



Asbestos & Lead Based Paint Assessment

City of Spartanburg
567 Farley Avenue
Spartanburg, South Carolina 29301

Prepared for:

The City of Spartanburg
440 South Church St., Suite B
Spartanburg, South Carolina 29306

Prepared by:

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

Project Number: 0519-118

July 22, 2019





Apex Project Number 0519-118

July 22, 2019

Mr. Jeff Tillerson
City of Spartanburg
440 South Church Street, Suite B
Spartanburg, SC 29306

Reference: Asbestos and Lead-Based Paint Assessment Services
567 Farley Avenue
Spartanburg, South Carolina 29301

Dear Mr. Tillerson:

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 'Tom Oliver', is written over a horizontal line.

Tom Oliver
Director of Operations

Appendices

7 Winchester Court
Mauldin, SC 29662
864.404.3210 office
864.404.3213 fax

802 E. Martintown Rd
N. Augusta, SC 29841
803.440-2790 office

www.apex-ehs.com

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

ASBESTOS AND LEAD BASED PAINT ASSESSMENT

**CITY OF SPARTANBURG
567 FARLEY AVENUE
SPARTANBURG, SOUTH CAROLINA 29301**

APEX PROJECT NO. 0519-118

TABLE OF CONTENTS

SECTION

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

SECTION I

Asbestos & Lead Evaluation Report

ASBESTOS EVALUATION REPORT
APEX PROJECT NUMBER: 0519-118

Date:	7/22/2019	Page Number:	1 of 4
Client:	City of Spartanburg	Client Contact:	Mr. Jeff Tillerson
Client Address:	440 South Church Street Suite B Spartanburg, SC 29306	Client Phone Number:	(864) 596-2911
Project:	Asbestos Evaluation and Lead Based Paint Assessment		
Property Address:	567 Farley Avenue Spartanburg, SC 29301		
Assessor:	Tom Oliver	Date of Assessment:	7/4/2019
Company:	Apex Environmental Management 7 Winchester Court Mauldin, SC 29662	Phone Number:	(864) 404-3210
Purpose of Assessment:	Demolition	Age of Structure:	Approximately 110 years
Building Type:	Residential	Number of Stories:	2 Including Finished Basement
Foundation:	Finished Basement	Approximate Square Footage:	1,325 SF

EXTERIOR BUILDING MATERIALS

- Pitched wooden framed roof with metal & sealant.
- Roof shingles & no felt on the front door awning.
- Wooden clapboard siding.
- Wooden windows with glazing & caulk on the glass panes.
- Vinyl windows with no caulk.
- Wooden window casings with caulk.
- Wooden doors with no caulk.

INTERIOR BUILDING MATERIALS

- Drywall with joint compound & tape walls & ceilings scattered throughout.
- Plaster with finish scattered throughout.
- Popcorn ceiling texture throughout the main level except in the bathroom & hallway.
- Multiple types of vinyl flooring with & without mastics & leveling compound.
- Vinyl floor exists under wood.
- Carpet over wooden floors.
- Mastic behind tub/shower surround in the main level bathroom.

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-six (46) bulk samples were collected during the survey and submitted to EMSL Analytical, Inc. (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 and are split into homogeneous layers and each layer is analyzed separately. Sixty-one (61) samples were analyzed due to layering by PLM method and positive stop methods. In accordance with SC DHEC 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). Fourteen (14) 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 Results

The EPA defines an asbestos-containing material (ACM) as a material containing more than 1% asbestos. OSHA defines ACM as a material containing detectable amounts of asbestos. Provided below is a general discussion of the asbestos containing materials identified in the residence. A specific *PLM and TEM Data Table* is located in Appendix II of this report and identifies positive materials and designates approximate quantities.

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

- Approximately 1,600 SF of metal roof sealant.

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, the EPA defines LBP as paint containing in excess of, or equal to, $1.0 \text{ mg}/\text{cm}^2$. The laboratory analytical results are included in the LBP Analysis Report in Appendix II of this report. The approximate locations of the paint samples collected and analytical results are presented in the *LBP Data Table* included in Appendix II of this report.

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

Exterior:

- Yellow wooden siding & corner trim.

Interior:

- Beige brick fireplaces.
- White wooden windows.

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 EPA defines LBP as paint containing greater than 1.0 milligrams per square centimeter (mg/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.

