



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

City of Spartanburg  
4 Buckthorn Road  
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: 0120-17

February 10, 2020





**Apex Project Number 0120-17**

February 10, 2020

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

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

Reference: Asbestos and Lead-Based Paint Assessment Services  
4 Buckthorn Road  
Spartanburg, South Carolina 29301

**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  
4 BUCKTHORN ROAD  
SPARTANBURG, SOUTH CAROLINA 29301**

**APEX PROJECT NO. 0120-17**

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**SECTION I**

**Asbestos & Lead Evaluation Report**

<b>ASBESTOS EVALUATION REPORT</b> <b>APEX PROJECT NUMBER: 0120-17</b>
--------------------------------------------------------------------------

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:	4 Buckthorn Road Spartanburg, SC 29301		
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:	Block Crawlspace	Approximate Square Footage:	1,350 SF

**EXTERIOR BUILDING MATERIALS**

- Felt under cedar shake siding.
- Metal door.
- Metal storm windows.
- Wooden windows.
- Roof consists of one layer of tab shingles and one layer of felt.
- Chimney with tar.

**INTERIOR BUILDING MATERIALS**

- Wooden floors.
- Tile floor.
- Roll vinyl under wood and tile.
- Drywall walls under panel.
- Ceiling texture on drywall ceiling.
- Mastics under wooden wall paneling.

## **SCOPE OF THE SURVEY**

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

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

## **METHODS**

### **Asbestos Containing Materials**

In order to determine if the suspect materials observed during the visual survey contained asbestos, representative bulk samples were collected and placed in sealed packages. Thirty-one (31) 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. Thirty-three (33) 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). Ten (10) 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 3,700 SF of joint compound throughout the walls and ceiling.
- 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 ( $30 \mu\text{g}/\text{m}^3$ ) 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, EPA defines LBP as paint containing in excess of, or equal to,  $1.0 \text{ mg}/\text{cm}^2$ . *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:

- Grey wooden porch header.

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

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

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



**SECTION II**

**Asbestos & LBP Data Tables**

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

Project Name: COS 4 Buckthorn Road NIP ACM-LBP

Sampled By: Ted Shultz

Project Location: 4 Buckthorn Road, Spartanburg, SC 29301

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 (1 shingle, 1 felt)	PLM - NAD	Non-friable	Good	1,500 SF
2			TEM - NAD			
3			TEM - NAD			
4	Under cedar siding	Felt	PLM - NAD	Non-friable	Good	2,200 SF
5			TEM - NAD			
6			TEM - NAD			
7	Wood windows	Glazing	PLM - NAD	Non-friable	Good	12 EA
8			TEM - NAD			
9			TEM - NAD			
10	Under wood paneling	Paneling mastic, brown	PLM - NAD	Non-friable	Good	3,700 SF
11			TEM - NAD			
12			TEM - NAD			
13	Kitchen, under tile & wood	Wood pattern roll vinyl w/ yellow mastic	PLM - NAD	Non-friable	Good	120 SF
14			TEM - NAD			
15			TEM - NAD			
16	Bathroom floor under tile & wood	Tan roll vinyl with brown mastic	PLM - NAD	Non-friable	Good	40 SF
17			TEM - NAD			
18			TEM - NAD			
19	Ceiling Throughout	Ceiling Texture	PLM - NAD	Friable	Damaged	1,500 SF
20			PLM - NAD			
21			PLM - NAD			

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

Project Name: COS 4 Buckthorn Road NIP ACM-LBP

Sampled By: Ted Shultz

Project Location: 4 Buckthorn Road, Spartanburg, SC 29301

Project Manager: Ted Shultz

Project Number: 0120-17

Date: 1/7/2020

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
22	Walls and Ceiling	Drywall and joint compound	PLM - 2% Chrysotile (joint compound), PLM - NAD (drywall & tape)	Friable	Damaged	3,700 SF
23						
24						
25						
26						
27	Bathroom walls	Mastic under wall board	PLM - NAD	Non-Friable	Good	200 SF
28			TEM - NAD			
29						
30	Ceiling Throughout	Ceiling Texture	PLM - NAD	Friable	Damaged	-
31						
<b>Assumed</b>	<b>Chimney</b>	<b>Chimney tar</b>	<b>Assumed</b>	<b>Non-friable</b>	<b>Good</b>	<b>6 LF</b>

