

Asbestos & Lead Based Paint Assessment

City of Spartanburg 748 Baltimore Street Spartanburg, South Carolina 29301

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 4, 2018





7 Winchester Court Mauldin, SC 29662 864.404.3210 office 864.404.3213 fax www.apex-ehs.com

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Apex Project Number 0118-14

September 4, 2018

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

Reference: Asbestos and Lead-Based Paint Assessment Services

748 Baltimore Street

Spartanburg, South Carolina 29301

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 748 BALTIMORE STREET SPARTANBURG, SOUTH CAROLINA 29301

APEX PROJECT NO. 0118-14

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SECTION I

Asbestos & Lead Evaluation Report

ASBESTOS EVALUATION REPORT APEX PROJECT NUMBER: 0118-14

Date: 9/4/2018 Page Number: 1 of 5

Client: City of Spartanburg Client Contact: Mr. Jeff Tillerson Client 440 South Church Street Client Phone (864) 596-2911

Address: Suite B Number:

Spartanburg, SC 29306

Project: Asbestos Evaluation and

Lead Based Paint

Assessment

Property 748 Baltimore Street Address: Spartanburg, SC 29301

Assessor: Tom Oliver Date of 8/16/2018

Assessment: Apex Environmental Phone

Company: Apex Environmental Management

7 Winchester Court Mauldin, SC 29662

Purpose of Demolition Age of Approximately 50 years

Number:

Structure:

Footage

Building Residential Number of 1 story with basement

Type: Stories:

Foundation: Basement Approximate 7,500 SF Square

EXTERIOR BUILDING MATERIALS

Pitched wooden roofs with shingles & felt.

· Brick walls.

Assessment:

Wooden siding.

 Wooden framed windows & doors with caulk.

Metal windows & doors with no caulk.

• 1 chimney with no mastic/tar.

• The roof is partially collapsed on the portion of the building at the former grocery store.

INTERIOR BUILDING MATERIALS

(864) 404-3210

Unfinished drywall.

- Drywall with joint compound & tape ceilings in the basement bathrooms.
- Wooden wall panels with & without mastics.
- Wooden wall panels exist over unfinished drywall.
- 2' x 4' ceiling tiles.
- Multiple types & layers of vinyl flooring with and without mastics.
- Concrete floors.
- The floors are partially collapsed within the former grocery store. The former grocery store was assessed; however additional suspect ACM may exist.

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. Sixty-six (66) 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). Twenty-five (25) 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.

At the time of the assessment, the former grocery store was found to have collapsed floors and roof. Safety concerns while performing interior sampling within the grocery store were addressed. Subsequently, the building materials and finishes not sampled during the survey should be assumed to be ACM. Apex recommends that the portion of the building with the former grocery store be demolished in place and materials be treated and disposed of as friable ACM.

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

- Approximately 425 SF of brown roll vinyl floor with no mastic in the former grocery store - 1st floor.
- Approximately 50 SF of brown square roll pattern vinyl floor with no mastic in the former grocery store - bathrooms.
- Approximately 160 SF of brown mastic behind wall panels in the former grocery store bathrooms and kitchen.
- Approximately 2,165 SF of 12" x 12" tan floor tile & black mastic in the basement.
- Approximately 175 SF of drywall with joint compound & tape ceilings in the basement bathrooms.
- Approximately 960 SF of 12" x 12" tan floor tile with fiberboard & black mastic in the doctor's office right side suite bottom layer & top layer throughout.
- Approximately 25 SF of the mastic associated with the 2^{nd} layer of floor tile in the doctor's office $\frac{1}{2}$ bathroom.
- Approximately 60 SF of the mastic associated with the 12" x 12" tan speckled floor tile in the doctor's office front lobby and reception area.
- Approximately 730 SF of 12" x 12" grey streaked floor tile & mastic in the apartment.

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 μ g/m³) during an eight-hour workday and a permissible exposure level of fifty micrograms per cubic meter (50 μ g/m³) for employees.

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

White porcelain toilets and urinals.

RECOMMENDATIONS AND DISCUSSION

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 doctor's office, apartment and basement prior to renovation or demolition.
- 2. Demolish the former grocery store 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.
- 3. 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.

Please note that this document is not a specification for asbestos removal. It does not contain means and methods for asbestos abatement. If you are planning an asbestos 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. Quantities provided in this report are estimated. Contractors must verify material amounts prior to bidding or removal.

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/cm²) 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 (μ g/m³) 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

Project Name: COS 748 Baltimore Street ACM/LBP Sampled By: Tom Oliver

Project Location: 748 Baltimore Street, Spartanburg, SC 29301 Project Manager: Tom Oliver

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
1			PLM - NAD			
2	Grocery roof	Roof shingles (2 layers) & felt (1 layer)	FLIVI - IVAD	Non-Friable	Damaged	1,900 SF
3			TEM - NAD			
4	Doctors office,		DIM NAD			
5	apartment & 1/2 of	Roof shingles (1 layer) & felt (1 layer)	PLM - NAD	Non-Friable	Good	3,800 SF
6	grocery roof	(Tidyor)	TEM - NAD			
7			DIM NAD			
8	Exterior doors & windows	Door & window caulk	PLM - NAD	Non-Friable	Good	36 EA
9	willdewe		TEM - NAD			
10			5111 1115	Non-Friable	Good	
11	Grocery entrance top floor	12" x 12" floor tile & mastic	PLM - NAD			85 SF
12	top noor		TEM - NAD (tile); <1% chrysotile (mastic)			
13		Brown roll vinyl floor with no	PLM - 25% chry (roll vinyl); NAD (floor			
14	Grocery top floor	mastic over 12" x 12" floor	tile & mastic)	Non-Friable	Damaged	425 SF
15	Lop noon	tile & mastic	TEM - NAD (tile); <1% chry (mastic)			
16						
17	Grocery top floor	2' x 4' ceiling tile	PLM - NAD	Friable	Good	750 SF
18						
19	Grocery		DIM WAS			
20	top floor on partition	Tan square pattern roll vinyl floor & mastic	PLM - NAD	Non-Friable	Good	250 SF
21	floor	noor a madio	TEM - NAD			

Project Name: COS 748 Baltimore Street ACM/LBP Sampled By: Tom Oliver

Project Location: 748 Baltimore Street, Spartanburg, SC 29301 Project Manager: Tom Oliver

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
22						
23	Grocery bathrooms	Brown square roll pattern vinyl floor with no mastic	PLM - 25% chrysotile	Non-Friable	Good	50 SF
24						
25						
26	Grocery bathrooms & kitchen	Brown mastic behind wall panels	PLM - 3% chrysotile	Non-Friable	Good	160 SF
27		panoio				
28						
29	Throughout grocery	Unfinished drywall	PLM - NAD	Friable Go	Good	1,600 SF
30						
31						105 SF
32	Basement left side	2' x 4' ceiling tile	PLM - NAD	Friable	Good	
33	lon side					
34						
35	Basement left side	12" x 12" tan floor tile & black mastic	PLM - 3% chrysotile (floor tile) 5% chrysotile (black mastic)	Friable	Significantly Damaged	2,165 SF
36	_ left side	masuc	376 cm ysothe (black mastic)		Damageu	
37						
38	Basement left side bathrooms	Drywall with joint compound & tape ceilings	PLM - 5% chrysotile	Friable	Good	175 SF
39	_ leit side batiliooilis	a tape cennigs				
40	Doctors office					
41	right side suite	12" x 12" light green floor tile & mastic	PLM - NAD	Non-Friable	Good	430 SF
42	top layer	IIIasuc	TEM - NAD (tile); <1% chrysotile (mastic)			

