 7402 - Asbestos by TEM Prep Method: NIOSH 7402 - Asbestos by TEM

General Information

Instruments: Scope Model: JEM 100CXII Magnification: 19,000 Operational Condition: Normal Analyzer: Kevex Det. Area: 10 mm² Det. Window: 0.008 mm

BLI Project #: L6888F

Project Name: WESTON SOLUTIONS,INC.-RST 2 RFP NO. 279 **Sampling Location:** 0029-0122

Date Sampled: 3/7-8/2014 **Sampled by:** CLIENT **Date Received:** 3/11/2014 **Report Date:** 4/7/2014

Analytical Data

Note: Results provided in this summary report do not have to agree with those obtained from the EPA NADES EDD report.

Primary Filter Area (mm²): 385 **2nd Filter Area (mm²):** N/A **Media:** MCE **Grid Area (mm²):** 0.0094

Date Prepped: 3/11/2014 **Prepped By:** JX **Date Analyzed:** 3/11/2014 **Analyzed By:** JX

Sample ID and Prep Information					Analytical Data				Results		
Lab Sample Number	Field Sample Number	Sample QA Type-Prep Type	Dilution Factor	Air Volume (L) / PCM Fields / PCM Fibers	# of Grid Openings / Area Analyzed (mm²) / Total # of TEM PCME Fibers	Total # of Asb. by TEM / Asb. Fiber Ratio / f/cc by PCM	Asbestos Mineral Type Detected	Target Sensitivity (f/cc)	Reported Sensitivity (f/cc)	Reported Air Concentration (f/cc)	Reported Filter Density (f/mm²)
786873	FB-A-030814	FIELD SAMPLE DIRECT	1	0 / 100 / 1.0	40 / 0.3760 / 0.0	0.0 / < 0.091 / N/A	NON-DETECTED	0.00040	N/A	N/A	< 0.63694
786874	P0008-AS01-030814	FIELD SAMPLE		3686.4 / 0 / 0.0	0.0000	N/A	OVERLOAD	0.00040	NOT ANALYZED	NOT ANALYZED	NOT ANALYZED
786875	P0008-AS02-030814	FIELD SAMPLE		3636 / 0 / 0.0	0.0000	N/A	OVERLOAD	0.00040	NOT ANALYZED	NOT ANALYZED	NOT ANALYZED
786876	P0008-AS03-030814	FIELD SAMPLE		3688.2 / 0 / 0.0	0.0000	N/A	OVERLOAD	0.00040	NOT ANALYZED	NOT ANALYZED	NOT ANALYZED
786877	P0057-AS01-030714	FIELD SAMPLE DIRECT	1	3650.4 / 100 / 29.0	40 / 0.3760 / 5.0	1.0 / 0.200 / 0.004	AN	0.00040	0.00028	0.00078	7.38854
788878	P0057-AS02-030714	FIELD SAMPLE DIRECT	1	3733.2 / 100 / 25.0	40 / 0.3760 / 11.0	1.0 / 0.091 / 0.003	CH	0.00040	0.00027	0.00030	2.89519
786879	P0057-AS03-030714	FIELD SAMPLE DIRECT	1	3697.2 / 100 / 26.0	40 / 0.3760 / 4.0	0.0 / < 0.125 / 0.003	NON-DETECTED	0.00040	0.00028	< 0.00043	< 4.14013
786880	P0058-AS01-030714	FIELD SAMPLE DIRECT	1	3686.4 / 100 / 25.0	40 / 0.3760 / 16.0	0.0 / < 0.03 / 0.003	NON-DETECTED	0.00040	0.00028	< 0.00010	< 0.99522
786881	P0058-AS02-030714	FIELD SAMPLE DIRECT	1	3636 / 100 / 27.0	40 / 0.3760 / 1.0	0.0 / < 0.50 / 0.004	NON-DETECTED	0.00040	0.00028	< 0.00182	< 17.19745
786882	P0058-AS03-030714	FIELD SAMPLE DIRECT	1	3602.9 / 100 / 26.0	40 / 0.3760 / 10.5	0.0 / < 0.05 / 0.004	NON-DETECTED	0.00040	0.00028	< 0.00017	< 1.57719

Rev. 1: The report format changed, which may have impact on the reporting or detection limit reported previously. Please use this report to replace all versions previously received.

Note: Reported Sensitivity is calculated based on the actual number of asbestos fibers detected in TEM. Asb. (asbestos) Fiber Ratio is the ratio of the number of asbestos over the total number of fibers detected in TEM.

Analyst(s): JX

Reviewed By:

*NOTE:

1. LA: Libby Amphibole; AC: Actinolite; TR: Tremolite; CH: Chrysotile; CR: Crocidolite; AN: Anthophyllite; AM: Amosite
2. Indirect sample prep is based on ISO 13794:1999(E): Ambient air-Determination of asbestos fibers-Indirect-transfer transmission electron microscopy method. Refer to sample prep sheets for dilution details.
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FIELD COC

USEPA
DateShipped: 3/5/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-030514-142736-0021
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
786565	FB-A-030414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/4/2014	08:14	1	MCE Cassette	None		Liters	N	8:14:00 AM	
566	LB-A-030414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/4/2014	08:13	1	MCE Cassette	None		Liters	N	8:13:00 AM	
567	P0006-AS01-030414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/4/2014	16:00	1	MCE Cassette	None	3646.8	Liters	N	10:00:00 AM	4:00:00 PM
568	P0006-AS02-030414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/4/2014	16:00	1	MCE Cassette	None	3634.2	Liters	N	10:00:00 AM	4:00:00 PM
569	P0006-AS03-030414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/4/2014	16:00	1	MCE Cassette	None	3632.4	Liters	N	10:00:00 AM	4:00:00 PM
570	P0047-AS01-030414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/4/2014	17:15	1	MCE Cassette	None	3639.6	Liters	N	11:15:00 AM	5:15:00 PM
571	P0047-AS02-030414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/4/2014	17:15	1	MCE Cassette	None	3596.4	Liters	N	11:15:00 AM	5:15:00 PM
572	P0047-AS03-030414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/4/2014	17:15	1	MCE Cassette	None	3652.2	Liters	N	11:15:00 AM	5:15:00 PM

Joel Petty

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltuions.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RST2	3/5/14 1600	Bonnie Mei BATTA LABORATORIES	3/6/14 0955	

USEPA
DateShipped: 3/6/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-030614-131636-0023
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
78584	P0050-AS01-030514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/5/2014	16:30	1	MCE Cassette	None	3657.6	Liters	N	10:30:00 AM	4:30:00 PM
585	P0050-AS02-030514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/5/2014	16:30	1	MCE Cassette	None	3753	Liters	N	10:30:00 AM	4:30:00 PM
586	P0050-AS03-030514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/5/2014	16:30	1	MCE Cassette	None	3778.2	Liters	N	10:30:00 AM	4:30:00 PM

Joel Petty

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltuions.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RST2	3/6/14 1430	Bonnie Thi BATTA LABORATORIES	3/7/14 0948	

USEPA
DateShipped: 3/7/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-030714-125911-0026
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

TEM 7402

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
786629	P0009-AS01-030614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/6/2014	15:10	1	MCE Cassette	None	3805.45	Liters	N	9:00:00 AM	3:10:00 PM
30	P0009-AS02-030614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/6/2014	15:10	1	MCE Cassette	None	3748.1	Liters	N	9:00:00 AM	3:10:00 PM
31	P0009-AS03-030614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/6/2014	15:10	1	MCE Cassette	None	3783.25	Liters	N	9:00:00 AM	3:10:00 PM
32	P0069-AS01-030614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/6/2014	16:45	1	MCE Cassatte	None	4024.8	Liters	N	10:15:00 AM	4:45:00 PM
33	P0069-AS02-030614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/6/2014	16:45	1	MCE Cassette	None	3927.3	Liters	N	10:15:00 AM	4:45:00 PM
34	P0069-AS03-030614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/6/2014	16:45	1	MCE Cassette	None	3896.1	Liters	N	10:15:00 AM	4:45:00 PM

Joel Petty

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltuions.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RST2	3/7/14 1400			
			Bo Li	03/08/14 16:00	

USEPA
DateShipped: 3/10/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-031014-111810-0028
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
786873	FB-A-030814	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/8/2014	08:10	1	MCE Cassette	None		Liters	N	8:10:00 AM	8:10:00 AM
874	P0008-AS01-030814	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/8/2014	14:30	1	MCE Cassette	None	3686.4	Liters	N	8:30:00 AM	2:30:00 PM
875	P0008-AS02-030814	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/8/2014	14:30	1	MCE Cassette	None	3636	Liters	N	8:30:00 AM	2:30:00 PM
876	P0008-AS03-030814	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/8/2014	14:30	1	MCE Cassette	None	3688.2	Liters	N	8:30:00 AM	2:30:00 PM
877	P0057-AS01-030714	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/7/2014	15:00	1	MCE Cassette	None	3650.4	Liters	N	9:00:00 AM	3:00:00 PM
878	P0057-AS02-030714	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/7/2014	15:00	1	MCE Cassette	None	3733.2	Liters	N	9:00:00 AM	3:00:00 PM
879	P0057-AS03-030714	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/7/2014	15:00	1	MCE Cassette	None	3697.2	Liters	N	9:00:00 AM	3:00:00 PM
880	P0058-AS01-030714	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/7/2014	16:15	1	MCE Cassette	None	3686.4	Liters	N	10:15:00 AM	4:15:00 PM
881	P0058-AS02-030714	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/7/2014	18:15	1	MCE Cassette	None	3636	Liters	N	10:15:00 AM	4:15:00 PM
882	P0058-AS03-030714	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/7/2014	16:15	1	MCE Cassette	None	3602.88	Liters	N	10:15:00 AM	4:15:00 PM
Joel Petty													

Special instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltulons.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RST2	3/10/14 1230	Bonnie Mes Batta Laboratories	3/11/14 @ 1010	

Batta Data Package Checklist

Company:	Batta Laboratories, Inc.	**EPA ID#:**	DE 004
EPA CASE#:	RFP 279A	**LAB PROJ#:**	L6888G
EPA SDG#:	MULTIPLE	**Date Received:**	MULTIPLE
Total Units:	73	**Revision #:**	INITIAL

Data Package Type: ☐ Particle Size ☐ Moisture ☐ PLM ☐ PCM ☒ TEM

Sample Matrix: ☐ Bulk ☐ Soil ☒ Air ☐ Water

X	COC	X	Prep Sheet	See Narrative	EDD
X	QA Data	X	Bench Sheet	X (see below)	MISC.

Case Narrative:

This data package is pertinent to 73 sample units under the EPA order RFP# 279 through Weston Solutions, Inc. Date of sample receiving and sample conditions, together with sample matrix information were documented on the client provided COC(s), EPA Region 2 SDG forms and/or custody forms. Of these 73 units, 62 were analyzed by the NIOSH 7400 method. The rest were deemed in the lab to be overloaded during the sample collection. Please refer to attached COCs and EPA Region 2 DC-1 for details.

This data package contains the analysis only by the NIOSH 7402 TEM method. Please refer to the Counting Rules, Data Validation and Calculation section of this package for information on limit of detection and on how results were calculated and reported.

Starting with this data package, the fiber density in f/mm2 was reported differently. In previous reports, the fiber density was reported as the density of the total TEM fibers detected (i.e. the sum of asbestos and non-asbestos fibers). However, this was changed to the fiber density equivalent to the PCM fiber density in consistency with the fiber concentration reported. As such, all previously issued NIOSH 7402 reports were revised and included in the Miscellaneous Section of this data package. Please refer to the data validation section for details on how the equivalent PCM fiber density is calculated.

The data package contains a hardcopy report. Data DVD/CD discs that contain a copy of this hardcopy report package in PDF format plus EPA Region 2 EDDs or NADES EDDS whichever appropriate for each analysis will be shipped in a later time at the completion of the entire project for the purpose of data integrity. NADES EDD does not apply to this package. The hardcopy data package is organized with sections in the following manner: EPA Region 2 DC-2 Form (the inventory sheet), Batta Check List (w/ case narratives), SDG Cover Sheet, Summary Report of Analysis, EPA Region 2 DC-1 Form, Field COC, Miscellaneous, Data Validation and Calculation, Reanalysis, Standard Analysis, Calibrations and Routines, and Analytical Benchsheets. Reviewers who are not familiar with asbestos terminology and abbreviations used in this package are referred to the Nomenclature section featured in the first data package of this kind delivered at the beginning of this project.

Please direct all technical inquiries to: Bo Li, Ph. D., Batta Laboratories, Inc., Delaware Industrial Park, 6 Garfield Way, Newark, DE 19713; or at E-mail: bo.li@battaenv.com.

Signature:		**Title:**	Manager
Print Name:	Bo Li	**Date:**	04/08/2014

SUMMARY REPORT OF ANALYSIS

BY

NIOSH 7402, ISSUE 2: 15 AUGUST, 1994

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E.P.A. LAB ID# DE004

A.I.H.A./NLLAP #100448

NVLAP #101032

SAMPLE SUMMARY REPORT

Revision#: 1

COC#: 2-031114-112802-0031

Batch # : 5252 Test Method: NIOSH 7402 - Asbestos by TEM Prep Method: NIOSH 7402 - Asbestos by TEM

General Information

Instruments: Scope Model: JEM 100CXII Magnification: 19,000 Operational Condition: Normal
Analyzer: Kevex Dot Area: 10 mm² Dot Window: 1008 mm

BLI Project #: L6888G

Project Name: WESTON SOLUTIONS,INC.-RST 2 RFP NO. 279A Sampling Location: 0029-0122

Date Sampled: 3/10/2014 Sampled by: CLIENT Date Received: 3/12/2014 Report Date: 4/5/2014

Analytical Data

Note: Results provided in this summary report do not have to agree with those obtained from the EPA NADES EDD report.

Primary Filter Area (mm²): 385 2nd Filter Area (mm²): N/A Media: MCE Grid Area (mm²): 0.0094

Date Prepped: 3/12/2014 Prepped By: JX Date Analyzed: 3/12/2014 Analyzed By: JX

Sample ID and Prep Information					Analytical Data				Results		
Lab Sample Number	Field Sample Number	Sample QA Type-Prep Type	Dilution Factor	Air Volume (L) / PCM Fields / PCM Fibers	# of Grid Openings / Area Analyzed (mm²) / Total # of TEM PCME Fibers	Total # of Asb. by TEM / Asb. Fiber Ratio / f/cc by PCM	Asbestos Mineral Type Detected	Target Sensitivity (f/cc)	Reported Sensitivity (f/cc)	Reported Air Concentration (f/cc)	Reported Filter Density (f/mm²)
786919	P0008-AS04-031014	FIELD SAMPLE		3619.6 / 0 / 0	0.0000	N/A	OVERLOAD	0.00040	NOT ANALYZED	NOT ANALYZED	NOT ANALYZED
786920	P0006-AS05-031014	FIELD SAMPLE		3724.2 / 0 / 0	0.0000	N/A	OVERLOAD	0.00040	NOT ANALYZED	NOT ANALYZED	NOT ANALYZED
786921	P0008-AS06-031014	FIELD SAMPLE		3765.6 / 0 / 0	0.0000	N/A	OVERLOAD	0.00040	NOT ANALYZED	NOT ANALYZED	NOT ANALYZED
786922	P0076-AS01-031014	FIELD SAMPLE DIRECT	1	3646.8 / 100 / 13	40 / 0.3760 / 12.5	0 / 0.040 / 0.002	NON-DETECTED	0.00040	0.00028	< 0.00007	< 0.66242
786923	P0076-AS02-031014	FIELD SAMPLE DIRECT	1	3645 / 100 / 30	40 / 0.3780 / 14.5	0 / 0.034 / 0.004	NON-DETECTED	0.00040	0.00028	< 0.00014	< 1.31781
786924	P0076-AS03-031014	FIELD SAMPLE DIRECT	1	3709.8 / 100 / 20	40 / 0.3760 / 13.0	1 / 0.077 / 0.003	AC	0.00040	0.00028	0.00020	1.95982

Rev. 1: Report format changed, which may have impact on the reporting or detection limits reported. Please use this report to replace all versions previously received.

Note: Reported Sensitivity is calculated based on the actual number of asbestos fibers detected in TEM. Asb. (asbestos) Fiber Ratio is the ratio of the number of asbestos over the total number of fibers detected in TEM.

Analyst(s): J. XU

Reviewed By:

*NOTE:

1. LA: Libby Amphibole; AC: Actinolite; TR: Tremolite; CH: Chrysotile; CR: Crocidolite; AN: Anthophyllite; AM: Amosite
2. Indirect sample prep is based on ISO 13794:1999(E): Ambient air-Determination of asbestos fibers-Indirect-transfer transmission electron microscopy method. Refer to sample prep sheets for dilution details.
3. Some samples may be analyzed and/or prepped by multiple instruments, analysts, or on multiple dates. Please refer to the sample prep sheets and analytical benchsheets for details.
4. This summary report may not included all information submitted by clients. Furthermore, Batta will not be responsible for results that are due to improper sample collection and inaccurate data provided by clients.
5. This summary report precedes all electronic versions of any kinds, including copies in full or in part.
6. This summary report does not constitute endorsement by NVLAP and/or any other U.S. government agencies. The test data pertain only to the items tested. No assumptions or conclusions should be made to materials or samples not analyzed.

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E.P.A. LAB ID# DE004

A.I.H.A./NLLAP #100448

NVLAP #101032

SAMPLE SUMMARY REPORT

Revision#: 1

COC#: 2-031214-124554-0033

Batch # : 5255 Test Method: NIOSH 7402 - Asbestos by TEM Prep Method: NIOSH 7402 - Asbestos by TEM

General Information

Instruments: Scope Model: JEM 100CXII Magnification: 19,000 Operational Condition: Normal Analyzer: Kevex Det Area: 10 mm² Det Window: 0.008 mm

BLI Project #: L6688G

Project Name: WESTON SOLUTIONS,INC.-RST 2 RFP NO. 279A Sampling Location: 0029-0122

Date Sampled: 3/11/2014 Sampled by: CLIENT Date Received: 3/13/2014 Report Date: 4/7/2014

Analytical Data

Note: Results provided in this summary report do not have to agree with those obtained from the EPA NADES EDD report.

