



EMSL ANALYTICAL, INC.  
LABORATORY PRODUCTS TRAINING

### Asbestos Chain of Custody

EMSL Order Number (Lab Use Only):

041922026

EMSL ANALYTICAL, INC.  
5221 MILITIA HILL ROAD  
PLYMOUTH MEETING, PA 19462  
PHONE: (610) 828-3102  
FAX: (610) 828-3122

Company Name: PA Dept. of Environmental Protection		EMSL Customer ID: PADP42	
Street: SW Laurel Blvd		City: Pottsville	State/Province: PA
Zip/Postal Code: 17901	Country: US	Telephone #: 570-621-3118	Fax #: 570-621-3110
Report To (Name): Gary Latsha		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
Email Address: g.latsha@pa.gov		Purchase Order:	
Project Name/Number: Rockhill Quarry		EMSL Project ID (Internal Use Only):	
U.S. State Samples Taken: PA		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> 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 Process Guide.

<p><b>PCM - Air</b> <input type="checkbox"/> Check if samples are from NY</p> <p><input type="checkbox"/> NIOSH 7400</p> <p><input type="checkbox"/> w/ OSHA 8hr. TWA</p>	<p><b>TEM - Air</b> <input type="checkbox"/> 4-4.5hr TAT (AHERA only)</p> <p><input type="checkbox"/> AHERA 40 CFR, Part 763</p> <p><input type="checkbox"/> NIOSH 7402</p> <p><input type="checkbox"/> EPA Level II</p> <p><input type="checkbox"/> ISO 10312</p>	<p><b>TEM - Dust</b></p> <p><input type="checkbox"/> Microvac - ASTM D 5755</p> <p><input type="checkbox"/> Wipe - ASTM D6480</p> <p><input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167)</p>
<p><b>PLM - Bulk (reporting limit)</b></p> <p><input type="checkbox"/> PLM EPA 600/R-93/116 (&lt;1%)</p> <p><input type="checkbox"/> PLM EPA NOB (&lt;1%)</p> <p>Point Count</p> <p><input type="checkbox"/> 400 (&lt;0.25%) <input type="checkbox"/> 1000 (&lt;0.1%)</p> <p>Point Count w/Gravimetric</p> <p><input type="checkbox"/> 400 (&lt;0.25%) <input type="checkbox"/> 1000 (&lt;0.1%)</p> <p><input type="checkbox"/> NYS 198.1 (friable in NY)</p> <p><input type="checkbox"/> NYS 198.6 NOB (non-friable-NY)</p> <p><input type="checkbox"/> NYS 198.8 SOF-V</p> <p><input type="checkbox"/> NIOSH 9002 (&lt;1%)</p>	<p><b>TEM - Bulk</b></p> <p><input type="checkbox"/> TEM EPA NOB</p> <p><input type="checkbox"/> NYS NOB 198.4 (non-friable-NY)</p> <p><input type="checkbox"/> Chatfield SOP</p> <p><input type="checkbox"/> TEM Mass Analysis-EPA 600 sec. 2.5</p> <p><b>TEM - Water: EPA 100.2</b></p> <p>Fibers &gt;10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking</p> <p>All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking</p>	<p><b>Soil/Rock/Vermiculite</b></p> <p><input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (&lt;1%)</p> <p><input checked="" type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (&lt;0.25%)</p> <p><input checked="" type="checkbox"/> TEM EPA 600/R-93/116 with milling prep (&lt;0.1%)</p> <p><input type="checkbox"/> TEM Qualitative via Filtration Prep</p> <p><input type="checkbox"/> TEM Qualitative via Drop Mount Prep</p> <p><input type="checkbox"/> Cincinnati Method EPA 600/R-04/004 - PLM/TEM (BC only)</p> <p><b>Other:</b></p> <p><input type="checkbox"/></p>

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 ANNAPOLIS, MD  
 19 JUL 30 2019

Check For Positive Stop - Clearly Identify Homogenous Group Filter Pore Size (Air Samples):  0.8µm  0.45µm

Samplers Name: Samplers Signature:

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
RH # 33	rock		5/13/19 0830
DB -4	69.0' - core sample - rock		5/23/19 1248
HS # 2	bench zero trench - rock		5/15/19 1050
CB-3 # 8	core sample - rock		5/23/19 1203
CB-1 # 1	core sample - rock		5/23/19 1123

Client Sample # (s): Total # of Samples: 10

Relinquished (Client): Amiee Bollinger Date: 7/30/19 Time: 0938

Received (Lab): Meredith H... Date: 7/30/19 Time: 9:38 AM

Comments/Special Instructions: Disk milling on all samples - See attached quote sheet for methods

Rel. Toni Loney  
7-30-19 5:45

Rec: [Signature] 7/30/19 550





EMSL ANALYTICAL, INC.

http://www.emsl.com

800-220-3675

**EMSL ANALYTICAL, INC.**  
**Confidential Pricing**  
**PA Dept of Environmental Protection**  
**Customer ID: PADP42**  
**July 30, 2019**



Locally Focused...  
 .....Nationally Recognized

041922026

**Attention:**  
**Gary Latsha**  
 PA Dept of Environmental Protection  
 5 Laurel Blvd.  
 Pottsville, PA 17901  
 570-274-2464  
 galatsha@pa.gov

**Contact:**  
**Gary Perlmutter, Regional Account Manager**  
 EMSL Analytical, Inc.  
 200 Route 130 North  
 Cinnaminson, NJ 08077  
 (856) 303-2530

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 CINNAMINSON, N.J.  
 2019 JUL 30 P

**Asbestos Laboratory Services 1**

SOIL / ROCK / VERMICULITE METHODS	3 Hr	6 Hr	24 Hr	48 Hr	72 Hr	96 Hr	1 Wk	2 Wk
PLM by EPA/600/R-93/116 with Milling Prep Level A (400 Point Count, reporting limit to <0.25%)	\$449.00	\$321.00	\$238.00	\$197.00	\$168.00	\$138.00	\$107.00	\$77.50
PLM by EPA/600/R-93/116 with Milling Prep Level B (1000 Point Count, reporting limit to <0.1%)	\$544.00	\$416.00	\$290.00	\$247.00	\$215.00	\$186.00	\$155.00	\$125.00
PLM by EPA/600/R-93/116 with Milling and Gravimetric Prep Level A (400 Point Count, reporting limit to <0.25%)	\$461.00	\$333.00	\$250.00	\$209.00	\$179.00	\$149.00	\$119.00	\$88.00
PLM by EPA/600/R-93/116 with Milling Prep and Gravimetric Prep Level B (1000 Point Count, reporting limit to <0.1%)	\$557.00	\$427.00	\$301.00	\$258.00	\$227.00	\$197.00	\$167.00	\$137.00
TEM by EPA/600/R-93/116 with Milling Prep Level B (reporting limit to 0.1%)	N/A	N/A	\$406.00	\$351.00	\$316.00	\$281.00	\$247.00	\$212.00
TEM by EPA/600/R-93/116 with Milling and Gravimetric Prep Level B (reporting limit to 0.1%)	N/A	N/A	\$418.00	\$361.00	\$328.00	\$292.00	\$258.00	\$223.00
TEM by EPA/600/R-93/116 with Milling Prep Level C (reporting limit to 0.01%)	N/A	N/A	\$455.00	\$392.00	\$351.00	\$322.00	\$287.00	\$252.00
TEM by EPA/600/R-93/116 with Milling and Gravimetric Prep Level C (reporting limit to 0.01%)	N/A	N/A	\$466.00	\$402.00	\$361.00	\$333.00	\$298.00	\$264.00
PLM CARB 435 Level A (reporting limit to 0.25%)	\$449.00	\$321.00	\$238.00	\$197.00	\$168.00	\$138.00	\$107.00	\$77.50
PLM CARB 435 Level B (reporting limit to 0.1%)	\$544.00	\$415.00	\$289.00	\$246.00	\$215.00	\$185.00	\$155.00	\$125.00
TEM CARB 435 Level B (reporting limit to 0.1%)	N/A	N/A	\$423.00	\$365.00	\$329.00	\$292.00	\$257.00	\$219.00
TEM CARB 435 Level C (reporting limit to 0.01%) <sup>2</sup>	N/A	N/A	\$474.00	\$406.00	\$365.00	\$335.00	\$298.00	\$263.00
ASTM D7521 Asbestos in Soil PLM Quantitative with TEM Qualitative check	N/A	N/A	\$284.00	\$235.00	\$205.00	\$187.00	\$145.00	\$127.00
ASTM D7521 Asbestos in Soil TEM Quantitative <sup>3</sup>	N/A	N/A	\$307.00	\$268.00	\$247.00	\$239.00	\$233.00	\$225.00
PLM Qualitative (Asbestos Detect/Non Detect only)	\$102.00	\$68.50	\$43.00	\$35.00	\$31.25	\$28.90	\$27.65	\$26.45
TEM Qualitative via Filtration Prep Technique	N/A	Call	\$142.00	\$112.00	\$90.50	\$83.00	\$75.50	\$70.50
TEM Qualitative via Drop Mount Prep Technique	Call	Call	\$107.00	\$84.00	\$67.00	\$63.00	\$58.50	\$51.50
Fluidized Bed Asbestos Segregator (FBAS)-Level A	N/A	N/A	N/A	N/A	N/A	N/A	\$566.00	\$507.00
Fluidized Bed Asbestos Segregator (FBAS)-Level B	N/A	N/A	N/A	N/A	N/A	N/A	\$624.00	\$565.00
Fluidized Bed Asbestos Segregator (FBAS)-Level C	N/A	N/A	N/A	N/A	N/A	N/A	\$739.00	\$680.00
Fluidized Bed Asbestos Segregator (FBAS)-Level D	N/A	N/A	N/A	N/A	N/A	N/A	\$1,213.00	\$1,150.00
Superfund EPA 540-R-97-028 (Elutriator Method)	N/A	N/A	N/A	N/A	N/A	Call	\$1,539.00	\$1,358.00
Cincinnati Method EPA 600/R-04/004 PLM Only	N/A	N/A	N/A	N/A	\$254.00	\$232.00	\$216.00	\$181.00
Cincinnati Method EPA 600/R-04/004 TEM <sup>3</sup>	N/A	N/A	N/A	N/A	\$181.00	\$174.00	\$169.00	\$156.00
Jaw Crushing Prep	\$368.00	\$263.00	\$184.00	\$147.00	\$105.00	\$89.50	\$79.00	\$79.00
Milling Prep	\$368.00	\$263.00	\$184.00	\$147.00	\$105.00	\$89.50	\$79.00	\$79.00
Sample Homogenization (Turbula Mixer/Riffle Splitter)	\$263.00	\$158.00	\$105.00	\$79.00	\$68.50	\$61.00	\$52.50	\$36.75

All Test pricing is "Per Sample Unit Rates" which will apply to each item, discrete Sample and/or sub-component submitted for analysis. This unit price quote includes Customer Specific pricing which takes into account types of samples typically and/or routinely submitted, volume of workload expected, and client payment history and/or credit rating. Any/all work performed will be in accordance with EMSL Analytical, Inc. Terms and Conditions included herein. EMSL reserves the right to adjust pricing at our sole discretion based on (but not limited to) the customer's non-compliance with net 30 day payment terms, change in scope of work including but not limited to an amount/volume of work less than described at the time of the quote, and/or non-compliance with the EMSL terms and conditions included herein.