Project Name: COS 748 Baltimore Street ACM/LBP Sampled By: Tom Oliver

Project Location: 748 Baltimore Street, Spartanburg, SC 29301 Project Manager: Tom Oliver

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
43	Doctors office right side suite	12" x 12" tan floor tile with	PLM - NAD	Non Prickle	0 1	000.05
44	bottom layer & top	fiberboard & black mastic		Non-Friable	Good	960 SF
45	layer throughout		TEM - 4.4% chry (FT); <1% chry (mastic)			
46			PLM - NAD			
47	Doctors office kitchen & full bathroom	12"x 12" square pattern self- stick floor tile & mastic	FLIVI - IVAD	Non-Friable	Good	200 SF
48			TEM - NAD (tile); <1% chrysotile (mastic)			
49		12" x 12" beige with flowers	PLM - NAD (1st layer of floor tile &			
50	Doctors office	pattern self-stick floor tile	mastic & 2nd layer of floor tile); 2% chrysotile (2nd layer mastic)	Non-Friable	Good	25 SF
51	- 1/2 bathroom	over 2nd layer of floor tile & mastic	TEM - NAD (1st layer of floor tile & mastic & 2nd layer of floor tile	Tion Thable	3 000	2001
52	Doctors office		PLM - NAD (floor tile); 2% chrysotile			
53	front lobby &	12" x 12" tan speckled floor tile & mastic	(mastic)	Non-Friable	Good	60 SF
54	reception area	the a mastic	TEM - NAD (floor tile)			
55						
56	Doctors office throughout	Unfinished drywall	PLM - NAD	Friable	Good	2,000 SF
57	tinougnout					
58			5114 1105			
59	Left section apartment (patch)	12" x 12" tan speckled floor tile & mastic	PLM - NAD	Non-Friable	Good	10 SF
60	αραιτιποτιτ (ρατοπ)	& mastic TEM - NAD				
61			PLM - NAD (floor tile); 10% chrysotile			
62	Left section			Non-Friable	Good	730 SF
63	apartinont					

Project Name: COS 748 Baltimore Street ACM/LBP Sampled By: Tom Oliver

Project Location: 748 Baltimore Street, Spartanburg, SC 29301 Project Manager: Tom Oliver

Project Number: 0118-14 Date: 8/16/2018

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
64	Left section					
65	apartment on right side	Unfinished drywall under wooden wall panels	PLM - NAD	Friable	Good	500 SF
66	wall					

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 748 Baltimore Street ACM/LBP Sampled By: Tom Oliver

Project Location: 748 Baltimore Street, Spartanburg, SC 29301 Project Manager: Tom Oliver

Sample No.	Sample Location	Component	Color	Substrate	Analytical Result
	Standardization				(mg/m³)
1		184.00			
2		Calibration			1.00
3		Calibration			1.14
4		Calibration	•	.	1.30
5	Exterior grocery	Handrail	Black	Metal	0.13
6	Exterior grocery	Porch column	Black	Metal	0.22
7	Exterior grocery	Security door	Black	Metal	0.00
8	Exterior grocery	Wall	Red	Brick	0.00
9	Exterior grocery	Front entry ceiling	White	Wood	0.00
10	Exterior grocery	Front entry header	White	Wood	0.00
11	Exterior grocery	Door header	Red	Metal	0.00
12	Exterior	Window frame	White	Wood	0.30
13	Exterior	Siding	White	Wood	0.00
14	Exterior	Soffit	White	Wood	0.00
15	Exterior doctors office	Door header	White	Metal	0.00
16	Exterior apartment	Door header	White	Wood	0.00
17	Exterior basement	Siding	White	Wood	0.00
18	Exterior basement	Door	White	Wood	0.00
19	Exterior basement	Door frame	White	Wood	0.00
20	Exterior basement	Handrail	Red	Metal	0.00
21	Exterior basement	Door	Red	Metal	0.02
22	Interior	Wall panel	Brown	Wood	0.00
23	Interior	Door	Brown	Wood	0.00
24	Interior	Door frame	Brown	Wood	0.00

FIELD DATA SHEET LBP ANALYSIS

Project Name: COS 748 Baltimore Street ACM/LBP Sampled By: Tom Oliver

Project Location: 748 Baltimore Street, Spartanburg, SC 29301 Project Manager: Tom Oliver

 Project Number:
 0118-14

 Date:
 8/16/2018

Sample No.	Sample Location	Component	Color	Substrate	Analytical Result (mg/m³)
25	Interior	Ceiling tile	White	Wood	0.00
26	Interior	Window frame	Brown	Wood	0.00
27	Interior	Cabinets	Brown	Wood	0.00
28	Interior	Door	White	Metal	0.00
29	Interior	Bathroom vanity	White	Wood	0.03
30	Interior	Toilets/urinals	White	Ceramic	1.00

Bold = LBP

SECTION III

Laboratory Analytical Results



August 27, 2018

Apex Environmental Management 7 Winchester Court Mauldin, SC 29662

CLIENT PROJECT: COS 748 Baltimore St. ACM/LBP; COS 0118-14

CEI LAB CODE: A189266

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





ASBESTOS ANALYTICAL REPORT By: Polarized Light Microscopy

Prepared for

Apex Environmental Management

CLIENT PROJECT: COS 748 Baltimore St. ACM/LBP; COS 0118-14

LAB CODE: A189266

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

REPORT DATE: 08/27/18

TOTAL SAMPLES ANALYZED: 46

SAMPLES >1% ASBESTOS: 9



By: POLARIZING LIGHT MICROSCOPY

PROJECT: COS 748 Baltimore St. ACM/LBP; COS LAB CODE: A189266

0118-14

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
1	Layer 1	A84858A	Black	Roof Shingle	None Detected
	Layer 2	A84858A	Black,White	Roof Shingle	None Detected
		A84858B	Black	Felt	None Detected
2	Layer 1	A84859A	Black	Roof Shingle	None Detected
	Layer 2	A84859A	Black,White	Roof Shingle	None Detected
		A84859B	Black	Felt	None Detected
3		A84860		Sample Submitted for TEM Analysis	
4	Layer 1	A84861	Black,Off-white	Roof Shingle	None Detected
	Layer 2	A84861	Black	Felt	None Detected
5	Layer 1	A84862	Black,Off-white	Roof Shingle	None Detected
	Layer 2	A84862	Black	Felt	None Detected
6		A84863		Sample Submitted for TEM Analysis	
7		A84864	White	Caulk	None Detected
8		A84865	White	Caulk	None Detected
9		A84866		Sample Submitted for TEM Analysis	
10		A84867A	Off-white	Floor Tile	None Detected
		A84867B	Yellow	Mastic	None Detected
11		A84868A	Off-white	Floor Tile	None Detected
		A84868B	Yellow	Mastic	None Detected
12		A84869		Sample Submitted for TEM Analysis	
13		A84870A	Clear, Yellow	Vinyl Flooring	Chrysotile 25%
		A84870B	Brown	Floor Tile	None Detected
		A84870C	Clear, Yellow	Mastic	None Detected
14		A84871A		Sample Not Analyzed per COC	
		A84871B	Brown	Floor Tile	None Detected
		A84871C	Clear, Yellow	Mastic	None Detected
15		A84872A		Sample Not Analyzed per COC	