Changes to SC DHEC and federal regulations have changed the disposal options for LBP waste and LBP residue. LBP waste is defined as material such as wood, brick, metal, etc. that is coated with LBP. LBP residue is defined as residue that is generated from the removal (scraped, chipped, sandblasted, chemical means, etc.) of LBP from a structure. The regulations allow LBP waste from residential and commercial structures to be disposed of in Class 2 (construction and demolition debris) and Class 3 (municipal solid waste or industrial) landfills in South Carolina. The management of LBP residue is based on the source and lead concentration characterized by Toxic Characteristic Leaching Procedures (TCLP) to determine if the waste is classified as hazardous or non-hazardous. LBP residues that have TCLP sample results less than 5 milligrams per liter (mg/L) lead may be disposed of in a Class 3 landfill and is considered to be non-hazardous. LBP residues that have TCLP sample results equal to or greater than 5 mg/L lead should be disposed of in a Subtitle C landfill and is considered to be hazardous. 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 mg/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
PLM & TEM ANALYSIS**

Project Name: COS 567 Farley Avenue ACM/LBP

Sampled By: Tom Oliver

Project Location: 567 Farley Avenue, Spartanburg, South Carolina 29301

Project Manager: Tom Oliver

Project Number: 0519-118

Date: 7/4/2019

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
1	Roof	Metal roof sealant	PLM - 3% chrysotile	Non-Friable	Good	1,600 SF
2						
3						
4	Front door awning roof	Roof shingles (2 layers) with no felt	PLM - NAD	Non-Friable	Good	15 SF
5			TEM - NAD			
6						
7	Wooden windows	Window glazing	PLM - NAD	Non-Friable	Good	2 EA
8			TEM - NAD			
9						
10	Wooden windows	Window caulk on glass panes	PLM - NAD	Non-Friable	Good	10 EA
11			TEM - NAD			
12						
13	Wooden window casings	Caulk on window casings	PLM - NAD	Non-Friable	Good	14 EA
14			TEM - NAD			
15						
16	Throughout main level except in bathroom & hallway	Popcorn ceiling texture	PLM - NAD	Friable	Good	800 SF
17						
18						
19	Throughout	Drywall with joint compound & tape	PLM - NAD	Friable	Good	2,000 SF
20						
21						
22						
23						

**ASBESTOS SURVEY FIELD DATA SHEET
PLM & TEM ANALYSIS**

Project Name: COS 567 Farley Avenue ACM/LBP

Sampled By: Tom Oliver

Project Location: 567 Farley Avenue, Spartanburg, South Carolina 29301

Project Manager: Tom Oliver

Project Number: 0519-118

Date: 7/4/2019

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
24	Throughout	Plaster with finish	PLM - NAD	Friable	Good	2,000 SF
25						
26						
27						
28						
29	Main level - front left room	Gray square diamond pattern self-stick floor tile & mastic	PLM - NAD	Non-Friable	Good	100 SF
30			TEM - NAD			
31						
32	Main level - laundry room & bathroom	Gray square blue diamond pattern vinyl floor & mastic	PLM - NAD	Non-Friable	Good	105 SF
33			TEM - NAD			
34						
35	Main level - kitchen	Beige square pattern vinyl floor & mastic	PLM - NAD	Non-Friable	Good	145 SF
36			TEM - NAD			
37						
38	Main level - kitchen under wood	Dark flooring with no mastic	PLM - NAD	Non-Friable	Good	145 SF
39			TEM - NAD			
40						
41	Main level - bathroom	Mastic under tub/shower surround	PLM - NAD	Non-Friable	Good	70 SF
42			TEM - NAD			
43						
44	Basement - hallway	Beige small square vinyl floor & leveling compound	PLM - NAD	Non-Friable	Good	100 SF
45			TEM - NAD			
46						

