Laboratory Data Consultants, Inc.

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Northgate Environmental Management, Inc.
1100 Quail Street Ste. 102
Newport Beach, CA 92660
ATTN: Ms. Cindy Arnold

December 16, 2010

SUBJECT: Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada, Data Validation

Dear Ms. Arnold,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on November 10, 2010. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 24495:

SDG #	Fraction
137866, 139930, 139931, 139933, 139934 140411, 141276, 137865, 138491	Asbestos

The data validation was performed under Stage 2B/4 guidelines. The analyses were validated using the following documents, as applicable to each method:

- Standard Operating Procedures (SOP) 40, Data Review/Validation, BRC 2009
- Quality Assurance Project Plan Tronox LLC Facility, Henderson Nevada, June 2009
- NDEP Guidance, May 2006
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 2004

Please feel free to contact us if you have any questions.

Sincerely,

Erlinda T. Rauto
Operations Manager/Senior Chemist

DL 11/10/10 Tracker 12/02/10 Attachment 1

EDD Stage 2B/4

LDC #24495 (Tronox LLC-Northgate, Henderson NV / Tronox PCS, Additonal Sampling)

LDC	SDG#	DATE REC'D	(3) DATE DUE	Asb. (7402/ ISO)																															
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	137866	11/11/10	12/06/10	0	1																														
B	139930	11/11/10	12/06/10	0	2																														
C	139931	11/11/10	12/06/10	0	1																														
C	139931	11/11/10	12/06/10	0	1																														
D	139933	11/11/10	12/06/10	0	2																														
E	139934	11/11/10	12/06/10	0	2																														
E	139934	11/11/10	12/06/10	0	1																														
F	140411	11/11/10	12/06/10	0	3																														
G	141276	11/11/10	12/06/10	0	3																														
G	141276	11/11/10	12/06/10	0	1																														
H	137865	11/11/10	12/06/10	0	2																														
I	138491	11/11/10	12/06/10	0	1																														
Total	T/LR			0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20

Shaded cells indicate Stage 4 validation (all other cells are Stage 2B validation). These sample counts do not include MS/MSD, and DUPs

EDD CHECKLIST

LDC #: 24495
SDG #: 137866, 139930, 139931, 139933, 139934
140411, 141276, 137865, 138491

Reviewer: JE
2nd Reviewer: BC

Tronox Northgate Henderson Worksheet

EDD Area	Yes	No	NA	Findings/Comments
I. Completeness				
Is there an EDD for the associated Tronox validation report?	X			
II. EDD Qualifier Population				
Were all qualifiers from the validation report populated into the EDD?	X			
III. EDD Lab Anomalies				
Were EDD anomalies identified?		X		
If yes, were they corrected or documented for the client?			X	See EDD_discrepancy_ form_LDC24495_121610.doc
IV. EDD Delivery				
Was the final EDD sent to the client?	X			

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Collection Date:	May 17, 2010
LDC Report Date:	December 9, 2010
Matrix:	Soil
Parameters:	Asbestos
Validation Level:	Stage 4
Laboratory:	EMS Laboratories
Sample Delivery Group (SDG):	137866

Sample Identification

SSAN5-03-0.33BPC

Introduction

This data review covers one soil sample listed on the cover sheet. The analyses were per NIOSH Method 7402/ISO for Asbestos.

This review follows the Standard Operating Procedures (SOP) 40, Data Review/Validation (BRC 2009), the Quality Assurance Project Plan Tronox LLC Facility, Henderson, Nevada (June 2009), NDEP guidance (May 2006), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

B The analytical result may be a false positive totally attributable to blank contamination. This qualifier is applicable to radiochemistry analysis only.

JB The analytical result may be biased high and partially attributable to blank contamination. This qualifier is applicable to radiochemistry analysis only.

JK The analytical result is an estimated maximum possible concentration (EMPC).

X The analytical result is not used for reporting because a more accurate and precise result is reported in its place.

J-TDS The analytical result is estimated based on failure of the Total Dissolved Solids (TDS) correctness check performed in accordance with the Standard Method 1030E.

J-CAB The analytical result is estimated based on failure of the cation-anion balance correctness check performed in accordance with Standard Method 1030E.

J-TDS & CAB The analytical result is unreliable based on the failure of the cation-anion balance and TDS correctness check performed in accordance with standard Method 1030E.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

No holding time requirement is specified for asbestos.

No cooler temperature requirement is specified for asbestos.

II. Calibration

A NIST standard reference material containing Chrysotile, Amosite, and Crocidolite asbestos was analyzed. The calibration identified the proper constituents.

III. Blanks

The blank analyses showed no asbestos contamination.

No field blanks were identified in this SDG.

IV. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

V. Sample Result Verification

All sample result verifications were acceptable.

All analytes reported below the PQL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 137866	All analytes reported below the PQL.	J (all detects)	A

The results listed on the final report were verified against the raw data worksheets. The results were transcribed correctly to the final report.

VI. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

VII. Field Duplicates

No field duplicates were identified in this SDG.

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Data Qualification Summary - SDG 137866

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
137866	SSAN5-03-0.33BPC	All analytes reported below the PQL.	J (all detects)	A	Sample result verification (sp)

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Laboratory Blank Data Qualification Summary - SDG 137866

No Sample Data Qualified in this SDG

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Field Blank Data Qualification Summary - SDG 137866

No Sample Data Qualified in this SDG

LDC #: 24495A~~8~~13

SDG #: 137866

Laboratory: EMS Laboratories

Tronox Northgate Henderson
VALIDATION COMPLETENESS WORKSHEET
Stage 4

Date: 12-7-10

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: Asbestos (NIOSH 7402/ISO Method)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 5/17/10
II.	Calibration verification	A	
III.	Blanks	A	Filter Blk
IV.	Matrix Duplicates	N	Client specified
V.	Sample result verification	A	
VI.	Overall assessment of data	A	
VII.	Field duplicates	N	
VIII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Soil

1	SSAN5-03-0.33BPC	11		21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 24495A6
SDG #: —

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: CR
2nd Reviewer: [illegible]