By: POLARIZING LIGHT MICROSCOPY

PROJECT: COS 748 Baltimore St. ACM/LBP; COS LAB CODE: A189266

0118-14

Olivet ID		Lab ID	0-1	Commis Description	ASBESTOS
Client ID	Layer	Lab ID	Color	Sample Description	%
		A84872B		Sample Submitted for TEM Analysis	
16		A84873	Off-white,Gray	Ceiling Tile	None Detected
17		A84874	Off-white,Gray	Ceiling Tile	None Detected
18		A84875	Off-white,Gray	Ceiling Tile	None Detected
19	Layer 1	A84876	Tan,Patterned	Vinyl Flooring	None Detected
	Layer 2	A84876	Yellow	Mastic	None Detected
20	Layer 1	A84877	Tan,Patterned	Vinyl Flooring	None Detected
	Layer 2	A84877	Yellow	Mastic	None Detected
21		A84878		Sample Submitted for TEM Analysis	
22		A84879	Brown, Patterned	Vinyl Flooring	Chrysotile 25%
23		A84880		Sample Not Analyzed per COC	
24		A84881		Sample Not Analyzed per COC	
25		A84882	Brown	Mastic	Chrysotile 3%
26		A84883		Sample Not Analyzed per COC	
27		A84884		Sample Not Analyzed per COC	
28		A84885	Gray	Drywall	None Detected
30		A84887	Gray	Drywall	None Detected
31		A84888	Off-white,Gray	Ceiling Tile	None Detected
32		A84889	Off-white,Gray	Ceiling Tile	None Detected
33		A84890	Off-white,Gray	Ceiling Tile	None Detected
34		A84891A	Tan	Floor Tile	Chrysotile 3%
		A84891B	Black	Mastic	Chrysotile 5%
35		A84892		Sample Not Analyzed per COC	
36		A84893		Sample Not Analyzed per COC	
37	Layer 1	A84894	Brown,White	Joint Compound	Chrysotile 5%
	Layer 2	A84894	Gray	Drywall	None Detected
38		A84895		Sample Not Analyzed per COC	
39		A84896		Sample Not Analyzed per COC	
40		A84897A	Green	Floor Tile	None Detected



By: POLARIZING LIGHT MICROSCOPY

PROJECT: COS 748 Baltimore St. ACM/LBP; COS LAB CODE: A189266

0118-14

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
		A84897B		Mastic	None Detected
4.4			Brown, Yellow		
41		A84898A	Green	Floor Tile	None Detected
		A84898B	Brown,Yellow	Mastic	None Detected
42		A84899		Sample Submitted for TEM Analysis	
43		A84900A	Tan	Floor Tile	None Detected
	Layer 1	A84900B	Black	Mastic	None Detected
	Layer 2	A84900B	Yellow	Fiberboard	None Detected
44		A84901A	Tan	Floor Tile	None Detected
	Layer 1	A84901B	Black	Mastic	None Detected
	Layer 2	A84901B	Yellow	Fiberboard	None Detected
45		A84902A		Sample Submitted for TEM Analysis	
	Layer 1	A84902B		Sample Submitted for TEM Analysis	
	Layer 2	A84902B	Yellow	Fiberboard	None Detected
46		A84903A	Patterned,Gray	Floor Tile	None Detected
		A84903B	Clear	Mastic	None Detected
47		A84904A	Patterned,Gray	Floor Tile	None Detected
		A84904B	Clear	Mastic	None Detected
48		A84905		Sample Submitted for TEM Analysis	
49		A84906A	Beige,Patterned	f Floor Tile	None Detected
		A84906B	Clear	Mastic	None Detected
		A84906C	Beige	Floor Tile	None Detected
		A84906D	Black	Mastic	Chrysotile 2%
50		A84907A	Beige,Patterned	f Floor Tile	None Detected
		A84907B	Clear	Mastic	None Detected
		A84907C	Beige	Floor Tile	None Detected
		A84907D		Sample Not Analyzed per COC	
51		A84908A		Sample Submitted for TEM Analysis	



By: POLARIZING LIGHT MICROSCOPY

PROJECT: COS 748 Baltimore St. ACM/LBP; COS LAB CODE: A189266

0118-14

					ASBESTOS
Client ID	Layer	Lab ID	Color	Sample Description	%
		A84908B		Sample Not Analyzed per COC	
52		A84909A	Beige,Patterned	d Floor Tile	None Detected
		A84909B	Black	Mastic	Chrysotile 2%
53		A84910A	Beige,Patterned	d Floor Tile	None Detected
		A84910B		Sample Not Analyzed per COC	
54		A84911A		Sample Submitted for TEM Analysis	
		A84911B		Sample Not Analyzed per COC	
55		A84912	Gray	Drywall	None Detected
56		A84913	Gray	Drywall	None Detected
57		A84914	Gray	Drywall	None Detected
58		A84915A	Tan	Floor Tile	None Detected
		A84915B	Brown, Yellow	Mastic	None Detected
59		A84916A	Tan	Floor Tile	None Detected
		A84916B	Brown, Yellow	Mastic	None Detected
60		A84917		Sample Submitted for TEM Analysis	
61		A84918A	Gray	Floor Tile	None Detected
		A84918B	Black	Mastic	Chrysotile 10%
62		A84919A	Gray	Floor Tile	None Detected
		A84919B		Sample Not Analyzed per COC	
63		A84920A		Sample Submitted for TEM Analysis	
		A84920B		Sample Not Analyzed per COC	
64		A84921	Gray	Drywall	None Detected
65		A84922	Gray	Drywall	None Detected
66		A84923	Gray	Drywall	None Detected



Lab Code:

By: POLARIZING LIGHT MICROSCOPY

Client: **Apex Environmental Management**

A189266 Date Received: 08-20-18 7 Winchester Court Date Analyzed: 08-27-18 Mauldin, SC 29662 Date Reported: 08-27-18

Project: COS 748 Baltimore St. ACM/LBP; COS 0118-14

Client ID	Lab	Lab NON-ASBESTOS COMPONENTS					ASBESTOS
Lab ID	Description	Attributes	Fibr	ous	Non-F	ibrous	%
1 Layer 1 A84858A	Roof Shingle	Heterogeneous Black Fibrous Bound	35%	Cellulose	40% 25%	Tar Silicates	None Detected
Layer 2 A84858A	Roof Shingle	Heterogeneous Black,White Fibrous Bound	35%	Cellulose	40% 25%	Tar Silicates	None Detected
A84858B	Felt	Heterogeneous Black Fibrous Bound	80%	Cellulose	20%	Tar	None Detected
2 Layer 1 A84859A	Roof Shingle	Heterogeneous Black Fibrous Bound	35%	Cellulose	40% 25%	Tar Silicates	None Detected
Layer 2 A84859A	Roof Shingle	Heterogeneous Black,White Fibrous Bound	35%	Cellulose	40% 25%	Tar Silicates	None Detected
A84859B	Felt	Heterogeneous Black Fibrous Bound	80%	Cellulose	20%	Tar	None Detected
3 A84860	Sample Submitted for TEM Analysis						
4 Layer 1 A84861	Roof Shingle	Heterogeneous Black,Off-white Fibrous Bound	25%	Fiberglass	40% 35%	Tar Silicates	None Detected



Lab Code:

By: POLARIZING LIGHT MICROSCOPY

Client: **Apex Environmental Management**

A189266 Date Received: 08-20-18 7 Winchester Court Date Analyzed: 08-27-18 Mauldin, SC 29662 Date Reported: 08-27-18

