Asbestos & Lead Based Paint Assessment

City of Spartanburg
183 E. Columbia Avenue
Spartanburg, South Carolina 29306

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: 0120-17

February 10, 2020

PEX
Environmental
Management

Environmental Management

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Apex Project Number 0120-17

February 10, 2020

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

Reference: Asbestos and Lead-Based Paint Assessment Services
183 E. Columbia Avenue
Spartanburg, South Carolina 29306

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.

Stephanie Hamby
Field Scientist

Tom Oliver
Vice President

Appendices

ASBESTOS AND LEAD BASED PAINT ASSESSMENT

CITY OF SPARTANBURG
183 E. COLUMBIA AVENUE
SPARTANBURG, SOUTH CAROLINA 29306

APEX PROJECT NO. 0120-17

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SECTION

SECTION I

Asbestos & Lead Evaluation Report

ASBESTOS EVALUATION REPORT
APEX PROJECT NUMBER: 0120-17

Date:	2/10/2020	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:	183 E. Columbia Avenue Spartanburg, SC 29306		
Assessor:	Ted Shultz	Date of Assessment:	1/08/2020
Company:	Apex Environmental Management 7 Winchester Court Mauldin, SC 29662	Phone Number:	(864) 404-3210
Purpose of Assessment:	Demolition	Age of Structure:	Approximately 50+ years
Building Type:	Residential	Number of Stories:	1 and partial unfinished attic
Foundation:	Brick Crawlspace	Approximate Square Footage	2,600 SF

EXTERIOR BUILDING MATERIALS

- Brick & transite siding with felt
- Multiple layers of roof shingles.
- Wood windows with glazing.
- Wood doors.
- Metal window awnings.
- 300 gallon oil tank.
- 275 gallon oil tank.
- Chimney tar on 2 chimneys – assumed.
- Roof tar.
- Brick exterior grill.
- Approximately 16’x11’ metal shed – no suspect materials.

INTERIOR BUILDING MATERIALS

- Wood floors.
- Vinyl composition tile floors.
- Roll vinyl floors.
- Plaster ceilings and walls.
- Wood paneling.
- Carpet.

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. Thirty-seven (37) bulk samples were collected during the survey and submitted to EMSL in Pineville, 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. Seventy (70) samples were analyzed due to layering by PLM and positive stop methods. 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). Twenty-five (25) 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 12 SF of green/grey tile located in the bathroom closet.
- Approximately 12 SF of brown tile located under the green/grey tile in the bathroom closet.
- Approximately 12 SF of black mastic under brown tile in the bathroom closet.
- Approximately 4,200 SF of white transite siding.
- Approximately 12 LF of black tar from 2 chimney's (Assumed).
- Approximately 25 SF of flashing tar from the back porch roof (Assumed).

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 µg/m^3) during an eight-hour workday and a permissible exposure level of fifty micrograms per cubic meter (50 µg/m^3) for employees.

Currently, EPA defines LBP as paint containing in excess of, or equal to, 1.0 mg/cm^2. *XRF LBP Data Sheets* providing XRF results for testing combinations can be found in the Appendices at the conclusion of this report. Paint-chip sampling was not required for XRF inconclusive values.

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

Exterior:
- White transite siding.
- Barn red wood window casing.
- Barn red metal window awning.
- Blue brick foundation.
- Red wood porch ceiling.

Interior:
- Black wood fireplace mantle.