Method: Asbestos (EPA Method See cover)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Calibration				
Were balance checks performed as required?		✓		
Was the flow rate for the IST opening calibrated to 72 ml/min?	✓			
Was the leak check performed?			✓	
Was chrysotile beam dose sensitivity acceptable?	✓			
Was camera constant calibration acceptable?	✓			
Was crocidolite spectrum Na sensitivity acceptable?	✓			
Was Mg-Si K-alpha peak resolvability acceptable?	✓			
Were K factors acceptable?	✓			
Was detector resolution at the Mn K-alpha peak acceptable?	✓			
III. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Were 4% of unused filter lot blanks analyzed prior to sampling and < 0.2 fiber/mm^2?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
IV. Matrix Duplicates				
Was a duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated DUP.		✓		
Was the duplicate relative percent differences (RPD) ≤ 50%?			✓	
V. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
Were samples prepared in accordance with the Modified Elutriator Method for the Detemination of Asbestos in Soil and Bulk Material, Revision 1, Berman and Kolk, May 2000?	✓			
Were the EDXA and SAED photos provided?		✓		
Was the analytical sensitivity greater than 3.00E+06?	✓			
Were asbestos fibers recorded ≥5.0 microns in length, 3:1 aspect ratio, and a modified 0.4 micron min. width?	✓			
Was analysis stopped upon recording 25 asbestos fibers ≥10 microns in length after current grid opening was completed.	✓			

LDC #: 24445A6
SDG #: ——

VALIDATION FINDINGS CHECKLIST

Reviewer: AR
2nd Reviewer: W

Validation Area	Yes	No	NA	Findings/Comments
VI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
VII. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates and RPD ≤50%.			✓	
VIII. Field blanks				
Field blanks were identified in this SDG.		✓		
Target analytes were detected in the field blanks.			✓	

LDC #: 24495A6

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: CR
2nd reviewer: VC

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments?
Y N N/A Are all detection limits below the CRQL?

Compound (analyte) results for Total Amph. reported with a positive detect were recalculated and verified using the following equation:

Concentration = $\frac{(Count)(Filter\ Area)}{(Wt)(Grid\ Open\ Area)(Grid\ Analyzed)}$

Recalculation: $\frac{22\ (385mm^2)}{(0.000155g)(0.0094mm^2)(37)} = 1.5 \times 10^8$ S+C/g PM10

#	Sample ID	Analyte	Reported Concentration (S+C/g PM10)	Calculated Concentration (S+C/g PM10)	Acceptable (Y/N)
		Asbestos: 7Sum, <10um	5.00x10^8	5.00x10^8	Y
		(Chrys)	4.14x10^8	4.14x10^8	
		(Amph)	8.57x10^7	8.57x10^7	
		710um	2.43x10^8	2.43x10^8	
		(Chrys)	1.71x10^8	1.71x10^8	
		(Amph)	7.14x10^7	7.14x10^7	
		Total	7.42x10^8	7.43x10^8	
		(Chrys)	5.85x10^8	5.86x10^8	
		(Amph)	1.57x10^8	1.57x10^8	

Note:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Collection Date:	August 23, 2010
LDC Report Date:	December 9, 2010
Matrix:	Soil
Parameters:	Asbestos
Validation Level:	Stage 2B
Laboratory:	EMS Laboratories
Sample Delivery Group (SDG):	139930

Sample Identification

SSAM7-08-0.00BPC
SSAQ5-07-0.00BPC

Introduction

This data review covers 2 soil samples listed on the cover sheet. The analyses were per NIOSH Method 7402/ISO for Asbestos.

This review follows the Standard Operating Procedures (SOP) 40, Data Review/Validation (BRC 2009), the Quality Assurance Project Plan Tronox LLC Facility, Henderson, Nevada (June 2009), NDEP guidance (May 2006), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

B The analytical result may be a false positive totally attributable to blank contamination. This qualifier is applicable to radiochemistry analysis only.

JB The analytical result may be biased high and partially attributable to blank contamination. This qualifier is applicable to radiochemistry analysis only.

JK The analytical result is an estimated maximum possible concentration (EMPC).

X The analytical result is not used for reporting because a more accurate and precise result is reported in its place.

J-TDS The analytical result is estimated based on failure of the Total Dissolved Solids (TDS) correctness check performed in accordance with the Standard Method 1030E.

J-CAB The analytical result is estimated based on failure of the cation-anion balance correctness check performed in accordance with Standard Method 1030E.

J-TDS & CAB The analytical result is unreliable based on the failure of the cation-anion balance and TDS correctness check performed in accordance with standard Method 1030E.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

No holding time requirement is specified for asbestos.

No cooler temperature requirement is specified for asbestos.

II. Calibration

A NIST standard reference material containing Chrysotile, Amosite, and Crocidolite asbestos was analyzed. The calibration identified the proper constituents.

III. Blanks

The blank analyses showed no asbestos contamination.

No field blanks were identified in this SDG.

IV. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

V. Sample Result Verification

All analytes reported below the PQL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 041014155	All analytes reported below the PQL.	J (all detects)	A

Raw data were not reviewed for this SDG.

VI. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

VII. Field Duplicates

No field duplicates were identified in this SDG.

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Data Qualification Summary - SDG 139930

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
139930	SSAM7-08-0.00BPC SSAQ5-07-0.00BPC	All analytes reported below the PQL.	J (all detects)	A	Sample result verification (sp)

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Laboratory Blank Data Qualification Summary - SDG 139930

No Sample Data Qualified in this SDG

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Field Blank Data Qualification Summary - SDG 139930

No Sample Data Qualified in this SDG

LDC #: 24495B6 13

SDG #: 139930

Laboratory: EMS Laboratories

Tronox Northgate Henderson
VALIDATION COMPLETENESS WORKSHEET
Stage 2B

Date: 12-7-10

Page: 1 of 1

Reviewer: GR

2nd Reviewer: [illegible]

METHOD: Asbestos (NIOSH 7402/ISO Method)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/23/10
II.	Calibration verification	A	
III.	Blanks	~~A/N~~ Not required	Filter Blk
IV.	Matrix Duplicates	N	Client specified
V.	Sample result verification	N	
VI.	Overall assessment of data	A	
VII.	Field duplicates	N	
VIII	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Soil

1	SSAM7-08-0.00BPC	11		21		31	
2	SSAQ5-07-0.00BPC	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Collection Date:	August 20 through August 25, 2010
LDC Report Date:	December 9, 2010
Matrix:	Soil
Parameters:	Asbestos
Validation Level:	Stage 2B & 4
Laboratory:	EMS Laboratories
Sample Delivery Group (SDG):	139931

Sample Identification

SSAQ6-01-0.00BPC
SSAL5-07-0.00BPC**

**Indicates sample underwent Stage 4 review

Introduction

This data review covers 2 soil samples listed on the cover sheet. The analyses were per NIOSH Method 7402/ISO for Asbestos.