Project: COS 748 Baltimore St. ACM/LBP; COS 0118-14

Client ID	Lab	Lab	ASBESTOS				
Lab ID	Description	Attributes	Fibr	ous	Non-F	ibrous	%
Layer 2 A84861	Felt	Heterogeneous Black Fibrous Bound	80%	Cellulose	20%	Tar	None Detected
5 Layer 1 A84862	Roof Shingle	Heterogeneous Black,Off-white Fibrous Bound	25%	Fiberglass	40% 35%	Tar Silicates	None Detected
Layer 2 A84862	Felt	Heterogeneous Black Fibrous Bound	80%	Cellulose	20%	Tar	None Detected
6 A84863	Sample Submitted for TEM Analysis						
7 A84864	Caulk	Heterogeneous White Non-fibrous Bound			90% 10%	Caulk Paint	None Detected
8 A84865	Caulk	Heterogeneous White Non-fibrous Bound			90% 10%	Caulk Paint	None Detected
9 A84866	Sample Submitted for TEM Analysis						
10 A84867A	Floor Tile	Heterogeneous Off-white Non-fibrous Bound			100%	Vinyl	None Detected



Lab Code:

By: POLARIZING LIGHT MICROSCOPY

A189266

Client: **Apex Environmental Management**

Date Received: 08-20-18 7 Winchester Court Date Analyzed: 08-27-18 Mauldin, SC 29662 Date Reported: 08-27-18

Project: COS 748 Baltimore St. ACM/LBP; COS 0118-14

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS Fibrous		NENTS Fibrous	ASBESTOS %
Yellow	Non-fibrous		100%	Mastic	None Detected	
11 A84868A	Floor Tile	Heterogeneous Off-white Non-fibrous Bound		100%	Vinyl	None Detected
A84868B	Mastic	Homogeneous Yellow Non-fibrous Bound		100%	Mastic	None Detected
12 A84869	Sample Submitted for TEM Analysis					
13 A84870A	Vinyl Flooring	Heterogeneous Clear,Yellow Fibrous Bound		50% 25%	Vinyl Binder	25% Chrysotile
A84870B	Floor Tile	Heterogeneous Brown Non-fibrous Bound		100%	Vinyl	None Detected
A84870C	Mastic	Homogeneous Clear,Yellow Non-fibrous Bound		100%	Mastic	None Detected
14	Sample Not Analyzed					

A84871A per COC



Lab Code:

By: POLARIZING LIGHT MICROSCOPY

A189266

Client: Apex Environmental Management

7 Winchester Court
Mauldin, SC 29662
Date Analyzed: 08-20-18
Date Reported: 08-27-18
Date Reported: 08-27-18

Project: COS 748 Baltimore St. ACM/LBP; COS 0118-14

Client ID Lab ID	Lab Description	Lab Attributes	NO Fibr	N-ASBESTOS (ous		NENTS Fibrous	ASBESTOS %
A84871B	Floor Tile	Heterogeneous Brown Non-fibrous Bound			100%	Vinyl	None Detected
A84871C	Mastic	Homogeneous Clear,Yellow Non-fibrous Bound			100%	Mastic	None Detected
15 A84872A	Sample Not Analyzed per COC						
A84872B	Sample Submitted for TEM Analysis						
16 A84873	Ceiling Tile	Heterogeneous Off-white,Gray Fibrous Bound	10% 15% 60%	Cellulose Fiberglass Mineral Wool	5% 5% 5%	Binder Silicates Paint	None Detected
17 A84874	Ceiling Tile	Heterogeneous Off-white,Gray Fibrous Bound	10% 15% 60%	Cellulose Fiberglass Mineral Wool	5% 5% 5%	Binder Silicates Paint	None Detected
18 A84875	Ceiling Tile	Heterogeneous Off-white,Gray Fibrous Bound	10% 15% 60%	Cellulose Fiberglass Mineral Wool	5% 5% 5%	Binder Silicates Paint	None Detected
19 Layer 1 A84876	Vinyl Flooring	Heterogeneous Tan,Patterned Fibrous Bound	5%	Fiberglass	50% 45%	Vinyl Binder	None Detected



Lab Code:

By: POLARIZING LIGHT MICROSCOPY

A189266

Client: Apex Environmental Management

7 Winchester Court

Mauldin, SC 29662

Date Received: 08-20-18

Date Analyzed: 08-27-18

Date Reported: 08-27-18

Project: COS 748 Baltimore St. ACM/LBP; COS 0118-14

Client ID Lab ID	Lab Description	Lab Attributes		N-ASBESTOS rous		NENTS Fibrous	ASBESTOS %
Layer 2 A84876	Mastic	Heterogeneous Yellow Fibrous Bound	5%	Fiberglass	90% 5%	Mastic Binder	None Detected
20 Layer 1 A84877	Vinyl Flooring	Heterogeneous Tan,Patterned Fibrous Bound	5%	Fiberglass	40% 30% 25%	Vinyl Binder Non-Fibrous Debris	None Detected
Layer 2 A84877	Mastic	Heterogeneous Yellow Fibrous Bound	5%	Fiberglass	90% 5%	Mastic Binder	None Detected
21 A84878	Sample Submitted for TEM Analysis						
22 A84879	Vinyl Flooring	Heterogeneous Brown,Patterned Fibrous Bound	l		50% 25%	Vinyl Binder	25% Chrysotile
23 A84880	Sample Not Analyzed per COC						
24 A84881	Sample Not Analyzed per COC						
25 A84882	Mastic	Homogeneous Brown Fibrous Bound			97%	Mastic	3% Chrysotile
26 A84883	Sample Not Analyzed per COC						
27 A84884	Sample Not Analyzed per COC						



Lab Code:

By: POLARIZING LIGHT MICROSCOPY

A189266

Client: Apex Environmental Management

7 Winchester Court

Mauldin, SC 29662

Date Received: 08-20-18

Date Analyzed: 08-27-18

Date Reported: 08-27-18

Project: COS 748 Baltimore St. ACM/LBP; COS 0118-14

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NOI Fibr	N-ASBESTOS (ous		NENTS Fibrous	ASBESTOS %
28 A84885	Drywall	Heterogeneous Gray Fibrous Bound	10% 5%	Cellulose Fiberglass	80% 5%	Gypsum Silicates	None Detected
30 A84887	Drywall	Heterogeneous Gray Fibrous Bound	10% 5%	Cellulose Fiberglass	80% 5%	Gypsum Silicates	None Detected
31 A84888	Ceiling Tile	Heterogeneous Off-white,Gray Fibrous Bound	10% 15% 55%	Cellulose Fiberglass Mineral Wool	5% 10% 5%	Binder Perlite Paint	None Detected
32 A84889	Ceiling Tile	Heterogeneous Off-white,Gray Fibrous Bound	10% 15% 55%	Cellulose Fiberglass Mineral Wool	5% 10% 5%	Binder Perlite Paint	None Detected
33 A84890	Ceiling Tile	Heterogeneous Off-white,Gray Fibrous Bound	10% 15% 55%	Cellulose Fiberglass Mineral Wool	5% 10% 5%	Binder Perlite Paint	None Detected
34 A84891A	Floor Tile	Heterogeneous Tan Non-fibrous Bound			97%	Vinyl	3% Chrysotile
A84891B	Mastic	Heterogeneous Black Non-fibrous Bound			95%	Mastic	5% Chrysotile
35	Sample Not Analyzed						