Primary Filter Area (mm^2): 385 2nd Filter Area (mm^2): N/A Media: MCE Grid Area (mm^2): 0.0094

Date Prepped: 3/13/2014 Prepped By: ARY/JX Date Analyzed: 3/13/2014 Analyzed By: JX

Sample ID and Prep Information				Analytical Data						Results				
Lab Sample Number	Field Sample Number	Sample QA Type-Prep Type	Dilution Factor	Air Volume (L) / PCM Fields / PCM Fibers	# of Grid Openings / Area Analyzed (mm^2) / Total # of TEM PCME Fibers		Total # of Asb. by TEM / Asb. Fiber Ratio / f/cc by PCM	Asbestos Mineral Type Detected	Target Sensitivity (f/cc)	Reported Sensitivity (f/cc)		Reported Air Concentration (f/cc)		Reported Filter Density (f/mm^2)
787002	LB-A-031114	FIELD SAMPLE	1	0	40		0.0	NON-DETECTED	0.00040	N/A		N/A	<	1.16773
		DIRECT		100	0.3760	<	0.167							
				2.5	3.0		N/A							
787003	P0007-AS01-031114	FIELD SAMPLE	1	3661.2	40		0.0	NON-DETECTED	0.00040	0.00028	<	0.00012	<	1.11465
		DIRECT		100	0.3760	<	0.063							
				14.0	8.0		0.002							
787004	P0007-AS02-031114	FIELD SAMPLE	1	3799.8	40		0.0	NON-DETECTED	0.00040	0.00027	<	0.00022	<	2.12314
		DIRECT		100	0.3760	<	0.167							
				10.0	3.0		0.001							
787005	P0007-AS03-031114	FIELD SAMPLE	1	3663	40		0.0	NON-DETECTED	0.00040	0.00028	<	0.00007	<	0.66464
		DIRECT		100	0.3760	<	0.043							
				12.0	11.5		0.002							
787006	P0051-AS01-031114	FIELD SAMPLE	1	3794.4	40		0.0	NON-DETECTED	0.00040	0.00027	<	0.00004	<	0.36397
		DIRECT		100	0.3760	<	0.048							
				6.0	10.5		0.001							
787007	P0051-AS02-031114	FIELD SAMPLE	1	3618	40		0.0	NON-DETECTED	0.00040	0.00028	<	0.00014	<	1.27389
		DIRECT		100	0.3760	<	0.125							
				8.0	4.0		0.001							
787008	P0051-AS03-031114	FIELD SAMPLE	1	3634.2	40		0.0	NON-DETECTED	0.00040	0.00028	<	0.00005	<	0.46709
		DIRECT		100	0.3760	<	0.067							
				5.0	7.5		0.001							

Rev. 1: The report format changed, which may have impact on the reporting or detection limit reported previously. Please use this report to replace all versions previously received.

Note: Reported Sensitivity is calculated based on the actual number of asbestos fibers detected in TEM. Asb. (asbestos) Fiber Ratio is the ratio of the number of asbestos over the total number of fibers detected in TEM.

Analyst(s): JX

Reviewed By:

*NOTE:

1. LA: Libby Amphibole; AC: Actinolite; TR: Tremolite; CH: Chrysotile; CR: Crocidolite; AN: Anthophyllite; AM: Amosite
2. Indirect sample prep is based on ISO 13794:1999(E): Ambient air-Determination of asbestos fibers-Indirect-transfer transmission electron microscopy method. Refer to sample prep sheets for dilution details.
3. Some samples may be analyzed and/or prepped by multiple instruments, analysts, or on multiple dates. Please refer to the sample prep sheets and analytical benchsheets for details.
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E.P.A. LAB ID# DE004

A.I.H.A./NLLAP #100448

NVLAP #101032

SAMPLE SUMMARY REPORT

Revision#: 1

COC#: 2-031314-083644-0035

Batch # : 5259 Test Method: NIOSH 7402 - Asbestos by TEM Prep Method: NIOSH 7402 - Asbestos by TEM

General Information

Instruments: Scope Model: JEM-100CX-II Magnification: 15,000 Operational Condition: Normal
Analyzer: Kevex Det. Area: 10 mm Det. Window: 0.008 mm

BLI Project #: L6888G

Project Name: WESTON SOLUTIONS,INC.-RST 2 RFP NO. 279A Sampling Location: 0029-0122

Date Sampled: 3/12/2014 Sampled by: CLIENT Date Received: 3/14/2014 Report Date: 4/7/2014

Analytical Data

Note: Results provided in this summary report do not have to agree with those obtained from the EPA NADES EDD report.

Primary Filter Area (mm^2): 385 2nd Filter Area (mm^2): N/A Media: MCE Grid Area (mm^2): 0.0094

Date Prepped: 3/12/2014 Prepped By: JX Date Analyzed: 3/15/2014 Analyzed By: ARY

Sample ID and Prep Information					Analytical Data					Results				
Lab Sample Number	Field Sample Number	Sample QA Type-Prep Type	Dilution Factor	Air Volume (L) / PCM Fields / PCM Fibers	# of Grid Openings / Area Analyzed (mm^2) / Total # of TEM PCME Fibers		Total # of Asb. by TEM / Asb. Fiber Ratio / f/cc by PCM	Asbestos Mineral Type Detected	Target Sensitivity (f/cc)	Reported Sensitivity (f/cc)		Reported Air Concentration (f/cc)		Reported Filter Density (f/mm^2)
787070	FB-A-031214	FIELD SAMPLE DIRECT	1	0 / 100 / 1	40 / 0.3760 / 0.0	<	0.0 / 0.091 / N/A	NON-DETECTED	0.00040	N/A		N/A	<	0.63694
787071	P0054-AS01-031214	FIELD SAMPLE DIRECT	1	3775.7 / 100 / 10	40 / 0.3760 / 0.0	<	0 / 0.091 / 0.001	NON-DETECTED	0.00040	0.00027	<	0.00012	<	1.15808
787072	P0054-AS02-031214	FIELD SAMPLE DIRECT	1	3901.9 / 100 / 16	40 / 0.3760 / 0.0	<	0 / 0.091 / 0.002	NON-DETECTED	0.00040	0.00026	<	0.00018	<	1.85292
787073	P0054-AS03-031214	FIELD SAMPLE DIRECT	1	3853.1 / 100 / 14	40 / 0.3760 / 2.0	<	0 / 0.250 / 0.002	NON-DETECTED	0.00040	0.00027	<	0.00045	<	4.45860
787074	P0055-AS01-031214	FIELD SAMPLE DIRECT	1	3776.4 / 100 / 9	40 / 0.3760 / 3.5	<	0 / 0.143 / 0.001	NON-DETECTED	0.00040	0.00027	<	0.00017	<	1.63765
787075	P0055-AS02-031214	FIELD SAMPLE DIRECT	1	3661.2 / 100 / 8	40 / 0.3760 / 0.5	<	0 / 1.000 / 0.001	NON-DETECTED	0.00040	0.00028	<	0.00107	<	10.19108
787076	P0055-AS03-031214	FIELD SAMPLE DIRECT	1	3690 / 100 / 6	40 / 0.3760 / 2.0	<	0 / 0.250 / 0.001	NON-DETECTED	0.00040	0.00028	<	0.00020	<	1.91083

Rev. 1: The report format changed, which may have impact on the reporting or detection limit reported previously. Please use this report to replace all versions previously received.

Note: Reported Sensitivity is calculated based on the actual number of asbestos fibers detected in TEM. Asb. (asbestos) Fiber Ratio is the ratio of the number of asbestos over the total number of fibers detected in TEM.

Analyst(s): ARY

Reviewed By:

*NOTE:

1. LA: Libby Amphibole; AC: Actinolite; TR: Tremolite; CH: Chrysotile; CR: Crocidolite; AN: Anthophyllite; AM: Amosite
2. Indirect sample prep is based on ISO 13794:1999(E): Ambient air-Determination of asbestos fibers-Indirect-transfer transmission electron microscopy method. Refer to sample prep sheets for dilution details.
3. Some samples may be analyzed and/or prepped by multiple instruments, analysts, or on multiple dates. Please refer to the sample prep sheets and analytical benchsheets for details.
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E.P.A. LAB ID# DE004

A.I.H.A./NLLAP #100448

NVLAP #101032

SAMPLE SUMMARY REPORT

Revision#: 1

COC#: 2-031414-123018-0037

Batch # : 5262 Test Method: NIOSH 7402 - Asbestos by TEM Prep Method: NIOSH 7402 - Asbestos by TEM

General Information

Instruments: Scope Model: JEM 1005XII Magnification: 19,000 Operational Condition: Normal
Analyzer: Kovex Dot Area: 10 mm² Dot Window: 0.008 mm

BLI Project #: L6888G

Project Name: WESTON SOLUTIONS,INC.-RST 2 RFP NO. 279A Sampling Location: 0029-0122

Date Sampled: 3/13/2014 Sampled by: CLIENT Date Received: 3/18/2014 Report Date: 4/7/2014

Analytical Data

Note: Results provided in this summary report do not have to agree with those obtained from the EPA NADES EDD report.

Primary Filter Area (mm²): 385 2nd Filter Area (mm²): N/A Media: MCE Grid Area (mm²): 0.0094

Date Prepped: 3/18/2014 Prepped By: ARY Date Analyzed: 3/18/2014 Analyzed By: JX

Sample ID and Prep Information					Analytical Data				Results					
Lab Sample Number	Field Sample Number	Sample QA Type-Prep Type	Dilution Factor	Air Volume (L) / PCM Fields / PCM Fibers	# of Grid Openings / Area Analyzed (mm²) / Total # of TEM PCME Fibers		Total # of Asb. by TEM / Asb. Fiber Ratio / f/cc by PCM		Asbestos Mineral Type Detected	Target Sensitivity (f/cc)	Reported Sensitivity (f/cc)		Reported Air Concentration (f/cc)		Reported Filter Density (f/mm²)
787210	P0065-AS01-031314	FIELD SAMPLE DIRECT	1	3856.9	40		1.0		CH	0.00040	0.00027		0.00024		2.42449
				100	0.3760		0.065							
				29.5	15.5		0.004							
787211	P0065-AS02-031314	FIELD SAMPLE DIRECT	1	3762.4	40		1.5		CH	0.00040	0.00027		0.00024		2.36579
				100	0.3760		0.071							
				26.0	21.0		0.003							
787212	P0065-AS03-D31314	FIELD SAMPLE DIRECT	1	3787.5	40		0.0		NON-DETECTED	0.00040	0.00027	<	0.00012	<	1.22489
				100	0.3760	<	0.036							
				25.0	13.0		0.003							
767213	PDD67B-AS01-031314	FIELD SAMPLE DIRECT	1	3853.6	40		0.0		NON-DETECTED	0.00040	0.00027	<	0.00006	<	0.77849
				100	0.3760	<	0.111							
				4.0	4.5		0.001							
787214	P0067B-AS02-031314	FIELD SAMPLE DIRECT	1	3727.8	40		D.0		NON-DETECTED	D.00040	0.00027	<	0.00053	<	5.09554
				100	0.3760	<	0.500							
				8.0	1.0		0.001							
787215	PD067B-AS03-031314	FIELD SAMPLE DIRECT	1	3796.2	40		0.0		NON-DETECTED	0.00040	0.00027	<	0.00019	<	1.91083
				100	0.3760	<	0.250							
				6.0	2.0		0.001							

Rev. 1: The report format changed, which may have impact on the reporting or detection limit reported previously. Please use this report to replace all versions previously received.

Note: Reported Sensitivity is calculated based on the actual number of asbestos fibers detected in TEM. Asb. (asbestos) Fiber Ratio is the ratio of the number of asbestos over the total number of fibers detected in TEM.

Analyst(s): JX

Reviewed By:

*NOTE:

1. LA: Libby Amphibole; AC: Actinolite; TR: Tremolite; CH: Chrysotile; CR: Crocidolite; AN: Anthophyllite; AM: Amosite
2. Indirect sample prep is based on ISO 13794:1999(E): Ambient air-Determination of asbestos fibers-Indirect-transfer transmission electron microscopy method. Refer to sample prep sheets for dilution details.
3. Some samples may be analyzed and/or prepped by multiple instruments, analysts, or on multiple dates. Please refer to the sample prep sheets and analytical benchsheets for details.
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E.P.A. LAB ID# DE004

A.I.H.A./NLLAP #100448

NVLAP #101032

SAMPLE SUMMARY REPORT

Revision#: 1

COC#: 2-031714-132757-0039

Batch # : 5263 Test Method: NIOSH 7402 - Asbestos by TEM Prep Method: NIOSH 7402 - Asbestos by TEM

General Information

Instruments: Scope Model: JEM 1000XII Magnification: 19,000 Operational Condition: Normal
Analyzer: Kevex Det. Area: 10 mm² Det. Window: 0.008 mm

BLI Project #: L6888G

Project Name: WESTON SOLUTIONS,INC.-RST 2 RFP NO. 279A Sampling Location: 0029-0122

Date Sampled: 3/15/2014 Sampled by: CLIENT Date Received: 3/18/2014 Report Date: 4/7/2014

Analytical Data

Note: Results provided in this summary report do not have to agree with those obtained from the EPA NADES EDD report.

Primary Filter Area (mm^2): 385 2nd Filter Area (mm^2): N/A Media: MCE Grid Area (mm^2): 0.0094

Date Prepped: 3/18/2014 Prepped By: JX Date Analyzed: 3/19/2014 Analyzed By: AY

Sample ID and Prep Information					Analytical Data				Results			
Lab Sample Number	Field Sample Number	Sample QA Type-Prep Type	Dilution Factor	Air Volume (L) / PCM Fields / PCM Fibers	# of Grid Openings / Area Analyzed (mm^2) / Total # of TEM PCME Fibers	Total # of Asb. by TEM / Asb. Fiber Ratio / f/cc by PCM	Asbestos Mineral Type Detected	Target Sensitivity (f/cc)	Reported Sensitivity (f/cc)	Reported Air Concentration (f/cc)	Reported Filter Density (f/mm²)
7a7240	P0056A-AS01-031514	FIELD SAMPLE DIRECT	1	3814.2 100 15.0	40 0.3760 7.5	0.0 < 0.067 0.002	NON-DETECTED	0.00040	0.00027	< 0.00013	< 1.27389
787241	P0056A-AS02-031514	FIELD SAMPLE DIRECT	1	3640.1 100 16.0	40 0.3760 9.0	0.0 < 0.056 0.002	NON-DETECTED	0.00040	0.00028	< 0.00012	< 1.13234
787242	P0056A-AS03-031514	FIELD SAMPLE DIRECT	1	3639.8 100 23.0	40 0.3760 12.5	0.0 < 0.040 0.003	NON-DETECTED	0.00040	0.00028	< 0.00012	< 1.17197
787243	P0056B-AS01-031514	FIELD SAMPLE DIRECT	1	3875.6 100 20.0	40 0.3760 9.5	0.0 < 0.053 0.003	NON-DETECTED	0.00040	0.00028	< 0.00014	< 1.34093
787244	P0056B-AS02-031514	FIELD SAMPLE DIRECT	1	3751.2 100 20.0	40 0.3760 8.0	0.0 < 0.063 0.003	NON-DETECTED	0.00040	0.00027	< 0.00016	< 1.59236
787245	P0056B-AS03-031514	FIELD SAMPLE DIRECT	1	3825 100 40.0	40 0.3760 16.5	0.0 < 0.030 0.005	NON-DETECTED	0.00040	0.00027	< 0.00016	< 1.54410
787246	P0067A-AS01-031514	FIELD SAMPLE DIRECT	1	3718.8 100 11.0	40 0.3760 6.0	0.0 < 0.083 0.001	NON-DETECTED	0.00040	0.00028	< 0.00012	< 1.16773
787247	P0067A-AS02-031514	FIELD SAMPLE DIRECT	1	3704.4 100 7.0	40 0.3760 4.5	0.0 < 0.11 0.001	NON-DETECTED	0.00040	0.00028	< 0.00010	< 0.99080
787248	P0067A-AS03-031514	FIELD SAMPLE DIRECT	1	3727.8 100 14.0	40 0.3760 8.5	0.0 < 0.06 0.002	NON-DETECTED	0.00040	0.00027	< 0.00011	< 1.04908
787249	P0074-AS01-031514	FIELD SAMPLE DIRECT	1	3771 100 10.0	40 0.3760 4.0	0.0 < 0.13 0.001	NON-DETECTED	0.00040	0.00027	< 0.00016	< 1.59236

Rev. 1: The report format changed, which may have impact on the reporting or detection limit reported previously. Please use this report to replace all versions previously received.

Note: Reported Sensitivity is calculated based on the actual number of asbestos fibers detected in TEM. Asb. (asbestos) Fiber Ratio is the ratio of the number of asbestos over the total number of fibers detected in TEM.

Analyst(s): AY

Reviewed By:

*NOTE:

1. LA: Libby Amphibole; AC: Actinolite; TR: Tremolite; CH: Chrysotile; CR: Crocidolite; AN: Anthophyllite; AM: Amosite
2. Indirect sample prep is based on ISO 13794:1999(E): Ambient air-Determination of asbestos fibers-Indirect-transfer transmission electron microscopy method. Refer to sample prep sheets for dilution details.
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E.P.A. LAB ID# DE004

A.I.H.A./NLLAP #100448

NVLAP #101032

SAMPLE SUMMARY REPORT

Revision#: 1

COC#: 2-031714-132757-0039

Batch # : 5263 Test Method: NIDSH 7402 - Asbestos by TEM Prep Method: NIOSH 7402 - Asbestos by TEM

General Information

Instruments: Scope Model: JEM 1000XII Magnification: 19,000 Operational Condition: Normal
Analyzer: Kevex Det. Area: 10 mm Det. Window: 0.008 mm

BLI Project #: L6B88G

Project Name: WESTON SOLUTIONS,INC.-RST 2 RFP NO. 279A **Sampling Location:** 0029-0122

Date Sampled: 3/15/2014 **Sampled by:** CLIENT **Date Received:** 3/18/2014 **Report Date:** 4/7/2014

Analytical Data

Note: Results provided in this summary report do not have to agree with those obtained from the EPA NADES EDD report.

Primary Filter Area (mm^2): 385 **2nd Filter Area (mm^2):** N/A **Media:** MCE **Grid Area (mm^2):** 0.0094

Date Prepped: 3/18/2014 **Prepped By:** JX **Date Analyzed:** 3/19/2014 **Analyzed By:** AY

Sample ID and Prep Information					Analytical Data				Results				
Lab Sample Number	Field Sample Number	Sample QA Type-Prep Type	Dilution Factor	Air Volume (L) / PCM Fields / PCM Fibers	# of Grid Openings / Area Analyzed (mm^2) / Total # of TEM PCME Fibers		Total # of Asb. by TEM / Asb. Fiber Ratio / f/cc by PCM	Asbestos Mineral Type Detected	Target Sensitivity (f/cc)	Reported Sensitivity (f/cc)		Reported Air Concentration (f/cc)		Reported Filter Density (f/mm^2)
787250	P0074-AS02-031514	FIELD SAMPLE DIRECT	1	3691.8 100 6.0	40 0.3760 0.0	<	0.0 0.091 0.001	NON-DETECTED	0.00040	0.00028	<	0.00007	<	0.69485
787251	P0074-AS03-031514	FIELD SAMPLE DIRECT	1	3807 100 6.5	40 0.3760 2.0	<	0.0 0.250 0.001	NON-DETECTED	0.00040	0.00027	<	0.00021	<	2.07006

Rev. 1: The report format changed, which may have impact on the reporting or detection limit reported previously. Please use this report to replace all versions previously received.