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 Environmental Protection Agency (EPA) define 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. 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 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 ($\mu g/m^3$) 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 183 E. Columbia Avenue NIP ACM-LBP

Sampled By: Ted Shultz

Project Location: 183 E. Columbia Avenue, Spartanburg, SC 29306

Project Manager: Ted Shultz

Project Number: 0120-17

Date: 1/7/2020

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
1	Roof	Roofing (3 shingles, 1 felt)	PLM - NAD	Non-friable	Good	2,500 SF
2						
3			TEM - NAD			
4	Windows	Glazing	PLM - NAD	Friable	Good	8 EA
5						
6			TEM - NAD			
7	**Siding exterior**	**Transite & felt**	**PLM - 25% Chrysotile (Transite)** PLM - NAD (Felt)	**Non-friable**	**Good**	**4,200 SF**
8						
9			TEM - NAD (Felt)			
10	back porch closet floor	Roll flooring w/ felt	PLM - NAD	Non-friable	Good	8 SF
11						
12			TEM - NAD			
13	Kitchen corner floor	9" x 9" red tile w/ mastic & felt	PLM - NAD	Non-friable	Good	6 SF
14						
15			TEM - NAD			
16		Brown 9" x 9" tile w/ mastic & felt	PLM - NAD	Non-friable	Good	6 SF
17						
18			TEM - NAD			
19	Kitchen floor	6 layers vinyl floring some with mastic	PLM - NAD	Non-friable	Damaged	140 SF
20						
21			TEM - NAD			
22	Bathroom floor	12" x 12" self stick tan	PLM - NAD	Non-friable	Good	80 SF
23						
24			TEM - NAD			

ASBESTOS SURVEY FIELD DATA SHEET
PLM & TEM ANALYSIS

Project Name: COS 183 E. Columbia Avenue NIP ACM-LBP

Sampled By: Ted Shultz

Project Location: 183 E. Columbia Avenue, Spartanburg, SC 29306

Project Manager: Ted Shultz

Project Number: 0120-17

Date: 1/7/2020

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
25	**Bathroom closet floor**	**Green tile & mastic over brown tile & mastic**	**PLM - 2% Chrysotile (gray floor tile), 8% Chrysotile (brown floor tile), 3% Chrysotile (Mastic-black); PLM - NAD (mastic-brown)**	**Non-friable**	**Good**	**12 SF**
26						
27			**TEM - NAD (mastic-brown)**			
28	Bathroom walls	Brown mastic behind wall board	PLM - NAD	Non-friable	Good	100 SF
29						
30			TEM - NAD			
31	Walls & ceiling throughout	Plaster with felt	PLM - NAD	Friable	Good	6,250 SF
32						
33						
34						
35						
36						
37			PLM - NAD (plaster); TEM - NAD (felt)			
Assumed	**Back porch roof**	**Flashing tar**	**Assumed**	**Non-friable**	**Good**	**25 SF**
Assumed	**2 Chimney's**	**Chimney tar**	**Assumed**	**Non-friable**	**Good**	**12 LF**

NAD = No Asbestos Detected
Bold = Positive For Asbestos
LF = Linear Feet
SF = Square Feet
EA = Each
Chry = Chrysotile

FIELD DATA SHEET
LBP ANALYSIS

Project Name: COS 183 E. Columbia Avenue NIP ACM-LBP

Sampled By: Tom Oliver

Project Location: 183 E. Columbia Avenue, Spartanburg, SC 29306

Project Manager: Tom Oliver

Project Number: 0120-17

Date: 1/30/2020

Sample No.	Sample Location	Component	Color	Substrate	Analytical Result (mg/m^3)
54	Exterior	Siding	White	Wood	0.00
55	**Exterior**	**Siding**	**White**	**Transite**	**1.00**
56	**Exterior**	**Window Casing**	**Barn Red**	**Wood**	**3.92**
57	**Exterior**	**Window Awning**	**Barn Red**	**Metal**	**1.00**
58	Exterior	Door	Barn Red	Wood	0.00
59	**Exterior**	**Foundation**	**Blue**	**Brick**	**2.04**
60	Exterior	Door Casing	Red	Wood	0.08
61	Exterior	Window	Red	Wood	0.00
62	**Exterior**	**Porch Ceiling**	**Red**	**Wood**	**5.00**
63	Exterior	Porch Floor	Blue	Wood	0.02
64	Exterior	Door	White	Wood	0.75
65	Interior	Window	White	Wood	0.92
66	Interior	Window Casing	White	Wood	0.77
67	Interior	Base Board	White	Wood	0.59
68	Interior	door	White	Wood	0.00
69	Interior	Door Frame	White	Wood	0.90
70	Interior	Wall	White	Plaster	0.03
71	Interior	Window	Green	Wood	0.45
72	Interior	Window Casing	Green	Wood	0.64
73	Interior	Base Board	Green	Wood	0.96
74	**Interior**	**Fireplace Mantle**	**Black**	**Wood**	**1.01**
75	Interior	Wainscoating	Tan	Wood	0.89
76	Interior	Cabinet	Red	Wood	0.10
77	Interior	Stairs	Brown	Wood	0.00
78	Interior	Door	Green	Wood	0.88

