EMSL ANALYTICAL, INC.

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 858-4960

November 30, 2016

Josh Ewert
Geocon Consultants, Inc.
3160 Gold Valley Drive
Suite 800
Rancho Cordova, CA 95742
916-852-9118
ewert@geoconinc.com

Re: **Narrative TEM AHERA 041628499, 041628660, and 041629490, DTSC Metal Shredders/S9850-03-21**

Dear Josh:

Beginning on October 14, 2016 EMSL Analytical, Inc. in Cinnaminson, NJ received forty-five (45) air samples for asbestos content analysis via TEM AHERA. The samples were received via overnight carrier and were logged in following normal lab procedures. All samples were received under Chain of Custody and in good condition.

TEM AHERA

All samples were analyzed according to the TEM AHERA method EPA 40 CFR, Part 763, Subpart E, except for EMSL order 041628499. These samples had a particulate loading of greater than ten percent and were analyzed at the client's request. This method is for the determination of asbestos concentrations in air samples by Transmission Electron Microscopy (TEM). Air samples are collected on a membrane filter, prepared via a direct preparation method, and analyzed with an electron microscope at approximately 20,000 X magnification. Fibers encountered during analysis were identified by morphology, Energy Dispersive X-Ray analysis (EDXA), and Selected Area Electron Diffraction (SAED). Results are reported in structures per cc of air, with an analytical sensitivity of <0.005 structures per cc of air.

Quality Control Performed

The Quality Control (QC) and equipment calibration were performed in compliance with EMSL's Quality Assurance Manual. One laboratory blank was analyzed and three inter-analyst QC analyses were completed. All QC results presented with this package were found to be concordant.

11/30/16
Date

Benjamin Ellis
Asbestos Laboratory Manager
EMSL Analytical, Inc.

EMSL ANALYTICAL, INC.

2. Tabulated Sample Results

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order: 041628499
Customer ID: GECN80
Customer PO:
Project ID:

Attention: Josh Ewert
Geocon Consultants, Inc.
3160 Gold Valley Drive
Suite 800
Rancho Cordova, CA 95742
Project: DTSC Metal Shredders / S9850-03-21

Phone: (916) 852-9118
Fax: (916) 852-9132
Received Date: 10/14/2016 1:05 PM
Analysis Date: 11/11/2016 - 11/16/2016
Collected Date:

Test Report: Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Appendix A to Subpart E

Sample	Location	Volume (Liters)	Area Analyzed (mm²)	Non Asb	Asbestos Type(s)	#Structures ≥0.5μ < 5μ	#Structures ≥5μ	Analytical Sensitivity (S/cc)	Asbestos Concentration (S/mm²)	Asbestos Concentration (S/cc)
SARB1-T1-Asbestos *041628499-0001*	Perimeter Sample	2880.00	0.0520	0	None Detected			0.0026	<19.00	<0.0026
Particulate loading greater than 10% - sample processed at customer request.										
SARB2-T1-Asbestos *041628499-0002*	Perimeter Sample	2880.00	0.0520	0	None Detected			0.0026	<19.00	<0.0026
>10% particulate loading										
SARB3-T1-Asbestos *041628499-0003*	Perimeter Sample	2880.00	0.0520	0	None Detected			0.0026	<19.00	<0.0026
Particulate loading greater than 10% - sample processed at customer request.										
SARB4-T1-Asbestos *041628499-0004*	Perimeter Sample	2880.00	0.0520	0	None Detected			0.0026	<19.00	<0.0026
Particulate loading greater than 10% - sample processed at customer request.										
SARB5-T1-Asbestos *041628499-0005*	Perimeter Sample	2880.00	0.0520	0	None Detected			0.0026	<19.00	<0.0026
Particulate loading greater than 10% - sample processed at customer request.										
SARB1-T2-Asbestos *041628499-0006*	Perimeter Sample	2880.00	0.0520	0	None Detected			0.0026	<19.00	<0.0026
Particulate loading greater than 10% - sample processed at customer request.										
SARB2-T2-Asbestos *041628499-0007*	Perimeter Sample	2880.00	0.0520	0	None Detected			0.0026	<19.00	<0.0026
Particulate loading greater than 10% - sample processed at customer request.										
SARB3-T2-Asbestos *041628499-0008*	Perimeter Sample	2880.00	0.0520	0	None Detected			0.0026	<19.00	<0.0026
Particulate loading greater than 10% - sample processed at customer request.										
SARB4-T2-Asbestos *041628499-0009*	Perimeter Sample	2880.00	0.0520	0	None Detected			0.0026	<19.00	<0.0026
Particulate loading greater than 10% - sample processed at customer request.										
SARB5-T2-Asbestos *041628499-0010*	Perimeter Sample	2880.00	0.0520	0	None Detected			0.0026	<19.00	<0.0026
Particulate loading greater than 10% - sample processed at customer request.										

Report amended: 11/16/2016 12:11:53 Replaces initial report from: 10/17/2016 17:11:55 Reason Code: Client-Additional Analysis

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order: 041628499
Customer ID: GECN80
Customer PO:
Project ID:

Attention: Josh Ewert
Geocon Consultants, Inc.
3160 Gold Valley Drive
Suite 800
Rancho Cordova, CA 95742
Project: DTSC Metal Shredders / S9850-03-21

Phone: (916) 852-9118
Fax: (916) 852-9132
Received Date: 10/14/2016 1:05 PM
Analysis Date: 11/11/2016 - 11/16/2016
Collected Date:

Test Report: Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Appendix A to Subpart E

Sample	Location	Volume (Liters)	Area Analyzed (mm²)	Non Asb	Asbestos Type(s)	#Structures ≥0.5μ < 5μ	#Structures ≥5μ	Analytical Sensitivity (S/cc)	Asbestos Concentration (S/mm²)	Asbestos Concentration (S/cc)
SARB1-T3-Asbestos *041628499-0011*	Perimeter Sample	2880.00	0.0520	0	None Detected			0.0026	<19.00	<0.0026
Particulate loading greater than 10% - sample processed at customer request.										
SARB2-T3-Asbestos *041628499-0012*	Perimeter Sample	2880.00	0.0520	0	Chrysotile	0	1	0.0026	19.00	0.0026
Particulate loading greater than 10% - sample processed at customer request.										
SARB3-T3-Asbestos *041628499-0013*	Perimeter Sample	2880.00	0.0520	0	None Detected			0.0026	<19.00	<0.0026
Particulate loading greater than 10% - sample processed at customer request.										
SARB4-T3-Asbestos *041628499-0014*	Perimeter Sample	2880.00			Filter Damaged					N/A
SARB-TB-Asbestos *041628499-0015*	Perimeter Sample	0.00	0.1300	0	None Detected			N/A	<7.70	N/A

Samples particulate loading may cause an underestimation of asbestos concentration.

Analyst(s)

Ted Young (13)

William Nguyen (1)

Benjamin Ellis, Laboratory Manager
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. EMSL is not responsible for data reported in structures/cc, which is dependent on volume collected by non-laboratory personnel. Samples received in good condition unless otherwise noted. The test results meet the requirements of NELAC unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036, PA ID# 68-00367

Report amended: 11/16/2016 12:11:53 Replaces initial report from: 10/17/2016 17:11:55 Reason Code: Client-Additional Analysis

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order: 041628660
Customer ID: GECN80
Customer PO:
Project ID: S9805-**-**

Attention: Josh Ewert
Geocon Consultants, Inc.
3160 Gold Valley Drive
Suite 800
Rancho Cordova, CA 95742
Project: DTSC Metal Shredders / S9850-03-21 (S9805-**-**)

Phone: (916) 852-9118
Fax: (916) 852-9132
Received Date: 10/17/2016 8:50 AM
Analysis Date: 10/19/2016
Collected Date: 10/12/2016

Test Report: Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Appendix A to Subpart E

Sample	*Location*	*Volume (Liters)*	*Area Analyzed (mm²)*	*Non Asb*	*Asbestos Type(s)*	*#Structures ≥0.5μ < 5μ*	*#Structures ≥5μ*	*Analytical Sensitivity (S/cc)*	*Asbestos Concentration (S/mm²)*	*Asbestos Concentration (S/cc)*
SART11-T1-Asbestos *041628660-0001* Gypsum fibers Detected	Perimeter Sample	2880.00	0.0524	0	None Detected			0.0026	<19.00	<0.0026
SART12-T1-Asbestos *041628660-0002* Gypsum fibers Detected	Perimeter Sample	2880.00	0.0524	0	None Detected			0.0026	<19.00	<0.0026
SART13-T1-Asbestos *041628660-0003* Gypsum fibers Detected	Perimeter Sample	2880.00	0.0524	0	None Detected			0.0026	<19.00	<0.0026
SART14-T1-Asbestos *041628660-0004* Gypsum fibers Detected	Perimeter Sample	2880.00	0.0524	0	None Detected			0.0026	<19.00	<0.0026
SART11-T2-Asbestos *041628660-0005* Gypsum fibers Detected	Perimeter Sample	2880.00	0.0524	0	None Detected			0.0026	<19.00	<0.0026
SART12-T2-Asbestos *041628660-0006* Gypsum fibers Detected	Perimeter Sample	2880.00	0.0524	0	None Detected			0.0026	<19.00	<0.0026
SART13-T2-Asbestos *041628660-0007* Gypsum fibers Detected	Perimeter Sample	2880.00	0.0524	0	None Detected			0.0026	<19.00	<0.0026
SART14-T2-Asbestos *041628660-0008* Gypsum fibers Detected	Perimeter Sample	2880.00	0.0524	0	None Detected			0.0026	<19.00	<0.0026
SART15-T2-Asbestos *041628660-0009* Gypsum fibers Detected	Perimeter Sample	2880.00	0.0524	0	None Detected			0.0026	<19.00	<0.0026
SART11-T3-Asbesots *041628660-0010* Gypsum fibers Detected	Perimeter Sample	2880.00	0.0524	0	None Detected			0.0026	<19.00	<0.0026

Initial report from: 10/20/2016 17:41:14

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order: 041628660
Customer ID: GECN80
Customer PO:
Project ID: S9805-**-**

Attention: Josh Ewert
Geocon Consultants, Inc.
3160 Gold Valley Drive
Suite 800
Rancho Cordova, CA 95742
Project: DTSC Metal Shredders / S9850-03-21 (S9805-**-**)

Phone: (916) 852-9118
Fax: (916) 852-9132
Received Date: 10/17/2016 8:50 AM
Analysis Date: 10/19/2016
Collected Date: 10/12/2016

Test Report: Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Appendix A to Subpart E

Sample	*Location*	*Volume (Liters)*	*Area Analyzed (mm²)*	*Non Asb*	*Asbestos Type(s)*	*#Structures ≥0.5μ < 5μ*	*#Structures ≥5μ*	*Analytical Sensitivity (S/cc)*	*Asbestos Concentration (S/mm²)*	*Asbestos Concentration (S/cc)*
SART12-T3-Asbesots *041628660-0011*	Perimeter Sample	2880.00	0.0524	0	None Detected			0.0026	<19.00	<0.0026
Gypsum fibers Detected										
SART13-T3-Asbesots *041628660-0012*	Perimeter Sample	2880.00	0.0524	0	None Detected			0.0026	<19.00	<0.0026
Gypsum fibers Detected										
SART14-T3-Asbesots *041628660-0013*	Perimeter Sample	2880.00	0.0524	0	None Detected			0.0026	<19.00	<0.0026
Gypsum fibers Detected										
SART15-T3-Asbesots *041628660-0014*	Perimeter Sample	2880.00	0.0524	0	None Detected			0.0026	<19.00	<0.0026
Gypsum fibers Detected										
SART1-TB-Asbesots *041628660-0015*	Perimeter Sample	2880.00	0.0524	0	None Detected			0.0026	<19.00	<0.0026

Analyst(s)

Sandy Burany, Ph.D (15)

Benjamin Ellis, Laboratory Manager
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. EMSL is not responsible for data reported in structures/cc, which is dependent on volume collected by non-laboratory personnel. Samples received in good condition unless otherwise noted. The test results meet the requirements of NELAC unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036, PA ID# 68-00367

Initial report from: 10/20/2016 17:41:14

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order: 041629490
Customer ID: GECN80
Customer PO:
Project ID:

Attention: Josh Ewert
Geocon Consultants, Inc.
3160 Gold Valley Drive
Suite 800
Rancho Cordova, CA 95742
Project: DTSC Metal Shredders / S9850-03-21

Phone: (916) 852-9118
Fax: (916) 852-9132
Received Date: 10/25/2016 9:40 AM
Analysis Date: 11/07/2016 - 11/16/2016
Collected Date:

Test Report: Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Appendix A to Subpart E

Sample	Location	Volume (Liters)	Area Analyzed (mm²)	Non Asb	Asbestos Type(s)	#Structures ≥0.5μ < 5μ	#Structures ≥5μ	Analytical Sensitivity (S/cc)	Asbestos Concentration (S/mm²)	Asbestos Concentration (S/cc)
SMM1-T1-Asbestos *041629490-0001*	Perimeter Sample	2880.00	0.0520	0	None Detected			0.0026	<19.00	<0.0026
SMM2-T1-Asbestos *041629490-0002*	Perimeter Sample	2880.00	0.0520	0	None Detected			0.0026	<19.00	<0.0026
SMM3-T1-Asbestos *041629490-0003*	Perimeter Sample	2880.00	0.0520	0	None Detected			0.0026	<19.00	<0.0026
SMM4-T1-Asbestos *041629490-0004*	Perimeter Sample	2880.00	0.0520	0	None Detected			0.0026	<19.00	<0.0026
SMM5-T1-Asbestos *041629490-0005* Gypsum fibers Detected	Perimeter Sample	2880.00	0.0520	0	None Detected			0.0026	<19.00	<0.0026
SMM1-T2-Asbestos *041629490-0006*	Perimeter Sample	2880.00	0.0520	0	None Detected			0.0026	<19.00	<0.0026
SMM2-T2-Asbestos *041629490-0007* Gypsum and glass fibers Detected	Perimeter Sample	2880.00	0.0520	0	Chrysotile	0	1	0.0026	19.00	0.0026
SMM3-T2-Asbestos *041629490-0008*	Perimeter Sample	2880.00	0.0520	0	None Detected			0.0026	<19.00	<0.0026
SMM4-T2-Asbestos *041629490-0009*	Perimeter Sample	2880.00	0.0520	0	None Detected			0.0026	<19.00	<0.0026
SMM1-T3-Asbestos *041629490-0010*	Perimeter Sample	2880.00	0.0520	0	None Detected			0.0026	<19.00	<0.0026
SMM2-T3-Asbestos *041629490-0011*	Perimeter Sample	2880.00	0.0520	0	None Detected			0.0026	<19.00	<0.0026
SMM3-T3-Asbestos *041629490-0012*	Perimeter Sample	2880.00	0.0520	0	None Detected			0.0026	<19.00	<0.0026

Report amended: 11/16/2016 12:12:58 Replaces initial report from: 11/08/2016 10:11:07 Reason Code: Client-Additional Analysis

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order: 041629490
Customer ID: GECN80
Customer PO:
Project ID:

Attention: Josh Ewert
Geocon Consultants, Inc.
3160 Gold Valley Drive
Suite 800
Rancho Cordova, CA 95742
Project: DTSC Metal Shredders / S9850-03-21

Phone: (916) 852-9118
Fax: (916) 852-9132
Received Date: 10/25/2016 9:40 AM
Analysis Date: 11/07/2016 - 11/16/2016
Collected Date:

Test Report: Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Appendix A to Subpart E

Sample	*Location*	*Volume (Liters)*	*Area Analyzed (mm²)*	*Non Asb*	*Asbestos Type(s)*	*#Structures ≥0.5μ < 5μ*	*#Structures ≥5μ*	*Analytical Sensitivity (S/cc)*	*Asbestos Concentration (S/mm²)*	*Asbestos Concentration (S/cc)*
SMM4-T3-Asbestos *041629490-0013*	Perimeter Sample	2880.00	0.0520	0	None Detected			0.0026	<19.00	<0.0026
SMM5-T3-Asbestos *041629490-0014*	Perimeter Sample	2880.00	0.0520	0	None Detected			0.0026	<19.00	<0.0026
SMM-TR-Asbestos *041629490-0015*	Perimeter Sample	0.00	0.1300	0	None Detected			N/A	<7.70	N/A

Analyst(s)

Sandy Burany, Ph.D (14)

William Nguyen (1)

Benjamin Ellis, Laboratory Manager
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. EMSL is not responsible for data reported in structures/cc, which is dependent on volume collected by non-laboratory personnel. Samples received in good condition unless otherwise noted. The test results meet the requirements of NELAC unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036, PA ID# 68-00367

Report amended: 11/16/2016 12:12:58 Replaces initial report from: 11/08/2016 10:11:07 Reason Code: Client-Additional Analysis

EMSL ANALYTICAL, INC.

3. Worksheets/ Bench Sheets

11/29/2016

TEM AHERA Asbestos Analysis Of Air

Special Instructions:
Please use "SX" pricing. Thanks.

Due Date 11/17/2016

	48 Hour	1 Week
PLM	$6.50	$5.25
PLM 400 Pt Ct	$16.50	$15.25
Pb-FLAA	$6.50	$5.25
Pb-TCLP	$48.00	$32.00

Sample Number:	**041628499-0001**	Volume(L):	2880	G.O. Area(mm^2):	0.013
Customer Sample No.:	SARB1-T1-Asbest	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	tyoung	Filter Type:	MCE	Grid Box #:	416-AHERA-146
Analysis Date:	11/11/2016	Filter Size(mm^2):	25	Row:	C
Scope ID:	04-04	EFA(mm^2):	385	Column:	2, 3
TEM Voltage:	100				

Comments: Particulate loading greater than 10% - sample processed at customer request.

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	C2	B4	None Detected							
0	C2	E8	None Detected							
0	C3	G2	None Detected							
0	C3	I1	None Detected							

Sample Number:	**041628499-0002**	Volume(L):	2880	G.O. Area(mm^2):	0.013
Customer Sample No.:	SARB2-T1-Asbest	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	tyoung	Filter Type:	MCE	Grid Box #:	416-AHERA-146
Analysis Date:	11/11/2016	Filter Size(mm^2):	25	Row:	C
Scope ID:	04-04	EFA(mm^2):	385	Column:	4, 5
TEM Voltage:	100				

Comments: >10% particulate loading
Particulate loading greater than 10% - sample processed at customer request

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	C4	H8	None Detected							
0	C4	F6	None Detected							
0	C5	A6	None Detected							
0	C5	C8	None Detected							

Sample Number:	**041628499-0003**	Volume(L):	2880	G.O. Area(mm^2):	0.013
Customer Sample No.:	SARB3-T1-Asbest	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	tyoung	Filter Type:	MCE	Grid Box #:	416-AHERA-146
Analysis Date:	11/11/2016	Filter Size(mm^2):	25	Row:	C
Scope ID:	04-04	EFA(mm^2):	385	Column:	6, 7
TEM Voltage:	100				

Comments: Particulate loading greater than 10% - sample processed at customer request.

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	C6	D3	None Detected							
0	C6	J5	None Detected							
0	C7	B8	None Detected							
0	C7	E4	None Detected							

Sample Number:	**041628499-0004**	Volume(L):	2880	G.O. Area(mm^2):	0.013
Customer Sample No.:	SARB4-T1-Asbest	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	tyoung	Filter Type:	MCE	Grid Box #:	416-AHERA-146
Analysis Date:	11/11/2016	Filter Size(mm^2):	25	Row:	C
Scope ID:	04-04	EFA(mm^2):	385	Column:	8, 9
TEM Voltage:	100				

TEM AHERA Asbestos Analysis Of Air

Special Instructions:
Please use "SX" pricing. Thanks.

Due Date 11/17/2016

	48 Hour	1 Week
PLM	$6.50	$5.25
PLM 400 Pt Ct	$16.50	$15.25
Pb-FLAA	$6.50	$5.25
Pb-TCLP	$48.00	$32.00

Comments: Particulate loading greater than 10% - sample processed at customer request.

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	C8	I5	None Detected							
0	C8	G4	None Detected							
0	C9	F3	None Detected							
0	C9	H5	None Detected							

Sample Number:	**041628499-0005**	Volume(L):	2880	G.O. Area(mm^2):	0.013
Customer Sample No.:	SARB5-T1-Asbest	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	tyoung	Filter Type:	MCE	Grid Box #:	416-AHERA-146
Analysis Date:	11/11/2016	Filter Size(mm^2):	25	Row:	C
Scope ID:	04-04	EFA(mm^2):	385	Column:	10, 11
TEM Voltage:	100				

Comments: Particulate loading greater than 10% - sample processed at customer request.

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	C10	A3	None Detected							
0	C10	C4	None Detected							
0	C11	J6	None Detected							
0	C11	D7	None Detected							

Sample Number:	**041628499-0006**	Volume(L):	2880	G.O. Area(mm^2):	0.013
Customer Sample No.:	SARB1-T2-Asbest	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	tyoung	Filter Type:	MCE	Grid Box #:	416-AHERA-146
Analysis Date:	11/11/2016	Filter Size(mm^2):	25	Row:	D
Scope ID:	04-04	EFA(mm^2):	385	Column:	1, 2
TEM Voltage:	100				

Comments: Particulate loading greater than 10% - sample processed at customer request.

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	D1	I4	None Detected							
0	D1	G6	None Detected							
0	D2	B7	None Detected							
0	D2	E9	None Detected							

Sample Number:	**041628499-0007**	Volume(L):	2880	G.O. Area(mm^2):	0.013
Customer Sample No.:	SARB2-T2-Asbest	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	tyoung	Filter Type:	MCE	Grid Box #:	416-AHERA-146
Analysis Date:	11/11/2016	Filter Size(mm^2):	25	Row:	D
Scope ID:	04-04	EFA(mm^2):	385	Column:	3, 4
TEM Voltage:	100				

Comments: Particulate loading greater than 10% - sample processed at customer request.