Note: Reported Sensitivity is calculated based on the actual number of asbestos fibers detected in TEM. Asb. (asbestos) Fiber Ratio is the ratio of the number of asbestos over the total number of fibers detected in TEM.

Analyst(s): AY

Reviewed By:

*NOTE:

1. LA: Libby Amphibole; AC: Actinolite; TR: Tremolite; CH: Chrysotile; CR: Crocidolite; AN: Anthophylite; AM: Amosite
2. Indirect sample prep is based on ISO 13794:1999(E): Ambient air-Determination of asbestos fibers-indirect-transfer transmission electron microscopy method. Refer to sample prep sheets for dilution details.
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E.P.A. LAB ID# DE004

A.I.H.A./NLLAP #100448

NVLAP #101032

SAMPLE SUMMARY REPORT

Revision#: 1

COC#: 2-031914-111710-0041

Batch # : 5266 Test Method: NIOSH 7402 - Asbestos by TEM Prep Method: NIOSH 7402 - Asbestos by TEM

General Information

Instruments: Scope Model: JEM 100CXII Magnification: 10,000 Operational Condition: Normal
Analyzer: Kevex Det Area: 10 mm² Det Window: 0.008mm

BLI Project #: L6888G

Project Name: WESTON SOLUTIONS,INC.-RST 2 RFP NO. 279A Sampling Location: 0029-0122

Date Sampled: 3/18/2014 Sampled by: CLIENT Date Received: 3/20/2014 Report Date: 4/7/2014

Analytical Data

Note: Results provided in this summary report do not have to agree with those obtained from the EPA NADES EDD report.

Primary Filter Area (mm²): 385 2nd Filter Area (mm²): N/A Media: MCE Grid Area (mm²): 0.0094

Date Prepped: 3/20/2014 Prepped By: AY Date Analyzed: 3/23/2014 Analyzed By: JX

Sample ID and Prep Information					Analytical Data					Results				
Lab Sample Number	Field Sample Number	Sample QA Type-Prep Type	Dilution Factor	Air Volume (L) / PCM Fields / PCM Fibers	# of Grid Openings / Area Analyzed (mm²) / Total # of TEM PCME Fibers		Total # of Asb. by TEM / Asb. Fiber Ratio / f/cc by PCM	Asbestos Mineral Type Detected	Target Sensitivity (f/cc)	Reported Sensitivity (f/cc)		Reported Air Concentration (f/cc)		Reported Filter Density (f/mm²)
787313	FB-A-031814	FIELD SAMPLE DIRECT	1	0 / 100 / 0.0	40 / 0.3760 / 1.5	<	0.0 / 0.333 / N/A	NON-DETECTED	0.00040	N/A		N/A	<	2.33546
787314	P0068-AS01-031814	FIELD SAMPLE DIRECT	1	3611.7 / 100 / 31.0	40 / 0.3760 / 23.5		1.0 / 0.043 / 0.004	AC	0.00040	0.00028		0.00018		1.68044
787315	P0068-AS02-031814	FIELD SAMPLE DIRECT	1	3882.6 / 100 / 39.0	40 / 0.3760 / 18.5	<	0.0 / 0.027 / 0.005	NON-DETECTED	0.00040	0.00026	<	0.00013	<	1.34274
787316	P0068-AS03-031814	FIELD SAMPLE DIRECT	1	3805.2 / 100 / 37.5	40 / 0.3760 / 28.5	<	0.0 / 0.018 / 0.005	NON-DETECTED	0.00040	0.00027	<	0.00008	<	0.83808
787317	P0077-AS01-031814	FIELD SAMPLE DIRECT	1	4019 / 100 / 13.5	40 / 0.3760 / 7.0	<	0.0 / 0.071 / 0.002	NON-DETECTED	0.00040	0.00025	<	0.00012	<	1.22839
787318	P0077-AS02-031814	FIELD SAMPLE DIRECT	1	4024.8 / 100 / 8.0	40 / 0.3760 / 6.0	<	0.0 / 0.083 / 0.001	NON-DETECTED	0.00040	0.00025	<	0.00008	<	0.84926
787319	P0077-AS03-031814	FIELD SAMPLE DIRECT	1	4017 / 100 / 8.5	40 / 0.3760 / 4.5	<	0.0 / 0.111 / 0.001	NON-DETECTED	0.00040	0.00025	<	0.00012	<	1.20311

Rev. 1: The report format changed, which may have impact on the reporting or detection limit reported previously. Please use this report to replace all versions previously received.

Note: Reported Sensitivity is calculated based on the actual number of asbestos fibers detected in TEM. Asb. (asbestos) Fiber Ratio is the ratio of the number of asbestos over the total number of fibers detected in TEM.

Analyst(s): JX

Reviewed By:

*NOTE:

1. LA: Libby Amphibole; AC: Actinolite; TR: Tremolite; CH: Chrysotile; CR: Crocidolite; AN: Anthophyllite; AM: Amosite
2. Indirect sample prep is based on ISO 13794:1999(E): Ambient air-Determination of asbestos fibers-Indirect-transfer transmission electron microscopy method. Refer to sample prep sheets for dilution details.
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E.P.A. LAB ID# DE004

A.I.H.A./NLLAP #100448

NVLAP #101032

SAMPLE SUMMARY REPORT

Revision#: 1

COC#: 2-032014-111142-0043

Batch # : 5269 Test Method: NIOSH 7402 - Asbestos by TEM Prep Method: NIOSH 7402 - Asbestos by TEM

General Information

Instruments: Scope Model: SEM 4000X II Magnification: 19,000 Operational Condition: Normal
Analyzer: Keyex Det. Area: 10 mm Det. Window: 0.008 mm

BLI Project #: L6888G

Project Name: WESTON SOLUTIONS,INC.-RST 2 RFP NO. 279A Sampling Location: 0029-0122

Date Sampled: 3/19/2014 Sampled by: CLIENT Date Received: 3/21/2014 Report Date: 4/7/2014

Analytical Data

Note: Results provided in this summary report do not have to agree with those obtained from the EPA NADES EDD report.

Primary Filter Area (mm^2): 385 2nd Filter Area (mm^2): N/A Media: MCE Grid Area (mm^2): 0.0094

Date Prepped: 3/23/2014 Prepped By: JX Date Analyzed: 3/24/2014 Analyzed By: JX

Sample ID and Prep Information					Analytical Data					Results					
Lab Sample Number	Field Sample Number	Sample QA Type-Prep Type	Dilution Factor	Air Volume (L) / PCM Fields / PCM Fibers	# of Grid Openings / Area Analyzed (mm^2) / Total # of TEM PCME Fibers		Total # of Asb. by TEM / Asb. Fiber Ratio / f/cc by PCM	Asbestos Mineral Type Detected	Target Sensitivity (f/cc)	Reported Sensitivity (f/cc)		Reported Air Concentration (f/cc)		Reported Filter Density (f/mm^2)
787415	P0073-AS01-031914	FIELD SAMPLE DIRECT	1	3769.2 / 100 / 10.0	40 / 0.3760 / 8.5	<	0.0 / 0.059 / 0.001	NON-DETECTED	0.00040	0.00027	<	0.00008	<	0.74934
787416	P0073-AS02-031914	FIELD SAMPLE DIRECT	1	3709.8 / 100 / 7.0	40 / 0.3760 / 4.0	<	0.0 / 0.125 / 0.001	NON-DETECTED	0.00040	0.00026	<	0.00012	<	1.11465
787417	P0073-AS03-031914	FIELD SAMPLE DIRECT	1	3632.2 / 100 / 6.0	40 / 0.3760 / 5.5	<	0.0 / 0.091 / 0.001	NON-DETECTED	0.00040	0.00027	<	0.00007	<	0.69485

Rev. 1: The report format changed, which may have impact on the reporting or detection limit reported previously. Please use this report to replace all versions previously received.

Note: Reported Sensitivity is calculated based on the actual number of asbestos fibers detected in TEM. Asb. (asbestos) Fiber Ratio is the ratio of the number of asbestos over the total number of fibers detected in TEM.

Analyst(s): JX

Reviewed By:

*NOTE:

1. LA: Libby Amphibole; AC: Actinolite; TR: Tremolite; CH: Chrysotile; CR: Crocidolite; AN: Anthophyllite; AM: Amosite
2. Indirect sample prep is based on ISO 13794:1999(E): Ambient air-Determination of asbestos fibers-Indirect-transfer transmission electron microscopy method. Refer to sample prep sheets for dilution details.
3. Some samples may be analyzed and/or prepped by multiple instruments, analysts, or on multiple dates. Please refer to the sample prep sheets and analytical benchsheets for details.
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E.P.A. LAB ID# DE004

A.I.H.A./NLLAP #100448

NVLAP #101032

SAMPLE SUMMARY REPORT

Revision#: 1

COC#: 2-032414-131848-0045

Batch # : 5272 Test Method: NIOSH 7402 - Asbestos by TEM Prep Method: NIOSH 7402 - Asbestos by TEM

General Information

Instruments: Scope Model: TEM 100CX II Magnification: 19,000 Operational Condition: Normal
Analyzer: Xevox Det. Area: 10mm Det. Window: 0.008 mm

BLI Project #: L6888G

Project Name: WESTON SOLUTIONS,INC.-RST 2 RFP NO. 279A Sampling Location: 0029-0122

Date Sampled: 3/21/2014 Sampled by: CLIENT Date Received: 3/25/2014 Report Date: 4/7/2014

Analytical Data

Note: Results provided in this summary report do not have to egree with those obtained from the EPA NADES EDD report.

Primary Filter Area (mm^2): 385 2nd Filter Area (mm^2): N/A Media: MCE Grid Area (mm^2): 0.0094

Date Prepped: 3/25/2014 Prepped By: AY Date Analyzed: 3/26/2014 Analyzed By: AY

Sample ID and Prep Information					Analytical Data				Results		
Lab Sample Number	Field Sample Number	Sample QA Type-Prep Type	Dilution Factor	Air Volume (L) / PCM Fields / PCM Fibers	# of Grid Openings / Area Analyzed (mm^2) / Total # of TEM PCME Fibers	Total # of Asb. by TEM / Asb. Fiber Ratio / f/cc by PCM	Asbestos Mineral Type Detected	Target Sensitivity (f/cc)	Reported Sensitivity (f/cc)	Reported Air Concentration (f/cc)	Reported Filter Density (f/mm^2)
787615	P0046-AS01-032114	FIELD SAMPLE DIRECT	1	3543.3 / 89 / 102.0	40 / 0.3760 / 83.5	1.0 / 0.012 / 0.016	TR	0.00040	0.00029	0.00019	1.74845
787616	P0046-AS02-032114	FIELD SAMPLE DIRECT	1	3736.6 / 100 / 98.0	40 / 0.3760 / 54.5	0.0 / < 0.009 / 0.013	NON-DETECTED	0.00040	0.00027	< 0.00012	< 1.14533
787617	P0046-AS03-032114	FIELD SAMPLE DIRECT	1	3916.5 / 100 / 78.5	40 / 0.3760 / 74.0	0.0 / < 0.007 / 0.010	NON-DETECTED	0.00040	0.00026	< 0.00007	< 0.67568

Rev. 1: The report format changed, which may have impact on the reporting or detection limit reported previously. Please use this report to replace all versions previously received.

Note: Reported Sensitivity is calculated based on the actual number of asbestos fibers detected in TEM. Asb. (asbestos) Fiber Ratio is the ratio of the number of asbestos over the total number of fibers detected in TEM.

Analyst(s): AY

Reviewed By:

*NOTE:

1. LA: Libby Amphibole; AC: Actinolite; TR: Tremolite; CH: Chrysotile; CR: Crocidolite; AN: Anthophyllite; AM: Amosite
2. Indirect sample prep is based on ISO 13794:1999(E): Ambient air-Determination of asbestos fibers-Indirect-transfer transmission electron microscopy method. Refer to sample prep sheets for dilution details.
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E.P.A. LAB ID# DE004

A.I.H.A./NLLAP #100448

NVLAP #101032

SAMPLE SUMMARY REPORT

Revision#: 1

COC#: 2-032514-124456-0048

Batch # : 5273 Test Method: NIOSH 7402 - Asbestos by TEM Prep Method: NIOSH 7402 - Asbestos by TEM

General Information

Instruments: Scope Model: JEM1200CXII Magnification: 19,000 Operational Condition: Normal
Analyzer: Kevex Det. Area: 10 mm² Det. Window: 0.008 mm

BLI Project #: L6888G

Project Name: WESTON SOLUTIONS,INC.-RST 2 RFP NO. 279A Sampling Location: 0029-0122

Date Sampled: 3/24/2014 Sampled by: CLIENT Date Received: 3/26/2014 Report Date: 4/7/2014

Analytical Data

Note: Results provided in this summary report do not have to agree with those obtained from the EPA NADES EDD report.

Primary Filter Area (mm^2): 385 2nd Filter Area (mm^2): N/A Media: MCE Grid Area (mm^2): 0.0094

Date Prepped: 3/26/2014 Prepped By: JX Date Analyzed: 3/26/2014 Analyzed By: JX

Sample ID and Prep Information				Analytical Data					Results		
Lab Sample Number	Field Sample Number	Sample QA Type-Prep Type	Dilution Factor	Air Volume (L) / PCM Fields / PCM Fibers	# of Grid Openings / Area Analyzed (mm^2) / Total # of TEM PCME Fibers	Total # of Asb. by TEM / Asb. Fiber Ratio / f/cc by PCM	Asbestos Mineral Type Detected	Target Sensitivity (f/cc)	Reported Sensitivity (f/cc)	Reported Air Concentration (f/cc)	Reported Filter Density (f/mm^2)
787696	P0004-AS01-032414	FIELD SAMPLE DIRECT	1	3717 / 100 / 28.0	40 / 0.3760 / 17.0	1.0 / 0.059 / 0.004	CH	0.00040	0.00028	0.00022	2.09816
787697	P0004-AS02-032414	FIELD SAMPLE DIRECT	1	3717 / 100 / 28.0	40 / 0.3760 / 10.5	0.0 / < 0.048 / 0.004	NON-DETECTED	0.00040	0.00028	< 0.00018	< 1.69851
787698	P0004-AS03-032414	FIELD SAMPLE DIRECT	1	3738.6 / 100 / 19.0	40 / 0.3760 / 10.5	0.0 / < 0.048 / 0.002	NON-DETECTED	0.00040	0.00027	< 0.00012	< 1.15256
787699	P0079-AS01-032414	FIELD SAMPLE DIRECT	1	3693.6 / 100 / 12.0	40 / 0.3760 / 7.0	0.0 / < 0.071 / 0.002	NON-DETECTED	0.00040	0.00028	< 0.00011	< 1.09190
787700	P0079-AS02-032414	FIELD SAMPLE DIRECT	1	3655.8 / 100 / 16.0	40 / 0.3760 / 6.0	0.0 / < 0.083 / 0.002	NON-DETECTED	0.00040	0.00028	< 0.00018	< 1.69851
787701	P0079-AS03-032414	FIELD SAMPLE DIRECT	1	3648.6 / 100 / 24.0	40 / 0.3760 / 12.0	0.0 / < 0.042 / 0.003	NON-DETECTED	0.00040	0.00028	< 0.00013	< 1.27389

Rev. 1: The report format changed, which may have impact on the reporting or detection limit reported previously. Please use this report to replace all versions previously received.

Note: Reported Sensitivity is calculated based on the actual number of asbestos fibers detected in TEM. Asb. (asbestos) Fiber Ratio is the ratio of the number of asbestos over the total number of fibers detected in TEM.

Analyst(s): JX

Reviewed By:

*NOTE:

1. LA: Libby Amphibole; AC: Actinolite; TR: Tremolite; CH: Chrysotile; CR: Crocidolite; AN: Anthophyllite; AM: Amosite
2. Indirect sample prep is based on ISO 13794:1999(E): Ambient air-Determination of asbestos fibers-Indirect-transfer transmission electron microscopy method. Refer to sample prep sheets for dilution details.
3. Some samples may be analyzed and/or prepped by multiple instruments, analysts, or on multiple dates. Please refer to the sample prep sheets and analytical benchsheets for details.
4. This summary report may not included all information submitted by clients. Furthermore, Batta will not be responsible for results that are due to improper sample collection and inaccurate data provided by clients.
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Web: www.battaenv.com E-mail: battaenv@battaenv.com

E.P.A. LAB ID# DE004

A.I.H.A./NLLAP #100448

NVLAP #101032

SAMPLE SUMMARY REPORT

Revision#: 1

COC#: 2-032614-130037-0050

Batch # : 5270 Test Method: NIOSH 7402 - Asbestos by TEM Prep Method: NIOSH 7402 - Asbestos by TEM

General Information

Instruments: Scope Model: JEM-1000XII Magnification: 19,000 Operational Condition: Normal
Analyzer: Kevex Det. Area: 10 mm Det. Window: 0.008 mm

BLI Project #: L6888G

Project Name: WESTON SOLUTIONS,INC.-RST 2 RFP NO. 279A Sampling Location: 0029-0122

Date Sampled: 3/25/2014 Sampled by: CLIENT Date Received: 3/27/2014 Report Date: 4/7/2014

Analytical Data

Note: Results provided in this summary report do not have to agree with those obtained from the EPA NADES EDD report.

