



## **Asbestos & Lead Based Paint Assessment**

City of Spartanburg  
278 Arch Street  
Spartanburg, South Carolina

### ***Prepared for:***

The City of Spartanburg  
440 South Church St., Suite B  
Spartanburg, SC 29306-5234

### ***Prepared by:***

Apex Environmental Management, Inc.  
7 Winchester Court  
Mauldin, South Carolina 29662

Project Number: 0815-163

February 3, 2017





Apex Project Number 0815-163

February 3, 2017

7 Winchester Court  
Mauldin, SC 29662  
864.404.3210 office  
864.404.3213 fax  
[www.apex-ehs.com](http://www.apex-ehs.com)

Mr. Martin Livingston  
City of Spartanburg  
440 South Church Street, Suite B  
Spartanburg, SC 29306-5234

Reference: Asbestos & Lead-Based Paint Assessment Services  
278 Arch Street  
Spartanburg, South Carolina

### SERVICES

Indoor Air Quality  
Mold Remediation  
Asbestos & Lead  
Industrial Hygiene  
Worker Health & Safety  
Mold Consulting  
Moisture Management Plans  
Safety Assessment  
Environmental Site Assessments  
Hazard Communication

Dear Mr. Livingston:

Apex Environmental Management, Inc. (Apex) is pleased to provide the results of our assessment services for the referenced property.

This report and the associated attachments summarize our evaluation of the conditions observed at the project site. The findings presented by Apex are based upon sampling performed in the subject building. There is a chance that undetected ACM may exist in the building between walls or in other areas that would only be exposed during demolition or structural renovations. Should material be discovered that could potentially contain asbestos during the demolition process, additional samples of the material should be collected by a licensed asbestos inspector and submitted to an accredited laboratory for analytical interpretation. Our recommendations are based on the guidelines presented in EPA and/or OSHA regulations.

Please note that this document is not a specification for asbestos removal. It does not contain means and methods for abatement. Quantities are estimates and contractors must verify amounts prior to bidding or removal. If you are planning an abatement project, please contact Apex to discuss the requirements. Use of this document without the express written consent of Apex is at the sole risk of the user and or/abatement contractor.

The conclusions and/or recommendations contained in this report are based on our understanding of the applicable standards at the time this report was prepared. No warranty, expressed or implied, is made. If you have any questions please feel free to contact us at (864) 404-3210.

Respectfully submitted,  
**APEX ENVIRONMENTAL MANAGEMENT, INC.**

A handwritten signature in blue ink, appearing to read 'Ben Oliver'.

Ben Oliver  
Project Manager

A handwritten signature in blue ink, appearing to read 'Tom Oliver'.

Tom Oliver  
Director of Operations

**ASBESTOS ASSESSMENT**  
**CITY OF SPARTANBURG**  
**278 ARCH STREET**  
**SPARTANBURG, SOUTH CAROLINA**

**APEX PROJECT NO. 0815-163**

**TABLE OF CONTENTS**

**SECTION**

- I Asbestos & Lead Evaluation Report
- II Asbestos & LBP Data Tables
- III Laboratory Analytical Results
- IV Photographic Log
- V SC DHEC Asbestos Inspector License

**SECTION I**

**Asbestos & Lead Evaluation Report**

<b>ASBESTOS/LEAD EVALUATION REPORT</b> <b>APEX PROJECT NUMBER: 0815-163</b>
--

Date:	2/3/2017	Page Number:	1 of 4
Client:	City of Spartanburg	Client Contact:	Mr. Martin Livingston
Client Address:	440 South Church St., Suite B Spartanburg, SC 29306	Client Phone Number:	(864) 580-5323
Project:	Asbestos and Lead Evaluation		
Property Address:	278 Arch Street Spartanburg, SC		
Assessor:	Nick Neerhof	Date of Assessment:	1/20/2017
Company:	Apex Environmental Management 7 Winchester Court Mauldin, SC 29662	Phone Number:	(864) 404-3210
Purpose of Assessment:	Demolition	Age of Structure:	Approximately 60 years
Building Type:	Residential	Number of Stories:	1
Foundation:	CMU block crawlspace	Approximate Square Footage	1,200 SF

**EXTERIOR BUILDING MATERIALS**

- Pitched wooden roof with shingles & felt on house and front porch.
- Shingle siding with felt layer.
- Wooden doors with caulk.
- Vinyl windows with caulk.
- Wooden siding.

**INTERIOR BUILDING MATERIALS**

- Multiple types & layers of vinyl floor with & with no mastics.
- Ceiling texture.
- Mastic beneath wooden wall paneling.
- Drywall with joint compound & tape.
- Plaster with finish.
- Plaster and drywall exist beneath wooden wall paneling.

## SCOPE OF THE SURVEY

The objectives of the asbestos and lead assessment included the following:

- Identification of suspect asbestos-containing material (ACM) and lead based paints (LBP) in readily observable locations. Limited demolition of building finishes was conducted.
- Asbestos survey with sample collection by a South Carolina accredited inspector.
- Suspect ACM analysis by polarized light microscopy (PLM) utilizing EMSL Analytical, Inc. (EMSL) as an NVLAP certified laboratory, their accreditation number is 200841-0.
- Transmission electron microscopy (TEM) analysis of non-friable organically bound materials suspected to contain asbestos and testing negatively by PLM analysis.
- Lead inspection by a lead inspector certified by the Environmental Protection Agency and licensed to conduct LBP surveys in South Carolina.
- In situ analysis of suspected lead based paints by X-ray fluorescence (XRF).
- Presenting the results in a report identifying confirmed ACMs and LBPs.

## METHODS

### Asbestos Containing Materials

In order to determine if the suspect materials observed during the visual survey contained asbestos, representative bulk samples were collected and placed in sealed packages. Forty-four (44) bulk samples were collected during the survey and submitted to EMSL in Charlotte, North Carolina for analysis using the EPA recommended method of Polarized Light Microscopy (PLM) coupled with dispersion staining (Method No. EPA 600/M4-82-020, Dec. 1982). EMSL participates in the National Voluntary Laboratory Accreditation Program (NVLAP). Their NVLAP accreditation number is 200841-0. EPA regulations require that multiple samples of each homogeneous material be collected for laboratory analysis. In accordance with South Carolina Regulation 61-86.1, non-friable organically bound materials that are reported to be non-asbestos containing by PLM analysis must also be analyzed by Transmission Electron Microscopy (TEM). Thirty-one (31) samples were analyzed using TEM.

### Lead-Based Paint

Lead painted surfaces were analyzed in place using X-ray fluorescence. Painted surfaces were selected based on color of topcoat, underlying layers and substrate on which it was painted.

## RESULTS

### Asbestos Containing Materials

The EPA defines an asbestos-containing material (ACM) as a material containing more than 1% asbestos. OSHA defines ACM as a material containing any amount of asbestos. Materials were analyzed to contain less than 1% asbestos and it should be noted that OSHA asbestos regulations will apply. The *Asbestos PLM & TEM Data Table* is provided in Appendix II.