Bold = LBP

SECTION III

Laboratory Analytical Results

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:	412000569
Customer ID:	AXEM25
Customer PO:	
Project ID:	City of Spartanburg

Attention:	Rebecca Shultz	**Phone:**	(864) 404-3210
	Apex Environmental Management	**Fax:**	
	7 Winchester Court	**Received Date:**	01/20/2020 11:38 AM
	Mauldin, SC 29662	**Analysis Date:**	01/23/2020
		Collected Date:	01/07/2020

Project: COS 183 E. Columbia Ave (City of Spartanburg)

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
1-Shingle 1 *412000569-0001*	Roof - 3 Shingle w/ Felt	Red/Black Fibrous Homogeneous	15% Cellulose	85% Non-fibrous (Other)	None Detected
1-Shingle 2 *412000569-0001A*	Roof - 3 Shingle w/ Felt	Black/Green Fibrous Homogeneous	15% Cellulose	85% Non-fibrous (Other)	None Detected
1-Shingle 3 *412000569-0001B*	Roof - 3 Shingle w/ Felt	Brown/Black Fibrous Homogeneous	<1% Cellulose 8% Glass	92% Non-fibrous (Other)	None Detected
1-Felt *412000569-0001C*	Roof - 3 Shingle w/ Felt	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
2-Shingle 1 *412000569-0002*	Roof - 3 Shingle w/ Felt	Gray/Red/Black Fibrous Heterogeneous	15% Cellulose	85% Non-fibrous (Other)	None Detected
2-Shingle 2 *412000569-0002A*	Roof - 3 Shingle w/ Felt	Black/Green Fibrous Heterogeneous	20% Cellulose	80% Non-fibrous (Other)	None Detected
2-Shingle 3 *412000569-0002B*	Roof - 3 Shingle w/ Felt	Brown/Black Fibrous Heterogeneous	5% Glass	95% Non-fibrous (Other)	None Detected
2-Felt *412000569-0002C*	Roof - 3 Shingle w/ Felt	Black Fibrous Homogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected
4 *412000569-0003*	Windows - Glazing	Tan Non-Fibrous Homogeneous	<1% Cellulose	10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
5 *412000569-0004*	Windows - Glazing	Tan Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
7-Transite *412000569-0005*	Siding - Transite & Felt	Gray Fibrous Homogeneous		20% Ca Carbonate 55% Non-fibrous (Other)	25% Chrysotile
7-Felt *412000569-0005A*	Siding - Transite & Felt	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
8-Transite *412000569-0006*	Siding - Transite & Felt				Positive Stop (Not Analyzed)
8-Felt *412000569-0006A*	Siding - Transite & Felt	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
9-Transite *412000569-0006B*	Siding - Transite & Felt				Positive Stop (Not Analyzed)
10-Flooring *412000569-0007*	Back Porch Closet - Brown Vinyl Flooring & Felt	Brown/Tan Fibrous Homogeneous	40% Cellulose	60% Non-fibrous (Other)	None Detected

Initial report from: 01/24/2020 08:05:46

EMSL Analytical, Inc.
10801 Southern Loop Blvd Pineville, NC 28134
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http://www.EMSL.com / charlottelab@emsl.com

EMSL Order: 412000569
Customer ID: AXEM25
Customer PO:
Project ID: City of Spartanburg