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	D3	H7	None Detected							
0	D3	F2	None Detected							
0	D4	C7	None Detected							
0	D4	A2	None Detected							

TEM AHERA Asbestos Analysis Of Air

Special Instructions:
Please use "SX" pricing. Thanks.

Due Date 11/17/2016

	48 Hour	1 Week
PLM	$6.50	$5.25
PLM 400 Pt Ct	$16.50	$15.25
Pb-FLAA	$6.50	$5.25
Pb-TCLP	$48.00	$32.00

Sample Number:	**041628499-0008**	Volume(L):	2880	G.O. Area(mm^2):	0.013
Customer Sample No.:	SARB3-T2-Asbest	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	tyoung	Filter Type:	MCE	Grid Box #:	416-AHERA-146
Analysis Date:	11/11/2016	Filter Size(mm^2):	25	Row:	D
Scope ID:	04-04	EFA(mm^2):	385	Column:	5, 6
TEM Voltage:	100				

Comments: Particulate loading greater than 10% - sample processed at customer request.

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	D5	D8	None Detected							
0	D5	J2	None Detected							
0	D6	E5	None Detected							
0	D6	B3	None Detected							

Sample Number:	**041628499-0009**	Volume(L):	2880	G.O. Area(mm^2):	0.013
Customer Sample No.:	SARB4-T2-Asbest	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	tyoung	Filter Type:	MCE	Grid Box #:	416-AHERA-146
Analysis Date:	11/11/2016	Filter Size(mm^2):	25	Row:	D
Scope ID:	04-04	EFA(mm^2):	385	Column:	7, 8
TEM Voltage:	100				

Comments: Particulate loading greater than 10% - sample processed at customer request.

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	D7	I8	None Detected							
0	D7	G3	None Detected							
0	D8	F7	None Detected							
0	D8	H2	None Detected							

Sample Number:	**041628499-0010**	Volume(L):	2880	G.O. Area(mm^2):	0.013
Customer Sample No.:	SARB5-T2-Asbest	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	tyoung	Filter Type:	MCE	Grid Box #:	416-AHERA-146
Analysis Date:	11/11/2016	Filter Size(mm^2):	25	Row:	D
Scope ID:	04-04	EFA(mm^2):	385	Column:	9, 10
TEM Voltage:	100				

Comments: Particulate loading greater than 10% - sample processed at customer request.

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	D9	C2	None Detected							
0	D9	A5	None Detected							
0	D10	D3	None Detected							
0	D10	J4	None Detected							

Sample Number:	**041628499-0011**	Volume(L):	2880	G.O. Area(mm^2):	0.013
Customer Sample No.:	SARB1-T3-Asbest	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	tyoung	Filter Type:	MCE	Grid Box #:	416-AHERA-146
Analysis Date:	11/11/2016	Filter Size(mm^2):	25	Row:	E
Scope ID:	04-04	EFA(mm^2):	385	Column:	1, 2
TEM Voltage:	100				

TEM AHERA Asbestos Analysis Of Air

Special Instructions:
Please use "SX" pricing. Thanks.

Due Date 11/17/2016

	48 Hour	1 Week
PLM	$6.50	$5.25
PLM 400 Pt Ct	$16.50	$15.25
Pb-FLAA	$6.50	$5.25
Pb-TCLP	$48.00	$32.00

Comments: Particulate loading greater than 10% - sample processed at customer request.

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	E1	B10	None Detected							
0	E1	E9	None Detected							
0	E2	G7	None Detected							
0	E2	I5	None Detected							

Sample Number:	**041628499-0012**	Volume(L):	2880	G.O. Area(mm^2):	0.013
Customer Sample No.:	SARB2-T3-Asbest	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	tyoung	Filter Type:	MCE	Grid Box #:	416-AHERA-146
Analysis Date:	11/11/2016	Filter Size(mm^2):	25	Row:	E
Scope ID:	04-04	EFA(mm^2):	385	Column:	3, 4
TEM Voltage:	100				

Comments: Particulate loading greater than 10% - sample processed at customer request.

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
1	E3	F8	Chrysotile	13.3	0.25	Bundle	X	357		
0	E3	H5	None Detected							
0	E4	C6	None Detected							
0	E4	A7	None Detected							

Sketch:

Sample Number:	**041628499-0013**	Volume(L):	2880	G.O. Area(mm^2):	0.013
Customer Sample No.:	SARB3-T3-Asbest	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	tyoung	Filter Type:	MCE	Grid Box #:	416-AHERA-146
Analysis Date:	11/11/2016	Filter Size(mm^2):	25	Row:	E
Scope ID:	04-04	EFA(mm^2):	385	Column:	5, 6
TEM Voltage:	100				

Comments: Particulate loading greater than 10% - sample processed at customer request.

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	E5	J3	None Detected							
0	E5	D2	None Detected							
0	E6	E8	None Detected							
0	E6	B6	None Detected							

Sample Number:	**041628499-0014**	Volume(L):	2880	G.O. Area(mm^2):	0.013
Customer Sample No.:	SARB4-T3-Asbest	Magnification(X):	19000	Total/Req G.O.:	
Analyst:	tyoung	Filter Type:	MCE	Grid Box #:	
Analysis Date:	11/11/2016	Filter Size(mm^2):	25	Row:	
Scope ID:	04-04	EFA(mm^2):	385	Column:	
TEM Voltage:	100				

Comments:

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment

11/29/2016

TEM AHERA Asbestos Analysis Of Air

Special Instructions:
Please use "SX" pricing. Thanks.

Due Date 11/17/2016

	48 Hour	1 Week
PLM	$6.50	$5.25
PLM 400 Pt Ct	$16.50	$15.25
Pb-FLAA	$6.50	$5.25
Pb-TCLP	$48.00	$32.00

Sample Number:	**041628499-0015**	Volume(L):	0	G.O. Area(mm^2):	0.013
Customer Sample No.:	SARB-TB-Asbestc	Magnification(X):	20000	Total/Req G.O.:	10 / 10
Analyst:	wnguyen	Filter Type:	MCE	Grid Box #:	0416-AHERA-14
Analysis Date:	11/16/2016	Filter Size(mm^2):	25	Row:	E
Scope ID:	04-03	EFA(mm^2):	385	Column:	7.8
TEM Voltage:	100				

Comments:

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	E7	I8	None Detected							
0	E7	I6	None Detected							
0	E7	I4	None Detected							
0	E7	C8	None Detected							
0	E7	C6	None Detected							
0	E8	H10	None Detected							
0	E8	H8	None Detected							
0	E8	H6	None Detected							
0	E8	B10	None Detected							
0	E8	B8	None Detected							

11/29/2016

TEM AHERA Asbestos Analysis Of Air

Special Instructions:
Please use "SX" pricing. Thanks.

Due Date 10/31/2016

	48 Hour	1 Week
PLM	$6.50	$5.25
PLM 400 Pt Ct	$16.50	$15.25
Pb-FLAA	$6.50	$5.25
Pb-TCLP	$48.00	$32.00

Sample Number:	**041628660-0001**	Volume(L):	2880	G.O. Area(mm^2):	0.0131
Customer Sample No.:	SART11-T1- Asb	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 14
Analysis Date:	10/19/2016	Filter Size(mm^2):	25	Row:	A
Scope ID:	04-02	EFA(mm^2):	385	Column:	2-3
TEM Voltage:	100				

Comments: Gypsum fibers Detected

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	A2	A8	None Detected							
0	A2	I7	None Detected							
0	A3	J7	None Detected							
0	A3	C6	None Detected							

Sample Number:	**041628660-0002**	Volume(L):	2880	G.O. Area(mm^2):	0.0131
Customer Sample No.:	SART12-T1- Asb	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 14
Analysis Date:	10/19/2016	Filter Size(mm^2):	25	Row:	A
Scope ID:	04-02	EFA(mm^2):	385	Column:	4-5
TEM Voltage:	100				

Comments: Gypsum fibers Detected

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	A4	C5	None Detected							
0	A4	H4	None Detected							
0	A5	I3	None Detected							
0	A5	B5	None Detected							

Sample Number:	**041628660-0003**	Volume(L):	2880	G.O. Area(mm^2):	0.0131
Customer Sample No.:	SART13-T1- Asb	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 14
Analysis Date:	10/19/2016	Filter Size(mm^2):	25	Row:	A
Scope ID:	04-02	EFA(mm^2):	385	Column:	6-7
TEM Voltage:	100				

Comments: Gypsum fibers Detected

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	A6	J5	None Detected							
0	A6	E4	None Detected							
0	A7	G6	None Detected							
0	A7	B5	None Detected							

Sample Number:	**041628660-0004**	Volume(L):	2880	G.O. Area(mm^2):	0.0131
Customer Sample No.:	SART14-T1- Asb	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 14
Analysis Date:	10/19/2016	Filter Size(mm^2):	25	Row:	A
Scope ID:	04-02	EFA(mm^2):	385	Column:	8-9
TEM Voltage:	100				

TEM AHERA Asbestos Analysis Of Air

Special Instructions:
Please use "SX" pricing. Thanks.

Due Date 10/31/2016

	48 Hour	1 Week
PLM	$6.50	$5.25
PLM 400 Pt Ct	$16.50	$15.25
Pb-FLAA	$6.50	$5.25
Pb-TCLP	$48.00	$32.00

Comments: Gypsum fibers Detected

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	A8	A6	None Detected							
0	A8	G4	None Detected							
0	A9	H4	None Detected							
0	A9	D5	None Detected							

Sample Number:	**041628660-0005**	Volume(L):	2880	G.O. Area(mm^2):	0.0131
Customer Sample No.:	SART11-T2- Asb	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 14
Analysis Date:	10/19/2016	Filter Size(mm^2):	25	Row:	A
Scope ID:	04-02	EFA(mm^2):	385	Column:	10-11
TEM Voltage:	100				

Comments: Gypsum fibers Detected

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	A10	I2	None Detected							
0	A10	D4	None Detected							
0	A11	B6	None Detected							
0	A11	H5	None Detected							

Sample Number:	**041628660-0006**	Volume(L):	2880	G.O. Area(mm^2):	0.0131
Customer Sample No.:	SART12-T2- Asb	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 14
Analysis Date:	10/19/2016	Filter Size(mm^2):	25	Row:	B
Scope ID:	04-02	EFA(mm^2):	385	Column:	1-2
TEM Voltage:	100				

Comments: Gypsum fibers Detected

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	B1	A8	None Detected							
0	B1	D7	None Detected							
0	B2	J3	None Detected							
0	B2	B2	None Detected							

Sample Number:	**041628660-0007**	Volume(L):	2880	G.O. Area(mm^2):	0.0131
Customer Sample No.:	SART13-T2- Asb	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 14
Analysis Date:	10/19/2016	Filter Size(mm^2):	25	Row:	B
Scope ID:	04-02	EFA(mm^2):	385	Column:	3-4
TEM Voltage:	100				

Comments: Gypsum fibers Detected

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	B3	I3	None Detected							
0	B3	B4	None Detected							
0	B4	A8	None Detected							
0	B4	G6	None Detected							

TEM AHERA Asbestos Analysis Of Air

Special Instructions:
Please use "SX" pricing. Thanks.

Due Date 10/31/2016

	48 Hour	1 Week
PLM	$6.50	$5.25
PLM 400 Pt Ct	$16.50	$15.25
Pb-FLAA	$6.50	$5.25
Pb-TCLP	$48.00	$32.00

Sample Number:	**041628660-0008**	Volume(L):	2880	G.O. Area(mm^2):	0.0131
Customer Sample No.:	SART14-T2- Asb	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 14
Analysis Date:	10/19/2016	Filter Size(mm^2):	25	Row:	B
Scope ID:	04-02	EFA(mm^2):	385	Column:	5-6
TEM Voltage:	100				

Comments: Gypsum fibers Detected

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	B5	I6	None Detected							
0	B5	C5	None Detected							
0	B6	I3	None Detected							
0	B6	C4	None Detected							

Sample Number:	**041628660-0009**	Volume(L):	2880	G.O. Area(mm^2):	0.0131
Customer Sample No.:	SART15-T2- Asb	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 14
Analysis Date:	10/19/2016	Filter Size(mm^2):	25	Row:	B
Scope ID:	04-02	EFA(mm^2):	385	Column:	7-8
TEM Voltage:	100				

Comments: Gypsum fibers Detected

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	B7	C3	None Detected							
0	B7	H4	None Detected							
0	B8	J6	None Detected							
0	B8	C5	None Detected							

Sample Number:	**041628660-0010**	Volume(L):	2880	G.O. Area(mm^2):	0.0131
Customer Sample No.:	SART11-T3- Asb	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 14
Analysis Date:	10/19/2016	Filter Size(mm^2):	25	Row:	B
Scope ID:	04-02	EFA(mm^2):	385	Column:	9-10
TEM Voltage:	100				

Comments: Gypsum fibers Detected

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	B9	J3	None Detected							
0	B9	C5	None Detected							
0	B10	I1	None Detected							
0	B10	A4	None Detected							

Sample Number:	**041628660-0011**	Volume(L):	2880	G.O. Area(mm^2):	0.0131
Customer Sample No.:	SART12-T3- Asb	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 14
Analysis Date:	10/19/2016	Filter Size(mm^2):	25	Row:	C
Scope ID:	04-02	EFA(mm^2):	385	Column:	1-2
TEM Voltage:	100				

TEM AHERA Asbestos Analysis Of Air

Special Instructions:
Please use "SX" pricing. Thanks.

Due Date 10/31/2016

	48 Hour	1 Week
PLM	$6.50	$5.25
PLM 400 Pt Ct	$16.50	$15.25
Pb-FLAA	$6.50	$5.25
Pb-TCLP	$48.00	$32.00

Comments: Gypsum fibers Detected

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	C1	H6	None Detected							
0	C1	D5	None Detected							
0	C2	I4	None Detected							
0	C2	D4	None Detected							

Sample Number:	**041628660-0012**	Volume(L):	2880	G.O. Area(mm^2):	0.0131
Customer Sample No.:	SART13-T3- Asb	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 14
Analysis Date:	10/19/2016	Filter Size(mm^2):	25	Row:	C
Scope ID:	04-02	EFA(mm^2):	385	Column:	3-4
TEM Voltage:	100				

Comments: Gypsum fibers Detected

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	C3	H3	None Detected							
0	C3	D4	None Detected							
0	C4	B5	None Detected							
0	C4	H6	None Detected							

Sample Number:	**041628660-0013**	Volume(L):	2880	G.O. Area(mm^2):	0.0131
Customer Sample No.:	SART14-T3- Asb	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 14
Analysis Date:	10/19/2016	Filter Size(mm^2):	25	Row:	C
Scope ID:	04-02	EFA(mm^2):	385	Column:	5-6
TEM Voltage:	100				

Comments: Gypsum fibers Detected

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	C5	F8	None Detected							
0	C5	I9	None Detected							
0	C6	E1	None Detected							
0	C6	A3	None Detected							

Sample Number:	**041628660-0014**	Volume(L):	2880	G.O. Area(mm^2):	0.0131
Customer Sample No.:	SART15-T3- Asb	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 14
Analysis Date:	10/19/2016	Filter Size(mm^2):	25	Row:	C
Scope ID:	04-02	EFA(mm^2):	385	Column:	7-8
TEM Voltage:	100				

Comments: Gypsum fibers Detected

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	C7	A7	None Detected							
0	C7	H6	None Detected							
0	C8	B3	None Detected							
0	C8	G5	None Detected							

11/29/2016

TEM AHERA Asbestos Analysis Of Air

Special Instructions:
Please use "SX" pricing. Thanks.

Due Date 10/31/2016

	48 Hour	1 Week
PLM	$6.50	$5.25
PLM 400 Pt Ct	$16.50	$15.25
Pb-FLAA	$6.50	$5.25
Pb-TCLP	$48.00	$32.00

Sample Number:	**041628660-0015**	Volume(L):	2880	G.O. Area(mm^2):	0.0131
Customer Sample No.:	SART1-TB- Asbe	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 14
Analysis Date:	10/19/2016	Filter Size(mm^2):	25	Row:	C
Scope ID:	04-02	EFA(mm^2):	385	Column:	9-10
TEM Voltage:	100				

Comments:

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	C9	A9	None Detected							
0	C9	G7	None Detected							
0	C10	I3	None Detected							
0	C10	G5	None Detected							

11/29/2016

TEM AHERA Asbestos Analysis Of Air

Special Instructions:
Please use "SX" pricing. Thanks.

Due Date 11/08/2016

	48 Hour	1 Week
PLM	$6.50	$5.25
PLM 400 Pt Ct	$16.50	$15.25
Pb-FLAA	$6.50	$5.25
Pb-TCLP	$48.00	$32.00

Sample Number:	**041629490-0001**	Volume(L):	2880	G.O. Area(mm^2):	0.013
Customer Sample No.:	SMM1-T1-Asbest(	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 15
Analysis Date:	11/7/2016	Filter Size(mm^2):	25	Row:	A
Scope ID:	04-02	EFA(mm^2):	385	Column:	2-3
TEM Voltage:	100				

Comments:

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	A2	A2	None Detected							
0	A2	H6	None Detected							
0	A3	B9	None Detected							
0	A3	I6	None Detected							

Sample Number:	**041629490-0002**	Volume(L):	2880	G.O. Area(mm^2):	0.013
Customer Sample No.:	SMM2-T1-Asbest(	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 15
Analysis Date:	11/7/2016	Filter Size(mm^2):	25	Row:	A
Scope ID:	04-02	EFA(mm^2):	385	Column:	4-5
TEM Voltage:	100				

Comments:

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	A4	J4	None Detected							
0	A4	B3	None Detected							
0	A5	J4	None Detected							
0	A5	C4	None Detected							

Sample Number:	**041629490-0003**	Volume(L):	2880	G.O. Area(mm^2):	0.013
Customer Sample No.:	SMM3-T1-Asbest(	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 15
Analysis Date:	11/7/2016	Filter Size(mm^2):	25	Row:	A
Scope ID:	04-02	EFA(mm^2):	385	Column:	6-7
TEM Voltage:	100				

Comments:

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	A6	J2	None Detected							
0	A6	D4	None Detected							
0	A7	A8	None Detected							
0	A7	F7	None Detected							

Sample Number:	**041629490-0004**	Volume(L):	2880	G.O. Area(mm^2):	0.013
Customer Sample No.:	SMM4-T1-Asbest(	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 15
Analysis Date:	11/7/2016	Filter Size(mm^2):	25	Row:	A
Scope ID:	04-02	EFA(mm^2):	385	Column:	8-9
TEM Voltage:	100				

TEM AHERA Asbestos Analysis Of Air

Special Instructions:
Please use "SX" pricing. Thanks.

Due Date 11/08/2016

	48 Hour	1 Week
PLM	$6.50	$5.25
PLM 400 Pt Ct	$16.50	$15.25
Pb-FLAA	$6.50	$5.25
Pb-TCLP	$48.00	$32.00

Comments:

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	A8	F10	None Detected							
0	A8	J8	None Detected							
0	A9	A7	None Detected							
0	A9	G6	None Detected							

Sample Number:	**041629490-0005**	Volume(L):	2880	G.O. Area(mm^2):	0.013
Customer Sample No.:	SMM5-T1-Asbest(	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 15
Analysis Date:	11/7/2016	Filter Size(mm^2):	25	Row:	A
Scope ID:	04-02	EFA(mm^2):	385	Column:	10-11
TEM Voltage:	100				

Comments: Gypsum fibers Detected

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	A10	I2	None Detected							
0	A10	B6	None Detected							
0	A11	A6	None Detected							
0	A11	H8	None Detected							

Sample Number:	**041629490-0006**	Volume(L):	2880	G.O. Area(mm^2):	0.013
Customer Sample No.:	SMM1-T2-Asbest(	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 15
Analysis Date:	11/7/2016	Filter Size(mm^2):	25	Row:	B
Scope ID:	04-02	EFA(mm^2):	385	Column:	1-2
TEM Voltage:	100				

Comments:

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	B1	A9	None Detected							
0	B1	H8	None Detected							
0	B2	A7	None Detected							
0	B2	I8	None Detected							

Sample Number:	**041629490-0007**	Volume(L):	2880	G.O. Area(mm^2):	0.013
Customer Sample No.:	SMM2-T2-Asbest(	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 15
Analysis Date:	11/7/2016	Filter Size(mm^2):	25	Row:	B
Scope ID:	04-02	EFA(mm^2):	385	Column:	3-4
TEM Voltage:	100				

Comments: Gypsum and glass fibers Detected

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	B3	B8	None Detected							
0	B3	H7	None Detected							
1	B3	H7	Chrysotile	5.5	1	Matrix			MG SI FE	

TEM AHERA Asbestos Analysis Of Air

Special Instructions:
Please use "SX" pricing. Thanks.

Due Date 11/08/2016

	48 Hour	1 Week
PLM	$6.50	$5.25
PLM 400 Pt Ct	$16.50	$15.25
Pb-FLAA	$6.50	$5.25
Pb-TCLP	$48.00	$32.00

Sketch:

0	B4	I6	None Detected
0	B4	D3	None Detected

Sample Number:	**041629490-0008**	Volume(L):	2880	G.O. Area(mm²):	0.013
Customer Sample No.:	SMM3-T2-Asbest(	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 15
Analysis Date:	11/7/2016	Filter Size(mm²):	25	Row:	B
Scope ID:	04-02	EFA(mm²):	385	Column:	5-6
TEM Voltage:	100				

Comments:

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	B5	J3	None Detected							
0	B5	B5	None Detected							
0	B6	I3	None Detected							
0	B6	A5	None Detected							

Sample Number:	**041629490-0009**	Volume(L):	2880	G.O. Area(mm²):	0.013
Customer Sample No.:	SMM4-T2-Asbest(	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 15
Analysis Date:	11/7/2016	Filter Size(mm²):	25	Row:	B
Scope ID:	04-02	EFA(mm²):	385	Column:	7-8
TEM Voltage:	100				

Comments:

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	B7	J5	None Detected							
0	B7	D6	None Detected							
0	B8	I5	None Detected							
0	B8	C2	None Detected							

Sample Number:	**041629490-0010**	Volume(L):	2880	G.O. Area(mm²):	0.013
Customer Sample No.:	SMM1-T3-Asbest(	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 15
Analysis Date:	11/7/2016	Filter Size(mm²):	25	Row:	B
Scope ID:	04-02	EFA(mm²):	385	Column:	9-10
TEM Voltage:	100				

Comments:

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	B9	I2	None Detected							
0	B9	C4	None Detected							
0	B10	J2	None Detected							
0	B10	E3	None Detected							

TEM AHERA Asbestos Analysis Of Air

Special Instructions:
Please use "SX" pricing. Thanks.