NAD = No Asbestos Detected

LF = Linear Feet

EA = Each

**Bold = Positive For Asbestos**

SF = Square Feet

Chry = Chrysotile

**FIELD DATA SHEET  
LBP ANALYSIS**

Project Name: COS 4 Buckthorn Road NIP ACM-LBP

Sampled By: Tom Oliver

Project Location: 4 Buckthorn Road, Spartanburg, SC 29301

Project Manager: Tom Oliver

Project Number: 0120-17

Date: 1/30/2020

Sample No.	Sample Location	Component	Color	Substrate	Analytical Result (mg/m <sup>3</sup> )
1	Standardization				185.00
2	Calibration				1.22
3	Calibration				1.15
4	Calibration				1.22
5	Exterior Window	Window	Grey	Wood	0.00
6	Exterior Window	Casing	Grey	Wood	0.00
7	Siding	Siding	Grey	Wood	0.84
8	Exterior	Door	White	Metal	0.00
9	Exterior	Door Frame	White	Wood	0.00
10	Interior	Window	White	Wood	0.00
11	Interior	Window Frame	White	Wood	0.00
12	Interior	Fireplace Mantle	White	Wood	0.16
13	Interior	Wall	Pink	Wood Paneling	0.00
14	Interior	Crown	White	Wood	0.00
15	Interior	Baseboard	White	Wood	0.11
16	Interior	Door	White	Wood	0.18
17	Interior	Door Frame	White	Wood	0.05
18	Interior	Wall	Burgandy	Wood Paneling	0.00
19	Interior	Ceiling	White	Drywall	0.00
20	Interior	Wall	Pink	Wood Paneling	0.00
21	Interior	Wall	Green	Wood Paneling	0.21
22	Interior	Wall	Tan	Drywall	0.14
23	Interior	Wall	White	Drywall	0.00
<b>24</b>	<b>Exterior</b>	<b>Porch Header</b>	<b>Grey</b>	<b>Wood</b>	<b>1.15</b>

**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](mailto:charlottelab@emsl.com)

EMSL Order: 412000542

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

**Collected Date:** 01/07/2020

**Project:** COS 4 Buckthorn Rd (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-Shingle <small>412000542-0001</small>	Roof - Shingle & Felt	Tan/Black Fibrous Homogeneous	5% Glass	10% Quartz 20% Ca Carbonate 65% Non-fibrous (Other)	None Detected
1-Felt <small>412000542-0001A</small>	Roof - Shingle & Felt	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
2-Shingle <small>412000542-0002</small>	Roof - Shingle & Felt	Tan/Black Non-Fibrous Homogeneous	5% Glass	10% Quartz 15% Ca Carbonate 70% Non-fibrous (Other)	None Detected
2-Felt <small>412000542-0002A</small>	Roof - Shingle & Felt	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
4 <small>412000542-0003</small>	Under Siding - Felt	Black Fibrous Homogeneous	50% Cellulose	50% Non-fibrous (Other)	None Detected
5 <small>412000542-0004</small>	Under Siding - Felt	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
7 <small>412000542-0005</small>	Windows - Glazing	Gray/Tan/White Non-Fibrous Homogeneous		25% Ca Carbonate 75% Non-fibrous (Other)	None Detected
8 <small>412000542-0006</small>	Windows - Glazing	Gray Non-Fibrous Homogeneous		15% Ca Carbonate 85% Non-fibrous (Other)	None Detected
10 <small>412000542-0007</small>	Beneath Paneling	Tan Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
11 <small>412000542-0008</small>	Beneath Paneling	Tan Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected
13-Flooring <small>412000542-0009</small>	Kitchen Under Tile & Wood	Brown/Gray Fibrous Homogeneous	20% Cellulose	20% Ca Carbonate 60% Non-fibrous (Other)	None Detected
13-Mastic <small>412000542-0009A</small>	Kitchen Under Tile & Wood	Tan Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
14-Flooring <small>412000542-0010</small>	Kitchen Under Tile & Wood	Gray Non-Fibrous Homogeneous	20% Cellulose	20% Ca Carbonate 60% Non-fibrous (Other)	None Detected
14-Mastic <small>412000542-0010A</small>	Kitchen Under Tile & Wood	Tan Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
16-Flooring <small>412000542-0011</small>	Bathroom Under Tile & Wood	Brown/Tan Fibrous Homogeneous	30% Cellulose 2% Glass	68% Non-fibrous (Other)	None Detected
16-Mastic <small>412000542-0011A</small>	Bathroom Under Tile & Wood	Brown Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected

Initial report from: 01/22/2020 11:48:19



# 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](mailto:charlottelab@emsl.com)

**EMSL Order:** 412000542  
**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
17-Flooring <small>412000542-0012</small>	Bathroom Under Tile & Wood	Brown Fibrous Homogeneous	20% Cellulose	80% Non-fibrous (Other)	None Detected
17-Mastic <small>412000542-0012A</small>	Bathroom Under Tile & Wood	Brown Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
19-Drywall <small>412000542-0013</small> <i>No texture present</i>	Throughout - Ceiling Texture	Brown/Gray Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
20-Drywall <small>412000542-0014</small> <i>No texture present</i>	Throughout - Ceiling Texture	Brown/Gray Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
21 <small>412000542-0015</small>	Throughout - Ceiling Texture	White Non-Fibrous Homogeneous		40% Ca Carbonate 60% Non-fibrous (Other)	None Detected
22-Drywall <small>412000542-0016</small> <i>No joint compound present</i>	Throughout - Drywall & JC	Brown/Gray Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
23-Drywall <small>412000542-0017</small>	Throughout - Drywall & JC	Brown/Gray Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
23-Joint Compound <small>412000542-0017A</small>	Throughout - Drywall & JC	Tan Non-Fibrous Homogeneous		40% Ca Carbonate 58% Non-fibrous (Other)	2% Chrysotile
23-Tape <small>412000542-0017B</small>	Throughout - Drywall & JC	Tan Fibrous Homogeneous	100% Cellulose		None Detected
24-Drywall <small>412000542-0018</small> <i>No joint compound present</i>	Throughout - Drywall & JC	Brown/Gray Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
25-Drywall <small>412000542-0019</small> <i>No joint compound present</i>	Throughout - Drywall & JC	Gray Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
25-Tape <small>412000542-0019A</small>	Throughout - Drywall & JC	Tan Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (Other)	None Detected
26-Drywall <small>412000542-0020</small>	Throughout - Drywall & JC	Gray Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
26-Joint Compound <small>412000542-0020A</small>	Throughout - Drywall & JC				Positive Stop (Not Analyzed)
27 <small>412000542-0021</small>	Bathroom - Mastic Under Drywall	Tan Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected
28 <small>412000542-0022</small>	Bathroom - Mastic Under Drywall	Tan Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
30 <small>412000542-0023</small>	Throughout - Ceiling Texture	White Non-Fibrous Homogeneous		30% Ca Carbonate 5% Mica 65% Non-fibrous (Other)	None Detected

Initial report from: 01/22/2020 11:48:19



# 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](mailto:charlottelab@emsl.com)

**EMSL Order:** 412000542  
**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
31	Throughout - Ceiling	White		40% Ca Carbonate	None Detected
	Texture	Non-Fibrous		60% Non-fibrous (Other)	
412000542-0024		Homogeneous			

Analyst(s) \_\_\_\_\_  
 Katherine Sluder (18)  
 Lacy Searcy (15)