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
10-Felt *412000569-0007A*	Back Porch Closet - Brown Vinyl Flooring & Felt	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
11-Flooring *412000569-0008*	Back Porch Closet - Brown Vinyl Flooring & Felt	Brown/Gray/Tan Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected
11-Felt *412000569-0008A*	Back Porch Closet - Brown Vinyl Flooring & Felt	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
13-Floor Tile *412000569-0009*	Kitchen - 9x9 Red FT W/ Mastic & Felt	Red Non-Fibrous Homogeneous	2% Cellulose	25% Quartz 73% Non-fibrous (Other)	None Detected
13-Mastic *412000569-0009A*	Kitchen - 9x9 Red FT W/ Mastic & Felt	Brown Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected
13-Felt *412000569-0009B*	Kitchen - 9x9 Red FT W/ Mastic & Felt	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
14-Floor Tile *412000569-0010*	Kitchen - 9x9 Red FT W/ Mastic & Felt	Red Non-Fibrous Homogeneous	1% Cellulose	10% Quartz 89% Non-fibrous (Other)	None Detected
14-Mastic *412000569-0010A*	Kitchen - 9x9 Red FT W/ Mastic & Felt	Beige Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
14-Felt *412000569-0010B*	Kitchen - 9x9 Red FT W/ Mastic & Felt	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
16-Floor Tile *412000569-0011*	Kitchen - Brown 9x9 FT w/ Mastic & Felt	Tan Non-Fibrous Homogeneous		25% Quartz 75% Non-fibrous (Other)	None Detected
16-Mastic *412000569-0011A*	Kitchen - Brown 9x9 FT w/ Mastic & Felt	Brown/Tan Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected
16-Felt *412000569-0011B*	Kitchen - Brown 9x9 FT w/ Mastic & Felt	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
17-Floor Tile *412000569-0012*	Kitchen - Brown 9x9 FT w/ Mastic & Felt	Tan/Beige Non-Fibrous Homogeneous	<1% Cellulose	10% Quartz 90% Non-fibrous (Other)	None Detected
17-Mastic *412000569-0012A*	Kitchen - Brown 9x9 FT w/ Mastic & Felt	Tan Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
17-Felt *412000569-0012B*	Kitchen - Brown 9x9 FT w/ Mastic & Felt	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
19-Flooring 1 *412000569-0013*	Kitchen - 6 Layers of Vinyl Flooring	Brown/Tan Non-Fibrous Homogeneous		25% Quartz 75% Non-fibrous (Other)	None Detected
19-Flooring 2 *412000569-0013A*	Kitchen - 6 Layers of Vinyl Flooring	Brown/Tan/Black Non-Fibrous Homogeneous		25% Quartz 75% Non-fibrous (Other)	None Detected
19-Flooring 3 *412000569-0013B*	Kitchen - 6 Layers of Vinyl Flooring	Red/Black/Orange Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
19-Flooring 4 *412000569-0013C*	Kitchen - 6 Layers of Vinyl Flooring	Tan/White Fibrous Homogeneous	25% Cellulose	75% Non-fibrous (Other)	None Detected

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EMSL Order: 412000569
Customer ID: AXEM25
Customer PO:
Project ID: City of Spartanburg