Due Date 11/08/2016

	48 Hour	1 Week
PLM	$6.50	$5.25
PLM 400 Pt Ct	$16.50	$15.25
Pb-FLAA	$6.50	$5.25
Pb-TCLP	$48.00	$32.00

Sample Number:	**041629490-0011**	Volume(L):	2880	G.O. Area(mm^2):	0.013
Customer Sample No.:	SMM2-T3-Asbest(	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 15
Analysis Date:	11/7/2016	Filter Size(mm^2):	25	Row:	C
Scope ID:	04-02	EFA(mm^2):	385	Column:	1-2
TEM Voltage:	100				

Comments:

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	C1	A4	None Detected							
0	C1	G5	None Detected							
0	C2	B4	None Detected							
0	C2	H5	None Detected							

Sample Number:	**041629490-0012**	Volume(L):	2880	G.O. Area(mm^2):	0.013
Customer Sample No.:	SMM3-T3-Asbest(	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 15
Analysis Date:	11/7/2016	Filter Size(mm^2):	25	Row:	C
Scope ID:	04-02	EFA(mm^2):	385	Column:	3-4
TEM Voltage:	100				

Comments:

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	C3	A5	None Detected							
0	C3	H4	None Detected							
0	C4	J6	None Detected							
0	C4	C5	None Detected							

Sample Number:	**041629490-0013**	Volume(L):	2880	G.O. Area(mm^2):	0.013
Customer Sample No.:	SMM4-T3-Asbest(	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 15
Analysis Date:	11/7/2016	Filter Size(mm^2):	25	Row:	C
Scope ID:	04-02	EFA(mm^2):	385	Column:	5-6
TEM Voltage:	100				

Comments:

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	C5	J1	None Detected							
0	C5	B5	None Detected							
0	C6	A7	None Detected							
0	C6	H7	None Detected							

Sample Number:	**041629490-0014**	Volume(L):	2880	G.O. Area(mm^2):	0.013
Customer Sample No.:	SMM5-T3-Asbest(	Magnification(X):	19000	Total/Req G.O.:	4 / 4
Analyst:	sburany	Filter Type:	MCE	Grid Box #:	0416 AHERA 15
Analysis Date:	11/7/2016	Filter Size(mm^2):	25	Row:	C
Scope ID:	04-02	EFA(mm^2):	385	Column:	7-8
TEM Voltage:	100				

11/29/2016

TEM AHERA Asbestos Analysis Of Air

Special Instructions:
Please use "SX" pricing. Thanks.

Due Date 11/08/2016

	48 Hour	1 Week
PLM	$6.50	$5.25
PLM 400 Pt Ct	$16.50	$15.25
Pb-FLAA	$6.50	$5.25
Pb-TCLP	$48.00	$32.00

Comments:

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	C7	J4	None Detected							
0	C7	D7	None Detected							
0	C8	B6	None Detected							
0	C8	H7	None Detected							

Sample Number:	**041629490-0015**	Volume(L):	0	G.O. Area(mm^2):	0.013
Customer Sample No.:	SMM-TR-Asbesto	Magnification(X):	20000	Total/Req G.O.:	10 / 10
Analyst:	wnguyen	Filter Type:	MCE	Grid Box #:	0416-AHERA-15
Analysis Date:	11/16/2016	Filter Size(mm^2):	25	Row:	C
Scope ID:	04-03	EFA(mm^2):	385	Column:	9,10
TEM Voltage:	100				

Comments:

# of Strucs	Grid ID	G.O. ID	Mineral Type	Length	Width	Struct. Type	SAED	Negative #	EDXA	Comment
0	C9	B1	None Detected							
0	C9	B3	None Detected							
0	C9	B5	None Detected							
0	C9	B7	None Detected							
0	C9	B9	None Detected							
0	C10	B2	None Detected							
0	C10	B4	None Detected							
0	C10	B6	None Detected							
0	C10	G2	None Detected							
0	C10	G4	None Detected							

4. QC Data Reports/Logs

Monthly TEM Air (AHERA, EPA Level II) QC Summary

Laboratory: Cinnaminson **Report#: 1** **Month/Year: Nov-16**

	Date	Order & Sample #	Grid Opening	Original Analyst	Original Result	QC Analyst	QC Result	Confirmed Result	Type of Analysis	Variance Org.	Variance QC	Conclusion	Scope
1	10/19/16	41628660-8	ALL	SB	0	TY	0	n/a	Diff. GO	0.00	0.00	Pass	Same
2	11/7/16	41629490-14	C7J4	SB	0	PJC	0	0	Same GO	0.00	0.00	Pass	Same
3	11/7/16	41629490-14	C7D7	SB	0	PJC	0	0	Same GO	0.00	0.00	Pass	Same
4	11/7/16	41629490-14	C8B6	SB	0	PJC	0	0	Same GO	0.00	0.00	Pass	Same
5	11/7/16	41629490-14	C8H7	SB	0	PJC	0	0	Same GO	0.00	0.00	Pass	Same
6	11/22/16	41628499-6	D1I4	TY	0	WN	0	0	Same GO	0.00	0.00	Pass	Same
7	11/22/16	41628499-6	D1G6	TY	0	WN	0	0	Same GO	0.00	0.00	Pass	Same
8	11/22/16	41628499-6	D2B7	TY	0	WN	0	0	Same GO	0.00	0.00	Pass	Same
9	11/22/16	41628499-6	D2E9	TY	0	WN	0	0	Same GO	0.00	0.00	Pass	Same

Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Appendix A to Subpart E

QC

Lab ID:
Client: Geocon
Address:

Order ID 629490

Received:
TAT:

Sample ID: 14/5mm5-T3-Ashestos
Location:

Results Due

Project: QC Inter Analyst Sample 600

Special Instructions

NSD = No Structures Detected Structure Types: { F = Fiber, B = Bundle, C = Cluster, M = Matrix }

Grid I.D.	G.O. I.D.	Structure Number	Non Asbestos	ED OBSERVATION Chrys	Amphi	Sketch	LENGTH ≥ 0.5 µm < 5 µm	≥ 5 µm	WIDTH µm	Structure Type	SAED Negative Number	EDXA Chrys., Amo., Etc.
C7	J4	NSD								F B C M		
	D7	NSD								F B C M		
C8	B6	NSD								F B C M		
	H7	NSD								F B C M		
										F B C M		
										F B C M		
										F B C M		
										F B C M		
										F B C M		
										F B C M		
										F B C M		
										F B C M		
										F B C M		
										F B C M		
										F B C M		
										F B C M		
										F B C M		
										F B C M		
										F B C M		
(Total)		0	0									

Asbestos Fibers Present
- [ ] Chrysotile
- [ ] Anthophyllite
- [ ] Amosite
- [ ] Crocidolite
- [ ] Actinolite
- [ ] Tremolite

Nonasbestos Fibers Present
- [ ] (1) Gypsum
- [ ] (2) Glass
- [ ] (3) Cellulose
- [ ] (4) Organic Fibers
- [ ] (5) Fibers Containing

Filter Type: MCE TEM Voltage (kv): 100
Filter Size (mm): 25 Magnification (X): 19K
EFA (sq.mm): 385 Grid Opening Area:
Filter Pore Size (micron): 0.45 GO Required: 4
Sample Volume (L): 2880 GO Analyzed: 4

Grid Box # 04/6 Ahera 153 Row C Column 7,8
Filter Accepted for Analysis: [X] Yes [ ] No
If no, reason for rejection:

Analyst: BC Scope 04-02 Date 11/7/16

AHERA7.9.0

EMSL Analytical, Inc.

Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Appendix A to Subpart E

QC

Lab ID:
Client: Geocon
Address:

Order ID 629490

Received:
TAT:

Sample ID:
Location: Blank

Results Due

Project:

Special Instructions

NSD = No Structures Detected Structure Types: { F = Fiber, B = Bundle, C = Cluster, M = Matrix }

Grid I.D.	G.O. I.D.	Structure Number	Non Asbestos	ED OBSERVATION Chrys	ED OBSERVATION Amphi	Sketch	LENGTH ≥ 0.5 µm < 5 µm	LENGTH ≥ 5 µm	WIDTH µm	Structure Type	SAED Negative Number	EDXA Chrys.,Amo., Etc.
A1	G9	NSD								F B C M		
	G7	|								F B C M		
	D9	|								F B C M		
	D7	|								F B C M		
	B8	NSD								F B C M		
A12	I6	|								F B C M		
	I4	|								F B C M		
	H1	|								F B C M		
	D4	|								F B C M		
	D6	NSD								F B C M		
										F B C M		
										F B C M		
										F B C M		
										F B C M		
										F B C M		
										F B C M		
										F B C M		
										F B C M		
		0	0							F B C M		
(Total)												

Asbestos Fibers Present
- ☐ Chrysotile
- ☐ Anthophyllite
- ☐ Amosite
- ☐ Crocidolite
- ☐ Actinolite
- ☐ Tremolite

Nonasbestos Fibers Present
- ☐ (1) Gypsum
- ☐ (2) Glass
- ☐ (3) Cellulose
- ☐ (4) Organic Fibers
- ☐ (5) Fibers Containing

Filter Type: MCE TEM Voltage (kv): 100
Filter Size (mm): 25 Magnification (X): 19K
EFA (sq.mm): 385 Grid Opening Area:
Filter Pore Size (micron): 0.45 GO Required:
Sample Volume (L): 153 GO Analyzed:
Grid Box # 041 26 Aherm B Row A Column 1, 12
Filter Accepted for Analysis: ☒ Yes ☐ No
If no, reason for rejection:

Analyst Sdy Scope 4-2 Date 11.7.16

AHERA7.9.0 EMSL Analytical, Inc.

5. Client and EMSL Internal Chains of Custody

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number (*Lab Use Only*): 041628499

RECEIVED EMSL CINNAMINSON, NJ 2016 OCT 14 P 1:09

PHONE:
FAX:

Company Name: Geocon Consultants, Inc.		**EMSL Customer ID:**	
Street: 3160 Gold Valley Drive, #800		**City:** Rancho Cordova	**State/Province:** CA
Zip/Postal Code: 95742	**Country:** USA	**Telephone #:** 916.852.9118	**Fax #:**
Report To (Name): Josh Ewert		**Please Provide Results:** ☐ Fax ☑ Email	
Email Address: Ewert@geoconinc.com		**Purchase Order:**	
Project Name/Number: DTSC Metal Shredders / S9850-03-21		**EMSL Project ID** (*Internal Use Only*):	
U.S. State Samples Taken: CA		**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt	

EMSL-Bill to: ☑ Same ☐ Different - If Bill to is Different note instructions in Comments**
Third Party Billing requires written authorization from third party

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☐ 1 Week ☒ 2 Week

**For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

PCM - Air ☐ Check if samples are from NY
- ☐ NIOSH 7400
- ☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
- ☐ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)

Point Count
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)

Point Count w/Gravimetric
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
- ☐ NYS 198.1 (friable in NY)
- ☐ NYS 198.6 NOB (non-friable-NY)
- ☐ NYS 198.8 SOF-V
- ☐ NIOSH 9002 (<1%)

TEM – Air ☐ **4-4.5hr TAT (AHERA only)**
- ☑ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312

TEM - Bulk
- ☐ TEM EPA NOB
- ☐ NYS NOB 198.4 (non-friable-NY)
- ☐ Chatfield SOP
- ☐ TEM Mass Analysis-EPA 600 sec. 2.5

TEM – Water: EPA 100.2
- Fibers >10µm ☐ Waste ☐ Drinking
- All Fiber Sizes ☐ Waste ☐ Drinking

TEM- Dust
- ☐ Microvac - ASTM D 5755
- ☐ Wipe - ASTM D6480
- ☐ Carpet Sonication (EPA 600/J-93/167)

Soil/Rock/Vermiculite
- ☐ PLM EPA 600/R-93/116 with milling prep (<1%)
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
- ☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM Qualitative via Filtration Prep
- ☐ TEM Qualitative via Drop Mount Prep
- ☐ Cincinnati Method EPA 600/R-04/004 – PLM/TEM (BC only)

Other:
- ☐

☐ **Check For Positive Stop – Clearly Identify Homogenous Group**

Filter Pore Size (Air Samples): ☐ 0.8µm ☒ 0.45µm

Samplers Name: C. Dennig

Samplers Signature: C. Dennig

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
SARB1-T1-Asbestos	PERIMETER SAMPLE	2,880 liters	10/6/2016
SARB2-T1-Asbestos			
SARB3-T1-Asbestos			
SARB4-T1-Asbestos			
SARB5-T1-Asbestos			

Client Sample # (s): SARB1-T1-Asbestos - SARB-T8-Asbestos **Total # of Samples:** 15

Relinquished (Client): [signature] **Date:** 10/7/16 **Time:** 1000

Received (Lab): [signature] FXGD **Date:** 10/14/16 **Time:** 1:05

Comments/Special Instructions:

Page 1 of 2 pages

Controlled Document – Asbestos COC – R10 – 05/09/2016

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number *(Lab Use Only)*: 0411628499

RECEIVED EMSL CINNAMINSON, NJ 2016 OCT 14 P 1:09

PHONE:
FAX:

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
SARB1-T2-Asbestos	Perimeter Sample	2,880 liters	10/7/16
SARB2-T2-Asbestos			
SARB3-T2-Asbestos			
SARB4-T2-Asbestos			
SARB5-T2-Asbestos			
SARB1-T3-Asbestos	Perimeter Sample	2,880 liters	10/8/16
SARB2-T3-Asbestos			
SARB3-T3-Asbestos			
SARB4-T3-Asbestos			
SARB-TB-Asbestos		—	

***Comments/Special Instructions:**

Page 2 of 2 pages

Controlled Document – Asbestos COC – R10 – 05/09/2016

INTERNAL CHAIN OF CUSTODY

Order ID: 041628499 *10/14/2016 4:16:23 PM*

Attn: Josh Ewert
Geocon Consultants, Inc.
3160 Gold Valley Drive
Suite 800
Rancho Cordova, CA 95742
Fax: (916) 852-9132 Phone: (916) 852-9118
Project: **DTSC Metal Shredders / S9850-03-21**

Customer ID: GECN80
Customer PO:
Received: 10/14/16 1:05 PM

EMSL Order: 041628499
EMSL Proj ID: SX-**-**
Cust COC ID

REPORT TO INSTRUCTIONS

- [ ] Send Receipt Confirmation Emails
- [ ] No electronic signatures
- [ ] Project ID required
- [ ] Cust. COC ID required
- [ ] Miscellaneous account

Billing Frequency
With Report -- Create and send an invoice for each Order ID

Accounting Terms: N30

Sales Rep and Comment: nmurphy

Instructions

Please use "SX" pricing. Thanks.

48 Hour1 Week
PLM$6.50$5.25
PLM 400 Pt Ct
$16.50$15.25
Pb-FLAA$6.50$5.25
Pb-TCLP$48.00$32.00

Internal Comment

BILL TO INSTRUCTIONS

- [ ] Exempt from prep charge
- [ ] Exempt from off hour min charges
- [ ] Exempt from layer/aliquot charges
- [ ] Authorization to use credit card
- [ ] P.O. Required

Billing Frequency
With Report -- Create and send an invoice for each Order ID

Use Billing Contact:

Accounting Terms: N30

Payment Directions: With Report

Instructions

BILLING/INVOICING
At login, from the dropdown menu option on Project ID: match up the first letter ("S" or "E") and the first four digits ("0000") from the COC to SMXP – ignore trailing numbers
The project IDs on the COC will still be the same format: "S" = Rancho Cordova office, or "E" = Livermore office
0000 Four Digits = the project ID (Matches to SMXP & the Caltrans Contract)
Please use "SX" pricing. Thanks.

48 Hour1 Week
PLM$6.50$5.25
PLM 400 Pt Ct
$16.50$15.25
Pb-FLAA$6.50$5.25
Pb-TCLP$48.00$32.00

-00- Two digits will now change from project to project based upon who is sampling. It will no longer be fixed as "06". Example John Pfeifer is -01".
00 Last two digits will continue to change from project to project as well; just like before. (D Kocher 08/21/2013)
For projects requested to bill to Sterling, use billing ID STER62 and attn G.Vaccaro, then select matching project ID (Dkocher 09/22/2014)

INTERNAL CHAIN OF CUSTODY

Order ID: 041628499 *10/14/2016 4:16:24 PM*

Attn: Josh Ewert
Geocon Consultants, Inc.
3160 Gold Valley Drive
Suite 800
Rancho Cordova, CA 95742
Fax: (916) 852-9132 Phone: (916) 852-9118
Project: **DTSC Metal Shredders / S9850-03-21**

Customer ID: GECN80
Customer PO:
Received: 10/14/16 1:05 PM

EMSL Order: 041628499
EMSL Proj ID: SX-**-**
Cust COC ID

Test: **TEM AHERA** **Matrix** Air **TAT:** 2 Week **Qty:** 14

Desc: **Asbestos Fiber Analysis by Transmission Electron M**

Logged: capeters

Date: 10/14/2016

☐ Lab Opening Exempt For Test
☐ Layer/Aliquot Charge Exempt For Test
☐ Prep Charge Exempt For Test
☑ Free Shipping Eligible

Sample Condition: ☐ Acceptable ☐ Unacceptable

Comments

QC

Prepped: Sm **Date** 10-14-16
Analyzed: HE **Date** 10/17/16
Data Entry MZ **Date** 10/17/16
Screened: DFL **Date** 10/17/16
Mailed: **Date**
Scanned Internal Docs: D.Boz **Date** 10-18-16

Special Test Instructions

Lab Sample #	Cust. Sample #	Location	Due Date
041628499-0001	SARB1-T1-Asbestos	Perimeter Sample	10/28/2016 1:05:00 PM
041628499-0002	SARB2-T1-Asbestos	Perimeter Sample	10/28/2016 1:05:00 PM
041628499-0003	SARB3-T1-Asbestos	Perimeter Sample	10/28/2016 1:05:00 PM
041628499-0004	SARB4-T1-Asbestos	Perimeter Sample	10/28/2016 1:05:00 PM
041628499-0005	SARB5-T1-Asbestos	Perimeter Sample	10/28/2016 1:05:00 PM
041628499-0006	SARB1-T2-Asbestos	Perimeter Sample	10/28/2016 1:05:00 PM
041628499-0007	SARB2-T2-Asbestos	Perimeter Sample	10/28/2016 1:05:00 PM
041628499-0008	SARB3-T2-Asbestos	Perimeter Sample	10/28/2016 1:05:00 PM
041628499-0009	SARB4-T2-Asbestos	Perimeter Sample	10/28/2016 1:05:00 PM
041628499-0010	SARB5-T2-Asbestos	Perimeter Sample	10/28/2016 1:05:00 PM
041628499-0011	SARB1-T3-Asbestos	Perimeter Sample	10/28/2016 1:05:00 PM
041628499-0012	SARB2-T3-Asbestos	Perimeter Sample	10/28/2016 1:05:00 PM
041628499-0013	SARB3-T3-Asbestos	Perimeter Sample	10/28/2016 1:05:00 PM
041628499-0014	SARB4-T3-Asbestos – Blown	Perimeter Sample	10/28/2016 1:05:00 PM

0416 Ahera 146 C-E

INTERNAL CHAIN OF CUSTODY

Order ID: 041628499 *11/10/2016 3:48:03 PM*

Attn: Josh Ewert
Geocon Consultants, Inc.
3160 Gold Valley Drive
Suite 800
Rancho Cordova, CA 95742
Fax: (916) 852-9132 Phone: (916) 852-9118
Project: **DTSC Metal Shredders / S9850-03-21**

Customer ID: GECN80
Customer PO:
Received: 10/14/16 1:05 PM

EMSL Order: 041628499
EMSL Proj ID:
Cust COC ID

REPORT TO INSTRUCTIONS

- [ ] Send Receipt Confirmation Emails
- [ ] No electronic signatures
- [ ] Project ID required
- [ ] Cust. COC ID required
- [ ] Miscellaneous account

Billing Frequency
With Report -- Create and send an invoice for each Order ID

Accounting Terms: N30

Sales Rep and Comment: nmurphy

Instructions

Please use "SX" pricing. Thanks.

48 Hour1 Week
PLM$6.50$5.25
PLM 400 Pt Ct
$16.50$15.25
Pb-FLAA$6.50$5.25
Pb-TCLP$48.00$32.00

Internal Comment

BILL TO INSTRUCTIONS

- [ ] Exempt from prep charge
- [ ] Exempt from off hour min charges
- [ ] Exempt from layer/aliquot charges
- [ ] Authorization to use credit card
- [ ] P.O. Required

Billing Frequency
With Report -- Create and send an invoice for each Order ID

Use Billing Contact:

Accounting Terms: N30

Payment Directions: With Report

Instructions

BILLING/INVOICING
At login, from the dropdown menu option on Project ID: match up the first letter ("S" or "E") and the first four digits ("0000") from the COC to SMXP – ignore trailing numbers
The project IDs on the COC will still be the same format: "S" = Rancho Cordova office, or "E" = Livermore office
0000 Four Digits = the project ID (Matches to SMXP & the Caltrans Contract)
Please use "SX" pricing. Thanks.

