



Asbestos & Lead Based Paint Assessment

112 Owens Street
Spartanburg, South Carolina 29306

Prepared for:

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

Prepared by:

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

Project Number: 0118-14

August 14, 2017





7 Winchester Court
Mauldin, SC 29662
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Apex Project Number 0118-14

August 14, 2018

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

Reference: Asbestos and Lead-Based Paint Assessment Services
112 Owens 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.

Ted Shultz
Project Manager

Appendices

ASBESTOS AND LEAD BASED PAINT ASSESSMENT

**CITY OF SPARTANBURG
112 OWENS STREET
SPARTANBURG, SOUTH CAROLINA 29306**

APEX PROJECT NO. 0118-14

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SECTION I

Asbestos & Lead Evaluation Report

**ASBESTOS EVALUATION REPORT
APEX PROJECT NUMBER: 0118-14**

Date: 8/14/2018 Page Number: 1 of 4

Client: City of Spartanburg
Client Address: 440 South Church Street
Suite B
Spartanburg, SC 29306

Client Contact: Mr. Jeff Tillerson
Client Phone Number: (864) 596-2911

Project: Asbestos Evaluation and
Lead Based Paint
Assessment
Property Address: 112 Owens Street
Spartanburg, SC 29306

Assessor: Ted Shultz
Company: Apex Environmental
Management
7 Winchester Court
Mauldin, SC 29662

Date of Assessment: 7/11/2018
Phone Number: (864) 404-3210

Purpose of Assessment: Demolition Age of Structure: Approximately 80 years

Building Type: Residential Number of Stories: 1

Foundation: CMU Block Crawlspace Approximate Square Footage: 800 SF

EXTERIOR BUILDING MATERIALS

- Pitched wooden roof with shingles & felt.
- Wooden siding.
- Wooden windows with glazing.
- Wooden doors with no caulk.
- Black mastic/tar on chimney.

INTERIOR BUILDING MATERIALS

- Vinyl flooring.
- Wood flooring.
- Dry wall ceilings and walls.

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, Inc. 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. Fourteen (14) 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). CEI 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. 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). Four (4) 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. It should be noted that materials were identified to contain less than 1% asbestos and OSHA Construction Industry Asbestos Standards (29 CFR 1926.1101) will apply if those materials are disturbed during renovation or demolition activities. 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:

- Assumed Chimney Mastic

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

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

Exterior

- None

Interior

- None

RECOMMENDATIONS AND DISCUSSION

Due to the negative results of the samples for asbestos and lead paint Apex has no recommendations.

This report summarizes our evaluation of the conditions observed at the site. The findings prepared by Apex are based upon testing performed in the building space. Additional ACM may exist (undetected) in other areas due to their inaccessibility or due to the limited nature of our testing. Our assessment procedures and recommendations are based on the guidelines presented in EPA, State of South Carolina or OSHA asbestos regulations.

Lead-Based Paint

Currently the South Carolina Department of Health and Environmental Control (SCDHEC) define LBP as paint containing greater than $1.0 \text{ milligram per square centimeter (mg}/\text{cm}^2)$ 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 mg/cm² 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 112 Owens Street ACM/LBP

Sampled By: Ted Shultz

Project Location: 112 Owens Street, Spartanburg, SC 29306

Project Manager: Ted Shultz

Project Number: 0118-14

Date: 7/9/2018

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
1	Throughout	Drywall with joint compound & no tape	PLM - NAD	Friable	Damaged	1,000 SF
2						
3						
4						
5						
6	Kitchen	Stone pattern roll vinyl floor with no mastic	PLM - NAD	Non-Friable	Good	200 SF
7			TEM - NAD			
8						
9	Pantry	Wooden pattern vinyl floor with no mastic	PLM - NAD	Non-Friable	Good	60 SF
10			TEM - NAD			
11						
12	Roof	Roof shingles (1 layer) & felt (1 layer)	PLM - NAD	Non-Friable	Good	800 SF
13			TEM - NAD			
14						
Assumed	Roof/chimney	Mastic/tar on 1 chimneys	Assumed	Non-Friable	Good	6 LF

