Asbestos & Lead Based Paint Assessment

City of Spartanburg
423 Springwood Drive
Spartanburg, South Carolina 29302

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

September 6, 2018

PEX
Environmental
Management

Environmental Management

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

September 6, 2018

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

Reference: Asbestos and Lead-Based Paint Assessment Services
423 springwood Drive
Spartanburg, South Carolina 29302

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.

Tom Oliver
Director of Operations

Appendices

ASBESTOS AND LEAD BASED PAINT ASSESSMENT

CITY OF SPARTANBURG
423 SPRINGWOOD DRIVE
SPARTANBURG, SOUTH CAROLINA 29302

APEX PROJECT NO. 0118-14

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SECTION I

Asbestos & Lead Evaluation Report

ASBESTOS EVALUATION REPORT
APEX PROJECT NUMBER: 0118-14

Date:	9/6/2018	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:	423 Springwood Drive Spartanburg, SC 29302		
Assessor:	Tom Oliver	Date of Assessment:	8/17//2018
Company:	Apex Environmental Management 7 Winchester Court Mauldin, SC 29662	Phone Number:	(864) 404-3210
Purpose of Assessment:	Demolition	Age of Structure:	Approximately 40 years
Building Type:	Residential	Number of Stories:	2
Foundation:	CMU Block Crawlspace	Approximate Square Footage	1,650 SF

EXTERIOR BUILDING MATERIALS

- Pitched wooden roof with shingles & felt.
- Wooden siding.
- Wooden windows with no glazing or caulk.
- Wooden doors with no caulk.
- Wooden side deck.
- Construction & household debris is in the back yard.

INTERIOR BUILDING MATERIALS

- Drywall with joint compound & tape walls & ceilings.
- Wooden floors, walls & ceilings.
- Ceramic floor tile with mastic in the upstairs & downstairs bathrooms.
- Ceramic tile with grout on the walls in the upstairs bathroom.
- Large amount of household items throughout the residence.

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 Eurofins CEI Labs, Inc. (CEI) as an NVLAP certified laboratory, their accreditation number is 101768-0.
- 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. Eleven (11) bulk samples were collected during the survey and submitted to CEI in Cary, 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 101768-0. 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. No asbestos was detected in the samples collected and analyzed. Should additional suspect ACM should be discovered during demolition activities, Apex recommends that work activities stop until the suspect building materials may be sampled and analyzed. A specific *PLM* and *TEM Data Table* is located in Appendix II of this report and identifies positive materials and designates approximate quantities.

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, SCDHEC defines LBP as paint containing in excess of, or equal to, 1.0 mg/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:

- Brown ceramic wall tiles in the upstairs bathroom.
- White porcelain toilets.

RECOMMENDATIONS AND DISCUSSION

No asbestos was present in the materials sampled within the structure. Therefore, no recommendations are necessary at this time.

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 milligram 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 (µg/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 423 Springwood Drive ACM/LBP

Sampled By: Tom Oliver

Project Location: 423 Springwood Drive, Spartanburg, SC 29302

Project Manager: Tom Oliver

Project Number: 0118-14

Date: 8/17/2018

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
1	Roof	Roof shingles (1 layer) & felt (1 layer)	PLM - NAD	Non-Friable	Good	1,500 SF
2						
3			TEM - NAD			
4	Throughout	Drywall with joint compound & tape	PLM - NAD	Friable	Good	2,800 SF
5						
6						
7						
8						
9	Downstairs & ipstairs bathrooms	Ceramic floor tile with mastic	PLM - NAD	Non-Friable	Good	55 SF
10						
11			TEM - NAD			