48 Hour1 Week
PLM$6.50$5.25
PLM 400 Pt Ct
$16.50$15.25
Pb-FLAA$6.50$5.25
Pb-TCLP$48.00$32.00

-00- Two digits will now change from project to project based upon who is sampling. It will no longer be fixed as "06". Example John Pfeifer is -01".
00 Last two digits will continue to change from project to project as well; just like before. (D Kocher 08/21/2013)
For projects requested to bill to Sterling, use billing ID STER62 and attn G.Vaccaro, then select matching project ID (Dkocher 09/22/2014)

INTERNAL CHAIN OF CUSTODY

Order ID: 041628499 *11/10/2016 3:48:03 PM*

Attn: Josh Ewert
Geocon Consultants, Inc.
3160 Gold Valley Drive
Suite 800
Rancho Cordova, CA 95742
Fax: (916) 852-9132 Phone: (916) 852-9118
Project: **DTSC Metal Shredders / S9850-03-21**

Customer ID: GECN80
Customer PO:
Received: 10/14/16 1:05 PM

EMSL Order: 041628499
EMSL Proj ID:
Cust COC ID

Test: **TEM AHERA** **Matrix** Air **TAT:** 1 Week **Qty:** 14

Desc: **Asbestos Fiber Analysis by Transmission Electron M**

Logged: capeters

Date: 10/14/2016

☐ Lab Opening Exempt For Test
☐ Prep Charge Exempt For Test
☐ Layer/Aliquot Charge Exempt For Test
☑ Free Shipping Eligible

Sample Condition: ☐ Acceptable ☐ Unacceptable

Comments

Prepped: **Date**
Analyzed: Tim Young **Date** 11-11-16
Data Entry **Date**
Screened: AR **Date** 11/14/16
Mailed: **Date**
Scanned Internal Docs: D.Boz **Date** 11-14-16

Special Test Instructions

Lab Sample #	Cust. Sample #	Location	Due Date
041628499-0001	SARB1-T1-Asbestos	Perimeter Sample	11/17/2016 3:25:00 PM
041628499-0002	SARB2-T1-Asbestos	Perimeter Sample	11/17/2016 3:25:00 PM
041628499-0003	SARB3-T1-Asbestos	Perimeter Sample	11/17/2016 3:25:00 PM
041628499-0004	SARB4-T1-Asbestos	Perimeter Sample	11/17/2016 3:25:00 PM
041628499-0005	SARB5-T1-Asbestos	Perimeter Sample	11/17/2016 3:25:00 PM
041628499-0006	SARB1-T2-Asbestos	Perimeter Sample	11/17/2016 3:25:00 PM
041628499-0007	SARB2-T2-Asbestos	Perimeter Sample	11/17/2016 3:25:00 PM
041628499-0008	SARB3-T2-Asbestos	Perimeter Sample	11/17/2016 3:25:00 PM
041628499-0009	SARB4-T2-Asbestos	Perimeter Sample	11/17/2016 3:25:00 PM
041628499-0010	SARB5-T2-Asbestos	Perimeter Sample	11/17/2016 3:25:00 PM
041628499-0011	SARB1-T3-Asbestos	Perimeter Sample	11/17/2016 3:25:00 PM
041628499-0012	SARB2-T3-Asbestos	Perimeter Sample	11/17/2016 3:25:00 PM
041628499-0013	SARB3-T3-Asbestos	Perimeter Sample	11/17/2016 3:25:00 PM
041628499-0014	SARB4-T3-Asbestos	Perimeter Sample	11/17/2016 3:25:00 PM

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number *(Lab Use Only)*: 041628660

PHONE:
FAX:

Company Name : Geocon Consultants, Inc.		**EMSL Customer ID:**	
Street: 3160 Gold Valley Drive, #800		**City:** Rancho Cordova	**State/Province:** CA
Zip/Postal Code: 95742	**Country:** USA	**Telephone #:** 916.852.9118	**Fax #:**
Report To (Name): Josh Ewert		**Please Provide Results:** ☐ Fax ☑ Email	
Email Address: Ewert@geoconinc.com		**Purchase Order:**	
Project Name/Number: DTSC Metal Shredders / S9850-03-21		**EMSL Project ID** *(Internal Use Only)*:	
U.S. State Samples Taken: CA		**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt	

EMSL-Bill to: ☑ Same ☐ Different - If Bill to is Different note instructions in Comments**
Third Party Billing requires written authorization from third party

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☐ 1 Week ☒ 2 Week

**For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

PCM - Air ☐ Check if samples are from NY
- ☐ NIOSH 7400
- ☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
- ☐ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)

Point Count
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)

Point Count w/Gravimetric
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
- ☐ NYS 198.1 (friable in NY)
- ☐ NYS 198.6 NOB (non-friable-NY)
- ☐ NYS 198.8 SOF-V
- ☐ NIOSH 9002 (<1%)

TEM – Air ☐ 4-4.5hr TAT (AHERA only)
- ☑ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312

TEM - Bulk
- ☐ TEM EPA NOB
- ☐ NYS NOB 198.4 (non-friable-NY)
- ☐ Chatfield SOP
- ☐ TEM Mass Analysis-EPA 600 sec. 2.5

TEM – Water: EPA 100.2
- Fibers >10µm ☐ Waste ☐ Drinking
- All Fiber Sizes ☐ Waste ☐ Drinking

TEM- Dust
- ☐ Microvac - ASTM D 5755
- ☐ Wipe - ASTM D6480
- ☐ Carpet Sonication (EPA 600/J-93/167)

Soil/Rock/Vermiculite
- ☐ PLM EPA 600/R-93/116 with milling prep (<1%)
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
- ☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM Qualitative via Filtration Prep
- ☐ TEM Qualitative via Drop Mount Prep
- ☐ Cincinnati Method EPA 600/R-04/004 - PLM/TEM (BC only)

Other:
- ☐

☐ **Check For Positive Stop – Clearly Identify Homogenous Group**

Filter Pore Size (Air Samples): ☐ 0.8µm ☒ 0.45µm

Samplers Name: C - Deniz **Samplers Signature:**

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
SARTI1-T1-Asbestos	Perimeter Sample	2,880 liters	10/12
SARTI2-T2- "	↓	↓	↓
SARTI3-T1- "			
SARTI4-T1- "			
SARTI1-T2- "	↓	↓	10/13

Client Sample # (s): SARTI1-T1-Asbestos - SARTI-T8-Asbestos **Total # of Samples:** ~~14~~ 15 (m)

Relinquished (Client): **Date:** 10/15/16 **Time:** 0800

Received (Lab): EMSL FX **Date:** 10-17-2016 **Time:** 8:50 am

Comments/Special Instructions:
EMSL FX 7951 9690 7475

CI: GECN80

Controlled Document – Asbestos COC – R10 – 05/09/2016

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number *(Lab Use Only)*: 041628460

PHONE:
FAX:

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
SARTI2-T2-Asbestos	Perimeter Sample	2,880 liter	10/13
SARTI3-T2- "			
SARTI4-T2- "			
SARTI5-T2- "			
SARTI2-T3- "			10/14
SARTI2-T3- "			
SARTI3-T3- "			
SARTI4-T3- "			
SARTI5-T3- "			
SARTI-TB- "			

***Comments/Special Instructions:**

16 OCT 17 AM 9:16
EMSL
CINNAMINSON, NJ

Page 2 of 2 pages

INTERNAL CHAIN OF CUSTODY

Order ID: 041628660 *10/17/2016 2:03:08 PM*

Attn: Josh Ewert
Geocon Consultants, Inc.
3160 Gold Valley Drive
Suite 800
Rancho Cordova, CA 95742
Fax: (916) 852-9132 Phone: (916) 852-9118
Project: **DTSC Metal Shredders / S9850-03-21**

Customer ID: GECN80
Customer PO:
Received: 10/17/16 8:50 AM

EMSL Order: 041628660
EMSL Proj ID: S9805-**-**
Cust COC ID

REPORT TO INSTRUCTIONS

- [ ] Send Receipt Confirmation Emails
- [ ] No electronic signatures
- [ ] Project ID required
- [ ] Cust. COC ID required
- [ ] Miscellaneous account

Billing Frequency
With Report -- Create and send an invoice for each Order ID

Accounting Terms: N30

Sales Rep and Comment: nmurphy

Instructions

Please use "SX" pricing. Thanks.

48 Hour1 Week
PLM$6.50$5.25
PLM 400 Pt Ct
$16.50$15.25
Pb-FLAA$6.50$5.25
Pb-TCLP$48.00$32.00

Internal Comment

BILL TO INSTRUCTIONS

- [ ] Exempt from prep charge
- [ ] Exempt from off hour min charges
- [ ] Exempt from layer/aliquot charges
- [ ] Authorization to use credit card
- [ ] P.O. Required

Billing Frequency
With Report -- Create and send an invoice for each Order ID

Use Billing Contact:

Accounting Terms: N30

Payment Directions: With Report

Instructions

BILLING/INVOICING
At login, from the dropdown menu option on Project ID: match up the first letter ("S" or "E") and the first four digits ("0000") from the COC to SMXP – ignore trailing numbers
The project IDs on the COC will still be the same format: "S" = Rancho Cordova office, or "E" = Livermore office
0000 Four Digits = the project ID (Matches to SMXP & the Caltrans Contract)
Please use "SX" pricing. Thanks.

48 Hour1 Week
PLM$6.50$5.25
PLM 400 Pt Ct
$16.50$15.25
Pb-FLAA$6.50$5.25
Pb-TCLP$48.00$32.00

-00- Two digits will now change from project to project based upon who is sampling. It will no longer be fixed as "06". Example John Pfeifer is -01".
00 Last two digits will continue to change from project to project as well; just like before. (D Kocher 08/21/2013)
For projects requested to bill to Sterling, use billing ID STER62 and attn G.Vaccaro, then select matching project ID (Dkocher 09/22/2014)

INTERNAL CHAIN OF CUSTODY

Order ID: 041628660 *10/17/2016 2:03:09 PM*

Attn: Josh Ewert
Geocon Consultants, Inc.
3160 Gold Valley Drive
Suite 800
Rancho Cordova, CA 95742
Fax: (916) 852-9132 Phone: (916) 852-9118
Project: **DTSC Metal Shredders / S9850-03-21**

Customer ID: GECN80
Customer PO:
Received: 10/17/16 8:50 AM

EMSL Order: 041628660
EMSL Proj ID: S9805-**-**
Cust COC ID

Test: **TEM AHERA** **Matrix** Air **TAT:** 2 Week **Qty:** 15

Desc: **Asbestos Fiber Analysis by Transmission Electron M**

Logged: jherting

Date: 10/17/2016

☐ Lab Opening Exempt For Test
☐ Prep Charge Exempt For Test
☐ Layer/Aliquot Charge Exempt For Test
☑ Free Shipping Eligible

Sample Condition: ☐ Acceptable ☐ Unacceptable

Comments

QC GO: 0.0131MM2
LOT: 0416-70AH

Prepped: Sm **Date** 10-17-16
Analyzed: SB **Date** 10.19.16
Data Entry **Date**
Screened: KB **Date** 10/19/16
Mailed: **Date**
Scanned Internal Docs: KD **Date** 10.21.2016

Special Test Instructions

Lab Sample #	Cust. Sample #	Location	Due Date
041628660-0001	SART11-T1-Asbestos	Perimeter Sample	10/31/2016 8:50:00 AM
041628660-0002	SART12-T1-Asbestos	Perimeter Sample	10/31/2016 8:50:00 AM
041628660-0003	SART13-T1-Asbestos	Perimeter Sample	10/31/2016 8:50:00 AM
041628660-0004	SART14-T1-Asbestos	Perimeter Sample	10/31/2016 8:50:00 AM
041628660-0005	SART11-T2-Asbestos	Perimeter Sample	10/31/2016 8:50:00 AM
041628660-0006	SART12-T2-Asbestos	Perimeter Sample	10/31/2016 8:50:00 AM
041628660-0007	SART13-T2-Asbestos	Perimeter Sample	10/31/2016 8:50:00 AM
041628660-0008	SART14-T2-Asbestos	Perimeter Sample	10/31/2016 8:50:00 AM
041628660-0009	SART15-T2-Asbestos	Perimeter Sample	10/31/2016 8:50:00 AM
041628660-0010	SART11-T3-Asbesots	Perimeter Sample	10/31/2016 8:50:00 AM
041628660-0011	SART12-T3-Asbesots	Perimeter Sample	10/31/2016 8:50:00 AM
041628660-0012	SART13-T3-Asbesots	Perimeter Sample	10/31/2016 8:50:00 AM
041628660-0013	SART14-T3-Asbesots	Perimeter Sample	10/31/2016 8:50:00 AM
041628660-0014	SART15-T3-Asbesots	Perimeter Sample	10/31/2016 8:50:00 AM
041628660-0015	SART1-TB-Asbesots	Perimeter Sample	10/31/2016 8:50:00 AM

Over Ahera 147 A-C

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number (*Lab Use Only*): 041G 29490

PHONE:
FAX:

Company Name : Geocon Consultants, Inc.		**EMSL Customer ID:**	
Street: 3160 Gold Valley Drive, #800		**City:** Rancho Cordova	**State/Province:** CA
Zip/Postal Code: 95742	**Country:** USA	**Telephone #:** 916.852.9118	**Fax #:**
Report To (Name): Josh Ewert		**Please Provide Results:** ☐ Fax ☑ Email	
Email Address: Ewert@geoconinc.com		**Purchase Order:**	
Project Name/Number: DTSC Metal Shredders / S9850-03-21		**EMSL Project ID** (*Internal Use Only*):	
U.S. State Samples Taken: CA		**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt	

EMSL-Bill to: ☑ Same ☐ Different - If Bill to is Different note instructions in Comments**
Third Party Billing requires written authorization from third party

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☐ 1 Week ☒ 2 Week

**For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

PCM - Air ☐ Check if samples are from NY
- ☐ NIOSH 7400
- ☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
- ☐ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)

Point Count
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)

Point Count w/Gravimetric
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
- ☐ NYS 198.1 (friable in NY)
- ☐ NYS 198.6 NOB (non-friable-NY)
- ☐ NYS 198.8 SOF-V
- ☐ NIOSH 9002 (<1%)

TEM – Air ☐ **4-4.5hr TAT (AHERA only)**
- ☑ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312

TEM - Bulk
- ☐ TEM EPA NOB
- ☐ NYS NOB 198.4 (non-friable-NY)
- ☐ Chatfield SOP
- ☐ TEM Mass Analysis-EPA 600 sec. 2.5

TEM – Water: EPA 100.2
- Fibers >10µm ☐ Waste ☐ Drinking
- All Fiber Sizes ☐ Waste ☐ Drinking

TEM- Dust
- ☐ Microvac - ASTM D 5755
- ☐ Wipe - ASTM D6480
- ☐ Carpet Sonication (EPA 600/J-93/167)

Soil/Rock/Vermiculite
- ☐ PLM EPA 600/R-93/116 with milling prep (<1%)
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
- ☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM Qualitative via Filtration Prep
- ☐ TEM Qualitative via Drop Mount Prep
- ☐ Cincinnati Method EPA 600/R-04/004 – PLM/TEM (BC only)

Other:
- ☐

2016 OCT 21 A 10:55 CINNAMINSON, N.J.

☐ **Check For Positive Stop – Clearly Identify Homogenous Group**

Filter Pore Size (Air Samples): ☐ 0.8µm ☒ 0.45µm

Samplers Name: S. Keffer **Samplers Signature:**

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
SMM1-TI-Asbestos	Perimeter Sample	2,880 L	10/20/16
SMM2-TI- "	↓	↓	↓
SMM3-TI- "			
SMM4-TI- "			
SMM5-TI- "	↓	↓	↓

Client Sample # (s): SMM1-TI-Asbestos - SMM-FB-Asbestos **Total # of Samples:** 15

Relinquished (Client): C. Deming **Date:** 10/22/16 **Time:** 1900

Received (Lab): **Date:** 10/25/16 **Time:** 9:40a

Comments/Special Instructions:
FX-7951 9943 0549 (15) P.

OK to not to read sample #15 per Josh. It has no volume. AS 11/2/16 11:35Am

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number *(Lab Use Only)*:

OL11C6294190

PHONE:
FAX:

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
SMM1-T2-Asbestos	PERIMETER SAMPLE	2880 L	10/21/16
SMM2-T2- "			
SMM3-T2- "			
SMM4-T2- "			
SMM1-T3- "			10/22/16
SMM2-T3- "			
SMM3-T3- "			
SMM4-T3- "			
SMM5-T3- "			
SMM-TB-Asbestos		—	

RECEIVED EMSL CINNAMINSON, N.J. 2016 OCT 25 A 10:55

***Comments/Special Instructions:**

INTERNAL CHAIN OF CUSTODY

Order ID: 041629490 *11/4/2016 11:41:51 PM*

Attn: Josh Ewert
Geocon Consultants, Inc.
3160 Gold Valley Drive
Suite 800
Rancho Cordova, CA 95742
Fax: (916) 852-9132 Phone: (916) 852-9118
Project: **DTSC Metal Shredders / S9850-03-21**

Customer ID: GECN80
Customer PO:
Received: 10/25/16 9:40 AM

EMSL Order: 041629490
EMSL Proj ID:
Cust COC ID

REPORT TO INSTRUCTIONS

- ☐ Send Receipt Confirmation Emails
- ☐ No electronic signatures
- ☐ Project ID required
- ☐ Cust. COC ID required
- ☐ Miscellaneous account

Billing Frequency
With Report -- Create and send an invoice for each Order ID

Accounting Terms: N30

Sales Rep and Comment: nmurphy

Instructions

Please use "SX" pricing. Thanks.

☐48 Hour☐1 Week
PLM☐$6.50☐$5.25
PLM 400 Pt Ct
$16.50☐$15.25
Pb-FLAA☐$6.50☐$5.25
Pb-TCLP☐$48.00☐$32.00

Internal Comment

BILL TO INSTRUCTIONS

- ☐ Exempt from prep charge
- ☐ Exempt from off hour min charges
- ☐ Exempt from layer/aliquot charges
- ☐ Authorization to use credit card
- ☐ P.O. Required

Billing Frequency
With Report -- Create and send an invoice for each Order ID

Use Billing Contact:

Accounting Terms: N30

Payment Directions: With Report

Instructions

BILLING/INVOICING
At login, from the dropdown menu option on Project ID: match up the first letter ("S" or "E") and the first four digits ("0000") from the COC to SMXP – ignore trailing numbers
The project IDs on the COC will still be the same format: "S" = Rancho Cordova office, or "E" = Livermore office
0000 Four Digits = the project ID (Matches to SMXP & the Caltrans Contract)
Please use "SX" pricing. Thanks.

☐48 Hour☐1 Week
PLM☐$6.50☐$5.25
PLM 400 Pt Ct
$16.50☐$15.25
Pb-FLAA☐$6.50☐$5.25
Pb-TCLP☐$48.00☐$32.00

-00- Two digits will now change from project to project based upon who is sampling. It will no longer be fixed as "06". Example John Pfeifer is -01".
00 Last two digits will continue to change from project to project as well; just like before. (D Kocher 08/21/2013)
For projects requested to bill to Sterling, use billing ID STER62 and attn G.Vaccaro, then select matching project ID (Dkocher 09/22/2014)

INTERNAL CHAIN OF CUSTODY

Order ID: 041629490 *11/4/2016 11:41:51 PM*

Attn: Josh Ewert
Geocon Consultants, Inc.
3160 Gold Valley Drive
Suite 800
Rancho Cordova, CA 95742
Fax: (916) 852-9132 Phone: (916) 852-9118
Project: **DTSC Metal Shredders / S9850-03-21**

Customer ID: GECN80
Customer PO:
Received: 10/25/16 9:40 AM

EMSL Order: 041629490
EMSL Proj ID:
Cust COC ID

Test: **TEM AHERA** **Matrix** Air **TAT:** 2 Week **Qty:** 15

Desc: **Asbestos Fiber Analysis by Transmission Electron M**

Logged: capeters

☐ Lab Opening Exempt For Test ☐ Prep Charge Exempt For Test

Date: 10/25/2016

☐ Layer/Aliquot Charge Exempt For Test ☑ Free Shipping Eligible

Sample Condition: ☐ Acceptable ☐ Unacceptable

Comments

Q C

Prepped: SM **Date** 11-4-16
Analyzed: SB **Date** 11.7.16
Data Entry **Date**
Screened: M **Date** 11/7/16
Mailed: **Date**
Scanned Internal Docs: D Bee **Date** 11-8-16

Special Test Instructions

Lab Sample #	Cust. Sample #	Location	Due Date
041629490-0001	SMM1-T1-Asbestos	Perimeter Sample	11/8/2016 9:40:00 AM
041629490-0002	SMM2-T1-Asbestos	Perimeter Sample	11/8/2016 9:40:00 AM
041629490-0003	SMM3-T1-Asbestos	Perimeter Sample	11/8/2016 9:40:00 AM
041629490-0004	SMM4-T1-Asbestos	Perimeter Sample	11/8/2016 9:40:00 AM
041629490-0005	SMM5-T1-Asbestos	Perimeter Sample	11/8/2016 9:40:00 AM
041629490-0006	SMM1-T2-Asbestos	Perimeter Sample	11/8/2016 9:40:00 AM
041629490-0007	SMM2-T2-Asbestos	Perimeter Sample	11/8/2016 9:40:00 AM
041629490-0008	SMM3-T2-Asbestos	Perimeter Sample	11/8/2016 9:40:00 AM
041629490-0009	SMM4-T2-Asbestos	Perimeter Sample	11/8/2016 9:40:00 AM
041629490-0010	SMM1-T3-Asbestos	Perimeter Sample	11/8/2016 9:40:00 AM
041629490-0011	SMM2-T3-Asbestos	Perimeter Sample	11/8/2016 9:40:00 AM
041629490-0012	SMM3-T3-Asbestos	Perimeter Sample	11/8/2016 9:40:00 AM
041629490-0013	SMM4-T3-Asbestos	Perimeter Sample	11/8/2016 9:40:00 AM
041629490-0014	SMM5-T3-Asbestos	Perimeter Sample	11/8/2016 9:40:00 AM
041629490-0015	SMM-TR-Asbestos	Perimeter Sample	11/8/2016 9:40:00 AM

GO: 0.0130MM2
LOT: 0416-74AH

0416 Ahera 153 A-C

6. Equipment Performance Checks

Monthly Report for TEM Calibrations

Laboratory: Cinnaminson

Scope: 0402

Detector: IXRF

Chrysotile Beam Dose Sensitivity

(Quarterly)

Date	Initials	Negative Numbers		At least 90% of patterns >15 seconds ?
		SAED	Morphology	
1/24/2014	WF	3134	3135	PASS
4/24/2014	WF	3256	3257	PASS
7/29/2014	WF	3321	3322	PASS
10/21/2014	WF	3387	3388	PASS
1/16/2015	WF	2408	2409	PASS
4/7/2015	WF	3499	3500	PASS
7/7/2015	WF	2653	2654	PASS
10/5/2015	WF	3615	3616	PASS
1/2/2016	WF	3653	3654	PASS
4/4/2016	WF	04-04-16	04-04-16	PASS
7/3/2016	WF	07-09-16	07-03-16	PASS
9/27/2016	WF	9/27/2016	9/27/2016	PASS

Comments:

Camera Constant Calibrations

(Monthly / Weekly when Water Analysis is performed)

Negative (Camera)					
Date	Initials	Negative Number	Camera Length	Camera Constant	Is 2 Standard Dev. < 5% Mean?
7/24/2016	WF	N/A	83	1.98	PASS
7/31/2016	WF	N/A	83	2.09	PASS
8/7/2016	WF	N/A	83	2.05	PASS
8/14/2016	WF	N/A	83	2.09	PASS
8/21/2016	WF	N/A	83	2.08	PASS
8/29/2016	WF	N/A	83	2.08	PASS
9/6/2016	WF	N/A	83	2.10	PASS
9/13/2016	WF	N/A	83	1.99	PASS
9/19/2016	WF	N/A	83	2.00	PASS
9/26/2016	WF	N/A	83	2.04	PASS
10/4/2016	WF	N/A	83	2.12	PASS
10/9/2016	WF	N/A	83	1.97	PASS
10/16/2016	WF	N/A	83	2.10	PASS
10/23/2016	WF	N/A	83	2.08	PASS
10/30/2016	WF	N/A	83	1.96	PASS
11/6/2016	WF	N/A	83	2.01	PASS
11/13/2016	WF	N/A	83	1.96	PASS
11/20/2016	WF	N/A	83	1.96	PASS
11/27/2016	WF	N/A	83	2.01	PASS
11/27/2016	WF	N/A	83	2.01	PASS

Comments: New camera installed on 1/16/2016.