Primary Filter Area (mm^2): 385 2nd Filter Area (mm^2): N/A Media: MCE Grid Area (mm^2): 0.0094

Date Prepped: 3/27/2014 Prepped By: JX Date Analyzed: 3/28/2014 Analyzed By: JX

Sample ID and Prep Information					Analytical Data				Results		
Lab Sample Number	Field Sample Number	Sample QA Type-Prep Type	Dilution Factor	Air Volume (L) / PCM Fields / PCM Fibers	# of Grid Openings / Area Analyzed (mm^2) / Total # of TEM PCME Fibers	Total # of Asb. by TEM / Asb. Fiber Ratio / f/cc by PCM	Asbestos Mineral Type Detected	Target Sensitivity (f/cc)	Reported Sensitivity (f/cc)	Reported Air Concentration (f/cc)	Reported Filter Density (f/mm^2)
787749	FB-A-032514	FIELD SAMPLE DIRECT	1	0 / 100 / 3.0	40 / 0.3760 / 0.0	0.0 / < 0.091 / N/A	NON-DETECTED	0.00040	N/A	N/A	< 0.63694
787750	P0005-AS01-032514	FIELD SAMPLE DIRECT	1	3722.4 / 100 / 15.0	40 / 0.3760 / 9.0	2.0 / 0.222 / 0.002	CH	0.00040	0.00028	0.00044	4.24628
787751	P0005-AS02-032514	FIELD SAMPLE DIRECT	1	3803.4 / 100 / 38.0	40 / 0.3760 / 15.5	1.0 / 0.065 / 0.005	CH	0.00040	0.00027	0.00032	3.12307
787752	PD005-AS03-032514	FIELD SAMPLE DIRECT	1	3664.8 / 100 / 12.0	40 / 0.3760 / 18.0	4.0 / 0.222 / 0.002	CH	0.00040	0.00028	0.00036	3.39703
787753	P0049-AS01-032514	FIELD SAMPLE		3610.8 / 0 / 0.0	0.0000	N/A	DVERLDAD	0.00040	NOT ANALYZED	NOT ANALYZED	NOT ANALYZED
787754	P0049-AS02-032514	FIELD SAMPLE		3661.2 / 0 / 0.0	0.0000	N/A	OVERLOAD	0.00040	NOT ANALYZED	NOT ANALYZED	NOT ANALYZED
787755	P0049-AS03-032514	FIELD SAMPLE DIRECT	1	3848.4 / 100 / 68.0	40 / 0.3760 / 20.0	1.0 / 0.050 / 0.009	AN	0.00040	0.00027	0.00043	4.33121

Rev. 1: The report format changed, which may have impact on the reporting or detection limit reported previously. Please use this report to replace all versions previously received.

Note: Reported sensitivity is calculated based on the actual number of asbestos fibers detected in TEM. Asb. (asbestos) Fiber Ratio is the ratio of the number of asbestos over the total number of fibers detected in TEM.

Analyst(s): JX

Reviewed By:

*NOTE:

1. LA: Libby Amphibole; AC: Actinolite; TR: Tremolite; CH: Chrysotile; CR: Crocidolite; AN: Anthophyllite; AM: Amosite
2. Indirect sample prep is based on ISO 13794:1999(E): Ambient air-Determination of asbestos fibers-Indirect-transfer transmission electron microscopy method. Refer to sample prep sheets for dilution details.
3. Some samples may be analyzed and/or preppeal by multiple instruments, analysts, or on multiple dates. Please refer to the sample prep sheets and analytical benchsheets for details.
4. This summary report may not included all information submitted by clients. Furthermore, Batta will not be responsible for results that are due to improper sample collection and inaccurate data provided by clients.
5. This summary report precedes all electronic versions of any kinds, including copies in full or in part.
6. This summary report does not constitute endorsement by NVLAP and/or any other U.S. government agencies. The test data pertain only to the items tested. No assumptions or conclusions should be made to materials or samples not analyzed.

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E.P.A. LAB ID# DE004

A.I.H.A./NLLAP #100448

NVLAP #101032

SAMPLE SUMMARY REPORT

Revision#: 0

COC#: 2-032714-112056-0053

Batch # : 5281 Test Method: NIOSH 7402 - Asbestos by TEM Prep Method: NIOSH 7402 - Asbestos by TEM

General Information

Instruments: Scope Model: JEM 100CXII - Magnification: 19,000 Operational Condition: Normal
Analyzer: - Kevex Det Area: 10 mm² Det Window: 0.008 mm

BLI Project #: L6888G

Project Name: WESTON SOLUTIONS,INC.-RST 2 RFP NO. 279A Sampling Location: 0029-0122

Date Sampled: 3/26/2014 Sampled by: CLIENT Date Received: 3/28/2014 Report Date: 4/8/2014

Analytical Data

Note: Results provided in this summary report do not have to agree with those obtained from the EPA NAOES EDO report.

Primary Filter Area (mm²): 385 2nd Filter Area (mm²): N/A Media: MCE Grid Area (mm²): 0.0094

Date Prepped: 3/28/2014 Prepped By: JX Date Analyzed: 3/28/2014 Analyzed By: JX

Sample ID and Prep Information					Analytical Data				Results		
Lab Sample Number	Field Sample Number	Sample QA Type-Prep Type	Dilution Factor	Air Volume (L) / PCM Fields / PCM Fibers	# of Grid Openings / Area Analyzed (mm²) / Total # of TEM PCME Fibers	Total # of Asb. by TEM / Asb. Fiber Ratio / f/cc by PCM	Asbestos Mineral Type Detected	Target Sensitivity (f/cc)	Reported Sensitivity (f/cc)	Reported Air Concentration (f/cc)	Reported Filter Density (f/mm²)
787858	P0186-AS01-0326	FIELD SAMPLE		3828.8 / 0 / 0.0	0.0000	N/A	OVERLOAD	0.00040	NOT ANALYZED	NOT ANALYZED	NOT ANALYZED
787857	P0186-AS02-0326	FIELD SAMPLE		3836.3 / 0 / 0.0	0.0000	N/A	OVERLOAD	0.00040	NOT ANALYZED	NOT ANALYZED	NOT ANALYZED
787858	P0186-AS03-0326	FIELD SAMPLE		3858.8 / 0 / 0.0	0.0000	N/A	OVERLOAD	0.00040	NOT ANALYZED	NOT ANALYZED	NOT ANALYZED
787859	P0187-AS01-0326	FIELD SAMPLE		3672 / 0 / 0.0	0.0000	N/A	OVERLOAD	0.00040	NOT ANALYZED	NOT ANALYZED	NOT ANALYZED
787860	P0187-AS02-0326	FIELD SAMPLE		3650.4 / 0 / 0.0	0.0000	N/A	OVERLOAD	0.00040	NOT ANALYZED	NOT ANALYZED	NOT ANALYZED
787861	P0187-AS03-0326	FIELD SAMPLE		3715.2 / 0 / 0.0	0.0000	N/A	OVERLOAD	0.00040	NOT ANALYZED	NOT ANALYZED	NOT ANALYZED

Note: all samples were overloaded with particulates, and upgraded for TEM analysis by ISO 13794:1999(E). Refer to the ISO report package for results.

Note: Reported Sensitivity is calculated based on the actual number of asbestos fibers detected in TEM. Asb. (asbestos) Fiber Ratio is the ratio of the number of asbestos over the total number of fibers detected in TEM.

Analyst(s): JX

Reviewed By:

*NOTE:

1. LA: Libby Amphibole; AC: Actinolite; TR: Tremolite; CH: Chrysotile; CR: Crocidolite; AN: Anthophyllite; AM: Amosite
2. Indirect sample prep is based on ISO 13794:1999(E): Ambient air-Determination of asbestos fibers-Indirect-transfer transmission electron microscopy method. Refer to sample prep sheets for dilution details.
3. Some samples may be analyzed and/or prepped by multiple instruments, analysts, or on multiple dates. Please refer to the sample prep sheets and analytical benchsheets for details.
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E.P.A. LAB ID# DE004

A.I.H.A./NLLAP #100448

NVLAP #101032

SAMPLE SUMMARY REPORT

Revision#: 1

COC#: 2-032814-101327-0055

Batch # : 5282 Test Method: NIOSH 7402 - Asbestos by TEM Prep Method: NIOSH 7402 - Asbestos by TEM

General Information

Instruments: Microscope Model: JEM 100CX II Magnification: 19,000 Operational Condition: Normal
Analyzer: Kevex Det. Area: 10 mm² Det. Window: 0.006 mm

BLI Project #: L6888G

Project Name: WESTON SOLUTIONS,INC.-RST 2 RFP NO. 279A Sampling Location: 0029-0122

Date Sampled: 3/27/2014 Sampled by: CLIENT Date Received: 3/31/2014 Report Date: 4/7/2014

Analytical Data

Note: Results provided in this summary report do not have to agree with those obtained from the EPA NADES EOD report.

Primary Filter Area (mm²): 385 2nd Filter Area (mm²): N/A Media: MCE Grid Area (mm²): 0.0094

Date Prepped: 3/31/2014 Prepped By: JX Date Analyzed: 3/31/2014 Analyzed By: JX

Sample ID and Prep Information					Analytical Data				Results		
Lab Sample Number	Field Sample Number	Sample QA Type-Prep Type	Dilution Factor	Air Volume (L) / PCM Fields / PCM Fibers	# of Grid Openings / Area Analyzed (mm²) / Total # of TEM PCME Fibers	Total # of Asb. by TEM / Asb. Fiber Ratio / f/cc by PCM	Asbestos Mineral Type Detected	Target Sensitivity (f/cc)	Reported Sensitivity (f/cc)	Reported Air Concentration (f/cc)	Reported Filter Density (f/mm²)
787908	P0189-AS01-032714	FIELD SAMPLE DIRECT	1	3677.4 / 100 / 50.0	40 / 0.3760 / 7.0	1.0 / 0.143 / 0.007	AN	0.00040	0.00028	0.00095	9.09918
787909	P0189-AS02-032714	FIELD SAMPLE DIRECT	1	3803.4 / 100 / 51.0	40 / 0.3760 / 3.0	0.0 / < 0.167 / 0.007	NON-DETECTED	0.00040	0.00027	< 0.00110	< 10.82603
787910	P0189-AS03-032714	FIELD SAMPLE DIRECT	1	3639.4 / 100 / 20.0	40 / 0.3760 / 3.5	0.0 / < 0.143 / 0.003	NON-DETECTED	0.00040	0.00027	< 0.00036	< 3.63967

Rev. 1: The report format changed, which may have impact on the reporting or detection limit reported previously. Please use this report to replace all versions previously received.

Note: Reported Sensitivity is calculated based on the actual number of asbestos fibers detected in TEM. Asb. (asbestos) Fiber Ratio is the ratio of the number of asbestos over the total number of fibers detected in TEM.

Analyst(s): JX

Reviewed By:

*NOTE:

1. LA: Libby Amphibole; AC: Actinolite; TR: Tremolite; CH: Chrysotile; CR: Crocidolite; AN: Anthophyllite; AM: Amosite
2. Indirect sample prep is based on ISO 13794:1999(E): Ambient air-Determination of asbestos fibers-Indirect-transfer transmission electron microscopy method. Refer to sample prep sheets for dilution details.
3. Some samples may be analyzed and/or prepped by multiple instruments, analysts, or on multiple dates. Please refer to the sample prep sheets and analytical benchsheets for details.
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FIELD COC

USEPA
DateShipped: 3/11/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-031114-112802-0031
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
786919	P0008-AS04-031014	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/10/2014	15:15	1	MCE Cassette	None	3619.8	Liters	N	9:15:00 AM	3:15:00 PM
920	P0008-AS05-031014	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/10/2014	15:15	1	MCE Cassette	None	3724.2	Liters	N	9:15:00 AM	3:15:00 PM
921	P0008-AS06-031014	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/10/2014	15:15	1	MCE Cassette	None	3765.6	Liters	N	9:15:00 AM	3:15:00 PM
922	P0076-AS01-031014	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/10/2014	14:15	1	MCE Cassette	None	3646.8	Liters	N	8:15:00 AM	2:15:00 PM
923	P0076-AS02-031014	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/10/2014	14:15	1	MCE Cassette	None	3645	Liters	N	8:15:00 AM	2:15:00 PM
924	P0076-AS03-031014	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/10/2014	14:15	1	MCE Cassette	None	3709.8	Liters	N	8:15:00 AM	2:15:00 PM

Joel Petty

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltuions.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RST2	3/11/14 1400	Bonnie Mc BATTA LABORATORIES	3/12/14 @ 0930	

USEPA
DateShipped: 3/12/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-031214-124554-0033
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
787002	LB-A-031114	Asbestos PCM (NIDSH 7400) and ~~TEM(NIOSH 7402)~~	Air	3/11/2014	08:05	1	MCE Cassette	None		Liters	N	8:05:00 AM	8:05:00 AM
003	P0007-AS01-031114	Asbestos PCM (NIOSH 7400) and ~~TEM(NIOSH 7402)~~	Air	3/11/2014	15:00	1	MCE Cassette	None	3661.2	Liters	N	9:00:00 AM	3:00:00 PM
004	P0007-AS02-031114	Asbestos PCM (NIOSH 7400) and ~~TEM(NIOSH 7402)~~	Air	3/11/2014	15:00	1	MCE Cassette	None	3799.8	Liters	N	9:00:00 AM	3:00:00 PM
005	P0007-AS03-031114	Asbestos PCM (NIOSH 7400) and ~~TEM(NIOSH 7402)~~	Air	3/11/2014	15:00	1	MCE Cassette	None	3663	Liters	N	9:00:00 AM	3:00:00 PM
006	P0051-AS01-031114	Asbestos PCM (NIOSH 7400) and ~~TEM(NIOSH 7402)~~	Air	3/11/2014	16:15	1	MCE Cassette	None	3794.4	Liters	N	10:15:00 AM	4:15:00 PM
007	P0051-AS02-031114	Asbestos PCM (NIOSH 7400) and ~~TEM(NIOSH 7402)~~	Air	3/11/2014	16:15	1	MCE Cassette	None	3618	Liters	N	10:15:00 AM	4:15:00 PM
008	P0051-AS03-031114	Asbestos PCM (NIOSH 7400) and ~~TEM(NIOSH 7402)~~	Air	3/11/2014	16:15	1	MCE Cassette	None	3634.2	Liters	N	10:15:00 AM	4:15:00 PM

Joel Petty

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltuions.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RSTJ	3/12/14 1400	Bonnie Mu BATTA LABORATORIES	3/13/14 @ 0930	

USEPA
DateShipped: 3/13/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-031314-083644-0035
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
787070	FB-A-031214	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/12/2014	08:06	1	MCE Cassette	None		Liters	N	8:06:00 AM	8:06:00 AM
071	P0054-AS01-031214	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/12/2014	14:45	1	MCE Cassette	None	3775.69	Liters	N	8:30:00 AM	2:45:00 PM
072	P0054-AS02-031214	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/12/2014	14:45	1	MCE Cassette	None	3901.88	Liters	N	8:30:00 AM	2:45:00 PM
073	P0054-AS03-031214	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/12/2014	14:45	1	MCE Cassette	None	3853.13	Liters	N	8:30:00 AM	2:45:00 PM
074	P0055-AS01-031214	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/12/2014	15:10	1	MCE Cassette	None	3776.4	Liters	N	9:10:00 AM	3:10:00 PM
075	P0055-AS02-031214	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/12/2014	15:10	1	MCE Cassette	None	3661.2	Liters	N	9:10:00 AM	3:10:00 PM
076	P0055-AS03-031214	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/12/2014	15:10	1	MCE Cassette	None	3690	Liters	N	9:10:00 AM	3:10:00 PM

Joel Petty

Special instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltuions.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RST2	3/13/14 1430	Bonnie M. BATTA LABORATORIES	3/14/14 @ 0917	

USEPA
DateShipped: 3/14/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-031414-123018-0037
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
787210	P0065-AS01-031314	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/13/2014	15:15	1	MCE Cassette	None	3856.88	Liters	N	9:00:00 AM	3:15:00 PM
211	P0065-AS02-031314	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/13/2014	15:15	1	MCE Cassette	None	3762.38	Liters	N	9:00:00 AM	3:15:00 PM
212	P0065-AS03-031314	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/13/2014	15:15	1	MCE Cassette	None	3787.5	Liters	N	9:00:00 AM	3:15:00 PM
213	P0067B-AS01-031314	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/13/2014	16:10	1	MCE Cassette	None	3853.55	Liters	N	10:00:00 AM	4:10:00 PM
214	P0067B-AS02-031314	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/13/2014	16:10	1	MCE Cassette	None	3727.75	Liters	N	10:00:00 AM	4:10:00 PM
215	P0067B-AS03-031314	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/13/2014	16:10	1	MCE Cassette	None	3796.2	Liters	N	10:00:00 AM	4:10:00 PM

Joel Petty

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltuions.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RST2	3/14/14 1400	Bonnie Mei BATTA LABORATORIES	3/17/14 @ 1042	

USEPA
DateShipped: 3/17/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-031714-132757-0039
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
7872-40	P0056A-AS01-031514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/15/2014	15:00	1	MCE Cassette	None	3814.2	Liters	N	9:00:00 AM	3:00:00 PM
241	P0056A-AS02-031514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/15/2014	15:00	1	MCE Cassette	None	3640.14	Liters	N	9:00:00 AM	3:00:00 PM
242	P0056A-AS03-031514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/15/2014	15:00	1	MCE Cassette	None	3639.6	Liters	N	9:00:00 AM	3:00:00 PM
243	P0056B-AS01-031414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/14/2014	12:00	1	MCE Cassette	None	3675.6	Liters	N	6:00:00 AM	12:00:00 PM
244	P0056B-AS02-031414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/14/2014	12:00	1	MCE Cassette	None	3751.2	Liters	N	6:00:00 AM	12:00:00 PM
245	P0056B-AS03-031414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/14/2014	12:00	1	MCE Cassette	None	3825	Liters	N	6:00:00 AM	12:00:00 PM
246	P0067A-AS01-031414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/14/2014	12:40	1	MCE Cassette	None	3718.8	Liters	N	6:40:00 AM	12:40:00 PM
247	P0067A-AS02-031414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/14/2014	12:40	1	MCE Cassette	None	3704.4	Liters	N	6:40:00 AM	12:40:00 PM
248	P0067A-AS03-031414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/14/2014	12:40	1	MCE Cassette	None	3727.8	Liters	N	6:40:00 AM	12:40:00 PM
249	P0074-AS01-031514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/15/2014	14:00	1	MCE Cassette	None	3771	Liters	N	8:00:00 AM	2:00:00 PM

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltuions.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RST2	3/17/14 1530	Bonnie McBatta Batta Laboratories	3/18/14 0948	

USEPA
DateShipped: 3/17/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-031714-132757-0039
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
787250	P0074-AS02-031514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/15/2014	14:00	1	MCE Cassette	None	3691.8	Liters	N	8:00:00 AM	2:00:00 PM
↓ 29	P0074-AS03-031514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/15/2014	14:00	1	MCE Cassette	None	3807	Liters	N	8:00:00 AM	2:00:00 PM

Joel Petty

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltulons.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RST2	3/17/14 1530	Bonni Mai Batta Laboratories	3/18/14 @ 0943	

USEPA
DateShipped: 3/19/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-031914-111710-0041
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
787313	FB-A-031814	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/18/2014	07:15	1	MCE Cassette	None		Liters	N	7:15:00 AM	7:15:00 AM
314	P0068-AS01-031814	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/18/2014	15:10	1	MCE Cassette	None	3611.7	Liters	N	9:10:00 AM	3:10:00 PM
315	P0068-AS02-031814	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/18/2014	15:10	1	MCE Cassette	None	3882.6	Liters	N	9:10:00 AM	3:10:00 PM
316	P0068-AS03-031814	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/18/2014	15:10	1	MCE Cassette	None	3805.2	Liters	N	9:10:00 AM	3:10:00 PM
317	P0077-AS01-031814	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/18/2014	14:30	1	MCE Cassette	None	4018.95	Liters	N	8:00:00 AM	2:30:00 PM
318	P0077-AS02-031814	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/18/2014	14:30	1	MCE Cassette	None	4024.8	Liters	N	8:00:00 AM	2:30:00 PM
319	P0077-AS03-031814	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/18/2014	14:30	1	MCE Cassette	None	4017	Liters	N	8:00:00 AM	2:30:00 PM