This review follows the Standard Operating Procedures (SOP) 40, Data Review/Validation (BRC 2009), the Quality Assurance Project Plan Tronox LLC Facility, Henderson, Nevada (June 2009), NDEP guidance (May 2006), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Samples indicated by a double asterisk on the front cover underwent a Stage 4 review. A Stage 2B review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Stage 2B criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

B The analytical result may be a false positive totally attributable to blank contamination. This qualifier is applicable to radiochemistry analysis only.

JB The analytical result may be biased high and partially attributable to blank contamination. This qualifier is applicable to radiochemistry analysis only.

JK The analytical result is an estimated maximum possible concentration (EMPC).

X The analytical result is not used for reporting because a more accurate and precise result is reported in its place.

J-TDS The analytical result is estimated based on failure of the Total Dissolved Solids (TDS) correctness check performed in accordance with the Standard Method 1030E.

J-CAB The analytical result is estimated based on failure of the cation-anion balance correctness check performed in accordance with Standard Method 1030E. .

J-TDS & CAB The analytical result is unreliable based on the failure of the cation-anion balance and TDS correctness check performed in accordance with standard Method 1030E.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

No holding time requirement is specified for asbestos.

No cooler temperature requirement is specified for asbestos.

II. Calibration

A NIST standard reference material containing Chrysotile, Amosite, and Crocidolite asbestos was analyzed. The calibration identified the proper constituents.

III. Blanks

The blank analyses showed no asbestos contamination.

No field blanks were identified in this SDG.

IV. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

V. Sample Result Verification

All sample result verifications were acceptable for samples on which a Stage 4 review was performed.

All analytes reported below the PQL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 139931	All analytes reported below the PQL.	J (all detects)	A

The results listed on the final report were verified against the raw data worksheets. The results were transcribed correctly to the final report.

VI. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

VII. Field Duplicates

No field duplicates were identified in this SDG.

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Data Qualification Summary - SDG 139931

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
139931	SSAQ6-01-0.00BPC SSAL5-07-0.00BPC**	All analytes reported below the PQL.	J (all detects)	A	Sample result verification (sp)

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Laboratory Blank Data Qualification Summary - SDG 139931

No Sample Data Qualified in this SDG

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Field Blank Data Qualification Summary - SDG 139931

No Sample Data Qualified in this SDG

LDC #: 24495C13 (6 13)

Tronox Northgate Henderson
VALIDATION COMPLETENESS WORKSHEET
Stage 2B/4

SDG #: 139931
Laboratory: EMS Laboratories

Date: 12-7-10
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Asbestos (NIOSH 7402/ISO Method)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/20-25/10
II.	Calibration verification	A	
III.	Blanks	NA	~~No required for~~ Filter Blk
IV.	Matrix Duplicates	N	Client specified
V.	Sample result verification	A	Not reviewed for Stage 2B validation.
VI.	Overall assessment of data	A	
VII.	Field duplicates	N	
VIII	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: ** Indicates sample underwent Stage 4 validation

Soil

1	SSAQ6-01-0.00BPC	11		21		31	
2	SSAL5-07-0.00BPC**	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 24495CB6
SDG #: —

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: SR
2nd Reviewer: V

Method: Asbestos (EPA Method See cover)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Calibration				
Were balance checks performed as required?		✓		
Was the flow rate for the IST opening calibrated to 72 ml/min?	✓			
Was the leak check performed?			✓	
Was chrysotile beam dose sensitivity acceptable?	✓			
Was camera constant calibration acceptable?	✓			
Was crocidolite spectrum Na sensitivity acceptable?	✓			
Was Mg-Si K-alpha peak resolvability acceptable?	✓			
Were K factors acceptable?	✓			
Was detector resolution at the Mn K-alpha peak acceptable?	✓			
III. Blanks				
Was a method blank associated with every sample in this SDG?	✓	✓	SR	
Were 4% of unused filter lot blanks analyzed prior to sampling and < 0.2 fiber/mm^2?	✓		✓ SR	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓	✓ SR	
IV. Matrix Duplicates				
Was a duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated DUP.		✓		
Was the duplicate relative percent differences (RPD) ≤ 50%?			✓	
V. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
Were samples prepared in accordance with the Modified Elutriator Method for the Determination of Asbestos in Soil and Bulk Material, Revision 1, Berman and Kolk, May 2000?	✓			
Were the EDXA and SAED photos provided?		✓		
Was the analytical sensitivity greater than 3.00E+06?		✓		
Were asbestos fibers recorded ≥5.0 microns in length, 3:1 aspect ratio, and a modified 0.4 micron min. width?	✓			
Was analysis stopped upon recording 25 asbestos fibers ≥10 microns in length after current grid opening was completed.		✓		

LDC #: 24495C13 (6)
SDG #: ——

VALIDATION FINDINGS CHECKLIST

Reviewer: CR
2nd Reviewer: V

Validation Area	Yes	No	NA	Findings/Comments
VI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
VII. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates and RPD ≤50%.			✓	
VIII. Field blanks				
Field blanks were identified in this SDG.		✓		
Target analytes were detected in the field blanks.			✓	

LDC #: 24495C3 (6)

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: CR
2nd reviewer: W

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments?
Y N N/A Are all detection limits below the CRQL?