A84892 per COC



Lab Code:

By: POLARIZING LIGHT MICROSCOPY

A189266

Client: Apex Environmental Management

7 Winchester Court

Mauldin, SC 29662

Date Received: 08-20-18

Date Analyzed: 08-27-18

Date Reported: 08-27-18

Project: COS 748 Baltimore St. ACM/LBP; COS 0118-14

Client ID Lab ID	Lab Description	Lab Attributes		N-ASBESTOS ous		NENTS ibrous	ASBESTOS %
36 A84893	Sample Not Analyzed per COC						
37 Layer 1 A84894	Joint Compound	Heterogeneous Brown,White Fibrous Bound	10%	Talc	70% 5% 10%	Calc Carb Silicates Paint	5% Chrysotile
Layer 2 A84894	Drywall	Heterogeneous Gray Fibrous Bound	10% 5%	Cellulose Fiberglass	80% 5%	Gypsum Silicates	None Detected
38 A84895	Sample Not Analyzed per COC						
39 A84896	Sample Not Analyzed per COC						
40 A84897A	Floor Tile	Heterogeneous Green Non-fibrous Bound			100%	Vinyl	None Detected
A84897B	Mastic	Homogeneous Brown,Yellow Non-fibrous Bound			100%	Mastic	None Detected
41 A84898A	Floor Tile	Heterogeneous Green Non-fibrous Bound			100%	Vinyl	None Detected
A84898B	Mastic	Homogeneous Brown,Yellow Non-fibrous Bound			100%	Mastic	None Detected



Lab Code:

By: POLARIZING LIGHT MICROSCOPY

A189266

Client: Apex Environmental Management

7 Winchester Court

Mauldin, SC 29662

Date Received: 08-20-18

Date Analyzed: 08-27-18

Date Reported: 08-27-18

Project: COS 748 Baltimore St. ACM/LBP; COS 0118-14

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COM Fibrous No			NENTS ibrous	ASBESTOS %
42 A84899	Sample Submitted for TEM Analysis						
43 A84900A	Floor Tile	Heterogeneous Tan Non-fibrous Bound			100%	Vinyl	None Detected
Layer 1 A84900B	Mastic	Heterogeneous Black Non-fibrous Bound	5%	Cellulose	95%	Mastic	None Detected
Layer 2 A84900B	Fiberboard	Heterogeneous Yellow Fibrous Bound	90%	Cellulose	10%	Binder	None Detected
44 A84901A	Floor Tile	Heterogeneous Tan Non-fibrous Bound			100%	Vinyl	None Detected
Layer 1 A84901B	Mastic	Heterogeneous Black Non-fibrous Bound	5%	Cellulose	95%	Mastic	None Detected
Layer 2 A84901B	Fiberboard	Heterogeneous Yellow Fibrous Bound	90%	Cellulose	10%	Binder	None Detected
45 A84902A	Sample Submitted for TEM Analysis						
Layer 1 A84902B	Sample Submitted for TEM Analysis						



Lab Code:

By: POLARIZING LIGHT MICROSCOPY

A189266

Client: Apex Environmental Management

7 Winchester Court

Mauldin, SC 29662

Date Received: 08-20-18

Date Analyzed: 08-27-18

Date Reported: 08-27-18

Project: COS 748 Baltimore St. ACM/LBP; COS 0118-14

Client ID Lab ID	Lab Description	Lab Attributes	NOI Fibr	N-ASBESTOS ous		NENTS ibrous	ASBESTOS %
Layer 2 Fiberb A84902B	Fiberboard	Heterogeneous Yellow Fibrous Bound	90%	Cellulose	10%	Binder	None Detected
46 A84903A	Floor Tile	Heterogeneous Patterned,Gray Non-fibrous Bound			100%	Vinyl	None Detected
A84903B	Mastic	Homogeneous Clear Non-fibrous Bound			100%	Mastic	None Detected
47 A84904A	Floor Tile	Heterogeneous Patterned,Gray Non-fibrous Bound			100%	Vinyl	None Detected
A84904B	Mastic	Homogeneous Clear Non-fibrous Bound			100%	Mastic	None Detected
48 A84905	Sample Submitted for TEM Analysis						
49 A84906A	Floor Tile	Heterogeneous Beige,Patterned Non-fibrous Bound			100%	Vinyl	None Detected
A84906B	Mastic	Homogeneous Clear Non-fibrous Bound			100%	Mastic	None Detected



Lab Code:

By: POLARIZING LIGHT MICROSCOPY

Client: **Apex Environmental Management**

A189266 Date Received: 08-20-18 7 Winchester Court Date Analyzed: 08-27-18 Mauldin, SC 29662 Date Reported: 08-27-18

Project: COS 748 Baltimore St. ACM/LBP; COS 0118-14

Client ID	Lab	Lab	NON-ASBE	STOS COMPO	NENTS	S ASBESTOS	
Lab ID	Description	Attributes	Fibrous	Non-F	ibrous	%	
A84906C Floor Tile	Floor Tile	Heterogeneous Beige Non-fibrous Bound		100%	Vinyl	None Detected	
A84906D	Mastic	Homogeneous Black Fibrous Bound	8% Cellul	ose 90%	Mastic	2% Chrysotile	
50 A84907A	Floor Tile	Heterogeneous Beige,Patterned Non-fibrous Bound		100%	Vinyl	None Detected	
A84907B	Mastic	Homogeneous Clear Non-fibrous Bound		100%	Mastic	None Detected	
A84907C	Floor Tile	Heterogeneous Beige Non-fibrous Bound		100%	Vinyl	None Detected	
A84907D	Sample Not Analyzed per COC						
51 A84908A	Sample Submitted for TEM Analysis						
A84908B	Sample Not Analyzed per COC						
52 A84909A	Floor Tile	Heterogeneous Beige,Patterned Non-fibrous Bound		100%	Vinyl	None Detected	



Lab Code:

By: POLARIZING LIGHT MICROSCOPY

A189266

Client: Apex Environmental Management

7 Winchester Court

Mauldin, SC 29662

Date Received: 08-20-18

Date Analyzed: 08-27-18

Date Reported: 08-27-18

Project: COS 748 Baltimore St. ACM/LBP; COS 0118-14

Client ID Lab ID	Lab Description	Lab Attributes	NO Fibr	N-ASBESTOS	NENTS ibrous	ASBESTOS %	
A84909B	Mastic	Homogeneous Black Non-fibrous Bound	8%	Cellulose	90%	Mastic	2% Chrysotile
53 A84910A	Floor Tile	Heterogeneous Beige,Patterned Non-fibrous Bound			100%	Vinyl	None Detected
A84910B	Sample Not Analyzed per COC						
54 A84911A	Sample Submitted for TEM Analysis						
A84911B	Sample Not Analyzed per COC						
55 A84912	Drywall	Heterogeneous Gray Fibrous Bound	10% 5%	Cellulose Fiberglass	80% 5%	Gypsum Silicates	None Detected
56 A84913	Drywall	Heterogeneous Gray Fibrous Bound	10% 5%	Cellulose Fiberglass	80% 5%	Gypsum Silicates	None Detected
57 A84914	Drywall	Heterogeneous Gray Fibrous Bound	10% 5%	Cellulose Fiberglass	80% 5%	Gypsum Silicates	None Detected
58 A84915A	Floor Tile	Heterogeneous Tan Non-fibrous Bound			100%	Vinyl	None Detected



