



Asbestos & Lead Based Paint Assessment

City of Spartanburg
118 Overbrook Circle
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





Apex Project Number 0120-17

February 10, 2020

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

Reference: Asbestos and Lead-Based Paint Assessment Services
118 Overbrook Circle
Spartanburg, South Carolina 29306

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. 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 'S. Hamby'.

Stephanie Hamby
Field Scientist

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

Tom Oliver
Vice President

Appendices

ASBESTOS AND LEAD BASED PAINT ASSESSMENT

**CITY OF SPARTANBURG
118 OVERBROOK CIRCLE
SPARTANBURG, SOUTH CAROLINA 29306**

APEX PROJECT NO. 0120-17

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SECTION I

Asbestos & Lead Evaluation Report

ASBESTOS EVALUATION REPORT APEX PROJECT NUMBER: 0120-17
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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:	118 Overbrook Circle Spartanburg, SC 29306		
Assessor:	Ted Shultz	Date of Assessment:	1/07/2020
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
Foundation:	Brick Crawlspace	Approximate Square Footage:	1,500 SF

EXTERIOR BUILDING MATERIALS

- MDF siding over wood siding with felt.
- Wooden windows.
- Window caulk and glaze.
- Wooden doors.
- Gutters.
- Chimney with tar assume positive.
- House roof has two layers of shingles with no felt.
- Detached shed has window glaze.
- Detached shed's roof has one layer of shingle with felt.
- 300 gallon oil tank behind shed.

INTERIOR BUILDING MATERIALS

- Wooden floors.
- Orange roll vinyl flooring with felt in kitchen.
- 12"x12" self-stick flooring with felt in dining room.
- 9"x9" burgundy tile and mastic.
- Plaster over unfinished drywall walls and ceilings.
- Repair area around front window consists of drywall and joint compound.
- Black felt on wooden floor.
- Paneling.
- Wall paper

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-one (41) 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. Fifty-six (56) samples were analyzed due to layering by PLM method 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). Sixteen (16) 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 220 SF of orange sheet flooring located in the kitchen and dining room.
- Approximately 120 SF of 9" x 9" burgundy floor tile and mastic in the front right room.
- Approximately 6 LF of chimney tar. (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/m³) during an eight-hour workday and a permissible exposure level of fifty micrograms per cubic meter (50 µg/m³) for employees.

Currently, EPA defines LBP as paint containing in excess of, or equal to, 1.0 mg/cm². *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:

- Grey wooden doors.
- White wooden door frames.

Interior:

- No LBP was identified in the sampled areas.

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 $0.1 \text{ mg}/\text{cm}^2$ 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
PLM & TEM ANALYSIS**

Project Name: COS 118 Overbrook Circle NIP ACM-LBP

Sampled By: Ted Shultz

Project Location: 118 Overbrook Circle, 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	House Roof	Roofing (2 shingles & no felt)	PLM - NAD	Non-friable	Good	1,600 SF
2			TEM - NAD			
3						
4	Under wood siding	Black felt	PLM - NAD	Non-friable	Good	4,100 SF
5			TEM - NAD			
6						
7	House Windows	glaze	PLM - NAD	Non-friable	Good	12 EA
8			TEM - NAD			
9						
10		Caulk	PLM - NAD	Non-friable	Good	
11			TEM - NAD			
12						
13	Shed Roof	2 shingles, 1 felt	PLM - NAD	Non-friable	Good	500 SF
14			TEM - NAD			
15						
16	Kitchen & Dining Room	Orange sheet flooring w/felt	PLM - 12% Chrysotile (flooring), PLM - NAD (mastic & felt)	Non-friable	Good	220 SF
17			TEM - NAD (mastic & felt)			
18						
19	Dining Room	12"x12" wood pattern self stick floor tile	PLM - NAD	Non-friable	Good	100 SF
20			TEM - NAD			
21						
22	Front right room	9"x9" burgundy floor tile and mastic	PLM - 3% Chrysotile (Floor tile), 4% Chrysotile (Mastic)	Non-friable	Good	120 SF
23						
24						