Compound (analyte) results for Total reported with a positive detect were recalculated and verified using the following equation:

Concentration = $\frac{\text{Count}(\text{Filter Area})}{\text{Wt}(\text{Grid open Area})(\text{Grid Analyzed})}$

Recalculation: $\frac{1(385\text{mm}^2)}{(0.000157\text{g})(0.0094\text{mm}^2)(100)} = 2.61\text{x}10^6$

#	Sample ID	Analyte	Reported Concentration (S structures/g PM10)	Calculated Concentration (S structures PM10)	Acceptable (Y/N)
		Asbestos 710um	$2.61\text{x}10^6$	$2.61\text{x}10^6$	Y
		Total Asbestos	↓	↓	↓

Note:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Collection Date:	August 24, 2010
LDC Report Date:	December 9, 2010
Matrix:	Soil
Parameters:	Asbestos
Validation Level:	Stage 2B
Laboratory:	EMS Laboratories
Sample Delivery Group (SDG):	139933

Sample Identification

SSAP7-03-0.00BPC
SSAP6-03-0.00BPC

Introduction

This data review covers 2 soil samples listed on the cover sheet. The analyses were per NIOSH Method 7402/ISO for Asbestos.

This review follows the Standard Operating Procedures (SOP) 40, Data Review/Validation (BRC 2009), the Quality Assurance Project Plan Tronox LLC Facility, Henderson, Nevada (June 2009), NDEP guidance (May 2006), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

B The analytical result may be a false positive totally attributable to blank contamination. This qualifier is applicable to radiochemistry analysis only.

JB The analytical result may be biased high and partially attributable to blank contamination. This qualifier is applicable to radiochemistry analysis only.

JK The analytical result is an estimated maximum possible concentration (EMPC).

X The analytical result is not used for reporting because a more accurate and precise result is reported in its place.

J-TDS The analytical result is estimated based on failure of the Total Dissolved Solids (TDS) correctness check performed in accordance with the Standard Method 1030E.

J-CAB The analytical result is estimated based on failure of the cation-anion balance correctness check performed in accordance with Standard Method 1030E.

J-TDS & CAB The analytical result is unreliable based on the failure of the cation-anion balance and TDS correctness check performed in accordance with standard Method 1030E.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

No holding time requirement is specified for asbestos.

No cooler temperature requirement is specified for asbestos.

II. Calibration

A NIST standard reference material containing Chrysotile, Amosite, and Crocidolite asbestos was analyzed. The calibration identified the proper constituents.

III. Blanks

The blank analyses showed no asbestos contamination.

No field blanks were identified in this SDG.

IV. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

V. Sample Result Verification

All analytes reported below the PQL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 041014155	All analytes reported below the PQL.	J (all detects)	A

Raw data were not reviewed for this SDG.

VI. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

VII. Field Duplicates

No field duplicates were identified in this SDG.

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Data Qualification Summary - SDG 139933

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
139933	SSAP7-03-0.00BPC SSAP6-03-0.00BPC	All analytes reported below the PQL.	J (all detects)	A	Sample result verification (sp)

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Laboratory Blank Data Qualification Summary - SDG 139933

No Sample Data Qualified in this SDG

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Field Blank Data Qualification Summary - SDG 139933

No Sample Data Qualified in this SDG

LDC #: 24495D6(3)
SDG #: 139933
Laboratory: EMS Laboratories

Tronox Northgate Henderson
VALIDATION COMPLETENESS WORKSHEET
Stage 4 2B

Date: 12-7-10
Page: 1 of 1
Reviewer: CC
2nd Reviewer: [signature]

METHOD: Asbestos (NIOSH 7402/ISO Method)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/24/10
II.	Calibration verification	A	
III.	Blanks	A N ~~Not required~~	02 Filter Blk
IV.	Matrix Duplicates	N	Client specified
V.	Sample result verification	N	
VI.	Overall assessment of data	A	
VII.	Field duplicates	N	
VIII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Soil

1	SSAP7-03-0.00BPC	11		21		31	
2	SSAP6-03-0.00BPC	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Collection Date:	August 24, 2010
LDC Report Date:	December 9, 2010
Matrix:	Soil
Parameters:	Asbestos
Validation Level:	Stage 2B & 4
Laboratory:	EMS Laboratories
Sample Delivery Group (SDG):	139934

Sample Identification

SSAP6-02-0.00BPC
SSAP6-02-0.00BPC_FD
SSAP5-02-0.00BPC**

**Indicates sample underwent Stage 4 review

Introduction

This data review covers 3 soil samples listed on the cover sheet. The analyses were per NIOSH Method 7402/ISO for Asbestos.

This review follows the Standard Operating Procedures (SOP) 40, Data Review/Validation (BRC 2009), the Quality Assurance Project Plan Tronox LLC Facility, Henderson, Nevada (June 2009), NDEP guidance (May 2006), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Samples indicated by a double asterisk on the front cover underwent a Stage 4 review. A Stage 2B review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Stage 2B criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

B The analytical result may be a false positive totally attributable to blank contamination. This qualifier is applicable to radiochemistry analysis only.

JB The analytical result may be biased high and partially attributable to blank contamination. This qualifier is applicable to radiochemistry analysis only.

JK The analytical result is an estimated maximum possible concentration (EMPC).

X The analytical result is not used for reporting because a more accurate and precise result is reported in its place.

J-TDS The analytical result is estimated based on failure of the Total Dissolved Solids (TDS) correctness check performed in accordance with the Standard Method 1030E.

J-CAB The analytical result is estimated based on failure of the cation-anion balance correctness check performed in accordance with Standard Method 1030E.

J-TDS & CAB The analytical result is unreliable based on the failure of the cation-anion balance and TDS correctness check performed in accordance with standard Method 1030E.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

No holding time requirement is specified for asbestos.

No cooler temperature requirement is specified for asbestos.

II. Calibration

A NIST standard reference material containing Chrysotile, Amosite, and Crocidolite asbestos was analyzed. The calibration identified the proper constituents.

III. Blanks

The blank analyses showed no asbestos contamination.

No field blanks were identified in this SDG.