Suspect asbestos containing materials that were identified to be asbestos containing include:

- Approximately 1,500 SF of drywall system throughout.
- Approximately 115 SF of vinyl floor (5<sup>th</sup> layer) with mastic (4<sup>th</sup> layer) in the kitchen.
- Approximately 105 SF of gold and brown pattern vinyl floor in the laundry room and bathroom (2<sup>nd</sup> layer).

### Lead Based Paint

OSHA does not recognize a threshold level of lead for definition purposes, only the presence or absence of lead. The current OSHA regulations recognize an airborne action level of thirty micrograms per cubic meter (30  $\mu\text{g}/\text{m}^3$ ) during an eight-hour workday and a permissible exposure level of fifty micrograms per cubic meter (50  $\mu\text{g}/\text{m}^3$ ) for employees.

Currently, SCDHEC defines LBP as paint containing in excess of, or equal to, 1.0 mg/cm<sup>3</sup>. The laboratory analytical results and chain-of-custody are included in the Lead Analysis Reports in Appendix A. The approximate locations of the paint samples collected and analytical results are presented in the Tables included with this report .

Several surfaces in the building tested positive for lead in excess of the regulatory definition:

### Exterior

- White metal door frames.
- White metal window frames.
- White wooden siding.
- White wooden porch headers/trim.

### Interior

- Tan bead board walls.

## **RECOMMENDATIONS AND DISCUSSION**

### Asbestos Containing Materials

If the above referenced asbestos materials are to be disturbed by renovations or demolition, the asbestos must be removed in accordance with EPA, State of South Carolina and OSHA asbestos regulations. The State of South Carolina, Department of Health and Environmental Control (DHEC) has specific regulations that must be adhered to during asbestos removal/abatement projects.

Apex recommends the following:

1. Abate the asbestos containing materials in the structure prior to renovation or demolition.

2. Follow applicable asbestos regulations during renovation or demolition of the structure. You should be aware that stringent requirements are imposed upon anyone renovating or demolishing a structure in which ACM will be disturbed. This work must be performed in accordance with OSHA asbestos regulations, 29 CFR 1910 & 1926, and NESHAP asbestos regulations 40 CFR 61, subpart M. South Carolina regulations require the accreditation of personnel who work in the asbestos field and notification and permitting fees for asbestos removal projects. There is a 10 working day notification period required prior to abatement of asbestos in a facility. Failure to take proper precautions and actions to protect human health and the environment can result in penalties, danger to personnel, and construction delays.

### Lead Based Paint

Currently the South Carolina Department of Health and Environmental Control (SCDHEC) define LBP as paint containing greater than 1.0 milligrams per square centimeter ( $\text{mg}/\text{cm}^2$ ) lead or in excess of, or equal to, 0.5 percent lead. Building materials identified as being painted with LBP should be segregated from the other building materials and recycled or disposed of in a municipal lined landfill. The removed wastes would need to be containerized and further tested by Toxic Characteristic Leaching procedures (TCLP) to determine if the waste is classified as hazardous. The remaining building materials that are not painted with LBP may be disposed of in a construction and demolition landfill. However, the landfills should be contacted to determine their specific disposal requirements.

Occupational Safety and Health Administration Lead Regulations apply to actions initiated on lead containing materials. This regulation applies to lead concentrations greater than the analytical limit of detection. This regulation sets exposure levels on airborne lead and does not reference the percent lead in paint. Therefore, initial personal air monitoring should be conducted on workers performing work on surfaces which have a lead concentration of  $0.1 \text{ mg}/\text{cm}^2$  or above to satisfy the OSHA requirements. If a baseline exposure lower than the OSHA Action Level of 30 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) is established, personal air monitoring may be terminated. The full OSHA lead standard should be referenced for compliance.

**A copy of this report must be submitted to SCDHEC at least ten (10) working days prior to demolition when applying for a demolition permit.**



**SECTION II**

**Asbestos & LBP Data Tables**

# ASBESTOS SURVEY FIELD DATA SHEET

Project Name: COS 278 Arch Street ACM/LBP

Sampled By: Nick Neerhof

Project Location: 278 Arch Street., Spartanburg, SC

Project Manager: Tom Oliver

Project Number: 0815-163

Date: 1/20/2017

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
1	House and front porch roofs	Roof shingles (4) & felt (3)	PLM - NAD	Non-Friable	Good	1,500 SF
2			TEM - NAD			
3			TEM - NAD			
4	Exterior siding	Composite siding with shingle and felt layers	PLM - NAD	Non-Friable	Good	1,150 SF
5			TEM - NAD			
6			TEM - NAD			
7	Vinyl windows	Window caulk	PLM - NAD	Non-Friable	Good	8 EA
8			TEM - NAD			
9			TEM - NAD			
10	Exterior doors (front & side doors)	Door caulk	PLM - NAD	Non-Friable	Good	2 EA
11			TEM - NAD			
12			TEM - NAD			
13	<b>Throughout walls and ceilings</b>	<b>Drywall with joint compound and tape</b>	<b>PLM - 3% Chrysotile</b>	<b>Friable</b>	<b>Good</b>	<b>1,500 SF</b>
14						
15						
16						
17						
18	Living room, front right bedroom and bathroom	Plaster with finish	PLM - NAD	Friable	Good	675 SF
19						
20						
21	Bathroom and laundry room	Ceiling texture	PLM - NAD	Friable	Good	105 SF
22						
23						
24	Bathroom and laundry room	Wooden wall panel mastic	PLM - NAD	Non-Friable	Good	400 SF
25			TEM - NAD			
26			TEM - NAD			

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
27	Living room and front right bedroom	12"x12" beige speckled floor tile with mastic	PLM - NAD	Non-Friable	Good	425 SF
28			TEM - NAD			
29						
30	Middle left room and kitchen (top layer)	Tan slate pattern vinyl floor with mastic	PLM - NAD	Non-Friable	Good	215 SF
31			TEM - NAD			
32						
33	Middle left room (2nd layer under wood)	White floor tile and mastic under wood	PLM - NAD	Non-Friable	Good	180 SF
34			TEM - NAD			
35						
<b>36</b>	<b>Kitchen (multiple layers under wood)</b>	<b>Multiple layers of vinyl floor with no mastic &amp; floor tile with mastic and felt backing</b>	<b>PLM - NAD to 8% Chrysotile</b>	<b>Non-Friable</b>	<b>Good</b>	<b>115 SF</b>
<b>37</b>			<b>TEM - Fourth Mastic - NAD to 3.8% Chry</b>			
<b>38</b>						
39	Laundry room and bathroom (top layer)	12"x12" blue streaked floor tile with mastic	PLM - NAD	Non-Friable	Good	105 SF
40			TEM - NAD			
41						
<b>42</b>	<b>Laundry room and bathroom (2nd layer)</b>	<b>Gold / Brown pattern vinyl floor with mastic</b>	<b>PLM - Vinyl Floor - 10% Chrysotile</b>	<b>Non-Friable</b>	<b>Good</b>	<b>105 SF</b>
<b>43</b>						
<b>44</b>			TEM - Mastic - 0.73% Chrysotile			