**EMSL Analytical, Inc.**  
 200 Route 130 North, Cinnaminson, NJ 08077  
 Phone: (800) 220-3675  
 Fax: (856) 858-1292  
 Email: CinnAsblab@emsl.com

EMSL Order: 041922026  
 Customer ID: PADP42  
 Customer PO:  
 Project ID:

Attn: *Gary Latsha*  
 PA Dept of Environmental Protection  
 5 Laurel Blvd.  
 Pottsville, PA, 17901

Phone: (570) 274-2464  
 Fax: N/A  
 Collected: 05/13/2019  
 Received: 07/30/19 17:50

Project: **Rockhill Quarry**

Analyzed: 8/15/2019 - 8/21/2019

### SUMMARY REPORT : TEM EPA 600/R-93/116

#### Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

Sample ID	Minerals Present	Results	Structures	Reporting	Asbestos	Comments
				Limit	Weight	
RH#33 041922026-0001 Rock	<i>Tremolite, Non-asbestiform Tremolite, Actinolite, Non-asbestiform Actinolite, Pyroxene, Non-asbestiform Pyroxene</i>	Regulated Asbestos	19	0.1%	< 0.1%	<i>Pyx = Diopside</i>
		Other Minerals	20		< 0.1%	
		<b>Total</b>	<b>39</b>		<b>&lt; 0.1%</b>	
		Undetermined	0			
DB-4 041922026-0002 69.0'-Core Sample-Rock	<i>Actinolite, Non-asbestiform Actinolite</i>	Regulated Asbestos	1	0.1%	< 0.1%	
		Other Minerals	1		< 0.1%	
		<b>Total</b>	<b>2</b>		<b>&lt; 0.1%</b>	
		Undetermined	0			
HS#2 041922026-0003 Bench Zero Trench-Rock	<i>Non-asbestiform Actinolite, Actinolite</i>	Regulated Asbestos	52	0.1%	0.6%	
		Other Minerals	7		0.2%	
		<b>Total</b>	<b>59</b>		<b>0.8%</b>	
		Undetermined	0			
CB-3#8 041922026-0004 Core Sample-Rock	<i>Actinolite, Non-asbestiform Actinolite</i>	Regulated Asbestos	41	0.1%	0.2%	
		Other Minerals	12		< 0.1%	
		<b>Total</b>	<b>53</b>		<b>0.3%</b>	
		Undetermined	0			
CB-1#1 041922026-0005 Core Sample-Rock	<i>Non-asbestiform Actinolite, Actinolite, Non-asbestiform Pyroxene</i>	Regulated Asbestos	54	0.1%	3.3%	<i>Pyx = Diopside</i>
		Other Minerals	27		0.9%	
		<b>Total</b>	<b>81</b>		<b>4.2%</b>	
		Undetermined	0			
CB-2#5 041922026-0006 Core Sample-Rock	<i>Actinolite, Non-asbestiform Actinolite</i>	Regulated Asbestos	41	0.1%	0.6%	
		Other Minerals	11		< 0.1%	
		<b>Total</b>	<b>52</b>		<b>0.6%</b>	
		Undetermined	0			
CB-4#10 041922026-0007 Core Sample-Rock	<i>Actinolite, Non-asbestiform Actinolite</i>	Regulated Asbestos	23	0.1%	< 0.1%	
		Other Minerals	18		0.2%	
		<b>Total</b>	<b>41</b>		<b>0.2%</b>	
		Undetermined	0			
CB-2#4 041922026-0008 Core Sample-Rock	<i>Actinolite, Non-asbestiform Actinolite</i>	Regulated Asbestos	31	0.1%	0.5%	
		Other Minerals	19		< 0.1%	
		<b>Total</b>	<b>50</b>		<b>0.5%</b>	
		Undetermined	0			

F Craig  
Analyst

  
Approved Signatory

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Attn: Gary Latsha  
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 5 Laurel Blvd.  
 Pottsville, PA, 17901

Phone: (570) 274-2464  
 Fax: N/A  
 Collected: 05/13/2019  
 Received: 07/30/19 17:50

Project: Rockhill Quarry

Analyzed: 8/15/2019 - 8/21/2019

**SUMMARY REPORT : TEM EPA 600/R-93/116**

**Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep**

Sample ID	Minerals Present	Results	Structures	Reporting Limit	Asbestos Weight	Comments
RH HS-1 041922026-0009 Hand Sample#1 Rock	Non-asbestiform Actinolite, Actinolite	Regulated Asbestos	21	0.1%	0.7%	
		Other Minerals	14		0.1%	
		<b>Total</b>	<b>35</b>		<b>0.8%</b>	
		Undetermined	0			
RH Vein#7 041922026-0010 Rock Sample	Non-asbestiform Actinolite, Actinolite	Regulated Asbestos	76	0.1%	19.1%	
		Other Minerals	27		5.4%	
		<b>Total</b>	<b>103</b>		<b>24.5%</b>	
		Undetermined	0			

F Craig  
 Analyst

Approved Signatory

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Attn: Gary Latsha  
 PA Dept of Environmental Protection  
 5 Laurel Blvd.  
 Pottsville, PA, 17901

Phone: (570) 274-2464  
 Fax: N/A  
 Collected: 05/13/2019  
 Received: 07/30/19 17:50

Project: Rockhill Quarry

Analyzed: 08/15/2019

## TEM EPA 600/R-93/116

### Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep Detailed Sample Report

<b>Customer Sample Number: RH#33</b>		<b>Reporting Limit : 0.1%</b>	
<b>Sample Description: Rock</b>			
EMSL Sample Number: 041922026-0001		Sample Matrix: Bulk	
Aspect ratio for fiber definition: 3:1		Area of collection filter (mm <sup>2</sup> ): 1360	
Minimum Length (µm): 0.5		Grid Opening Area (mm <sup>2</sup> ): 0.0062	
Gravimetric Reduction Ratio: 1.00		Grid Openings Analyzed: 10	
Mass contributed by Largest fiber: 45%		Analyst: F Craig	
Mineral Type	Structures	Weight %	Average Aspect Ratio
<b>Total Regulated Asbestos</b>	<b>19</b>	<b>&lt; 0.1%</b>	<b>10.7</b>
Chrysotile	None Detected	<0.1%	
Amosite	None Detected	<0.1%	
Crocidolite	None Detected	<0.1%	
Tremolite	2	< 0.1%	8.8
Actinolite	17	< 0.1%	10.9
Anthophyllite	None Detected	<0.1%	
<b>Total Other Elongate Mineral Types</b>	<b>20</b>	<b>&lt; 0.1%</b>	<b>6.5</b>
Non-asbestiform Actinolite	16	< 0.1%	6.7
Non-asbestiform Pyroxene	1	< 0.1%	3.1
Non-asbestiform Tremolite	2	< 0.1%	7.6
Pyroxene	1	< 0.1%	4.3
<b>Undetermined Elongate Mineral</b>	<b>None Detected</b>		

Pyx = Diopside

Laboratory Manager or Other Approved Signatory

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**Project:** Rockhill Quarry

**Analyzed:** 08/15/2019

### TEM EPA 600/R-93/116

#### Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep Detailed Sample Report

<b>Customer Sample Number: DB-4</b>		<b>Reporting Limit : 0.1%</b>	
<b>Sample Description: 69.0'-Core Sample-Rock</b>			
EMSL Sample Number: 041922026-0002		Sample Matrix: Bulk	
Aspect ratio for fiber definition: 3:1		Area of collection filter (mm <sup>2</sup> ): 1360	
Minimum Length (µm): 0.5		Grid Opening Area (mm <sup>2</sup> ): 0.0062	
Gravimetric Reduction Ratio: 1.00		Grid Openings Analyzed: 10	
Mass contributed by Largest fiber: 75%		Analyst: F Craig	
Mineral Type	Structures	Weight %	Average Aspect Ratio
<b>Total Regulated Asbestos</b>	<b>1</b>	<b>&lt; 0.1%</b>	<b>6</b>
Chrysotile	None Detected	<0.1%	
Amosite	None Detected	<0.1%	
Crocidolite	None Detected	<0.1%	
Tremolite	None Detected	<0.1%	
Actinolite	1	< 0.1%	6
Anthophyllite	None Detected	<0.1%	
<b>Total Other Elongate Mineral Types</b>	<b>1</b>	<b>&lt; 0.1%</b>	<b>6</b>
Non-asbestiform Actinolite	1	< 0.1%	6
<b>Unknown Elongate Mineral</b>	<b>None Detected</b>	<b>-</b>	

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**Project:** Rockhill Quarry

**Analyzed:** 08/15/2019

## TEM EPA 600/R-93/116

### Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep Detailed Sample Report

<b>Customer Sample Number: HS#2</b>		<b>Reporting Limit : 0.1%</b>	
<b>Sample Description: Bench Zero Trench-Rock</b>			
EMSL Sample Number: 041922026-0003		Sample Matrix: Bulk	
Aspect ratio for fiber definition: 3:1		Area of collection filter (mm <sup>2</sup> ): 1360	
Minimum Length (µm): 0.5		Grid Opening Area (mm <sup>2</sup> ): 0.0062	
Gravimetric Reduction Ratio: 1.00		Grid Openings Analyzed: 4	
Mass contributed by Largest fiber: 56%		Analyst: F Craig	
Mineral Type	Structures	Weight %	Average Aspect Ratio
<b>Total Regulated Asbestos</b>	<b>52</b>	<b>0.6%</b>	<b>20</b>
Chrysotile	None Detected	<0.1%	
Amosite	None Detected	<0.1%	
Crocidolite	None Detected	<0.1%	
Tremolite	None Detected	<0.1%	
Actinolite	52	0.6%	20
Anthophyllite	None Detected	<0.1%	
<b>Total Other Elongate Mineral Types</b>	<b>7</b>	<b>0.2%</b>	<b>14</b>
Non-asbestiform Actinolite	7	0.2%	14
<b>Unknown Elongate Mineral</b>	<b>None Detected</b>		

Laboratory Manager or Other Approved Signatory

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EMSL Order: 041922026  
 Customer ID: PADP42  
 Customer PO:  
 Project ID:

**Attn:** Gary Latsha  
 PA Dept of Environmental Protection  
 5 Laurel Blvd.  
 Pottsville, PA, 17901

**Phone:** (570) 274-2464  
**Fax:** N/A  
**Collected:** 05/13/2019  
**Received:** 07/30/19 17:50

**Project:** Rockhill Quarry

**Analyzed:** 08/15/2019

### TEM EPA 600/R-93/116

Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep  
 Detailed Sample Report

<b>Customer Sample Number: CB-3#8</b>		<b>Reporting Limit : 0.1%</b>	
<b>Sample Description: Core Sample-Rock</b>			
EMSL Sample Number: 041922026-0004		Sample Matrix: Bulk	
Aspect ratio for fiber definition: 3:1		Area of collection filter (mm <sup>2</sup> ): 1360	
Minimum Length (µm): 0.5		Grid Opening Area (mm <sup>2</sup> ): 0.0062	
Gravimetric Reduction Ratio: 1.00		Grid Openings Analyzed: 5	
Mass contributed by Largest fiber: 49%		Analyst: F Craig	
Mineral Type	Stuctures	Weight %	Average Aspect Ratio
<b>Total Regulated Asbestos</b>	<b>41</b>	<b>0.2%</b>	<b>15</b>
Chrysotile	None Detected	<0.1%	
Amosite	None Detected	<0.1%	
Crocidolite	None Detected	<0.1%	
Tremolite	None Detected	<0.1%	
Actinolite	41	0.2%	15
Anthophyllite	None Detected	<0.1%	
<b>Total Other Elongate Mineral Types</b>	<b>12</b>	<b>&lt; 0.1%</b>	<b>11</b>
Non-asbestiform Actinolite	12	< 0.1%	11
<b>Unknown Elongate Mineral</b>	<b>None Detected</b>	<b>-</b>	

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**Received:** 07/30/19 17:50

**Project:** Rockhill Quarry

**Analyzed:** 08/15/2019

### TEM EPA 600/R-93/116

Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep  
 Detailed Sample Report

<b>Customer Sample Number: CB-1#1</b>		<b>Reporting Limit : 0.1%</b>	
<b>Sample Description: Core Sample-Rock</b>			
EMSL Sample Number: 041922026-0005		Sample Matrix: Bulk	
Aspect ratio for fiber definition: 3:1	Minimum Length (µm): 0.5	Area of collection filter (mm²): 1360	Grid Opening Area (mm²): 0.0062
Gravimetric Reduction Ratio: 1.00	Mass contributed by Largest fiber: 42%	Grid Openings Analyzed: 4	Analyst: F Craig
Mineral Type	Structures	Weight %	Average Aspect Ratio
<b>Total Regulated Asbestos</b>	<b>54</b>	<b>3.3%</b>	<b>27</b>
Chrysotile	None Detected	<0.1%	
Amosite	None Detected	<0.1%	
Crocidolite	None Detected	<0.1%	
Tremolite	None Detected	<0.1%	
Actinolite	54	3.3%	27
Anthophyllite	None Detected	<0.1%	
<b>Total Other Elongate Mineral Types</b>	<b>27</b>	<b>0.9%</b>	<b>11</b>
Non-asbestiform Actinolite	26	0.8%	11
Non-asbestiform Pyroxene	1	< 0.1%	7
<b>Unknown Elongate Mineral</b>	<b>None Detected</b>	<b>-</b>	

Pyx = Diopside

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 Collected: 05/13/2019  
 Received: 07/30/19 17:50

**Project:** Rockhill Quarry

Analyzed: 08/15/2019

### TEM EPA 600/R-93/116

#### Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep Detailed Sample Report

<b>Customer Sample Number: CB-2#5</b>		<b>Reporting Limit : 0.1%</b>	
<b>Sample Description: Core Sample-Rock</b>			
EMSL Sample Number: 041922026-0006		Sample Matrix: Bulk	
Aspect ratio for fiber definition: 3:1		Area of collection filter (mm <sup>2</sup> ): 1360	
Minimum Length (µm): 0.5		Grid Opening Area (mm <sup>2</sup> ): 0.0062	
Gravimetric Reduction Ratio: 1.00		Grid Openings Analyzed: 9	
Mass contributed by Largest fiber: 71%		Analyst: F Craig	
Mineral Type	Stuctures	Weight %	Average Aspect Ratio
<b>Total Regulated Asbestos</b>	<b>41</b>	<b>0.6%</b>	<b>14</b>
Chrysotile	None Detected	<0.1%	
Amosite	None Detected	<0.1%	
Crocidolite	None Detected	<0.1%	
Tremolite	None Detected	<0.1%	
Actinolite	41	0.6%	14
Anthophyllite	None Detected	<0.1%	
<b>Total Other Elongate Mineral Types</b>	<b>11</b>	<b>&lt; 0.1%</b>	<b>17</b>
Non-asbestiform Actinolite	11	< 0.1%	17
<b>Unknown Elongate Mineral</b>	<b>None Detected</b>	<b>-</b>	