NAD = No Asbestos Detected

Bold = Positive For Asbestos

LF = Linear Feet

SF = Square Feet

EA = Each

Chry = Chrysotile

Amos = Amosite

FIELD DATA SHEET
LBP ANALYSIS

Project Name: COS 423 Springwood Drive ACM/LBP

Sampled By: Tom Oliver

Project Location: 423 Springwood Drive, Spartanburg, SC 29302

Project Manager: Tom Oliver

Project Number: 0118-14

Date: 8/17/2018

Sample No.	Sample Location	Component	Color	Substrate	Analytical Result (mg/m^3)
110	Standardization				183.00
111	Calibration				1.17
112	Calibration				1.17
113	Calibration				1.14
114	Exterior	Siding	Brown	Wood	0.00
115	Exterior	Window	Brown	Wood	0.00
116	Exterior	Window frame	Brown	Wood	0.00
117	Exterior	Door	Brown	Wood	0.00
118	Exterior	Door frame	Brown	Wood	0.00
119	Exterior front porch	Ceiling	Brown	Wood	0.00
120	Exterior front porch	Column	Brown	Wood	0.00
121	Exterior front porch	Header	Brown	Wood	0.00
122	Exterior side porch	Porch rail	Brown	Wood	0.00
123	Exterior side porch	Storm door	Brown	Metal	0.00
124	Interior	Walls/ceilings	White	Drywall	0.00
125	Interior	Walls/ceilings	Brown	Wood	0.00
126	Interior	Shelves	White	Wood	0.00
127	Interior	Floor	Tan	Ceramic	0.00
128	**Interior**	**Toilets**	**White**	**Porcelain**	**1.00**
129	Interior	Cabinets	White	Wood	0.00
130	**Interior**	**Wall**	**Brown**	**Ceramic**	**5.00**
131	Interior	Door	Brown	Wood	0.00
132	Interior	Door frame	Brown	Wood	0.00
133	Interior	Window	Brown	Wood	0.00

FIELD DATA SHEET
LBP ANALYSIS

Project Name: COS 423 Springwood Drive ACM/LBP

Sampled By: Tom Oliver

Project Location: 423 Springwood Drive, Spartanburg, SC 29302

Project Manager: Tom Oliver

Project Number: 0118-14

Date: 8/17/2018

Sample No.	Sample Location	Component	Color	Substrate	Analytical Result (mg/m^3)
134	Interior	Window frame	Brown	Wood	0.00

Bold = LBP

SECTION III

Laboratory Analytical Results

August 27, 2018

Apex Environmental Management
7 Winchester Court
Mauldin, SC 29662

CLIENT PROJECT: COS 423 Springwood Dr. ACM/LBP; COS 0118-14
CEI LAB CODE: A189267

Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on August 20, 2018. The samples were analyzed for asbestos using polarizing light microscopy (PLM) per the EPA 600 Method.

Sample results containing >1% asbestos are considered asbestos-containing materials (ACMs) per EPA regulatory requirements. The detection limit for the EPA 600 Method is <1% asbestos by weight as determined by visual estimation.

Thank you for your business and we look forward to continuing good relations. If you have any questions, please feel free to call our office at 919-481-1413.

Kind Regards,

Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP TESTING
NVLAP LAB CODE 101768-0

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ASBESTOS ANALYTICAL REPORT
By: Polarized Light Microscopy

Prepared for

Apex Environmental Management

CLIENT PROJECT: COS 423 Springwood Dr. ACM/LBP; COS 0118-14

LAB CODE: A189267

TEST METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORT DATE: 08/27/18

TOTAL SAMPLES ANALYZED: 9

SAMPLES >1% ASBESTOS:

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: COS 423 Springwood Dr. ACM/LBP; COS 0118-14 **LAB CODE:** A189267

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
1	Layer 1	A84924	Black,Brown	Roof Shingle	None Detected
	Layer 2	A84924	Black	Felt	None Detected
2	Layer 1	A84925	Black,Brown	Roof Shingle	None Detected
	Layer 2	A84925	Black	Felt	None Detected
3	Layer 1	A84926		Sample Submitted for TEM Analysis	
	Layer 2	A84926		Sample Submitted for TEM Analysis	
4	Layer 1	A84927	White	Drywall	None Detected
	Layer 2	A84927	White	Joint Compound	None Detected
	Layer 3	A84927	White	Tape	None Detected
5	Layer 1	A84928	White	Drywall	None Detected
	Layer 2	A84928	White	Joint Compound	None Detected
	Layer 3	A84928	White	Tape	None Detected
6	Layer 1	A84929	White	Drywall	None Detected
	Layer 2	A84929	White	Joint Compound	None Detected
	Layer 3	A84929	White	Tape	None Detected
7	Layer 1	A84930	White	Drywall	None Detected
	Layer 2	A84930	White	Joint Compound	None Detected
	Layer 3	A84930	White	Tape	None Detected
8	Layer 1	A84931	White	Drywall	None Detected
	Layer 2	A84931	White	Joint Compound	None Detected
	Layer 3	A84931	White	Tape	None Detected
9		A84932A	White	Ceramic Floor Tile	None Detected
		A84932B	Yellow	Mastic	None Detected
10		A84933A	White	Ceramic Floor Tile	None Detected
		A84933B	Yellow	Mastic	None Detected
11		A84934A		Sample Submitted for TEM Analysis	
		A84934B		Sample Submitted for TEM Analysis	