NAD = No Asbestos Detected

LF = Linear Feet

EA = Each

Amos = Amosite

**Bold = Positive For Asbestos**

SF = Square Feet

Chry = Chrysotile

# FIELD DATA SHEET LBP ANALYSIS

Project Name: COS 278 Arch Street ACM/LBP

Sampled By: Tom Oliver

Project Location: 278 Arch Street Spartanburg SC

Project Manager: Tom Oliver

Project Number: 0815-163

Date: 1/20/2017

Sample No.	Sample Location	Component	Color	Substrate	Analytical Result (mg/m <sup>3</sup> )
1	Standardization Resolution				184.00
2	Calibration				1.11
3	Calibration				1.03
4	Calibration				1.21
5	Exterior	Foundation	Blue/Grey	CMU Block	0.04
6	Exterior	Porch Floor	Blue	Concrete	0.07
7	Exterior	Porch Column	White	Wood	0.00
8	Exterior	Hand Rail	White	Wood	0.00
9	Exterior	Foundation	Blue/Grey	Brick	0.03
<b>10</b>	<b>Exterior</b>	<b>Door Frame</b>	<b>White</b>	<b>Metal</b>	<b>5.00</b>
11	Exterior	Porch Ceiling	White	Wood	0.00
<b>12</b>	<b>Exterior</b>	<b>Window Frame</b>	<b>White</b>	<b>Metal</b>	<b>2.41</b>
13	Exterior	Window	White	Vinyl	0.00
<b>14</b>	<b>Exterior</b>	<b>Siding</b>	<b>White</b>	<b>Wood</b>	<b>4.52</b>
15	Exterior	Door	White	Wood	0.00
<b>16</b>	<b>Exterior</b>	<b>Porch Header/Trim</b>	<b>White</b>	<b>Wood</b>	<b>3.33</b>
17	Exterior	Soffit/Fascia	White	Wood	0.00
18	Exterior	Siding	White	Wood	0.00
19	Interior	Door Frame	White	Wood	0.15
20	Interior	Door	White	Wood	0.00
21	Interior	Window Frame	White	Wood	0.69
22	Interior	Window	White	Vinyl	0.00
23	Interior	Base Board	White	Wood	Insufficient test Time
24	Interior	Base Board	White	Wood	0.12
25	Interior	Wall Panel	Brown	Wood	0.32
26	Interior	Wall	Turquoise	Plaster	0.05

**FIELD DATA SHEET  
LBP ANALYSIS**

Project Name: COS 278 Arch Street ACM/LBP

Sampled By: Tom Oliver

Project Location: 278 Arch Street Spartanburg SC

Project Manager: Tom Oliver

Project Number: 0815-163

Date: 1/20/2017

Sample No.	Sample Location	Component	Color	Substrate	Analytical Result (mg/m <sup>3</sup> )
27	Interior	Wall	Blue	Plaster	0.02
28	Interior	Wall	White	Drywall	0.00
29	Interior	Fire Place Mantle	White	Wood	0.00
30	Interior	Wall	Turquoise	Drywall	0.00
31	Interior	Cabinets	Brown	Wood	0.03
32	Interior	Wall	White	Wood	0.06
<b>33</b>	<b>Interior</b>	<b>Wall</b>	<b>Tan</b>	<b>Bead Board</b>	<b>2.43</b>
34	Interior	Wall Panel	Brown	Wood	0.05
35	Interior	Wall	Green	Drywall	0.00
36	Interior	Vanity	White	Wood	0.00
37	Interior	Wall	Light Blue	Plaster	0.17
38	Interior	Toilet	White	Porcelain	0.03
39	Interior	Ceiling	White	Drywall	0.00

**Bold is Lead Based Paint**

**SECTION III**

**Laboratory Analytical Results**



# EMSL Analytical, Inc.

376 Crompton Street Charlotte, NC 28273

Tel/Fax: (704) 525-2205 / (704) 525-2382

<http://www.EMSL.com> / [charlottelab@emsl.com](mailto:charlottelab@emsl.com)

EMSL Order: 411700457

Customer ID: AXEM25

Customer PO:

Project ID:

**Attention:** Nicholas Neerhof  
Apex Environmental Management  
7 Winchester Court  
Mauldin, SC 29662

**Phone:** (864) 640-5274

**Fax:**

**Received Date:** 01/23/2017 9:20 AM

**Analysis Date:** 01/25/2017 - 01/26/2017

**Collected Date:** 01/20/2017

**Project:** 278 Arch St.

## Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
1-Shingle 1 411700457-0001	House and Front Porch Roofs - Roof Shingle (4 Layers) and Felt (3 Layers)	Gray/Black Fibrous Homogeneous	10% Glass	8% Quartz 5% Ca Carbonate 77% Non-fibrous (Other)	None Detected
1-Shingle 2 411700457-0001A	House and Front Porch Roofs - Roof Shingle (4 Layers) and Felt (3 Layers)	Gray/Black Fibrous Homogeneous	10% Glass	10% Quartz 80% Non-fibrous (Other)	None Detected
1-Shingle 3 411700457-0001B	House and Front Porch Roofs - Roof Shingle (4 Layers) and Felt (3 Layers)	Gray/Black Fibrous Homogeneous	12% Glass	10% Quartz 5% Ca Carbonate 73% Non-fibrous (Other)	None Detected
1-Shingle 4 411700457-0001C	House and Front Porch Roofs - Roof Shingle (4 Layers) and Felt (3 Layers)	Gray/Black Fibrous Homogeneous	8% Glass	8% Quartz 5% Ca Carbonate 79% Non-fibrous (Other)	None Detected
1-Felt 1 411700457-0001D	House and Front Porch Roofs - Roof Shingle (4 Layers) and Felt (3 Layers)	Black Fibrous Homogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected
1-Felt 2 411700457-0001E	House and Front Porch Roofs - Roof Shingle (4 Layers) and Felt (3 Layers)	Black Fibrous Homogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected
1-Felt 3 411700457-0001F	House and Front Porch Roofs - Roof Shingle (4 Layers) and Felt (3 Layers)	Black Fibrous Homogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected
2-Shingle 1 411700457-0002	House and Front Porch Roofs - Roof Shingle (4 Layers) and Felt (3 Layers)	Gray/Black Fibrous Homogeneous	10% Glass	8% Quartz 8% Ca Carbonate 74% Non-fibrous (Other)	None Detected
2-Shingle 2 411700457-0002A	House and Front Porch Roofs - Roof Shingle (4 Layers) and Felt (3 Layers)	Gray/Black Fibrous Homogeneous	8% Glass	5% Quartz 10% Ca Carbonate 77% Non-fibrous (Other)	None Detected
2-Shingle 3 411700457-0002B	House and Front Porch Roofs - Roof Shingle (4 Layers) and Felt (3 Layers)	Gray/Black Fibrous Homogeneous	8% Glass	5% Quartz 10% Ca Carbonate 77% Non-fibrous (Other)	None Detected
2-Shingle 4 411700457-0002C	House and Front Porch Roofs - Roof Shingle (4 Layers) and Felt (3 Layers)	Gray/Black Fibrous Homogeneous	8% Glass	5% Quartz 8% Ca Carbonate 79% Non-fibrous (Other)	None Detected
2-Felt 1 411700457-0002D	House and Front Porch Roofs - Roof Shingle (4 Layers) and Felt (3 Layers)	Black Fibrous Homogeneous	65% Cellulose	35% Non-fibrous (Other)	None Detected