NAD = No Asbestos Detected
Bold = Positive For Asbestos

LF = Linear Feet
SF = Square Feet

EA = Each
Chry = Chrysotile

Amos = Amosite
FT3 = Cubic Feet

**FIELD DATA SHEET
XRF LBP ANALYSIS**

Project Name: COS 567 Farley Avenue ACM/LBP

Sampled By: Tom Oliver

Project Location: 567 Farley Avenue, Spartanburg, SC 29301

Project Manager: Tom Oliver

Project Number: 0519-118

Date: 7/4/2019

Sample No.	Sample Location	Component	Color	Substrate	Analytical Result (mg/m ³)
1	Standardization				185.00
2	Calibration				1.18
3	Calibration				1.19
4	Calibration				1.13
5	Exterior front porch	Window	White	Wood	0.00
6	Exterior front porch	Window frame	White	Wood	0.00
7	Exterior front porch	Door frame	White	Wood	0.00
8	Exterior front porch	Awning ceiling	White	Wood	0.00
9	Exterior front porch	Awning frame	White	Wood	0.00
10	Exterior front porch	Awning trim	White	Wood	0.00
11	Exterior front porch	Top hand rail	White	Wood	0.00
12	Exterior front porch	Handrail post	White	Wood	0.00
13	Exterior front porch	Baluster	White	Wood	0.00
14	Exterior front porch	Fascia	White	Wood	0.97
15	Exterior front porch	Soffit	White	Wood	0.11
16	Exterior front porch	Door	Black	Wood	0.00
17	Exterior	Clapboard siding	Yellow	Wood	5.00
18	Exterior	Corner trim	Yellow	Wood	5.00
19	Exterior	Siding	Yellow	Wood	0.00
20	Exterior	Window frame	White	Wood	0.40
21	Exterior	Window	White	Wood	0.53
22	Exterior	Door frame	White	Wood	0.00
23	Exterior	Door	White	Metal	0.00
24	Interior	Wall	White	Plaster	0.01
25	Interior	Wall	White	Drywall	0.00

FIELD DATA SHEET XRF LBP ANALYSIS

Project Name: COS 567 Farley Avenue ACM/LBP

Sampled By: Tom Oliver

Project Location: 567 Farley Avenue, Spartanburg, SC 29301

Project Manager: Tom Oliver

Project Number: 0519-118

Date: 7/4/2019

Sample No.	Sample Location	Component	Color	Substrate	Analytical Result (mg/m ³)
26	Interior	Wall	Beige	Plaster	0.00
27	Interior	Base board	White	Wood	0.08
28	Interior	Ceiling	White	Drywall	0.00
29	Interior	Fire place	Beige	Brick	5.00
30	Interior	Newel post	White	Wood	0.14
31	Interior	Stair tread	White	Wood	0.01
32	Interior	Stair riser	White	Wood	0.13
33	Interior	Stair stringer	White	Wood	0.00
34	Interior	Stair handrail	Brown	Wood	0.00
35	Interior	Wall	Green	Drywall	0.00
36	Interior	Chair rail	Beige	Wood	0.00
37	Interior	Base board	Beige	Wood	0.00
38	Interior	Fire place	Blue	Brick	0.00
39	Interior	Door frame	White	Wood	0.06
40	Interior	Door	White	Wood	0.08
41	Interior	Window frame	White	Wood	0.15
42	Interior	Window	White	Wood	3.67
43	Interior	Wall	Yellow	Drywall	0.00
44	Interior	Wall	Blue	Drywall	0.00
45	Interior	Wall	Gray	Drywall	0.00
46	Interior	Chair rail	White	Wood	0.08
47	Interior	Floor	Beige	Wood	0.01
48		Calibration			1.18
49		Calibration			1.08
50		Calibration			1.15

Bold = LBP

FFM = Factory Finish Metal

FFM = Factory Finish Vinyl

SECTION III

Laboratory Analytical Results & Chain of Custody



EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

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

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

EMSL Order: 411906852

Customer ID: AXEM25

Customer PO:

Project ID:

Attention: Tom Oliver
Apex Environmental Management
7 Winchester Court
Mauldin, SC 29662

Phone: (864) 640-5274

Fax:

Received Date: 07/09/2019 9:20 AM

Analysis Date: 07/10/2019 - 07/15/2019

Collected Date: 07/04/2019

Project: 0519-118 COS 567 Farley Avenue

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 411906852-0001	Metal Roof Sealant	White/Black/Rust Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
2 411906852-0002	Metal Roof Sealant	Black/Rust Non-Fibrous Homogeneous		97% Non-fibrous (Other)	3% Chrysotile
4-Shingle 1 411906852-0003	Roof Shingles (2 Layers) & No Felt	Gray/Black Fibrous Homogeneous	8% Glass	92% Non-fibrous (Other)	None Detected
4-Shingle 2 411906852-0003A	Roof Shingles (2 Layers) & No Felt	Black Fibrous Homogeneous	<1% Cellulose 8% Glass	92% Non-fibrous (Other)	None Detected
5-Shingle 1 411906852-0004	Roof Shingles (2 Layers) & No Felt	Gray/Black Fibrous Heterogeneous	<1% Cellulose 2% Glass	98% Non-fibrous (Other)	None Detected
5-Shingle 2 411906852-0004A	Roof Shingles (2 Layers) & No Felt	Black Non-Fibrous Heterogeneous	<1% Cellulose 2% Glass	98% Non-fibrous (Other)	None Detected
7 411906852-0005	Window Glazing	Tan/White/Beige Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
8 411906852-0006	Window Glazing	Gray/White/Green Non-Fibrous Homogeneous	<1% Cellulose	10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
10 411906852-0007	Window Caulk on Glass Pane	Brown/Tan/Beige Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
11 411906852-0008	Window Caulk on Glass Pane	Brown/Tan/Beige Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
13 411906852-0009	Caulk on Window Casing	White/Beige Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
14 411906852-0010	Caulk on Window Casing	White/Beige Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
16 411906852-0011	Popcorn Ceiling Texture	White Non-Fibrous Homogeneous	<1% Cellulose	20% Ca Carbonate 80% Non-fibrous (Other)	None Detected
17 411906852-0012	Popcorn Ceiling Texture	White Non-Fibrous Homogeneous	<1% Cellulose	25% Ca Carbonate 75% Non-fibrous (Other)	None Detected
18 411906852-0013	Popcorn Ceiling Texture	White Non-Fibrous Homogeneous		30% Ca Carbonate 70% Non-fibrous (Other)	None Detected
19-Drywall 411906852-0014	Drywall & JC & Tape	Brown/White Fibrous Heterogeneous	8% Cellulose	92% Non-fibrous (Other)	None Detected

Initial report from: 07/15/2019 09:45:23



EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

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

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

EMSL Order: 411906852
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-Joint Compound 411906852-0014A	Drywall & JC & Tape	White Non-Fibrous Homogeneous	<1% Cellulose	30% Ca Carbonate 70% Non-fibrous (Other)	None Detected
19-Tape 411906852-0014B	Drywall & JC & Tape	Beige Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (Other)	None Detected
20-Drywall 411906852-0015	Drywall & JC & Tape	Brown/White Fibrous Heterogeneous	10% Cellulose 1% Glass	89% Non-fibrous (Other)	None Detected
20-Joint Compound 411906852-0015A	Drywall & JC & Tape	White Non-Fibrous Homogeneous	1% Cellulose	30% Ca Carbonate 69% Non-fibrous (Other)	None Detected
20-Tape 411906852-0015B	Drywall & JC & Tape	Beige Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
21-Drywall 411906852-0016	Drywall & JC & Tape	Brown/White Fibrous Heterogeneous	8% Cellulose	92% Non-fibrous (Other)	None Detected
21-Joint Compound 411906852-0016A	Drywall & JC & Tape	White Fibrous Homogeneous	<1% Cellulose 3% Glass	30% Ca Carbonate 67% Non-fibrous (Other)	None Detected
21-Tape 411906852-0016B	Drywall & JC & Tape	Beige Fibrous Homogeneous	98% Cellulose	2% Non-fibrous (Other)	None Detected
22-Drywall 411906852-0017	Drywall & JC & Tape	Brown/Gray Fibrous Heterogeneous	15% Cellulose 1% Glass	84% Non-fibrous (Other)	None Detected
22-Joint Compound 411906852-0017A	Drywall & JC & Tape	White Non-Fibrous Homogeneous		30% Ca Carbonate 70% Non-fibrous (Other)	None Detected
22-Tape 411906852-0017B	Drywall & JC & Tape	Beige Fibrous Homogeneous	100% Cellulose		None Detected
23-Drywall 411906852-0018	Drywall & JC & Tape	Brown/Gray Fibrous Heterogeneous	15% Cellulose 1% Glass	84% Non-fibrous (Other)	None Detected
23-Joint Compound 411906852-0018A	Drywall & JC & Tape	White Non-Fibrous Homogeneous		30% Ca Carbonate 70% Non-fibrous (Other)	None Detected
23-Tape 411906852-0018B	Drywall & JC & Tape	Beige Fibrous Homogeneous	100% Cellulose		None Detected
24-Skim Coat 411906852-0019	Plaster w/ Finish	White Non-Fibrous Homogeneous		20% Ca Carbonate 80% Non-fibrous (Other)	None Detected
24-Rough Coat 411906852-0019A	Plaster w/ Finish	Gray Non-Fibrous Heterogeneous	1% Cellulose	40% Quartz 59% Non-fibrous (Other)	None Detected
25-Skim Coat 411906852-0020	Plaster w/ Finish	White Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
25-Rough Coat 411906852-0020A	Plaster w/ Finish	Gray/Tan Non-Fibrous Homogeneous	<1% Cellulose <1% Hair	35% Quartz 65% Non-fibrous (Other)	None Detected
26-Skim Coat 411906852-0021	Plaster w/ Finish	White Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected

Initial report from: 07/15/2019 09:45:23



EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

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

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

EMSL Order: 411906852
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
26-Rough Coat 411906852-0021A	Plaster w/ Finish	Gray/Tan Non-Fibrous Homogeneous	<1% Cellulose <1% Hair	35% Quartz 65% Non-fibrous (Other)	None Detected
27-Skim Coat 411906852-0022	Plaster w/ Finish	White Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
27-Rough Coat 411906852-0022A	Plaster w/ Finish	Gray/Tan Non-Fibrous Homogeneous	<1% Cellulose <1% Hair	35% Quartz 65% Non-fibrous (Other)	None Detected
28-Skim Coat 411906852-0023	Plaster w/ Finish	White Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
28-Rough Coat 411906852-0023A	Plaster w/ Finish	Gray/Tan Non-Fibrous Homogeneous	<1% Cellulose <1% Hair	35% Quartz 65% Non-fibrous (Other)	None Detected
29-Flooring 411906852-0024	Gray Square Diamond Pattern Self Stick VF & Mastic	Beige Non-Fibrous Homogeneous	<1% Cellulose	15% Quartz 85% Non-fibrous (Other)	None Detected
29-Mastic 411906852-0024A	Gray Square Diamond Pattern Self Stick VF & Mastic	Black Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
30-Flooring 411906852-0025	Gray Square Diamond Pattern Self Stick VF & Mastic	Tan/Beige Non-Fibrous Homogeneous		10% Quartz 90% Non-fibrous (Other)	None Detected
30-Mastic 411906852-0025A	Gray Square Diamond Pattern Self Stick VF & Mastic	Clear Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
32-Flooring 411906852-0026	Gray Square Blue Diamond VF & Mastic	Gray/White/Green Fibrous Heterogeneous	10% Cellulose 2% Glass	88% Non-fibrous (Other)	None Detected
32-Mastic 411906852-0026A	Gray Square Blue Diamond VF & Mastic	Yellow/Beige Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
33-Flooring 411906852-0027	Gray Square Blue Diamond VF & Mastic	Tan/Green/Beige Fibrous Heterogeneous	15% Cellulose 1% Glass	84% Non-fibrous (Other)	None Detected
33-Mastic 411906852-0027A	Gray Square Blue Diamond VF & Mastic	Beige Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
35-Flooring 411906852-0028	Beige Square Pattern VF & Mastic	Gray/Tan/Green Fibrous Heterogeneous	25% Cellulose 1% Glass	74% Non-fibrous (Other)	None Detected
35-Mastic 411906852-0028A	Beige Square Pattern VF & Mastic	Yellow/Beige Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected
36-Flooring 411906852-0029	Beige Square Pattern VF & Mastic	Gray/Tan Fibrous Heterogeneous	15% Cellulose 1% Glass	84% Non-fibrous (Other)	None Detected
36-Mastic 411906852-0029A	Beige Square Pattern VF & Mastic	Tan/Beige Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
38 411906852-0030	Dark Flooring w/ No Mastic	Brown/Gray/Tan Fibrous Heterogeneous	30% Cellulose 1% Synthetic	69% Non-fibrous (Other)	None Detected
39 411906852-0031	Dark Flooring w/ No Mastic	Brown/Tan/Various Fibrous Homogeneous	40% Cellulose 5% Synthetic	55% Non-fibrous (Other)	None Detected