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Apex Environmental Management
7 Winchester Court
Mauldin, SC 29662

Lab Code: A189267
Date Received: 08-20-18
Date Analyzed: 08-27-18
Date Reported: 08-27-18

Project: COS 423 Springwood Dr. ACM/LBP; COS 0118-14

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
1 Layer 1 A84924	Roof Shingle	Heterogeneous Black,Brown Fibrous Bound	15%	Fiberglass	70% 15%	Tar Gravel	None Detected
Layer 2 A84924	Felt	Heterogeneous Black Fibrous Bound	75%	Cellulose	25%	Tar	None Detected
2 Layer 1 A84925	Roof Shingle	Heterogeneous Black,Brown Fibrous Bound	15%	Fiberglass	70% 15%	Tar Gravel	None Detected
Layer 2 A84925	Felt	Heterogeneous Black Fibrous Bound	75%	Cellulose	25%	Tar	None Detected
3 Layer 1 A84926	Sample Submitted for TEM Analysis						
Layer 2 A84926	Sample Submitted for TEM Analysis						
4 Layer 1 A84927	Drywall	Heterogeneous White Fibrous Bound	25%	Cellulose	75%	Gypsum	None Detected
Layer 2 A84927	Joint Compound	Heterogeneous White Fibrous Bound	<1%	Cellulose	65% 33% 2%	Silicates Calc Carb Paint	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Apex Environmental Management
7 Winchester Court
Mauldin, SC 29662

Lab Code: A189267
Date Received: 08-20-18
Date Analyzed: 08-27-18
Date Reported: 08-27-18

Project: COS 423 Springwood Dr. ACM/LBP; COS 0118-14

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
Layer 3 A84927	Tape	Heterogeneous White Fibrous Bound	100%	Cellulose			None Detected
5 Layer 1 A84928	Drywall	Heterogeneous White Fibrous Bound	25%	Cellulose	75%	Gypsum	None Detected
Layer 2 A84928	Joint Compound	Heterogeneous White Fibrous Bound	<1%	Cellulose	65% 33% 2%	Silicates Calc Carb Paint	None Detected
Layer 3 A84928	Tape	Heterogeneous White Fibrous Bound	100%	Cellulose			None Detected
6 Layer 1 A84929	Drywall	Heterogeneous White Fibrous Bound	25%	Cellulose	75%	Gypsum	None Detected
Layer 2 A84929	Joint Compound	Heterogeneous White Fibrous Bound	<1%	Cellulose	65% 33% 2%	Silicates Calc Carb Paint	None Detected
Layer 3 A84929	Tape	Heterogeneous White Fibrous Bound	100%	Cellulose			None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Apex Environmental Management
7 Winchester Court
Mauldin, SC 29662

Lab Code: A189267
Date Received: 08-20-18
Date Analyzed: 08-27-18
Date Reported: 08-27-18

Project: COS 423 Springwood Dr. ACM/LBP; COS 0118-14

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
7 Layer 1 A84930	Drywall	Heterogeneous White Fibrous Bound	25%	Cellulose	75%	Gypsum	None Detected
Layer 2 A84930	Joint Compound	Heterogeneous White Fibrous Bound	<1%	Cellulose	65% 33% 2%	Silicates Calc Carb Paint	None Detected
Layer 3 A84930	Tape	Heterogeneous White Fibrous Bound	100%	Cellulose			None Detected
8 Layer 1 A84931	Drywall	Heterogeneous White Fibrous Bound	25%	Cellulose	75%	Gypsum	None Detected
Layer 2 A84931	Joint Compound	Heterogeneous White Fibrous Bound	<1%	Cellulose	65% 33% 2%	Silicates Calc Carb Paint	None Detected
Layer 3 A84931	Tape	Heterogeneous White Fibrous Bound	100%	Cellulose			None Detected
9 A84932A	Ceramic Floor Tile	Heterogeneous White Non-fibrous Tightly Bound			100%	Binder	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Apex Environmental Management
7 Winchester Court
Mauldin, SC 29662