Initial report from: 01/26/2017 14:45:31



# EMSL Analytical, Inc.

376 Crompton Street Charlotte, NC 28273

Tel/Fax: (704) 525-2205 / (704) 525-2382

<http://www.EMSL.com> / [charlottelab@emsl.com](mailto:charlottelab@emsl.com)

EMSL Order: 411700457

Customer ID: AXEM25

Customer PO:

Project ID:

## Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
2-Felt 2 411700457-0002E	House and Front Porch Roofs - Roof Shingle (4 Layers) and Felt (3 Layers)	Black Fibrous Homogeneous	65% Cellulose	35% Non-fibrous (Other)	None Detected
2-Felt 3 411700457-0002F	House and Front Porch Roofs - Roof Shingle (4 Layers) and Felt (3 Layers)	Black Fibrous Homogeneous	65% Cellulose	35% Non-fibrous (Other)	None Detected
4-Siding 411700457-0003	Siding - Composite Siding with Shingles and Felt	Gray/Black/Green Non-Fibrous Homogeneous	25% Cellulose	5% Quartz 70% Non-fibrous (Other)	None Detected
4-Insulation 411700457-0003A	Siding - Composite Siding with Shingles and Felt	Brown Fibrous Homogeneous	100% Cellulose		None Detected
4-Felt 411700457-0003B	Siding - Composite Siding with Shingles and Felt	Black Fibrous Homogeneous	75% Cellulose	25% Non-fibrous (Other)	None Detected
4-Silver Paint 411700457-0003C	Siding - Composite Siding with Shingles and Felt	Silver Non-Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
5-Siding 411700457-0004	Siding - Composite Siding with Shingles and Felt	Gray/Black Non-Fibrous Homogeneous		5% Quartz 25% Ca Carbonate 70% Non-fibrous (Other)	None Detected
5-Insulation 411700457-0004A	Siding - Composite Siding with Shingles and Felt	Brown Fibrous Homogeneous	100% Cellulose		None Detected
5-Felt 411700457-0004B	Siding - Composite Siding with Shingles and Felt	Black Fibrous Homogeneous	65% Cellulose	35% Non-fibrous (Other)	None Detected
5-Silver Paint 411700457-0004C	Siding - Composite Siding with Shingles and Felt	Silver Non-Fibrous Homogeneous	3% Cellulose	97% Non-fibrous (Other)	None Detected
6-Insulation 411700457-0004D	Siding - Composite Siding with Shingles and Felt	Brown Fibrous Homogeneous	100% Cellulose		None Detected
7 411700457-0005	Vinyl Windows - Window Caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
8 411700457-0006	Vinyl Windows - Window Caulk	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
10 411700457-0007	Front and Side Doors - Door Caulk	Gray/White Non-Fibrous Homogeneous		40% Ca Carbonate 60% Non-fibrous (Other)	None Detected
11 411700457-0008	Front and Side Doors - Door Caulk	Gray/White Non-Fibrous Homogeneous		35% Ca Carbonate 65% Non-fibrous (Other)	None Detected
13-Drywall 411700457-0009	Throughout Walls and Ceilings - Drywall with Joint Compound and Tape	Brown/Gray Fibrous Homogeneous	8% Cellulose	92% Non-fibrous (Other)	None Detected
13-Joint Compound 411700457-0009A	Throughout Walls and Ceilings - Drywall with Joint Compound and Tape	Tan Non-Fibrous Homogeneous		20% Ca Carbonate 77% Non-fibrous (Other)	3% Chrysotile

Initial report from: 01/26/2017 14:45:31





# EMSL Analytical, Inc.

376 Crompton Street Charlotte, NC 28273

Tel/Fax: (704) 525-2205 / (704) 525-2382

<http://www.EMSL.com> / [charlottelab@emsl.com](mailto:charlottelab@emsl.com)

**EMSL Order:** 411700457  
**Customer ID:** AXEM25  
**Customer PO:**  
**Project ID:**

## Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
13-Tape <small>411700457-0009B</small>	Throughout Walls and Ceilings - Drywall with Joint Compound and Tape	Tan Fibrous Homogeneous	100% Cellulose		None Detected
14-Drywall <small>411700457-0010</small>	Throughout Walls and Ceilings - Drywall with Joint Compound and Tape	Brown/Gray Fibrous Homogeneous	8% Cellulose	92% Non-fibrous (Other)	None Detected
14-Joint Compound <small>411700457-0010A</small>	Throughout Walls and Ceilings - Drywall with Joint Compound and Tape				Positive Stop (Not Analyzed)
14-Tape <small>411700457-0010B</small>	Throughout Walls and Ceilings - Drywall with Joint Compound and Tape	Tan Fibrous Homogeneous	100% Cellulose		None Detected
15-Drywall <small>411700457-0011</small>	Throughout Walls and Ceilings - Drywall with Joint Compound and Tape	Brown/Gray Fibrous Homogeneous	8% Cellulose	92% Non-fibrous (Other)	None Detected
15-Joint Compound <small>411700457-0011A</small>	Throughout Walls and Ceilings - Drywall with Joint Compound and Tape				Positive Stop (Not Analyzed)
15-Tape <small>411700457-0011B</small>	Throughout Walls and Ceilings - Drywall with Joint Compound and Tape	Tan Fibrous Homogeneous	100% Cellulose		None Detected
16-Drywall <small>411700457-0012</small>	Throughout Walls and Ceilings - Drywall with Joint Compound and Tape	Gray Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
16-Joint Compound <small>411700457-0012A</small>	Throughout Walls and Ceilings - Drywall with Joint Compound and Tape				Positive Stop (Not Analyzed)
16-Tape <small>411700457-0012B</small>	Throughout Walls and Ceilings - Drywall with Joint Compound and Tape	Tan Fibrous Homogeneous	100% Cellulose		None Detected
17-Drywall <small>411700457-0013</small>	Throughout Walls and Ceilings - Drywall with Joint Compound and Tape	Gray Fibrous Homogeneous	8% Cellulose	92% Non-fibrous (Other)	None Detected
17-Joint Compound <small>411700457-0013A</small>	Throughout Walls and Ceilings - Drywall with Joint Compound and Tape				Positive Stop (Not Analyzed)
17-Tape <small>411700457-0013B</small>	Throughout Walls and Ceilings - Drywall with Joint Compound and Tape	Tan Fibrous Homogeneous	100% Cellulose		None Detected
18 <small>411700457-0014</small>	Living Room, Front Right Bedroom and Bathroom - Plaster with Finish	Beige Fibrous Homogeneous	1% Cellulose 1% Synthetic	40% Quartz 58% Non-fibrous (Other)	None Detected