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

Project Name: COS 118 Overbrook Circle NIP ACM-LBP

Sampled By: Ted Shultz

Project Location: 118 Overbrook Circle, 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	Tan square pattern roll vinyl w/ tan mastic	PLM - NAD	Non-friable	Good	50 SF
26			TEM - NAD			
27						
28	Bathroom, hall & closet floors	Black felt	PLM - NAD	Non-Friable	Good	75 SF
29			TEM - NAD			
30						
31	Living room front window wall repair	Drywall & joint compound	PLM - NAD	Friable	Good	35 SF
32						
33						
34	Walls & Ceilings throughout	Plaster over unfinished drywall	PLM - NAD	Friable	Good	4,100 SF
35						
36						
37						
38						
39	Shed window	Glazing	PLM - NAD	Non-friable	Good	1 EA
40			TEM - NAD			
41						
Assumed	Chimney	Chimney tar	Assumed	Non-friable	Good	6 LF

Bold = Positive For Asbestos

SF = Square Feet

Chry = Chrysotile

**FIELD DATA SHEET
LBP ANALYSIS**

Project Name: COS 118 Overbrook Circle NIP ACM-LBP

Sampled By: Tom Oliver

Project Location: 118 Overbrook Circle, 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)
79	Exterior	Siding	Grey	Wood	0.00
80	Exterior	Brick	Red	Brick	0.00
81	Exterior	Door	Grey	Wood	3.07
82	Exterior	Door Frame	White	Wood	2.96
83	Exterior	Window	White	Wood	0.74
84	Exterior	Window Frame	White	Wood	0.31
85	Exterior	Porch Column	Red	Wood	0.00
86	Interior	Wall	White	Drywall	0.00
87	Interior	Shelf	White	Wood	0.02
88	Interior	Door Case	White	Wood	0.14
89	Interior	Door	White	Wood	0.12
90	Interior	Door Frame	Blue	Wood	0.31
91	Interior	Window	White	Wood	0.06
92	Interior	Window Frame	White	Wood	0.03
93	Interior	Baseboard	White	Wood	0.04
94		Calibration			1.14
95		Calibration			1.14
96		Calibration			1.12

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: 412000543

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: 01/17/2020 8:45 AM

Analysis Date: 01/21/2020 - 01/22/2020

Collected Date: 01/07/2020

Project: COS 118 Overbrook Cir (City of Spartanburg)

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-Green Shingle <small>412000543-0001</small>	Roof-House - 2 Layers of Shingle	Black/Green Fibrous Heterogeneous	15% Glass	10% Quartz 30% Ca Carbonate 45% Non-fibrous (Other)	None Detected
1-Red Shingle <small>412000543-0001A</small>	Roof-House - 2 Layers of Shingle	Red/Black Fibrous Heterogeneous	10% Glass	10% Quartz 20% Ca Carbonate 60% Non-fibrous (Other)	None Detected
2-Green Shingle <small>412000543-0002</small>	Roof-House - 2 Layers of Shingle	Black/Green Non-Fibrous Homogeneous	5% Glass	10% Quartz 20% Ca Carbonate 65% Non-fibrous (Other)	None Detected
2-Red Shingle <small>412000543-0002A</small>	Roof-House - 2 Layers of Shingle	Red/Black Fibrous Homogeneous	5% Glass	10% Quartz 15% Ca Carbonate 70% Non-fibrous (Other)	None Detected
4 <small>412000543-0003</small>	Beneath Wood Siding - Felt	Black Fibrous Homogeneous	15% Cellulose	85% Non-fibrous (Other)	None Detected
5 <small>412000543-0004</small>	Beneath Wood Siding - Felt	Black Fibrous Homogeneous	40% Cellulose	60% Non-fibrous (Other)	None Detected
7 <small>412000543-0005</small>	Windows - Glazing	Tan Non-Fibrous Homogeneous		15% Ca Carbonate 85% Non-fibrous (Other)	None Detected
8 <small>412000543-0006</small>	Windows - Glazing	Tan Non-Fibrous Homogeneous		25% Ca Carbonate 75% Non-fibrous (Other)	None Detected
10 <small>412000543-0007</small>	Windows - Caulk	Tan Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
11 <small>412000543-0008</small>	Windows - Caulk	Tan Non-Fibrous Homogeneous		20% Ca Carbonate 80% Non-fibrous (Other)	None Detected
13-Red Shingle <small>412000543-0009</small>	Shed Roof - 2 Shingle & Felt	Red/Black Fibrous Heterogeneous	10% Glass	10% Quartz 20% Ca Carbonate 60% Non-fibrous (Other)	None Detected
13-Yellow Shingle <small>412000543-0009A</small>	Shed Roof - 2 Shingle & Felt	Black/Yellow Non-Fibrous Heterogeneous	2% Cellulose 10% Glass	10% Quartz 20% Ca Carbonate 58% Non-fibrous (Other)	None Detected
13-Felt <small>412000543-0009B</small>	Shed Roof - 2 Shingle & Felt	Black Fibrous Homogeneous	50% Cellulose	50% Non-fibrous (Other)	None Detected
14-Red Shingle <small>412000543-0010</small>	Shed Roof - 2 Shingle & Felt	Red/Black Fibrous Homogeneous	5% Glass	10% Quartz 10% Ca Carbonate 75% Non-fibrous (Other)	None Detected
14-Yellow Shingle <small>412000543-0010A</small>	Shed Roof - 2 Shingle & Felt	Black/Yellow Fibrous Homogeneous	5% Glass	10% Quartz 10% Ca Carbonate 75% Non-fibrous (Other)	None Detected
14-Felt <small>412000543-0010B</small>	Shed Roof - 2 Shingle & Felt	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected

Initial report from: 01/22/2020 11:48:44



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: 412000543

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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
16-Flooring 412000543-0011	Kitchen & Dining Room - Orange Vinyl Flooring	Tan Fibrous Homogeneous	20% Cellulose	68% Non-fibrous (Other)	12% Chrysotile
16-Mastic 412000543-0011A	Kitchen & Dining Room - Orange Vinyl Flooring	Tan Non-Fibrous Homogeneous	10% Cellulose	5% Ca Carbonate 85% Non-fibrous (Other)	None Detected
16-Felt 412000543-0011B	Kitchen & Dining Room - Orange Vinyl Flooring	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
17-Flooring 412000543-0012	Kitchen & Dining Room - Orange Vinyl Flooring				Positive Stop (Not Analyzed)
17-Mastic 412000543-0012A	Kitchen & Dining Room - Orange Vinyl Flooring	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
17-Felt 412000543-0012B	Kitchen & Dining Room - Orange Vinyl Flooring	Black Fibrous Homogeneous	50% Cellulose	50% Non-fibrous (Other)	None Detected
19 412000543-0013	Dining Room - Wood Pattern SA Floor Tile	Brown/Tan Non-Fibrous Homogeneous	2% Cellulose	30% Ca Carbonate 68% Non-fibrous (Other)	None Detected
20 412000543-0014	Dining Room - Wood Pattern SA Floor Tile	Brown/Tan Non-Fibrous Homogeneous		30% Ca Carbonate 70% Non-fibrous (Other)	None Detected
22-Floor Tile 412000543-0015	Front Rt. Room - 9 x 9 Burgundy FT & Mastic	Purple Non-Fibrous Homogeneous		40% Ca Carbonate 57% Non-fibrous (Other)	3% Chrysotile
22-Mastic 412000543-0015A	Front Rt. Room - 9 x 9 Burgundy FT & Mastic	Black Non-Fibrous Homogeneous		96% Non-fibrous (Other)	4% Chrysotile
23-Floor Tile 412000543-0016	Front Rt. Room - 9 x 9 Burgundy FT & Mastic				Positive Stop (Not Analyzed)
23-Mastic 412000543-0016A	Front Rt. Room - 9 x 9 Burgundy FT & Mastic				Positive Stop (Not Analyzed)
25-Flooring 412000543-0017	Bathroom - Tan Square Vinyl Floor & Mastic	Tan Non-Fibrous Homogeneous	5% Cellulose	10% Ca Carbonate 85% Non-fibrous (Other)	None Detected
25-Mastic 412000543-0017A	Bathroom - Tan Square Vinyl Floor & Mastic	Tan Non-Fibrous Homogeneous	4% Cellulose	5% Ca Carbonate 91% Non-fibrous (Other)	None Detected
26-Flooring 412000543-0018	Bathroom - Tan Square Vinyl Floor & Mastic	Tan Non-Fibrous Homogeneous	15% Cellulose	20% Ca Carbonate 65% Non-fibrous (Other)	None Detected
26-Mastic 412000543-0018A	Bathroom - Tan Square Vinyl Floor & Mastic	Tan Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
28-Felt 412000543-0019	Bathroom, Hall, & Closet Floors - Black Felt	Black Fibrous Homogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected
28-Mastic 412000543-0019A	Bathroom, Hall, & Closet Floors - Black Felt	Tan Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
29-Felt 412000543-0020	Bathroom, Hall, & Closet Floors - Black Felt	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected

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

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

EMSL Order: 412000543
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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
29-Mastic 412000543-0020A	Bathroom, Hall, & Closet Floors - Black Felt	Brown Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected
31-Drywall 412000543-0021	Living Room Front Wall Patch - Drywall & JC	Brown/Gray Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
31-Joint Compound 412000543-0021A	Living Room Front Wall Patch - Drywall & JC	White Non-Fibrous Homogeneous		40% Ca Carbonate 60% Non-fibrous (Other)	None Detected
32-Drywall 412000543-0022	Living Room Front Wall Patch - Drywall & JC	Gray Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
32-Joint Compound 412000543-0022A	Living Room Front Wall Patch - Drywall & JC	White Non-Fibrous Homogeneous		40% Ca Carbonate 60% Non-fibrous (Other)	None Detected
33-Drywall 412000543-0023	Living Room Front Wall Patch - Drywall & JC	Gray Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
33-Joint Compound 412000543-0023A	Living Room Front Wall Patch - Drywall & JC	White Non-Fibrous Homogeneous		40% Ca Carbonate 60% Non-fibrous (Other)	None Detected
34-Drywall 412000543-0024	Throughout - Plaster over Drywall	Brown/Gray Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
34-Skim Coat 412000543-0024A	Throughout - Plaster over Drywall	White Non-Fibrous Homogeneous		5% Quartz 15% Ca Carbonate 80% Non-fibrous (Other)	None Detected
34-Rough Coat 412000543-0024B	Throughout - Plaster over Drywall	Gray Non-Fibrous Homogeneous	2% Cellulose 2% Synthetic	30% Quartz 5% Ca Carbonate 61% Non-fibrous (Other)	None Detected
35-Drywall 412000543-0025	Throughout - Plaster over Drywall	Brown/Gray Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
35-Skim Coat 412000543-0025A	Throughout - Plaster over Drywall	White Non-Fibrous Homogeneous		4% Quartz 15% Ca Carbonate 81% Non-fibrous (Other)	None Detected
35-Rough Coat 412000543-0025B	Throughout - Plaster over Drywall	Gray Non-Fibrous Homogeneous	4% Cellulose 3% Synthetic	30% Quartz 5% Ca Carbonate 58% Non-fibrous (Other)	None Detected
36-Drywall 412000543-0026	Throughout - Plaster over Drywall	Brown/Gray Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
36-Skim Coat 412000543-0026A	Throughout - Plaster over Drywall	White Non-Fibrous Homogeneous		15% Ca Carbonate 85% Non-fibrous (Other)	None Detected
36-Rough Coat 412000543-0026B	Throughout - Plaster over Drywall	Gray Non-Fibrous Homogeneous	2% Synthetic	30% Quartz 10% Ca Carbonate 5% Mica 53% Non-fibrous (Other)	None Detected
37-Drywall 412000543-0027	Throughout - Plaster over Drywall	Gray Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
37-Skim Coat 412000543-0027A	Throughout - Plaster over Drywall	White Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected

Initial report from: 01/22/2020 11:48:44



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EMSL Order: 412000543
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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
37-Rough Coat <i>412000543-0027B</i>	Throughout - Plaster over Drywall	Gray Non-Fibrous Homogeneous	<1% Cellulose	25% Quartz 5% Ca Carbonate 70% Non-fibrous (Other)	None Detected
38-Drywall <i>412000543-0028</i>	Throughout - Plaster over Drywall	Gray Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
38-Skim Coat <i>412000543-0028A</i>	Throughout - Plaster over Drywall	White Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
38-Rough Coat <i>412000543-0028B</i>	Throughout - Plaster over Drywall	Gray Non-Fibrous Homogeneous		25% Quartz 5% Ca Carbonate 70% Non-fibrous (Other)	None Detected
39 <i>412000543-0029</i>	Shed Windows - Glazing	Tan/White Non-Fibrous Homogeneous	2% Cellulose	5% Quartz 15% Ca Carbonate 78% Non-fibrous (Other)	None Detected
40 <i>412000543-0030</i>	Shed Windows - Glazing	White Non-Fibrous Homogeneous		15% Ca Carbonate 85% Non-fibrous (Other)	None Detected

Analyst(s) _____
 Gloriana Ramirez (32)
 Lacy Searcy (24)



 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. Pineville, NC NVLAP Lab Code 200841-0, VA 3333 00312

Initial report from: 01/22/2020 11:48:44



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: 412000543

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: 01/17/2020 8:45 AM

Analysis Date: 01/25/2020

Collected Date: 01/07/2020

Project: COS 118 Overbrook Cir (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-Green Shingle 412000543-0031	Roof-House - 2 Layers of Shingle	Black/Green Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
3-Red Shingle 412000543-0032	Roof-House - 2 Layers of Shingle	Red/Black Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
6 412000543-0033	Beneath Wood Siding - Felt	Black Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
9 412000543-0034	Windows - Glazing	Beige Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
12 412000543-0035	Windows - Caulk	White Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
15-Red Shingle 412000543-0036	Shed Roof - 2 Shingle & Felt	Red/Black Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
15-Yellow Shingle 412000543-0037	Shed Roof - 2 Shingle & Felt	Brown/Black/Yellow Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
15-Felt 412000543-0038	Shed Roof - 2 Shingle & Felt	Black Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
18-Mastic 412000543-0039	Kitchen & Dining Room - Orange Vinyl Flooring	Gray Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
18-Felt 412000543-0040	Kitchen & Dining Room - Orange Vinyl Flooring	Black Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
21 412000543-0041	Dining Room - Wood Pattern SA Floor Tile	Brown Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
27-Flooring 412000543-0042	Bathroom - Tan Square Vinyl Floor & Mastic	Beige Non-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. Pineville, NC

Initial report from: 01/27/2020 08:23:33



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: 412000543
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: 01/17/2020 8:45 AM
Analysis Date: 01/25/2020
Collected Date: 01/07/2020

Project: COS 118 Overbrook Cir (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
27-Mastic 412000543-0043	Bathroom - Tan Square Vinyl Floor & Mastic	Tan Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
30-Felt 412000543-0044	Bathroom, Hall & Closet Floors - Black Felt	Black Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
30-Mastic 412000543-0045	Bathroom, Hall & Closet Floors - Black Felt	Tan Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
41 412000543-0046	Shed Windows - Glazing	White Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected

Analyst(s)

Aaron Hartley (16)

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. Pineville, NC

Initial report from: 01/27/2020 08:23:33



Asbestos Bulk Building Material Chain of Custody

Pineville, NC 28134

PHONE: (704) 525-2205

FAX: (704) 525-2382

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

EMSL Order Number (Lab Use Only):

412000543

Company: Apex Environmental Management		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): Rebecca Shultz		Telephone #: 864-404-3210	
Email Address: rshultz@apex-ehs.com		Fax #:	Purchase Order:
Project Name/Number: <u>CDS 118 Overbrook Cir</u>		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%)	<input checked="" type="checkbox"/> TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
<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:** 1/7/20

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

Sample #	HA #	Sample Location	Material Description
1		Roof - House	2 layers of Shingle
2		↓	↓
3		↓	↓
4		Beneath Wood Siding	Felt
5		↓	↓
6		↓	↓
7		Windows	Glazing
8		↓	↓
9		↓	↓
10			

Client Sample # (s): - **Total # of Samples:** 4/1

Relinquished (Client): **Date:** 1/16/2020 **Time:** 2:59 PM

Received (Lab): **Date:** 1/17/20 **Time:** 8:45 AM F/V

Comments/Special Instructions: 7958 1585 4462



EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (Lab Use Only):