Lab Code: A189267
Date Received: 08-20-18
Date Analyzed: 08-27-18
Date Reported: 08-27-18

Project: COS 423 Springwood Dr. ACM/LBP; COS 0118-14

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous	Non-Fibrous		ASBESTOS %
A84932B	Mastic	Heterogeneous Yellow Non-fibrous Bound		100%	Mastic	None Detected
10 A84933A	Ceramic Floor Tile	Heterogeneous White Non-fibrous Bound		100%	Binder	None Detected
A84933B	Mastic	Heterogeneous Yellow Non-fibrous Bound		100%	Mastic	None Detected
11 A84934A	Sample Submitted for TEM Analysis					
A84934B	Sample Submitted for TEM Analysis					

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LEGEND:

Non-Anth	= Non-Asbestiform Anthophyllite
Non-Trem	= Non-Asbestiform Tremolite
Calc Carb	= Calcium Carbonate

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORTING LIMIT: <1% by visual estimation

REPORTING LIMIT FOR POINT COUNTS: 0.25% by 400 Points or 0.1% by 1,000 Points

REGULATORY LIMIT: >1% by weight

Due to the limitations of the EPA 600 method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarized light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation. Estimated measurement of uncertainty is available on request.

ANALYST: Saithya Painkal

APPROVED BY: Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP TESTING
NVLAP LAB CODE 101768-0

ASBESTOS CHAIN OF CUSTODY

CEI LABS
107 New Edition Court, Cary, NC 27511
Tel: 866-481-1412; Fax: 919-481-1442

LAB USE ONLY:	
CEI Lab Code:	A1892607 (11)
CEI Lab I.D. Range:	A84924-A84934

COMPANY INFORMATION		PROJECT INFORMATION	
CEI CLIENT #:		Job Contact:	Tom Oliver
Company:	Apex Environmental Management, Inc.	Email / Tel:	toliver@apex-ehs.com
Address:	7 Winchester Court	Project Name:	COS 423 Springwood Dr. ACM/LBP
	Mauldin, South Carolina 29662	Project ID#	0118-14
Email:	toliver@apex-ehs.com	PO #:	
Tel: 864-404-3210	Fax: 864-404-3213	STATE SAMPLES COLLECTED IN:	South Carolina

GENERAL INSTRUCTIONS			
POSITIVE STOP ANALYSIS	☒	PLM DUE DATE:	/ /
ANALYZE NOB'S BY TEM	☒	TEM DUE DATE:	/ /

IF TAT IS NOT MARKED STANDARD 3 DAY TAT APPLIES.

ASBESTOS	METHOD	TURN AROUND TIME					
		4 HR	8 HR	24 HR	2 DAY	3 DAY	5 DAY
PLM BULK	EPA 600	☐	☐	☐	☐	☐	☒
PLM POINT COUNT (400)	EPA 600	☐	☐	☐	☐	☐	☐
PLM POINT COUNT (1000)	EPA 600	☐	☐	☐	☐	☐	☐
PLM GRAV w POINT COUNT	EPA 600		☐	☐	☐	☐	☐
PCM AIR	NIOSH 7400	☐	☐	☐	☐	☐	☐
TEM AIR AHERA	EPA AHERA	☐	☐	☐	☐	☐	☐
TEM AIR NIOSH	NIOSH 7402	☐	☐	☐	☐	☐	☐
TEM BULK	CHATFIELD		☐	☐	☐	☐	☒
TEM DUST WIPE	ASTM D6480-05	☐	☐	☐	☐	☐	☐
TEM DUST MICROVAC	ASTM D5755-09	☐	☐	☐	☐	☐	☐
TEM SOIL	ASTM D7521-13			☐	☐	☐	☐
TEM VERMICULITE	CINCINNATI METHOD			☐	☐	☐	☐
OTHER:		☐	☐	☐	☐	☐	☐

REMARKS: Utilize Positive Stop During Analysis. If joint compound is positive for asbestos, positive stop on drywall and tape