Joel Petty

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltulons.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RST2	3/19/14 1500	Bonnie Mei BATTA LABORATORIES	3/20/14 @ 0948	

USEPA
DateShipped: 3/20/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-032014-111142-0043
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
78745	P0073-AS01-031914	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/19/2014	14:00	1	MCE Cassette	None	3769.2	Liters	N	8:00:00 AM	2:00:00 PM
46	P0073-AS02-031914	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/19/2014	14:00	1	MCE Cassette	None	3709.8	Liters	N	8:00:00 AM	2:00:00 PM
47	P0073-AS03-031914	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/19/2014	14:00	1	MCE Cassette	None	3832.2	Liters	N	8:00:00 AM	2:00:00 PM

Joel Petty

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltuions.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RST2	3/20/14 1400	Bonnie Mei BATTA LABORATORIES	3/21/14 @ 0940	

USEPA
DateShipped: 3/24/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-032414-131848-0045
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
78605	P0046-AS01-032114	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/21/2014	15:00	1	MCE Cassette	None	3543.31	Liters	N	8:50:00 AM	3:00:00 PM
606	P0046-AS02-032114	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/21/2014	15:00	1	MCE Cassette	None	3736.63	Liters	N	8:50:00 AM	3:00:00 PM
607	P0046-AS03-032114	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/21/2014	15:00	1	MCE Cassette	None	3916.45	Liters	N	8:50:00 AM	3:00:00 PM

Joel Petty

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltuions.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RST2	3/24/14 1430	Bonnie Mai BATTA LABORATORIES	3/25/14 @ 0900	

USEPA
DateShipped: 3/25/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-032514-124456-0048
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
78696	P0004-AS01-032414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/24/2014	15:50	1	MCE Cassette	None	3717	Liters	N	9:50:00 AM	3:50:00 PM
697	P0004-AS02-032414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/24/2014	15:50	1	MCE Cassette	None	3717	Liters	N	9:50:00 AM	3:50:00 PM
698	P0004-AS03-032414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/24/2014	15:50	1	MCE Cassette	None	3738.6	Liters	N	9:50:00 AM	3:50:00 PM
699	P0079-AS01-032412	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/24/2014	14:30	1	MCE Cassette	None	3693.6	Liters	N	8:30:00 AM	2:30:00 PM
700	P0079-AS02-032414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/24/2014	14:30	1	MCE Cassette	None	3655.8	Liters	N	8:30:00 AM	2:30:00 PM
701	P0079-AS03-032414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/24/2014	14:30	1	MCE Cassette	None	3648.6	Liters	N	8:30:00 AM	2:30:00 PM

Joel Petty

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltuions.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RST2	3/25/14 1330	Bonnie Mi Batta Laboratories	3/26/14@0930	

USEPA
DateShipped: 3/26/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-032614-130037-0050
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
187749	FB-A-032514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/25/2014	08:15	1	MCE Cassette	None		Liters	N	7:15:00 AM	7:15:00 AM
750	P0005-AS01-032514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/25/2014	15:00	1	MCE Cassette	None	3722.4	Liters	N	9:00:00 AM	3:00:00 PM
751	P0005-AS02-032514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/25/2014	15:00	1	MCE Cassette	None	3803.4	Liters	N	9:00:00 AM	3:00:00 PM
752	P0005-AS03-032514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/25/2014	15:00	1	MCE Cassette	None	3664.8	Liters	N	9:00:00 AM	3:00:00 PM
753	P0049-AS01-032514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/25/2014	16:00	1	MCE Cassette	None	3610.8	Liters	N	10:00:00 AM	4:00:00 PM
754	P0049-AS02-032514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/25/2014	16:00	1	MCE Cassette	None	3661.2	Liters	N	10:00:00 AM	4:00:00 PM
755	P0049-AS03-032514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/25/2014	16:00	1	MCE Cassette	None	3848.4	Liters	N	10:00:00 AM	4:00:00 PM

Joel Petty

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltuions.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RSTJ	3/26/14 1400	Bonnie Mei BATTA LABORATORIES	3/27/14 @1000	

USEPA
DateShipped: 3/27/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-032714-112056-0053
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
857856	P0186-AS01-032614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/26/2014	15:15	1	MCE Cassette	None	3826.88	Liters	N	9:00:00 AM	3:15:00 PM
857	P0186-AS02-032614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/26/2014	15:15	1	MCE Cassette	None	3836.25	Liters	N	9:00:00 AM	3:15:00 PM
858	P0186-AS03-032614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/26/2014	15:15	1	MCE Cassette	None	3856.88	Liters	N	9:00:00 AM	3:15:00 PM
859	P0187-AS01-032614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/26/2014	16:00	1	MCE Cassette	None	3670.38	Liters	N	10:00:00 AM	4:00:00 PM
860	P0187-AS02-032614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/26/2014	16:00	1	MCE Cassette	None	3650.04	Liters	N	10:00:00 AM	4:00:00 PM
861	P0187-AS03-032614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/26/2014	16:00	1	MCE Cassette	None	3713.4	Liters	N	10:00:00 AM	4:00:00 PM

Joel Petty

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltuions.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RSTJ	3/27/14 1330	Bonnie Mei BATTA LABORATORIES	3/28/14@1026	

USEPA
DateShipped: 3/28/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-032814-101327-0055
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
78908	P0189-AS01-032714	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/27/2014	16:00	1	MCE Cassette	None	3677.4	Liters	N	10:00:00 AM	4:00:00 PM
909	P0189-AS02-032714	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/27/2014	16:00	1	MCE Cassette	None	3803.4	Liters	N	10:00:00 AM	4:00:00 PM
910	P0189-AS03-032714	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/27/2014	16:00	1	MCE Cassette	None	3839.4	Liters	N	10:00:00 AM	4:00:00 PM

Joel Petty

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltuions.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RST 2	3/28/14 1130	Bonnie Mia Batta Laboratories	3/31/14 @ 1025	

RFP# 279A DATA PACKAGE: TEM ANALYSIS BY NIOSH 7402 SITE: 0029-0122 BATT LABORATORIES, INC.

MISCELLANEOUS

(Revised TEM 7402 Reports for RFP 279)

COC#:
2-030514-142736-0021
2-030614-131636-0023
2-030714-125911-0026
2-031014-111810-0028

USEPA
DateShipped: 3/5/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-030514-142736-0021
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
786565	FB-A-030414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/4/2014	08:14	1	MCE Cassette	None		Liters	N	8:14:00 AM	
566	LB-A-030414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/4/2014	08:13	1	MCE Cassette	None		Liters	N	8:13:00 AM	
567	P0006-AS01-030414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/4/2014	16:00	1	MCE Cassette	None	3646.8	Liters	N	10:00:00 AM	4:00:00 PM
568	P0006-AS02-030414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/4/2014	16:00	1	MCE Cassette	None	3634.2	Liters	N	10:00:00 AM	4:00:00 PM
569	P0006-AS03-030414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/4/2014	16:00	1	MCE Cassette	None	3632.4	Liters	N	10:00:00 AM	4:00:00 PM
570	P0047-AS01-030414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/4/2014	17:15	1	MCE Cassette	None	3639.6	Liters	N	11:15:00 AM	5:15:00 PM
571	P0047-AS02-030414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/4/2014	17:15	1	MCE Cassette	None	3598.4	Liters	N	11:15:00 AM	5:15:00 PM
572	P0047-AS03-030414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/4/2014	17:15	1	MCE Cassette	None	3652.2	Liters	N	11:15:00 AM	5:15:00 PM

Joel Petty

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltuions.com

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RSTJ	3/5/14 1600	Bonnie Mei BATTA LABORATORIES	3/6/14 0955	

USEPA
DateShipped: 3/6/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-030614-131636-0023
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
78584	P0050-AS01-030514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/5/2014	16:30	1	MCE Cassette	None	3657.6	Liters	N	10:30:00 AM	4:30:00 PM
585	P0050-AS02-030514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/5/2014	16:30	1	MCE Cassette	None	3753	Liters	N	10:30:00 AM	4:30:00 PM
586	P0050-AS03-030514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/5/2014	16:30	1	MCE Cassette	None	3778.2	Liters	N	10:30:00 AM	4:30:00 PM

Joel Petty

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltuions.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RSTJ	3/6/14 1430	Bonnie Mc BATTA LABORATORIES	3/7/14 0948	

USEPA
DateShipped: 3/7/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-030714-125911-0026
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

TEM 7402

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
786629	P0009-AS01-030614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/6/2014	15:10	1	MCE Cassette	None	3805.45	Liters	N	9:00:00 AM	3:10:00 PM
30	P0009-AS02-030614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/6/2014	15:10	1	MCE Cassette	None	3748.1	Liters	N	9:00:00 AM	3:10:00 PM
31	P0009-AS03-030614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/6/2014	15:10	1	MCE Cassette	None	3783.25	Liters	N	9:00:00 AM	3:10:00 PM
32	P0069-AS01-030614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/6/2014	16:45	1	MCE Cassette	None	4024.8	Liters	N	10:15:00 AM	4:45:00 PM
33	P0069-AS02-030614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/6/2014	16:45	1	MCE Cassette	None	3927.3	Liters	N	10:15:00 AM	4:45:00 PM
34	P0069-AS03-030614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/6/2014	16:45	1	MCE Cassette	None	3896.1	Liters	N	10:15:00 AM	4:45:00 PM

Joel Petty

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltuions.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RST2	3/7/14 1400			
			Bo Li	03/08/14 16:00	

USEPA
DateShipped: 3/10/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-031014-111810-0028
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
786873	FB-A-030814	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/8/2014	08:10	1	MCE Cassette	None		Liters	N	8:10:00 AM	8:10:00 AM
874	P0008-AS01-030814	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/8/2014	14:30	1	MCE Cassette	None	3686.4	Liters	N	8:30:00 AM	2:30:00 PM
875	P0008-AS02-030814	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/8/2014	14:30	1	MCE Cassette	None	3636	Liters	N	8:30:00 AM	2:30:00 PM
876	P0008-AS03-030814	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/8/2014	14:30	1	MCE Cassette	None	3688.2	Liters	N	8:30:00 AM	2:30:00 PM
877	P0057-AS01-030714	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/7/2014	15:00	1	MCE Cassette	None	3650.4	Liters	N	9:00:00 AM	3:00:00 PM
878	P0057-AS02-030714	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/7/2014	15:00	1	MCE Cassette	None	3733.2	Liters	N	9:00:00 AM	3:00:00 PM
879	P0057-AS03-030714	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/7/2014	15:00	1	MCE Cassette	None	3697.2	Liters	N	9:00:00 AM	3:00:00 PM
880	P0058-AS01-030714	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/7/2014	16:15	1	MCE Cassette	None	3686.4	Liters	N	10:15:00 AM	4:15:00 PM
881	P0058-AS02-030714	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/7/2014	16:15	1	MCE Cassette	None	3636	Liters	N	10:15:00 AM	4:15:00 PM
882	P0058-AS03-030714	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/7/2014	16:15	1	MCE Cassette	None	3602.88	Liters	N	10:15:00 AM	4:15:00 PM
Joel Petty													

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltuions.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RST2	3/10/14 1230	Bonnie Mae Batta Laboratories	3/11/14 @ 1010	

Analytical Method, Counting Rules and Data Validation

Analytical Method: NIOSH 7402 – Asbestos by TEM, Issue 2, August 15, 1994.

Calculation of Analytical Sensitivity (S) Expressed in Fibers/cc or Structures/cc:

S = 1 Fiber or Structure x Total Effective Filter Area / (No. of Grids Openings Analyzed x Averaged Grid Opening Area x Air Volume in cc).

Example: For an air cassettes of 385 mm^2 effective area with volume of 3596.4 liters (field sample P0047-AS02-030414), the analytical sensitivity after 40 grid openings were analyzed for each opening that has an average area of 0.0094 mm^2 is:

S = 1 fiber x 385 mm^2 / (40 x 0.0094 mm^2 x 3596.4 liter x 1000 cc/liter)
= 0.00028 fibers/cc or 0.00028 f/cc. The SOW requires 0.0004 f/cc be met.

Calculation of Fiber Density (D) Expressed in Fibers/ mm^2 or Structures/ mm^2:

D = No. of Asbestos Fibers or Structures / (No. of Grids Openings Analyzed x Averaged Grid Opening Area)

Example: If only one (1) fiber was detected during the above analysis, the fiber density on the filter is:

D = 1 Fiber or Structure / (40 x 0.0094 mm^2) = 2.65957 f/mm^2.

Calculation of Fiber Concentration (C) in the Air Expressed in Structures/cc:

C = (No. of Fibers or Structures Detected / Total PCME Fibers) x Fiber Concentration by PCM. PCME: PCM equivalent (fibers).

Example: For the above analysis, there was only one (1) asbestos structure detected over a total of 4 PCME fibers detected (see benchseets). The initial PCM result of this sample is 0.003 f/cc. Therefore, the air concentration by TEM is:

C =(1/4) x 0.003 f/cc = 0.00075 f/cc. Refer to PCM data package for PCM results.

Reporting Limit: the reporting limit of NIOSH 7402 is based on 0.5 fiber detected. For the above sample, the reporting limit is (0.5/4) x 0.003 f/cc, or 0.00038 f/cc. If there was not asbestos detected, the sample would be reported with the reporting limit preceded with the qualifier "<".

Bo Li

From: Bo Li
Sent: Thursday, March 06, 2014 2:23 PM
To: 'Sumbaly, Smita'
Cc: Neeraj Batta (neeraj@battaenv.com); ncbatta@battaenv.com
Subject: FW: Blow out damaged sample
Attachments: photo.JPG; ATT00001.txt

Importance: High

Hi Smita,

Please see attached photo showing the blown filter inside the cassette. This is usually an accidental damage in the field.

Regarding the overloaded filters, I suggest ISO 13794 :1999 (E) method; which is an alternative version of ISO 10312:1995 E method when an air sample is overloaded.

Neeraj or Naresh will send you a quote in a few minutes. The price will be higher compared to the NIOSH7402 method because it involves indirect prep and much more grid openings to meet your 0.0004 s/cc sensitivity.

Bo.

-----Original Message-----
From: Angela Yohn
Sent: Thursday, March 06, 2014 2:04 PM
To: Bo Li; Angela Yohn
Subject: FW: Blow out damaged sample
Importance: High

Angela R. Yohn

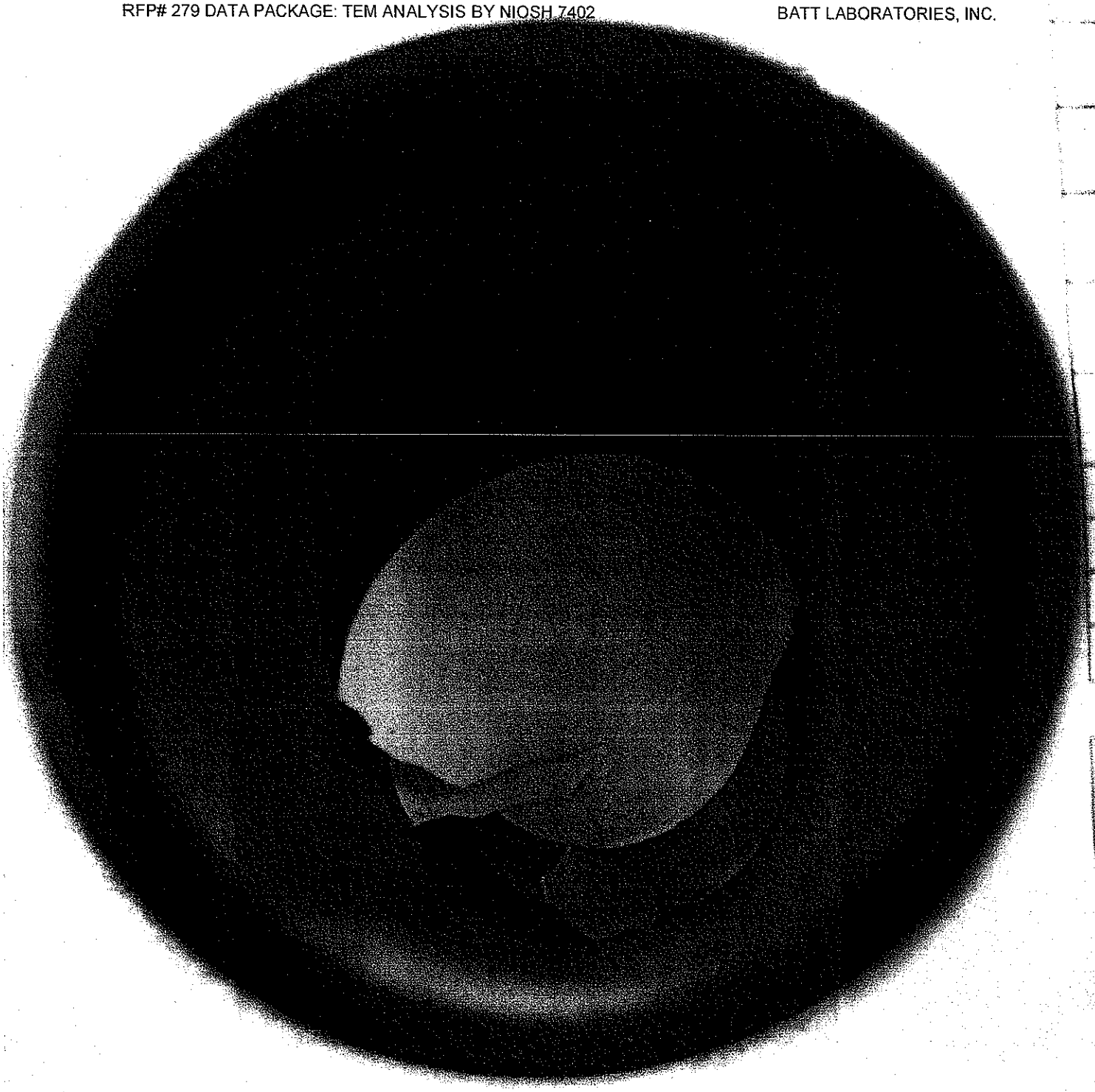
Senior Level Laboratory Analyst
Batta Laboratories
302.737.3376 x119

-----Original Message-----
From: Angela Yohn
Sent: Thursday, March 06, 2014 11:32 AM
To: Bo Li
Subject: FW: Blow out damaged sample
Importance: High

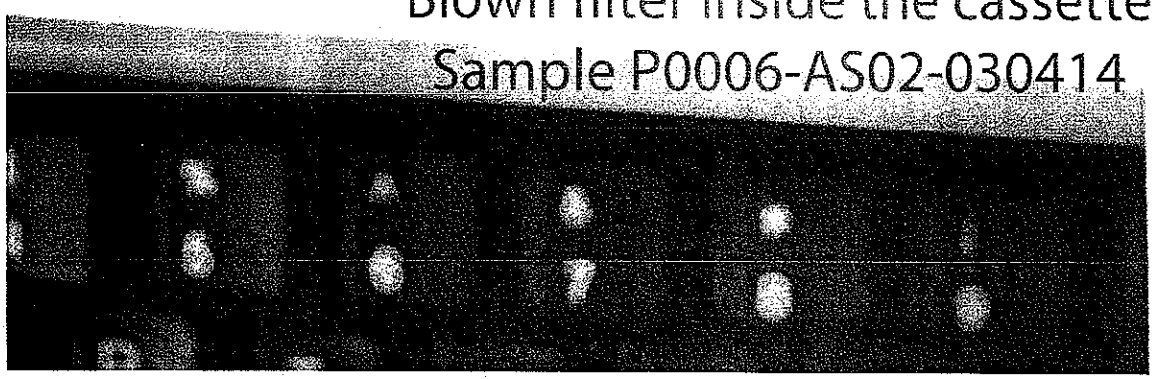
This is sample P0006-AS02-030414.

