# Asbestos & Lead Based Paint Assessment

City of Spartanburg
938 Ansel Street
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
938 Ansel Street
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**
**938 ANSEL STREET**
**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<br>Suite B<br>Spartanburg, SC 29306 | Client Phone Number: | (864) 596-2911 |
| Project: | Asbestos Evaluation and Lead Based Paint Assessment | | |
| Property Address: | 938 Ansel Street<br>Spartanburg, SC 29306 | | |
| Assessor: | Ted Shultz | Date of Assessment: | 1/7/2020 |
| Company: | Apex Environmental Management<br>7 Winchester Court<br>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 and block crawlspace | Approximate Square Footage | 2,000 SF |

EXTERIOR BUILDING MATERIALS

- Wood siding.
- Aluminum siding.
- Wood windows.
- Brick siding.
- Block siding.
- Window glaze.
- Shingles and metal roof.
- Exterior shed with roof shingles & felt & wooden construction.
- Fire damage throughout the exterior. Limited sampling was performed.

INTERIOR BUILDING MATERIALS

- Plaster.
- Collapsed roof.
- Collapsed floor.
- Roll vinyl flooring.
- VCT flooring.
- Interior building materials were not fully assessed due to fire & structural damage within the residence.
- Due to safety concerns limited asbestos samples were collected from within the residence.
- Debris throughout the residence is considered to be contaminated.

## 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. Twenty-six (26) 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. Eighteen (18) 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. A specific *PLM* and *TEM Data Table* is located in Appendix II of this report and identifies positive materials and designates approximate quantities.

The residence has fire and structural damage throughout the interior and exterior. A limited assessment was conducted due to safety concerns. Sampling was performed in areas Apex could safely access suspect materials through exterior openings and in debris piles. Apex recommends that the residence be demolished in place and materials be treated and disposed of

as friable, regulated ACM.

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

- Approximately 200 SF tar on metal roof.
- Approximately 150 SF tan tile and associated gray layer in the middle room on the right side of building.
- Approximately 2,000 SF contaminated and unassessed debris within the residence and associate debris piles.

*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 wood window.
- White wood window frame.
- Yellow wood door frame.
- White wood siding.

*Interior:*
- The interior of the residence was not assessed due to safety concerns. Interior materials should be assumed to be LBP.

## 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. Demolish the residence with ACM in place and dispose of the waste stream as friable Regulated Asbestos Containing Materials (RACM) and delivered to an asbestos approved hazardous waste landfill for disposal.

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 938 Ansel Street NIP ACM-LBP

Sampled By: Ted Shultz

Project Location: 938 Ansel Street, 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 | Ext. shed | Roofing (1 shingle, 1 felt) | PLM - NAD | Friable | Siginficantly Damaged | 60 SF |
| 2 | | | | | | |
| 3 | | | TEM - NAD | | | |
| 4 | House roof | Roofing (2 shingles, no felt) | PLM - NAD | Friable | Siginficantly Damaged | 2,200 SF |
| 5 | | | | | | |
| 6 | | | TEM - NAD | | | |
| **7** | **Roof metal** | **Tar on metal roof** | **PLM - 5% Chrysotile** | **Friable** | **Siginficantly Damaged** | **200 SF** |
| **8** | | | | | | |
| **9** | | | | | | |
| 10 | Wood window | Glazing | PLM - NAD | Friable | Siginficantly Damaged | 10 EA |
| 11 | | | | | | |
| 12 | | | TEM - NAD | | | |
| 13 | Under aluminum siding | Foil wrap | PLM - NAD | Friable | Siginficantly Damaged | 300 SF |
| 14 | | | | | | |
| 15 | | | TEM - NAD | | | |
| **16** | **Right side middle room** | **Tan tile with mastic and felt** | **PLM - 4% Chrysotile (Grey layer); 5% Chrysotile (floor tile);** < 1% Chrysotile (mastic); NAD (felt) | **Friable** | **Siginficantly Damaged** | **150 SF** |
| **17** | | | | | | |
| **18** | | | TEM - NAD (felt & mastic) | | | |
| 19 | Right rear room | Grey vinyl flooring | PLM - NAD | **Friable** | **Siginficantly Damaged** | 150 SF |
| 20 | | | | | | |
| 21 | | | TEM - NAD | | | |

# ASBESTOS SURVEY FIELD DATA SHEET
# PLM & TEM ANALYSIS

Project Name: COS 938 Ansel Street NIP ACM-LBP

Sampled By: Ted Shultz

Project Location: 938 Ansel Street, 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 |
|---|---|---|---|---|---|---|
| 22 | Walls | Plaster | PLM - NAD | Friable | Siginficantly Damaged | 4,200 SF |
| 23 | | | | | | |
| 24 | | | | | | |
| 25 | | | | | | |
| 26 | | | | | | |
| **Assumed** | **House/debris piles** | **House/debris piles** | **Assumed** | **Friable** | **Siginficantly Damaged** | **2,000 SF** |