IV. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

V. Sample Result Verification

All sample result verifications were acceptable for samples on which a Stage 4 review was performed.

All analytes reported below the PQL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 139934	All analytes reported below the PQL.	J (all detects)	A

The results listed on the final report were verified against the raw data worksheets. The results were transcribed correctly to the final report.

VI. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

VII. Field Duplicates

No field duplicates were identified in this SDG.

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Data Qualification Summary - SDG 139934

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
139934	SSAP6-02-0.00BPC SSAP6-02-0.00BPC_FD SSAP5-02-0.00BPC**	All analytes reported below the PQL.	J (all detects)	A	Sample result verification (sp)

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Laboratory Blank Data Qualification Summary - SDG 139934

No Sample Data Qualified in this SDG

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Field Blank Data Qualification Summary - SDG 139934

No Sample Data Qualified in this SDG

LDC #: 24495E13 (6\3)
SDG #: 139934
Laboratory: EMS Laboratories

Tronox Northgate Henderson
VALIDATION COMPLETENESS WORKSHEET
Stage 2B/4

Date: 12-6-10
Page: 1 of 1
Reviewer: CSL
2nd Reviewer: VC

METHOD: Asbestos (NIOSH 7402/ISO Method)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 8/24/10
II.	Calibration verification	A	
III.	Blanks	A A ~~Not required~~ or	Filter Blk
IV.	Matrix Duplicates	N	Client Specified
V.	Sample result verification	A	Not reviewed for Stage 2B validation.
VI.	Overall assessment of data	A	
VII.	Field duplicates	ND	(1,2)
VIII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Soil ** Indicates sample underwent Stage 4 validation

1	SSAP6-02-0.00BPC	11		21		31	
2	SSAP6-02-0.00BPC_FD	12		22		32	
3	SSAP5-02-0.00BPC**	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 24495EB6
SDG #:

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: CR
2nd Reviewer: VV

Method: Asbestos (EPA Method Recall)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Calibration				
Were balance checks performed as required?		✓		
Was the flow rate for the IST opening calibrated to 72 ml/min?	✓			
Was the leak check performed?			✓	
Was chrysotile beam dose sensitivity acceptable?	✓			
Was camera constant calibration acceptable?	✓			
Was crocidolite spectrum Na sensitivity acceptable?	✓			
Was Mg-Si K-alpha peak resolvability acceptable?	✓			
Were K factors acceptable?	✓			
Was detector resolution at the Mn K-alpha peak acceptable?	✓			
III. Blanks				
Was a method blank associated with every sample in this SDG?	✓	✓		
Were 4% of unused filter lot blanks analyzed prior to sampling and < 0.2 fiber/mm^2?	✓		✓	CR
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓	✓	CR
IV. Matrix Duplicates				
Was a duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated DUP.		✓		
Was the duplicate relative percent differences (RPD) ≤ 50%?			✓	
V. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
Were samples prepared in accordance with the Modified Elutriator Method for the Determination of Asbestos in Soil and Bulk Material, Revision 1, Berman and Kolk, May 2000?	✓			
Were the EDXA and SAED photos provided?		✓		
Was the analytical sensitivity greater than 3.00E+06?		✓		
Were asbestos fibers recorded ≥5.0 microns in length, 3:1 aspect ratio, and a modified 0.4 micron min. width?	✓			
Was analysis stopped upon recording 25 asbestos fibers ≥10 microns in length after current grid opening was completed.		✓		

LDC #: 24495SB6
SDG #: —

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: CR
2nd Reviewer: W

Validation Area	Yes	No	NA	Findings/Comments
VI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
VII. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target analytes were detected in the field duplicates and RPD ≤50%.		✓		
VIII. Field blanks				
Field blanks were identified in this SDG.		✓		
Target analytes were detected in the field blanks.			✓	

LDC #: 24495EB6

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: CR
2nd reviewer: [signature]

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments?
Y N N/A Are all detection limits below the CRQL?

Compound (analyte) results for Total reported with a positive detect were recalculated and verified using the following equation:

Concentration = $\frac{\text{Count}(\text{Filter Area})}{\text{Wt}(\text{Grid Open Area})(\text{Grid Analyzed})}$

Recalculation: $\frac{7(385\text{mm}^2)}{(0.000170\text{g})(0.0094\text{mm}^2)(.92)} = 1.83\text{x}10^7$ Str/g PMD

#	Sample ID	Analyte	Reported Concentration Str/g PMD	Calculated Concentration (Str/g PMD	Acceptable (Y/N)
	3	Asbestos Structures 75um, ≤10um	5		
		>10um	2		
		Total	7 CR		
	3	Asbestos Structures 75um, ≤10um	1.31x10^7	1.31x10^7	Y
		>10um	5.24x10^6	5.24x10^6	↓
		Total Asbestos	1.83x10^7	1.83x10^7	↓

Note:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Collection Date:	September 14, 2010
LDC Report Date:	December 9, 2010
Matrix:	Soil
Parameters:	Asbestos
Validation Level:	Stage 2B
Laboratory:	EMS Laboratories
Sample Delivery Group (SDG):	140411

Sample Identification

SSAN5-03-1.00BPC
SSAN5-03-1.50BPC
SA113-0.00BPC

Introduction

This data review covers 3 soil samples listed on the cover sheet. The analyses were per NIOSH Method 7402/ISO for Asbestos.

This review follows the Standard Operating Procedures (SOP) 40, Data Review/Validation (BRC 2009), the Quality Assurance Project Plan Tronox LLC Facility, Henderson, Nevada (June 2009), NDEP guidance (May 2006), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

B The analytical result may be a false positive totally attributable to blank contamination. This qualifier is applicable to radiochemistry analysis only.

JB The analytical result may be biased high and partially attributable to blank contamination. This qualifier is applicable to radiochemistry analysis only.

JK The analytical result is an estimated maximum possible concentration (EMPC).

X The analytical result is not used for reporting because a more accurate and precise result is reported in its place.

J-TDS The analytical result is estimated based on failure of the Total Dissolved Solids (TDS) correctness check performed in accordance with the Standard Method 1030E.