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**Analyzed:** 08/15/2019

### TEM EPA 600/R-93/116

Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep  
 Detailed Sample Report

<b>Customer Sample Number: CB-4#10</b>		<b>Reporting Limit : 0.1%</b>	
<b>Sample Description: Core Sample-Rock</b>			
EMSL Sample Number: 041922026-0007		Sample Matrix: Bulk	
Aspect ratio for fiber definition: 3:1		Area of collection filter (mm <sup>2</sup> ): 1360	
Minimum Length (µm): 0.5		Grid Opening Area (mm <sup>2</sup> ): 0.0062	
Gravimetric Reduction Ratio: 1.00		Grid Openings Analyzed: 10	
Mass contributed by Largest fiber: 23%		Analyst: F Craig	
Mineral Type	Structures	Weight %	Average Aspect Ratio
<b>Total Regulated Asbestos</b>	<b>23</b>	<b>&lt; 0.1%</b>	<b>12</b>
Chrysotile	None Detected	<0.1%	
Amosite	None Detected	<0.1%	
Crocidolite	None Detected	<0.1%	
Tremolite	None Detected	<0.1%	
Actinolite	23	< 0.1%	12
Anthophyllite	None Detected	<0.1%	
<b>Total Other Elongate Mineral Types</b>	<b>18</b>	<b>0.2%</b>	<b>8</b>
Non-asbestiform Actinolite	18	0.2%	8
<b>Unknown Elongate Mineral</b>	<b>None Detected</b>	<b>-</b>	

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### TEM EPA 600/R-93/116

Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep  
 Detailed Sample Report

<b>Customer Sample Number: CB-2#4</b>		<b>Reporting Limit : 0.1%</b>	
<b>Sample Description: Core Sample-Rock</b>			
EMSL Sample Number: 041922026-0008		Sample Matrix: Bulk	
Aspect ratio for fiber definition: 3:1		Area of collection filter (mm <sup>2</sup> ): 1360	
Minimum Length (µm): 0.5		Grid Opening Area (mm <sup>2</sup> ): 0.0062	
Gravimetric Reduction Ratio: 1.00		Grid Openings Analyzed: 8	
Mass contributed by Largest fiber: 73%		Analyst: F Craig	
Mineral Type	Structures	Weight %	Average Aspect Ratio
<b>Total Regulated Asbestos</b>	<b>31</b>	<b>0.5%</b>	<b>15</b>
Chrysotile	None Detected	<0.1%	
Amosite	None Detected	<0.1%	
Crocidolite	None Detected	<0.1%	
Tremolite	None Detected	<0.1%	
Actinolite	31	0.5%	15
Anthophyllite	None Detected	<0.1%	
<b>Total Other Elongate Mineral Types</b>	<b>19</b>	<b>&lt; 0.1%</b>	<b>8</b>
Non-asbestiform Actinolite	19	< 0.1%	8
<b>Unknown Elongate Mineral</b>	<b>None Detected</b>	<b>-</b>	

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### TEM EPA 600/R-93/116

Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep  
 Detailed Sample Report

<b>Customer Sample Number: RH HS-1</b>		<b>Reporting Limit : 0.1%</b>	
<b>Sample Description: Hand Sample#1 Rock</b>			
EMSL Sample Number: 041922026-0009		Sample Matrix: Bulk	
Aspect ratio for fiber definition: 3:1		Area of collection filter (mm <sup>2</sup> ): 1360	
Minimum Length (µm): 0.5		Grid Opening Area (mm <sup>2</sup> ): 0.0062	
Gravimetric Reduction Ratio: 1.00		Grid Openings Analyzed: 10	
Mass contributed by Largest fiber: 39%		Analyst: F Craig	
Mineral Type	Structures	Weight %	Average Aspect Ratio
<b>Total Regulated Asbestos</b>	<b>21</b>	<b>0.7%</b>	<b>10</b>
Chrysotile	None Detected	<0.1%	
Amosite	None Detected	<0.1%	
Crocidolite	None Detected	<0.1%	
Tremolite	None Detected	<0.1%	
Actinolite	21	0.7%	10
Anthophyllite	None Detected	<0.1%	
<b>Total Other Elongate Mineral Types</b>	<b>14</b>	<b>0.1%</b>	<b>12</b>
Non-asbestiform Actinolite	14	0.1%	12
<b>Unknown Elongate Mineral</b>	<b>None Detected</b>	<b>-</b>	

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**Analyzed:** 08/15/2019

### TEM EPA 600/R-93/116

Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep  
 Detailed Sample Report

<b>Customer Sample Number: RH Vein#7</b>		<b>Reporting Limit : 0.1%</b>	
<b>Sample Description: Rock Sample</b>			
EMSL Sample Number: 041922026-0010		Sample Matrix: Bulk	
Aspect ratio for fiber definition: 3:1		Area of collection filter (mm <sup>2</sup> ): 1360	
Minimum Length (µm): 0.5		Grid Opening Area (mm <sup>2</sup> ): 0.0062	
Gravimetric Reduction Ratio: 1.00		Grid Openings Analyzed: 3	
Mass contributed by Largest fiber: 69%		Analyst: F Craig	
Mineral Type	Structures	Weight %	Average Aspect Ratio
<b>Total Regulated Asbestos</b>	<b>76</b>	<b>19.1%</b>	<b>28</b>
Chrysotile	None Detected	<0.1%	
Amosite	None Detected	<0.1%	
Crocidolite	None Detected	<0.1%	
Tremolite	None Detected	<0.1%	
Actinolite	76	19.1%	28
Anthophyllite	None Detected	<0.1%	
<b>Total Other Elongate Mineral Types</b>	<b>27</b>	<b>5.4%</b>	<b>19</b>
Non-asbestiform Actinolite	27	5.4%	19
<b>Unknown Elongate Mineral</b>	<b>None Detected</b>	<b>-</b>	

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## Asbestos Analysis Of Bulk Materials using Polarized Light Microscopy With Point Counting

Special Instructions:

Due Date 08/13/2019

Sample Number	<b>041922026-0001</b>			Analyst	wnguyen				
Customer Sample No.	RH #33			Analysis Date	08/13/2019 09:34 AM				
Matrix	Bulk			Status	None Detected				
Sample Colors	Gray	Homogeneity	Homogeneous		% Asbestos	0.0			
Treatment	Teased	Stereo Asb. Est.			% Non-Asb. Fibrous	3.0			
Texture	Non-Fibrous	Temperature (C)	21.8		% Non-fibrous	97.0			
Comments:									
Material	Pct	R.I. Perpend.	R.I. Parallel	Morphology	Elongation	Pleochroism	Birefringence	Fiber Color	Extinction
Fibrous (other)	3			Straight			Medium: 0.011-0.01		
Point counts:	SlideID	Non-asbestos	Chrysotile	Amosite	Crocidolite	Anthophyllite	Tremolite	Actinolite	
	01	100	0	0	0	0	0	0	
	02	100	0	0	0	0	0	0	
	03	100	0	0	0	0	0	0	
	04	100	0	0	0	0	0	0	
	05	100	0	0	0	0	0	0	
	06	100	0	0	0	0	0	0	
	07	100	0	0	0	0	0	0	
	08	100	0	0	0	0	0	0	
	09	100	0	0	0	0	0	0	
	10	100	0	0	0	0	0	0	

Sample Number	<b>041922026-0002</b>			Analyst	wnguyen				
Customer Sample No.	DB-4			Analysis Date	08/13/2019 09:57 AM				
Matrix	Bulk			Status	None Detected				
Sample Colors	Gray	Homogeneity	Homogeneous		% Asbestos	0.0			
Treatment	Teased	Stereo Asb. Est.			% Non-Asb. Fibrous	3.0			
Texture	Non-Fibrous	Temperature (C)	21.8		% Non-fibrous	97.0			
Comments:									
Material	Pct	R.I. Perpend.	R.I. Parallel	Morphology	Elongation	Pleochroism	Birefringence	Fiber Color	Extinction
Fibrous (other)	3			Straight			Medium: 0.011-0.01		
Point counts:	SlideID	Non-asbestos	Chrysotile	Amosite	Crocidolite	Anthophyllite	Tremolite	Actinolite	
	01	100	0	0	0	0	0	0	
	02	100	0	0	0	0	0	0	
	03	100	0	0	0	0	0	0	
	04	100	0	0	0	0	0	0	
	05	100	0	0	0	0	0	0	
	06	100	0	0	0	0	0	0	
	07	100	0	0	0	0	0	0	
	08	100	0	0	0	0	0	0	
	09	100	0	0	0	0	0	0	
	10	100	0	0	0	0	0	0	

Sample Number	<b>041922026-0003</b>			Analyst	wnguyen				
Customer Sample No.	HS #2			Analysis Date	08/13/2019 10:16 AM				
Matrix	Bulk			Status	None Detected				
Sample Colors	Gray	Homogeneity	Homogeneous		% Asbestos	0.0			
Treatment	Teased/Crushed	Stereo Asb. Est.			% Non-Asb. Fibrous	3.0			
Texture	Non-Fibrous	Temperature (C)	21.8		% Non-fibrous	97.0			
Comments:									
Material	Pct	R.I. Perpend.	R.I. Parallel	Morphology	Elongation	Pleochroism	Birefringence	Fiber Color	Extinction
Fibrous (other)	3			Straight			Medium: 0.011-0.01		



## Asbestos Analysis Of Bulk Materials using Polarized Light Microscopy With Point Counting

Special Instructions:

Due Date 08/13/2019

Point counts:	SlideID	Non-asbestos	Chrysotile	Amosite	Crocidolite	Anthophyllite	Tremolite	Actinolite
	01	100	0	0	0	0	0	0
	02	100	0	0	0	0	0	0
	03	100	0	0	0	0	0	0
	04	100	0	0	0	0	0	0
	05	100	0	0	0	0	0	0
	06	100	0	0	0	0	0	0
	07	100	0	0	0	0	0	0
	08	100	0	0	0	0	0	0
	09	100	0	0	0	0	0	0
	10	100	0	0	0	0	0	0

Sample Number	<b>041922026-0004</b>	Analyst	wnguyen
Customer Sample No.	CB-3 #8	Analysis Date	08/13/2019 10:35 AM
Matrix	Bulk	Status	None Detected
Sample Colors	Gray	Homogeneity	Homogeneous
Treatment	Teased	Stereo Asb. Est.	
Texture	Non-Fibrous	Temperature (C)	21.8
		% Asbestos	0.0
		% Non-Asb. Fibrous	5.0
		% Non-fibrous	95.0

Comments:

Material	Pct	R.I. Perpend.	R.I. Parallel	Morphology	Elongation	Pleochroism	Birefringence	Fiber Color	Extinction
Fibrous (other)	5			Straight			Medium: 0.011-0.01		

Point counts:	SlideID	Non-asbestos	Chrysotile	Amosite	Crocidolite	Anthophyllite	Tremolite	Actinolite
	01	100	0	0	0	0	0	0
	02	100	0	0	0	0	0	0
	03	100	0	0	0	0	0	0
	04	100	0	0	0	0	0	0
	05	100	0	0	0	0	0	0
	06	100	0	0	0	0	0	0
	07	100	0	0	0	0	0	0
	08	100	0	0	0	0	0	0
	09	100	0	0	0	0	0	0
	10	100	0	0	0	0	0	0

Sample Number	<b>041922026-0005</b>	Analyst	wnguyen
Customer Sample No.	CB-1 #1	Analysis Date	08/13/2019 11:23 AM
Matrix	Bulk	Status	None Detected
Sample Colors	Gray	Homogeneity	Homogeneous
Treatment	Teased	Stereo Asb. Est.	
Texture	Non-Fibrous	Temperature (C)	21.8
		% Asbestos	0.0
		% Non-Asb. Fibrous	3.0
		% Non-fibrous	97.0

Comments:

Material	Pct	R.I. Perpend.	R.I. Parallel	Morphology	Elongation	Pleochroism	Birefringence	Fiber Color	Extinction
Fibrous (other)	3			Straight			Medium: 0.011-0.01		

Point counts:	SlideID	Non-asbestos	Chrysotile	Amosite	Crocidolite	Anthophyllite	Tremolite	Actinolite
	01	100	0	0	0	0	0	0
	02	100	0	0	0	0	0	0
	03	100	0	0	0	0	0	0
	04	100	0	0	0	0	0	0
	05	100	0	0	0	0	0	0
	06	100	0	0	0	0	0	0
	07	100	0	0	0	0	0	0
	08	100	0	0	0	0	0	0
	09	100	0	0	0	0	0	0
	10	100	0	0	0	0	0	0

## Asbestos Analysis Of Bulk Materials using Polarized Light Microscopy With Point Counting

Special Instructions:

Due Date 08/13/2019

Sample Number	<b>041922026-0006</b>			Analyst	wnguyen				
Customer Sample No.	CB-2 #5			Analysis Date	08/13/2019 11:42 AM				
Matrix	Bulk			Status	None Detected				
Sample Colors	Gray	Homogeneity	Homogeneous		% Asbestos	0.0			
Treatment	Teased	Stereo Asb. Est.			% Non-Asb. Fibrous	4.0			
Texture	Non-Fibrous	Temperature (C)	21.8		% Non-fibrous	96.0			
Comments:									
Material	Pct	R.I. Perpend.	R.I. Parallel	Morphology	Elongation	Pleochroism	Birefringence	Fiber Color	Extinction
Fibrous (other)	4			Straight			Medium: 0.011-0.01		
Point counts:	SlideID	Non-asbestos	Chrysotile	Amosite	Crocidolite	Anthophyllite	Tremolite	Actinolite	
	01	100	0	0	0	0	0	0	
	02	100	0	0	0	0	0	0	
	03	100	0	0	0	0	0	0	
	04	100	0	0	0	0	0	0	
	05	100	0	0	0	0	0	0	
	06	100	0	0	0	0	0	0	
	07	100	0	0	0	0	0	0	
	08	100	0	0	0	0	0	0	
	09	100	0	0	0	0	0	0	
	10	100	0	0	0	0	0	0	

Sample Number	<b>041922026-0007</b>			Analyst	wnguyen				
Customer Sample No.	CB-4 #10			Analysis Date	08/13/2019 12:00 PM				
Matrix	Bulk			Status	None Detected				
Sample Colors	Gray	Homogeneity	Homogeneous		% Asbestos	0.0			
Treatment	Teased/Crushed	Stereo Asb. Est.			% Non-Asb. Fibrous	5.0			
Texture	Non-Fibrous	Temperature (C)	21.8		% Non-fibrous	95.0			
Comments:									
Material	Pct	R.I. Perpend.	R.I. Parallel	Morphology	Elongation	Pleochroism	Birefringence	Fiber Color	Extinction
Fibrous (other)	5			Straight			Medium: 0.011-0.01		
Point counts:	SlideID	Non-asbestos	Chrysotile	Amosite	Crocidolite	Anthophyllite	Tremolite	Actinolite	
	01	100	0	0	0	0	0	0	
	02	100	0	0	0	0	0	0	
	03	100	0	0	0	0	0	0	
	04	100	0	0	0	0	0	0	
	05	100	0	0	0	0	0	0	
	06	100	0	0	0	0	0	0	
	07	100	0	0	0	0	0	0	
	08	100	0	0	0	0	0	0	
	09	100	0	0	0	0	0	0	
	10	100	0	0	0	0	0	0	

Sample Number	<b>041922026-0008</b>			Analyst	wnguyen				
Customer Sample No.	CB-2 #4			Analysis Date	08/13/2019 12:12 PM				
Matrix	Bulk			Status	None Detected				
Sample Colors	Gray	Homogeneity	Homogeneous		% Asbestos	0.0			
Treatment	Teased	Stereo Asb. Est.			% Non-Asb. Fibrous	5.0			
Texture	Non-Fibrous	Temperature (C)	21.8		% Non-fibrous	95.0			
Comments:									
Material	Pct	R.I. Perpend.	R.I. Parallel	Morphology	Elongation	Pleochroism	Birefringence	Fiber Color	Extinction
Fibrous (other)	5			Straight			Medium: 0.011-0.01		

## Asbestos Analysis Of Bulk Materials using Polarized Light Microscopy With Point Counting

Special Instructions:

Due Date 08/13/2019

Point counts:	SlideID	Non-asbestos	Chrysotile	Amosite	Crocidolite	Anthophyllite	Tremolite	Actinolite
	01	100	0	0	0	0	0	0
	02	100	0	0	0	0	0	0
	03	100	0	0	0	0	0	0
	04	100	0	0	0	0	0	0
	05	100	0	0	0	0	0	0
	06	100	0	0	0	0	0	0
	07	100	0	0	0	0	0	0
	08	100	0	0	0	0	0	0
	09	100	0	0	0	0	0	0
	10	100	0	0	0	0	0	0

Sample Number	<b>041922026-0009</b>			Analyst	wnguyen			
Customer Sample No.	RH HS-1			Analysis Date	08/13/2019 01:37 PM			
Matrix	Bulk			Status	None Detected			
Sample Colors	Gray	Homogeneity	Homogeneous		% Asbestos	0.0		
Treatment	Teased/Crushed/Dissolved	Stereo Asb. Est.			% Non-Asb. Fibrous	0.0		
Texture	Non-Fibrous	Temperature (C)	21.8		% Non-fibrous	100.0		

Comments:

Material	Pct	R.I. Perpend.	R.I. Parallel	Morphology	Elongation	Pleochroism	Birefringence	Fiber Color	Extinction
Comment:									

Point counts:	SlideID	Non-asbestos	Chrysotile	Amosite	Crocidolite	Anthophyllite	Tremolite	Actinolite
	01	100	0	0	0	0	0	0
	02	100	0	0	0	0	0	0
	03	100	0	0	0	0	0	0
	04	100	0	0	0	0	0	0
	05	100	0	0	0	0	0	0
	06	100	0	0	0	0	0	0
	07	100	0	0	0	0	0	0
	08	100	0	0	0	0	0	0
	09	100	0	0	0	0	0	0
	10	100	0	0	0	0	0	0

Sample Number	<b>041922026-0010</b>			Analyst	wnguyen			
Customer Sample No.	RH Vein #7			Analysis Date	08/13/2019 01:47 PM			
Matrix	Bulk			Status	Positive Result			
Sample Colors	Gray	Homogeneity	Homogeneous		% Asbestos	18.0		
Treatment	Teased	Stereo Asb. Est.			% Non-Asb. Fibrous	10.0		
Texture	Fibrous	Temperature (C)	21.8		% Non-fibrous	72.0		

Comments:

Material	Pct	R.I. Perpend.	R.I. Parallel	Morphology	Elongation	Pleochroism	Birefringence	Fiber Color	Extinction
Actinolite	18.0	1.621	1.638	Straight	+	No	Medium: 0.011-0.01	Colorless	Oblique
Fibrous (other)	10			Straight			Medium: 0.011-0.01		

Point counts:	SlideID	Non-asbestos	Chrysotile	Amosite	Crocidolite	Anthophyllite	Tremolite	Actinolite
	01	79	0	0	0	0	0	21
	02	89	0	0	0	0	0	11
	03	85	0	0	0	0	0	15
	04	80	0	0	0	0	0	20
	05	75	0	0	0	0	0	25
	06	81	0	0	0	0	0	19
	07	84	0	0	0	0	0	16
	08	78	0	0	0	0	0	22
	09	91	0	0	0	0	0	9
	10	76	0	0	0	0	0	24



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## TEM EPA 600/R-93/116

Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

### Analytical Worksheet Report

**Customer Sample Number: RH#33**  
**Laboratory Sample ID: 041922026-0001**  
**Sample Description: Rock**

Grid ID	Mineral Type	Structure Length	Structure Width	Type	Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
B1 : N5	Tremolite	5.4	0.49	F	1106	4.27E-03	11.0	Regulated
B1 : N5	Non-asbestiform Tremolite	2.4	0.25	F		4.94E-04	9.6	Other
B1 : N5	Actinolite	4.7	0.49	F		3.84E-03	9.6	Regulated
B1 : K3	Actinolite	4.9	0.25	F		1.04E-03	19.6	Regulated
B1 : K3	Actinolite	2.9	0.25	f	1108	6.16E-04	11.6	Regulated
B1 : K3	Non-asbestiform Actinolite	1.6	0.25	f		3.40E-04	6.4	Other
B1 : K3	Pyroxene	1.6	0.37	F		8.12E-04	4.3	Other
B1 : K3	Non-asbestiform Actinolite	1.6	0.12	F		7.83E-05	13.3	Other
B1 : K3	Non-asbestiform Actinolite	1.5	0.49	F		1.22E-03	3.1	Other
B1 : K3	Non-asbestiform Actinolite	2.4	0.25	F		5.10E-04	9.6	Other
B1 : K3	Actinolite	1.9	0.12	F		9.30E-05	15.8	Regulated
B1 : I5	Non-asbestiform Actinolite	1.2	0.12	F		5.88E-05	10.0	Other
B1 : I5	Non-asbestiform Tremolite	6.9	1.23	F		3.43E-02	5.6	Other
B1 : I5	Actinolite	1.5	0.25	F		3.19E-04	6.0	Regulated
B1 : I5	Non-asbestiform Actinolite	3.4	0.98	F		1.11E-02	3.5	Other
B1 : I5	Actinolite	2.9	0.25	F		6.16E-04	11.6	Regulated
B1 : F4	Actinolite	1.2	0.12	F		5.88E-05	10.0	Regulated
B1 : F4	Actinolite	1.6	0.25	F		3.40E-04	6.4	Regulated
B1 : F4	Non-asbestiform Actinolite	1.6	0.12	F		7.83E-05	13.3	Other
B1 : F4	Non-asbestiform Actinolite	2.8	0.37	F		1.30E-03	7.6	Other
B1 : C7	Actinolite	1.2	0.12	F		5.88E-05	10.0	Regulated
B1 : C7	Actinolite	1.5	0.12	F		7.34E-05	12.5	Regulated
B1 : C7	Non-asbestiform Actinolite	1.2	0.12	F		5.88E-05	10.0	Other
B2 : B6	Non-asbestiform Actinolite	2.2	0.49	F		1.80E-03	4.5	Other
B2 : B6	Actinolite	1.2	0.48	F		0.00E+00	2.5	Regulated
B2 : B6	Non-asbestiform Pyroxene	1.5	0.49	F		1.34E-03	3.1	Other



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## TEM EPA 600/R-93/116

Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

### Analytical Worksheet Report

**Customer Sample Number:** RH#33  
**Laboratory Sample ID:** 041922026-0001  
**Sample Description:** Rock

Grid ID	Mineral Type	Structure		Type	Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
		Length	Width					
B2 : E2	Actinolite	2.4	0.12	F		1.18E-04	20.0	Regulated
B2 : E2	Tremolite	2.4	0.37	F		1.08E-03	6.5	Regulated
B2 : E2	Non-asbestiform Actinolite	2.6	0.49	F		2.12E-03	5.3	Other
B2 : E2	Non-asbestiform Actinolite	2.4	0.49	F		1.96E-03	4.9	Other
B2 : H4	Actinolite	1.2	0.25	F		2.55E-04	4.8	Regulated
B2 : H4	Actinolite	1.5	0.37	F		6.98E-04	4.1	Regulated
B2 : L6	Actinolite	3.1	0.12	F		1.52E-04	25.8	Regulated
B2 : L6	Actinolite	1.5	0.25	F		3.19E-04	6.0	Regulated
B2 : L6	Actinolite	2.3	0.25	F		4.89E-04	9.2	Regulated
B2 : N5	Non-asbestiform Actinolite	1.9	0.49	F		1.55E-03	3.9	Other
B2 : N5	Non-asbestiform Actinolite	1.6	0.37	F		7.45E-04	4.3	Other
B2 : N5	Non-asbestiform Actinolite	1.5	0.49	F		1.22E-03	3.1	Other
B2 : N5	Non-asbestiform Actinolite	1.2	0.25	F		2.55E-04	4.8	Other



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## TEM EPA 600/R-93/116

Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

### Analytical Worksheet Report

**Customer Sample Number:** DB-4  
**Laboratory Sample ID:** 041922026-0002  
**Sample Description:** 69.0'-Core Sample-Rock

Grid ID	Mineral Type	Structure Length	Structure Width	Type	Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
C1 : N6	Actinolite	1.6	0.25	F		3.40E-04	6.4	Regulated
C1 : K4	No Structures Detected							
C1 : I2	No Structures Detected							
C1 : F7	No Structures Detected							
C1 : C5	No Structures Detected							
C2 : B6	No Structures Detected							
C2 : E3	No Structures Detected							
C2 : H5	No Structures Detected							
C2 : J2	Non-asbestiform Actinolite	2.2	0.37	F	1115	1.02E-03	5.9	Other
C2 : M4	No Structures Detected							



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## TEM EPA 600/R-93/116

Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

### Analytical Worksheet Report

**Customer Sample Number: HS#2**  
**Laboratory Sample ID: 041922026-0003**  
**Sample Description: Bench Zero Trench-Rock**