Initial report from: 01/26/2017 14:45:31



# EMSL Analytical, Inc.

376 Crompton Street Charlotte, NC 28273

Tel/Fax: (704) 525-2205 / (704) 525-2382

<http://www.EMSL.com/charlottelab@emsl.com>

EMSL Order: 411700457

Customer ID: AXEM25

Customer PO:

Project ID:

## Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
19-Skim Coat 411700457-0015	Living Room, Front Right Bedroom and Bathroom - Plaster with Finish	White Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
19-Rough Coat 411700457-0015A	Living Room, Front Right Bedroom and Bathroom - Plaster with Finish	Beige Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
20 411700457-0016	Living Room, Front Right Bedroom and Bathroom - Plaster with Finish	Beige Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
21 411700457-0017	Bathroom and Laundry Room - Ceiling Texture	White Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
22 411700457-0018	Bathroom and Laundry Room - Ceiling Texture	White Non-Fibrous Homogeneous		15% Ca Carbonate 85% Non-fibrous (Other)	None Detected
23 411700457-0019	Bathroom and Laundry Room - Ceiling Texture	White Non-Fibrous Homogeneous		20% Ca Carbonate 80% Non-fibrous (Other)	None Detected
24 411700457-0020	Bathroom and Laundry Room - Wooden Wall Panel Mastic	Tan Non-Fibrous Homogeneous	3% Cellulose	97% Non-fibrous (Other)	None Detected
25 411700457-0021	Bathroom and Laundry Room - Wooden Wall Panel Mastic	Tan Non-Fibrous Homogeneous	3% Cellulose	97% Non-fibrous (Other)	None Detected
27-Floor Tile 411700457-0022	Living Room and Front Right Bedroom - 12"x12" Beige Speckled Floor Tile with Mastic	Brown/Gray/Beige Non-Fibrous Homogeneous		35% Ca Carbonate 65% Non-fibrous (Other)	None Detected
27-Mastic 411700457-0022A	Living Room and Front Right Bedroom - 12"x12" Beige Speckled Floor Tile with Mastic	Tan Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected
28-Floor Tile 411700457-0023	Living Room and Front Right Bedroom - 12"x12" Beige Speckled Floor Tile with Mastic	Brown/Gray/Beige Non-Fibrous Homogeneous		35% Ca Carbonate 65% Non-fibrous (Other)	None Detected
28-Mastic 411700457-0023A	Living Room and Front Right Bedroom - 12"x12" Beige Speckled Floor Tile with Mastic	Tan Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
30-Flooring 411700457-0024	Middle Left Room and Top Layer of Kitchen - Tan Slate Pattern Vinyl Flooring with Mastic	Beige Fibrous Homogeneous	10% Cellulose 2% Glass	15% Ca Carbonate 73% Non-fibrous (Other)	None Detected
30-Mastic 411700457-0024A	Middle Left Room and Top Layer of Kitchen - Tan Slate Pattern Vinyl Flooring with Mastic	Beige Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected

Initial report from: 01/26/2017 14:45:31



# EMSL Analytical, Inc.

376 Crompton Street Charlotte, NC 28273

Tel/Fax: (704) 525-2205 / (704) 525-2382

<http://www.EMSL.com> / [charlottelab@emsl.com](mailto:charlottelab@emsl.com)

EMSL Order: 411700457

Customer ID: AXEM25

Customer PO:

Project ID:

## Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
31-Flooring 411700457-0025	Middle Left Room and Top Layer of Kitchen - Tan Slate Pattern Vinyl Flooring with Mastic	Beige Fibrous Homogeneous	10% Cellulose 1% Glass	15% Ca Carbonate 74% Non-fibrous (Other)	None Detected
31-Mastic 411700457-0025A	Middle Left Room and Top Layer of Kitchen - Tan Slate Pattern Vinyl Flooring with Mastic	Beige Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
33-Top Mastic 411700457-0026	Middle Left Room (2nd Layer under Wood) - White Floor Tile with Mastic	Tan Non-Fibrous Homogeneous	1% Cellulose	5% Ca Carbonate 94% Non-fibrous (Other)	None Detected
33-Floor Tile 411700457-0026A	Middle Left Room (2nd Layer under Wood) - White Floor Tile with Mastic	White Non-Fibrous Homogeneous		35% Ca Carbonate 65% Non-fibrous (Other)	None Detected
33-Bottom Mastic 411700457-0026B	Middle Left Room (2nd Layer under Wood) - White Floor Tile with Mastic	Tan Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected
34-Top Mastic 411700457-0027	Middle Left Room (2nd Layer under Wood) - White Floor Tile with Mastic	Tan Non-Fibrous Homogeneous	2% Cellulose	5% Ca Carbonate 93% Non-fibrous (Other)	None Detected
34-Floor Tile 411700457-0027A	Middle Left Room (2nd Layer under Wood) - White Floor Tile with Mastic	White Non-Fibrous Homogeneous		35% Ca Carbonate 65% Non-fibrous (Other)	None Detected
34-Bottom Mastic 411700457-0027B	Middle Left Room (2nd Layer under Wood) - White Floor Tile with Mastic	Tan Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
36-Flooring 1 411700457-0028	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing	Brown/Tan Fibrous Homogeneous	25% Cellulose	75% Non-fibrous (Other)	None Detected
36-Flooring 2 411700457-0028A	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing	Brown/White Fibrous Homogeneous	4% Cellulose	96% Non-fibrous (Other)	None Detected
36-Flooring 3 411700457-0028B	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing	Beige Fibrous Homogeneous	20% Cellulose 3% Synthetic	5% Ca Carbonate 72% Non-fibrous (Other)	None Detected

Initial report from: 01/26/2017 14:45:31



# EMSL Analytical, Inc.

376 Crompton Street Charlotte, NC 28273

Tel/Fax: (704) 525-2205 / (704) 525-2382

<http://www.EMSL.com> / [charlottelab@emsl.com](mailto:charlottelab@emsl.com)

**EMSL Order:** 411700457  
**Customer ID:** AXEM25  
**Customer PO:**  
**Project ID:**

## Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
36-Flooring 4  411700457-0028C	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing	White/Beige Fibrous Homogeneous	25% Cellulose 1% Synthetic	74% Non-fibrous (Other)	None Detected
36-Flooring 5  411700457-0028D	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing	Brown/Tan/Beige Fibrous Homogeneous		92% Non-fibrous (Other)	8% Chrysotile
36-Mastic  411700457-0028E	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing	Tan Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
36-Flooring 6  411700457-0028F	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing	Red/Black Fibrous Homogeneous	40% Cellulose	8% Ca Carbonate 52% Non-fibrous (Other)	None Detected
36-Floor Tile  411700457-0028G	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing	Gray Non-Fibrous Homogeneous		30% Ca Carbonate 70% Non-fibrous (Other)	None Detected
36-Mastic  411700457-0028H	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing	Tan Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
37-Flooring 1  411700457-0029	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing	Brown/Tan Fibrous Homogeneous	25% Cellulose	75% Non-fibrous (Other)	None Detected