Angela R. Yohn

Senior Level Laboratory Analyst
Batta Laboratories
302.737.3376 x119



Blown filter inside the cassette
Sample P0006-AS02-030414



Nomenclatures

Note: the following abbreviations may be used in the data package depending on their context:

Chry, Chrys, CH – Chrysotile
Amph – Amphibole
AC, ACT – Actinolite
TR, Trem – Tremolite
AN, Anth – Anthophyllite
AM, Amo – Amosite
CR, Croc - Crocidolite

COMMON TERMINOLOGY AND DEFINITIONS FOR ASBESTOS ANALYSIS

Note to users: The terminology (including acronyms) listed in this section is generic and may not include all present in this data package. Reviewers are recommended to refer to a better reference if certain terminologies sought for were not included in this section.

AAR – Asbestos Analysts Registry; registry program offered through the AIHA to recognize and list analysts and laboratories who have achieved acceptable results in PCM analytical proficiency testing and laboratory QA operations.

AAT – Asbestos Analysts Testing; performance testing program for asbestos analysts who desire to be listed in the AAR.

ACCEPTANCE LIMITS - Established mathematical data quality limits for analytical method performance.

ACCURACY – The degree of agreement between an observed value and an accepted reference value. Accuracy includes a combination of precision and bias. See Precision and Bias.

ACICULAR – The shape of an extremely slender crystal with cross-sectional dimensions which are small relative to its length, i.e., needle-like.

ACTINOLITE - An amphibole silicate mineral, chemical formula $Ca_2(Mg,Fe)_5Si_8O_{22}(OH)_2$.

AHERA – Asbestos Hazard Emergency Response Act. In 1986, the Asbestos Hazard Emergency Response Act (AHERA) was signed into law as Title II of the Toxic Substance Control Act.Additionally, the Asbestos School Hazard Abatement Reauthorization Act (ASHARA), passed in 1990, requires accreditation of personnel working on asbestos activities in schools, and public and commercial buildings.

AIHA – American Industrial Hygiene Association; association responsible for establishing Proficiency Analytical Testing (PAT), Laboratory Accreditation, and Registry Programs (e.g., Asbestos Analysts Registry). The AIHA programs are now operated by AIHA Proficiency Analytical Testing Programs, LLC; AIHA Laboratory Accreditation Programs, LLC; and AIHA Registry Programs, LLC.

AMOSITE (Grunerite) - a mineral of the amphibole group of minerals with chemical formula $Fe_7Si_8O_{22}(OH)_2$; also known as brown asbestos.

AMPHIBOLE – A group of double chain silicate minerals, closely related in crystal form and composition with the chemical formula:
$(A_0 \text{ or } 1)B_2C_5T_8O_{22}(OH,F,Cl_2)$, where:

A = K, Na
B = Fe2+, Mn, Mg, Ca, Na
C = Al, Cr, Ti, Fe3+, Mg, Fe2+
T = Si, Al, Cr, Fe3+, Ti

AMPHIBOLE ASBESTOS – Amphibole in an asbestiform habit.

ANALYTICAL SAMPLE – A portion of material to be analyzed that is enclosed in a single container, received from an external source, and identified by a unique sample number. Airborne samples are collected on membrane filters and bulk/soil samples are placed in zip-lock bags.

ANALYTICAL SENSITIVITY – The smallest concentration of a substance that can be reliably measured by a given analytical method (e.g., the airborne asbestos concentration represented by one fiber or structure counted under the microscope). Analytical sensitivity is determined by the quantity of matrix collected and the proportion of the matrix examined.

ANISOTROPIC – Refers to substances that have more than one refractive index (i.e., are

birefringent), such as nonisometric crystals, oriented polymers, or strained isotropic substances.

ANTHOPHYLLITE- An amphibole mineral, magnesium iron inosilicate hydroxide, chemical formula $(Mg,Fe)_7Si_8O_{22}(OH)_2$.

ASBESTIFORM (MORPHOLOGY) – A specific type of mineral fibrosity in which the fibers and fibrils possess high tensile strength, flexibility, or long, thin fibers occurring in bundles.

ASBESTOS – The generic name used for a group of naturally occurring mineral silicate fibers of the serpentine and amphibole series, displaying similar physical characteristics although differing in composition.

ASBESTOSIS - A non-cancerous disease associated with inhalation of asbestos fibers and characterized by scarring of the air-exchange regions of the lungs.

ASBESTOS FIBER - A fiber of asbestos which meets the criteria specified for a fiber (see "fiber").

ASPECT RATIO – The ratio of the length of a fiber to its diameter, usually defined as length:width, e.g., 3:1 or 5:1 according to test methods (See ISO Rules, AHERA Rules and Libby Rules).

ASTM – American Society for Testing and Materials (Now known as ASTM International).

BECKE LINE – A band of light seen at the periphery of a specimen when the refractive indices of the specimen and the mounting medium are different; it is used to determine refractive index.

BIAS - A systematic error manifested as a consistent positive or negative deviation from the known or true value.

BINDER – With reference to a bulk sample, a component added for cohesiveness (e.g., plaster, cement, glue).

BIREFRINGENCE – The numerical difference between the maximum and minimum refractive indices of an anisotropic substance. Birefringence may be estimated, using a Michel-Levy Chart, from the interference colors observed under crossed polarizers. Interference colors are also dependent on the orientation and thickness of the grain, and therefore are used qualitatively to determine placement in one of the categories listed below:

Qualitative	Quantitative (N-n)
Weak	≤ 0.010
Moderate	0.011-0.025
Strong	0.026-0.100
Very Strong	0.101-0.200
Extreme	≥ 0.201
None	000 or Isotropic

BULK SAMPLE – A sample of building material taken for identification and quantitation of asbestos. Bulk building materials may include a wide variety of friable and non-friable materials.

BUNDLE – Asbestos structure consisting of three or more fibers having a common axis of elongation with each fiber closer than one fiber diameter.

CALIBRATION MATERIALS – Materials, such as known weight % standards, that assist in the calibration of microscopes in terms of ability to quantitate the asbestos content of bulk materials.

CAMERA LENGTH – With respect to TEM, the equivalent projection length between the specimen and its electron diffraction pattern, in the absence of lens action.

CDF – Complete Data Package File as defined in this SOW. A CDF includes the analytical sample

data, associated QC data, and all related evidentiary documentation for one Sample Set.

CERTIFIED REFERENCE MATERIAL – A reference material with one or more of the property values certified by a technically valid procedure, and accompanied by or traceable to a certificate or other documentation which is issued by a certifying body. See Reference Material.

CHRYSOTILE – The most prevalent type of asbestos also referred to as white asbestos. Chrysotile is a fibrous mineral of the serpentine group which has the nominal composition: $Mg_3Si_2O_5(OH)_4$

CLEAVAGE – The breaking of a mineral along one of its crystallographic directions.

CLEAVAGE FRAGMENTS - Mineral particles formed by comminution of minerals, especially those characterized by parallel sides and a moderate aspect ratio (usually less than 20:1).

CLUSTER – A structure in which two or more fibers or fiber bundles are randomly oriented in a connected grouping.

COLOR – The color of a particle or fiber when observed in plane polarized light.

COMPENSATOR – A device with known, fixed, or variable retardation and vibration direction used for determining the degree of retardation (hence the thickness or value of birefringence) in an anisotropic specimen. It is also used to determine the sign of elongation of elongated materials. The most common compensator is the first-order red plate (530-550 nm retardation).

CONTROL CHART – A graphical plot of test results with respect to time or sequence of measurement, together with limits within which the results are expected to lie when the system is in a state of statistical control.

CROCIDOLITE (Riebeckite) - A sodium-rich member of the amphibole group of silicate minerals, chemical formula $Na_2(Fe,Mg)_5Si_8O_{22}(OH)_2$; also known as blue asbestos.

d-SPACING – Distance between identical adjacent and parallel planes of atoms in a crystal.

DETECTION LIMIT – The smallest concentration/amount of the component of interest that can be determined by a single measurement with a stated level of confidence.

DIFFERENTIAL COUNTING - The term applied to the practice of excluding certain kinds of fibers from a fiber count because they do not appear to be asbestos.

DISPERSION STAINING (FOCAL MASKING) – An optical means of imparting apparent or virtual color to transparent substances by the use of stops in the objective back focal plane; it is used to determine refractive indices.

DUPLICATE SAMPLES - Two samples taken from and representative of the same population and carried through all steps of the sampling and analytical procedures in an identical manner. Duplicate samples are used to assess variance of the total method including sampling and analysis.

ED – Electron Diffraction; a technique used to study matter by firing electrons at a sample and observing the resulting interference pattern.

EDD – Electronic Data Deliverables.

EDXA – Energy Dispersive X-ray Analysis.

EFA -Effective Filter Area.

ELAP – The Environmental Laboratory Approval Program (ELAP) of the Wadsworth Center was established in 1984, under Section 502 of the Public Health Law and is responsible for the certification of laboratories performing environmental analyses on samples originating from New York State, thus ensuring the accuracy and reliability of these analyses. Accurate and reliable environmental analyses are a matter of vital concern, affecting the public health, safety and welfare of all NYS residents. All environmental laboratories analyzing samples from the State of New York must be certified.

ELECTRON SCATTERING POWER – Extent to which a thin layer of substance scatters impinging electrons from their original directions.

ERROR – Difference between the true and the measured value of a quantity or parameter.

EUCENTRIC – Condition in which the area of interest of an object is placed on a tilting axis, at the intersection of the electron beam with that axis, and is in the plane of focus.

EXTINCTION – The condition in which an anisotropic substance appears dark when observed between crossed polars. This occurs when the vibration directions in the specimen are parallel to the vibration directions in the polarizer and analyzer. Extinction may be complete or incomplete; common types include parallel, oblique, symmetrical, and undulose.

EXTINCTION ANGLE – For fibers, the angle between the extinction position and the position at which the fiber is parallel to the polarizer or analyzer privileged directions.

F/cc – Fibers per cubic centimeter.

F/mm2 – Fibers per square millimeter.

FIBER - A particle that is 5 μm or longer, with a length-to-width ratio of at least 3:1 for EPA Superfund Sites or 5:1 for AHERA or ISO 10312:1995(E), and with parallel or stepped sides. With reference to asbestiform morphology, a structure consisting of one or more fibrils.
FIBRIL – A single fiber of asbestos which cannot be further separated longitudinally into smaller components without losing its fibrous properties or appearance.

NOTE: A fiber bundle may exhibit diverging fibers at one or both ends.

FIBROUS STRUCTURE – Fiber, or connected grouping of fibers, with or without other particles.

FIELD – With respect to PCM analyses, the area within the graticule circle that is superimposed on the microscope image.

FIELD BLANK - An analyte-free matrix (e.g., sampling cassette, filter) carried to the sampling site, exposed to the sampling conditions and carried through all steps of the preparation and analysis. Field blanks may or may not be identified as such when delivered to the laboratory, and should be treated and reported as a routine sample.

FILTER LOT BLANK – An unopened sampling cassette with filter, or a filter from a new lot analyzed to verify that the matrix is contaminant-free.

FRIABLE – Refers to the cohesiveness of a bulk material, indicating that it may be crumbled or disaggregated by hand pressure.

FWHM – Full Width at Half Maximum; a measure of the width of a line in an emission or absorption spectrum. It is the width of the line at a point that is half the line's peak value. Used when measuring spectrum peaks in EDXA.

GRATICULE - A microscope slide or eyepiece that contains a grid of lines allowing the size of

objects seen under magnification to be measured. See Walton-Beckett Graticule.

GRAVIMETRY – Any technique in which the concentration of a component is determined by weighing. As used in this document, it refers to measurement of asbestos-containing residues after sample treatment by ashing, dissolution, etc.

GRID – An open structure on which a sample specimen is mounted to aid in its examination in a TEM.

HABIT – Characteristic crystal growth form (or combination of these forms) of a mineral, including characteristic irregularities.

HEPA FILTER – High Efficiency Particulate Air Filter.

HETEROGENEOUS – Lacking uniformity in composition and/or distribution of material; components not uniform. Does not satisfy the conditions stated for homogeneous; i.e., layered or in clumps, very coarse grained, etc.

HOMOGENEOUS – Uniform in composition and distribution of all components of a material, such that multiple subsamples taken for analysis will contain the same components in approximately the same relative concentrations.

INTER-ANALYST ANALYSIS – Quality control measure in which a field sample is analyzed/counted by two different microscopists.

INTERLABORATORY COMPARISONS - Evaluation of tests on the same or similar items by two or more laboratories.

INTERSECTION – Nonparallel touching or crossing of fibers, with the projection having an aspect ratio ≥ 5:1 (AHERA).

INTRA-ANALYST ANALYSIS - Quality control measure in which a field sample is reanalyzed/recounted by the microscopist who performed the initial analysis/count.

ISO – International Organization for Standardization.

ISOTROPIC – Refers to substances that have a single refractive index such as unstrained glass, un-oriented polymers and unstrained substances in the isometric crystal system.

IUR - Inhalation Unit Risk; the excess lifetime cancer risk estimated to result from continuous exposure to an agent at a concentration 1 pg/m^3 in air.

LABORATORY BLANK – An unused filter, obtained from a filter lot shown to be free from contamination, which is exposed while a set of sample filters are processed, and is taken through all of the preparation, analysis, and reporting steps simultaneously with the sample set.

LAMDA ZERO (A_0) – The wavelength of the dispersion staining color shown by a specimen in a medium; both the specimen and medium have the same refractive index at that wavelength.

LIMS – Laboratory Information Management System.

LOD-Limit of Detection. See Detection Limit.

MATRIX – FOR PLM: Non-asbestos, non-binder components of a bulk material. Includes such components as cellulose, fiberglass, mineral wool, mica, etc.

MATRIX - FOR TEM: Structure in which one or more fibers or fiber bundles touch, are attached to, or are partially concealed by a single particle or connected group of non-fibrous particles.

MCE – Mixed cellulose esters; one type of matrix for sample collection or sample analytical filters.

MESOTHELIOMA - A malignant tumor of the covering of the lung or the lining of the pleural and abdominal cavity often associated with exposure to asbestos.

METHOD BLANK – See Laboratory Blank.

MICHEL-LEVY SCALE OF RETARDATION COLORS – A chart plotting the relationship between birefringence, retardation, and thickness of anisotropic substances. Any one of the three variables can be determined if the other two are known.

MILLER INDEX – Set of either three or four integer numbers used to specify the orientation of a crystallographic plane in relation to the crystal axes.

MORPHOLOGY – The structure and shape of a particle. Characterization may be descriptive (e.g., platy, rod-like, acicular) or dimensional (e.g., length, diameter). See Asbestiform.

MSDS – Material Safety Data Sheet.

NADES – National Asbestos Data Entry Spreadsheet. NAM –

Non-Asbestos Mineral.

NIST - National Institute of Standards and Technology.

NONEMPTY POINT – The visual superposition of a point over any material in the slide preparation.

NVLAP – National Voluntary Laboratory Accreditation Program; program administered by NIST that accredits testing and calibration laboratories.

OUTLIER – A result that is outside the statistical control limits determined for a sample.

PC – Polycarbonate; one type of matrix for sample collection or sample analytical filters.

PCM – Phase Contrast Microscopy.

PCM-EQUIVALENT FIBER or STRUCTURE – Fiber or fibrous structure with an aspect ratio ≥ 3:1, longer than 5 μm, and a diameter greater than 0.2 μm.

PDF – Portable Document Format; a file format for electronic document exchange.

PLEOCHROISM – The change in color or hue of colored anisotropic substance when rotated relative to the vibration direction of plane polarized light.

POINT COUNTING – A technique used to determine the relative projected areas occupied by separate components in a microscope slide preparation of a sample. For asbestos analysis, this technique is used with PLM to determine the relative concentrations of asbestos minerals to non-asbestos sample components.

POLARIZATION COLORS – Interference colors displayed by anisotropic substances between two polarizers. Birefringence, thickness, and orientation of the material affect the colors and their intensity.

PLM - Polarized Light Microscopy.

PRECISION - The degree to which a set of observations or measurements of the same property, obtained under similar conditions, conform to one another. Precision is often expressed as standard deviation, variance, or range, in either absolute or relative terms.

PREPARATION BLANK – See Laboratory Blank.

PRIMARY STRUCTURE – Fibrous structure that is a separate entity in a TEM image.

PAT – Proficiency Analytical Testing; refers to multi-laboratory performance testing program(s), such as the programs operated by AIHA Proficiency Analytical Testing Programs, LLC. See Interlaboratory Comparisons.

PT SAMPLES – Proficiency Testing samples; materials prepared and distributed to multiple laboratories, and utilized to determine laboratory accuracy/bias and interlaboratory precision.

QATS – Quality Assurance Technical Support; a contract awarded and administered by the USEPA Office of Superfund Remediation and Technology Innovation (OSRTI) Analytical Services Branch (ASB) to provide QA support for EPA's Contract Laboratory Program (CLP).

QMP – Quality Management Plan; an EPA-developed tool for documenting how a laboratory plans, implements, and assesses the effectiveness of its quality assurance and quality control operations applied to environmental programs. The development, review, approval, and implementation of the QMP are components of USEPA's mandatory Quality System.