Grid ID	Mineral Type	Structure Length	Structure Width	Type	Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
D4 : M4	Non-asbestiform Actinolite	8.1	0.49	F	1117	3.31E-02	16.5	Other
D4 : M4	Actinolite	1.5	0.12	F		3.68E-04	12.5	Regulated
D4 : M4	Actinolite	4.9	0.37	B		1.14E-02	13.2	Regulated
D4 : M4	Actinolite	2.7	0.12	F		6.62E-04	22.5	Regulated
D4 : M4	Actinolite	3.4	0.12	F		8.34E-04	28.3	Regulated
D4 : M4	Actinolite	1.5	0.12	F		3.68E-04	12.5	Regulated
D4 : M4	Actinolite	7.1	0.12	F		1.74E-03	59.2	Regulated
D4 : M4	Actinolite	1.2	0.12	F		2.94E-04	10.0	Regulated
D4 : M4	Non-asbestiform Actinolite	2.9	0.74	F		2.71E-02	3.9	Other
D4 : M4	Actinolite	5.4	0.12	F		1.32E-03	45.0	Regulated
D4 : M4	Actinolite	8.5	0.12	F		2.08E-03	70.8	Regulated
D4 : M4	Actinolite	3.2	0.25	F		3.41E-03	12.8	Regulated
D4 : M4	Actinolite	2.2	0.1	F		3.75E-04	22.0	Regulated
D4 : l6	Actinolite	5.1	0.49	F	1119	2.09E-02	10.4	Regulated
D4 : l6	Actinolite	2.6	0.12				21.7	Regulated
D4 : l6	Actinolite	2.9	0.12	F		7.11E-04	24.2	Regulated
D4 : l6	Actinolite	1.5	0.12	F		3.68E-04	12.5	Regulated
D4 : l6	Actinolite	0.8	0.12	F		1.96E-04	6.7	Regulated
D4 : l6	Non-asbestiform Actinolite	4.9	0.12	F		1.20E-03	40.8	Other
D4 : l6	Actinolite	1.2	0.37	F		2.80E-03	3.2	Regulated
D4 : l6	Actinolite	1.2	0.12	F		2.94E-04	10.0	Regulated
D4 : l6	Actinolite	1.5	0.12	F		3.68E-04	12.5	Regulated
D4 : l6	Actinolite	2.1	0.1	F		3.58E-04	21.0	Regulated
D4 : l6	Actinolite	5.4	0.12	F		1.32E-03	45.0	Regulated
D4 : l6	Actinolite	1.2	0.12	F		2.94E-04	10.0	Regulated
D4 : l6	Non-asbestiform Actinolite	5.9	0.74	F		5.50E-02	8.0	Other



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Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

### Analytical Worksheet Report

**Customer Sample Number: HS#2**  
**Laboratory Sample ID: 041922026-0003**  
**Sample Description: Bench Zero Trench-Rock**

Grid ID	Mineral Type	Structure Length	Structure Width	Type	Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
D4 : I6	Actinolite	1.5	0.37	F		3.50E-03	4.1	Regulated
D4 : I6	Actinolite	1.2	0.12	F		2.94E-04	10.0	Regulated
D5 : F7	Actinolite	1.6	0.1	F		2.73E-04	16.0	Regulated
D5 : F7	Actinolite	1.2	0.1	F		2.04E-04	12.0	Regulated
D5 : F7	Actinolite	7.1	0.25	F		7.56E-03	28.4	Regulated
D5 : F7	Actinolite	3.6	0.25	F		3.83E-03	14.4	Regulated
D5 : F7	Actinolite	1.2	0.12	F		2.94E-04	10.0	Regulated
D5 : F7	Non-asbestiform Actinolite	5.1	0.37	F		1.19E-02	13.8	Other
DE5 : F7	Actinolite	1	0.12	F		2.45E-04	8.3	Regulated
D5 : F7	Actinolite	1.2	0.12	F		2.94E-04	10.0	Regulated
D5 : F7	Actinolite	4.3	0.74	F		4.01E-02	5.8	Regulated
D5 : F7	Actinolite	2.2	0.12	F		5.40E-04	18.3	Regulated
D5 : J8	Actinolite	2.2	0.12	F		5.40E-04	18.3	Regulated
D5 : J8	Non-asbestiform Actinolite	5.1	0.49	F		2.09E-02	10.4	Other
D5 : J8	Actinolite	1.2	0.12	F		2.94E-04	10.0	Regulated
D5 : J8	Actinolite	1	0.25	F		1.06E-03	4.0	Regulated
D5 : J8	Actinolite	9.1	1.72	B		4.59E-01	5.3	Regulated
D5 : J8	Actinolite	1.7	0.12	F		4.17E-04	14.2	Regulated
D5 : J8	Actinolite	5.1	0.12	F		1.25E-03	42.5	Regulated
D5 : J8	Actinolite	3.1	0.49	F		1.27E-02	6.3	Regulated
D5 : J8	Actinolite	4.3	0.25	F		4.58E-03	17.2	Regulated
D5 : J8	Actinolite	1.5	0.37	F		3.50E-03	4.1	Regulated
D5 : J8	Actinolite	6.1	0.12	F		1.50E-03	50.8	Regulated
D5 : J8	Actinolite	2.8	0.25	F		2.98E-03	11.2	Regulated
D5 : J8	Actinolite	7.3	0.25	F		7.77E-03	29.2	Regulated
D5 : J8	Actinolite	6.1	0.12	F		1.50E-03	50.8	Regulated





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Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

### Analytical Worksheet Report

**Customer Sample Number: HS#2**  
**Laboratory Sample ID: 041922026-0003**  
**Sample Description: Bench Zero Trench-Rock**

Grid ID	Mineral Type	Structure		Type	Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
		Length	Width					
D5 : J8	Actinolite	4.9	0.12	F		1.20E-03	40.8	Regulated
D5 : J8	Actinolite	6.4	0.12	F		1.57E-03	53.3	Regulated
D5 : J8	Non-asbestiform Actinolite	5.4	0.74	F		5.04E-02	7.3	Other
D5 : J8	Actinolite	3.1	0.12	F		7.60E-04	25.8	Regulated
D5 : J8	Actinolite	2.9	0.49	F	1121	1.19E-02	5.9	Regulated
D5 : J8	Actinolite	2.9	0.12	F		7.11E-04	24.2	Regulated
D5 : J8	Actinolite	3.1	0.25	F		3.30E-03	12.4	Regulated



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## TEM EPA 600/R-93/116

Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

### Analytical Worksheet Report

**Customer Sample Number: CB-3#8**  
**Laboratory Sample ID: 041922026-0004**  
**Sample Description: Core Sample-Rock**

Grid ID	Mineral Type	Structure Length	Structure Width	Type	Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
E1 : M6	Actinolite	2.4	0.49	F	1123	3.91E-03	4.9	Regulated
E1 : K4	Actinolite	2.2	0.25	F		9.34E-04	8.8	Regulated
E1 : K4	Non-asbestiform Actinolite	6.8	0.61	M		1.72E-02	11.1	Other
E1 : K4	Actinolite	1.2	0.12	F		1.17E-04	10.0	Regulated
E1 : K4	Actinolite	1.5	0.25	F		6.37E-04	6.0	Regulated
E1 : K4	Actinolite	1.2	0.25	F	1125	5.09E-04	4.8	Regulated
E1 : K4	Actinolite	7.5	0.12	F		7.34E-04	62.5	Regulated
E1 : K4	Actinolite	4.9	0.12	F		4.79E-04	40.8	Regulated
E1 : K4	Non-asbestiform Actinolite	1.5	0.25	F		6.37E-04	6.0	Other
E1 : K4	Actinolite	1.7	0.25	M		7.22E-04	6.8	Regulated
E1 : K4	Actinolite	4.6	0.12	F		4.50E-04	38.3	Regulated
E1 : K4	Actinolite	1.2	0.12	F		1.17E-04	10.0	Regulated
E1 : K4	Actinolite	1.2	0.12	F		1.17E-04	10.0	Regulated
E1 : K4	Actinolite	5.4	0.49	M		8.81E-03	11.0	Regulated
E1 : K4	Actinolite	5.4	0.12	F		5.28E-04	45.0	Regulated
E1 : I5	Non-asbestiform Actinolite	3.4	0.25	F		1.44E-03	13.6	Other
E1 : I5	Actinolite	0.8	0.12	F		7.83E-05	6.7	Regulated
E1 : I5	Actinolite	6.4	0.37	F		5.95E-03	17.3	Regulated
E1 : I5	Non-asbestiform Actinolite	4.1	0.49	F		6.69E-03	8.4	Other
E1 : I5	Actinolite	2.9	0.25	F		1.23E-03	11.6	Regulated
E1 : I5	Non-asbestiform Actinolite	7.8	0.49	F	1127	1.27E-02	15.9	Other
E1 : I5	Actinolite	1.5	0.12	M		1.47E-04	12.5	Regulated
E1 : I5	Non-asbestiform Actinolite	2.4	0.25	F		1.02E-03	9.6	Other
E1 : I5	Actinolite	2.9	0.49	F		4.73E-03	5.9	Regulated
E1 : I5	Actinolite	1.7	0.12	M		1.66E-04	14.2	Regulated
E1 : I5	Actinolite	2.2	0.25	F		9.34E-04	8.8	Regulated



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Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

### Analytical Worksheet Report

**Customer Sample Number: CB-3#8**  
**Laboratory Sample ID: 041922026-0004**  
**Sample Description: Core Sample-Rock**

Grid ID	Mineral Type	Structure Length	Structure Width	Type	Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
E1 : I5	Actinolite	3.1	0.12	F		3.03E-04	25.8	Regulated
E1 : F7	Actinolite	2.6	0.25	F		1.10E-03	10.4	Regulated
E1 : F7	Actinolite	3.1	0.25	F		1.32E-03	12.4	Regulated
E1 : F7	Actinolite	2.8	0.12	F		2.74E-04	23.3	Regulated
E1 : F7	Actinolite	7.8	0.25	M		3.31E-03	31.2	Regulated
E1 : F7	Actinolite	2.6	0.49	F		4.24E-03	5.3	Regulated
E1 : F7	Non-asbestiform Actinolite	2.6	0.25	F		1.10E-03	10.4	Other
E1 : F7	Actinolite	6.2	1.72	B		1.25E-01	3.6	Regulated
E2 : G4	Actinolite	2.6	0.49	F		4.24E-03	5.3	Regulated
E2 : G4	Actinolite	1.5	0.12	F		1.47E-04	12.5	Regulated
E2 : G4	Actinolite	1.7	0.12	F		1.66E-04	14.2	Regulated
E2 : G4	Non-asbestiform Actinolite	9.3	0.49	F		1.52E-02	19.0	Other
E2 : G4	Non-asbestiform Actinolite	2.4	0.25	F		1.02E-03	9.6	Other
E2 : G4	Actinolite	3.2	0.74	F		1.19E-02	4.3	Regulated
E2 : G4	Actinolite	5.1	0.12	F		4.99E-04	42.5	Regulated
E2 : G4	Actinolite	2.2	0.25	F		9.34E-04	8.8	Regulated
E2 : G4	Non-asbestiform Actinolite	1.2	0.25	F		5.09E-04	4.8	Other
E2 : G4	Actinolite	1.2	0.12	F		1.17E-04	10.0	Regulated
E2 : G4	Non-asbestiform Actinolite	3.6	0.37	F		3.35E-03	9.7	Other
E2 : G4	Actinolite	4.3	0.12	F		4.21E-04	35.8	Regulated
E2 : G4	Actinolite	1.2	0.24	F		4.70E-04	5.0	Regulated
E2 : G4	Actinolite	2.5	0.25	F		1.06E-03	10.0	Regulated
E2 : G4	Non-asbestiform Actinolite	3.9	0.25	F		1.66E-03	15.6	Other
E2 : G4	Actinolite	2.4	0.25	F		1.02E-03	9.6	Regulated
E2 : G4	Actinolite	1.2	0.25	F		5.09E-04	4.8	Regulated
E2 : G4	Actinolite	3.4	0.25	F		1.44E-03	13.6	Regulated



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Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

### Analytical Worksheet Report

Customer Sample Number: CB-3#8  
Laboratory Sample ID: 041922026-0004  
Sample Description: Core Sample-Rock

Grid ID	Mineral Type	Structure Length	Structure Width	Type	Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
E2 : G4	Actinolite	1.9	0.25	F		8.07E-04	7.6	Regulated



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Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

### Analytical Worksheet Report

**Customer Sample Number: CB-1#1**  
**Laboratory Sample ID: 041922026-0005**  
**Sample Description: Core Sample-Rock**

Grid ID	Mineral Type	Structure			Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
		Length	Width	Type				
F4 : M6	Non-asbestiform Actinolite	5.9	0.49	F	1132	2.41E-02	12.0	Other
F4 : M6	Actinolite	2.2	0.12	F		5.39E-04	18.3	Regulated
F4 : M6	Non-asbestiform Actinolite	2.3	0.49	F		9.39E-03	4.7	Other
F4 : M6	Actinolite	2.2	0.25	F		2.34E-03	8.8	Regulated
F4 : M6	Non-asbestiform Actinolite	3.6	0.49	F		1.47E-02	7.3	Other
F4 : M6	Actinolite	1.2	0.12	F		2.94E-04	10.0	Regulated
F4 : M6	Actinolite	3.4	0.25	F		3.61E-03	13.6	Regulated
F4 : M6	Non-asbestiform Actinolite	4.9	0.25	F		5.21E-03	19.6	Other
F4 : M6	Actinolite	5.9	0.12	F		1.44E-03	49.2	Regulated
F4 : M6	Actinolite	0.8	0.12	F		1.96E-04	6.7	Regulated
F4 : M6	Actinolite	1.9	0.12	F		4.65E-04	15.8	Regulated
F4 : M6	Actinolite	4.9	0.12	F		1.20E-03	40.8	Regulated
F4 : M6	Actinolite	1.7	0.12	F		4.16E-04	14.2	Regulated
F4 : M6	Actinolite	14.1	0.12	F		3.45E-03	117.5	Regulated
F4 : M6	Non-asbestiform Actinolite	3.4	0.25	F		3.61E-03	13.6	Other
F4 : M6	Non-asbestiform Actinolite	1.5	0.37	F		3.49E-03	4.1	Other
F4 : M6	Non-asbestiform Actinolite	12.2	0.49	F		4.98E-02	24.9	Other
F4 : F4	Actinolite	7.7	0.37	F	1134	1.79E-02	20.8	Regulated
F4 : F4	Actinolite	1.2	0.12	F		2.94E-04	10.0	Regulated
F4 : F4	Actinolite	1.2	0.12	F		2.94E-04	10.0	Regulated
F4 : F4	Actinolite	8.1	0.25	F		8.61E-03	32.4	Regulated
F4 : F4	Non-asbestiform Actinolite	1.5	0.25	F		1.59E-03	6.0	Other
F4 : F4	Non-asbestiform Actinolite	3.6	0.49	F		1.47E-02	7.3	Other
F4 : F4	Actinolite	1.2	0.12	F		2.94E-04	10.0	Regulated
F4 : F4	Actinolite	2.6	0.25	F		2.76E-03	10.4	Regulated
F4 : F4	Actinolite	1	0.25	F		1.06E-03	4.0	Regulated