Initial report from: 01/26/2017 14:45:31



# EMSL Analytical, Inc.

376 Crompton Street Charlotte, NC 28273

Tel/Fax: (704) 525-2205 / (704) 525-2382

<http://www.EMSL.com> / [charlottelab@emsl.com](mailto:charlottelab@emsl.com)

**EMSL Order:** 411700457  
**Customer ID:** AXEM25  
**Customer PO:**  
**Project ID:**

## Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
37-Flooring 2  411700457-0029A	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing	Brown/White Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
37-Flooring 3  411700457-0029B	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing	Beige Non-Fibrous Homogeneous	25% Cellulose	5% Ca Carbonate 70% Non-fibrous (Other)	None Detected
37-Flooring 4  411700457-0029C	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing	White/Beige Fibrous Homogeneous	25% Cellulose 2% Synthetic	73% Non-fibrous (Other)	None Detected
37-Flooring 5  411700457-0029D	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing				Positive Stop (Not Analyzed)
37-Mastic  411700457-0029E	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing	Tan Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
37-Flooring 6  411700457-0029F	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing	Red/Black Fibrous Homogeneous	40% Cellulose	8% Ca Carbonate 52% Non-fibrous (Other)	None Detected
37-Floor Tile  411700457-0029G	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing	Gray Non-Fibrous Homogeneous		35% Ca Carbonate 65% Non-fibrous (Other)	None Detected

Initial report from: 01/26/2017 14:45:31



# EMSL Analytical, Inc.

376 Crompton Street Charlotte, NC 28273

Tel/Fax: (704) 525-2205 / (704) 525-2382

<http://www.EMSL.com> / [charlottelab@emsl.com](mailto:charlottelab@emsl.com)

**EMSL Order:** 411700457  
**Customer ID:** AXEM25  
**Customer PO:**  
**Project ID:**

## Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
37-Mastic <i>411700457-0029H</i>	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing	Tan Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
39-Floor Tile <i>411700457-0030</i>	Laundry Room and Top Layer of Bathroom - 12"x12" Blue Speckled Floor Tile with Mastic	Gray Non-Fibrous Homogeneous		40% Ca Carbonate 60% Non-fibrous (Other)	None Detected
39-Mastic <i>411700457-0030A</i>	Laundry Room and Top Layer of Bathroom - 12"x12" Blue Speckled Floor Tile with Mastic	Tan Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected
40-Floor Tile <i>411700457-0031</i>	Laundry Room and Top Layer of Bathroom - 12"x12" Blue Speckled Floor Tile with Mastic	Gray Non-Fibrous Homogeneous		35% Ca Carbonate 65% Non-fibrous (Other)	None Detected
40-Mastic <i>411700457-0031A</i>	Laundry Room and Top Layer of Bathroom - 12"x12" Blue Speckled Floor Tile with Mastic	Tan Non-Fibrous Homogeneous	3% Cellulose	97% Non-fibrous (Other)	None Detected
42-Flooring <i>411700457-0032</i>	Laundry Room and 2nd Layer of Bathroom - Gold/Brown Pattern Vinyl Floor with Mastic	Tan Fibrous Homogeneous	4% Cellulose	86% Non-fibrous (Other)	10% Chrysotile
42-Mastic <i>411700457-0032A</i>	Laundry Room and 2nd Layer of Bathroom - Gold/Brown Pattern Vinyl Floor with Mastic	Gray/Tan Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected
43-Flooring <i>411700457-0033</i>	Laundry Room and 2nd Layer of Bathroom - Gold/Brown Pattern Vinyl Floor with Mastic				Positive Stop (Not Analyzed)
43-Mastic <i>411700457-0033A</i>	Laundry Room and 2nd Layer of Bathroom - Gold/Brown Pattern Vinyl Floor with Mastic	Tan Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected

Initial report from: 01/26/2017 14:45:31



# EMSL Analytical, Inc.

376 Crompton Street Charlotte, NC 28273

Tel/Fax: (704) 525-2205 / (704) 525-2382

<http://www.EMSL.com> / [charlottelab@emsl.com](mailto:charlottelab@emsl.com)

EMSL Order: 411700457

Customer ID: AXEM25

Customer PO:

Project ID:

Analyst(s)

*Aaron Hartley (48)*

*Lyterra Barrow (37)*

Lee Plumley, Laboratory Manager  
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported 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 by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

Samples analyzed by EMSL Analytical, Inc. Charlotte, NC NVLAP Lab Code 200841-0, VA 3333 00312

Initial report from: 01/26/2017 14:45:31



# EMSL Analytical, Inc.

376 Crompton Street Charlotte, NC 28273  
Tel/Fax: (704) 525-2205 / (704) 525-2382  
<http://www.EMSL.com> / [charlottelab@emsl.com](mailto:charlottelab@emsl.com)

**EMSL Order:** 411700457  
**Customer ID:** AXEM25  
**Customer PO:**  
**Project ID:**

**Attention:** Nicholas Neerhof  
Apex Environmental Management  
7 Winchester Court  
Mauldin, SC 29662  
**Phone:** (864) 640-5274  
**Fax:**  
**Received Date:** 01/23/2017 9:20 AM  
**Analysis Date:** 01/31/2017  
**Collected Date:** 01/20/2017  
**Project:** 278 Arch St.

## Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
3-Shingle 1 411700457-0034	House and Front Porch Roofs - Roof Shingle (4 Layers) and Felt (3 Layers)	Gray/Black Fibrous Heterogeneous	100	None	No Asbestos Detected
3-Shingle 2 411700457-0035	House and Front Porch Roofs - Roof Shingle (4 Layers) and Felt (3 Layers)	Gray/Black Fibrous Heterogeneous	100	None	No Asbestos Detected
3-Shingle 3 411700457-0036	House and Front Porch Roofs - Roof Shingle (4 Layers) and Felt (3 Layers)	Gray/Black Fibrous Heterogeneous	100	None	No Asbestos Detected
3-Shingle 4 411700457-0037	House and Front Porch Roofs - Roof Shingle (4 Layers) and Felt (3 Layers)	Gray/Black Fibrous Heterogeneous	100	None	No Asbestos Detected
3-Felt 1 411700457-0038	House and Front Porch Roofs - Roof Shingle (4 Layers) and Felt (3 Layers)	Black Fibrous Homogeneous	100	None	No Asbestos Detected
3-Felt 2 411700457-0039	House and Front Porch Roofs - Roof Shingle (4 Layers) and Felt (3 Layers)	Black Fibrous Homogeneous	100	None	No Asbestos Detected
3-Felt 3 411700457-0040	House and Front Porch Roofs - Roof Shingle (4 Layers) and Felt (3 Layers)	Black Fibrous Homogeneous	100	None	No Asbestos Detected
6-Siding 411700457-0041	Siding - Composite Siding with Shingles and Felt	White/Black Fibrous Heterogeneous	100	None	No Asbestos Detected
6-Felt 411700457-0042	Siding - Composite Siding with Shingles and Felt	Black Fibrous Homogeneous	100	None	No Asbestos Detected
6-Silver Paint 411700457-0043	Siding - Composite Siding with Shingles and Felt	Silver Non-Fibrous Homogeneous	100	None	No Asbestos Detected
9 411700457-0044	Vinyl Windows - Window Caulk	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
12 411700457-0045	Front and Side Doors - Door Caulk	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected

This laboratory is not responsible for % asbestos in total sample when the residue only is submitted for analysis. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

Samples analyzed by EMSL Analytical, Inc. Charlotte, NC

Initial report from: 01/31/2017 13:50:53





# EMSL Analytical, Inc.

376 Crompton Street Charlotte, NC 28273  
Tel/Fax: (704) 525-2205 / (704) 525-2382  
<http://www.EMSL.com> / [charlottelab@emsl.com](mailto:charlottelab@emsl.com)

**EMSL Order:** 411700457  
**Customer ID:** AXEM25  
**Customer PO:**  
**Project ID:**

**Attention:** Nicholas Neerhof  
Apex Environmental Management  
7 Winchester Court  
Mauldin, SC 29662  
**Phone:** (864) 640-5274  
**Fax:**  
**Received Date:** 01/23/2017 9:20 AM  
**Analysis Date:** 01/31/2017  
**Collected Date:** 01/20/2017  
**Project:** 278 Arch St.

## Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
26 411700457-0046	Bathroom and Laundry Room - Wooden Wall Panel Mastic	Blue/Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
29-Floor Tile 411700457-0047	Living Room and Front Right Bedroom - 12"x12" Beige Speckled Floor Tile with Mastic	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
29-Mastic 411700457-0048	Living Room and Front Right Bedroom - 12"x12" Beige Speckled Floor Tile with Mastic	Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
32-Flooring 411700457-0049	Middle Left Room and Top Layer of Kitchen - Tan Slate Pattern Vinyl Flooring with Mastic	Gray/Beige Fibrous Heterogeneous	100	None	No Asbestos Detected
32-Mastic 411700457-0050	Middle Left Room and Top Layer of Kitchen - Tan Slate Pattern Vinyl Flooring with Mastic	White/Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
35-Top Mastic 411700457-0051	Middle Left Room (2nd Layer under Wood) - White Floor Tile with Mastic	Beige/Clear Non-Fibrous Homogeneous	100	None	No Asbestos Detected
35-Floor Tile 411700457-0052	Middle Left Room (2nd Layer under Wood) - White Floor Tile with Mastic	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
35-Bottom Mastic 411700457-0053	Middle Left Room (2nd Layer under Wood) - White Floor Tile with Mastic	Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
38-Flooring 1 411700457-0054	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing	Brown/Black/Green Fibrous Heterogeneous	100	None	No Asbestos Detected
38-Flooring 2 411700457-0055	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing	Brown/Beige Non-Fibrous Heterogeneous	100	None	No Asbestos Detected

This laboratory is not responsible for % asbestos in total sample when the residue only is submitted for analysis. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

Samples analyzed by EMSL Analytical, Inc. Charlotte, NC

Initial report from: 01/31/2017 13:50:53



# EMSL Analytical, Inc.

376 Crompton Street Charlotte, NC 28273  
Tel/Fax: (704) 525-2205 / (704) 525-2382  
<http://www.EMSL.com> / [charlottelab@emsl.com](mailto:charlottelab@emsl.com)

**EMSL Order:** 411700457  
**Customer ID:** AXEM25  
**Customer PO:**  
**Project ID:**

**Attention:** Nicholas Neerhof  
Apex Environmental Management  
7 Winchester Court  
Mauldin, SC 29662  
**Phone:** (864) 640-5274  
**Fax:**  
**Received Date:** 01/23/2017 9:20 AM  
**Analysis Date:** 01/31/2017  
**Collected Date:** 01/20/2017  
**Project:** 278 Arch St.

## Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
38-Flooring 3 411700457-0056	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing	Gray/Tan/Black Fibrous Heterogeneous	100	None	No Asbestos Detected
38-Flooring 4 411700457-0057	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing	Tan/Black/Beige Fibrous Heterogeneous	100	None	No Asbestos Detected
38-Mastic 411700457-0058	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing	Brown Non-Fibrous Homogeneous	96.2	None	3.8% Chrysotile
38-Flooring 6 411700457-0059	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing	Red Non-Fibrous Homogeneous	100	None	No Asbestos Detected
38-Floor Tile 411700457-0060	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
38-Mastic 411700457-0061	Kitchen (Multiple Layers under Wood) - Multiple Layers of Vinyl Flooring with and without Mastics and Floor Tile with Mastic and Felt Backing	Brown/Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
41-Floor Tile 411700457-0062	Laundry Room and Top Layer of Bathroom - 12"x12" Blue Speckled Floor Tile with Mastic	Gray Non-Fibrous Homogeneous	100	None	No Asbestos Detected
41-Mastic 411700457-0063	Laundry Room and Top Layer of Bathroom - 12"x12" Blue Speckled Floor Tile with Mastic	Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected

This laboratory is not responsible for % asbestos in total sample when the residue only is submitted for analysis. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

Samples analyzed by EMSL Analytical, Inc. Charlotte, NC

Initial report from: 01/31/2017 13:50:53



# EMSL Analytical, Inc.

376 Crompton Street Charlotte, NC 28273  
Tel/Fax: (704) 525-2205 / (704) 525-2382  
<http://www.EMSL.com> / [charlottelab@emsl.com](mailto:charlottelab@emsl.com)

**EMSL Order:** 411700457  
**Customer ID:** AXEM25  
**Customer PO:**  
**Project ID:**

**Attention:** Nicholas Neerhof  
Apex Environmental Management  
7 Winchester Court  
Mauldin, SC 29662  
**Phone:** (864) 640-5274  
**Fax:**  
**Received Date:** 01/23/2017 9:20 AM  
**Analysis Date:** 01/31/2017  
**Collected Date:** 01/20/2017  
**Project:** 278 Arch St.

## Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
44-Mastic 411700457-0064	Laundry Room and 2nd Layer of Bathroom - Gold/Brown Pattern Vinyl Floor with Mastic	Yellow Non-Fibrous Homogeneous	99.3	None	0.73% Chrysotile

Analyst(s)

Derrick Young (31)

Lee Plumley, Laboratory Manager  
or other approved signatory

This laboratory is not responsible for % asbestos in total sample when the residue only is submitted for analysis. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

Samples analyzed by EMSL Analytical, Inc. Charlotte, NC

Initial report from: 01/31/2017 13:50:53





EMSL ANALYTICAL, INC.  
LABORATORY • PRODUCTS • TRAINING

### Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (Lab Use Only):

411700457

Charlotte, NC 28273  
PHONE: (704) 525-2205  
FAX: (704) 525-2382

Company : Apex Environmental Management		EMSL-Bill to: <input type="checkbox"/> Same <input checked="" type="checkbox"/> Different <small>If Bill to is Different note instructions in Comments**</small>	
Street: 7 Winchester Court		<i>Third Party Billing requires written authorization from third party</i>	
City: Mauldin	State/Province: SC	Zip/Postal Code: 29662	Country: US
Report To (Name): Nicholas Neerhof		Telephone #: 864-607-4159	
Email Address: nneerhof@apex-ehs.com		Fax #:	Purchase Order:
Project Name/Number: 278 Arch St.		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email <input type="checkbox"/> Mail	
U.S. State Samples Taken: SC		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	