REFERENCE MATERIAL – A material or substance, one or more properties of which are sufficiently well established to be used for equipment calibration, assessment of a measurement method, or for assigning values to materials.

RI – Refractive Index (Index of Refraction); ratio of the velocity of light in a vacuum relative to the velocity of light in a medium. It is expressed as n and varies with wavelength and temperature.

REPLICATION – Procedure in electron microscopy specimen preparation in which a thin copy, or replica, of a surface is made.

ROUND ROBIN - Interlaboratory quality control program wherein three or more independent organizations exchange samples. Each organization analyzes the samples and a statistical comparison is performed on the data to access the variability of fiber-counting measurements between organizations.
Contractors analyzing samples under this SOW must participate in a minimum of two interlaboratory analytical events annually.

S/cc - Structures per cubic centimeter.

SAED – Selected Area Electron Diffraction; technique in electron microscopy in which the crystal structure of a small area of a sample is examined.

SAMPLE SET – A group of samples and associated blanks which are collected at one site or geographical area, received by the laboratory on one given day, and assigned one laboratory job number. The analytical, QC data, and evidentiary documents from a sample set comprise a Complete Data Package File (CDF).

SEM – Scanning Electron Microscopy.

SERPENTINE – A group of common rock-forming minerals having the nominal formula:

$$Mg_3Si_2O_5(OH)_4$$

Minerals from this family that are important in asbestos analysis include chrysotile, lizardite, and antigorite.

SIGN OF ELONGATION – Referring to the location of the high and low refractive indices in an elongated anisotropic substance. A specimen is described as positive when the higher refractive index is lengthwise (length slow), and as negative when the lower refractive index is lengthwise (length fast).

SOP – Standard Operating Procedure; an EPA-developed tool which provides a standardized method for documenting routine quality system management and technical activities.

SOW – Statement of Work.

SRM – Standard Reference Material; a reference material certified and distributed by the National Institute of Standards and Technology (NIST).

STRUCTURE – A microscopic fiber, fiber bundle, cluster, or matrix which may contain asbestos.

TEM – Transmission Electron Microscopy.

TREMOLITE - A member of the amphibole group of silicate minerals, chemical formula $Ca_2Mg_5Si_8O_{22}(OH)_2$.

TWINNING – Occurrence of crystals of the same species joined together at a particular mutual orientation, such that the relative orientations are related by a definite law.

UICC – Union Internationale Contre le Cancer; potential source of asbestos reference material.

UNOPENED FIBER – Large-diameter asbestos fiber bundle which has not been separated into its constituent fibrils or fibers.

VERIFIED ANALYSIS – Check of accuracy in analyzing a TEM specimen through independent counts of a single grid opening by multiple analysts.

VERMICULITE - A chemically inert, lightweight, and fire-resistant magnesium silicate material that is used for thermal and sound insulation in construction and for its absorbent properties in horticultural applications.

VISUAL ESTIMATION – An estimation of the concentration of asbestos in a sample as compared to the other sample components. Utilized in PLM analyses.

WALTON-BECKETT GRATICULE - An eyepiece graticule designed for PCM asbestos fiber counting. It consists of a circle with a projected diameter of 100 ± 2 μm (area of about 0.00785 mm^2) with a crosshair having tic-marks at 3-μm intervals in one direction and 5-μm in the orthogonal direction.

WIPE SAMPLE - A wipe sample consists of using a wipe and a wetting agent that is wiped over a specified area using a template. The wipe picks up settled dust in the template area and its analysis provides an estimate of the number of fibers per area.

ZONE-AXIS – Line or crystallographic direction through the center of a crystal which is parallel to the intersection edges of the crystal faces defining the crystal zone.

AIHA Laboratory Accreditation Programs, LLC

acknowledges that

Batta Laboratories, Inc.

Delaware Industrial Park, 6 Garfield Way, Newark, DE 19713-3540

Laboratory ID: 100448

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA-LAP), LLC accreditation to the ISO/IEC 17025:2005 international standard, *General Requirements for the Competence of Testing and Calibration Laboratories in* the following:

LABORATORY ACCREDITATION PROGRAMS

✓	**INDUSTRIAL HYGIENE**	Accreditation Expires: 11/01/2014
✓	**ENVIRONMENTAL LEAD**	Accreditation Expires: 11/01/2014
☐	**ENVIRONMENTAL MICROBIOLOGY**	Accreditation Expires:
☐	**FOOD**	Accreditation Expires:

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached **Scope of Accreditation**. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2005 and AIHA-LAP, LLC requirements. This certificate is not valid without the attached **Scope of Accreditation**. Please review the AIHA-LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

S. D. Allen Iske, PhD, CIH, CSP
Chairperson, Analytical Accreditation Board

Cheryl O. Morton

Cheryl O. Morton
Managing Director, AIHA Laboratory Accreditation Programs, LLC

Revision 12: 03/29/2012

Date Issued: 11/30/2012

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 101032-0

Batta Laboratories, Inc.

Newark, DE

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

AIRBORNE ASBESTOS FIBER ANALYSIS

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2013-07-01 through 2014-06-30

Effective dates

For the National Institute of Standards and Technology

Batta Data Package Checklist

Company:	Batta Laboratories, Inc.	**EPA ID#:**	DE 004
EPA CASE#:	RFP 279	**LAB PROJ#:**	L6888F & L6888G
EPA SDG#:	MULTIPLE	**Date Received:**	MULTIPLE
Total Units:	12	**Revision #:**	INITIAL

Data Package Type: ☐ Particle Size ☐ Moisture ☐ PLM ☐ PCM ☒ TEM

Sample Matrix: ☐ Bulk ☐ Soil ☒ Air ☐ Water

X	COC	X	Prep Sheet	See narrative	EDD
X	QA Data	X	Bench Sheet	NA	MISC.

Case Narrative:

This data package is pertinent to 13 samples received under the EPA order RFP# 279 or RFP# 279A through Weston Solutions, Inc. Date of sample receiving and sample conditions, together with sample matrix information are documented on the client provided COC(s), EPA Region 2 SDG forms and/or custody forms. These samples were upgraded from samples previously received for NIOSH 7402 analysis that were overloaded.

The method utilized for the analysis is ISO 13794:199(E): Ambient Air-Determination of Asbestos Fibres-Indirect Transfer Electron Microscopy Method. The target sensitivity of this analysis is 0.0004 s/cc; however, due to heavy particulate loading (>50% filter coverage regardless of particulate thickness) and serial dilutions, the sensitivity of some samples could not be practically met. In this case, analysis may be terminated at the 50th grid opening (GO) analyzed or the 100th structures counted (whichever comes first) based on the EPA Superfund conventions. As courtesy, for samples that have no fibers detected, lab may choose to analyze more GOs to lower the analytical sensitivity until at least one fiber is detected up to 100 GOs.

The data package contains one hardcopy report. Data CDs or DVDs that contain both hard copies and EDDs will be sent separately in a later package. This hardcopy data package is organized with sections in the following manner: EPA Region 2 DC-2 Form, Batta Check List (w/ case narratives), SDG Cover Sheet, Summary Report of Analysis, EPA Region 2 DC-1 Form, Counting Rules, Data Validation and Calculation, Reanalysis, Standard Analysis, Calibrations and Routines, and NADES Data Sheet and Report. For information on terminology and the routine TEM standard analysis, please refer to the previous data packages revived for TEM NIOSH 7402 analyses.

Please direct all technical inquiries to: Bo Li, Ph. D., Batta Laboratories, Inc., Delaware Industrial Park, 6 Garfield Way, Newark, DE 19713; or at E-mail: bo.li@battaenv.com.

Signature:		**Title:**	Manager
Print Name:	Bo Li	**Date:**	04/01/2014

SUMMARY REPORT OF ANALYSIS

BY

ISO 13794:1999(E) – Indirect Transfer TEM Method

Dedicated to a Cleaner Environment Since 1982

BATTA

BATTA LABORATORIES, INC.
A Certified MBE Company
Delaware Industrial Park - 6 Garfield Way - Newark, DE 19713-5817
(302) 737-3376 - Fax (302) 737-5764
Web: www.battaenv.com E-mail: battaenv@battaenv.com

E.P.A. LAB ID# DE004

A.I.H.A./NLLAP #100448

NVLAP #101032

SAMPLE SUMMARY REPORT

Revision#: 1

COC#: MULTIPLE

Batch # : 5250 Test Method: ISO 13794:1999(E) Prep Method: ISO 13794:1999(E)

General Information

Instruments: Scope Model: JEM 100CX II Magnification: 19,000 Operational Condition: Normal
Analyzer: Kevex Det. Area: 10 mm² Det. Window: 0.008 mm

BLI Project #: L6888F

Project Name: WESTON SOLUTIONS, INC. - RST 2 RFP 279 **Sampling Location:** PUERTO RICO

Date Sampled: MULTIPLE **Sampled by:** CLIENT **Date Received:** MULTIPLE **Report Date:** MULTIPLE

Analytical Data

Primary Filter Area (mm²): 385 **2nd Filter Area (mm²):** 346 **Media:** MCE **Grid Area (mm²):** 0.013

Date Prepped: 3/17/2014 **Prepped By:** JX **Date Analyzed:** 3/20-21/2014 **Analyzed By:** AY

Sample ID and Prep Information					Analytical Data				Results		
Lab Sample Number	Field Sample Number	Sample QA Type-Prep Type	Dilution Factor	Air Volume (L)	# of Grid Openings / Area Analyzed (mm²)	Total Number of Structures Detected	Asbestos Mineral Type Detected	Target Sensitivity (s/cc)	Reported Sensitivity (s/cc)	Reported Air Concentration (s/cc)	Reported Filter Density (s/mm²)
786567	P0006-AS01-030414	FIELD SAMPLE INDIRECT	0.25	3646.8	51 / 0.663	48	CH	0.00040	0.00057	0.02748	260.25739
786568	P0006-AS02-030414	FIELD SAMPLE	N/A	3634.2	0 / 0.000	VOID-DAMAGED FILTER	VOID-DAMAGED FILTER	0.0004	NOT ANALYZED	NOT ANALYZED	NOT ANALYZED
786569	P0006-AS03-030414	FIELD SAMPLE INDIRECT	0.25	3632.4	41 / 0.533	106	CH	0.00040	0.00071	0.07577	714.91435
786632	P0069-AS01-030614	FIELD SAMPLE INDIRECT	0.25	4024.8	96 / 1.248	17	CH, AN, AC	0.00040	0.00028	0.00468	48.96770
786633	P0069-AS02-030614	FIELD SAMPLE INDIRECT	0.25	3927.3	87 / 1.131	3	CH, AC	0.00040	0.00031	0.00093	9.53529
786634	P0069-AS03-030614	FIELD SAMPLE INDIRECT	0.25	3896.1	73 / 0.949	2	TR	0.00040	0.00037	0.00075	7.57599
786874	P0008-AS01-030814	FIELD SAMPLE INDIRECT	0.25	3686.4	76 / 0.988	10	CH, AN	0.00040	0.00038	0.00380	36.38467
786875	P0008-AS02-030814	FIELD SAMPLE INDIRECT	0.25	3636	50 / 0.650	59	CH	0.00040	0.00059	0.03455	326.29770
786876	P0008-AS03-030814	FIELD SAMPLE INDIRECT	0.25	3688.2	73 / 0.949	14	CH	0.00040	0.00040	0.00554	53.03190

Rev. 1: Combining samples under the same prep batch to one summary report. The number of G.O.s of the following samples were revised without significant impact on the final air concentration: 786567, 786569, 786633 and 786876.

Analyst(s): J. XU & A. YOHN **Reviewed By:**

*NOTE:

1. LA: Libby Amphibole; AC: Actinolite; TR: Tremolite; CH: Chrysotile; CR: Crocidolite; AN: Anthophyllite; AM: Amosite
2. Indirect sample prep is based on ISO 13794:1999(E): Ambient air-Determination of asbestos fibers-Indirect-transfer transmission electron microscopy method. Refer to sample prep sheets for dilution details.
3. Some samples may be analyzed and/or prepped by multiple instruments, analysts, or on multiple dates. Please refer to the sample prep sheets and analytical benchsheets for details.
4. This summary report may not included all information submitted by clients. Furthermore, Batta will not be responsible for results that are due to improper sample collection and inaccurate data provided by clients.
5. This summary report precedes all electronic versions of any kinds, including copies in full or in part.
6. This summary report does not constitute endorsement by NVLAP and/or any other U.S. government agencies. The test data pertain only to the items tested. No assumptions or conclusions should be made to materials or samples not analyzed.

Dedicated to a Cleaner
Environment Since 1982

BATTA

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E.P.A. LAB ID# DE004

A.I.H.A./NLLAP #100448

NVLAP #101032

SAMPLE SUMMARY REPORT

Revision#: 1

COC#: 2-031114-112802-0031

Batch # : 5254 Test Method: ISO 13794:1999(E) Prep Method: ISO 13794:1999(E)

General Information

Instruments: Scope Model: JEM 100CX II Magnification: 19,000 Operational Condition: Normal
Analyzer: Kevex Det. Area: 10 mm² Det. Window: 0.008 mm

BLI Project #: L6888F
Project Name: WESTON SOLUTIONS, INC. - RST 2 RFP NO. 279 **Sampling Location:** PUERTO RICO
Date Sampled: 3/10/2014 **Sampled by:** Client **Date Received:** 3/12/2014 **Report Date:** 3/24/2014

Analytical Data

Primary Filter Area (mm²): 385 **2nd Filter Area (mm²):** 962 **Media:** MCE **Grid Area (mm²):** 0.013
Date Prepped: 3/24/2014 **Prepped By:** AY/JX **Date Analyzed:** 3/24/2014 **Analyzed By:** AY

Sample ID and Prep Information					Analytical Data				Results		
Lab Sample Number	Field Sample Number	Sample QA Type-Prep Type	Dilution Factor	Air Volume (L)	# of Grid Openings / Area Analyzed (mm²)	Total Number of Structures Detected	Asbestos Mineral Type Detected	Target Sensitivity (s/cc)	Reported Sensitivity (s/cc)	Reported Air Concentration (s/cc)	Reported Filter Density (s/mm²)
786919	P0008-AS04-031014	FIELD SAMPLE INDIRECT	0.25	3619.8	39 / 0.507	100	CH	0.00040	0.00210	0.20967	1971.36197
786920	P0008-AS05-031014	FIELD SAMPLE INDIRECT	0.25	3724.2	15 / 0.195	100	CH	0.00040	0.00530	0.52987	5125.54113
786921	P0008-AS06-031014	FIELD SAMPLE INDIRECT	0.25	3765.5	50 / 0.650	67	CH	0.00040	0.00157	0.10534	1030.23377

Rev. 1: The number of asbestos fibers corrected on 786921; correct result is 67 (was previously 68)

Analyst(s): J. XU **Reviewed By:**

*NOTE:

1. LA: Libby Amphibole; AC: Actinolite; TR: Tremolite; CH: Chrysotile; CR: Crocidolite; AN: Anthophyllite; AM: Amosite
2. Indirect sample prep is based on ISO 13794:1999(E): Ambient air-Determination of asbestos fibers-Indirect-transfer transmission electron microscopy method. Refer to sample prep sheets for dilution details.
3. Some samples may be analyzed and/or prepped by multiple instruments, analysts, or on multiple dates. Please refer to the sample prep sheets and analytical benchsheets for details.
4. This summary report may not included all information submitted by clients. Furthermore, Batta will not be responsible for results that are due to improper sample collection and inaccurate data provided by clients.
5. This summary report precedes all electronic versions of any kinds, including copies in full or in part.
6. This summary report does not constitute endorsement by NVLAP and/or any other U.S. government agencies. The test data pertain only to the items tested. No assumptions or conclusions should be made to materials or samples not analyzed.

USEPA
DateShipped: 3/5/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-030514-142736-0021
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
786565	FB-A-030414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/4/2014	08:14	1	MCE Cassette	None		Liters	N	8:14:00 AM	
566	LB-A-030414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/4/2014	08:13	1	MCE Cassette	None		Liters	N	8:13:00 AM	
567	P0006-AS01-030414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/4/2014	16:00	1	MCE Cassette	None	3646.8	Liters	N	10:00:00 AM	4:00:00 PM
568	P0006-AS02-030414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/4/2014	16:00	1	MCE Cassette	None	3634.2	Liters	N	10:00:00 AM	4:00:00 PM
569	P0006-AS03-030414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/4/2014	16:00	1	MCE Cassette	None	3632.4	Liters	N	10:00:00 AM	4:00:00 PM
570	P0047-AS01-030414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/4/2014	17:15	1	MCE Cassette	None	3639.6	Liters	N	11:15:00 AM	5:15:00 PM
571	P0047-AS02-030414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/4/2014	17:15	1	MCE Cassette	None	3596.4	Liters	N	11:15:00 AM	5:15:00 PM
572	P0047-AS03-030414	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/4/2014	17:15	1	MCE Cassette	None	3652.2	Liters	N	11:15:00 AM	5:15:00 PM

Joel Petty

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltuions.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RSTJ	3/5/14 1600	Bonnie Mei BATTA LABORATORIES	3/6/14 @ 0955	

USEPA
DateShipped: 3/7/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-030714-125911-0026
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

TEM 7402

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
786629	P0009-AS01-030614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/6/2014	15:10	1	MCE Cassette	None	3805.45	Liters	N	9:00:00 AM	3:10:00 PM
30	P0009-AS02-030614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/6/2014	15:10	1	MCE Cassette	None	3748.1	Liters	N	9:00:00 AM	3:10:00 PM
31	P0009-AS03-030614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/6/2014	15:10	1	MCE Cassette	None	3783.25	Liters	N	9:00:00 AM	3:10:00 PM
32	P0069-AS01-030614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/6/2014	16:45	1	MCE Cassette	None	4024.8	Liters	N	10:15:00 AM	4:45:00 PM
33	P0069-AS02-030614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/6/2014	16:45	1	MCE Cassette	None	3927.3	Liters	N	10:15:00 AM	4:45:00 PM
34	P0069-AS03-030614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/6/2014	16:45	1	MCE Cassette	None	3896.1	Liters	N	10:15:00 AM	4:45:00 PM

Joel Petty

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltuions.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RSTI	3/7/14 1400			
			Bo Li	03/08/14 16:00	