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Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

### Analytical Worksheet Report

**Customer Sample Number: CB-1#1**  
**Laboratory Sample ID: 041922026-0005**  
**Sample Description: Core Sample-Rock**

Grid ID	Mineral Type	Structure Length	Structure Width	Type	Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
F4 : F4	Actinolite	14.1	0.86	B		1.77E-01	16.4	Regulated
F4 : F4	Non-asbestiform Actinolite	5.1	0.25	F		5.42E-03	20.4	Other
F4 : F4	Non-asbestiform Actinolite	12.6	0.74	F		1.17E-01	17.0	Other
F4 : F4	Non-asbestiform Actinolite	3.4	0.25	F		3.61E-03	13.6	Other
F4 : F4	Actinolite	9.2	0.37	F		2.14E-02	24.9	Regulated
F4 : F4	Actinolite	4.3	0.25	F		4.57E-03	17.2	Regulated
F4 : F4	Non-asbestiform Actinolite	2.9	0.25	F		3.08E-03	11.6	Other
F4 : F4	Actinolite	7.9	0.12	F		1.93E-03	65.8	Regulated
F4 : F4	Actinolite	1.2	0.25	F		1.28E-03	4.8	Regulated
F5 : E5	Actinolite	1.7	0.25	F		1.81E-03	6.8	Regulated
F5 : E5	Non-asbestiform Actinolite	1.5	0.25	F		1.59E-03	6.0	Other
F5 : E5	Actinolite	7.1	1.23	B		1.83E-01	5.8	Regulated
F5 : E5	Non-asbestiform Actinolite	1.2	0.25	F		1.28E-03	4.8	Other
F5 : E5	Actinolite	3.4	0.61	F		2.15E-02	5.6	Regulated
F5 : E5	Actinolite	7.8	0.86	F		9.81E-02	9.1	Regulated
F5 : E5	Non-asbestiform Actinolite	3.4	0.74	F		3.17E-02	4.6	Other
F5 : E5	Actinolite	1.5	0.12	F		3.67E-04	12.5	Regulated
F5 : E5	Actinolite	3.6	0.12	F		8.81E-04	30.0	Regulated
F5 : E5	Actinolite	6.6	0.12	F		1.62E-03	55.0	Regulated
F5 : E5	Actinolite	4.6	0.25	F		4.89E-03	18.4	Regulated
F5 : E5	Actinolite	11.2	0.49	F		4.57E-02	22.9	Regulated
F5 : E5	Actinolite	3.4	0.1	F		5.78E-04	34.0	Regulated
F5 : E5	Actinolite	1.2	0.25	F		1.28E-03	4.8	Regulated
F5 : E5	Actinolite	1.5	0.49	F		6.12E-03	3.1	Regulated
F5 : E5	Actinolite	12.2	0.12	F		2.99E-03	101.7	Regulated
F5 : E5	Actinolite	7.5	0.12	F		1.84E-03	62.5	Regulated



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Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

### Analytical Worksheet Report

**Customer Sample Number: CB-1#1**  
**Laboratory Sample ID: 041922026-0005**  
**Sample Description: Core Sample-Rock**

Grid ID	Mineral Type	Structure Length	Structure Width	Type	Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
F5 : E5	Non-asbestiform Actinolite	3.6	0.37	F		8.38E-03	9.7	Other
F5 : E5	Actinolite	1.7	0.12	F		4.16E-04	14.2	Regulated
F5 : E5	Non-asbestiform Actinolite	9.2	0.49	F		3.76E-02	18.8	Other
F5 : E5	Actinolite	6.1	0.98	F		9.96E-02	6.2	Regulated
F5 : K7	Non-asbestiform Actinolite	4.6	0.49	F		1.88E-02	9.4	Other
F5 : K7	Actinolite	2.6	0.49	F		1.06E-02	5.3	Regulated
F5 : K7	Actinolite	17.1	0.12	F		4.19E-03	142.5	Regulated
F5 : K7	Actinolite	12.2	0.12	F		2.99E-03	101.7	Regulated
F5 : K7	Actinolite	5.4	0.37	F		1.26E-02	14.6	Regulated
F5 : K7	Non-asbestiform Actinolite	2.4	0.37	F		5.59E-03	6.5	Other
F5 : K7	Non-asbestiform Actinolite	3.1	0.25	F		3.29E-03	12.4	Other
F5 : K7	Actinolite	13.4	0.1	F		2.28E-03	134.0	Regulated
F5 : K7	Actinolite	6.8	0.98	B		1.11E-01	6.9	Regulated
F5 : K7	Actinolite	3.1	0.49	F		1.27E-02	6.3	Regulated
F5 : K7	Actinolite	1.9	0.12	F		4.65E-04	15.8	Regulated
F5 : K7	Non-asbestiform Pyroxene	5.9	0.86	F	1138	8.09E-02	6.9	Other
F5 : K7	Actinolite	3.4	0.49	F		1.39E-02	6.9	Regulated
F5 : K7	Non-asbestiform Actinolite	7.9	1.23	F		2.03E-01	6.4	Other
F5 : K7	Actinolite	14.8	0.49	F		6.04E-02	30.2	Regulated
F5 : K7	Non-asbestiform Actinolite	17.1	0.74	F		1.59E-01	23.1	Other
F5 : K7	Non-asbestiform Actinolite	2.4	0.25	F		2.55E-03	9.6	Other
F5 : K7	Actinolite	8.5	1.72	F		4.27E-01	4.9	Regulated
F5 : K7	Non-asbestiform Actinolite	2.9	0.74	F		2.70E-02	3.9	Other
F5 : K7	Actinolite	3.6	0.25	F		3.83E-03	14.4	Regulated
F5 : K7	Actinolite	21.9	2.18	B		1.77E+00	10.0	Regulated
F5 : K7	Actinolite	8.3	0.98	B		1.36E-01	8.5	Regulated



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Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

### Analytical Worksheet Report

**Customer Sample Number: CB-1#1**  
**Laboratory Sample ID: 041922026-0005**  
**Sample Description: Core Sample-Rock**

Grid ID	Mineral Type	Structure Length	Structure Width	Type	Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
F5 : K7	Actinolite	4.9	0.12	F		1.20E-03	40.8	Regulated
F5 : K7	Non-asbestiform Actinolite	5.4	0.61	F		3.42E-02	8.9	Other
F5 : K7	Actinolite	1.7	0.25	F		1.81E-03	6.8	Regulated





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Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

### Analytical Worksheet Report

**Customer Sample Number: CB-2#5**  
**Laboratory Sample ID: 041922026-0006**  
**Sample Description: Core Sample-Rock**

Grid ID	Mineral Type	Structure			Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
		Length	Width	Type				
G1 : N6	Actinolite	7.3	0.49	F	1142	6.61E-03	14.9	Regulated
G1 : N6	Actinolite	6.4	0.49	F		5.79E-03	13.1	Regulated
G1 : N6	Actinolite	1.2	0.12	F		6.51E-05	10.0	Regulated
G1 : N6	Non-asbestiform Actinolite	2.5	0.49	F		2.26E-03	5.1	Other
G1 : N6	Actinolite	3.6	0.37	F		1.86E-03	9.7	Regulated
G1 : N6	Actinolite	7.1	0.25	M		1.67E-03	28.4	Regulated
G1 : N6	Actinolite	5.4	0.25	M		1.27E-03	21.6	Regulated
G1 : N6	Actinolite	4.9	0.98	B		1.77E-02	5.0	Regulated
G1 : K4	Non-asbestiform Actinolite	2.1	0.49	F		1.90E-03	4.3	Other
G1 : K4	Actinolite	3.6	0.49	F		3.26E-03	7.3	Regulated
G1 : K4	Actinolite	2.3	0.25	F		5.42E-04	9.2	Regulated
G1 : K4	Actinolite	1.2	0.25	F		2.83E-04	4.8	Regulated
G1 : K4	Actinolite	4.6	0.98	F		1.67E-02	4.7	Regulated
G1 : I5	Actinolite	7.5	1.23	F		4.28E-02	6.1	Regulated
G1 : I5	Actinolite	4.6	0.12	F		2.50E-04	38.3	Regulated
G1 : I5	Actinolite	2.1	0.25	F		4.95E-04	8.4	Regulated
G1 : I5	Actinolite	1.7	0.25	F		4.01E-04	6.8	Regulated
G1 : G7	Non-asbestiform Actinolite	1.7	0.61	F		0.00E+00	2.8	Other
G1 : G7	Actinolite	4.3	0.12	F		2.33E-04	35.8	Regulated
G1 : G7	Non-asbestiform Actinolite	12.5	0.25	F		2.95E-03	50.0	Other
G1 : D4	Actinolite	2.6	0.25	F		6.13E-04	10.4	Regulated
GF1 : D4	Actinolite	1.5	0.12	F		8.14E-05	12.5	Regulated
G1 : D4	Non-asbestiform Actinolite	2.7	0.74	F		5.57E-03	3.6	Other
G1 : D4	Actinolite	2.9	0.25	F		6.83E-04	11.6	Regulated
G3 : C6	Non-asbestiform Actinolite	2.6	0.49	F		2.35E-03	5.3	Other
G3 : C6	Actinolite	3.1	0.12	F		1.68E-04	25.8	Regulated



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### Analytical Worksheet Report

**Customer Sample Number: CB-2#5**  
**Laboratory Sample ID: 041922026-0006**  
**Sample Description: Core Sample-Rock**

Grid ID	Mineral Type	Structure Length	Structure Width	Type	Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
G3 : C6	Actinolite	2.6	0.25	F		6.13E-04	10.4	Regulated
G3 : C6	Actinolite	1.2	0.25	F		2.83E-04	4.8	Regulated
G3 : E5	Non-asbestiform Actinolite	17.2	0.25	F		4.05E-03	68.8	Other
G3 : E5	Actinolite	6.8	0.98	F		2.46E-02	6.9	Regulated
G3 : E5	Actinolite	2.6	0.12	F		1.41E-04	21.7	Regulated
G3 : E5	Actinolite	3.4	0.25	F		8.01E-04	13.6	Regulated
G3 : E5	Actinolite	1.7	0.25	F		4.01E-04	6.8	Regulated
G3 : E5	Non-asbestiform Actinolite	3.6	0.49	F		3.26E-03	7.3	Other
G3 : E5	Actinolite	5.1	0.25	F		1.20E-03	20.4	Regulated
G3 : E5	Actinolite	3.1	0.25	F		7.30E-04	12.4	Regulated
G3 : E5	Actinolite	6.6	0.25	F		1.56E-03	26.4	Regulated
G3 : H4	Non-asbestiform Actinolite	8.3	0.49	f	1144	7.51E-03	16.9	Other
G3 : H4	Actinolite	1.5	0.12	F		8.14E-05	12.5	Regulated
G3 : H4	Actinolite	4.9	0.49	F		4.44E-03	10.0	Regulated
G3 : H4	Actinolite	17.5	2.52	B		4.19E-01	6.9	Regulated
G3 : H4	Non-asbestiform Actinolite	2.6	0.25	F		6.13E-04	10.4	Other
G3 : H4	Actinolite	1.2	0.25	F		2.83E-04	4.8	Regulated
G3 : H4	Actinolite	3.9	0.12	F		2.12E-04	32.5	Regulated
G3 : H4	Non-asbestiform Actinolite	3.4	0.49	F		3.08E-03	6.9	Other
G3 : H4	Actinolite	1.2	0.12	F		6.51E-05	10.0	Regulated
G3 : H4	Actinolite	1.5	0.12	F		8.14E-05	12.5	Regulated
G3 : H4	Actinolite	3.1	0.25	F		7.30E-04	12.4	Regulated
G3 : L5	Actinolite	2.4	0.1	F		9.05E-05	24.0	Regulated
G3 : L5	Actinolite	1.2	0.12	F		6.51E-05	10.0	Regulated
G3 : L5	Actinolite	3.1	0.25	F		7.30E-04	12.4	Regulated
G3 : L5	Actinolite	1.7	0.25	M		4.01E-04	6.8	Regulated



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Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

### Analytical Worksheet Report

Customer Sample Number: CB-2#5  
Laboratory Sample ID: 041922026-0006  
Sample Description: Core Sample-Rock