Initial report from: 07/15/2019 09:45:23



EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

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

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

EMSL Order: 411906852
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
41 <small>411906852-0032</small>	Mastic Under Tub Surround	Yellow Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected
42 <small>411906852-0033</small>	Mastic Under Tub Surround	Tan Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
44-Flooring <small>411906852-0034</small>	Beige Small Square VF & Leveling Compound	Gray/Tan/Beige Fibrous Heterogeneous	30% Cellulose 1% Glass	69% Non-fibrous (Other)	None Detected
44-Leveler <small>411906852-0034A</small>	Beige Small Square VF & Leveling Compound	White Non-Fibrous Homogeneous	<1% Cellulose	10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
45-Flooring <small>411906852-0035</small>	Beige Small Square VF & Leveling Compound	Tan/Beige Fibrous Heterogeneous	20% Cellulose 1% Glass	79% Non-fibrous (Other)	None Detected
45-Leveler <small>411906852-0035A</small>	Beige Small Square VF & Leveling Compound	White Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
46-Leveler <small>411906852-0035B</small>	Beige Small Square VF & Leveling Compound	White Non-Fibrous Homogeneous	<1% Cellulose	10% Ca Carbonate 90% Non-fibrous (Other)	None Detected

Analyst(s)

Cameron Evans (3)
 Nicole Shutts (28)
 Ryan Rains (21)
 Scott Combs (9)

Lee Plumley, Laboratory Manager
 or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. 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. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Kernersville, NC NVLAP Lab Code 102104-0, CA ELAP 2689, Virginia 3333-000228, West Virginia LT000321

Initial report from: 07/15/2019 09:45:23



EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

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

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

EMSL Order: 411906852

Customer ID: AXEM25

Customer PO:

Project ID:

Attention: Tom Oliver
Apex Environmental Management
7 Winchester Court
Mauldin, SC 29662

Phone: (864) 640-5274

Fax:

Received Date: 07/09/2019 9:20 AM

Analysis Date: 07/16/2019

Collected Date: 07/04/2019

Project: 0519-118 COS 567 Farley Avenue

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
6-Shingle 1 411906852-0036	Roof Shingles (2 Layers) & No Felt	Black Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
6-Shingle 2 411906852-0037	Roof Shingles (2 Layers) & No Felt	Black Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
9 411906852-0038	Window Glazing	Gray/White Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
12 411906852-0039	Window Caulk on Glass Pane	White Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
15 411906852-0040	Caulk on Window Casing	White Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
31-Flooring 411906852-0041	Gray Square Diamond Pattern Self Stick VF & Mastic	Gray/Tan Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
31-Mastic 411906852-0042	Gray Square Diamond Pattern Self Stick VF & Mastic	Black/Clear Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
34-Flooring 411906852-0043	Gray Square Blue Diamond VF & Mastic	White/Green/Beige Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
34-Mastic 411906852-0044	Gray Square Blue Diamond VF & Mastic	Beige Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
37-Flooring 411906852-0045	Beige Square Pattern VF & Mastic	Blue/Beige Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
37-Mastic 411906852-0046	Beige Square Pattern VF & Mastic	Tan Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
40 411906852-0047	Dark Flooring w/ No Mastic	Brown/Black Fibrous Heterogeneous	100.0 Other	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. Kernersville, NC

Initial report from: 07/17/2019 08:24:46



EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

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

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

EMSL Order: 411906852
Customer ID: AXEM25
Customer PO:
Project ID:

Attention: Tom Oliver Apex Environmental Management 7 Winchester Court Mauldin, SC 29662	Phone: (864) 640-5274 Fax: Received Date: 07/09/2019 9:20 AM Analysis Date: 07/16/2019 Collected Date: 07/04/2019
Project: 0519-118 COS 567 Farley Avenue	

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
43 411906852-0048	Mastic Under Tub Surround	Tan Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
46-Flooring 411906852-0049	Beige Small Square VF & Leveling Compound	Gray/Tan/Beige Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected

Analyst(s)

Stephen Bennett (14)

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. Kernersville, NC

Initial report from: 07/17/2019 08:24:46



EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (Lab Use Only):

411906852

Pineville, NC 28134
PHONE: (704) 525-2205
FAX: (704) 525-2382

Company: Apex Environmental Management, Inc. AXEM25		EMSL-Bill to: <input checked="" type="checkbox"/> Same <input 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): Tom Oliver		Telephone #: 864-404-3210	
Email Address: tolover@apex-ehs.com		Fax #: 864-404-3213	Purchase Order:
Project Name/Number: 0519-118 COS 567 Farley Avenue		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.