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 938 Ansel Street NIP ACM-LBP

Sampled By: Tom Oliver

Project Location: 938 Ansel Street, Spartanburg, SC 29306

Project Manager: Tom Oliver

Project Number: 0120-17

Date: 1/30/2020

| Sample No. | Sample Location | Component | Color | Substrate | Analytical Result ($mg/m^3$) |
|---|---|---|---|---|---|
| **25** | **Exterior** | **Window** | **White** | **Wood** | **1.89** |
| **26** | **Exterior** | **Window Frame** | **White** | **Wood** | **2.09** |
| **27** | **Exterior** | **Door Frame** | **Yellow** | **Wood** | **4.34** |
| **28** | **Exterior** | **Siding** | **White** | **Wood** | **3.31** |
| 29 | Interior | Wall | Grey | Plaster | 0.07 |
| 30 | Exterior | Shed | Grey | Wood | 0.00 |

**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:** | 412000541 |
| **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:** | 01/17/2020 8:45 AM |
| | Mauldin, SC 29662 | **Analysis Date:** | 01/21/2020 - 01/22/2020 |
| | | **Collected Date:** | 01/07/2020 |
| **Project:** | COS 938 Ansel St. (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<br>*412000541-0001* | Shed - Shingle & Felt | Gray/Black<br>Fibrous<br>Heterogeneous | 10% Glass | 10% Quartz<br>20% Ca Carbonate<br>60% Non-fibrous (Other) | None Detected |
| 1-Felt<br>*412000541-0001A* | Shed - Shingle & Felt | Black<br>Fibrous<br>Homogeneous | 60% Cellulose | 40% Non-fibrous (Other) | None Detected |
| 2-Shingle<br>*412000541-0002* | Shed - Shingle & Felt | Black<br>Fibrous<br>Homogeneous | 10% Glass | 8% Quartz<br>5% Ca Carbonate<br>77% Non-fibrous (Other) | None Detected |
| 2-Felt<br>*412000541-0002A* | Shed - Shingle & Felt | Black<br>Fibrous<br>Homogeneous | 70% Cellulose | 30% Non-fibrous (Other) | None Detected |
| 4-Green Shingle<br>*412000541-0003* | House Roof - 2 Layers of Shingle | Green<br>Fibrous<br>Heterogeneous | 20% Cellulose | 10% Quartz<br>70% Non-fibrous (Other) | None Detected |
| 4-Brown Shingle<br>*412000541-0003A* | House Roof - 2 Layers of Shingle | Brown/Black<br>Fibrous<br>Heterogeneous | 10% Glass | 10% Quartz<br>20% Ca Carbonate<br>60% Non-fibrous (Other) | None Detected |
| 5-Green Shingle<br>*412000541-0004* | House Roof - 2 Layers of Shingle | Green<br>Fibrous<br>Homogeneous | 25% Cellulose | 5% Quartz<br>70% Non-fibrous (Other) | None Detected |
| 5-Brown Shingle<br>*412000541-0004A* | House Roof - 2 Layers of Shingle | Brown/Black<br>Fibrous<br>Homogeneous | 10% Glass | 8% Quartz<br>5% Ca Carbonate<br>77% Non-fibrous (Other) | None Detected |
| 7<br>*412000541-0005* | House Roof - Tar on Metal | Black<br>Non-Fibrous<br>Homogeneous | | 10% Ca Carbonate<br>85% Non-fibrous (Other) | 5% Chrysotile |
| 8<br>*412000541-0006* | House Roof - Tar on Metal | | | | Positive Stop (Not Analyzed) |
| 10<br>*412000541-0007* | Windows - Glazing | Tan<br>Non-Fibrous<br>Homogeneous | | 10% Ca Carbonate<br>90% Non-fibrous (Other) | None Detected |
| 11<br>*412000541-0008* | Windows - Glazing | Tan<br>Non-Fibrous<br>Homogeneous | | 25% Ca Carbonate<br>75% Non-fibrous (Other) | None Detected |
| 13<br>*412000541-0009* | Beneath Siding - Foil Wrap | Brown/Silver<br>Fibrous<br>Heterogeneous | 70% Cellulose | 30% Non-fibrous (Other) | None Detected |
| 14<br>*412000541-0010* | Beneath Siding - Foil Wrap | Brown/Black<br>Fibrous<br>Heterogeneous | 60% Cellulose | 40% Non-fibrous (Other) | None Detected |
| 16-Gray Layer<br>*412000541-0012* | Rt. Middle Rm - Tan Tile w/ Mastic & Felt | Gray<br>Non-Fibrous<br>Homogeneous | | 96% Non-fibrous (Other) | 4% Chrysotile |
| 16-Floor Tile<br>*412000541-0012A* | Rt. Middle Rm - Tan Tile w/ Mastic & Felt | Tan<br>Non-Fibrous<br>Homogeneous | | 30% Ca Carbonate<br>65% Non-fibrous (Other) | 5% Chrysotile |