**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.

<p><b>PLM - Bulk (reporting limit)</b></p> <p><input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (&lt;1%)</p> <p><input type="checkbox"/> PLM EPA NOB (&lt;1%)</p> <p>Point Count <input type="checkbox"/> 400 (&lt;0.25%) <input type="checkbox"/> 1000 (&lt;0.1%)</p> <p>Point Count w/Gravimetric <input type="checkbox"/> 400 (&lt;0.25%) <input type="checkbox"/> 1000 (&lt;0.1%)</p> <p><input type="checkbox"/> NIOSH 9002 (&lt;1%)</p> <p><input type="checkbox"/> NY ELAP Method 198.1 (friable in NY)</p> <p><input type="checkbox"/> NY ELAP Method 198.6 NOB (non-friable-NY)</p> <p><input type="checkbox"/> OSHA ID-191 Modified</p> <p><input type="checkbox"/> Standard Addition Method</p>	<p><b>TEM - Bulk</b></p> <p><input checked="" type="checkbox"/> TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1</p> <p><input type="checkbox"/> NY ELAP Method 198.4 (TEM)</p> <p><input type="checkbox"/> Chatfield Protocol (semi-quantitative)</p> <p><input type="checkbox"/> TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2</p> <p><input type="checkbox"/> TEM Qualitative via Filtration Prep Technique</p> <p><input type="checkbox"/> TEM Qualitative via Drop Mount Prep Technique</p> <p style="text-align: center;"><b>Other</b></p> <p><input type="checkbox"/></p>
---	---

Check For Positive Stop – Clearly Identify Homogenous Group    Date Sampled: 1-20-17

Samplers Name: Nicholas Neerhof    Samplers Signature:

Sample #	HA #	Sample Location	Material Description
1		House and front porch roofs	Roof shingle (4 layers) and felt (3 layers)
2			
3			
4		Siding	Composite siding with shingles and felt
5			
6			
7		Vinyl windows	Window caulk
8			
9			
10		Front and side doors	Door caulk

Client Sample # (s):	44	Total # of Samples:	44
Relinquished (Client):	Nicholas Neerhof	Date:	1-20-17
		Time:	4:40 pm
Received (Lab):		Date:	1/23/17
		Time:	9:20 AM EMSL
Comments/Special Instructions:			
Utilize positive stop.			
Bill To: Apex Environmental Management, 7 Winchester Court, Mauldin, SC, 29662, US			
Attention: Rebecca Shultz Phone: 864-404-3210 Email: rshultz@apex-ehs.com Purchase Order:			

7906 1190 9003





EMSL ANALYTICAL, INC.  
LABORATORY • PRODUCTS • TRAINING

### Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (Lab Use Only):

411700457

Charlotte, NC 28273  
PHONE: (704) 525-2205  
FAX: (704) 525-2382

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

Sample #	HA #	Sample Location	Material Description
11		Front and side doors	Door caulk
12			
13		Throughout walls and ceilings	Drywall with joint compound and tape
14			
15			
16			
17			
18		Living room, front right bedroom and bathroom	Plaster with finish
19			
20			
21		Bathroom and laundry room	Ceiling texture
22			
23			
24		Bathroom and laundry room	Wooden wall panel mastic
25			
26			
27		Living room and front right bedroom	12"x12" beige speckled floor tile with mastic
28			
29			
30		Middle left room and top layer of kitchen	Tan slate pattern vinyl flooring with mastic
31			
32			
33		Middle left room (2nd layer under wood)	White floor tile with mastic
34			

**\*Comments/Special Instructions:**

Utilize positive stop.  
Bill To: Apex Environmental Management, 7 Winchester Court, Mauldin, SC, 29662, US  
Attention: Rebecca Shultz Phone: 864-404-3210 Email: rshultz@apex-ehs.com Purchase Order:



EMSL ANALYTICAL, INC.  
LABORATORY • PRODUCTS • TRAINING

## Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (Lab Use Only):

411700457

EMSL Analytical, Inc.  
376 Crompton Street

Charlotte, NC 28273

PHONE: (704) 525-2205

FAX: (704) 525-2382

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

Sample #	HA #	Sample Location	Material Description
35		Middle left room (2nd layer under wood)	White floor tile with mastic
36		Kitchen (multiple layers under wood)	Multiple layers of <del>V</del> vinyl floorings with and without mastics and floor tile with mastic and felt backings
37			
38			
39		Laundry room and top layer of bathroom	12"x12" blue speckled floor tile with matic
40			
41			
42		Laundry room and 2nd layer of bathroom	Gold/brown pattern vinyl floor with mastic
43			
44			

**\*Comments/Special Instructions:**  
Utilize positive stop.  
Bill To: Apex Environmental Management, 7 Winchester Court, Mauldin, SC, 29662, US  
Attention: Rebecca Shultz Phone: 864-404-3210 Email: rshultz@apex-ehs.com Purchase Order:

**SECTION IV**  
**Photographic Log**



*Asbestos & Lead-Based Paint Assessment  
City of Spartanburg  
278 Arch Street  
Spartanburg, South Carolina*



Photo 1 -- 278 Arch Street in Spartanburg, SC.



Photo 2 – Roll shingle roof (4) & felt (3).



Photo 3 – Window caulk.



Photo 4 – Composite siding with shingle and felt.



Photo 5 – Door caulk.



Photo 6 – Drywall with joint compound and tape.





Photo 7 – Plaster with finish.



Photo 8 – Ceiling texture.



Photo 9 – Wall panel mastic.



Photo 10 – 12"x12" beige speckled floor tile with mastic.



Photo 11 – Tan slate pattern vinyl floor with mastic



Photo 12 – White floor tile and mastic under wood.





Photo 13 – Multiple layers of vinyl floor with no mastic, floor tile with mastic and felt backing in the kitchen



Photo 14 – 12"x12" blue streaked floor tile with mastic over gold / brown pattern vinyl floor with mastic in the laundry room and bathroom.

**SECTION V**

**SC DHEC Asbestos Inspector License**

**SCDHEC ISSUED**  
**Asbestos ID Card**

**Thomas H Oliver**

Expiration Date



**CONSULTBI BI-00680 01/20/17**  
**AIRSAMPLER AS-00202 02/02/17**

This card is nontransferable and considered invalid if loaned or given to another person for identification. This card will also be invalid if altered or defaced. This card is property of SCDHEC. It must be returned to the department if the holder's accreditation is revoked or if this card is invalidated. Any person performing regulated asbestos activities without current accreditation shall be subject to legal sanction. This card must be returned upon expiration and/or issuance of a new card.

**YOU MUST HAVE THIS IDENTIFICATION CARD WITH YOU ON THE JOB.**

For information or corrections contact: SCDHEC - Asbestos Section  
2600 Bull Street  
Columbia, SC 29201  
(803) 898-4289