412000543

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		Windows	Caulk
11		↓	↓
12		↓	↓
13		Shed Roof	2 Shingles & 1 Felt
14		↓	↓
15		↓	↓
16		Kitchen & Dining Room	Orange Vinyl Flooring
17		↓	↓
18		↓	↓
19		Dining Room	Wood pattern SA Floor Tile
20		↓	↓
21		↓	↓
22		Front Rt. Room	↗
23		↓	9x9 Burgundy FT & Mastic
24		↓	↓
25		Bathroom	Ten Square Vinyl Floor
26		↓	↓
27		↓	↓
28		Bathroom, Hall, & Closet Floors	Black Felt
29		↓	↓
30		↓	↓
31		Living Room Front Wall	Dry wall & JC
32		↓	↓
33		↓	↓

*Comments/Special Instructions:

SECTION IV
Photographic Log



Photo 1 – 118 Overbrook Circle in Spartanburg, South Carolina.



Photo 2 – Black felt under wood siding.



Photo 3 – Window glaze and caulk.



Photo 4 – Shingled roof and assumed asbestos chimney tar.



Photo 5 – Detached shed.



Photo 6 – 300 gallon fuel oil tank behind detached shed.



Photo 7– Orange roll vinyl kitchen flooring with felt.



Photo 8 – Dining room wood pattern self-stick tile over orange roll vinyl flooring with felt.



Photo 9 – Front right room burgundy 9"x 9" floor tile and mastic.

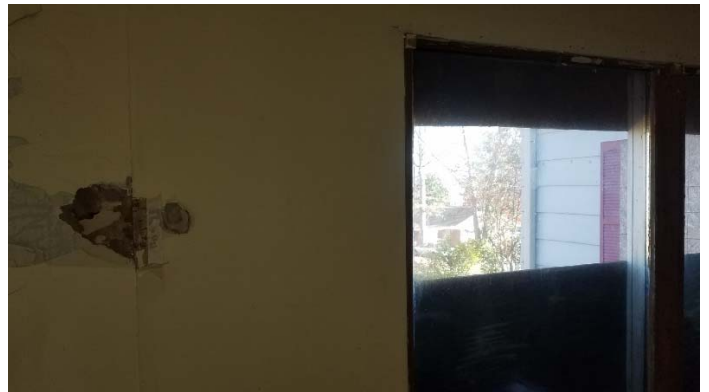


Photo 10 – Plaster over unfinished drywall walls and ceilings.



Photo 11 – Black felt on wood flooring in bathroom, hallway and hall closet floor.

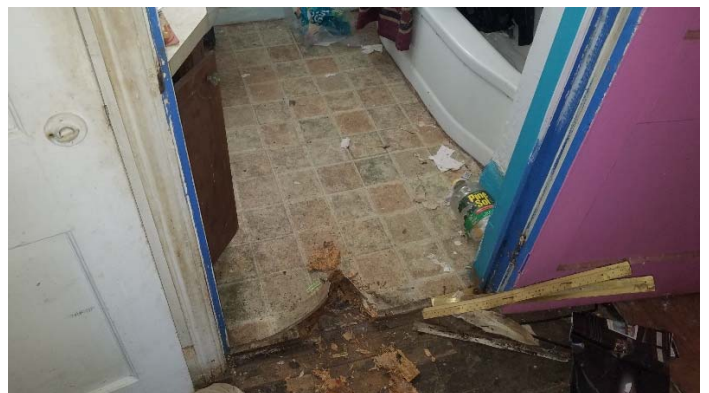


Photo 12 – Bathroom tan square pattern roll vinyl flooring with mastic. Black felt below flooring and wood sub-floor.



Photo 13 – Window glaze on detached shed.



Photo 14 – Plaster over unfinished drywall.



Photo 15 – Transition from plaster over drywall to drywall with joint compound at front window repair.

SECTION V

SC DHEC Asbestos Inspector License

SCDHEC ISSUED
Asbestos ID Card

Tedman K Shultz



CONSULTBI BI-00971
AIRSAMPLER AS-00355

Expiration Date:
01/16/20
03/06/20

**North Carolina
Asbestos Accreditation**



Tedman K Shultz
7 Winchester Court
Mauldin, SC 29662

123985

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