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
19-Flooring 5 *412000569-0013D*	Kitchen - 6 Layers of Vinyl Flooring	Brown/Beige Fibrous Homogeneous	15% Cellulose 1% Glass	84% Non-fibrous (Other)	None Detected
19-Mastic *412000569-0013E*	Kitchen - 6 Layers of Vinyl Flooring	Brown Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected
19-Flooring 6 *412000569-0013F*	Kitchen - 6 Layers of Vinyl Flooring	Brown/Tan Fibrous Homogeneous	15% Cellulose 2% Synthetic 1% Glass	82% Non-fibrous (Other)	None Detected
20-Flooring 1 *412000569-0014* *Flooring 2 not present*	Kitchen - 6 Layers of Vinyl Flooring	Brown/Gray/Tan Non-Fibrous Homogeneous		20% Quartz 80% Non-fibrous (Other)	None Detected
20-Flooring 3 *412000569-0014A*	Kitchen - 6 Layers of Vinyl Flooring	Brown/Red/Black Fibrous Heterogeneous	45% Cellulose	55% Non-fibrous (Other)	None Detected
20-Flooring 4 *412000569-0014B*	Kitchen - 6 Layers of Vinyl Flooring	Gray/White Fibrous Heterogeneous	20% Cellulose	80% Non-fibrous (Other)	None Detected
20-Flooring 5 *412000569-0014C* *No mastic present*	Kitchen - 6 Layers of Vinyl Flooring	Brown/Beige Fibrous Heterogeneous	20% Cellulose 1% Glass	79% Non-fibrous (Other)	None Detected
20-Flooring 6 *412000569-0014D*	Kitchen - 6 Layers of Vinyl Flooring	Brown/Tan Fibrous Heterogeneous	10% Cellulose 1% Synthetic 1% Glass	88% Non-fibrous (Other)	None Detected
22 *412000569-0015*	Bathroom - SA Tan Tile	Gray/Tan Non-Fibrous Homogeneous		25% Quartz 75% Non-fibrous (Other)	None Detected
23 *412000569-0016*	Bathroom - SA Tan Tile	Gray/Tan Non-Fibrous Homogeneous	1% Synthetic	10% Quartz 89% Non-fibrous (Other)	None Detected
25-Gray Floor Tile *412000569-0017*	Bathroom Closet - Green FT and Mastic Over Brrown FT & Mastic	Gray/Beige Non-Fibrous Homogeneous		5% Quartz 93% Non-fibrous (Other)	2% Chrysotile
25-Mastic *412000569-0017A*	Bathroom Closet - Green FT and Mastic Over Brrown FT & Mastic	Beige Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
25-Brown Floor Tile *412000569-0017B*	Bathroom Closet - Green FT and Mastic Over Brrown FT & Mastic	Brown Fibrous Homogeneous		25% Quartz 67% Non-fibrous (Other)	8% Chrysotile
25-Mastic *412000569-0017C*	Bathroom Closet - Green FT and Mastic Over Brrown FT & Mastic	Black Fibrous Homogeneous	1% Cellulose	96% Non-fibrous (Other)	3% Chrysotile
26-Gray Floor Tile *412000569-0018*	Bathroom Closet - Green FT and Mastic Over Brrown FT & Mastic				Positive Stop (Not Analyzed)
26-Mastic *412000569-0018A*	Bathroom Closet - Green FT and Mastic Over Brrown FT & Mastic	Brown Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected

Initial report from: 01/24/2020 08:05:46

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			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
26-Brown Floor Tile *412000569-0018B*	Bathroom Closet - Green FT and Mastic Over Brrown FT & Mastic				Positive Stop (Not Analyzed)
26-Mastic *412000569-0018C*	Bathroom Closet - Green FT and Mastic Over Brrown FT & Mastic				Positive Stop (Not Analyzed)
28 *412000569-0019*	Bathroom - Brown Mastic Behind DW	Brown Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
29 *412000569-0020*	Bathroom - Brown Mastic Behind DW	Brown Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
31-Skim Coat *412000569-0021*	Throughout - Plaster & Felt	White Non-Fibrous Homogeneous	<1% Cellulose	10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
31-Rough Coat *412000569-0021A*	Throughout - Plaster & Felt	Tan Non-Fibrous Homogeneous	<1% Cellulose <1% Synthetic <1% Hair	40% Quartz 10% Ca Carbonate 50% Non-fibrous (Other)	None Detected
31-Felt *412000569-0021B*	Throughout - Plaster & Felt	Tan/Black Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
32-Skim Coat *412000569-0022*	Throughout - Plaster & Felt	White Non-Fibrous Homogeneous	<1% Cellulose	10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
32-Rough Coat *412000569-0022A*	Throughout - Plaster & Felt	Tan Non-Fibrous Homogeneous	<1% Cellulose <1% Hair	40% Quartz 10% Ca Carbonate 50% Non-fibrous (Other)	None Detected
32-Felt *412000569-0022B*	Throughout - Plaster & Felt	Tan/Black Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
33-Skim Coat *412000569-0023*	Throughout - Plaster & Felt	White Non-Fibrous Homogeneous	<1% Cellulose	10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
33-Rough Coat *412000569-0023A*	Throughout - Plaster & Felt	Tan Non-Fibrous Homogeneous	<1% Cellulose	40% Quartz 10% Ca Carbonate 50% Non-fibrous (Other)	None Detected
33-Felt *412000569-0023B*	Throughout - Plaster & Felt	Tan/Black Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
34-Skim Coat *412000569-0024*	Throughout - Plaster & Felt	White Non-Fibrous Homogeneous	<1% Cellulose	15% Ca Carbonate 85% Non-fibrous (Other)	None Detected
34-Rough Coat *412000569-0024A*	Throughout - Plaster & Felt	Tan Non-Fibrous Homogeneous	<1% Cellulose <1% Hair	40% Quartz 10% Ca Carbonate 50% Non-fibrous (Other)	None Detected
34-Felt *412000569-0024B*	Throughout - Plaster & Felt	Tan/Black Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
35-Skim Coat *412000569-0025*	Throughout - Plaster & Felt	White/Beige Non-Fibrous Homogeneous	<1% Cellulose	10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
35-Rough Coat *412000569-0025A*	Throughout - Plaster & Felt	Tan Non-Fibrous Homogeneous	<1% Cellulose <1% Hair	40% Quartz 10% Ca Carbonate 50% Non-fibrous (Other)	None Detected

Initial report from: 01/24/2020 08:05:46

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: 412000569
Customer ID: AXEM25
Customer PO:
Project ID: City of Spartanburg

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
35-Felt *412000569-0025B*	Throughout - Plaster & Felt	Tan/Black Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
36-Skim Coat *412000569-0026*	Throughout - Plaster & Felt	Gray/White Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
36-Rough Coat *412000569-0026A*	Throughout - Plaster & Felt	Gray/Tan Non-Fibrous Homogeneous	1% Cellulose 2% Hair	35% Quartz 62% Non-fibrous (Other)	None Detected
36-Felt *412000569-0026B*	Throughout - Plaster & Felt	Brown/Black Fibrous Homogeneous	98% Cellulose	2% Non-fibrous (Other)	None Detected
37-Skim Coat *412000569-0027*	Throughout - Plaster & Felt	Gray/White Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
37-Rough Coat *412000569-0027A*	Throughout - Plaster & Felt	Gray/Tan Non-Fibrous Homogeneous	1% Cellulose 1% Hair	35% Quartz 63% Non-fibrous (Other)	None Detected

Analyst(s)
Cameron Evans (42)
Nicole Shutts (28)

Lee Plumley, Laboratory Manager
or Other Approved Signatory

Initial report from: 01/24/2020 08:05:46

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EMSL Order: 412000569
Customer ID: AXEM25
Customer PO:
Project ID: City of Spartanburg

Attention: Rebecca Shultz
Apex Environmental Management
7 Winchester Court
Mauldin, SC 29662

Phone: (864) 404-3210
Fax:
Received Date: 01/20/2020 11:38 AM
Analysis Date: 01/29/2020 - 01/30/2020
Collected Date: 01/07/2020

Project: COS 183 E. Columbia Ave (City of Spartanburg)