Monthly Report for TEM Calibrations

Laboratory: Cinnaminson

Scope: 0402

Detector: IXRF

Camera Constant Calibrations

(Monthly / Weekly when Water Analysis is performed)

On Screen					
Date	Initials	Camera Length	Aperture #	Aperture Diameter	Is 2 Standard Dev. < 5% Mean?
7/10/2016	WF	22	2	1.02	PASS
7/18/2016	WF	22	2	1.02	PASS
7/24/2016	WF	22	2	1.02	PASS
7/31/2016	WF	22	2	1.02	PASS
8/7/2016	WF	22	2	1.04	PASS
8/14/2016	WF	22	2	1.04	PASS
8/21/2016	WF	22	2	1.06	PASS
8/29/2016	WF	22	2	1.04	PASS
9/6/2016	WF	22	2	1.02	PASS
9/13/2016	WF	22	2	1.02	PASS
9/19/2016	WF	22	2	1.02	PASS
10/4/2016	WF	22	2	1.02	PASS
10/9/2016	WF	22	2	1.06	PASS
10/16/2016	WF	22	2	1.06	PASS
10/23/2016	WF	22	2	1.04	PASS
10/30/2016	WF	22	2	1.04	PASS
11/6/2016	WF	22	2	1.04	PASS
11/13/2016	WF	22	2	1.04	PASS
11/20/2016	WF	22	2	1.06	PASS
11/27/2016	WF	22	2	1.04	PASS

The above aperture diameter represents the on screen diameter in reciprocal space. Multiply this number times the number of layer lines seen to get layer line spacing.

Comments:

Plasma Asher Calibration

(Quarterly)

Time To Ash 5% of Collapsed MCE Filter			
Date	Initials	Min	Sec
2/23/2014	WP	4	06
5/29/2014	WP	5	45
9/3/2014	KF	7	53
9/15/2014	KF	5	36
7/23/2015	JG	6	42
1/6/2016	WF	5	34
4/28/2016	JG	5	51
6/3/2016	JG	86	20
6/7/2016	JG	4	25
9/14/2016	JG	4	49

Comments:

Monthly Report for TEM Calibrations

Laboratory: Cinnaminson

Scope: 0402

Detector: IXRF

Magnification Calibrations

(Monthly)

20,000x - Negative

Date	Initials	Mean Calibration Mag	Actual Mag	Is 2 SD <5% of Mean?
4/5/2016	WF	2950	17701	FAIL
4/10/2016	WF	17576	17450	PASS
4/12/2016	WF	17518	17402	PASS
4/17/2016	WF	17478	17361	PASS
5/1/2016	WF	17423	17199	PASS
5/30/2016	WF	17421	17415	PASS
7/3/2016	WF	17404	17299	PASS
7/31/2016	WF	17341	16902	PASS
8/31/2016	WF	17326	17207	PASS
9/29/2016	WF	17330	17361	PASS
10/30/2016	WF	17338	17423	PASS
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		

Comments: New camera installed on 1/16/2016.

20,000x - Screen

Date	Initials	Target Mag	Mean Calibration Mag	Is 2 SD <5% of Mean?
6/10/2015	WF	15480	15518	PASS
7/9/2015	WF	15464	14400	PASS
8/3/2015	WF	15397	15223	PASS
8/31/2015	WF	15328	15223	PASS
10/1/2015	WF	15358	14664	PASS
10/29/2015	SB	15320	15223	PASS
12/2/2015	WF	15621	15518	PASS
12/29/2015	WF	15297	15223	PASS
1/29/2016	WF	15281	15518	PASS
2/29/2016	WF	15297	15369	PASS
4/1/2016	WF	15281	15671	PASS
4/10/2016	WF	15297	15369	PASS
4/17/2016	WF	15281	15369	PASS
5/1/2016	WF	15325	15369	PASS
5/30/2016	WF	15325	15223	PASS
7/3/2016	WF	15306	15518	PASS
7/31/2016	WF	15313	14664	PASS
8/31/2016	WF	15268	15223	PASS
9/29/2016	WF	15253	15223	PASS
10/30/2016	WF	15237	15671	PASS

Comments:

10,000x - Negative

Date	Initials	Mean Calibration Mag	Actual Mag	Is 2 SD <5% of Mean?
4/5/2016	WF	9884	9884	PASS
4/10/2016	WF	9894	9905	PASS
4/12/2016	WF	9834	9714	PASS
4/17/2016	WF	9821	9782	PASS
5/1/2016	WF	9806	9745	PASS
5/30/2016	WF	9801	9776	PASS
7/3/2016	WF	9799	9786	PASS
7/31/2016	WF	9768	9555	PASS
8/31/2016	WF	9770	9782	PASS
9/29/2016	WF	9773	9806	PASS
10/30/2016	WF	9778	9822	PASS
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		
		0		

Comments: New camera installed on 1/16/2016.

10,000x - Screen

Date	Initials	Target Mag	Mean Calibration Mag	Is 2 SD <5% of Mean?
6/10/2015	WF	8743	8640	PASS
7/9/2015	WF	8734	8239	PASS
8/3/2015	WF	8705	8640	PASS
8/31/2015	WF	8698	8640	PASS
10/1/2015	WF	8690	8640	PASS
10/29/2015	SB	8685	8930	PASS
11/29/2015	WF	8689	8782	PASS
12/29/2015	WF	8688	8457	PASS
1/29/2016	WF	8668	8831	PASS
2/29/2016	WF	8666	8640	PASS
4/1/2016	WF	8799	8782	PASS
4/10/2016	WF	8666	8687	PASS
4/17/2016	WF	8666	8640	PASS
5/1/2016	WF	8664	8831	PASS
5/30/2016	WF	8697	8687	PASS
7/3/2016	WF	8689	8831	PASS
7/31/2016	WF	8695	8413	PASS
8/31/2016	WF	8675	8640	PASS
9/29/2016	WF	8670	8640	PASS
10/30/2016	WF	8663	8594	PASS

Comments:

Monthly Report for TEM Calibrations

Laboratory: Cinnaminson

Scope: 0402

Detector: IXRF

Calibration of On Screen 0.5 and 5µm

Measuring Aids at EPA AHERA Magnification

(Monthly)

Date	Initials	Small Circle microns	Large Circle microns
6/10/2015	WF	0.48	4.77
7/9/2015	WF	0.51	5.14
8/3/2015	WF	0.49	4.86
8/31/2015	WF	0.49	4.86
10/1/2015	WF	0.50	5.05
10/29/2015	SB	0.49	4.86
12/2/2015	WF	0.48	4.77
12/29/2015	WF	0.49	4.86
1/29/2016	WF	0.48	4.77
2/29/2016	WF	0.48	4.81
4/1/2016	WF	0.47	4.72
4/10/2016	WF	0.48	4.81
4/17/2016	WF	0.48	4.81
5/1/2016	WF	0.48	4.81
5/30/2016	WF	0.49	4.86
7/3/2016	WF	0.48	4.77
7/31/2016	WF	0.50	5.05
8/31/2016	WF	0.49	4.86
9/29/2016	WF	0.49	4.86
10/30/2016	WF	0.47	4.72

Comments:

Calibration of On Screen 1.0 and 10µm

Measuring Aids at EPA 100.2 Magnification

(Monthly)

Date	Initials	Small Circle microns	Large Circle microns
6/10/2015	WF	0.86	8.56
7/9/2015	WF	0.90	8.98
8/3/2015	WF	0.86	8.56
8/31/2015	WF	0.86	8.56
10/1/2015	WF	0.86	8.56
10/29/2015	SB	0.83	8.29
11/29/2015	WF	0.84	8.43
12/29/2015	WF	0.88	8.75
1/29/2016	WF	0.84	8.38
2/29/2016	WF	0.86	8.56
4/1/2016	WF	0.84	8.43
4/10/2016	WF	0.85	8.52
4/17/2016	WF	0.86	8.56
5/1/2016	WF	0.84	8.38
5/30/2016	WF	0.85	8.52
7/3/2016	WF	0.84	8.38
7/31/2016	WF	0.88	8.80
8/31/2016	WF	0.86	8.56
9/29/2016	WF	0.86	8.56
10/30/2016	WF	0.86	8.61

Comments:

Spot Size Measurements

(Quarterly)

Date	Initials	Actual Spot	Target Spot Size	FAIL ≤250nm =	Is 2 SD <25% of
7/18/2016	WF	234.12	≤ 250 nm	PASS	PASS
7/21/2016	WF	206.66	≤ 250 nm	PASS	PASS
7/23/2016	WF	189.61	≤ 250 nm	PASS	PASS
7/24/2016	WF	237.35	≤ 250 nm	PASS	PASS
7/29/2016	WF	185.39	≤ 250 nm	PASS	PASS
8/7/2016	WF	177.26	≤ 250 nm	PASS	PASS
8/16/2016	WF	222.81	≤ 250 nm	PASS	PASS
8/21/2016	WF	200.57	< 250 nm	PASS	PASS
8/29/2016	WF	233.11	≤ 250 nm	PASS	PASS
11/16/2016	wf	207.20	≤ 250 nm	PASS	PASS
			≤ 250 nm		
			≤ 250 nm		
			≤ 250 nm		
			≤ 250 nm		
			≤ 250 nm		
			≤ 250 nm		
			≤ 250 nm		
			≤ 250 nm		
			≤ 250 nm		
			≤ 250 nm		

Comments: New camera installed on 1/16/2016.

Monthly Report for TEM Calibrations

Laboratory: Cinnaminson

Scope: 0402

Detector: IXRF

K Factors

(Semi-Annually)

Date	Initials	K Factor	Pass Criteria	Actual	PASS / FAIL	Acceptance Criteria	PASS / FAIL
9/25-28/2016	WF	*Standard Used:*		*BIR1G*			
		Na:Si	1.0 - 4.0	----	**N/A**	2SD < 20% Mean	**N/A**
		Mg:Si	1.0 - 2.0	1.53	**PASS**	2SD < 10% Mean	**PASS**
		Al:Si	1.0 - 1.75	1.24	**PASS**	2SD < 10% Mean	**PASS**
		Ca:Si	1.0 - 1.75	1.04	**PASS**	2SD < 10% Mean	**PASS**
		Fe:Si	1.0 - 2.0	1.30	**PASS**	2SD < 10% Mean	**PASS**
		Mg:Fe	1.5 or less	1.18	**PASS**	N / A	**N/A**
9/29/2016	WF	*Standard Used:*		*Albite*			
		Na:Si	1.0 - 4.0	2.28	**PASS**	2SD < 20% Mean	**PASS**
		Al:Si	1.0 - 1.75	----	**N/A**	2SD < 10% Mean	**N/A**
		K:Si	1.0 - 1.75	----	**N/A**	2SD < 10% Mean	**N/A**

Comments: Detector replaced 11/20 all EDX cals updated

Detector Resolution

(Semi-Annually / Quarterly when necessary to meet TNI Standard)

Date	@Mn Kα Peak Initials	Resolution	<175?	Resolution + 2(s) <180?
12/3/2014	SB	138.5	Pass	Pass
12/4/2014	SB	126.7	Pass	Pass
3/5/2015	WF	132.4	Pass	Pass
6/3/2015	WF	133.7	Pass	Pass
8/31/2015	WF	136.2	Pass	Pass
11/27/2015	WF	135.1	Pass	Pass
2/29/2016	WF	131.5	Pass	Pass
5/30/2016	WF	128.6	Pass	Pass
8/25/2016	WF	131.4	Pass	Pass
11/21/2016	WF	126.1	Pass	Pass

Comments:

Significant Na and Resolvable Mg-Si Peaks

(Quarterly)

Date	Initials	Significant Na		Date	Initials	Resolvable Mg	Resolvable Si
12/2/2014	SB	Pass		11/28/14	SB	Yes	Yes
12/3/2014	SB	Pass		12/1/14	SB	Yes	Yes
1/20/2015	WF	Pass		12/2/14	SB	Yes	Yes
4/21/2015	SB	Pass		12/3/14	SB	Yes	Yes
7/19/2015	WF	Pass		12/4/14	SB	Yes	Yes
10/15/2015	WF	Pass		1/20/15	WF	Yes	Yes
1/13/2016	WF	Pass		4/17/15	WF	Yes	Yes
4/12/2016	WF	Pass		10/17/15	WF	Yes	Yes
7/11/2016	WF	Pass		4/12/16	WF	Yes	Yes
10/9/2016	WF	Pass		7/11/16	WF	Yes	Yes

Comments:

Daily TEM Calibration Sheet

AM

Month: Oct. **Year:** 2016 **Scope:** 04-02

Day (1-31)	Analyst Initials	Scope Aligned	LN Dewar Filled	Al Peak Actual	Al Peak Accepted Range	Cu Peak Actual	Cu Peak Accepted Range	Al Cu Pass/Fail*
1	SB		SQ		1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
2					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
3	SB	✓	PJC	1.488	1.47-1.49	8.050	8.03-8.05	☑ Pass ☐ Fail
4	SB	✓		1.490	1.47-1.49	8.050	8.03-8.05	☑ Pass ☐ Fail
5	SB	✓	PJC	1.489	1.47-1.49	8.043	8.03-8.05	☑ Pass ☐ Fail
6	SB	✓		1.487	1.47-1.49	8.050	8.03-8.05	☑ Pass ☐ Fail
7	SB	✓	SQ	1.488	1.47-1.49	8.042	8.03-8.05	☑ Pass ☐ Fail
8			DS		1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
9					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
10	SB	✓	PJC	1.487	1.47-1.49	8.041	8.03-8.05	☑ Pass ☐ Fail
11	SB	✓		1.485	1.47-1.49	8.038	8.03-8.05	☑ Pass ☐ Fail
12	SB	✓	PJC	1.490	1.47-1.49	8.050	8.03-8.05	☑ Pass ☐ Fail
13	SB	✓		1.488	1.47-1.49	8.030	8.03-8.05	☑ Pass ☐ Fail
14	SB	✓	PJC	1.490	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
15			DS		1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
16					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
17	SB	✓	PJC	1.485	1.47-1.49	8.042	8.03-8.05	☑ Pass ☐ Fail
18	SB	✓		1.487	1.47-1.49	8.041	8.03-8.05	☑ Pass ☐ Fail
19	SB	✓	PJC	1.488	1.47-1.49	8.043	8.03-8.05	☑ Pass ☐ Fail
20	SB	✓		1.486	1.47-1.49	8.049	8.03-8.05	☑ Pass ☐ Fail
21	SB	✓	PJC	1.490	1.47-1.49	8.032	8.03-8.05	☑ Pass ☐ Fail
22			DS		1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
23					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
24	SB	✓	PJC	1.486	1.47-1.49	8.041	8.03-8.05	☑ Pass ☐ Fail
25	SB	✓		1.490	1.47-1.49	8.048	8.03-8.05	☑ Pass ☐ Fail
26	SB	✓	PJC	1.485	1.47-1.49	8.045	8.03-8.05	☑ Pass ☐ Fail
27	SB	✓		1.487	1.47-1.49	8.050	8.03-8.05	☑ Pass ☐ Fail
28	SB	✓	PJC	1.476	1.47-1.49	8.039	8.03-8.05	☑ Pass ☐ Fail
29			DS		1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
30					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
31	SB	✓	PJC	1.487	1.47-1.49	8.044	8.03-8.05	☑ Pass ☐ Fail

*** Any failing results need immediate corrective action**

Controlled Document
Confidential Business Information/Property of EMSL Analytical, Inc.

Daily TEM Calibration Sheet

AM

Month: November **Year:** 2016 **Scope:** 04-02

Day (1-31)	Analyst Initials	Scope Aligned	LN Dewar Filled	Al Peak Actual	Al Peak Accepted Range	Cu Peak Actual	Cu Peak Accepted Range	Al Cu Pass/Fail*
1	SB	✓		1.488	1.47-1.49	8.047	8.03-8.05	☑ Pass ☐ Fail
2	SB	✓	PJC	1.487	1.47-1.49	8.049	8.03-8.05	☑ Pass ☐ Fail
3	SB	✓		1.490	1.47-1.49	8.040	8.03-8.05	☑ Pass ☐ Fail
4	SB	✓	PH	1.487	1.47-1.49	8.039	8.03-8.05	☑ Pass ☐ Fail
5			DP		1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
6					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
7	SB	✓	PJC	1.489	1.47-1.49	8.036	8.03-8.05	☑ Pass ☐ Fail
8	SB	✓		1.486	1.47-1.49	8.050	8.03-8.05	☑ Pass ☐ Fail
9	SB	✓	PJC	1.487	1.47-1.49	8.041	8.03-8.05	☑ Pass ☐ Fail
10	SB	✓		1.490	1.47-1.49	8.050	8.03-8.05	☑ Pass ☐ Fail
11	SB	✓	PJC	1.487	1.47-1.49	8.037	8.03-8.05	☑ Pass ☐ Fail
12			DP		1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
13					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
14	SB	✓	DP	1.487	1.47-1.49	8.050	8.03-8.05	☑ Pass ☐ Fail
15	SB	✓		1.486	1.47-1.49	8.045	8.03-8.05	☑ Pass ☐ Fail
16	SB	✓	WN	1.485	1.47-1.49	8.049	8.03-8.05	☑ Pass ☐ Fail
17	SB	✓		1.487	1.47-1.49	8.039	8.03-8.05	☑ Pass ☐ Fail
18	SB	✓	WN	1.488	1.47-1.49	8.050	8.03-8.05	☑ Pass ☐ Fail
19			SQ		1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
20					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
21	SB	✓	WN	1.487	1.47-1.49	8.050	8.03-8.05	☑ Pass ☐ Fail
22	SB	✓		1.484	1.47-1.49	8.031	8.03-8.05	☑ Pass ☐ Fail
23	SB	✓	WN	1.484	1.47-1.49	8.040	8.03-8.05	☑ Pass ☐ Fail
24					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
25	SB	✓	WN	1.489	1.47-1.49	8.032	8.03-8.05	☑ Pass ☐ Fail
26			DP		1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
27					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
28	SB	✓	WN	1.482	1.47-1.49	8.050	8.03-8.05	☒ Pass ☐ Fail
29	SB	✓		1.487	1.47-1.49	8.050	8.03-8.05	☒ Pass ☐ Fail
30					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
31					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail

*** Any failing results need immediate corrective action**

Controlled Document
Confidential Business Information/Property of EMSL Analytical, Inc.