☑ Accept Samples
☐ Reject Samples

Relinquished By:	Date/Time	Received By:	Date/Time
	8-17-18	CO	8/20 @ 10:00

Samples will be disposed of 30 days after analysis

ASBESTOS A1892607
SAMPLING FORM

CEI LABS

COMPANY CONTACT INFORMATION	
Company: Apex Environmental Management, Inc.	Job Contact: Tom Oliver
Project Name: COS 423 Springwood Drive ACM LBP	
Project ID #: 0118-14	Tel: 864-640-5127

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST	
1	Roof shingles (1) &		PLM ☑	TEM ☐
2	felt (1)		PLM ☑	TEM ☐
3			PLM ☐	TEM ☑
4	Drywall w/ JC & tape		PLM ☑	TEM ☐
5			PLM ☑	TEM ☐
6			PLM ☑	TEM ☐
7			PLM ☑	TEM ☐
8			PLM ☑	TEM ☐
9	Ceramic floor tile		PLM ☑	TEM ☐
10	& mastic		PLM ☑	TEM ☐
11			PLM ☐	TEM ☑
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
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			PLM ☐	TEM ☐

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September 4, 2018

Apex Environmental Management
7 Winchester Court
Mauldin, SC 29662

CLIENT PROJECT: COS 423 Springwood Dr. ACM/LBP; 0118-14
LAB CODE: T181978

Dear Customer:

Enclosed are asbestos analysis results for TEM bulk samples received at our laboratory on August 27, 2018. The samples were analyzed for asbestos using transmission electron microscopy (TEM) per Chatfield Method.

Sample results containing > 1% asbestos are considered asbestos-containing materials (ACMs) per the EPA regulatory requirements. The detection limit for the TEM Chatfield method is <1% depending on the processed weight and constituents of the sample.

Thank you for your business and we look forward to continuing good relations. If you have any questions, please feel free to call our office at 919-481-1413.

Kind Regards,

Tianbao Bai, Ph.D., CIH
Laboratory Director

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ASBESTOS ANALYTICAL REPORT
By: Transmission Electron Microscopy

Prepared for

Apex Environmental Management

CLIENT PROJECT: COS 423 Springwood Dr. ACM/LBP; 0118-14

LAB CODE: T181978

TEST METHOD: Bulk Chatfield
EPA 600 / R93 / 116

REPORT DATE: 09/04/18

ASBESTOS BULK ANALYSIS

By: TRANSMISSION ELECTRON MICROSCOPY

Client: Apex Environmental Management
7 Winchester Court
Mauldin, SC 29662

Lab Code: T181978
Date Received: 08-27-18
Date Analyzed: 08-31-18
Date Reported: 09-04-18

Project: COS 423 Springwood Dr. ACM/LBP; 0118-14

TEM BULK CHATFIELD / EPA 600 / R93 / 116

Client ID Lab ID	Material Description	Sample Weight (g)	Organic Material %	Acid Soluble Material %	Acid Insoluble Material %	Asbestos %
3 T83634	Black, Brown Roof Shingle	0.657	26.5	30.1	43.4	**None Detected**
3 T83635	Black Felt	0.523	94.6	1.9	3.5	**None Detected**
11 T83636	White Ceramic Floor Tile	0.345	28.7	68.1	3.2	**None Detected**
11 T83637	Yellow Mastic	0.393	55.2	.5	44.3	**None Detected**

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LEGEND: None

METHOD: CHATFIELD & EPA/600/R-93/116

LIMIT OF DETECTION: Varies with the weight and constituents of the sample (<1%)

REGULATORY LIMIT: >1% by weight

This report relates only to the samples tested or analyzed and may not be reproduced, except in full, without written approval by Eurofins CEI. Eurofins CEI makes no warranty representation regarding the accuracy of client submitted information in preparing and presenting analytical results. Interpretation of the analytical results is the sole responsibility of the client. Estimated measurement of uncertainty is available on request. Samples were received in acceptable condition unless otherwise noted.