Lab Code:

By: POLARIZING LIGHT MICROSCOPY

A189266

Client: Apex Environmental Management

7 Winchester Court
Mauldin, SC 29662
Date Analyzed: 08-20-18
Date Reported: 08-27-18
Date Reported: 08-27-18

Project: COS 748 Baltimore St. ACM/LBP; COS 0118-14

Client ID	Lab	Lab	NON-ASBES	TOS COMPO	NENTS	ASBESTOS	
Lab ID	Description	Attributes	Fibrous	Non-F	ibrous	%	
A84915B	Mastic	Homogeneous Brown,Yellow Non-fibrous Bound		100%	Mastic	None Detected	
59 A84916A	Floor Tile	Heterogeneous Tan Non-fibrous Bound		100%	Vinyl	None Detected	
A84916B	Mastic	Homogeneous Brown,Yellow Non-fibrous Bound		100%	Mastic	None Detected	
60 A84917	Sample Submitted for TEM Analysis						
61 A84918A	Floor Tile	Heterogeneous Gray Non-fibrous Bound		100%	Vinyl	None Detected	
A84918B	Mastic	Heterogeneous Black Non-fibrous Bound		90%	Vinyl	10% Chrysotile	
62 A84919A	Floor Tile	Heterogeneous Gray Non-fibrous Bound		100%	Vinyl	None Detected	
A84919B	Sample Not Analyzed per COC						
63 A84920A	Sample Submitted for TEM Analysis						



By: POLARIZING LIGHT MICROSCOPY

Client: **Apex Environmental Management**

Lab Code: A189266 Date Received: 08-20-18 7 Winchester Court Date Analyzed: 08-27-18 Mauldin, SC 29662 **Date Reported:** 08-27-18

Project: COS 748 Baltimore St. ACM/LBP; COS 0118-14

Client ID Lab ID	Lab Description	Lab Attributes		NON-ASBESTOS COMPONENTS Fibrous Non-Fibrous			ASBESTOS %
A84920B	Sample Not Analyzed per COC						
64 A84921	Drywall	Heterogeneous Gray Fibrous Bound	10% 5%	Cellulose Fiberglass	80% 5%	Gypsum Silicates	None Detected
65 A84922	Drywall	Heterogeneous Gray Fibrous Bound	10% 5%	Cellulose Fiberglass	80% 5%	Gypsum Silicates	None Detected
66 A84923	Drywall	Heterogeneous Gray Fibrous Bound	10% 5%	Cellulose Fiberglass	80% 5%	Gypsum Silicates	None Detected



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.

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ANALYST

APPROVED BY

Tianbao Bai, Ph.D., CIH Laboratory Director

NVLAP LAB CODE 101768-0



ASBESTOS

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LABS	5		LAB USE OF	VLY:	1 1	(uv)	and the same of the	1
107 New Edition Court, Cary,	754		CEI Lab C	ode: Al8	9240	u		
Tel: 866-481-1412; Fax: 919-	481-1442		CEI Lab I.	D. Range:	MACC	2- A2407	2	
COMPANY INFORMATION	J	- 13		T INFORM		0 110[12		
CEI CLIENT #:	41		Job Conta	ct: Tom C	liver			
Company: Apex Environ	mental Manageme	ent Inc		: toliver@		hs com		
		711, 1110.					- 57	AUN/LOP
						(Jairin)	616-7.	HUYLUSP
	th Carolina 29662		Project ID/	1 0118-	14			
Email: toliver@ape	c-ehs.com		PO#:					
Tel: 864-404-3210	Fax: 864-404-32	13	STATE SA	MPLES CO	LLECTED	IN: South (Carolina	
GENERAL INSTRUCTIONS								
POSITIVE STOP ANALYSIS		- KO	PLM DUE	DATE:		1 1		
ANALYZE NOB'S BY TEM			TEM DUE	EDATE:		1 1		
	F TAT IS NOT MARKI	ED STAND	0ARD 3 DA	V TAT API	DI IES			
	TATIONOT WARRE	DOTAND	ANDODA		DUND TIM	F		
ASBESTOS	METHOD	4 HR	8 HR	24 HR	2 DAY	3 DAY	5 DAY	
PLM BULK	EPA 600			ZGTIK	DAI	5 DAT	BAI	
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						X	
TEM DUST WIPE	ASTM D6480-05							
TEM DUST MICROVAC	ASTM D5755-09							
TEM SOIL	ASTM D7521-13							
TEM VERMICULITE	CINCINNATI METHOD							
OTHER:								
REMARKS: Utilize Pos	tive Stop During A	nalvsis.	If joint co	mpound	Ι			
	for asbestos, positi					Accept Sample	es	
tape	2.1		,			Reject Sample	s	
Relinquished By:	Date/Time	La vill	Receiv	ved By:		Date/Time		
W	8-17-18		w		@12		0:00	

Samples will be disposed of 30 days after analysis

ASBESTOS AMPLING FORM



COMPANY CONTACT INFORMATION	
Company: Apex Environmental Management, Inc.	Job Contact: Tom Oliver
Project Name: COS 748 Baltimore Street ACM LBP	
Project ID #: 0118-14	Tel: 864-640-5127

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TE	ST
SAMPLE ID#	Prof Violes (2) &	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	PLM	TEM
2	Roof Singles (2) & felt(i)		PLM 🔼	TEM
3	1011 0.2		PLM	TEM
4	Roof shingles (1) 2		PLM	TEM
5	felt (1)		PLM	TEM
6			PLM	TEM 🖊
7	white cause		PLM 🔼	TEM
8			PLM 🥌	TEM
9			PLM	TEM
10	12"x12" f.T. +		PLM	TEM
	mastic	m in t	PLM	TEM
12			PLM	TEM
13	Brown roll viry floor		PLM	TEM
14	Out 121/x124 F.T. & master)		PLM	TEM
15			PLM	TEM
16	2'x4' Ceiling Files		PLM	TEM
17			PLM	TEM
is			PLM	TEM
19	Tan will viry floor		PLM	TEM
20	Squire Dather Cod of		PLM	TEM
21	sque father and I		PLM	TEM
22	brown squar pattern		PLM	TEM
23	roll viry floor		PLM	TEM
24			PLM	TEM
	Brown nastic behind		PLM —	TEM
25 26	non panels		PLM	TEM
27			PLM	TEM
28	Unfinished drynally		PLM _	TEM
29	/ /		PLM	TEM
30			PLM	TEM

Page _____ of ______

ASBESTOS A18924U SAMPLING FORM



COMPANY CONTACT INFORMATION	
Company: Apex Environmental Management, Inc.	Job Contact: Tom Oliver
Project Name: COS 748 Baltimore Street ACM LBP	
Project ID #: 0118-14	Tel: 864-640-5127