Monthly Report for TEM Calibrations

Laboratory: Cinnaminson

Scope: 04-03

Detector: PGT Avalon

Chrysotile Beam Dose Sensitivity

(Quarterly)

Date	Initials	Negative Numbers		At least 90% of patterns >15 seconds ?
		SAED	Morphology	
3/4/2014	PH	04262	04263	PASS
5/27/2014	PH	04360	04361	PASS
8/22/2014	PH	04464	04465	PASS
11/17/2014	PH	04575	04576	PASS
2/23/2015	PH	04599	04600	PASS
5/20/2015	MG	04618	04619	PASS
8/14/2015	MG	04641	04642	PASS
11/11/2015	MG	04669	04670	PASS
2/2/2016	PH	4701	4700	PASS
5/5/2016	PJC	4712	4713	PASS
7/28/2016	PJC	4734	4735	PASS
10/25/2016	PJC	4755	4756	PASS

Comments:

Camera Constant Calibrations

(Monthly / Weekly when Water Analysis is performed)

Negative (Camera)					
Date	Initials	Negative Number	Camera Length	Camera Constant	Is 2 Standard Dev. < 5% Mean?
7/14/2016	PJC	4730	100	519.44	PASS
7/21/2016	PJC	4732	100	524.74	PASS
7/28/2016	PJC	4733	100	516.43	PASS
8/5/2016	WN	4736	100	497.22	PASS
8/15/2016	PJC	4739	100	513.75	PASS
8/23/2016	PJC	4740	100	512.75	PASS
8/30/2016	PJC	4741	100	515.74	PASS
9/7/2016	PJC	4744	100	521.65	PASS
9/14/2016	PJC	4745	100	522.35	PASS
9/19/2016	PJC	4746	100	527.14	PASS
9/26/2016	PJC	4747	100	512.32	PASS
10/3/2016	PJC	4748	100	513.26	PASS
10/10/2016	PJC	4751	100	514.31	PASS
10/17/2016	PJC	4753	100	511.11	PASS
10/25/2016	PJC	4754	100	517.92	PASS
11/1/2016	PJC	4757	100	515.77	PASS
11/7/2016	PJC	4760	100	518.18	PASS
11/14/2016	WN	4761	100	513.75	PASS
11/21/2016	WN	4762	100	497.78	PASS
11/28/2016	WN	4763	100	535.41	PASS

Comments:

Monthly Report for TEM Calibrations

Laboratory: Cinnaminson

Scope: 04-03

Detector: PGT Avalon

Camera Constant Calibrations

(Monthly / Weekly when Water Analysis is performed)

On Screen					
Date	Initials	Camera Length	Aperture #	Aperture Diameter	Is 2 Standard Dev. < 5% Mean?
7/14/2016	PJC	24	1	1.20	PASS
7/21/2016	PJC	24	1	1.20	PASS
7/28/2016	PJC	24	1	1.18	PASS
8/5/2016	WN	24	1	1.18	PASS
8/15/2016	PJC	24	1	1.18	PASS
8/23/2016	PJC	24	1	1.18	PASS
8/30/2016	PJC	24	1	1.20	PASS
9/7/2016	PJC	24	1	1.18	PASS
9/14/2016	PJC	24	1	1.20	PASS
9/19/2016	PJC	24	1	1.18	PASS
9/26/2016	PJC	24	1	1.20	PASS
10/3/2016	PJC	24	1	1.23	PASS
10/10/2016	PJC	24	1	1.18	PASS
10/17/2016	PJC	24	1	1.20	PASS
10/25/2016	PJC	24	1	1.18	PASS
11/1/2016	PJC	24	1	1.18	PASS
11/7/2016	PJC	24	1	1.20	PASS
11/14/2016	WN	24	1	1.18	PASS
11/21/2016	WN	24	1	1.18	PASS
11/28/2016	WN	24	1	1.18	PASS

The above aperture diameter represents the on screen diameter in reciprocal space. Multiply this number times the number of layer lines seen to get layer line spacing.

Comments:

Plasma Asher Calibration

(Quarterly)

Time To Ash 5% of Collapsed MCE Filter			
Date	Initials	Min	Sec

Comments:

Monthly Report for TEM Calibrations

Laboratory: Cinnaminson

Scope: 04-03

Detector: PGT Avalon

Magnification Calibrations

(Monthly)

20,000x - Negative

Date	Initials	Mean Calibration Mag	Actual Mag	Is 2 SD <5% of Mean?
4/15/2015	PH	20652	20520	PASS
5/13/2015	MG	20622	20088	PASS
6/12/2015	MG	20622	19656	PASS
7/16/2015	MG	20736	20736	PASS
8/14/2015	MG	20736	20304	PASS
9/9/2015	MG	20700	21168	PASS
10/9/2015	MG	20709	20736	PASS
11/10/2015	MG	20693	20628	PASS
12/10/2015	MG	20700	20952	PASS
1/5/2016	PJC	20583	20196	PASS
2/1/2016	WN	20554	20088	PASS
3/3/2016	PH	20531	20520	PASS
4/4/2016	WN	20520	20520	PASS
5/5/2016	PJC	20509	20520	PASS
6/7/2016	PJC	20509	20520	PASS
7/7/2016	PJC	20509	20088	PASS
8/5/2016	WN	20486	20304	PASS
9/2/2016	PJC	20475	19872	PASS
10/3/2016	PJC	20429	19872	PASS
11/7/2016	PJC	20384	19440	PASS

Comments:

20,000x - Screen

Date	Initials	Target Mag	Mean Calibration Mag	Is 2 SD <5% of Mean?
4/15/2015	PH	14295	14281	PASS
5/13/2015	MG	14294	14281	PASS
6/12/2015	MG	14294	14281	PASS
7/16/2015	MG	14400	14400	PASS
8/14/2015	MG	14340	13935	PASS
9/9/2015	MG	14360	14164	PASS
10/9/2015	MG	14340	14281	PASS
11/10/2015	MG	14352	14281	PASS
12/10/2015	MG	14340	14164	PASS
1/5/2016	PJC	14251	13292	PASS
2/1/2016	WN	14199	13292	PASS
3/3/2016	PH	14147	13500	PASS
4/4/2016	WN	14099	13824	PASS
5/5/2016	PJC	14075	14164	PASS
6/7/2016	PJC	14075	14164	PASS
7/7/2016	PJC	14075	13935	PASS
8/5/2016	WN	14057	13935	PASS
9/2/2016	PJC	14045	13606	PASS
10/3/2016	PJC	14010	13824	PASS
11/7/2016	PJC	13979	13824	PASS

Comments:

10,000x - Negative

Date	Initials	Mean Calibration Mag	Actual Mag	Is 2 SD <5% of Mean?
4/15/2015	PH	10212	10368	PASS
5/13/2015	MG	10215	10260	PASS
6/12/2015	MG	10215	9936	PASS
7/16/2015	MG	9936	10368	PASS
8/14/2015	MG	9936	10368	PASS
9/9/2015	MG	9936	10368	PASS
10/9/2015	MG	9936	10368	PASS
11/10/2015	MG	10001	10260	PASS
12/10/2015	MG	9990	10152	PASS
1/5/2016	PJC	10288	9828	PASS
2/1/2016	WN	10254	9720	PASS
3/3/2016	PH	10226	10368	PASS
4/4/2016	WN	10243	10152	PASS
5/5/2016	PJC	10249	10368	PASS
6/7/2016	PJC	10260	10368	PASS
7/7/2016	PJC	10266	10152	PASS
8/5/2016	WN	10254	10152	PASS
9/2/2016	PJC	10249	10260	PASS
10/3/2016	PJC	10232	9936	PASS
11/7/2016	PJC	10197	9936	PASS

Comments:

10,000x - Screen

Date	Initials	Target Mag	Mean Calibration Mag	Is 2 SD <5% of Mean?
4/15/2015	PH	7009	7053	PASS
5/23/2015	MG	7012	7053	PASS
6/12/2015	MG	7012	7053	PASS
7/16/2015	MG	6912	7200	PASS
8/14/2015	MG	6912	6912	PASS
9/9/2015	MG	6912	7024	PASS
10/9/2015	MG	6878	7140	PASS
11/10/2015	MG	6913	7053	PASS
12/10/2015	MG	6890	7053	PASS
1/5/2016	PJC	7059	6646	PASS
2/1/2016	WN	7036	6646	PASS
3/3/2016	PH	7014	6776	PASS
4/4/2016	WN	7007	6776	PASS
5/5/2016	PJC	7000	7053	PASS
6/7/2016	PJC	7000	7053	PASS
7/7/2016	PJC	7000	6912	PASS
8/5/2016	WN	6993	6968	PASS
9/2/2016	PJC	6988	6912	PASS
10/3/2016	PJC	6973	6776	PASS
11/7/2016	PJC	6951	6776	PASS

Comments:

Monthly Report for TEM Calibrations

Laboratory: Cinnaminson

Scope: 04-03

Detector: PGT Avalon

Calibration of On Screen 0.5 and 5µm

Measuring Aids at EPA AHERA Magnification

(Monthly)

Date	Initials	Small Circle microns	Large Circle microns
4/15/2015	PH	0.56	5.60
5/13/2015	MG	0.56	5.60
6/12/2015	MG	0.56	5.60
7/16/2015	MG	0.56	5.56
8/14/2015	MG	0.57	5.74
9/9/2015	MG	0.56	5.65
10/9/2015	MG	0.56	5.60
11/10/2015	MG	0.56	5.60
12/10/2015	MG	0.56	5.65
1/5/2016	PJC	0.60	6.02
2/1/2016	WN	0.60	6.02
3/3/2016	PH	0.59	5.93
4/4/2016	WN	0.58	5.79
5/5/2016	PJC	0.56	5.65
6/7/2016	PJC	0.56	5.65
7/7/2016	PJC	0.57	5.74
8/5/2016	WN	0.57	5.74
9/2/2016	PJC	0.59	5.88
10/3/2016	PJC	0.58	5.79
11/7/2016	PJC	0.58	5.79

Comments:

Calibration of On Screen 1.0 and 10µm

Measuring Aids at EPA 100.2 Magnification

(Monthly)

Date	Initials	Small Circle microns	Large Circle microns
4/15/2015	PH	1.13	11.34
5/23/2015	MG	1.13	11.34
6/12/2015	MG	1.13	11.34
7/16/2015	MG	1.11	11.11
8/14/2015	MG	1.16	11.57
9/9/2015	MG	1.14	11.39
10/9/2015	MG	1.12	11.20
11/10/2015	MG	1.13	11.34
12/10/2015	MG	1.13	11.34
1/5/2016	PJC	1.20	12.04
2/1/2016	WN	1.20	12.04
3/3/2016	PH	1.18	11.81
4/4/2016	WN	1.18	11.81
5/5/2016	PJC	1.13	11.34
6/7/2016	PJC	1.13	11.34
7/7/2016	PJC	1.16	11.57
8/5/2016	WN	1.15	11.48
9/2/2016	PJC	1.16	11.57
10/3/2016	PJC	1.18	11.81
11/7/2016	PJC	1.18	11.81

Comments:

Spot Size Measurements

(Quarterly)

Date	Initials	Actual Spot	Target Spot Size	FAIL ≤250nm =	Is 2 SD <25% of
3/25/2014	PH	215.89	≤ 250 nm	PASS	PASS
3/26/2014	PH	190.91	≤ 250 nm	PASS	PASS
3/27/2014	PH	192.90	≤ 250 nm	PASS	PASS
3/28/2014	PH	168.79	≤ 250 nm	PASS	PASS
3/31/2014	PH	167.91	≤ 250 nm	PASS	PASS
4/1/2014	PH	168.79	≤ 250 nm	PASS	PASS
4/2/2014	PH	168.79	≤ 250 nm	PASS	PASS
4/4/2014	PH	193.91	< 250 nm	PASS	PASS
4/8/2014	PH	192.90	≤ 250 nm	PASS	PASS
4/21/2014	PH	193.91	≤ 250 nm	PASS	PASS
7/14/2014	PH	192.90	≤ 250 nm	PASS	PASS
10/6/2014	PH	168.79	≤ 250 nm	PASS	PASS
12/22/2014	PH	170.57	≤ 250 nm	PASS	PASS
3/16/2015	PH	192.90	≤ 250 nm	PASS	PASS
5/20/2015	MG	224.01	≤ 250 nm	PASS	PASS
11/11/2015	MG	180.84	≤ 250 nm	PASS	PASS
1/5/2016	PJC	218.63	≤ 250 nm	PASS	PASS
4/6/2016	PJC	194.93	≤ 250 nm	PASS	PASS
7/14/2016	PJC	199.12	≤ 250 nm	PASS	PASS
10/14/2016	PJC	150.97	≤ 250 nm	PASS	PASS

Comments: 8/14/15 - Analyst did not condition beam correctly resulting in failure of spot size measurement.

Monthly Report for TEM Calibrations

Laboratory: Cinnaminson

Scope: 04-03

Detector: PGT Avalon

K Factors

(Semi-Annually)

Date	Initials	K Factor	Pass Criteria	Actual	PASS / FAIL	Acceptance Criteria	PASS / FAIL
11/14/2016	WN	*Standard Used:*		*BIR1G*			
		Na:Si	1.0 - 4.0	2.47	**PASS**	2SD < 20% Mean	**PASS**
		Mg:Si	1.0 - 2.0	1.84	**PASS**	2SD < 10% Mean	**PASS**
		Al:Si	1.0 - 1.75	1.27	**PASS**	2SD < 10% Mean	**PASS**
		Ca:Si	1.0 - 1.75	1.06	**PASS**	2SD < 10% Mean	**PASS**
		Fe:Si	1.0 - 2.0	1.40	**PASS**	2SD < 10% Mean	**PASS**
		Mg:Fe	1.5 or less	1.32	**PASS**	N / A	**N/A**
11/15/2016	WN	*Standard Used:*		*Orthoclase*			
		Na:Si	1.0 - 4.0	----	**N/A**	2SD < 20% Mean	**N/A**
		Al:Si	1.0 - 1.75	----	**N/A**	2SD < 10% Mean	**N/A**
		K:Si	1.0 - 1.75	1.11	**PASS**	2SD < 10% Mean	**PASS**

Comments:

Detector Resolution

(Semi-Annually / Quarterly when necessary to meet TNI Standard)

Date	@Mn Kα Peak Initials	Resolution	<175?	Resolution + 2(s) <180?
8/6/2014	PH	132.0	Pass	Pass
11/3/2014	PH	132.0	Pass	Pass
1/28/2015	PH	132.0	Pass	Pass
4/21/2015	PH	134.0	Pass	Pass
7/17/2015	MG	134.0	Pass	Pass
10/15/2015	MG	131.0	Pass	Pass
1/11/2016	PJC	138.4	Pass	Pass
4/12/2016	PJC	140.0	Pass	Pass
7/7/2016	PJC	152.0	Pass	Pass
10/4/2016	PJC	154.0	Pass	Pass

Comments:

Significant Na and Resolvable Mg-Si Peaks

(Quarterly)

Date	Initials	Significant Na		Date	Initials	Resolvable Mg	Resolvable Si
8/6/2014	PH	Pass		8/6/14	PH	Yes	Yes
11/3/2014	PH	Pass		11/3/14	PH	Yes	Yes
1/26/2015	PH	Pass		1/26/15	PH	Yes	Yes
4/21/2015	PH	Pass		4/21/15	PH	Yes	Yes
7/17/2015	MG	Pass		7/17/15	MG	Yes	Yes
10/14/2015	MG	Pass		10/14/15	MG	Yes	Yes
1/11/2016	PJC	Pass		1/11/16	PJC	Yes	Yes
4/12/2016	PJC	Pass		4/12/16	PJC	Yes	Yes
7/7/2016	PJC	Pass		7/7/16	PJC	Yes	Yes
10/4/2016	PJC	Pass		10/4/16	PJC	Yes	Yes

Comments:

Daily TEM Calibration Sheet

Month: November Year: 2016 Scope: 04-03

Day (1-31)	Analyst Initials	Scope Aligned	LN Dewar Filled	Al Peak Actual	Al Peak Accepted Range	Cu Peak Actual	Cu Peak Accepted Range	Al Cu Pass/Fail*
1	BC	BC		1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
2	BC	BC	BC	1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
3	BC	BC		1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
4			PA		1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
5			DP		1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
6					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
7	BC	BC	BC	1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
8	BC	BC		1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
9	BC	BC	BC	1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
10	BC	BC		1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
11	BC	BC	BC	1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
12			DP		1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
13					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
14	WN	X	DP	1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
15	WN	X		1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
16	WN	X	WN	1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
17	WN	X		1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
18	WN	X	WN	1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
19			SQ		1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
20					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
21	WN	X	WN	1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
22	WN	X		1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
23	WN	X	WN	1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
24					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
25	WN	X	WN	1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
26			DP		1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
27					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
28	WN	X	WN	1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
29					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
30					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
31					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail

* Any failing results need immediate corrective action

Controlled Document
Confidential Business Information/Property of EMSL Analytical, Inc.

Monthly Report for TEM Calibrations

Laboratory: Cinnaminson

Scope: 04-04

Detector: PGT Avalon

Chrysotile Beam Dose Sensitivity

(Quarterly)

Date	Initials	Negative Numbers		At least 90% of patterns >15 seconds ?
		SAED	Morphology	
2/26/2014	TY	Cal176	Cal177	PASS
5/21/2014	TY	Cal198	Cal199	PASS
8/14/2014	TY	Cal217	Cal218	PASS
11/7/2014	TY	Cal236	Cal237	PASS
2/4/2015	TY	Cal255	Cal256	PASS
4/25/2015	TY	Cal274	Cal275	PASS
7/21/2015	TY	Cal296	Cal297	PASS
10/17/2015	TY	Cal326	Cal327	PASS
1/12/2016	TY	Cal037	Cal038	PASS
4/9/2016	TY	Cal056	Cal057	PASS
7/7/2016	TY	Cal079	Cal080	PASS
9/29/2016	TY	Cal101	Cal102	PASS

Comments:

Camera Constant Calibrations

(Monthly / Weekly when Water Analysis is performed)

Negative (Camera)					
Date	Initials	Negative Number	Camera Length	Camera Constant	Is 2 Standard Dev. < 5% Mean?
7/26/2016	TY	Cal086	83	1.93	PASS
8/2/2016	TY	Cal087	83	1.82	PASS
8/9/2016	TY	Cal088	83	1.90	PASS
8/16/2016	TY	Cal089	83	1.91	PASS
8/23/2016	TY	Cal092	83	1.91	PASS
8/25/2016	TY	Cal093	83	1.88	PASS
8/31/2016	TY	Cal094	83	1.90	PASS
9/7/2016	TY	Cal095	83	1.88	PASS
9/13/2016	TY	Cal096	83	1.87	PASS
9/16/2016	TY	Cal097	83	1.84	PASS
9/27/2016	TY	Cal100	83	1.90	PASS
10/4/2016	TY	Cal104	83	1.93	PASS
10/11/2016	TY	Cal105	83	1.85	PASS
10/18/2016	TY	Cal108	83	1.80	PASS
10/25/2016	TY	Cal109	83	1.83	PASS
11/2/2016	TY	Cal110	83	1.82	PASS
11/8/2016	TY	Cal112	83	1.85	PASS
11/15/2016	TY	Cal114	83	1.94	PASS
11/22/2016	TY	Cal115	83	1.84	PASS
11/29/2016	TY	Cal116	83	1.82	PASS

Comments:

Monthly Report for TEM Calibrations

Laboratory: **Cinnaminson**

Scope: **04-04**

Detector: **PGT Avalon**

Camera Constant Calibrations

(Monthly / Weekly when Water Analysis is performed)

On Screen					
Date	**Initials**	**Camera Length**	**Aperture #**	**Aperture Diameter**	**Is 2 Standard Dev. < 5% Mean?**
7/26/2016	TY	22	3	1.13	PASS
8/2/2016	TY	22	3	1.13	PASS
8/9/2016	TY	22	3	1.13	PASS
8/16/2016	TY	22	3	1.13	PASS
8/23/2016	TY	22	3	1.15	PASS
8/25/2016	TY	22	3	1.15	PASS
8/31/2016	TY	22	3	1.15	PASS
9/7/2016	TY	22	3	1.15	PASS
9/13/2016	TY	22	3	1.15	PASS
9/16/2016	TY	22	3	1.15	PASS
9/27/2016	TY	22	3	1.15	PASS
10/4/2016	TY	22	3	1.15	PASS
10/11/2016	TY	22	3	1.15	PASS
10/18/2016	TY	22	3	1.15	PASS
10/25/2016	TY	22	3	1.15	PASS
11/2/2016	TY	22	3	1.15	PASS
11/8/2016	TY	22	3	1.15	PASS
11/15/2016	TY	22	3	1.15	PASS
11/22/2016	TY	22	3	1.15	PASS
11/29/2016	TY	22	3	1.15	PASS

The above aperture diameter represents the on screen diameter in reciprocal space. Multiply this number times the number of layer lines seen to get layer line spacing.