ANALYST: Amanda Rucinski

APPROVED BY: Tianbao Bai, Ph.D., CIH
Laboratory Director

T81978
T83634-637
(4)

ASBESTOS CHAIN OF CUSTODY

CEI LABS
107 New Edition Court, Cary, NC 27511
Tel: 866-481-1412; Fax: 919-481-1442

LAB USE ONLY:	
CEI Lab Code:	A1892107 (11)
CEI Lab I.D. Range:	A84924-A84934

COMPANY INFORMATION		PROJECT INFORMATION
CEI CLIENT #:		Job Contact: Tom Oliver
Company: Apex Environmental Management, Inc.		Email / Tel: toliver@apex-ehs.com
Address: 7 Winchester Court		Project Name: COS 423 Springwood Dr. ACM/LBP
Mauldin, South Carolina 29662		Project ID# 0118-14
Email: toliver@apex-ehs.com		PO #:
Tel: 864-404-3210	Fax: 864-404-3213	STATE SAMPLES COLLECTED IN: South Carolina

GENERAL INSTRUCTIONS		
POSITIVE STOP ANALYSIS	☒	PLM DUE DATE: / /
ANALYZE NOB'S BY TEM	☒	TEM DUE DATE: / /

IF TAT IS NOT MARKED STANDARD 3 DAY TAT APPLIES.

ASBESTOS	METHOD	TURN AROUND TIME					
		4 HR	8 HR	24 HR	2 DAY	3 DAY	5 DAY
PLM BULK	EPA 600	☐	☐	☐	☐	☐	☒
PLM POINT COUNT (400)	EPA 600	☐	☐	☐	☐	☐	☐
PLM POINT COUNT (1000)	EPA 600	☐	☐	☐	☐	☐	☐
PLM GRAV w POINT COUNT	EPA 600		☐	☐	☐	☐	☐
PCM AIR	NIOSH 7400	☐	☐	☐	☐	☐	☐
TEM AIR AHERA	EPA AHERA	☐	☐	☐	☐	☐	☐
TEM AIR NIOSH	NIOSH 7402	☐	☐	☐	☐	☐	☐
TEM BULK	CHATFIELD		☐	☐	☐	☐	☒
TEM DUST WIPE	ASTM D6480-05	☐	☐	☐	☐	☐	☐
TEM DUST MICROVAC	ASTM D5755-09	☐	☐	☐	☐	☐	☐
TEM SOIL	ASTM D7521-13			☐	☐	☐	☐
TEM VERMICULITE	CINCINNATI METHOD			☐	☐	☐	☐
OTHER:		☐	☐	☐	☐	☐	☐

REMARKS: Utilize Positive Stop During Analysis. If joint compound is positive for asbestos, positive stop on drywall and tape

☑ Accept Samples
☐ Reject Samples

Relinquished By:	Date/Time	Received By:	Date/Time
	8-17-18		8/20 @ 10:00

Samples will be disposed of 30 days after analysis

SP
08/27/18
10:00 AM

N81978

ASBESTOS SAMPLING FORM

A1892107

CEI LABS

COMPANY CONTACT INFORMATION	
Company: Apex Environmental Management, Inc.	**Job Contact:** Tom Oliver
Project Name: COS 423 Springwood Drive ACM LBP	
Project ID #: 0118-14	**Tel:** 864-640-5127

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST	
1	Roof shingles (1) &		PLM ☒	TEM ☐
2	felt (1)		PLM ☒	TEM ☐
3			PLM ☐	TEM ☒
4	Drywall w/ JC & tape		PLM ☒	TEM ☐
5			PLM ☒	TEM ☐
6	do		PLM ☒	TEM ☐
7			PLM ☒	TEM ☐
8			PLM ☒	TEM ☐
9	Ceramic floor tile		PLM ☒	TEM ☐
10	mastic		PLM ☒	TEM ☐
11			PLM ☐	TEM ☒
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
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			PLM ☐	TEM ☐
			PLM ☐	TEM ☐