Grid ID	Mineral Type	Length	Structure Width	Type	Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
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Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

### Analytical Worksheet Report

**Customer Sample Number: CB-4#10**  
**Laboratory Sample ID: 041922026-0007**  
**Sample Description: Core Sample-Rock**

Grid ID	Mineral Type	Structure Length	Structure Width	Type	Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
H2 : N6								
H2 : N6								
H2 : N6	Actinolite	8.3	0.49	F	1146	6.78E-03	16.9	Regulated
H2 : N6	Actinolite	1.2	0.25	F		2.55E-04	4.8	Regulated
H2 : N6	Actinolite	2.6	0.61	F		3.29E-03	4.3	Regulated
H2 : N6	Non-asbestiform Actinolite	4.5	0.98	F		1.47E-02	4.6	Other
H2 : N6	Actinolite	7.5	0.98	F		2.45E-02	7.7	Regulated
H2 : L4	Non-asbestiform Actinolite	1.7	0.25	F		3.61E-04	6.8	Other
H2 : L4	Non-asbestiform Actinolite	3.6	0.74	F		6.70E-03	4.9	Other
H2 : L4	Non-asbestiform Actinolite	5.5	0.86	F		1.38E-02	6.4	Other
H2 : L4	Actinolite	1.2	0.25	F		2.55E-04	4.8	Regulated
H2 : L4	Non-asbestiform Actinolite	7.1	1.47	F		5.22E-02	4.8	Other
H2 : J7	Non-asbestiform Actinolite	10.2	0.74	F	1148	1.90E-02	13.8	Other
H2 : J7	Actinolite	2.4	0.12	F		1.18E-04	20.0	Regulated
H2 : J7	Actinolite	1.7	0.49	F		1.39E-03	3.5	Regulated
H2 : G4	Actinolite	2.2	0.25	F		4.68E-04	8.8	Regulated
H2 : G4	Non-asbestiform Actinolite	1.5	0.12	F		7.34E-05	12.5	Other
H2 : D5	Non-asbestiform Actinolite	1.7	0.49	F		1.39E-03	3.5	Other
H2 : D5	Actinolite	1.7	0.49	F		1.39E-03	3.5	Regulated
H2 : D5	Non-asbestiform Actinolite	3.6	0.49	F		2.94E-03	7.3	Other
H3 : C7	Actinolite	2.9	0.61	F		3.67E-03	4.8	Regulated
H3 : C7	Actinolite	4.9	0.12	M		2.40E-04	40.8	Regulated
H3 : C7	Non-asbestiform Actinolite	12.2	0.74	F		2.27E-02	16.5	Other
H3 : F8	Actinolite	3.1	0.25	F		6.59E-04	12.4	Regulated
H3 : F8	Non-asbestiform Actinolite	1.5	0.37	F		6.98E-04	4.1	Other
H3 : F8	Non-asbestiform Actinolite	2.5	0.49	F		2.04E-03	5.1	Other



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Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

### Analytical Worksheet Report

**Customer Sample Number: CB-4#10**  
**Laboratory Sample ID: 041922026-0007**  
**Sample Description: Core Sample-Rock**

Grid ID	Mineral Type	Structure Length	Structure Width	Type	Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
H3 : I6	Non-asbestiform Actinolite	3.9	0.74	F		7.26E-03	5.3	Other
H3 : I6	Actinolite	1.5	0.25	F		3.19E-04	6.0	Regulated
H3 : L10	Non-asbestiform Actinolite	7.5	0.49	F		6.12E-03	15.3	Other
H3 : L10	Actinolite	5.1	0.49	F		4.16E-03	10.4	Regulated
H3 : L10	Actinolite	2.4	0.49	F		1.96E-03	4.9	Regulated
H3 : L10	Actinolite	2.6	0.12	F		1.27E-04	21.7	Regulated
H3 : L10	Actinolite	2.9	0.49	F		2.37E-03	5.9	Regulated
H3 : L10	Non-asbestiform Actinolite	1.5	0.25	F		3.19E-04	6.0	Other
H3 : L10	Actinolite	5.4	0.1	F		1.84E-04	54.0	Regulated
H3 : L10	Actinolite	1.2	0.25	F		2.55E-04	4.8	Regulated
H3 : L10	Non-asbestiform Actinolite	2.9	0.61	F		3.67E-03	4.8	Other
H3 : L10	Actinolite	2.4	0.25	M		5.10E-04	9.6	Regulated
H3 : N8	Actinolite	1.7	0.25	F		3.61E-04	6.8	Regulated
H3 : N8	Actinolite	7.1	0.98	F		2.32E-02	7.2	Regulated
H3 : N8	Non-asbestiform Actinolite	1.5	0.12	F		7.34E-05	12.5	Other
H3 : N8	Non-asbestiform Actinolite	2.7	0.25	F		5.74E-04	10.8	Other
H3 : N8	Actinolite	1.2	0.12	F		5.88E-05	10.0	Regulated



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## TEM EPA 600/R-93/116

Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

### Analytical Worksheet Report

**Customer Sample Number: CB-2#4**  
**Laboratory Sample ID: 041922026-0008**  
**Sample Description: Core Sample-Rock**

Grid ID	Mineral Type	Structure Length	Structure Width	Type	Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
I4 : N5	Actinolite	4.7	0.49	F	1150	9.61E-03	9.6	Regulated
I4 : N5	Actinolite	3.4	0.61	F		1.08E-02	5.6	Regulated
I4 : N5	Non-asbestiform Actinolite	1.7	0.37	F		1.98E-03	4.6	Other
I4 : N5	Non-asbestiform Actinolite	2.9	0.25	F		1.54E-03	11.6	Other
I4 : N5	Non-asbestiform Actinolite	2.4	0.49	F		4.91E-03	4.9	Other
I4 : N5	Actinolite	10.2	0.25	F		5.43E-03	40.8	Regulated
I4 : N5	Actinolite	1.9	0.12	F		2.33E-04	15.8	Regulated
I4 : N5	Actinolite	2.2	0.49	F		4.50E-03	4.5	Regulated
I4 : J3	Actinolite	1.5	0.12	F		1.84E-04	12.5	Regulated
I4 : J3	Actinolite	7.8	2.43	B		3.92E-01	3.2	Regulated
I4 : J3	Non-asbestiform Actinolite	3.6	0.25	F		1.92E-03	14.4	Other
I4 : J3	Actinolite	1.2	0.1	F		1.02E-04	12.0	Regulated
I4 : J3	Actinolite	3.9	0.37	F		4.55E-03	10.5	Regulated
I4 : J3	Non-asbestiform Actinolite	1.7	0.49	F		3.48E-03	3.5	Other
I4 : J3	Actinolite	5.4	0.49	F		1.10E-02	11.0	Regulated
I4 : J3	Non-asbestiform Actinolite	3.2	0.74	F		1.49E-02	4.3	Other
I4 : J3	Non-asbestiform Actinolite	1.7	0.37	F		1.98E-03	4.6	Other
I4 : J3	Actinolite	1.2	0.12	F		1.47E-04	10.0	Regulated
I4 : G5	Actinolite	2.6	0.25	F		1.38E-03	10.4	Regulated
I4 : G5	Actinolite	1.7	0.12	F		2.08E-04	14.2	Regulated
I4 : G5	Non-asbestiform Actinolite	1.5	0.25	F		7.98E-04	6.0	Other
I4 : G5	Non-asbestiform Actinolite	4.9	0.49	F	1152	1.00E-02	10.0	Other
I4 : G5	Actinolite	2.6	0.12	F		3.19E-04	21.7	Regulated
I4 : G5	Non-asbestiform Actinolite	2.4	0.25	F		1.28E-03	9.6	Other
I4 : G5	Actinolite	2.6	0.1	F		2.21E-04	26.0	Regulated
I4 : G5	Non-asbestiform Actinolite	1.5	0.25	F		7.98E-04	6.0	Other



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Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

### Analytical Worksheet Report

**Customer Sample Number: CB-2#4**  
**Laboratory Sample ID: 041922026-0008**  
**Sample Description: Core Sample-Rock**

Grid ID	Mineral Type	Structure Length	Structure Width	Type	Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
15 : C6	Non-asbestiform Actinolite	1.7	0.49	F		3.48E-03	3.5	Other
15 : C6	Non-asbestiform Actinolite	1.2	0.25	F		6.39E-04	4.8	Other
15 : F5	Actinolite	1.2	0.25	F		6.39E-04	4.8	Regulated
15 : F5	Actinolite	6.9	0.12	F		8.46E-04	57.5	Regulated
15 : F5	Actinolite	4.1	0.25	F		2.18E-03	16.4	Regulated
15 : F5	Actinolite	1.5	0.12	F		1.84E-04	12.5	Regulated
15 : F5	Non-asbestiform Actinolite	3.1	0.25	F		1.65E-03	12.4	Other
15 : F5	Non-asbestiform Actinolite	1.5	0.25	F		7.98E-04	6.0	Other
15 : H12	Actinolite	1.2	0.25	F		6.39E-04	4.8	Regulated
15 : H12	Actinolite	2.4	0.12	F		2.94E-04	20.0	Regulated
15 : H12	Non-asbestiform Actinolite	2.7	0.25	F		1.44E-03	10.8	Other
16 : M4	Non-asbestiform Actinolite	2.6	0.12	F		3.19E-04	21.7	Other
16 : M4	Actinolite	1.5	0.12	F		1.84E-04	12.5	Regulated
16 : M4	Actinolite	5.5	0.49	B		1.12E-02	11.2	Regulated
16 : M4	Actinolite	3.4	0.25	F		1.81E-03	13.6	Regulated
16 : M4	Actinolite	2.9	0.25	F		1.54E-03	11.6	Regulated
16 : H2	Actinolite	2.2	0.12	F		2.70E-04	18.3	Regulated
16 : H2	Actinolite	1.2	0.12	F		1.47E-04	10.0	Regulated
16 : H2	Non-asbestiform Actinolite	3.1	0.49	F		6.34E-03	6.3	Other
16 : H2	Actinolite	4.6	0.12	F		5.64E-04	38.3	Regulated
16 : H2	Actinolite	1.2	0.12	F		1.47E-04	10.0	Regulated
16 : H2	Actinolite	2.1	0.12	F		2.58E-04	17.5	Regulated
16 : H2	Non-asbestiform Actinolite	7.1	0.49	F		1.45E-02	14.5	Other
16 : H2	Actinolite	0.9	0.12	F		1.10E-04	7.5	Regulated



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Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

### Analytical Worksheet Report

**Customer Sample Number:** RH HS-1  
**Laboratory Sample ID:** 041922026-0009  
**Sample Description:** Hand Sample#1 Rock

Grid ID	Mineral Type	Structure Length	Structure Width	Type	Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
J2 : L4	Non-asbestiform Actinolite	3.2	0.61	F	1158	4.05E-03	5.2	Other
J2 : L4	Actinolite	2.6	0.49	F		2.12E-03	5.3	Regulated
J2 : L4	Actinolite	8.5	1.76	F		8.95E-02	4.8	Regulated
J2 : I6	Non-asbestiform Actinolite	5.6	0.25	F		1.19E-03	22.4	Other
J2 : I6	Non-asbestiform Actinolite	1.2	0.25	F		2.55E-04	4.8	Other
J2 : I6	Non-asbestiform Actinolite	4.5	0.49	F		3.67E-03	9.2	Other
J2 : I6	Actinolite	2.9	0.12	F		1.42E-04	24.2	Regulated
J2 : G4	Actinolite	7.5	0.49	F	1160	6.12E-03	15.3	Regulated
J2 : G4	Non-asbestiform Actinolite	1.7	0.49	F		1.39E-03	3.5	Other
J2 : G4	Non-asbestiform Actinolite	14.3	1.23	F		7.36E-02	11.6	Other
J2 : G4	Actinolite	15.1	2.43	F		3.03E-01	6.2	Regulated
J2 : E5	Actinolite	2.2	0.12	F		1.08E-04	18.3	Regulated
J2 : E5	Non-asbestiform Actinolite	1.2	0.12	F		5.88E-05	10.0	Other
J2 : E5	Actinolite	1.5	0.25	F		3.19E-04	6.0	Regulated
J2 : E5	Actinolite	1.5	0.25	F		3.19E-04	6.0	Regulated
J2 : B6	Non-asbestiform Actinolite	11.9	0.25	F		2.53E-03	47.6	Other
J2 : B6	Non-asbestiform Actinolite	3.6	0.74	F	1162	6.70E-03	4.9	Other
J2 : B6	Actinolite	2.4	0.25	F		5.10E-04	9.6	Regulated
J3 : C5	Actinolite	1.2	0.12	F		5.88E-05	10.0	Regulated
J3 : C5	Actinolite	1.7	0.25	F		3.61E-04	6.8	Regulated
J3 : C5	Non-asbestiform Actinolite	5.3	0.86	F		1.33E-02	6.2	Other
J3 : C5	Actinolite	1.5	0.37	F		6.98E-04	4.1	Regulated
J3 : C5	Actinolite	1.2	0.12	F		5.88E-05	10.0	Regulated
J3 : F4	Non-asbestiform Actinolite	1.2	0.25	F		2.55E-04	4.8	Other
J3 : F4	Actinolite	1.7	0.25	F		3.61E-04	6.8	Regulated
J3 : F4	Actinolite	1.2	0.12	F		5.88E-05	10.0	Regulated