  
 \_\_\_\_\_  
 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 11:48:19





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10801 Southern Loop Blvd Pineville, NC 28134

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**EMSL Order:** 412000542

**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 4 Buckthorn Rd (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 412000542-0025	Roof - Shingle & Felt	Gray/Black Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
3-Felt 412000542-0026	Roof - Shingle & Felt	Black Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
6 412000542-0027	Under Siding - Felt	Black Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
9 412000542-0028	Windows - Glazing	Gray Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
12 412000542-0029	Beneath Paneling	Tan Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
15-Flooring 412000542-0030	Kitchen under Tile & Wood	Brown Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
15-Mastic 412000542-0031	Kitchen under Tile & Wood	Tan Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
18-Flooring 412000542-0032	Bathroom under Tile & Wood	Brown/Tan Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
18-Mastic 412000542-0033	Bathroom under Tile & Wood	Tan Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
29 412000542-0034	Bathroom - Mastic Under Drywall	Tan 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 08:22:58



# EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

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

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Apex Environmental Management  
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**Collected Date:** 01/07/2020

**Project:** COS 4 Buckthorn Rd (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
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Analyst(s)

Aaron Hartley (10)

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 08:22:58



# 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):**

412000542

<b>Company :</b> Apex Environmental Management		<b>EMSL-Bill to:</b> <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different <small>If Bill to is Different note instructions in Comments**</small>	
<b>Street:</b> 7 Winchester Court		<i>Third Party Billing requires written authorization from third party</i>	
<b>City:</b> Mauldin	<b>State/Province:</b> SC	<b>Zip/Postal Code:</b> 29662	<b>Country:</b> US
<b>Report To (Name):</b> Rebecca Shultz		<b>Telephone #:</b> 864-404-3210	
<b>Email Address:</b> rshultz@apex-ehs.com		<b>Fax #:</b>	<b>Purchase Order:</b>
<b>Project Name/Number:</b> COS 4 Buckthorn Rd		<b>Please Provide Results:</b> <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email <input type="checkbox"/> Mail	
<b>U.S. State Samples Taken:</b> SC		<b>CT Samples:</b> <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)	<b>Other</b>
<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	Shingle ? Felt
2			
3			
4		Under Siding	Felt
5			
6			
7		Windows	Glazing
8			
9			

<b>Client Sample # (s):</b> -	<b>Total # of Samples:</b> 29
<b>Relinquished (Client):</b>	<b>Date:</b> 1/16/2020 <b>Time:</b> 2:59pm
<b>Received (Lab):</b>	<b>Date:</b> 1/17/20 <b>Time:</b> 8:45am F1X
<b>Comments/Special Instructions:</b>	
7558 1585 4462	



# Asbestos Bulk Building Material Chain of Custody

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

Sample #	HA #	Sample Location	Material Description
10		Beneath Paneling	
11			
12			
13		Kitchen under tile? wood	
14			
15			
16		Bathroom under tile? wood	
17			
18			
19		Throughout	Ceiling Texture
20			
21			
22			Drywall ? JC
23			
24			
25			
26			
27		Bathroom	Mastic Under Drywall
28			
29			
30		Throughout	Ceiling Texture
31			

\*Comments/Special Instructions:

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

Asbestos Containing Materials Assessment  
4 Buckthorn Road  
Spartanburg, South Carolina 29301



Photo 1 – 4 Buckthorn Road in Spartanburg, South Carolina.



Photo 2 – Assumed asbestos chimney tar.



Photo 3 – Shingled roof.



Photo 4 – Window glazing.



Photo 5 – Ceiling texture.



Photo 6 – Mastic behind wooden wall paneling.



Photo 7 – Kitchen wood pattern roll vinyl flooring with mastic under tile and wood sub-floor.



Photo 8 – Bathroom mastic behind wall-board.



Photo 9 – Bathroom tan roll vinyl flooring with mastic under tile and wood sub-floor.



Photo 10 – Black felt under exterior cedar shake siding.

**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