PLM - Bulk (reporting limit)	TEM - Bulk
<input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (<1%) 96	<input checked="" type="checkbox"/> TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1 1 WEEK
<input type="checkbox"/> PLM EPA NOB (<1%)	<input type="checkbox"/> NY ELAP Method 198.4 (TEM)
Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%)	<input type="checkbox"/> Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%)	<input type="checkbox"/> TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
<input type="checkbox"/> NIOSH 9002 (<1%)	<input type="checkbox"/> TEM Qualitative via Filtration Prep Technique
<input type="checkbox"/> NY ELAP Method 198.1 (friable in NY)	<input type="checkbox"/> TEM Qualitative via Drop Mount Prep Technique
<input type="checkbox"/> NY ELAP Method 198.6 NOB (non-friable-NY)	Other
<input type="checkbox"/> OSHA ID-191 Modified	<input type="checkbox"/>
<input type="checkbox"/> Standard Addition Method	

Check For Positive Stop – Clearly Identify Homogenous Group Date Sampled: **7-4-19**

Samplers Name: Tom Oliver Samplers Signature:

Sample #	HA #	Sample Location	Material Description
1		Metal Roof sealant	PLM
2			
3			TEM
4		Roof shingles (2 layers) +	PLM
5		no felt	
6			TEM
7		Window glazing	PLM
8			
9			TEM

Client Sample # (s): 1-46	Total # of Samples: 46	
Relinquished (Client):	Date: 7-5-19	Time: 5:30 PM
Received (Lab):	Date: 7/9/19	Time: 9:20 AM F/K
Comments/Special Instructions: <small>Positive stop on all analysis. Please bill according to special pricing for City of Spartanburg. Ask Jason McDonald for details.</small>		7957 4064 3880



EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

**Asbestos Bulk Building Material
Chain of Custody**

EMSL Order Number (Lab Use Only):

411906852

Pineville, NC 28134
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
10		Window Caulk on	PLM
11		glass pane	↓
12			TEM
13		caulk on window casings	PLM
14			↓
15			TEM
16		popcorn ceiling texture	PLM
17			↓
18			↓
19		drywall joint & Ct tape	PLM
20			↓
21			↓
22			↓
23			↓
24		plaster w/ finish	PLM
25			↓
26			↓
27			↓
28			↓
29		gray sq. diamond pattern	PLM
30		self self stick VFD	↓
31		mastic	TEM
32			

*Comments/Special Instructions:
Positive stop on all analysis. Please bill according to special pricing for City of Spartanburg. Ask Jason McDonald for details.

SECTION IV
Photographic Log



Photo 1 – 567 Farley Avenue in Spartanburg, South Carolina



Photo 2 – Metal roof sealant



Photo 3 – Roof shingles & no felt on the front door awning



Photo 4 – Wooden window glazing



Photo 5 – Caulk on the glass panes on the wooden windows



Photo 6 – Caulk on the wooden window casings



Photo 7 – Drywall with joint compound & tape throughout



Photo 8 – Plaster with finish throughout



Photo 9 – Drywall with joint compound & tape over plaster with finish



Photo 10 – Gray square diamond pattern self-stick floor tile & mastic in the main level – front left room



Photo 11 – Gray square blue diamond pattern vinyl floor & mastic in the main level – laundry room & bathroom



Photo 12 – Beige square pattern vinyl floor & mastic in the main level - kitchen



Photo 13 – Dark flooring with no mastic in the main level – kitchen under wood



Photo 14 – Mastic under tub/shower surround in the main level - bathroom



Photo 15 – Beige small square vinyl floor & leveling compound in the basement - hallway

SECTION V

SC DHEC Asbestos Inspector License

SCDHEC ISSUED

Asbestos ID Card

Thomas H Oliver



CONSULTBI BI-00680
AIRSAMPLER AS-00202

Expiration Date:

01/18/20

05/08/20

This card is nontransferable and shall be 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 of corrections contact: SCDHEC – Asbestos Section
2600 Bull Street
Columbia, SC 29201
(803) 898-4289