J-CAB The analytical result is estimated based on failure of the cation-anion balance correctness check performed in accordance with Standard Method 1030E.

J-TDS & CAB The analytical result is unreliable based on the failure of the cation-anion balance and TDS correctness check performed in accordance with standard Method 1030E.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

No holding time requirement is specified for asbestos.

No cooler temperature requirement is specified for asbestos.

II. Calibration

A NIST standard reference material containing Chrysotile, Amosite, and Crocidolite asbestos was analyzed. The calibration identified the proper constituents.

III. Blanks

The blank analyses showed no asbestos contamination.

No field blanks were identified in this SDG.

IV. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

V. Sample Result Verification

All analytes reported below the PQL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 140411	All analytes reported below the PQL.	J (all detects)	A

Raw data were not reviewed for this SDG.

VI. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

VII. Field Duplicates

No field duplicates were identified in this SDG.

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Data Qualification Summary - SDG 140411

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
140411	SSAN5-03-1.00BPC SSAN5-03-1.50BPC SA113-0.00BPC	All analytes reported below the PQL.	J (all detects)	A	Sample result verification (sp)

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Laboratory Blank Data Qualification Summary - SDG 140411

No Sample Data Qualified in this SDG

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Field Blank Data Qualification Summary - SDG 140411

No Sample Data Qualified in this SDG

LDC #: 24495F13

Tronox Northgate Henderson
VALIDATION COMPLETENESS WORKSHEET
Stage 2B

Date: 12-6-10
Page: 1 of 1
Reviewer:
2nd Reviewer:

SDG #: 140411
Laboratory: EMS Laboratories

METHOD: Asbestos (NIOSH 7402/ISO Method)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/14/10
II.	Calibration verification	A	
III.	Blanks	A N	~~Not required~~ or Filter Blk
IV.	Matrix Duplicates	N	Client specified
V.	Sample result verification	N	
VI.	Overall assessment of data	A	
VII.	Field duplicates	N	
VIII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Soil

1	SSAN5-03-1.00BPC	11		21		31	
2	SSAN5-03-1.50BPC	12		22		32	
3	SA113-0.00BPC	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Collection Date:	October 28, 2010
LDC Report Date:	December 9, 2010
Matrix:	Soil
Parameters:	Asbestos
Validation Level:	Stage 2B & 4
Laboratory:	EMS Laboratories
Sample Delivery Group (SDG):	141276

Sample Identification

SSAN5-05-0.00_01_BPC
SSAN4-01-0.00_01_BPC
SSAP8-02-0.00_01_BPC**
SSAN5-05-0.33_01_BPC

**Indicates sample underwent Stage 4 review

Introduction

This data review covers 4 soil samples listed on the cover sheet. The analyses were per NIOSH Method 7402/ISO for Asbestos.

This review follows the Standard Operating Procedures (SOP) 40, Data Review/Validation (BRC 2009), the Quality Assurance Project Plan Tronox LLC Facility, Henderson, Nevada (June 2009), NDEP guidance (May 2006), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Samples indicated by a double asterisk on the front cover underwent a Stage 4 review. A Stage 2B review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Stage 2B criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

B The analytical result may be a false positive totally attributable to blank contamination. This qualifier is applicable to radiochemistry analysis only.

JB The analytical result may be biased high and partially attributable to blank contamination. This qualifier is applicable to radiochemistry analysis only.

JK The analytical result is an estimated maximum possible concentration (EMPC).

X The analytical result is not used for reporting because a more accurate and precise result is reported in its place.

J-TDS The analytical result is estimated based on failure of the Total Dissolved Solids (TDS) correctness check performed in accordance with the Standard Method 1030E.

J-CAB The analytical result is estimated based on failure of the cation-anion balance correctness check performed in accordance with Standard Method 1030E.

J-TDS & CAB The analytical result is unreliable based on the failure of the cation-anion balance and TDS correctness check performed in accordance with standard Method 1030E.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

No holding time requirement is specified for asbestos.

No cooler temperature requirement is specified for asbestos.

II. Calibration

A NIST standard reference material containing Chrysotile, Amosite, and Crocidolite asbestos was analyzed. The calibration identified the proper constituents.

III. Blanks

The blank analyses showed no asbestos contamination.

No field blanks were identified in this SDG.

IV. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

V. Sample Result Verification

All sample result verifications were acceptable for samples on which a Stage 4 review was performed.

All analytes reported below the PQL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 141276	All analytes reported below the PQL.	J (all detects)	A

The results listed on the final report were verified against the raw data worksheets. The results were transcribed correctly to the final report.

VI. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

VII. Field Duplicates

No field duplicates were identified in this SDG.

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Data Qualification Summary - SDG 141276

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
141276	SSAN5-05-0.00_01_BPC SSAN4-01-0.00_01_BPC SSAP8-02-0.00_01_BPC** SSAN5-05-0.33_01_BPC	All analytes reported below the PQL.	J (all detects)	A	Sample result verification (sp)

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Laboratory Blank Data Qualification Summary - SDG 141276

No Sample Data Qualified in this SDG

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Field Blank Data Qualification Summary - SDG 141276

No Sample Data Qualified in this SDG

LDC #: 24495G13 (6 13)

Tronox Northgate Henderson
VALIDATION COMPLETENESS WORKSHEET
Stage 2B/4

SDG #: 141276
Laboratory: EMS Laboratories

Date: 12-7-10
Page: 1 of 1
Reviewer: OR
2nd Reviewer: [signature]

METHOD: Asbestos (NIOSH 7402/ISO Method)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 10/28/10
II.	Calibration verification	A	
III.	Blanks	A	Filter Blk
IV.	Matrix Duplicates	N	Client Specified
V.	Sample result verification	A	Not reviewed for Stage 2B validation.
VI.	Overall assessment of data	A	
VII.	Field duplicates	N	
VIII	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: ** Indicates sample underwent Stage 4 validation

Soil

1	SSAN5-05-0.00_01_BPC	11		21		31	
2	SSAN4-01-0.00_01_BPC	12		22		32	
3	SSAP8-02-0.00_01_BPC**	13		23		33	
4	SSAN5-05-0.33_01_BPC	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 24495G6
SDG #:

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: CR
2nd Reviewer: VV

Method: Asbestos (EPA Method See Cover)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Calibration				
Were balance checks performed as required?		✓		
Was the flow rate for the IST opening calibrated to 72 ml/min?	✓			
Was the leak check performed?			✓	
Was chrysotile beam dose sensitivity acceptable?	✓			
Was camera constant calibration acceptable?	✓			
Was crocidolite spectrum Na sensitivity acceptable?	✓			
Was Mg-Si K-alpha peak resolvability acceptable?	✓			
Were K factors acceptable?	✓			
Was detector resolution at the Mn K-alpha peak acceptable?	✓			
III. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Were 4% of unused filter lot blanks analyzed prior to sampling and < 0.2 fiber/mm^2?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
IV. Matrix Duplicates				
Was a duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated DUP.		✓		
Was the duplicate relative percent differences (RPD) ≤ 50%?			✓	
V. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
Were samples prepared in accordance with the Modified Elutriator Method for the Determination of Asbestos in Soil and Bulk Material, Revision 1, Berman and Kolk, May 2000?	✓			
Were the EDXA and SAED photos provided?		✓		
Was the analytical sensitivity greater than 3.00E+06?		✓		
Were asbestos fibers recorded ≥5.0 microns in length, 3:1 aspect ratio, and a modified 0.4 micron min. width?	✓			
Was analysis stopped upon recording 25 asbestos fibers ≥10 microns in length after current grid opening was completed.			✓	

LDC #: 2449566
SDG #: —

VALIDATION FINDINGS CHECKLIST

Reviewer: CR
2nd Reviewer: W

Validation Area	Yes	No	NA	Findings/Comments
VI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
VII. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates and RPD ≤50%.			✓	
VIII. Field blanks				
Field blanks were identified in this SDG.		✓		
Target analytes were detected in the field blanks.			✓	

LDC #: 24495G6

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: CR
2nd reviewer:

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments?
Y N N/A Are all detection limits below the CRQL?

Compound (analyte) results for _____ reported with a positive detect were recalculated and verified using the following equation:

Concentration = Recalculation:

Non Detect

#	Sample ID	Analyte	Reported Concentration ( )	Calculated Concentration ( )	Acceptable (Y/N)

Note: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Collection Date:	May 18, 2010
LDC Report Date:	December 9, 2010
Matrix:	Soil
Parameters:	Asbestos
Validation Level:	Stage 2B
Laboratory:	EMS Laboratories
Sample Delivery Group (SDG):	137865

Sample Identification

SSAL6-02-0.33BPC
SSAL6-01-0.33BPC

Introduction

This data review covers 2 soil samples listed on the cover sheet. The analyses were per NIOSH Method 7402/ISO for Asbestos.

This review follows the Standard Operating Procedures (SOP) 40, Data Review/Validation (BRC 2009), the Quality Assurance Project Plan Tronox LLC Facility, Henderson, Nevada (June 2009), NDEP guidance (May 2006), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

B The analytical result may be a false positive totally attributable to blank contamination. This qualifier is applicable to radiochemistry analysis only.

JB The analytical result may be biased high and partially attributable to blank contamination. This qualifier is applicable to radiochemistry analysis only.

JK The analytical result is an estimated maximum possible concentration (EMPC).

X The analytical result is not used for reporting because a more accurate and precise result is reported in its place.

J-TDS The analytical result is estimated based on failure of the Total Dissolved Solids (TDS) correctness check performed in accordance with the Standard Method 1030E.

J-CAB The analytical result is estimated based on failure of the cation-anion balance correctness check performed in accordance with Standard Method 1030E.

J-TDS & CAB The analytical result is unreliable based on the failure of the cation-anion balance and TDS correctness check performed in accordance with standard Method 1030E.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

No holding time requirement is specified for asbestos.

No cooler temperature requirement is specified for asbestos.

II. Calibration

A NIST standard reference material containing Chrysotile, Amosite, and Crocidolite asbestos was analyzed. The calibration identified the proper constituents.

III. Blanks

The blank analyses showed no asbestos contamination.

No field blanks were identified in this SDG.

IV. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

V. Sample Result Verification

All analytes reported below the PQL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 137865	All analytes reported below the PQL.	J (all detects)	A

Raw data were not reviewed for this SDG.

VI. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

VII. Field Duplicates

No field duplicates were identified in this SDG.

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Data Qualification Summary - SDG 137865

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
137865	SSAL6-02-0.33BPC SSAL6-01-0.33BPC	All analytes reported below the PQL.	J (all detects)	A	Sample result verification (sp)

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Laboratory Blank Data Qualification Summary - SDG 137865

No Sample Data Qualified in this SDG

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Field Blank Data Qualification Summary - SDG 137865

No Sample Data Qualified in this SDG

LDC #: 24495H6 (13)
SDG #: 137865
Laboratory: EMS Laboratories

Tronox Northgate Henderson
VALIDATION COMPLETENESS WORKSHEET
Stage 2B

Date: 12-7-10
Page: 1 of 1
Reviewer: CR
2nd Reviewer: W

METHOD: Asbestos (NIOSH 7402/ISO Method)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 5/18/10
II.	Calibration verification	A	
III.	Blanks	A	Filter Blk
IV.	Matrix Duplicates	N	Client specified
V.	Sample result verification	N	
VI.	Overall assessment of data	A	
VII.	Field duplicates	N	
VIII	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Soil

1	SSAL6-02-0.33BPC	11		21		31	
2	SSAL6-01-0.33BPC	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name:	Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Collection Date:	June 16, 2010
LDC Report Date:	December 9, 2010
Matrix:	Soil
Parameters:	Asbestos
Validation Level:	Stage 4
Laboratory:	EMS Laboratories
Sample Delivery Group (SDG):	138491

Sample Identification

SSAQ4-03-1.50BPC

Introduction

This data review covers one soil sample listed on the cover sheet. The analyses were per NIOSH Method 7402/ISO for Asbestos.