Comments:

Plasma Asher Calibration

(Quarterly)

Time To Ash 5% of Collapsed MCE Filter			
Date	Initials	Min	Sec

Comments:

Monthly Report for TEM Calibrations

Laboratory: Cinnaminson

Scope: 04-04

Detector: PGT Avalon

Magnification Calibrations

(Monthly)

20,000x - Negative

Date	Initials	Mean Calibration Mag	Actual Mag	Is 2 SD <5% of Mean?
5/27/2015	TY	21006	21630	PASS
6/26/2015	TY	21916	20677	PASS
7/21/2015	TY	21846	20841	PASS
8/19/2015	TY	21568	21098	PASS
9/18/2015	TY	21626	21292	PASS
10/17/2015	TY	20884	21211	PASS
11/13/2015	TY	20888	20979	PASS
12/11/2015	TY	20918	20474	PASS
1/8/2016	TY	20916	20882	PASS
2/6/2016	TY	20910	20903	PASS
3/4/2016	TY	20888	20655	PASS
4/1/2016	TY	20862	20671	PASS
4/28/2016	TY	20838	20682	PASS
5/27/2016	TY	20830	20922	PASS
6/25/2016	TY	20830	21506	PASS
7/22/2016	TY	20884	21392	PASS
8/20/2016	TY	20907	21573	PASS
9/16/2016	TY	20953	21333	PASS
10/15/2016	TY	21004	21362	PASS
11/12/2016	TY	21057	20488	PASS

Comments:

20,000x - Screen

Date	Initials	Target Mag	Mean Calibration Mag	Is 2 SD <5% of Mean?
5/27/2015	TY	14097	14531	PASS
6/26/2015	TY	14271	14531	PASS
7/21/2015	TY	14208	14021	PASS
8/19/2015	TY	14187	14271	PASS
9/18/2015	TY	14208	14531	PASS
10/17/2015	TY	14196	14400	PASS
11/13/2015	TY	14151	14400	PASS
12/11/2015	TY	14158	14021	PASS
1/8/2016	TY	14145	14400	PASS
2/6/2016	TY	14152	14400	PASS
3/4/2016	TY	14158	14400	PASS
4/1/2016	TY	14165	14800	PASS
4/28/2016	TY	14193	14531	PASS
5/27/2016	TY	14239	13779	PASS
6/25/2016	TY	14206	14531	PASS
7/22/2016	TY	14239	14531	PASS
8/20/2016	TY	14279	14800	PASS
9/16/2016	TY	14339	14664	PASS
10/15/2016	TY	14379	14664	PASS
11/12/2016	TY	14432	14145	PASS

Comments: New screen (circles) installed 9/8

10,000x - Negative

Date	Initials	Mean Calibration Mag	Actual Mag	Is 2 SD <5% of Mean?
5/27/2015	TY	10829	11237	PASS
6/26/2015	TY	11358	10768	PASS
7/21/2015	TY	11206	10719	PASS
8/19/2015	TY	11088	10903	PASS
9/18/2015	TY	11065	11016	PASS
10/17/2015	TY	10800	11127	PASS
11/13/2015	TY	10815	10780	PASS
12/11/2015	TY	10839	10664	PASS
1/8/2016	TY	10841	10889	PASS
2/6/2016	TY	10866	10814	PASS
3/4/2016	TY	10854	10733	PASS
4/1/2016	TY	10846	10873	PASS
4/28/2016	TY	10846	11313	PASS
5/27/2016	TY	10875	10742	PASS
6/25/2016	TY	10869	11273	PASS
7/22/2016	TY	10891	11196	PASS
8/20/2016	TY	10916	10714	PASS
9/16/2016	TY	10911	10854	PASS
10/15/2016	TY	10909	11063	PASS
11/12/2016	TY	10930	10743	PASS

Comments:

10,000x - Screen

Date	Initials	Target Mag	Mean Calibration Mag	Is 2 SD <5% of Mean?
5/27/2015	TY	7308	7611	PASS
6/26/2015	TY	7366	7332	PASS
7/21/2015	TY	7332	7332	PASS
8/19/2015	TY	7332	7400	PASS
9/18/2015	TY	7324	7611	PASS
10/17/2015	TY	7312	7540	PASS
11/13/2015	TY	7360	7540	PASS
12/11/2015	TY	7373	7299	PASS
1/8/2016	TY	7371	7434	PASS
2/6/2016	TY	7380	7504	PASS
3/4/2016	TY	7391	7299	PASS
4/1/2016	TY	7389	7611	PASS
4/28/2016	TY	7399	7992	PASS
5/27/2016	TY	7435	7575	PASS
6/25/2016	TY	7446	7540	PASS
7/22/2016	TY	7462	7366	PASS
8/20/2016	TY	7462	7611	PASS
9/16/2016	TY	7479	7575	PASS
10/15/2016	TY	7495	7648	PASS
11/12/2016	TY	7517	7299	PASS

Comments: New screen (circles) installed 9/8

Monthly Report for TEM Calibrations

Laboratory: Cinnaminson

Scope: 04-04

Detector: PGT Avalon

Calibration of On Screen 0.5 and 5µm

Measuring Aids at EPA AHERA Magnification

(Monthly)

Date	Initials	Small Circle microns	Large Circle microns
5/27/2015	TY	0.51	5.09
6/26/2015	TY	0.51	5.09
7/21/2015	TY	0.53	5.28
8/19/2015	TY	0.52	5.19
9/18/2015	TY	0.51	5.09
10/17/2015	TY	0.51	5.14
11/13/2015	TY	0.51	5.14
12/11/2015	TY	0.53	5.28
1/8/2016	TY	0.51	5.14
2/6/2016	TY	0.51	5.14
3/4/2016	TY	0.51	5.14
4/1/2016	TY	0.50	5.00
4/28/2016	TY	0.51	5.09
5/27/2016	TY	0.54	5.37
6/25/2016	TY	0.51	5.09
7/22/2016	TY	0.51	5.09
8/20/2016	TY	0.50	5.00
9/16/2016	TY	0.50	5.05
10/15/2016	TY	0.50	5.05
11/12/2016	TY	0.52	5.23

Comments: New screen (circles) installed 9/8

Calibration of On Screen 1.0 and 10µm

Measuring Aids at EPA 100.2 Magnification

(Monthly)

Date	Initials	Small Circle microns	Large Circle microns
5/27/2015	TY	0.97	9.72
6/26/2015	TY	1.01	10.09
7/21/2015	TY	1.01	10.09
8/19/2015	TY	1.00	10.00
9/18/2015	TY	0.97	9.72
10/17/2015	TY	0.98	9.81
11/13/2015	TY	0.98	9.81
12/11/2015	TY	1.01	10.14
1/8/2016	TY	1.00	9.95
2/6/2016	TY	0.99	9.86
3/4/2016	TY	1.01	10.14
4/1/2016	TY	0.97	9.72
4/28/2016	TY	0.93	9.26
5/27/2016	TY	0.98	9.77
6/25/2016	TY	0.98	9.81
7/22/2016	TY	1.00	10.05
8/20/2016	TY	0.97	9.72
9/16/2016	TY	0.98	9.77
10/15/2016	TY	0.97	9.68
11/12/2016	TY	1.01	10.14

Comments: New screen (circles) installed 9/8

Spot Size Measurements

(Quarterly)

Date	Initials	Actual Spot	Target Spot Size	FAIL ≤250nm =	Is 2 SD <25% of
6/15/2012	PM	180.12	≤ 250 nm	PASS	PASS
7/16/2012	TY	178.51	≤ 250 nm	PASS	PASS
10/3/2012	TY	183.21	≤ 250 nm	PASS	PASS
1/3/2013	TY	194.94	≤ 250 nm	PASS	PASS
4/2/2013	TY	223.22	≤ 250 nm	PASS	PASS
5/26/2013	TY	180.53	≤ 250 nm	PASS	PASS
9/4/2013	TY	137.09	≤ 250 nm	PASS	PASS
12/3/2013	TY	146.31	< 250 nm	PASS	PASS
2/26/2014	TY	156.75	≤ 250 nm	PASS	PASS
5/21/2014	TY	159.32	≤ 250 nm	PASS	PASS
8/14/2014	TY	146.97	≤ 250 nm	PASS	PASS
11/7/2014	TY	169.01	≤ 250 nm	PASS	PASS
2/4/2015	TY	189.73	≤ 250 nm	PASS	PASS
4/25/2015	TY	188.66	≤ 250 nm	PASS	PASS
7/21/2015	TY	176.99	≤ 250 nm	PASS	PASS
10/17/2015	TY	161.02	≤ 250 nm	PASS	PASS
1/12/2016	TY	159.24	≤ 250 nm	PASS	PASS
4/9/2016	TY	185.25	≤ 250 nm	PASS	PASS
7/7/2016	TY	159.73	≤ 250 nm	PASS	PASS
9/29/2016	TY	165.14	≤ 250 nm	PASS	PASS

Comments:

Monthly Report for TEM Calibrations

Laboratory: Cinnaminson

Scope: 04-04

Detector: PGT Avalon

K Factors

(Semi-Annually)

Date	Initials	K Factor	Pass Criteria	Actual	PASS / FAIL	Acceptance Criteria	PASS / FAIL
10/19/2016	TY	*Standard Used:*		*BIR1G*			
		Na:Si	1.0 - 4.0	1.75	**PASS**	2SD < 20% Mean	**PASS**
		Mg:Si	1.0 - 2.0	1.57	**PASS**	2SD < 10% Mean	**PASS**
		Al:Si	1.0 - 1.75	1.29	**PASS**	2SD < 10% Mean	**PASS**
		Ca:Si	1.0 - 1.75	1.31	**PASS**	2SD < 10% Mean	**PASS**
		Fe:Si	1.0 - 2.0	1.57	**PASS**	2SD < 10% Mean	**PASS**
		Mg:Fe	1.5 or less	1.00	**PASS**	N / A	**N/A**
		Standard Used:		*None*			
		Na:Si	1.0 - 4.0	----	**N/A**	2SD < 20% Mean	**N/A**
		Al:Si	1.0 - 1.75	----	**N/A**	2SD < 10% Mean	**N/A**
		K:Si	1.0 - 1.75	----	**N/A**	2SD < 10% Mean	**N/A**

Comments:

Detector Resolution

(Semi-Annually / Quarterly when necessary to meet TNI Standard)

Date	@Mn Kα Peak Initials	Resolution	<175?	Resolution + 2(s) <180?
8/14/2014	TY	145.0	Pass	Pass
11/7/2014	TY	145.0	Pass	Pass
2/4/2015	TY	133.0	Pass	Pass
4/25/2015	TY	134.0	Pass	Pass
7/21/2015	TY	134.0	Pass	Pass
10/17/2015	TY	151.0	Pass	Pass
1/13/2016	TY	153.0	Pass	Pass
4/9/2016	TY	153.0	Pass	Pass
7/7/2016	TY	153.0	Pass	Pass
9/29/2016	TY	153.0	Pass	Pass

Comments:

Significant Na and Resolvable Mg-Si Peaks

(Quarterly)

Date	Initials	Significant Na		Date	Initials	Resolvable Mg	Resolvable Si
8/14/2014	TY	Pass		2/26/14	TY	Yes	Yes
11/7/2014	TY	Pass		5/21/14	TY	Yes	Yes
2/4/2015	TY	Pass		11/7/14	TY	Yes	Yes
4/25/2015	TY	Pass		2/4/15	TY	Yes	Yes
7/21/2015	TY	Pass		4/25/15	TY	Yes	Yes
10/17/2015	TY	Pass		7/21/15	TY	Yes	Yes
1/12/2016	TY	Pass		10/17/15	TY	Yes	Yes
4/9/2016	TY	Pass		4/9/16	TY	Yes	Yes
7/7/2016	TY	Pass		7/7/16	TY	Yes	Yes
9/29/2016	TY	Pass		9/29/16	TY	Yes	Yes

Comments:

Daily TEM Calibration Sheet

Month: October Year: 2012 Scope: 04-04

Day (1-31)	Analyst Initials	Scope Aligned	LN Dewar Filled	Al Peak Actual	Al Peak Accepted Range	Cu Peak Actual	Cu Peak Accepted Range	Al Cu Pass/Fail*
1	TT	✓	SQ	1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
2	MO	✓		1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
3			PJC		1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
4	TT	✓		1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
5	TT	✓	PJC	1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
6	TT	✓		1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
7	TT	✓	SQ	1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
8	TT	✓	DS	1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
9					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
10	CB	✓	PJC	1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
11	TT	✓		1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
12	TT	✓	PJC	1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
13	TT	✓		1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
14	TT	✓	PJC	1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
15	TT	✓	DS	1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
16					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
17			PJC		1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
18	TT	✓		1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
19	TT	✓	PJC	1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
20	TT	✓		1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
21	TT	✓	PJC	1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
22	TT	✓	DP	1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
23	MO	✓		1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
24			PJC		1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
25	TT	✓		1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
26	TT	✓	PJC	1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
27	TT	✓		1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
28	TT	✓	PJC	1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
29	TT	✓	DS	1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail
30					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
31	PJC	RZ	PJC	1.487	1.47-1.49	8.046	8.03-8.05	☑ Pass ☐ Fail

* Any failing results need immediate corrective action

Controlled Document
Confidential Business Information/Property of EMSL Analytical, Inc.

Daily TEM Calibration Sheet

Month: November Year: 2016 Scope: 04-04

Day (1-31)	Analyst Initials	Scope Aligned	LN Dewar Filled	Al Peak Actual	Al Peak Accepted Range	Cu Peak Actual	Cu Peak Accepted Range	Al Cu Pass/Fail*
1					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
2	TY	✓	PJC	1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
3	TY	✓		1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
4	TY	✓	PH	1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
5	TY	✓	DS	1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
6					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
7			PJC		1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
8	TY	✓		1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
9	TY	✓	PJC	1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
10	TY	✓		1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
11	TY	✓	PJC	1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
12	TY	✓	DS	1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
13					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
14			DS		1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
15	TY	✓		1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
16	TY	✓	WN	1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
17	TY	✓		1.487	1.47-1.49	8.042	8.03-8.05	☒ Pass ☐ Fail
18	TY	✓	WN	1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
19	TY	✓		1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
20					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
21			WN		1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
22	TY	✓		1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
23	TY	✓	WN	1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
24					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
25	TY	✓	WN	1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
26	TY	✓	DS	1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
27					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
28			WN		1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
29	TY	✓		1.487	1.47-1.49	8.046	8.03-8.05	☒ Pass ☐ Fail
30					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail
31					1.47-1.49		8.03-8.05	☐ Pass ☐ Fail

*** Any failing results need immediate corrective action**

Controlled Document
Confidential Business Information/Property of EMSL Analytical, Inc.

7. NVLAP/AIHA Certifications

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 101048-0

EMSL Analytical, Inc.

Cinnaminson, NJ

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

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).

2016-07-01 through 2017-06-30

Effective Dates

For the National Voluntary Laboratory Accreditation Program

National Voluntary
Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
Mr. Ben Ellis
Phone: 800-220-3675 Fax: 856-786-5973
Email: bellis@emsl.com
http://www.emsl.com

ASBESTOS FIBER ANALYSIS — NVLAP LAB CODE 101048-0

Bulk Asbestos Analysis

Code	Description
18/A01	EPA 600/M4-82-020: Interim Method for the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

Code	Description
18/A02	U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.

For the National Voluntary Laboratory Accreditation Program

Effective 2016-07-01 through 2017-06-30

August 31, 2016

Laboratory ID: 100194

Oommen Kappil
EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077

Dear Mr. Kappil:

Congratulations! The AIHA Laboratory Accreditation Programs (AIHA-LAP), LLC's Analytical Accreditation Board (AAB) has approved EMSL Analytical, Inc. as an accredited Industrial Hygiene, Environmental Lead and Environmental Microbiology laboratory.

Accreditation documentation includes the IHLAP, ELLAP and EMLAP accreditation certificate, scope of accreditation document and a copy of the current AIHA-LAP, LLC license agreement (if your completed agreement is not on file at AIHA-LAP, LLC). The accreditation symbol has been designed for use by all AIHA-LAP, LLC accredited laboratories. If your laboratory chooses to use the symbol in its advertising the laboratory's accreditation, you must complete and return the AIHA-LAP, LLC license agreement to a Laboratory Accreditation Specialist. Once submitted, an electronic copy of the accreditation symbol will be sent to you. Please inform us if your laboratory does not wish to use the symbol in advertising.

Laboratory accreditation shall be maintained by continued compliance with IHLAP, ELLAP and EMLAP requirements *(see Policy Modules 2B, 2C, 2D, and 6),* which includes proficient participation in AIHA-LAP, LLC approved proficiency testing, demonstration of competency, or round robin program as indicated on the AIHA-LAP "Approved PT and Round Robin" webpage, its associated Scope/PT table, and as required in Policy Module 6, for all Fields of Testing (FoTs) for which the laboratory is accredited. An accredited laboratory that wishes to expand into a new FoT must submit an updated accreditation application to AIHA-LAP, LLC for review by the AAB.

Any changes in ownership, laboratory location, personnel, FoTs/Methods, or significant procedural changes shall be reported to AIHA-LAP, LLC in writing within twenty (20) business days of the change.

The accreditation certificate is the property of AIHA-LAP, LLC and must be returned to us should your laboratory withdraw or be removed from the IHLAP, ELLAP and EMLAP.

Again, congratulations. If you have any questions, please contact Lauren Schnack, Laboratory Accreditation Specialist, at (703) 846-0716.

Sincerely,

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

AIHA Laboratory Accreditation Programs, LLC
3141 Fairview Park Drive, Suite 777, Falls Church, VA 22042 USA
main +1 703-846-0736 *fax* +1 703-207-8558
Twitter: @AIHA_LAP_LLC

AIHA Laboratory Accreditation Programs, LLC

acknowledges that

EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077

Laboratory ID: 100194

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: September 01, 2018
✓	**ENVIRONMENTAL LEAD**	Accreditation Expires: September 01, 2018
✓	**ENVIRONMENTAL MICROBIOLOGY**	Accreditation Expires: September 01, 2018
☐	**FOOD**	Accreditation Expires:
☐	**UNIQUE SCOPES**	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.

William Walsh, CIH
Chairperson, Analytical Accreditation Board

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

Revision 15: 03/30/2016

Date Issued: 08/31/2016

AIHA Laboratory Accreditation Programs, LLC

SCOPE OF ACCREDITATION

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077

Laboratory ID: **100194**
Issue Date: 10/20/2016

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Industrial Hygiene Laboratory Accreditation Program (IHLAP)

Initial Accreditation Date: 02/01/1989

IHLAP Scope Category	**Field of Testing (FoT)** (FoTs cover all relevant IH matrices)	**Technology sub-type/ Detector**	**Published Reference Method/Title of In-house Method**	**Method Description or Analyte** *(for internal methods only)*
Chromatography Core	Gas Chromatography	GC/FID	NIOSH 1003 Modified	
			NIOSH 1005	
			NIOSH 1400 Modified	
			NIOSH 1500 Modified	
			NIOSH 1501 Modified	
			NIOSH 1550 Modified	
			NIOSH 1603 Modified	
			NIOSH 2000 Modified	
		GC/ECD	NIOSH 5502 Modified	
			NIOSH 5503 Modified	
			NIOSH 5510 Modified	
			OSHA 1010 Modified	
	GC/MS	GC/MS	EPA TO-15	
	Gas Chromatography (Diffusive Samplers)		NIOSH 1501 Modified	
	Ion Chromatography (IC)		NIOSH 6004 Modified	
			NIOSH 6011	
			NIOSH 7903	
			OSHA ID-165SG	
			OSHA ID-214	
			OSHA ID-215 Modified	
	Liquid Chromatography	HPLC/FL	NIOSH 2016 Modified	
		HPLC/UV	NIOSH 5506 Modified	
Spectrometry Core	Atomic Absorption	CVAA	NIOSH 6009 Modified	
			OSHA ID-140 Modified	
			OSHA ID-145	

IHLAP Scope Category	Field of Testing (FoT) (FoTs cover all relevant IH matrices)	Technology sub-type/ Detector	Published Reference Method/Title of In-house Method	Method Description or Analyte *(for internal methods only)*
Spectrometry Core	Atomic Absorption	FAA	NIOSH 7082	
		GFAA	NIOSH 7105	
	Inductively-Coupled Plasma	ICP/MS	NIOSH 7300 Modified	
		ICP/AES	NIOSH 7300 Modified	
	X-ray Diffraction (XRD)		NIOSH 7500 Modified	
			OSHA ID-142 Modified	
	UV/VIS (Colorimetric)		NIOSH 6010 Modified	
Asbestos/Fiber Microscopy Core	Polarized Light Microscopy (PLM)		EPA 600/R-93/116	
	Phase Contrast Microscopy (PCM)		NIOSH 7400	
	Transmission Electron Microscopy (TEM)		EPA AHERA - 40 CFR Part 763	EPA AHERA Method (40 CFR 763, Subpart E, Appendix A, Mandatory Method
			NIOSH 7402	
Miscellaneous Core	Gravimetric		NIOSH 0500	
			NIOSH 0600	
			NIOSH 5524	
	Thermo-optical Analysis (TOA)		NIOSH 5040	
Beryllium Testing	Inductively-Coupled Plasma	ICP/MS	NIOSH 7300	
			NIOSH 7303	

A complete listing of currently accredited Industrial Hygiene laboratories is available on the AIHA-LAP, LLC website at: http://www.aihaaccreditedlabs.org

AIHA Laboratory Accreditation Programs, LLC

SCOPE OF ACCREDITATION

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077

Laboratory ID: **100194**
Issue Date: 08/31/2016

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

The EPA recognizes the AIHA-LAP, LLC ELLAP program as meeting the requirements of the National Lead Laboratory Accreditation Program (NLLAP) established under Title X of the Residential Lead-Based Paint Hazard Reduction Act of 1992 and includes paint, soil and dust wipe analysis. Air analysis is not included as part of the NLLAP.

Environmental Lead Laboratory Accreditation Program (ELLAP)

Initial Accreditation Date: 01/18/1995

Field of Testing (FoT)	Technology sub-type/ Detector	Method	Method Description *(for internal methods only)*
Paint		EPA SW-846 3050B	
		EPA SW-846 7000B	
Soil		EPA SW-846 3050B	
		EPA SW-846 7000B	
Settled Dust by Wipe		EPA SW-846 3050B	
		EPA SW-846 7000B	
Airborne Dust		NIOSH 7082	
Composited Wipes		EPA SW-846 3050B	
		EPA SW-846 7000B	

A complete listing of currently accredited Environmental Lead laboratories is available on the AIHA-LAP, LLC website at: http://www.aihaaccreditedlabs.org

AIHA Laboratory Accreditation Programs, LLC

SCOPE OF ACCREDITATION

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077

Laboratory ID: **100194**
Issue Date: 08/31/2016

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Environmental Microbiology Laboratory Accreditation Program (EMLAP)

Initial Accreditation Date: 09/01/2002

EMLAP Category	Field of Testing (FoT)	Method	Method Description (*for internal methods only*)
Fungal	Air - Culturable	M005	Detection and Enumeration of Culturable Fungi from Environmental Samples
	Bulk - Culturable	M005	Detection and Enumeration of Culturable Fungi from Environmental Samples
	Surface - Culturable	M005	Detection and Enumeration of Culturable Fungi from Environmental Samples
	Air - Direct Examination	05-TP-003.7	Standard Operating Procedure for the Analysis of Airborne Fungal Spores, Hyphal Fragments, Pollen, Insect Fragments, Skin Fragments and Fibrous Particulate by Optical Microscopy of Spore Trap Samples
	Bulk - Direct Examination	M041	Standard Operating Procedure for the Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, Pollen, Insect Fragments, and Fibrous Material from Surface Samples
	Surface - Direct Examination	M041	Standard Operating Procedure for the Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, Pollen, Insect Fragments, and Fibrous Material from Surface Samples
Bacterial	Air - Culturable	M009	Detection and Enumeration of Culturable Bacteria from Environmental Samples
	Bulk - Culturable	M009	Detection and Enumeration of Culturable Bacteria from Environmental Samples
	Surface - Culturable	M009	Detection and Enumeration of Culturable Bacteria from Environmental Samples

EMLAP Category	Field of Testing (FoT)	Method	Method Description *(for internal methods only)*
Bacterial	Legionella	05-TP-002	Recovery of Legionella from the Environment Using the Center for Disease Control and Prevention's Culture Method

A complete listing of currently accredited Environmental Microbiology laboratories is available on the AIHA-LAP, LLC website at: http://www.aihaaccreditedlabs.org

EMSL ANALYTICAL, INC.