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Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

### Analytical Worksheet Report

**Customer Sample Number:** RH HS-1  
**Laboratory Sample ID:** 041922026-0009  
**Sample Description:** Hand Sample#1 Rock

Grid ID	Mineral Type	Structure Length	Structure Width	Type	Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
J3 : F4	Actinolite	10.7	2.68	F		2.61E-01	4.0	Regulated
J3 : H6	Non-asbestiform Actinolite	2.2	0.37	F		1.02E-03	5.9	Other
J3 : H6	Actinolite	1.5	0.12	F		7.34E-05	12.5	Regulated
J3 : K3	Non-asbestiform Actinolite	8.7	0.49	F		7.10E-03	17.8	Other
J3 : K3	Actinolite	4.9	0.12	F		2.40E-04	40.8	Regulated
J3 : K3	Non-asbestiform Actinolite	1.2	0.12	F		5.88E-05	10.0	Other
J3 : M7	Actinolite	2.4	0.49	F		1.96E-03	4.9	Regulated
J3 : M7	Actinolite	1.5	0.25	F		3.19E-04	6.0	Regulated
J3 : M7	Actinolite	1.5	0.25	F		3.19E-04	6.0	Regulated



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Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

### Analytical Worksheet Report

**Customer Sample Number:** RH Vein#7  
**Laboratory Sample ID:** 041922026-0010  
**Sample Description:** Rock Sample

Grid ID	Mineral Type	Structure Length	Structure Width	Type	Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
J4 : M2	Non-asbestiform Actinolite	4.7	0.74	F	1165	2.92E-01	6.4	Other
J4 : M2	Actinolite	2.4	0.12	F		3.92E-03	20.0	Regulated
J4 : M2	Actinolite	1.5	0.12	F		2.45E-03	12.5	Regulated
J4 : M2	Non-asbestiform Actinolite	1.2	0.12	F		1.96E-03	10.0	Other
J4 : M2	Actinolite	1.2	0.12	F		1.96E-03	10.0	Regulated
J4 : M2	Actinolite	7.1	0.25	F		5.03E-02	28.4	Regulated
J4 : M2	Non-asbestiform Actinolite	1.7	0.12	F		2.77E-03	14.2	Other
J4 : M2	Actinolite	10.4	0.12	F		1.70E-02	86.7	Regulated
J4 : M2	Actinolite	9.5	0.12	F		1.55E-02	79.2	Regulated
J4 : M2	Actinolite	3.4	0.12	F		5.55E-03	28.3	Regulated
J4 : M2	Actinolite	0.8	0.12	F		1.31E-03	6.7	Regulated
J4 : M2	Non-asbestiform Actinolite	3.6	0.49	F	1167	9.80E-02	7.3	Other
J4 : M2	Actinolite	3.2	0.25	F		2.27E-02	12.8	Regulated
J4 : M2	Actinolite	3.6	0.1	F		4.08E-03	36.0	Regulated
J4 : M2	Actinolite	1.2	0.1	F		1.36E-03	12.0	Regulated
J4 : M2	Actinolite	1.2	0.25	F		8.50E-03	4.8	Regulated
J4 : M2	Actinolite	5.6	0.25	F		3.97E-02	22.4	Regulated
J4 : M2	Non-asbestiform Actinolite	10.2	0.74	F		6.33E-01	13.8	Other
J4 : M2	Non-asbestiform Actinolite	1.5	0.49	F		4.08E-02	3.1	Other
J4 : M2	Actinolite	3.1	0.1	F		3.51E-03	31.0	Regulated
J4 : M2	Actinolite	10.2	0.1	F		1.16E-02	102.0	Regulated
J4 : M2	Actinolite	2.9	0.12	F		4.73E-03	24.2	Regulated
J4 : M2	Actinolite	2.3	0.12	F		3.75E-03	19.2	Regulated
J4 : M2	Actinolite	1.2	0.37	F		1.86E-02	3.2	Regulated
J4 : M2	Actinolite	4.7	0.25	F		3.33E-02	18.8	Regulated
J4 : M2	Actinolite	7.6	0.25	F		5.38E-02	30.4	Regulated



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Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

### Analytical Worksheet Report

**Customer Sample Number:** RH Vein#7  
**Laboratory Sample ID:** 041922026-0010  
**Sample Description:** Rock Sample

Grid ID	Mineral Type	Structure Length	Structure Width	Type	Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
J4 : M2	Actinolite	6.4	0.12	F		1.04E-02	53.3	Regulated
J4 : M2	Non-asbestiform Actinolite	3.4	0.49	F		9.25E-02	6.9	Other
J4 : M2	Actinolite	3.2	0.25	F		2.27E-02	12.8	Regulated
J4 : M2	Actinolite	1.2	0.12	F		1.96E-03	10.0	Regulated
J4 :	Actinolite	1.5	0.12	F		2.45E-03	12.5	Regulated
J4 : M2	Actinolite	4.9	0.98	F		5.33E-01	5.0	Regulated
J4 : M2	Actinolite	2.9	0.49	F		7.89E-02	5.9	Regulated
J4 : M2	Actinolite	4.7	0.49	F	1169	1.28E-01	9.6	Regulated
J4 : M2	Actinolite	2.7	0.12	F		4.41E-03	22.5	Regulated
J4 : M2	Actinolite	1.2	0.12	F		1.96E-03	10.0	Regulated
J4 : M2	Actinolite	3.6	0.37	F		5.59E-02	9.7	Regulated
J4 : M2	Actinolite	5.5	0.25	F		3.90E-02	22.0	Regulated
J4 : M2	Actinolite	4.9	0.1	F		5.55E-03	49.0	Regulated
J4 : M2	Actinolite	3.4	0.1	F		3.85E-03	34.0	Regulated
J4 : M2	Actinolite	9.9	0.25	F		7.01E-02	39.6	Regulated
J4 : M2	Non-asbestiform Actinolite	3.6	0.25	F		2.55E-02	14.4	Other
J4 : M2	Actinolite	17.4	2.92	B		1.68E+01	6.0	Regulated
J4 : M2	Actinolite	10.4	0.25	F		7.37E-02	41.6	Regulated
J4 : M2	Actinolite	24.7	0.25	F		1.75E-01	98.8	Regulated
J4 : M2	Actinolite	1.2	0.12	F		1.96E-03	10.0	Regulated
J4 : M2	Actinolite	14.8	0.37	F		2.30E-01	40.0	Regulated
J4 : M2	Actinolite	10.5	0.12	F		1.71E-02	87.5	Regulated
J4 : M2	Actinolite	3.6	0.25	F		2.55E-02	14.4	Regulated
J4 : M2	Actinolite	3.4	0.12	F		5.55E-03	28.3	Regulated
J4 : M2	Non-asbestiform Actinolite	4.1	0.25	F		2.90E-02	16.4	Other
J4 : M2	Actinolite	2.9	0.12	F		4.73E-03	24.2	Regulated



EMSL Analytical, Inc.  
 200 Route 130 North, Cinnaminson,  
 NJ 08077  
 Phone: (800) 220-3675

EMSL Order: 041922026  
 Customer ID: PADP42  
 Customer PO:  
 Project ID:

## TEM EPA 600/R-93/116

Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

### Analytical Worksheet Report

**Customer Sample Number:** RH Vein#7  
**Laboratory Sample ID:** 041922026-0010  
**Sample Description:** Rock Sample

Grid ID	Mineral Type	Structure Length	Structure Width	Type	Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
J4 : M2	Actinolite	2.2	0.12	F		3.59E-03	18.3	Regulated
J6 : I3	Actinolite	7.6	0.25	F		5.38E-02	30.4	Regulated
J6 : I3	Actinolite	1.2	0.1	F		1.36E-03	12.0	Regulated
J6 : I3	Non-asbestiform Actinolite	1.2	0.25	F		8.50E-03	4.8	Other
J6 : I3	Actinolite	1.2	0.1	F		1.36E-03	12.0	Regulated
J6 : I3	Actinolite	8.3	0.12	F		1.35E-02	69.2	Regulated
J6 : I3	Actinolite	1.7	0.25	F		1.20E-02	6.8	Regulated
J6 : I3	Non-asbestiform Actinolite	3.7	0.49	F		1.01E-01	7.6	Other
J6 : I3	Actinolite	1.9	0.12	F		3.10E-03	15.8	Regulated
J6 : I3	Non-asbestiform Actinolite	1.2	0.12	F		1.96E-03	10.0	Other
J6 : I3	Non-asbestiform Actinolite	1.5	0.25	F		1.06E-02	6.0	Other
J6 : I3	Actinolite	1.2	0.1	F		1.36E-03	12.0	Regulated
J6 : I3	Non-asbestiform Actinolite	7.3	0.37	F		1.13E-01	19.7	Other
J6 : I3	Actinolite	1.2	0.12	F		1.96E-03	10.0	Regulated
J6 : I3	Non-asbestiform Actinolite	7.8	0.49	F		2.12E-01	15.9	Other
J6 : I3	Actinolite	1.7	0.49	F		4.63E-02	3.5	Regulated
J6 : I3	Actinolite	6.4	0.12	F		1.04E-02	53.3	Regulated
J6 : I3	Actinolite	2.5	0.12	F		4.08E-03	20.8	Regulated
J6 : I3	Actinolite	6.4	0.25	F		4.53E-02	25.6	Regulated
J6 : I3	Non-asbestiform Actinolite	6.6	0.25	F		4.68E-02	26.4	Other
J6 : I3	Non-asbestiform Actinolite	1.5	0.12	F		2.45E-03	12.5	Other
J6 : I3	Non-asbestiform Actinolite	2.2	0.49	F		5.99E-02	4.5	Other
J6 : I3	Non-asbestiform Actinolite	13.1	0.12	F		2.14E-02	109.2	Other
J6 : I3	Actinolite	5.4	0.12	F		8.81E-03	45.0	Regulated
J6 : I3	Non-asbestiform Actinolite	19.9	0.25	F		1.41E-01	79.6	Other
J6 : I3	Actinolite	2.9	0.12	F		4.73E-03	24.2	Regulated



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## TEM EPA 600/R-93/116

Analysis of Bulk Material Utilizing Analytical Electron Microscopy (Section 2.5.5.2) with Milling Prep

### Analytical Worksheet Report

**Customer Sample Number:** RH Vein#7  
**Laboratory Sample ID:** 041922026-0010  
**Sample Description:** Rock Sample

Grid ID	Mineral Type	Structure Length	Structure Width	Type	Photo ID Number	Mass (%)	Aspect Ratio	Mineral Class
J6 : I3	Actinolite	1.5	0.25	F		1.06E-02	6.0	Regulated
J6 : I3	Actinolite	2.2	0.1	F		2.49E-03	22.0	Regulated
J6 : I3	Actinolite	8.8	0.12	F		1.44E-02	73.3	Regulated
J6J : I3	Non-asbestiform Actinolite	8.1	0.25	F		5.74E-02	32.4	Other
J6 : I3	Non-asbestiform Actinolite	16.1	0.25	F		1.14E-01	64.4	Other
J6 : I3	Actinolite	12.6	0.12	F		2.06E-02	105.0	Regulated
J6 : I3	Actinolite	9.2	0.25	F		6.52E-02	36.8	Regulated
J6 : I3	Actinolite	2.6	0.25	F		1.84E-02	10.4	Regulated
J6 : I3	Non-asbestiform Actinolite	2.9	0.74	F	1172	1.80E-01	3.9	Other
J6 : I3	Non-asbestiform Actinolite	1.5	0.25	F		1.06E-02	6.0	Other
J6 : I3	Actinolite	4.7	0.12	F		7.67E-03	39.2	Regulated
J6 : I3	Actinolite	2.9	0.12	F		4.73E-03	24.2	Regulated
J6 : I3	Non-asbestiform Actinolite	9.3	1.72	F		3.12E+00	5.4	Other
J6 : I3	Actinolite	1.9	0.37	F		2.95E-02	5.1	Regulated
J6 : I3	Actinolite	1.7	0.12	F		2.77E-03	14.2	Regulated
J6 : I3	Actinolite	2.9	0.25	F		2.05E-02	11.6	Regulated
J6 : I3	Actinolite	2.9	0.1	F		3.29E-03	29.0	Regulated
J6 : I3	Actinolite	8.3	0.1	F		9.41E-03	83.0	Regulated
J6 : I3	Actinolite	1.5	0.12	F		2.45E-03	12.5	Regulated
J6 : I3	Actinolite	1.2	0.12	F		1.96E-03	10.0	Regulated
J6 : I3	Actinolite	8.5	0.25	F		6.02E-02	34.0	Regulated
J6 : I3	Non-asbestiform Actinolite	0.8	0.12	F		1.31E-03	6.7	Other
J6 : I3	Non-asbestiform Actinolite	1.2	0.25	F		8.50E-03	4.8	Other
J6 : I3	Actinolite	1.2	0.1	F		1.36E-03	12.0	Regulated
J6 : I3	Actinolite	0.6	0.12	F		9.79E-04	5.0	Regulated