Initial report from: 01/22/2020 15:33:54

**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:** 412000541
**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** |
| 16-Mastic<br>*412000541-0012B*<br>*possible contamination from floor tile* | Rt. Middle Rm - Tan Tile w/ Mastic & Felt | Black<br>Non-Fibrous<br>Homogeneous | | 10% Ca Carbonate<br>90% Non-fibrous (Other) | <1% Chrysotile |
| 16-Felt<br>*412000541-0012C* | Rt. Middle Rm - Tan Tile w/ Mastic & Felt | Black<br>Fibrous<br>Homogeneous | 70% Cellulose | 30% Non-fibrous (Other) | None Detected |
| 16-Mastic<br>*412000541-0012D* | Rt. Middle Rm - Tan Tile w/ Mastic & Felt | Tan<br>Non-Fibrous<br>Homogeneous | | 10% Quartz<br>5% Ca Carbonate<br>85% Non-fibrous (Other) | None Detected |
| 17-Gray Layer<br>*412000541-0013* | Rt. Middle Rm - Tan Tile w/ Mastic & Felt | | | | Positive Stop (Not Analyzed) |
| 17-Floor Tile<br>*412000541-0013A* | Rt. Middle Rm - Tan Tile w/ Mastic & Felt | | | | Positive Stop (Not Analyzed) |
| 17-Mastic<br>*412000541-0013B* | Rt. Middle Rm - Tan Tile w/ Mastic & Felt | Tan/Black<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 17-Felt<br>*412000541-0013C* | Rt. Middle Rm - Tan Tile w/ Mastic & Felt | Black<br>Fibrous<br>Homogeneous | 70% Cellulose | 30% Non-fibrous (Other) | None Detected |
| 17-Mastic<br>*412000541-0013D* | Rt. Middle Rm - Tan Tile w/ Mastic & Felt | Tan<br>Non-Fibrous<br>Homogeneous | <1% Cellulose | 100% Non-fibrous (Other) | None Detected |
| 19<br>*412000541-0014* | Rt. Rear Rm - Grey Vinyl Flooring | Tan<br>Fibrous<br>Homogeneous | 40% Cellulose<br>15% Glass | 45% Non-fibrous (Other) | None Detected |
| 20<br>*412000541-0015* | Rt. Rear Rm - Grey Vinyl Flooring | Tan/Green<br>Fibrous<br>Homogeneous | 35% Cellulose<br>2% Glass | 63% Non-fibrous (Other) | None Detected |
| 22<br>*412000541-0016* | Throughout - Plaster | Tan<br>Fibrous<br>Homogeneous | 5% Synthetic | 30% Quartz<br>10% Ca Carbonate<br>55% Non-fibrous (Other) | None Detected |
| 23<br>*412000541-0017* | Throughout - Plaster | Tan<br>Fibrous<br>Homogeneous | 5% Synthetic | 30% Quartz<br>10% Ca Carbonate<br>55% Non-fibrous (Other) | None Detected |
| 24<br>*412000541-0018* | Throughout - Plaster | Tan<br>Fibrous<br>Homogeneous | 5% Synthetic | 30% Quartz<br>10% Ca Carbonate<br>55% Non-fibrous (Other) | None Detected |
| 25<br>*412000541-0019* | Throughout - Plaster | Tan<br>Non-Fibrous<br>Homogeneous | <1% Cellulose | 25% Quartz<br>10% Ca Carbonate<br>65% Non-fibrous (Other) | None Detected |
| 26<br>*412000541-0020* | Throughout | Tan<br>Non-Fibrous<br>Homogeneous | <1% Cellulose | 30% Quartz<br>10% Ca Carbonate<br>60% Non-fibrous (Other) | None Detected |

Initial report from: 01/22/2020 15:33:54

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| | |
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| **EMSL Order:** | 412000541 |
| **Customer ID:** | AXEM25 |
| **Customer PO:** | |
| **Project ID:** | City of Spartanburg |

Analyst(s)