8. Customer Correspondence

9. Shipping Documentation

My Profile | Support | Locations | English | Search or tracking number | Subı

FedEx. Shipping | Tracking | Manage | Learn | FedEx Office ® | Login

FedEx ® Tracking

795196907475

Ship date:
Sat 10/15/2016

Rancho Cordova, CA US

Delivered
Signed for by: C.LACERRA

Actual delivery:
Mon 10/17/2016 8:34 am

Cinnaminson, NJ US

Travel History

Date/Time	Activity	Location
- 10/17/2016 - Monday		
8:34 am	Delivered	Cinnaminson, NJ
7:50 am	On FedEx vehicle for delivery	MOUNT LAUREL, NJ
7:40 am	At local FedEx facility	MOUNT LAUREL, NJ
- 10/16/2016 - Sunday		
6:17 pm	At destination sort facility	PHILADELPHIA, PA
3:17 pm	Departed FedEx location	MEMPHIS, TN
10:37 am	Arrived at FedEx location	MEMPHIS, TN
- 10/15/2016 - Saturday		
6:15 pm	Left FedEx origin facility	SIGNAL HILL, CA
3:45 pm	Picked up	SIGNAL HILL, CA
12:39 pm	Picked up Tendered at FedEx Office	LONG BEACH, CA
- 10/06/2016 - Thursday		
1:44 pm	Shipment information sent to FedEx	

Shipment Facts

Tracking number	795196907475	**Service**	FedEx Standard Overnight
Weight	18 lbs / 8.16 kgs	**Dimensions**	21x21x12 in.
Delivered To	Shipping/Receiving	**Total pieces**	1
Total shipment weight	18 lbs / 8.16 kgs	**Terms**	Shipper
Purchase order number	verbal - Josh Ewert	**Invoice number**	GECN80
Packaging	Your Packaging	**Special handling section**	Deliver Weekday
Standard transit	10/17/2016 by 3:00 pm		

FedEx.

Search or tracking number | Subm

Customer Focus
New Customer Center
Small Business Center
Service Guide
Customer Support

Company Information
About FedEx
Careers
Investor Relations
Subscribe to FedEx email

Featured Services
FedEx Delivery Manager
FedEx SameDay
FedEx Home Delivery
FedEx TechConnect
Healthcare Solutions
Online Retail Solutions
Packaging Services
Ancillary Clearance Services

Other Resources
FedEx Compatible
Developer Resource Center
FedEx Ship Manager Software
FedEx Mobile

Companies
FedEx Express
FedEx Ground
FedEx Office
FedEx Freight
FedEx Custom Critical
FedEx Trade Networks
FedEx Cross Border
FedEx SupplyChain

Follow FedEx

United States - English

Ask FedEx

© FedEx 1995-2016

Global Home | Site Map | fedex.com Terms of Use | Security and Privacy

My Profile | Support | Locations | English Search or tracking number Subı

FedEx. Shipping | Tracking | Manage | Learn | FedEx Office ® Login

FedEx ® Tracking

795199430549

Ship date:
Mon 10/24/2016

Rancho Cordova, CA US

Delivered
Signed for by: C.LACERRA

Actual delivery:
Tue 10/25/2016 9:16 am

Cinnaminson, NJ US

Travel History

Date/Time	Activity	Location
- 10/25/2016 - Tuesday		
9:16 am	Delivered	Cinnaminson, NJ
8:34 am	On FedEx vehicle for delivery	MOUNT LAUREL, NJ
8:29 am	At local FedEx facility	MOUNT LAUREL, NJ
6:25 am	At destination sort facility	PHILADELPHIA, PA
3:31 am	Departed FedEx location	MEMPHIS, TN
12:22 am	Arrived at FedEx location	MEMPHIS, TN
- 10/24/2016 - Monday		
5:52 pm	Left FedEx origin facility	SOUTH SAN FRANCISCO, CA
4:17 pm	Picked up	SOUTH SAN FRANCISCO, CA
- 10/22/2016 - Saturday		
7:10 pm	At FedEx origin facility	SAN MATEO, CA
7:10 pm	In FedEx possession Package received after final location pickup has occurred. Scheduled for pickup next business day.	SAN MATEO, CA
- 10/13/2016 - Thursday		
3:51 pm	Shipment information sent to FedEx	

Shipment Facts

Tracking number	795199430549	**Service**	FedEx Standard Overnight
Weight	19 lbs / 8.62 kgs	**Dimensions**	20x19x10 in.
Delivered To	Shipping/Receiving	**Total pieces**	1
Total shipment weight	19 lbs / 8.62 kgs	**Terms**	Shipper
Purchase order number	verbal - Josh Ewert	**Invoice number**	GECN80
Packaging	Your Packaging	**Special handling section**	Deliver Weekday
Standard transit	10/25/2016 by 3:00 pm		

FedEx. Search or tracking number Subm

Customer Focus
New Customer Center
Small Business Center
Service Guide
Customer Support

Company Information
About FedEx
Careers
Investor Relations
Subscribe to FedEx email

Featured Services
FedEx Delivery Manager
FedEx SameDay
FedEx Home Delivery
FedEx TechConnect
Healthcare Solutions
Online Retail Solutions
Packaging Services
Ancillary Clearance Services

Other Resources
FedEx Compatible
Developer Resource Center
FedEx Ship Manager Software
FedEx Mobile

Companies
FedEx Express
FedEx Ground
FedEx Office
FedEx Freight
FedEx Custom Critical
FedEx Trade Networks
FedEx Cross Border
FedEx SupplyChain

Follow FedEx

United States - English

Ask FedEx

© FedEx 1995-2016

Global Home | Site Map | fedex.com Terms of Use | Security and Privacy

eurofins | Air Toxics

11/5/2016
Mr. Josh Ewert
Geocon Consultants, Inc.
3160 Gold Valley Drive
Suite 800
Rancho Cordova CA 95742-7207

Project Name: DTSC- Metal Shredders
Project #: S9850-03-21
Workorder #: 1610461

Dear Mr. Josh Ewert

The following report includes the data for the above referenced project for sample(s) received on 10/25/2016 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-11A are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

eurofins | Air Toxics

WORK ORDER #: 1610461

Work Order Summary

CLIENT:	Mr. Josh Ewert Geocon Consultants, Inc. 3160 Gold Valley Drive Suite 800 Rancho Cordova, CA 95742-7207	**BILL TO:**	Mr. Josh Ewert Geocon Consultants, Inc. 3160 Gold Valley Drive Suite 800 Rancho Cordova, CA 95742-7207
PHONE:	916-852-5870	**P.O. #**	
FAX:	916-852-9132	**PROJECT #**	S9850-03-21 DTSC- Metal Shredders
DATE RECEIVED:	10/25/2016	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	11/05/2016		

FRACTION #	NAME	TEST
01A	SMM1-T1-FORM	Modified TO-11A
02A	SMM2-T1-FORM	Modified TO-11A
03A	SMM3-T1-FORM	Modified TO-11A
04A	SMM4-T1-FORM	Modified TO-11A
05A	SMM5-T1-FORM	Modified TO-11A
06A	SMM1-T2-FORM	Modified TO-11A
07A	SMM2-T2-FORM	Modified TO-11A
08A	SMM3-T2-FORM	Modified TO-11A
09A	SMM4-T2-FORM	Modified TO-11A
10A	SMM1-T3-FORM	Modified TO-11A
11A	SMM2-T3-FORM	Modified TO-11A
12A	SMM3-T3-FORM	Modified TO-11A
13A	SMM4-T3-FORM	Modified TO-11A
14A	SMM5-T3-FORM	Modified TO-11A
15A	SMM-TB-FORM	Modified TO-11A
16A	Lab Blank	Modified TO-11A
17A	LCS	Modified TO-11A
17AA	LCSD	Modified TO-11A

CERTIFIED BY: Heidi Mayo DATE: 11/05/16

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, Inc.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-11A
Geocon Consultants, Inc.
Workorder# 1610461

Fifteen TO-11 Cartridge samples were received on October 25, 2016. The laboratory performed analysis via modified Method TO-11A using reverse phase High Pressure Liquid Chromatography (HPLC) with an Ultraviolet (UV) Detector. The method involves eluting the sorbent tubes with acetonitrile using a gravity feed technique. Method modifications taken to run these samples include:

Requirement	***TO-11A***	***ATL Modifications***
ACN Purity Check	Contribution of analytes from ACN determined as described Sections 9.1.1 and 9.1.2 of Compendium TO-11A.	Total contribution of analytes from ACN and cartridge combined is determined.
Initial Calibration Curve (ICAL)	Multi-point using linear regression performed every 6 months; r^2 > 0.999	Multi-point using average Response Factor; % RSD </= 10 %. Re-calibration if daily cal. fails, major maintenance, or column change. Linear regression is performed when requested.
Blank Subtraction	Average blank concentrations calculated. Blank value subtracted from sample result.	One Lab Blank is analyzed per batch; no blank subtraction performed on samples.

Receiving Notes

The Chain of Custody was missing method information. EATL proceeded with the analysis as per the original contract or verbal agreement.

The Chain of Custody (COC) was not relinquished properly. The signature, date and time provided in the first 'Received By' line was completed by the field sampler. The correct 'Received By' information was completed on the second line of the COC by the laboratory receiving technician.

Analytical Notes

The quantitation of Formaldehyde in samples SMM2-T1-FORM, SMM5-T1-FORM, SMM1-T2-FORM, SMM2-T2-FORM, SMM3-T2-FORM, SMM4-T2-FORM, SMM2-T3-FORM, SMM3-T3-FORM, SMM4-T3-FORM and SMM5-T3-FORM is impacted by matrix interference. Results are qualified with an "M" flag.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:
B - Compound present in laboratory blank greater than reporting limit.
J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the detection limit.

M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

eurofins | Air Toxics

Summary of Detected Compounds
AMBIENT AIR: EPA METHOD TO-11A HPLC

Client Sample ID: SMM1-T1-FORM

Lab ID#: 1610461-01A

Compound	Rpt. Limit (ug)	Amount (ug)
Formaldehyde	0.050	2.0

Client Sample ID: SMM2-T1-FORM

Lab ID#: 1610461-02A

Compound	Rpt. Limit (ug)	Amount (ug)
Formaldehyde	0.050	3.2 M

Client Sample ID: SMM3-T1-FORM

Lab ID#: 1610461-03A

Compound	Rpt. Limit (ug)	Amount (ug)
Formaldehyde	0.050	2.3

Client Sample ID: SMM4-T1-FORM

Lab ID#: 1610461-04A

Compound	Rpt. Limit (ug)	Amount (ug)
Formaldehyde	0.050	3.0

Client Sample ID: SMM5-T1-FORM

Lab ID#: 1610461-05A

Compound	Rpt. Limit (ug)	Amount (ug)
Formaldehyde	0.050	4.6 M

Client Sample ID: SMM1-T2-FORM

Lab ID#: 1610461-06A

Compound	Rpt. Limit (ug)	Amount (ug)
Formaldehyde	0.050	3.2 M

eurofins | Air Toxics

Summary of Detected Compounds
AMBIENT AIR: EPA METHOD TO-11A HPLC

Client Sample ID: SMM2-T2-FORM

Lab ID#: 1610461-07A

Compound	Rpt. Limit (ug)	Amount (ug)
Formaldehyde	0.050	3.1 M

Client Sample ID: SMM3-T2-FORM

Lab ID#: 1610461-08A

Compound	Rpt. Limit (ug)	Amount (ug)
Formaldehyde	0.050	3.6 M

Client Sample ID: SMM4-T2-FORM

Lab ID#: 1610461-09A

Compound	Rpt. Limit (ug)	Amount (ug)
Formaldehyde	0.050	3.7 M

Client Sample ID: SMM1-T3-FORM

Lab ID#: 1610461-10A

Compound	Rpt. Limit (ug)	Amount (ug)
Formaldehyde	0.050	1.8

Client Sample ID: SMM2-T3-FORM

Lab ID#: 1610461-11A

Compound	Rpt. Limit (ug)	Amount (ug)
Formaldehyde	0.050	2.4 M

Client Sample ID: SMM3-T3-FORM

Lab ID#: 1610461-12A

Compound	Rpt. Limit (ug)	Amount (ug)
Formaldehyde	0.050	2.5 M

Summary of Detected Compounds
AMBIENT AIR: EPA METHOD TO-11A HPLC

Client Sample ID: SMM4-T3-FORM

Lab ID#: 1610461-13A

Compound	Rpt. Limit (ug)	Amount (ug)
Formaldehyde	0.050	2.9 M

Client Sample ID: SMM5-T3-FORM

Lab ID#: 1610461-14A

Compound	Rpt. Limit (ug)	Amount (ug)
Formaldehyde	0.050	3.6 M

Client Sample ID: SMM-TB-FORM

Lab ID#: 1610461-15A

No Detections Were Found.

eurofins | Air Toxics

Client Sample ID: SMM1-T1-FORM

Lab ID#: 1610461-01A

AMBIENT AIR: EPA METHOD TO-11A HPLC

File Name:	**f1103007**	**Date of Collection: 10/20/16 8:35:00 AM**
Dil. Factor:	**1.00**	**Date of Analysis: 11/3/16 11:53 AM**
		Date of Extraction: 11/3/16

Compound	Rpt. Limit (ug)	Amount (ug)
Formaldehyde	0.050	2.0

eurofins | Air Toxics

Client Sample ID: SMM2-T1-FORM

Lab ID#: 1610461-02A

AMBIENT AIR: EPA METHOD TO-11A HPLC

File Name:	**f1103008**	**Date of Collection: 10/20/16 8:15:00 AM**
Dil. Factor:	**1.00**	**Date of Analysis: 11/3/16 12:19 PM**
		Date of Extraction: 11/3/16

Compound	Rpt. Limit (ug)	Amount (ug)
Formaldehyde	0.050	3.2 M

M = Reported value may be biased due to apparent matrix interferences.

eurofins | Air Toxics

Client Sample ID: SMM3-T1-FORM

Lab ID#: 1610461-03A

AMBIENT AIR: EPA METHOD TO-11A HPLC

File Name:	**f1103009**	**Date of Collection: 10/20/16 8:30:00 AM**
Dil. Factor:	**1.00**	**Date of Analysis: 11/3/16 12:45 PM**
		Date of Extraction: 11/3/16

Compound	Rpt. Limit (ug)	Amount (ug)
Formaldehyde	0.050	2.3

eurofins | Air Toxics

Client Sample ID: SMM4-T1-FORM

Lab ID#: 1610461-04A

AMBIENT AIR: EPA METHOD TO-11A HPLC

File Name:	**f1103010**	**Date of Collection: 10/20/16 8:05:00 AM**
Dil. Factor:	**1.00**	**Date of Analysis: 11/3/16 01:11 PM**
		Date of Extraction: 11/3/16

Compound	Rpt. Limit (ug)	Amount (ug)
Formaldehyde	0.050	3.0

eurofins | Air Toxics

Client Sample ID: SMM5-T1-FORM

Lab ID#: 1610461-05A

AMBIENT AIR: EPA METHOD TO-11A HPLC

File Name:	**f1103011**	**Date of Collection: 10/20/16 8:15:00 AM**
Dil. Factor:	**1.00**	**Date of Analysis: 11/3/16 01:37 PM**
		Date of Extraction: 11/3/16

Compound	Rpt. Limit (ug)	Amount (ug)
Formaldehyde	0.050	4.6 M

M = Reported value may be biased due to apparent matrix interferences.

eurofins | Air Toxics

Client Sample ID: SMM1-T2-FORM

Lab ID#: 1610461-06A

AMBIENT AIR: EPA METHOD TO-11A HPLC

File Name:	**f1103012**	**Date of Collection: 10/21/16 11:10:00 A**
Dil. Factor:	**1.00**	**Date of Analysis: 11/3/16 02:03 PM**
		Date of Extraction: 11/3/16

Compound	**Rpt. Limit (ug)**	**Amount (ug)**
Formaldehyde	0.050	3.2 M

M = Reported value may be biased due to apparent matrix interferences.

eurofins | Air Toxics

Client Sample ID: SMM2-T2-FORM

Lab ID#: 1610461-07A

AMBIENT AIR: EPA METHOD TO-11A HPLC

File Name:	**f1103013**	**Date of Collection: 10/21/16 11:30:00 A**
Dil. Factor:	**1.00**	**Date of Analysis: 11/3/16 02:29 PM**
		Date of Extraction: 11/3/16

Compound	**Rpt. Limit (ug)**	**Amount (ug)**
Formaldehyde	0.050	3.1 M

M = Reported value may be biased due to apparent matrix interferences.

eurofins | Air Toxics

Client Sample ID: SMM3-T2-FORM

Lab ID#: 1610461-08A

AMBIENT AIR: EPA METHOD TO-11A HPLC

File Name:	**f1103014**	**Date of Collection: 10/21/16 11:50:00 A**
Dil. Factor:	**1.00**	**Date of Analysis: 11/3/16 02:55 PM**
		Date of Extraction: 11/3/16

Compound	**Rpt. Limit (ug)**	**Amount (ug)**
Formaldehyde	0.050	3.6 M

M = Reported value may be biased due to apparent matrix interferences.

eurofins | Air Toxics

Client Sample ID: SMM4-T2-FORM

Lab ID#: 1610461-09A

AMBIENT AIR: EPA METHOD TO-11A HPLC

File Name:	**f1103015**	**Date of Collection: 10/21/16 11:20:00 A**
Dil. Factor:	**1.00**	**Date of Analysis: 11/3/16 03:21 PM**
		Date of Extraction: 11/3/16

Compound	**Rpt. Limit (ug)**	**Amount (ug)**
Formaldehyde	0.050	3.7 M

M = Reported value may be biased due to apparent matrix interferences.

eurofins | Air Toxics

Client Sample ID: SMM1-T3-FORM

Lab ID#: 1610461-10A

AMBIENT AIR: EPA METHOD TO-11A HPLC

File Name:	**f1103018**	**Date of Collection: 10/22/16 1:35:00 PM**
Dil. Factor:	**1.00**	**Date of Analysis: 11/3/16 04:38 PM**
		Date of Extraction: 11/3/16

Compound	**Rpt. Limit (ug)**	**Amount (ug)**
Formaldehyde	0.050	1.8

eurofins | Air Toxics

Client Sample ID: SMM2-T3-FORM

Lab ID#: 1610461-11A

AMBIENT AIR: EPA METHOD TO-11A HPLC

File Name:	**f1103019**	**Date of Collection: 10/22/16 1:15:00 PM**
Dil. Factor:	**1.00**	**Date of Analysis: 11/3/16 05:04 PM**
		Date of Extraction: 11/3/16

Compound	**Rpt. Limit (ug)**	**Amount (ug)**
Formaldehyde	0.050	2.4 M

M = Reported value may be biased due to apparent matrix interferences.

eurofins | Air Toxics

Client Sample ID: SMM3-T3-FORM

Lab ID#: 1610461-12A

AMBIENT AIR: EPA METHOD TO-11A HPLC

File Name:	**f1103020**	**Date of Collection: 10/22/16 1:30:00 PM**
Dil. Factor:	**1.00**	**Date of Analysis: 11/3/16 05:30 PM**
		Date of Extraction: 11/3/16

Compound	Rpt. Limit (ug)	Amount (ug)
Formaldehyde	0.050	2.5 M

M = Reported value may be biased due to apparent matrix interferences.

eurofins | Air Toxics

Client Sample ID: SMM4-T3-FORM

Lab ID#: 1610461-13A

AMBIENT AIR: EPA METHOD TO-11A HPLC

File Name:	**f1103021**	**Date of Collection: 10/22/16 1:45:00 PM**
Dil. Factor:	**1.00**	**Date of Analysis: 11/3/16 05:56 PM**
		Date of Extraction: 11/3/16

Compound	Rpt. Limit (ug)	Amount (ug)
Formaldehyde	0.050	2.9 M

M = Reported value may be biased due to apparent matrix interferences.

eurofins | Air Toxics

Client Sample ID: SMM5-T3-FORM

Lab ID#: 1610461-14A

AMBIENT AIR: EPA METHOD TO-11A HPLC

File Name:	**f1103022**	**Date of Collection: 10/22/16 1:15:00 PM**
Dil. Factor:	**1.00**	**Date of Analysis: 11/3/16 06:22 PM**
		Date of Extraction: 11/3/16

Compound	Rpt. Limit (ug)	Amount (ug)
Formaldehyde	0.050	3.6 M

M = Reported value may be biased due to apparent matrix interferences.

eurofins | Air Toxics

Client Sample ID: SMM-TB-FORM

Lab ID#: 1610461-15A

AMBIENT AIR: EPA METHOD TO-11A HPLC

File Name:	**f1103006**	**Date of Collection: 10/22/16 8:00:00 AM**
Dil. Factor:	**1.00**	**Date of Analysis: 11/3/16 11:27 AM**
		Date of Extraction: 11/3/16

Compound	**Rpt. Limit (ug)**	**Amount (ug)**
Formaldehyde	0.050	Not Detected

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1610461-16A

AMBIENT AIR: EPA METHOD TO-11A HPLC

File Name:	**f1103005**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 11/3/16 11:01 AM**
		Date of Extraction: 11/3/16

Compound	**Rpt. Limit (ug)**	**Amount (ug)**
Formaldehyde	0.050	Not Detected

eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 1610461-17A

AMBIENT AIR: EPA METHOD TO-11A HPLC

File Name:	**f1103003**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 11/3/16 10:09 AM**
		Date of Extraction: 11/3/16

Compound	**%Recovery**	**Method Limits**
Formaldehyde	95	85-115

Container Type: NA - Not Applicable

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 1610461-17AA

AMBIENT AIR: EPA METHOD TO-11A HPLC

File Name:	**f1103004**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 11/3/16 10:35 AM**
		Date of Extraction: 11/3/16

Compound	**%Recovery**	**Method Limits**
Formaldehyde	93	85-115

Container Type: NA - Not Applicable