NAD = No Asbestos Detected

LF = Linear Feet

EA = Each

Amos = Amosite

Bold = Positive For Asbestos

SF = Square Feet

Chry = Chrysotile

**FIELD DATA SHEET
LBP ANALYSIS**

Project Name: COS 112 Owens Street ACM/LBP

Sampled By: Ted Shultz

Project Location: 100 Owens Street, Spartanburg, SC 29306

Project Manager: Ted Shultz

Project Number: 0118-14

Date: 7/9/2018

Sample No.	Sample Location	Component	Color	Substrate	Analytical Result (mg/m ³)
1	Standardization				Pass
2	Calibration				1.07
3	Calibration				1.10
4	Calibration				1.11
5	Exterior	Siding	Tan	Wood	0.78
6	Front porch	Porch rail	White	Wood	0.00
7	Back porch	Porch frame	Grey	Wood	0.00
8	Back door	Door frame	White	Wood	0.00
9	Kitchen	Window frame	White	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: 411806013

Customer ID: AXEM25

Customer PO:

Project ID:

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

Phone: (803) 348-4921

Fax:

Received Date: 07/26/2018 8:45 AM

Analysis Date: 08/01/2018

Collected Date: 07/11/2018

Project: COS 112 Owens St.

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-Drywall <small>411806013-0001</small>	Throughout Interior - Drywall/JC	Brown/Gray Fibrous Homogeneous	4% Cellulose 2% Glass	94% Non-fibrous (Other)	None Detected
1-Joint Compound <small>411806013-0001A</small>	Throughout Interior - Drywall/JC	Tan Non-Fibrous Homogeneous	2% Cellulose	30% Ca Carbonate 68% Non-fibrous (Other)	None Detected
2-Drywall <small>411806013-0002</small>	Throughout Interior - Drywall/JC	Brown/Gray/White Fibrous Homogeneous	4% Cellulose 2% Glass	94% Non-fibrous (Other)	None Detected
2-Joint Compound <small>411806013-0002A</small>	Throughout Interior - Drywall/JC	White Non-Fibrous Homogeneous		35% Ca Carbonate 65% Non-fibrous (Other)	None Detected
3-Drywall <small>411806013-0003</small>	Throughout Interior - Drywall/JC	Gray Fibrous Homogeneous	2% Cellulose 2% Glass	96% Non-fibrous (Other)	None Detected
3-Joint Compound <small>411806013-0003A</small>	Throughout Interior - Drywall/JC	Tan Non-Fibrous Homogeneous	1% Cellulose	40% Ca Carbonate 59% Non-fibrous (Other)	None Detected
4-Drywall <small>411806013-0004</small>	Throughout Interior - Drywall/JC	Gray Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
4-Joint Compound <small>411806013-0004A</small>	Throughout Interior - Drywall/JC	White Non-Fibrous Homogeneous		40% Ca Carbonate 60% Non-fibrous (Other)	None Detected
5-Drywall <small>411806013-0005</small>	Throughout Interior - Drywall/JC	Gray Fibrous Homogeneous	8% Cellulose	92% Non-fibrous (Other)	None Detected
5-Joint Compound <small>411806013-0005A</small>	Throughout Interior - Drywall/JC	White Non-Fibrous Homogeneous		40% Ca Carbonate 60% Non-fibrous (Other)	None Detected
6 <small>411806013-0006</small>	Kitchen - Stone Pattern Vinyl Flooring	Gray/Beige Fibrous Homogeneous	3% Glass	15% Ca Carbonate 82% Non-fibrous (Other)	None Detected
7 <small>411806013-0007</small>	Kitchen - Stone Pattern Vinyl Flooring	Gray/Beige Fibrous Homogeneous	15% Cellulose 3% Glass	82% Non-fibrous (Other)	None Detected
9 <small>411806013-0008</small>	Pantry - Wood Pattern Vinyl Flooring	Brown Fibrous Homogeneous	20% Cellulose	80% Non-fibrous (Other)	None Detected
10 <small>411806013-0009</small>	Pantry - Wood Pattern Vinyl Flooring	Brown Fibrous Homogeneous	15% Cellulose 2% Glass	83% Non-fibrous (Other)	None Detected
12-Shingle <small>411806013-0010</small>	Roof - Shingle & Felt	Gray/Black Fibrous Homogeneous	12% Glass	10% Quartz 8% Ca Carbonate 70% Non-fibrous (Other)	None Detected
12-Felt <small>411806013-0010A</small>	Roof - Shingle & Felt	Black Fibrous Homogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected

Initial report from: 08/01/2018 14:16:21



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: 411806013
Customer ID: AXEM25
Customer PO:
Project ID:

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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
13-Shingle <small>411806013-0011</small>	Roof - Shingle & Felt	Gray/Black Fibrous Homogeneous	10% Glass	8% Quartz 5% Ca Carbonate 77% Non-fibrous (Other)	None Detected
13-Felt <small>411806013-0011A</small>	Roof - Shingle & Felt	Black Fibrous Homogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected

Analyst(s) _____

Aaron Hartley (10)

Anupriya Tyagi (8)

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: 08/01/2018 14:16:21



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: 411806013

Customer ID: AXEM25

Customer PO:

Project ID:

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

Phone: (803) 348-4921

Fax:

Received Date: 07/26/2018 8:45 AM

Analysis Date: 08/03/2018

Collected Date: 07/11/2018

Project: COS 112 Owens St.

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
8 411806013-0012	Kitchen - Stone Pattern Vinyl Flooring	Gray Fibrous Homogeneous	100	None	No Asbestos Detected
11 411806013-0013	Pantry - Wood Pattern Vinyl Flooring	Brown Non-Fibrous Homogeneous	100	None	No Asbestos Detected
14-Shingle 411806013-0014	Roof - Shingle & Felt	Black Fibrous Homogeneous	100	None	No Asbestos Detected
14-Felt 411806013-0015	Roof - Shingle & Felt	Black Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Aaron Hartley (4)

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: 08/03/2018 14:56:40



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):

411806013

Company: Apex Environmental Management		EMSL-Bill to: <input type="checkbox"/> Same <input checked="" type="checkbox"/> Different If Bill to is Different note instructions in Comments**	
Street: 7 Winchester Court		Third Party Billing requires written authorization from third party	
City: Mauldin	State/Province: SC	Zip/Postal Code: 29662	Country: US
Report To (Name): Ted Shultz		Telephone #: 864-404-3210	
Email Address: tshultz@apex-ehs.com		Fax #:	Purchase Order:
Project Name/Number: COS 112 Owens St.		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
 4 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: 7/11/18

Samplers Name: _____ Samplers Signature: _____

Sample #	HA #	Sample Location	Material Description
1		Throughout Interior	Drywall / JC
2		↓	↓
3			
4			
5			
6		Kitchen	Stone Pattern Vinyl Flooring
7		↓	↓
8			

Client Sample # (s): 14	Total # of Samples: 14
Relinquished (Client): Date: 7/24/18	Time: 3:00 pm
Received (Lab): Date: 7/26/18	Time: 8:45 AM FX
Comments/Special Instructions: Bill To: Apex Environmental Management, 7 Winchester Court, Mauldin, SC, 29662, US Attention: Rebecca Shultz Phone: 864-404-3210 Email: rshultz@apex-ehs.com Purchase Order:	

7955 2904 4295

SECTION IV
Photographic Log



Photo 1 – 112 Owens Street in Spartanburg, South Carolina.



Photo 2 – Drywall, joint compound and tape.



Photo 3 – Kitchen flooring.



Photo 4 – Pantry flooring.



Photo 5 – Roof shingle and felt.

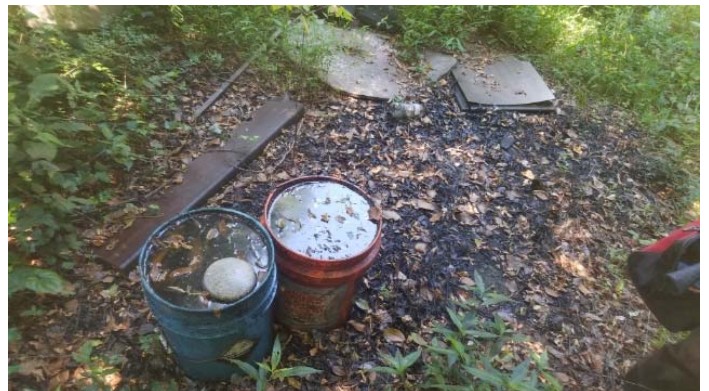


Photo 6 – Buckets of oil in front yard.

SECTION V

SC DHEC Asbestos Inspector License

SCDHEC ISSUED

Asbestos ID Card

Tedman K Shultz



**CONSULTBI
AIRSAMPLER**

**BI-00971
AS-00355**

Expiration Date:

**01/17/19
02/23/19**