USEPA
DateShipped: 3/10/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-031014-111810-0028
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
786873	FB-A-030814	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/8/2014	08:10	1	MCE Cassette	None		Liters	N	8:10:00 AM	8:10:00 AM
874	P0008-AS01-030814	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/8/2014	14:30	1	MCE Cassette	None	3686.4	Liters	N	8:30:00 AM	2:30:00 PM
875	P0008-AS02-030814	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/8/2014	14:30	1	MCE Cassette	None	3636	Liters	N	8:30:00 AM	2:30:00 PM
876	P0008-AS03-030814	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/8/2014	14:30	1	MCE Cassette	None	3688.2	Liters	N	8:30:00 AM	2:30:00 PM
877	P0057-AS01-030714	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/7/2014	15:00	1	MCE Cassette	None	3650.4	Liters	N	9:00:00 AM	3:00:00 PM
878	P0057-AS02-030714	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/7/2014	15:00	1	MCE Cassette	None	3733.2	Liters	N	9:00:00 AM	3:00:00 PM
879	P0057-AS03-030714	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/7/2014	15:00	1	MCE Cassette	None	3697.2	Liters	N	9:00:00 AM	3:00:00 PM
880	P0058-AS01-030714	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/7/2014	16:15	1	MCE Cassette	None	3686.4	Liters	N	10:15:00 AM	4:15:00 PM
881	P0058-AS02-030714	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/7/2014	16:15	1	MCE Cassette	None	3636	Liters	N	10:15:00 AM	4:15:00 PM
882	P0058-AS03-030714	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/7/2014	16:15	1	MCE Cassette	None	3602.88	Liters	N	10:15:00 AM	4:15:00 PM
Joel Petty													

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltuions.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RST2	3/10/14 1230	Bonnie Mae Batta Laboratories	3/11/14 @ 1010	

USEPA
DateShipped: 3/11/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-031114-112802-0031
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
919	P0008-AS04-031014	Asbestos PCM (NIOSH 7400) and [redacted]	Air	3/10/2014	15:15	1	MCE Cassette	None	3619.8	Liters	N	9:15:00 AM	3:15:00 PM
920	P0008-AS05-031014	Asbestos PCM (NIOSH 7400) and [redacted]	Air	3/10/2014	15:15	1	MCE Cassette	None	3724.2	Liters	N	9:15:00 AM	3:15:00 PM
921	P0008-AS06-031014	Asbestos PCM (NIOSH 7400) and [redacted]	Air	3/10/2014	15:15	1	MCE Cassette	None	3765.6	Liters	N	9:15:00 AM	3:15:00 PM
922	P0076-AS01-031014	Asbestos PCM (NIOSH 7400) and [redacted]	Air	3/10/2014	14:15	1	MCE Cassette	None	3646.8	Liters	N	8:15:00 AM	2:15:00 PM
923	P0076-AS02-031014	Asbestos PCM (NIOSH 7400) and [redacted]	Air	3/10/2014	14:15	1	MCE Cassette	None	3645	Liters	N	8:15:00 AM	2:15:00 PM
924	P0076-AS03-031014	Asbestos PCM (NIOSH 7400) and [redacted]	Air	3/10/2014	14:15	1	MCE Cassette	None	3709.8	Liters	N	8:15:00 AM	2:15:00 PM

Joel Petty

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSolutions.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RSTJ	3/11/14 1400	Bonnie Mc BATTA LABORATORIES	3/12/14 @ 0930	

Batta Data Package Checklist

Company:	Batta Laboratories, Inc.	**EPA ID#:**	DE 004
EPA CASE#:	RFP 279A	**LAB PROJ#:**	L6888G
EPA SDG#:	MULTIPLE	**Date Received:**	MULTIPLE
Total Units:	8	**Revision #:**	INITIAL

Data Package Type: ☐ Particle Size ☐ Moisture ☐ PLM ☐ PCM ☒ TEM

Sample Matrix: ☐ Bulk ☐ Soil ☒ Air ☐ Water

X	COC	X	Prep Sheet	See narrative	EDD
X	QA Data	X	Bench Sheet	NA	MISC.

Case Narrative:

This data package is pertinent to 8 samples received under the EPA order RFP# 279A through Weston Solutions, Inc. Date of sample receiving and sample conditions, together with sample matrix information are documented on the client provided COC(s), EPA Region 2 SDG forms and/or custody forms. These samples were upgraded from samples previously received for NIOSH 7402 analysis that were deemed overloaded during their initially required sample prep and analysis.

The method utilized for the analysis is ISO 13794:199(E): Ambient Air-Determination of Asbestos Fibres-Indirect Transfer Electron Microscopy Method. The target sensitivity of this analysis is 0.0004 s/cc; however, due to heavy particulate loading (>50% filter coverage regardless of particulate thickness) and serial dilutions, the sensitivity of some samples could not be practically met. In this case, analysis may be terminated at the 50th grid opening (GO) analyzed or the 100th structures counted (whichever comes first) based on the EPA Superfund conventions. As courtesy, for samples that have no fibers detected, lab may choose to analyze more GOs to lower the analytical sensitivity until at least one fiber is detected up to 100 GOs.

The data package contains one hardcopy report. Data CDs or DVDs that contain both hard copies and EDDs (in EPA Region 2 format) will be sent separately in a later package. This hardcopy data package is organized with sections in the following manner: EPA Region 2 DC-2 Form, Batta Check List (w/ case narratives), SDG Cover Sheet, Summary Report of Analysis, EPA Region 2 DC-1 Form, Lab Prep Sheet, Reanalysis and Blank Analysis, Data Validation, Calibrations and Routines, and NADES Data Sheet and Report. For information on terminology and the routine TEM standard analysis, please refer to the previous data packages revived for TEM NIOSH 7402 analyses.

Please direct all technical inquiries to: Bo Li, Ph. D., Batta Laboratories, Inc., Delaware Industrial Park, 6 Garfield Way, Newark, DE 19713; or at E-mail: bo.li@battaenv.com.

Signature:		**Title:**	Manager
Print Name:	Bo Li	**Date:**	04/10/2014

SUMMARY REPORT OF ANALYSIS

BY

ISO 13794:1999(E) – Indirect Transfer TEM Method

Dedicated to a Cleaner Environment Since 1982

BATTA

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A Certified MBE Company
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Web: www.battaenv.com E-mail: battaenv@battaenv.com

E.P.A. LAB ID# DE004

A.I.H.A./NLLAP #100448

NVLAP #101032

SAMPLE SUMMARY REPORT

Revision#: 2

COC#: 2-032614-130037-0050

Batch # : T5277 Test Method: ISO 13794: 1999 (E), Indirect prep Prep Method: ISO 13794: 1999 (E), Indirect prep

General Information

Instruments: Scope Model: JEM 100CXII Magnification: 19,000 Operational Condition: Normal
Analyzer: Kevex Det. Area: 10 mm Det. Window: 0.008 mm

BLI Project #: L6888G

Project Name: Weston Solutions Sampling Location: 0029-0122

Date Sampled: 3/25/2014 Sampled by: Client Date Received: 3/27/2014 Report Date: 4/1/2014

Analytical Data

Primary Filter Area (mm^2): 385 2nd Filter Area (mm^2): 962 Media: MCE Grid Area (mm^2): 0.0130

Date Prepped: 3/31/2014 Prepped By: JX Date Analyzed: 3/31, 4/2/2014 Analyzed By: JX & ARY

Sample ID and Prep Information					Analytical Data				Results		
Lab Sample Number	Field Sample Number	Sample QA Type-Prep Type	Dilution Factor	Air Volume (L)	# of Grid Openings / Area Analyzed (mm^2)	Total Number of Structures Detected	Asbestos Mineral Type Detected	Target Sensitivity (s/cc)	Reported Sensitivity (s/cc)	Reported Air Concentration (s/cc)	Reported Filter Density (s/mm^2)
787753	P0049-AS01-032514	Field Sample INDIRECT	0.25	3610.8	100 / 1,300	0	NON-DETECTED	0.00040	0.00082	< 0.00040	< 7.68831
787784	P0049-AS02-032514	Field Sample INDIRECT	0.25	3661.2	52 / 0.676	3	CH	0.00040	0.00155	0.00466	44.35564

REV 1: 787753: volume corrected + additional grid openings read to strengthen sensitivity; Rev 2:
Total number of structures detected for sample 787753 was corrected as non-detected.

Analyst(s): J. XU & ARY **Reviewed By:**

*NOTE:

1. LA: Libby Amphibole; AC: Actinolite; TR: Tremolite; CH: Chrysotile; CR: Crocidolite; AN: Anthophyllite; AM: Amosite
2. Indirect sample prep is based on ISO 13794:1999(E): Ambient air-Determination of asbestos fibers-Indirect-transfer transmission electron microscopy method. Refer to sample prep sheets for dilution details.
3. Some samples may be analyzed and/or prepped by multiple instruments, analysts, or on multiple dates. Please refer to the sample prep sheets and analytical benchsheets for details.
4. This summary report may not included all information submitted by clients. Furthermore, Batta will not be responsible for results that are due to improper sample collection and inaccurate data provided by clients.
5. This summary report precedes all electronic versions of any kinds, including copies in full or in part.
6. This summary report does not constitute endorsement by NVLAP and/or any other U.S. government agencies. The test date pertain only to the items tested. No assumptions or conclusions should be made to materials or samples not analyzed.

Dedicated to a Cleaner Environment Since 1982

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E.P.A. LAB ID# DE004

A.I.H.A./NLLAP #100448

NVLAP #101032

SAMPLE SUMMARY REPORT

Revision#: 2

COC#: 2-032714-112056-0053

Batch # : 5281 Test Method: ISO 13794: 1999 (E), Indirect prep Prep Method: ISO 13794: 1999 (E), Indirect prep

General Information

Instruments: Scope Model: JEM 1010 X II Magnification: 18,000 Operational Condition: Normal
Analyzer: Kevex Det. Area: 10 mm² Det. Window: 0.008 mm

BLI Project #: L6888G

Project Name: Weston Solutions **Sampling Location:** 0029-0122

Date Sampled: 3/26/2014 **Sampled by:** Client **Date Received:** 3/28/2014 **Report Date:** 4/2/2014

Analytical Data

Primary Filter Area (mm²): 385 **2nd Filter Area (mm²):** 962 **Media:** MCE **Grid Area (mm²):** 0.0130

Date Prepped: 3/28/2014 **Prepped By:** JX **Date Analyzed:** 4/1-2/2014 **Analyzed By:** JX&ARY

Sample ID and Prep Information					Analytical Data				Results		
Lab Sample Number	Field Sample Number	Sample QA Type-Prep Type	Dilution Factor	Air Volume (L)	# of Grid Openings / Area Analyzed (mm²)	Total Number of Structures Detected	Asbestos Mineral Type Detected	Target Sensitivity (s/cc)	Reported Sensitivity (s/cc)	Reported Air Concentration (s/cc)	Reported Filter Density (s/mm²)
787856	P0186-AS01-032614	Field Sample INDIRECT	0.25	3826.88	50 / 0.650	1	CH	0.00040	0.00155	0.00155	15.37662
787857	P0186-AS02-032614	Field Sample INDIRECT	0.25	3836.25	50 / 0.650	2	CH	0.00040	0.00154	0.00309	30.75325
787858	P0186-AS03-032614	Field Sample INDIRECT	0.25	3856.88	50 / 0.650	1	CH	0.00040	0.00153	0.00153	15.37662
787859	P0187-AS01-032614	Field Sample INDIRECT	0.25	3670.38	100 / 1.300	0	NON-DETECTED	0.00040	0.00081	< 0.00081	< 7.68831
787860	P0187-AS02-032614	Field Sample INDIRECT	0.25	3650.04	100 / 1.300	1	CH	0.00040	0.00081	0.00081	7.68831
787861	P0187-AS03-032614	Field Sample INDIRECT	0.25	3713.4	50 / 0.650	1	CH	0.00040	0.00159	0.00159	15.37662

REV 1: 787859 & 787860: additional grid openings read to tighten sensitivity. Rev. 2: 1 structure detected for sample 787860 and the analytical dates were revised.

Analyst(s): J. XU & ARY **Reviewed By:**

*NOTE:

1. LA: Libby Amphibole; AC: Actinolite; TR: Tremolite; CH: Chrysotile; CR: Crocidolite; AN: Anthophyllite; AM: Amosite
2. Indirect sample prep is based on ISO 13794:1999(E): Ambient air-Determination of asbestos fibers-Indirect-transfer transmission electron microscopy method. Refer to sample prep sheets for dilution details.
3. Some samples may be analyzed and/or prepped by multiple instruments, analysts, or on multiple dates. Please refer to the sample prep sheets and analytical benchsheets for details.
4. This summary report may not included all information submitted by clients. Furthermore, Batta will not be responsible for results that are due to improper sample collection and inaccurate data provided by clients.
5. This summary report precedes all electronic versions of any kinds, including copies in full or in part.
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FIELD COC

USEPA
DateShipped: 3/26/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-032614-130037-0050
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
787749	FB-A-032514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/25/2014	08:15	1	MCE Cassette	None		Liters	N	7:15:00 AM	7:15:00 AM
750	P0005-AS01-032514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/25/2014	15:00	1	MCE Cassette	None	3722.4	Liters	N	9:00:00 AM	3:00:00 PM
751	P0005-AS02-032514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/25/2014	15:00	1	MCE Cassette	None	3803.4	Liters	N	9:00:00 AM	3:00:00 PM
752	P0005-AS03-032514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/25/2014	15:00	1	MCE Cassette	None	3664.8	Liters	N	9:00:00 AM	3:00:00 PM
753	P0049-AS01-032514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/25/2014	16:00	1	MCE Cassette	None	3610.8	Liters	N	10:00:00 AM	4:00:00 PM
754	P0049-AS02-032514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/25/2014	16:00	1	MCE Cassette	None	3661.2	Liters	N	10:00:00 AM	4:00:00 PM
755	P0049-AS03-032514	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/25/2014	16:00	1	MCE Cassette	None	3848.4	Liters	N	10:00:00 AM	4:00:00 PM

Joel Petty

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltuions.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joel Petty RSTJ	3/26/14 1400	Bonnie Nix BATTA LABORATORIES	3/27/14 @1000	

Samples under lab# 787753 and 787754 were upgraded to ISO 13794 analysis due to particulate overloading

USEPA
DateShipped: 3/27/2014
RFP# 279

CHAIN OF CUSTODY RECORD
Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-032714-112056-0053
Cooler #: 1
Lab: Batta Environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Time	Stop_Time
787856	P0186-AS01-032614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/26/2014	15:15	1	MCE Cassette	None	3826.88	Liters	N	9:00:00 AM	3:15:00 PM
857	P0186-AS02-032614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/26/2014	15:15	1	MCE Cassette	None	3836.25	Liters	N	9:00:00 AM	3:15:00 PM
858	P0186-AS03-032614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/26/2014	15:15	1	MCE Cassette	None	3856.88	Liters	N	9:00:00 AM	3:15:00 PM
859	P0187-AS01-032614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/26/2014	16:00	1	MCE Cassette	None	3670.38	Liters	N	10:00:00 AM	4:00:00 PM
860	P0187-AS02-032614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/26/2014	16:00	1	MCE Cassette	None	3650.04	Liters	N	10:00:00 AM	4:00:00 PM
861	P0187-AS03-032614	Asbestos PCM (NIOSH 7400) and TEM (NIOSH 7402)	Air	3/26/2014	16:00	1	MCE Cassette	None	3713.4	Liters	N	10:00:00 AM	4:00:00 PM

Joel Petty

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSoltuions.com

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyse,	Joel Petty RSTJ	3/27/14 1330	Bonnie Mei BATTA LABORATORIES	3/28/14@1026	

Samples under lab# 787856 thru 787861 were upgraded to ISO 13794 analysis due to particulate overloading

Analytical Method, Counting Rules and Data Validation

Note: the analytical method used for this project is ISO 13794:1999(E), which is an indirect method of ISO 10312:1995(E). In order to understand the calculations involved with the indirect method, the calculations involved with the direct method must be understood and calculated first.

Analytical Method: ISO 10312:1995(E) – Determination of Asbestos Fibers-Direct Transfer Transmission Electron Microscopy Method. Additional counting rules apply (see the NADES counting rule summary and SOW that follow).

Fiber Dimension Definition: length ≥ 0.5 µm, width ≥ 5:1.

Calculation of Analytical Sensitivity (S) Expressed in Fibers/cc or Structures/cc:

S = 1 Fiber or Structure x Total Effective Filter Area / (No. of Grids Openings Analyzed x Averaged Grid Opening Area x Air Volume in cc). .....1)

Example: For an air cassette of 385 mm^2 effective area with volume of 3646.8 liters, the analytical sensitivity after 51 grid openings were analyzed with each opening that has an average area of 0.0130 mm^2 is (Field Sample P0006-AS01-030414, Lab# 786567):

S = 1 Structure x 385 mm^2 / (~~1~~ 51 x 0.0130 mm^2 x 3646.8 liter x 1000 cc/liter)
= 0.000159 structure/cc or 0.0002 s/cc

Calculation of Fiber Density (D) Expressed in Fibers/ mm^2 or Structures/ mm^2:

D = No. of Fibers or Structures / (No. of Grids Openings Analyzed x Averaged Grid Opening Area) ..... 2)

Example: If 48 structures were found during the above analysis, the fiber density on the filter is:

D = 48 Structures / (51 x 0.0130 mm^2) = 72.3982 Structures/mm^2 or 72.4 s/ mm^2.

Calculation of Fiber Concentration (C) in the Air Expressed in Structures/cc:

C = No. of Fibers or Structures Detected x Analytical Sensitivity .....3)

Example: For the above analysis, there were 48 asbestos structures detected. The air concentration is:

C = 48 x Analytical Sensitivity = 48 x 0.000159 s/cc = 0.00764 s/cc or 0.008 s/cc

Calculation of Fiber Concentration (C) in the Air Expressed in Structures/cc for the Indirect Transfer Method (i.e. ISO 13794:1999(E)):

Note: *All samples in this project were prepped and analyzed by an indirect transfer method: ISO 13794:1995(E) – Determination of asbestos fibers - indirect-transfer transmission electron microscopy method.*

If an indirect prep is involved as by ISO 13794:1999(E), the analytical sensitivity, the final air concentration and the actual fiber density are calculated by multiplying each calculated from the previous equations with a ***conversion factor***, which is calculated by the following:

Conversion Factor = (Secondary Filer Area/Primary Filter Area) / Dilution factor .....4)

For example, the conversion factor of Sample P0006-AS01-030414 (Lab# 786567) is:

Conversion Factor = (346/385)/0.25 = 3.594805 or 3.595

Therefore, for the previous example, the final analytical sensitivity, the air concentration and the filer fiber density after the correction by the above conversion factor are:

Reported Analytical Sensitivity = S (equation 1) x Conversion Factor (equation 4)
= 0.000159 x 3.5948 = 0.000572 (s/cc)

Reported Air Concentration = C (equation 3) x Conversion Factor (equation 4)
= 0.00764 x 3.5948 = 0.0275 (s/cc)

Reported Fiber Density = D (equation 2) x Conversion Factor (equation 4)
= 72.3982 x 3.5948 = 260.257 (s/ mm^2)

Please note that the results presented above may be slightly different from what were actually reported on the final report due to differences in decimal points used in the calculation.