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 *412000569-0028*	Roof - 3 Shingle w/ Felt	Gray/Red/Black Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
3-Shingle 2 *412000569-0029*	Roof - 3 Shingle w/ Felt	Black/Green Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
3-Shingle 3 *412000569-0030*	Roof - 3 Shingle w/ Felt	Brown/Black Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
3-Felt *412000569-0031*	Roof - 3 Shingle w/ Felt	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
6 *412000569-0032*	Windows - Glazing	Gray/Tan Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
9-Felt *412000569-0033*	Siding - Transite & Felt	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
12-Flooring *412000569-0034*	Back Porch Closet - Brown Vinyl Flooring & Felt	Brown/Tan/Black Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
12-Felt *412000569-0035*	Back Porch Closet - Brown Vinyl Flooring & Felt	Brown/Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
15-Floor Tile *412000569-0036*	Kitchen - 9x9 Red FT W/ Mastic & Felt	Red Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
15-Mastic *412000569-0037*	Kitchen - 9x9 Red FT W/ Mastic & Felt	Brown/Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
15-Felt *412000569-0038*	Kitchen - 9x9 Red FT W/ Mastic & Felt	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
18-Floor Tile *412000569-0039*	Kitchen - Brown 9x9 FT w/ Mastic & Felt	Brown/Tan Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

Samples analyzed by EMSL Analytical, Inc. Kernersville, NC

Initial report from: 01/30/2020 14:38:11

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: 412000569
Customer ID: AXEM25
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Project ID: City of Spartanburg

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Apex Environmental Management
7 Winchester Court
Mauldin, SC 29662

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Fax:
Received Date: 01/20/2020 11:38 AM
Analysis Date: 01/29/2020 - 01/30/2020
Collected Date: 01/07/2020

Project: COS 183 E. Columbia Ave (City of Spartanburg)

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
18-Mastic *412000569-0040*	Kitchen - Brown 9x9 FT w/ Mastic & Felt	Brown/Black Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
18-Felt *412000569-0041*	Kitchen - Brown 9x9 FT w/ Mastic & Felt	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
21-Flooring 1 *412000569-0042*	Kitchen - 6 Layers of Vinyl Flooring	Brown/Gray/Tan Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
21-Flooring 2 *412000569-0043*	Kitchen - 6 Layers of Vinyl Flooring	Brown/Tan/Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
21-Flooring 3 *412000569-0044*	Kitchen - 6 Layers of Vinyl Flooring	Red/Black/Orange Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
21-Flooring 4 *412000569-0045*	Kitchen - 6 Layers of Vinyl Flooring	Tan/White/Green Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
21-Flooring 5 *412000569-0046*	Kitchen - 6 Layers of Vinyl Flooring	Brown/Tan Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
21-Mastic *412000569-0047*	Kitchen - 6 Layers of Vinyl Flooring	Brown/Tan Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
21-Flooring 6 *412000569-0048*	Kitchen - 6 Layers of Vinyl Flooring	Brown/Tan/Beige Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
24 *412000569-0049*	Bathroom - SA Tan Tile	Gray/Tan/Beige Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
27-Mastic *412000569-0050*	Bathroom Closet - Green FT and Mastic Over Brrown FT & Mastic	Brown Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
30 *412000569-0051*	Bathroom - Brown Mastic Behind DW	Brown/Tan Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

Samples analyzed by EMSL Analytical, Inc. Kernersville, NC

Initial report from: 01/30/2020 14:38:11

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Tel/Fax: (704) 525-2205 / (704) 525-2382
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EMSL Order: 412000569
Customer ID: AXEM25
Customer PO:
Project ID: City of Spartanburg

Attention: Rebecca Shultz
Apex Environmental Management
7 Winchester Court
Mauldin, SC 29662

Phone: (864) 404-3210
Fax:
Received Date: 01/20/2020 11:38 AM
Analysis Date: 01/29/2020 - 01/30/2020
Collected Date: 01/07/2020

Project: COS 183 E. Columbia Ave (City of Spartanburg)

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
37-Felt *412000569-0052*	Throughout - Plaster & Felt	Tan/Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

Analyst(s)

Scott Combs (19)
Stephen Bennett (6)