	DESCRIPTION / LOCATION	VOLUME/ AREA	TE	ST
SAMPLE ID#	DESCRIPTION / LOCATION	ANCA	PLM	TEM
32	2'x41 Coiling tile		PLM PLM	TEM
32			PLM	TEM
24	(2"x12" ton Apor,		PLM 🔀	TEM
35	tile + mastin		PLM	TEM
36	+10 + 30/4/1-		PLM	TEM
37	Doumb 1 T/ +20		PLM	TEM
38	tope - certify		PLM	TEM
39	Tape Sen y		PLM	TEM
40	12"x12" light anse Fit		PLM	TEM
41	12"x12" light green Fit.	Physics F	PLM	TEM
42	0 370001		PLM	TEM
42	12"x12" ton F.T. +		PLM 🖵	TEM
42,	How mastic		PLM	TEM
45	30		PLM	TEM
46	12 11x 10 Square pottern		PLM	TEM
47	Self-Still Fit.		PLM	TEM
48			PLM	TEM
49	12"x12" beige of Aones		PLM	TEM
50	Self-Stak F.T.		PLM	TEM
51			PLM	TEM
52	12"x12" fan Sperkled		PLM _	TEM
53	12"x12" fan Speckled F.T. i martie		PLM	TEM
54			PLM	TEM
55	Unfinisheddrynon		PLM	TEM
56			PLM	TEM
57			PLM .	TEM
58	12"x12" for spendely		PLM	TEM
59	FIT. Path of brown		PLM -	TEM
60	nostic		PLM	TEM

Page 3____ of _____

ASBESTOS A18924U SAMPLING FORM



COMPANY CONTACT INFORMATION	
Company: Apex Environmental Management, Inc.	Job Contact: Tom Oliver
Project Name: COS 748 Baltimore Street ACM LBP	X.
Project ID #: 0118-14	Tel: 864-640-5127

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST			
61	12"x12" grey streaked F.T. + mastic		PLM	TEM		
62	F.T. + martie		PLM PLM	TEM		
63			PLM	TEM		
64	Unfinished drywill		PLM	TEM		
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Page 4 of 4

August 31, 2018

Apex Environmental Management 7 Winchester Court Mauldin, SC 29662

CLIENT PROJECT: COS 748 Baltimore St. ACM/LBP; COS 0118-14

LAB CODE: T181980

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

Mansas Bi



ASBESTOS ANALYTICAL REPORT By: Transmission Electron Microscopy

Prepared for

Apex Environmental Management

CLIENT PROJECT: COS 748 Baltimore St. ACM/LBP; COS 0118-14

LAB CODE: T181980

TEST METHOD: Bulk Chatfield

EPA 600 / R93 / 116

REPORT DATE: 08/31/18



ASBESTOS BULK ANALYSIS

By: TRANSMISSION ELECTRON MICROSCOPY

Client: Apex Environmental Management

7 Winchester Court Mauldin, SC 29662

 Lab Code:
 T181980

 Date Received:
 08-27-18

 Date Analyzed:
 08-31-18

 Date Reported:
 08-31-18

Project: COS 748 Baltimore St. ACM/LBP; COS 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 T83647	Black Roof Shingle	0.556	41.9	21.4	36.7	None Detected
3 T83648	Black, White Roof Shingle	0.521	52	22.3	25.7	None Detected
3 T83649	Black Felt	01.16	95.1	1.6	3.3	None Detected
6 T83650	Black, Off-white Roof Shingle	0.524	24.6	41.2	34.2	None Detected
6 T83651	Black Felt	0.756	95.4	1.6	3	None Detected
9 T83652	White Caulk	0.285	56.5	40	3.5	None Detected
12 T83653	Off-white Floor Tile	0.683	13.2	60.8	26	None Detected
12 T83654	Yellow Mastic	0.201	84.6	10.4	5	<1% Chrysotile
15 T83655	Brown Floor Tile	0.595	15.8	81.5	2.7	None Detected
15 T83656	Clear, Yellow Mastic	0.092	65.2	16.3	18.5	<1% Chrysotile
21 T83657	Tan, Pattern Vinyl Flooring	0.387	86	10.1	3.9	None Detected
21 T83658	Yellow Mastic	0.117	52.1	30.8	17.1	None Detected



ASBESTOS BULK ANALYSIS

By: TRANSMISSION ELECTRON MICROSCOPY

Client: Apex Environmental Management

7 Winchester Court Mauldin, SC 29662

 Lab Code:
 T181980

 Date Received:
 08-27-18

 Date Analyzed:
 08-31-18

 Date Reported:
 08-31-18

Project: COS 748 Baltimore St. ACM/LBP; COS 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 %
42 T83659	Green Floor Tile	0.728	15.5	72	12.5	None Detected
42 T83660	Brown, Yellow Mastic	0.119	57.1	39.5	3.4	<1% Chrysotile
45 T83661	Tan Floor Tile	0.474	12	72.4	15.6	4.4% Chrysotile
45 T83662	Black Mastic	0.102	87.3	6.9	5.8	<1% Chrysotile
48 T83663	Patterned, Gray Floor Tile	0.489	27.2	70.8	2	None Detected
48 T83664	Clear Mastic	0.164	86	9.8	4.2	<1% Chrysotile
51 T83665	Beige, Patterned Floor Tile	0.572	20.3	75.5	4.2	None Detected
51 T83666	Clear Mastic	0.095	74.7	24.2	1.1	None Detected
51 T83667	Beige Floor Tile	0.404	17.8	66.1	16.1	None Detected
54 T83668	Beige, Patterned Floor Tile	0.569	12.3	87.3	.4	None Detected
60 T83669	Tan Floor Tile	0.786	12	87.3	.7	None Detected
60 T83670	Brown, Yellow Mastic	0.117	59	40.2	.8	None Detected



ASBESTOS BULK ANALYSIS

By: TRANSMISSION ELECTRON MICROSCOPY

Client: **Apex Environmental Management**

Lab Code: T181980 **Date Received:** 08-27-18 7 Winchester Court Date Analyzed: 08-31-18 Mauldin, SC 29662 **Date Reported:** 08-31-18

Project: COS 748 Baltimore St. ACM/LBP; COS 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 %
63 T83671	Gray Floor Tile	0.28	21.4	61.4	17.2	3.2% Chrysotile



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

APPROVED BY:

Tianbao Bai, Ph.D., CIH Laboratory Director

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ASBESTOS

CHAIN OF CUSTODY									
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107 New Edition Cou				CEI Lab C	ode: M	8920	T W		
Tel: 866-481-1412; F	ax: 919-481-	1442		CEI Lab I.D. Range: AGARCY - AGART 2					
COMPANY INFOR	MATION			PROJECT	INFORM	MATION	0 110[[<i>V S</i>	
CEI CLIENT #:				Job Contac	t: Tom	Oliver			
Company: Apex E	nvironmer	ntal Manageme	ent, Inc.	Email / Tel:	toliver	@арех-	ehs.com		
Address: 7 Winc	hester Co	urt		Project Nar	ne: COS	748	Baltin	nore 5%	
Mauldi	n, South C	arolina 29662		Project ID#				1	
Email: toliver(@apex-eh	s.com		PO#:					
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TEM DUST MICROVAC	AST	M D5755-09							
TEM SOIL	AST	M D7521-13							
TEM VERMICULITE	CINC	CINNATI METHOD							
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Samples will be disposed of 30 days after analysis



ASBESTOS ALSO ZUU **SAMPLING FORM**



COMPANY	CONTACT INFORMATION		**
Company: A	ex Environmental Management, Inc.	Job Contact: Tom Oliver	
Project Name:	COS 748 Baltimore Street ACM LBP		
Project ID #:		Tel: 864-640-5127	