SECTION IV

Photographic Log

Photo 1 – 423 Springwood Drive in Spartanburg, South Carolina

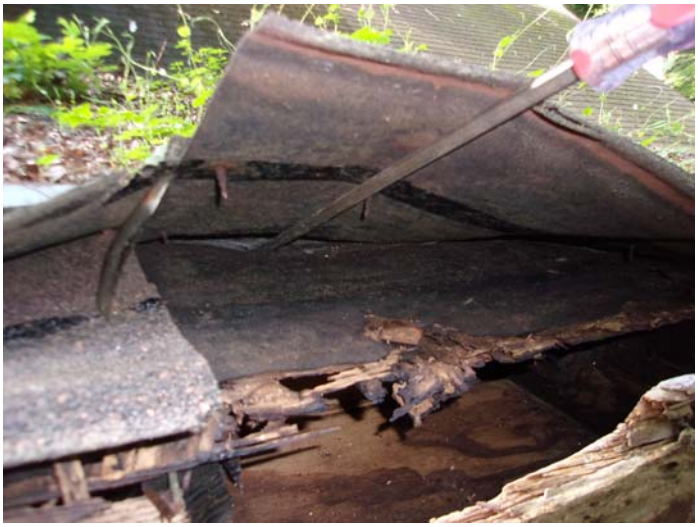

Photo 2 – Roof shingles & felt

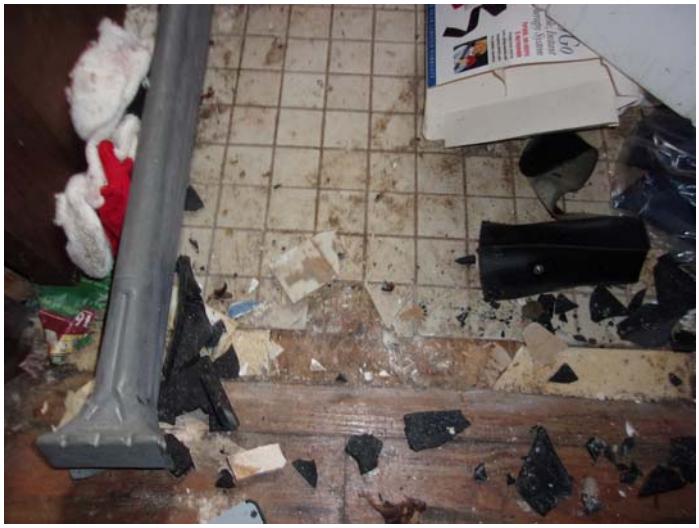

Photo 3 – Ceramic floor tile with mastic in the downstairs & upstairs bathrooms

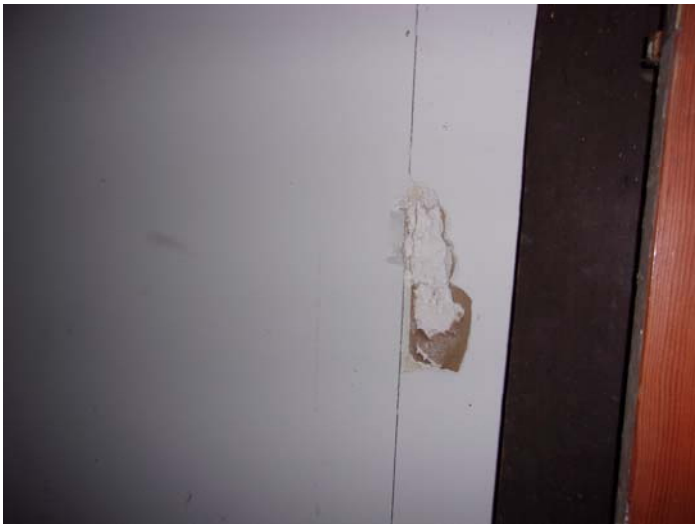

Photo 4 – Drywall with joint compound & tape throughout

SECTION V

SC DHEC Asbestos Inspector License

SCDHEC ISSUED
Asbestos ID Card

Thomas H Oliver

		Expiration Date:
CONSULTBI	BI-00680	01/18/19
AIRSAMPLER	AS-00202	04/04/19

This card is nontransferable and considered invalid if loaned or given to another person for identification. This card will also be invalid if altered or defaced. This card is property of SCDHEC. It must be returned to the department if the holder's accreditation is revoked or if this card is invalidated. Any person performing regulated asbestos activities without current accreditation shall be subject to legal sanction. This card must be returned upon expiration and/or issuance of a new card.

YOU MUST HAVE THIS IDENTIFICATION CARD WITH YOU ON THE JOB.

For information of corrections contact: SCDHEC – Asbestos Section
2600 Bull Street
Columbia, SC 29201
(803) 898-4289