*Anupriya Tyagi (12)*
*Gloriana Ramirez (16)*

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 15:33:54

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10801 Southern Loop Blvd Pineville, NC 28134
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**EMSL Order:** 412000541
**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 938 Ansel St. (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<br>*412000541-0021* | Shed - Shingle & Felt | Gray/Black<br>Non-Fibrous<br>Heterogeneous | 100.0 Other | None | No Asbestos Detected |
| 3-Felt<br>*412000541-0022* | Shed - Shingle & Felt | Black<br>Non-Fibrous<br>Heterogeneous | 100.0 Other | None | No Asbestos Detected |
| 6-Green Shingle<br>*412000541-0023* | House Roof - 2 Layers of Shingle | Black/Green<br>Non-Fibrous<br>Heterogeneous | 100.0 Other | None | No Asbestos Detected |
| 6-Brown Shingle<br>*412000541-0024* | House Roof - 2 Layers of Shingle | Brown/Black<br>Non-Fibrous<br>Heterogeneous | 100.0 Other | None | No Asbestos Detected |
| 12<br>*412000541-0025* | Windows - Glazing | Tan/White<br>Non-Fibrous<br>Heterogeneous | 99.86 Other | 0.14 Fibrous_Other | No Asbestos Detected |
| 15<br>*412000541-0026* | Beneath Siding - Foil Wrap | Gray/Black<br>Non-Fibrous<br>Heterogeneous | 100.0 Other | None | No Asbestos Detected |
| 18-Mastic<br>*412000541-0027* | Rt. Middle Rm - Tan Tile w/ Mastic & Felt | Brown/Black<br>Non-Fibrous<br>Heterogeneous | 99.49 Other | None | 0.51% Chrysotile |
| 18-Felt<br>*412000541-0028* | Rt. Middle Rm - Tan Tile w/ Mastic & Felt | Black<br>Non-Fibrous<br>Heterogeneous | 100.0 Other | None | No Asbestos Detected |
| 18-Mastic<br>*412000541-0029* | Rt. Middle Rm - Tan Tile w/ Mastic & Felt | Brown/Gray<br>Non-Fibrous<br>Heterogeneous | 100.0 Other | None | No Asbestos Detected |
| 21<br>*412000541-0030* | Rt. Rear Rm - Grey Vinyl Flooring | White/Green/Beige<br>Non-Fibrous<br>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 08:22:23

EMSL Analytical, Inc.
10801 Southern Loop Blvd Pineville, NC 28134
Tel/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com / charlottelab@emsl.com

**EMSL Order:** 412000541
**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 938 Ansel St. (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 |
|---|---|---|---|---|---|

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 08:22:23

OrderID: 412000541

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

# Asbestos Bulk Building Material Chain of Custody

**EMSL Order Number** (*Lab Use Only*): 412000541

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

| | |
|---|---|
| **Company :** Apex Environmental Management | **EMSL-Bill to:** ☑ Same ☐ Different<br>If Bill to is Different note instructions in Comments**<br>*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 938 Ansel St. | **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 | | Shed | Shingle & Felt |
| 2 | | " | " |
| 3 | | " | " |
| 4 | | House Roof | 2 layers of Shingle |
| 5 | | " | " |
| 6 | | " | " |
| 7 | | " | Tar on Metal |
| 8 | | " | " |
| 9 | | " | " |
| | | | |

**Client Sample # (s):** - **Total # of Samples:** 24

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

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

**Comments/Special Instructions:** 7458 1585 4462

OrderID: 412000541

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

# Asbestos Bulk Building Material Chain of Custody

**EMSL Order Number** *(Lab Use Only)*: 412000541

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 | Glazing |
| 11 | | " | " |
| 12 | | " | " |
| N 13 | | Beneath Siding | Foil Wrap |
| 14 | | " | " |
| 15 | | " | " |
| 16 | | Rt. Middle Rm | Tan Tile w/ Mastic & Felt |
| 17 | | " | " |
| 18 | | " | " |
| 19 | | Rt. Rear Rm | Grey Vinyl Flooring |
| 20 | | " | " |
| 21 | | " | " |
| N 22 | | Throughout | Plaster |
| 23 | | " | " |
| 24 | | " | " |
| 25 | | " | " |
| 26 | | " | |

***Comments/Special Instructions:**

Page 2 of 2 pages

## SECTION IV

## Photographic Log

Photo 1 – 938 Ansel Street in Spartanburg, South Carolina. Typical view of fire damage throughout the residence.

Photo 2 – House shingle remnants.

Photo 3 – Exterior window glazing.

Photo 4 – Tar on metal roofing.

Photo 5 – Front living room.

Photo 6 – Wall plaster.

Photo 7 – Aluminum wrap with black layer under exterior siding.

Photo 8 – right middle room flooring.

Photo 9 – right rear room flooring.

Photo 10 – Exterior shed.

## 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 |