		<u> </u>		
SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	, TEST	
	Roof Sinds (2) &		PLM 🔼	TEM
2	felt(i)		PLM 🔼	TEM
3			PLM	TEM
4	Roof Shingle(1) d		PLM	TEM
5	felt (1)		PLM	TEM
6			PLM	TEM 🔼
7	white call		PLM 🔼	TEM
8			PLM 🔛	TEM
G	<u> </u>		PLM	TEM 🖊
10	12"x12" F.T. L.		PLM 🖊	TEM
	mastic		PLM	TEM
12			PLM	TEM
13	Brown roll viry floor		PLM	TEM
14	as 121x124 F.T. & mostic)		PLM	TEM
15			PLM	TEM
16	2'x4' Ceiling Files		PLM	TEM
17			PLM	TEM
18			PLM 🔀	TEM
19	Tan vol viry Hor		PLM	TEM
20	Sque potent of of		PLM	TEM
21	mastic 1		PLM	TEM
22	Brown Squing pattern		PLM	TEM
23	roll viry floor		PLM	TEM
24			PLM	TEM
25	Breun mastri behind		PLM -	TEM
<u> </u>	n-4 panels		PLM	TEM
<u> </u>			PLM	TEM _
28	Unfinished drynuly		PLM _	TEM
29			PLM	TEM
30			PLM .	TEM

Page 2 of 4



ASBESTOS A89240 SAMPLING FORM



COMPANY CONTACT INFORMATION	
company: Apex Environmental Management, Inc.	Job Contact: Tom Oliver
Project Name COS 748 Baltimore Street ACM LBP	
Project ID #: 0118-14	Tel: 864-640-5127

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST	
31	2'x41 Coiling the		PLM	TEM
32			PLM D	TEM
33			PLM	TEM
24	(L'x12" ton Apor,		PLM 🔀	TEM
3,5	tile + mastin		PLM	TEM
36			PLM	TEM
37	Digital and JC + 10		PLM 🖊	TEM
3/8	tope - certify		PLM 🗐	TEM
39			PLM 🖾	TEM
40	12"x12" light green FIT		PLM	TEM
41	& brown masti-		PLM	TEM
42			PLM	TEM
43	12"x12" ton F.T. +		PLM 🔀	TEM
44	Have nasting		PLM 🔄	TEM
45			PLM	TEM
46	12"x 1 Square Cottern		PLM 🔀	TEM
47	Self-Stick Fit.		PLM	TEM
48			PLM	TEM _
49	12"x12" beize of Ames		PLM 🔼	TEM
50	Self-Stak Fit		PLM	TEM
51			PLM	TEM
52	12"x12" fan Sprikled		PLM _	TEM
53	F.T. i martie		PLM	TEM
54			PLM	TEM _
55	Unfinisheddrynon		PLM 🔀	TEM
56	/		PLM	TEM
57			PLM	TEM
58	12"x12" for sperilet		PLM	TEM
59	FIT Part of brown		PLM 🖅	TEM
60	~ 05tic		PLM	TEM

Page <u>3</u> of <u>4</u>

741250

ASBESTOS A189244 SAMPLING FORM



COMPANY CONTACT INFORMATION	
Anox Environmental Ma	Job Contact: Tom Oliver
Project Name COS 748 Baltimore Street ACM LBP	POST COMMENTS OF THE COMMENTS
Project ID #: 0118-14	Tel: 864-640-5127

CAREDI E := ::		VOLUME/		
SAMPLE ID#	DESCRIPTION / LOCATION	AREA	1	EST
k[12"x12" grey Streamed F.T. + martin		PLM	TEM
<u>b2</u>	F.T. + nastic		PLM	TEM
63			PLM	TEM
64	Unfinished drywch		PLM	TEM
<u> </u>	under inside , pagelix		PLM PLM	TEM
66			PLM _	TEM
			PLM	TEM
	·		PLM	TEM
			PLM []	TEM
			PLM	TEM
			PLM	TEM

Page 4 of 4

SECTION IV

Photographic Log



Photo 1 – 748 Baltimore Street in Spartanburg, South Carolina



Photo 2 – Roof shingles & felt on the grocery, doctors office & apartment roofs



Photo 3 – Roof shingles & felt on the grocery roof



Photo 4 – Door caulk

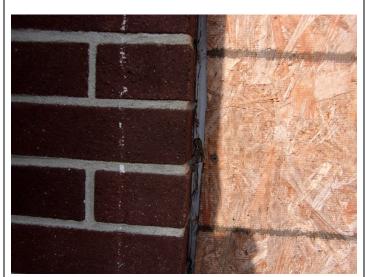


Photo 5 – Window caulk



Photo 6 – 12" x 12" floor tile & mastic in the grocery top floor entrance



Photo 7 – Brown roll vinyl floor with no mastic over 12" x 12" floor tile & mastic in the grocery – top floor



Photo 8-2' x 4' ceiling tile in the grocery section



Photo 9 – Tan square pattern roll vinyl floor & mastic in the grocery top floor section on the partition floor



Photo 10- Brown square roll pattern vinyl floor with no mastic in the grocery section bathrooms



Photo 11 – Brown mastic behind wall panels in the grocery section bathroom & kitchen



Photo 12 – Unfinished drywall in the grocery section



Photo 13 – Unfinished drywall in the grocery section



Photo 14 – 2' x 4' ceiling tile sin the basement



Photo 15 – 12" x 12" tan floor tile & black mastic in the basement



Photo 16 - Drywall with joint compound & tape in the basement bathrooms



Photo 17 - 12" x 12" light green floor tile & mastic in the doctor's office - right side suite (top layer)



Photo 18 – 12" x 12" tan floor tile with fiberboard & black mastic in the doctor's office- right side suite (bottom layer & top layer throughout)



Photo 19-12"x 12" square pattern self-stick floor tile & mastic in the doctor's office - kitchen & full bathroom

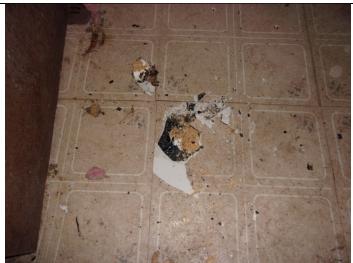


Photo 20 - 12" x 12" beige with flowers pattern self-stick floor tile over 2nd layer of floor tile & mastic in the doctor's office - 1/2 bathroom

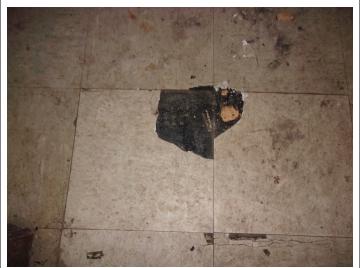


Photo 21 – 12" x 12" tan speckled floor tile & mastic in the doctor's office - front lobby & reception area



Photo 22- Unfinished drywall throughout the doctor's office



Photo 23 - 12" x 12" tan speckled floor tile & mastic in the apartment (patch)



Photo 25 - 12" x 12" grey streaked floor tile & mastic in the apartment

Asbestos & Lead Assessment City of Spartanburg 748 Baltimore Street Spartanburg, South Carolina 29301

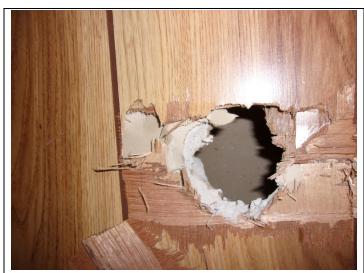


Photo 25 – Unfinished drywall under wooden wall panels in the apartment

SECTION V

SC DHEC Asbestos Inspector License

SCDHEC ISSUED

Asbestos ID Card

Thomas H Oliver



CONSULTBI BI-00680 AIRSAMPLER AS-00202

Expiration Date: 01/18/19 04/04/19

This card is nontransferable and common 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