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: 01/30/2020 14:38:11

OrderID: 412000569

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*: 412000569

10801 Southern Loop Blvd
Pineville, NC 28134
PHONE: (704) 525-2205
FAX: (704) 525-2382

Company : Apex Environmental Management	**EMSL-Bill to:** ☑ Same ☐ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 7 Winchester Court	
City: Mauldin **State/Province:** SC	**Zip/Postal Code:** 29662 **Country:** US
Report To (Name): Rebecca Shultz	**Telephone #:** 864-404-3210
Email Address: rshultz@apex-ehs.com	**Fax #:** **Purchase Order:**
Project Name/Number: COS 183 E. Columbia Ave	**Please Provide Results:** ☐ Fax ☑ Email ☐ Mail
U.S. State Samples Taken: SC	**CT Samples:** ☐ Commercial/Taxable ☐ 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
☒ PLM EPA 600/R-93/116 (<1%)	☒ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
☐ PLM EPA NOB (<1%)	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

☒ Check For Positive Stop – Clearly Identify Homogenous Group **Date Sampled:** 1/7/20

Samplers Name: T. Shultz **Samplers Signature:**

Sample #	HA #	Sample Location	Material Description
1		Roof	3 Shingle w/ 1 Felt
2		〃	〃
3		〃	〃
4		Windows	Glazing
5		〃	〃
6		〃	〃
7		Siding	Transite & Felt
8		〃	〃
9		〃	〃
			(N)

Client Sample # (s): - **Total # of Samples:** 37

Relinquished (Client): **Date:** 11/6/2020 **Time:** 2:58pm

Received (Lab): **Date:** 1/17/20 **Time:** 8:45am FAX

Comments/Special Instructions: 7458 1585 4462

OrderID: 412000569

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*: 412000569

10801 Southern Loop Blvd
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		Back Porch Closet	Brown Vinyl Flooring & Felt
11		↓	↓
12		↓	↓
13		Kitchen	9x9 Red FT w/ Mastic &
14		↓	↓ Felt
15		↓	↓
16		Kitchen	Brown 9x9 FT w/ Mastic
17		↓	↓ & Felt
18		↓	↓
19		Kitchen	2 Layers of Vinyl
20		↓	↓ Flooring
21		↓	↓
22		Bathroom	SA Tan Tile
23		↓	↓
24		↓	↓
25		Bathroom Closet	Green FT and Mastic over
26		↓	↓ Brown FT & Mastic
27		↓	↓
28		Bathroom	Brown Mastic behind
29		↓	↓ DW
30		↓	↓
31 through 37		Throughout	Plaster & Felt (N)
		↓	↓

*Comments/Special Instructions:

Page 2 of 2 pages

SECTION IV

Photographic Log

Photo 1 – 183 E. Columbia Avenue in Spartanburg, South Carolina.

Photo 2 – Shingled Roof and assumed asbestos black tar on damaged, leaning chimney. 2 chimneys exist.

Photo 3 – Transite exterior siding with felt.

Photo 4 – Two fuel oil tanks behind the house.

Photo 5 – Detached shed in back yard.

Photo 6 – Assumed asbestos back porch roof flashing tar.

Photo 7 – Back porch collapsed roof.

Photo 8 – Back porch closet flooring.

Photo 9 – Bathroom closet flooring.

Photo 10 – Bathroom mastic behind wall-board.

Photo 11 – Bathroom 12”x 12” tan self-stick tile.

Photo 12 – Multiple layers of kitchen flooring.

Photo 13 – Plaster ceiling.

Photo 14 – Self-stick tile flooring in partially finished attic. Same as two layers in kitchen samples.

SECTION V

SC DHEC Asbestos Inspector License

SCDHEC ISSUED

Asbestos ID Card

Tedman K Shultz

Expiration Date:

CONSULTBI	**BI-00971**	**01/16/20**
AIRSAMPLER	**AS-00355**	**03/06/20**

Tedman K Shultz
7 Winchester Court
Mauldin, SC 29662

123985

North Carolina
Asbestos Accreditation

EXPIRATION			
03-31-2020			
DOB	SEX	HT	WT
03-10-1972	M	5'10"	240
CLASS		#	EXP
AIR MONITOR		80864	03-20
INSPECTOR		12900	01-20