This review follows the Standard Operating Procedures (SOP) 40, Data Review/Validation (BRC 2009), the Quality Assurance Project Plan Tronox LLC Facility, Henderson, Nevada (June 2009), NDEP guidance (May 2006), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.

J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.

J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

B The analytical result may be a false positive totally attributable to blank contamination. This qualifier is applicable to radiochemistry analysis only.

JB The analytical result may be biased high and partially attributable to blank contamination. This qualifier is applicable to radiochemistry analysis only.

JK The analytical result is an estimated maximum possible concentration (EMPC).

X The analytical result is not used for reporting because a more accurate and precise result is reported in its place.

J-TDS The analytical result is estimated based on failure of the Total Dissolved Solids (TDS) correctness check performed in accordance with the Standard Method 1030E.

J-CAB The analytical result is estimated based on failure of the cation-anion balance correctness check performed in accordance with Standard Method 1030E.

J-TDS & CAB The analytical result is unreliable based on the failure of the cation-anion balance and TDS correctness check performed in accordance with standard Method 1030E.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

No holding time requirement is specified for asbestos.

No cooler temperature requirement is specified for asbestos.

II. Calibration

A NIST standard reference material containing Chrysotile, Amosite, and Crocidolite asbestos was analyzed. The calibration identified the proper constituents.

III. Blanks

The blank analyses showed no asbestos contamination.

No field blanks were identified in this SDG.

IV. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

V. Sample Result Verification

All sample result verifications were acceptable.

All analytes reported below the PQL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG 138491	All analytes reported below the PQL.	J (all detects)	A

The results listed on the final report were verified against the raw data worksheets. The results were transcribed correctly to the final report.

VI. Overall Assessment

Data flags are summarized at the end of this report if data has been qualified.

VII. Field Duplicates

No field duplicates were identified in this SDG.

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Data Qualification Summary - SDG 138491

SDG	Sample	Analyte	Flag	A or P	Reason (Code)
138491	SSAQ4-03-1.50BPC	All analytes reported below the PQL.	J (all detects)	A	Sample result verification (sp)

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Laboratory Blank Data Qualification Summary - SDG 138491

No Sample Data Qualified in this SDG

Tronox LLC Facility, PCS Additional Sampling, Henderson, Nevada
Asbestos - Field Blank Data Qualification Summary - SDG 138491

No Sample Data Qualified in this SDG

LDC #: 24495I13

SDG #: 138491

Laboratory: EMS Laboratories

Tronox Northgate Henderson
VALIDATION COMPLETENESS WORKSHEET
Stage 4

Date: 12-7-10

Page: 1 of 1

Reviewer: CR

2nd Reviewer: [illegible]

METHOD: Asbestos (NIOSH 7402/ISO Method)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 6/16/10
II.	Calibration verification	A	
III.	Blanks	A	Filter BLK
IV.	Matrix Duplicates	N	Client specified
V.	Sample result verification	A	
VI.	Overall assessment of data	A	
VII.	Field duplicates	N	
VIII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Soil

1	SSAQ4-03-1.50BPC	11		21		31	
2		12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 24495I6
SDG #: —

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: CR
2nd Reviewer: —

Method: Asbestos (EPA Method see cover)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Calibration				
Were balance checks performed as required?		✓		
Was the flow rate for the IST opening calibrated to 72 ml/min?	✓			
Was the leak check performed?			✓	
Was chrysotile beam dose sensitivity acceptable?	✓			
Was camera constant calibration acceptable?	✓			
Was crocidolite spectrum Na sensitivity acceptable?	✓			
Was Mg-Si K-alpha peak resolvability acceptable?	✓			
Were K factors acceptable?	✓			
Was detector resolution at the Mn K-alpha peak acceptable?	✓			
III. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Were 4% of unused filter lot blanks analyzed prior to sampling and < 0.2 fiber/mm^2?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
IV. Matrix Duplicates				
Was a duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated DUP.		✓		
Was the duplicate relative percent differences (RPD) ≤ 50%?			✓	
V. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
Were samples prepared in accordance with the Modified Elutriator Method for the Determination of Asbestos in Soil and Bulk Material, Revision 1, Berman and Kolk, May 2000?	✓			
Were the EDXA and SAED photos provided?		✓		
Was the analytical sensitivity greater than 3.00E+06?		✓		
Were asbestos fibers recorded ≥5.0 microns in length, 3:1 aspect ratio, and a modified 0.4 micron min. width?	✓			
Was analysis stopped upon recording 25 asbestos fibers ≥10 microns in length after current grid opening was completed.		✓		

LDC #: 24495I6
SDG #:

VALIDATION FINDINGS CHECKLIST

Reviewer: CR
2nd Reviewer:

Validation Area	Yes	No	NA	Findings/Comments
VI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
VII. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates and RPD ≤50%.			✓	
VIII. Field blanks				
Field blanks were identified in this SDG.		✓		
Target analytes were detected in the field blanks.			✓	

LDC #: 24495I6

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: CR
2nd reviewer:

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments?
Y N N/A Are all detection limits below the CRQL?

Compound (analyte) results for Total reported with a positive detect were recalculated and verified using the following equation:

Concentration =

$$\frac{Count(FilterArea)}{WE(GridOpenArea)(GridAnalyzed)}$$

Recalculation:

$$\frac{(11)(385mm^2)}{(0.000184g)(0.0094mm^2)(84)} = 2.91\times10^7 \text{ str/g PMD}$$

#	Sample ID	Analyte	Reported Concentration str/g PMD	Calculated Concentration str/g PMD	Acceptable (Y/N)
	1	Asbestos, 75um ± 10um	2.12×10^7	2.12×10^7	Y
		(Chrys)	7.59×10^6	7.95×10^6	
		(Amph)	1.32×10^7	1.32×10^7	
		710um	7.95×10^6	7.95×10^6	
		(Chrys)	2.65×10^6	2.65×10^6	
		(Amph)	5.30×10^6	5.30×10^6	
		Total	2.91×10^7	2.91×10^7	
		(Chrys)	1.06×10^7	1.00×10^7	
		(Amph)	1.85×10^7	1.85×10^7	

Note: