**April 17, 2019**

# Asbestos Survey
# For

**1924 Boyer Drive, Columbia, SC**

| | | |
|---|---|---|
| **Prepared for:** | **City of Columbia**<br>**Attn: David Hatcher**<br>**1136 Washington Street**<br>**Columbia, SC 29201** | **Phone: (803) 545-3444** |
| **Prepared by:** | **ABS Environmental, Inc.**<br>**1416 Chapin Road**<br>**Chapin, SC 29036**<br>**ABS Job # 7800.19001** | **Phone: (803) 345-3833** |

| | | | |
|---|---|---|---|
| Inspection Performed by: | Jeff Rivers | SCDHEC #<br>MP – 00166 | Lic Exp Date<br>8/1/19 |
| Report Prepared by: | Jeff Rivers | SCDHEC #<br>MP – 00166 | Lic Exp Date<br>8/1/19 |
| Report Reviewed by: | Lee Capell | SCDHEC #<br>MP – 00072 | Lic Exp Date<br>8/8/19 |

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## 1.0 EXECUTIVE SUMMARY

***ABS Environmental, Inc. (ABS)*** was retained by the City of Columbia to perform an asbestos survey at 1924 Boyer Drive in Columbia, SC. The primary objective of this survey was to identify, sample and physically assess suspect asbestos-containing building materials (ACBM) associated with the vacant residence.

The subject structure is an approximately 1,444 $ft^2$ single-family residence built over a crawlspace. The roof is built in an intersecting hip configuration and is covered with 3-tab composition shingles. The exterior is clad primarily with brick veneer. Interior finishes include:

Ceilings/Walls: Sheetrock throughout.
Floors: Combination of hardwood, ceramic tile and vinyl.

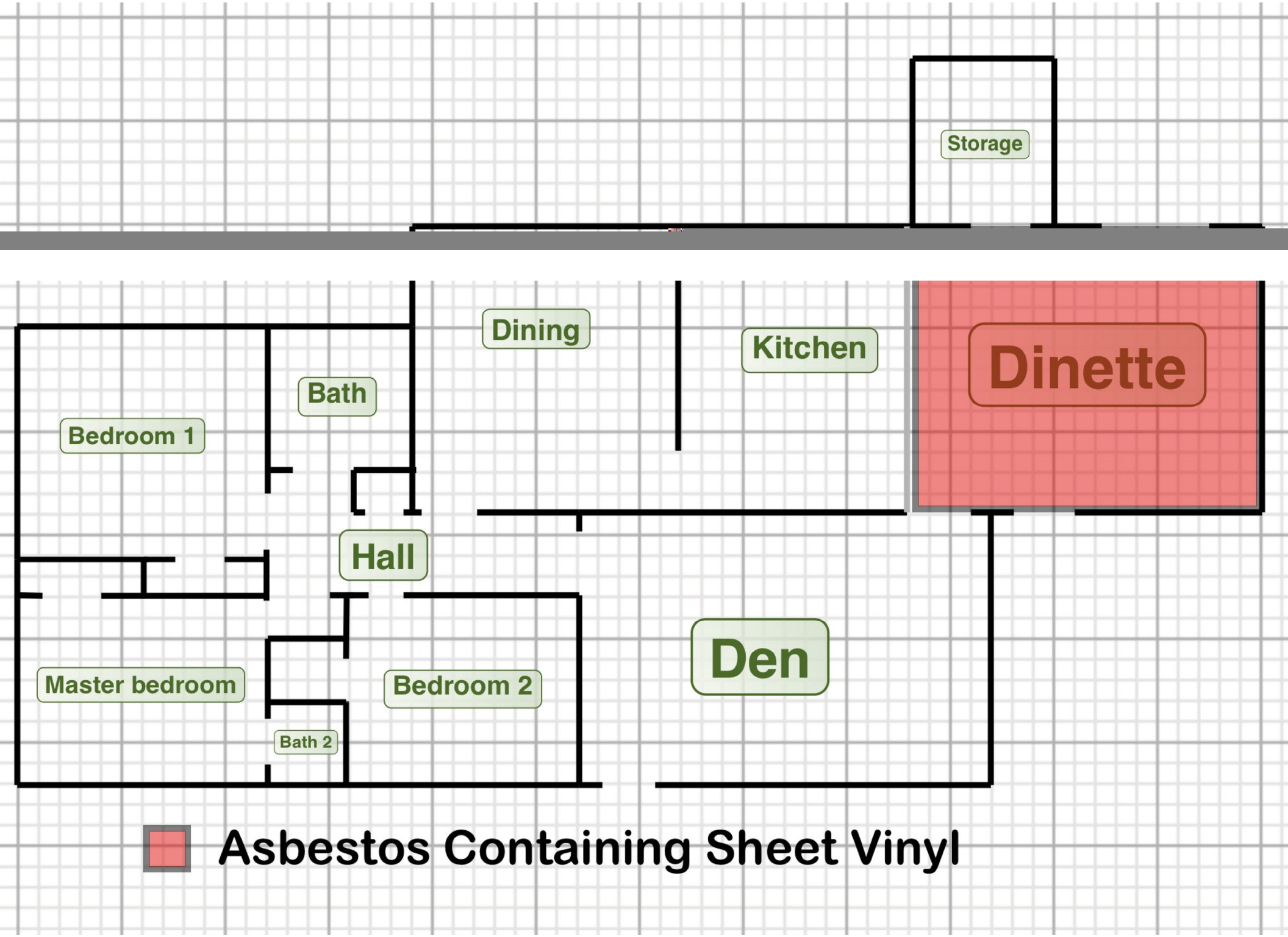
Twelve (12) suspect materials were identified, sampled and analyzed for the presence of asbestos. Samples were delivered by overnight courier service to EMSL Analytical, Inc. for analysis using Polarized Light Microscopy (PLM) and Transmission Electron Microscopy (TEM) to confirm negative PLM results for non-friable organically bound materials. As indicated by laboratory analysis, those materials containing asbestos > 1 % include approximately:

- 4,692 $ft^2$ of joint compound on the walls and ceilings.
- 238 $ft^2$ of sheet vinyl floorinf in the Dinette.
- 12 LF of chimney flashing.

**<u>Limitations</u>**

This survey and report have been executed at the request of Mr. David Hatcher and City of Columbia and are intended solely for their use. All work related to this project has been conducted in keeping with accepted standards of environmental consulting as practiced in the State of South Carolina. No unnecessary destructive measures were undertaken during this survey. Additional suspect and/or asbestos containing materials may be present. If at any time during the course of renovation or demolition a suspect material is observed that is not identified in this report, stop work immediately until the material can be sampled and analyzed for the presence of asbestos. ***ABS*** has relied, in part, on information derived from secondary sources, and except as set forth herein, ***ABS*** has made no independent investigation as to the accuracy or completeness of the information derived from such secondary sources. No warranty is expressed or implied.

# DRAWING


Storage
Dining
Kitchen
Dinette
Bath
Bedroom 1
Hall
Master bedroom
Bedroom 2
Bath 2
Den
Asbestos Containing Sheet Vinyl

# SITE MAP

# TABLES

**Table #1**
**Asbestos Containing Building Material (ACBM)**

**Project Name:** **1924 Boyer Drive**
**Project Address:** 1924 Boyer Dr., Columbia, SC **Date:** 17-Apr-19

* Assumed to Contain Asbestos > 1%

| Observed ACBM | | |
|---|---|---|
| Material | EPA AHERA Category | Quantity |
| Joint Compound: Ceilings | Surfacing | 1,444 $ft^2$ |
| Joint Compound: Walls | Surfacing | 3,248 $ft^2$ |
| Sheet Vinyl Flooring | Miscellaneous | 238 $ft^2$ |
| Chimney Flashing | Miscellaneous | 12 LF |

**Table #2**
**Friable ACBM**

**Project Name:** **1924 Boyer Drive**
**Project Address:** 1924 Boyer Dr., Columbia, SC **Date:** 17-Apr-19

* Assumed to Contain Asbestos > 1%

| Friable ACBM | |
|---|---|
| Material | Quantity |
| Joint Compound: Ceilings | 1,444 $ft^2$ |
| Joint Compound: Walls | 3,248 $ft^2$ |
| | |

**Table #3**
**Non-Friable ACBM**

**Project Name:** **1924 Boyer Drive**
**Project Address:** 1924 Boyer Dr., Columbia, SC **Date:** 17-Apr-19

* Assumed to Contain Asbestos > 1%

| Non-Friable ACBM | |
|---|---|
| Material | Quantity |
| Sheet Vinyl Flooring | 238 $ft^2$ |
| Chimney Flashing | 12 LF |
| | |

## Table #4
## Asbestos - Suspect Material Data Sheet

**Project Name:** **1924 Boyer Drive**

**Project Address:** 1924 Boyer Dr., Columbia, SC **Date:** 17-Apr-19

**Asbestos Finding;** **Asbestos Containing Material (ACM) contains > 1% asbestos by definition**

P = Positive via PLM | N = Negative: does not meet definition of ACM | PTP = Previously tested Positive

P = Positive via TEM | A = Assumed to be ACM; no samples collected | PTN = Previously tested Negative

**Present Condition**

F = Friable NF= Non Friable D = Damaged (Damage less than 10 distributed and less than 25 % localized)

G = Good (Very localized damage) SD = Significantly Damaged (Damage equal to or greater than 10 % distributed/ 25 % localized)

**Potential for Future Disturbance by Contact, Vibration or Air Erosion Mechanisms**

LPD = Low Potential for Disturbance (All Three Mechanisms of Low Concern) PSD = Potential for Significant Damage (One Mechanism of High Concern or More Than One of Moderate Concern)

PD = Potential for Damage (Any One Mechanism of Moderate Concern)

**EPA AHERA Asbestos Category** T = Thermal System Insulation (Inhibits heat transfer or prohibits condensation)

S = Surfacing Material (Spray-applied or trowel applied) M = Miscellaneous Materials (Refer to as "Other" materials by OSHA)

**Hazard Ranking** = 7 thru 1; (7 being the worst i.e. significantly damaged material)

| Suspect Material # | Material Description | Category (S, T, M) | # Samples | Quantity | Present Condition | Disturbance Potential | P or N PLM | P or N TEM | P or N Point Count | Hazard Ranking |
|---|---|---|---|---|---|---|---|---|---|---|
| HM-01 | Sheetrock | M | 3 | 4,692 $ft^2$ | F/G | PD | N | | | NA |
| HM-02 | Joint Comp: Ceilings | S | 5 | 1,444 $ft^2$ | F/G | PD | P | | | 2 |
| | Joint Comp: Walls | | | 3,248 $ft^2$ | F/G | PD | | | | |
| HM-03 | Sheet Vinyl Flooring | M | 3 | 238 $ft^2$ | NF/G | PD | P | | | 2 |
| HM-04 | White Floor Tile | M | 3 | 105 $ft^2$ | NF/G | PD | N | N | | NA |
| HM-05 | Black Floor Tile | M | 3 | 105 $ft^2$ | NF/G | PD | N | N | | NA |
| HM-06 | Ceramic Tile Thinset | M | 3 | 65 $ft^2$ | F/G | PD | N | N | | NA |
| HM-07 | Ext Window Glazing | M | 3 | 20 windows | NF/G | PD | N | N | | NA |
| HM-08 | Exterior Caulk | M | 3 | 20 windows; 3 doors | NF/G | PD | N | N | | NA |
| HM-09 | Felt Paper Under Hardwood Floors | M | 3 | 931 $ft^2$ | NF/G | LPD | N | N | | NA |

## Table #4
## Asbestos - Suspect Material Data Sheet

**Project Name:** **1924 Boyer Drive**

**Project Address:** 1924 Boyer Dr., Columbia, SC **Date:** 17-Apr-19

**Asbestos Finding;** **Asbestos Containing Material (ACM) contains > 1% asbestos by definition**

P = Positive via PLM

P = Positive via TEM

N = Negative: does not meet definition of ACM

A = Assumed to be ACM; no samples collected

PTP = Previously tested Positive

PTN = Previously tested Negative

**Present Condition**

F = Friable

NF= Non Friable

D = Damaged (Damage less than 10 distributed and less than 25 % localized)

G = Good (Very localized damage)

SD = Significantly Damaged (Damage equal to or greater than 10 % distributed/ 25 % localized)

**Potential for Future Disturbance by Contact, Vibration or Air Erosion Mechanisms**

LPD = Low Potential for Disturbance (All Three Mechanisms of Low Concern)

PD = Potential for Damage (Any One Mechanism of Moderate Concern)

PSD = Potential for Significant Damage (One Mechanism of High Concern or More Than One of Moderate Concern)

**EPA AHERA Asbestos Category**

T = Thermal System Insulation (Inhibits heat transfer or prohibits condensation)

S = Surfacing Material (Spray-applied or trowel applied)

M = Miscellaneous Materials (Refer to as "Other" materials by OSHA)

**Hazard Ranking** = 7 thru 1; (7 being the worst i.e. significantly damaged material)

| Suspect Material # | Material Description | Category (S, T, M) | # Samples | Quantity | Present Condition | Disturbance Potential | P or N PLM | P or N TEM | P or N Point Count | Hazard Ranking |
|---|---|---|---|---|---|---|---|---|---|---|
| HM-10 | Roof Shingles | M | 3 | 2.166 $ft^2$ | NF/G | LPD | N | N | | NA |
| HM-11 | Felt Paper | M | 3 | 2.166 $ft^2$ | NF/G | LPD | N | N | | NA |
| HM-12 | Chimney Flashing | M | 3 | 12 LF | NF/G | PD | P | | | 2 |

**Table #5**
**Asbestos - Bulk Sample Data Sheet**

**Project Name:** **1924 Boyer Drive**
**Project Address:** 1924 Boyer Dr., Columbia, SC **Date:** 17-Apr-19

Positive; meets definition of Asbestos Containing Material (ACM) (i.e.>1%asbestos) via PLM
Positive; meets definition of Asbestos Containing Material (ACM) (i.e.>1%asbestos) via TEM
Assumed to contain Asbestos > 1%

* **Chry = Chrysotile Amos = Amosite Croc = Crocidolite Anth = Anthophylite NAD = No Asbestos Detected DNA = Did Not Analyze**

| Laboratory Sample # | ABS Sample # | Suspect Material # | Material Description | Location | Type * Asbestos | Percent PLM | Percent TEM | Percent Point Count |
|---|---|---|---|---|---|---|---|---|
| 021902315-0001 | 1924-01 | HM-01 | Sheetrock | Dinette | | NAD | | |
| 021902315-0002 | 1924-02 | | | Den | | NAD | | |
| 021902315-0003 | 1924-03 | | | Bedroom 2 | | NAD | | |
| 021902315-0001A | 1924-01 | HM-02 | Joint Compound | Dinette | Chry | 3% | | |
| 021902315-0002A | 1924-02 | | | Den | Chry | 3% | | |
| 021902315-0003A | 1924-03 | | | Bedroom 2 | Chry | 3% | | |
| 021902315-0004 | 1924-04 | | | Master Bedroom | Chry | 3% | | |
| 021902315-0005 | 1924-05 | | | Bedroom 1 | Chry | 3% | | |
| 021902315-0006 | 1924-06 | HM-03 | Sheet Vinyl | Dinette | Chry | 25% | | |
| 021902315-0007 | 1924-07 | | | | Chry | 25% | | |
| | 1924-08 | | | | | DNA | | |
| 021902315-0008 | 1924-09 | HM-04 | White Floor Tile | Kitchen | | NAD | | |
| 021902315-0009 | 1924-10 | | | Kitchen | | NAD | | |
| 021902315-0027 | 1924-11 | | | Storage | | | NAD | |
| 021902315-0010 | 1924-12 | HM-05 | Black Floor Tile | Kitchen | | NAD | | |
| 021902315-0011 | 1924-13 | | | Kitchen | | NAD | | |
| 021902315-0028 | 1924-14 | | | Storage | | | NAD | |
| 021902315-0012 | 1924-15 | HM-06 | Ceramic Tile Thinset | Bathroom 1 | | NAD | | |
| 021902315-0013 | 1924-16 | | | Bathroom 1 | | NAD | | |
| 021902315-0014 | 1924-17 | | | Bathroom 2 | | | NAD | |

* NAD = No Asbestos Detected DNA = Did Not Analyze Chry = Chrysotile
Amos = Amosite Croc = Crocidilite Anth = Anthophylite

**Table #5**
**Asbestos - Bulk Sample Data Sheet**

**Project Name:** **1924 Boyer Drive**

**Project Address:** 1924 Boyer Dr., Columbia, SC **Date:** 17-Apr-19

Positive; meets definition of Asbestos Containing Material (ACM) (i.e.>1%asbestos) via PLM

Positive; meets definition of Asbestos Containing Material (ACM) (i.e.>1%asbestos) via TEM

Assumed to contain Asbestos > 1%

*** Chry = Chrysotile Amos = Amosite Croc = Crocidolite Anth = Anthophylite NAD = No Asbestos Detected DNA = Did Not Analyze**

| Laboratory Sample # | ABS Sample # | Suspect Material # | Material Description | Location | Type * Asbestos | Percent PLM | Percent TEM | Percent Point Count |
|---|---|---|---|---|---|---|---|---|
| 021902315-0015 | 1924-18 | HM-07 | Exterior Window Glazing | | | NAD | | |
| 021902315-0016 | 1924-19 | | | | | NAD | | |
| 021902315-0029 | 1924-20 | | | | | | NAD | |
| 021902315-0017 | 1924-21 | HM-08 | Exterior Caulk | | | NAD | | |
| 021902315-0018 | 1924-22 | | | | | NAD | | |
| 021902315-0030 | 1924-23 | | | | | | NAD | |
| 021902315-0019 | 1924-24 | HM-09 | Felt Paper Under Hardwood Floors | Hallway | | NAD | | |
| 021902315-0020 | 1924-25 | | | Master Bedroom | | NAD | | |
| 021902315-0031 | 1924-26 | | | Bedroom 1 | | | NAD | |
| 021902315-0021 | 1924-27 | HM-10 | Shingles | Roof | | NAD | | |
| 021902315-0022 | 1924-28 | | | | | NAD | | |
| 021902315-0032 | 1924-29 | | | | | | NAD | |
| 021902315-0023 | 1924-30 | HM-11 | Felt Paper | Roof | | NAD | | |
| 021902315-0024 | 1924-31 | | | | | NAD | | |
| 021902315-0033 | 1924-32 | | | | | | NAD | |
| 021902315-0025 | 1924-33 | HM-12 | Chimney Flashing | | | NAD | | |
| 021902315-0026 | 1924-34 | | | | Chry | 5% | | |
| | 1924-35 | | | | | DNA | | |

* NAD = No Asbestos Detected DNA = Did Not Analyze Chry = Chrysotile
Amos = Amosite Croc = Crocidilite Anth = Anthophylite

# LABORATORY RESULTS

# EMSL Analytical, Inc.

**706 Gralin Street Kernersville, NC 27284**

Tel/Fax: (336) 992-1025 / (336) 992-4175

http://www.EMSL.com / greensborolab@emsl.com


**EMSL Order:** 021902315
**Customer ID:** ESE52
**Customer PO:**
**Project ID:**

**Attention:** Jeff Rivers
ABS Environmental
1416 Chapin Road
Chapin, SC 29036

**Project:** 1924 Boyer

**Phone:** (803) 345-3833
**Fax:** (803) 345-2823
**Received Date:** 04/10/2019 9:30 AM
**Analysis Date:** 04/10/2019
**Collected Date:** 04/09/2019

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

| | | | Non-Asbestos | | Asbestos |
|---|---|---|---|---|---|
| **Sample** | **Description** | **Appearance** | **% Fibrous** | **% Non-Fibrous** | **% Type** |
| 1924-01-Sheetrock<br>*021902315-0001* | Sheetrock/Joint Compound | Brown/Gray<br>Fibrous<br>Heterogeneous | 15% Cellulose | 85% Non-fibrous (Other) | None Detected |
| 1924-01-Joint Compound<br>*021902315-0001A* | Sheetrock/Joint Compound | Beige<br>Non-Fibrous<br>Homogeneous | <1% Cellulose | 20% Ca Carbonate<br>77% Non-fibrous (Other) | 3% Chrysotile |
| 1924-02-Sheetrock<br>*021902315-0002* | Sheetrock/Joint Compound | Brown/Gray<br>Fibrous<br>Heterogeneous | 8% Cellulose | 92% Non-fibrous (Other) | None Detected |
| 1924-02-Joint Compound<br>*021902315-0002A* | Sheetrock/Joint Compound | Beige<br>Non-Fibrous<br>Homogeneous | <1% Cellulose | 20% Ca Carbonate<br>77% Non-fibrous (Other) | 3% Chrysotile |
| 1924-03-Sheetrock<br>*021902315-0003* | Sheetrock/Joint Compound | Brown/Gray<br>Fibrous<br>Heterogeneous | 10% Cellulose<br><1% Synthetic | 90% Non-fibrous (Other) | None Detected |
| 1924-03-Joint Compound<br>*021902315-0003A* | Sheetrock/Joint Compound | Beige<br>Non-Fibrous<br>Homogeneous | <1% Cellulose | 20% Ca Carbonate<br>77% Non-fibrous (Other) | 3% Chrysotile |
| 1924-04-Joint Compound<br>*021902315-0004* | Sheetrock/Joint Compound | Beige<br>Non-Fibrous<br>Homogeneous | <1% Cellulose | 20% Ca Carbonate<br>77% Non-fibrous (Other) | 3% Chrysotile |
| 1924-05-Joint Compound<br>*021902315-0005* | Sheetrock/Joint Compound | Beige<br>Non-Fibrous<br>Homogeneous | <1% Cellulose | 20% Ca Carbonate<br>77% Non-fibrous (Other) | 3% Chrysotile |
| 1924-06<br>*021902315-0006* | Dinette Sheet Vinyl | Brown/Gray/Orange<br>Fibrous<br>Heterogeneous | 1% Cellulose | 74% Non-fibrous (Other) | 25% Chrysotile |
| 1924-07<br>*021902315-0007* | Dinette Sheet Vinyl | Brown/Gray/Orange<br>Fibrous<br>Heterogeneous | 1% Cellulose | 74% Non-fibrous (Other) | 25% Chrysotile |
| 1924-09<br>*021902315-0008* | White Floor Tile | White/Beige<br>Non-Fibrous<br>Homogeneous | | 15% Quartz<br>85% Non-fibrous (Other) | None Detected |
| 1924-10<br>*021902315-0009* | White Floor Tile | White/Beige<br>Non-Fibrous<br>Homogeneous | | 20% Quartz<br>80% Non-fibrous (Other) | None Detected |
| 1924-12<br>*021902315-0010* | Black Floor Tile | Gray/Black<br>Non-Fibrous<br>Homogeneous | | 15% Quartz<br>85% Non-fibrous (Other) | None Detected |
| 1924-13<br>*021902315-0011* | Black Floor Tile | Gray/Black<br>Non-Fibrous<br>Homogeneous | | 20% Quartz<br>80% Non-fibrous (Other) | None Detected |

Initial report from: 04/10/2019 16:47:17

**EMSL Analytical, Inc.**
**706 Gralin Street Kernersville, NC 27284**
Tel/Fax: (336) 992-1025 / (336) 992-4175
http://www.EMSL.com / greensborolab@emsl.com

**EMSL Order:** 021902315
**Customer ID:** ESE52
**Customer PO:**
**Project ID:**

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

| | | | Non-Asbestos | | Asbestos |
|---|---|---|---|---|---|
| **Sample** | **Description** | **Appearance** | **% Fibrous** | **% Non-Fibrous** | **% Type** |
| 1924-15<br>*021902315-0012* | Ceramic Tile Thinset | Gray/White<br>Non-Fibrous<br>Homogeneous | <1% Cellulose | 15% Quartz<br>5% Ca Carbonate<br>80% Non-fibrous (Other) | None Detected |
| 1924-16<br>*021902315-0013* | Ceramic Tile Thinset | Gray/White<br>Non-Fibrous<br>Homogeneous | <1% Cellulose | 15% Quartz<br>5% Ca Carbonate<br>80% Non-fibrous (Other) | None Detected |
| 1924-17<br>*021902315-0014* | Ceramic Tile Thinset | Gray/White<br>Non-Fibrous<br>Heterogeneous | <1% Cellulose | 30% Quartz<br>5% Ca Carbonate<br><1% Mica<br>65% Non-fibrous (Other) | None Detected |
| 1924-18<br>*021902315-0015* | Exterior Window Glazing | Gray/Tan/White<br>Non-Fibrous<br>Homogeneous | <1% Cellulose<br>1% Fibrous (Other) | 10% Ca Carbonate<br>89% Non-fibrous (Other) | None Detected |
| 1924-19<br>*021902315-0016* | Exterior Window Glazing | Tan/White/Beige<br>Non-Fibrous<br>Heterogeneous | <1% Fibrous (Other) | 10% Ca Carbonate<br>90% Non-fibrous (Other) | None Detected |
| 1924-21<br>*021902315-0017* | Exterior Caulk | White<br>Non-Fibrous<br>Homogeneous | <1% Cellulose | 10% Ca Carbonate<br>90% Non-fibrous (Other) | None Detected |
| 1924-22<br>*021902315-0018* | Exterior Caulk | White<br>Non-Fibrous<br>Homogeneous | <1% Cellulose | 30% Ca Carbonate<br>70% Non-fibrous (Other) | None Detected |
| 1924-24<br>*021902315-0019* | Felt Paper Under Hardwood Floors | Black<br>Fibrous<br>Homogeneous | 70% Cellulose | 30% Non-fibrous (Other) | None Detected |
| 1924-25<br>*021902315-0020* | Felt Paper Under Hardwood Floors | Tan/Black<br>Non-Fibrous<br>Heterogeneous | 70% Cellulose | 30% Non-fibrous (Other) | <1% Chrysotile |
| 1924-27<br>*021902315-0021* | Roof Shingles | Gray/Black<br>Fibrous<br>Heterogeneous | 5% Glass | 95% Non-fibrous (Other) | None Detected |
| 1924-28<br>*021902315-0022* | Roof Shingles | White/Black<br>Fibrous<br>Heterogeneous | <1% Cellulose<br>5% Glass | 95% Non-fibrous (Other) | None Detected |
| 1924-30<br>*021902315-0023* | Felt Paper | Black<br>Fibrous<br>Homogeneous | 60% Cellulose | 40% Non-fibrous (Other) | None Detected |
| 1924-31<br>*021902315-0024* | Felt Paper | Black<br>Fibrous<br>Homogeneous | 70% Cellulose | 30% Non-fibrous (Other) | None Detected |
| 1924-33<br>*021902315-0025* | Chimney Flashing | Brown<br>Non-Fibrous<br>Homogeneous | <1% Cellulose<br>1% Fibrous (Other) | 99% Non-fibrous (Other) | None Detected |
| 1924-34<br>*021902315-0026* | Chimney Flashing | Gray/Black<br>Fibrous<br>Homogeneous | 1% Cellulose | 94% Non-fibrous (Other) | 5% Chrysotile |

Initial report from: 04/10/2019 16:47:17

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Tel/Fax: (336) 992-1025 / (336) 992-4175
http://www.EMSL.com / greensborolab@emsl.com

| | |
|---|---|
| **EMSL Order:** | 021902315 |
| **Customer ID:** | ESE52 |
| **Customer PO:** | |
| **Project ID:** | |

Analyst(s)

*Nicole Shutts (17)*
*Scott Combs (12)*

Stephen Bennett, 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. Kernersville, NC NVLAP Lab Code 102104-0, CA ELAP 2689, Virginia 3333-000228, West Virginia LT000321

Initial report from: 04/10/2019 16:47:17

EMSL Analytical, Inc.
706 Gralin Street Kernersville, NC 27284
Tel/Fax: (336) 992-1025 / (336) 992-4175
http://www.EMSL.com / greensborolab@emsl.com

**EMSL Order:** 021902315
**Customer ID:** ESE52
**Customer PO:**
**Project ID:**

**Attention:** Jeff Rivers
ABS Environmental
1416 Chapin Road
Chapin, SC 29036

**Project:** 1924 Boyer

**Phone:** (803) 345-3833
**Fax:** (803) 345-2823
**Received Date:** 04/10/2019 9:30 AM
**Analysis Date:** 04/11/2019
**Collected Date:** 04/09/2019

## 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 |
|---|---|---|---|---|---|
| 1924-11<br>*021902315-0027* | White Floor Tile | White<br>Non-Fibrous<br>Heterogeneous | 100.0 Other | None | No Asbestos Detected |
| 1294-14<br>*021902315-0028* | Black Floor Tile | Black<br>Non-Fibrous<br>Heterogeneous | 100.0 Other | None | No Asbestos Detected |
| 1924-20<br>*021902315-0029* | Exterior Window Glazing | Gray<br>Non-Fibrous<br>Heterogeneous | 100.0 Other | None | No Asbestos Detected |
| 1924-23<br>*021902315-0030* | Exterior Caulk | White<br>Non-Fibrous<br>Homogeneous | 99.6 Other | 0.40 Fibrous_Other | No Asbestos Detected |
| 1924-26<br>*021902315-0031* | Felt Paper Under Hardwood Floors | Black<br>Fibrous<br>Homogeneous | 100.0 Other | None | No Asbestos Detected |
| 1924-29<br>*021902315-0032* | Roof Shingles | White/Black<br>Fibrous<br>Heterogeneous | 100.0 Other | None | No Asbestos Detected |
| 1924-32<br>*021902315-0033* | Felt Paper | Black<br>Fibrous<br>Homogeneous | 100.0 Other | None | No Asbestos Detected |

Analyst(s)
*Stephen Bennett (7)*

Stephen Bennett, 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. Kernersville, NC

Initial report from: 04/11/2019 14:04:51

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

# Asbestos Chain of Custody

**EMSL Order Number** (Lab Use Only): 2315

PHONE:
FAX:

| | | | |
|---|---|---|---|
| **Company Name :** ABS Environmental, Inc. | | **EMSL Customer ID:** | |
| **Street:** 1416 Chapin Road | | **City:** Chapin | **State/Province:** SC |
| **Zip/Postal Code:** 29036 | **Country:** USA | **Telephone #:** 803-345-3833 | **Fax #:** 803-345-2823 |
| **Report To (Name):** Jeff Rivers | | **Please Provide Results:** ☐ Fax ☑ Email | |
| **Email Address:** jrivers@absenv.com | | **Purchase Order:** | |
| **Project Name/Number:** 1924 Boyer | | **EMSL Project ID** (*Internal Use Only*): | |
| **U.S. State Samples Taken:** SC | | **CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt | |

**EMSL-Bill to:** ☐ Same ☐ Different - If Bill to is Different note instructions in Comments**
*Third Party Billing requires written authorization from third party*

**Turnaround Time (TAT) Options* – Please Check**

☐ 3 Hour ☐ 6 Hour ☒ 24 Hour ☐ 48 Hour ☒ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week

*For TEM Air 3 hr through 6 hr, please call ahead to schedule. *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

**PCM - Air** ☐ Check if samples are from NY
☐ NIOSH 7400
☐ w/ OSHA 8hr. TWA

**PLM - Bulk (reporting limit)**
☑ PLM EPA 600/R-93/116 (<1%)
☐ PLM EPA NOB (<1%)
Point Count
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
Point Count w/Gravimetric
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
☐ NYS 198.1 (friable in NY)
☐ NYS 198.6 NOB (non-friable-NY)
☐ NYS 198.8 SOF-V
☐ NIOSH 9002 (<1%)

**TEM – Air** ☐ 4-4.5hr TAT (AHERA only)
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☐ ISO 10312

**TEM - Bulk**
☑ TEM EPA NOB
☐ NYS NOB 198.4 (non-friable-NY)
☐ Chatfield SOP
☐ TEM Mass Analysis-EPA 600 sec. 2.5

**TEM – Water:** EPA 100.2
Fibers >10µm ☐ Waste ☐ Drinking
All Fiber Sizes ☐ Waste ☐ Drinking

**TEM- Dust**
☐ Microvac - ASTM D 5755
☐ Wipe - ASTM D6480
☐ Carpet Sonication (EPA 600/J-93/167)

**Soil/Rock/Vermiculite**
☐ PLM EPA 600/R-93/116 with milling prep (<1%)
☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)
☐ TEM Qualitative via Filtration Prep
☐ TEM Qualitative via Drop Mount Prep
☐ Cincinnati Method EPA 600/R-04/004 – PLM/TEM (BC only)

**Other:**
☐

☐ **Check For Positive Stop – Clearly Identify Homogenous Group**

**Filter Pore Size (Air Samples):** ☐ 0.8µm ☐ 0.45µm

**Samplers Name:**

**Samplers Signature:** Jeff Rivers

| Sample # | Sample Description | Volume/Area (Air) HA # (Bulk) | Date/Time Sampled |
|---|---|---|---|
| 1924/01-05 | Sheetrock/Joint Compound | | |
| 1924/06-08 | Dinette Sheet Vinyl | TEM NOB | If Negative |
| 1924/09-11 | White Floor Tile | TEM NOB | If Negative |
| 1924/12-14 | Black Floor Tile | TEM NOB | If Negative |
| 1924/15-17 | Ceramic Tile Thinset | | |

**Client Sample # (s):** 1924-01 - 1924-35 **Total # of Samples:** 9/35 = 26

**Relinquished (Client):** Jeff Rivers **Date:** 4/9/19 **Time:** 1730

**Received (Lab):** **Date:** 4/10/19 **Time:** 9:30

**Comments/Special Instructions:**
① EFx 813290385323

Page 1 of 1 pages

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

# Asbestos Chain of Custody

**EMSL Order Number** *(Lab Use Only)*: 2315

PHONE:
FAX:

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

| Sample # | Sample Description | Volume/Area (Air) HA # (Bulk) | Date/Time Sampled |
|---|---|---|---|
| 1924/18-20 | Exterior Window Glazing | TEM NOB | If Negative |
| 1924/21-23 | Exterior Caulk | TEM NOB | If Negative |
| 1924/24-26 | Felt Paper under Hardwood Floors | TEM NOB | If Negative |
| 1924/27-29 | Roof Shingles | TEM NOB | If Negative |
| 1924/30-32 | Felt Paper | TEM NOB | If Negative |
| 1924/33-35 | Chimney Flashing | TEM NOB | If Negative |
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*Comments/Special Instructions:

Page _____ of _____ pages

Controlled Document – Asbestos COC – R10 – 05/09/2016

**February 28, 2019**

# Asbestos Survey
# For

**3119 Harrison Road, Columbia, SC**

| | | |
|---|---|---|
| **Prepared for:** | **City of Columbia**<br>**Attn: David Hatcher**<br>**1136 Washington Street**<br>**Columbia, SC 29201** | **Phone: (803) 545-3444** |
| **Prepared by:** | **ABS Environmental, Inc.**<br>**1416 Chapin Road**<br>**Chapin, SC 29036**<br>**ABS Job # 7800.19015** | **Phone: (803) 345-3833** |

| | | | |
|---|---|---|---|
| Inspection Performed by: | Jeff Rivers | SCDHEC #<br>MP – 00166 | Lic Exp Date<br>8/1/19 |
| Report Prepared by: | Jeff Rivers | SCDHEC #<br>MP – 00166 | Lic Exp Date<br>8/1/19 |
| Report Reviewed by: | Lee Capell | SCDHEC #<br>MP – 00072 | Lic Exp Date<br>8/8/19 |

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**1.0 EXECUTIVE SUMMARY**

**2.0 APPENDIX**

**A. Drawing**

**B. Site Map**

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**D. Laboratory Results**

## 1.0 EXECUTIVE SUMMARY

***ABS Environmental, Inc. (ABS)*** was retained by the City of Columbia to perform an asbestos survey at 3119 Harrison Road in Columbia, SC. The primary objective of this survey was to identify, sample and physically assess suspect asbestos-containing building materials (ACBM) associated with the vacant residence.

The subject structure is a single-family residence built over a crawlspace. The roof is built in an intersecting hip configuration and is covered with 3-tab composition shingles. The exterior is clad primarily with brick veneer. The Utility Room and Office are an addition to the original house and were sampled separate from the original portion of the house. Interior finishes include:

Ceilings/Walls: Sheetrock
Floors: Combination of ceramic tile and wood floors.

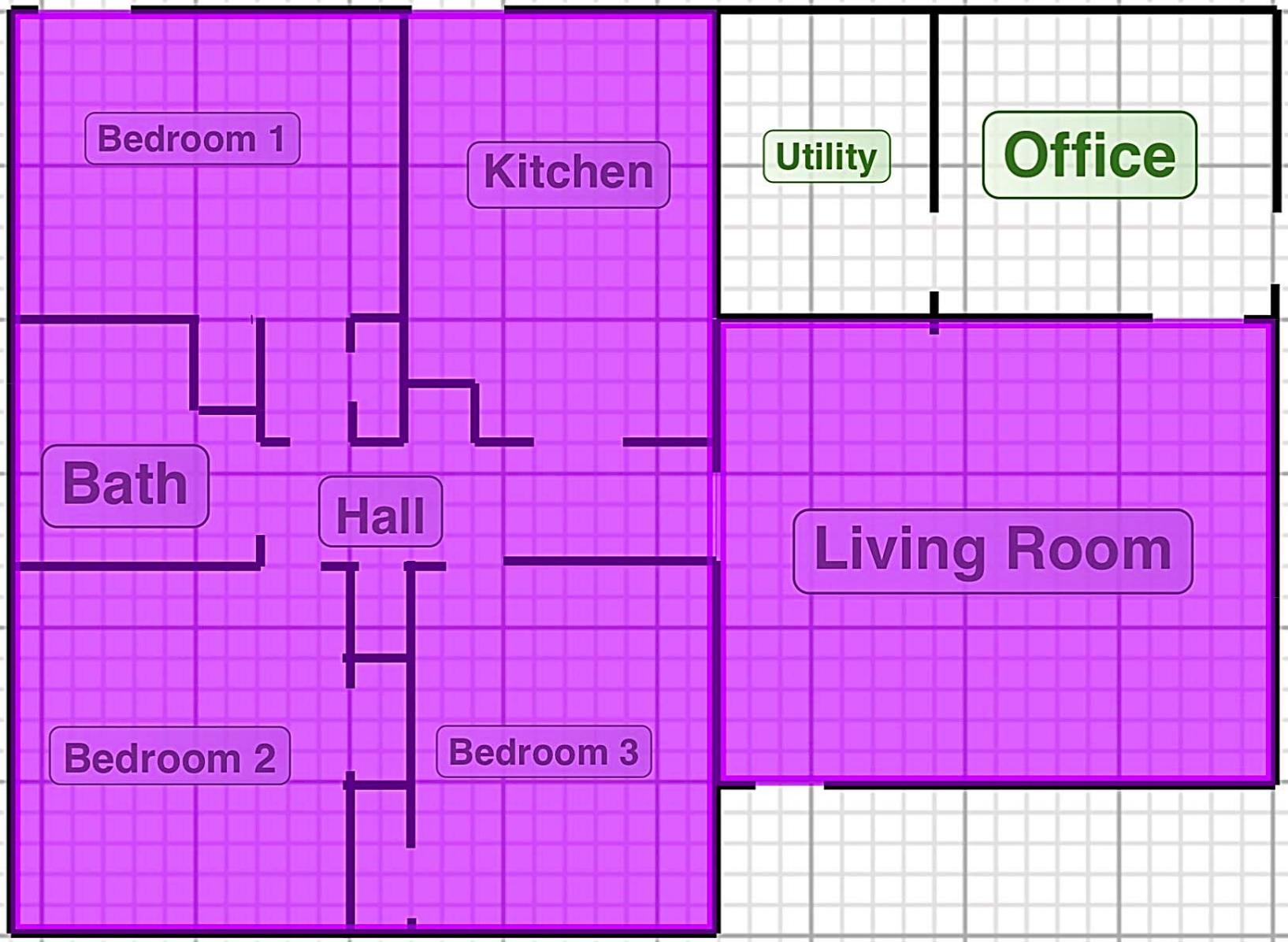
Nine (9) suspect materials were identified, sampled and analyzed for the presence of asbestos. Samples were delivered by overnight courier service to SAI, Inc. for analysis using Polarized Light Microscopy (PLM) and Transmission Electron Microscopy (TEM) to confirm negative PLM results for non-friable organically bound materials. As indicated by laboratory analysis, those materials containing asbestos > 1 % include approximately:

- 2,880 $ft^2$ of joint compound on walls and ceilings in all the rooms, except the Utility Room and Office.
- 10 LF of chimney flashing.

**<u>Limitations</u>**

This survey and report have been executed at the request of Mr. David Hatcher and City of Columbia and are intended solely for their use. All work related to this project has been conducted in keeping with accepted standards of environmental consulting as practiced in the State of South Carolina. No unnecessary destructive measures were undertaken during this survey. Additional suspect and/or asbestos containing materials may be present. If at any time during the course of renovation or demolition a suspect material is observed that is not identified in this report, stop work immediately until the material can be sampled and analyzed for the presence of asbestos. ***ABS*** has relied, in part, on information derived from secondary sources, and except as set forth herein, ***ABS*** has made no independent investigation as to the accuracy or completeness of the information derived from such secondary sources. No warranty is expressed or implied.

# DRAWING




Asbestos Containing Joint Compound on Sheetrock Walls/Ceilings

# SITE MAP

# TABLES

**Table #1**
**Asbestos Containing Building Material (ACBM)**

**Project Name:** **3119 Harrison Road: Main House**
**Project Address:** 3119 Harrison Rd., Columbia, SC **Date:** 12-Mar-19

* Assumed to Contain Asbestos > 1%

| Observed ACBM | | |
|---|---|---|
| Material | EPA AHERA Category | Quantity |
| Joint Compound | Surfacing | 2,880 $ft^2$ |
| Chimney Flashing | Miscellaneous | 10 LF |
| | | |

**Table #2**
**Friable ACBM**

**Project Name:** **3119 Harrison Road: Main House**
**Project Address:** 3119 Harrison Rd., Columbia, SC **Date:** 12-Mar-19

* Assumed to Contain Asbestos > 1%

| Friable ACBM | |
|---|---|
| Material | Quantity |
| Joint Compound | 2,880 $ft^2$ |
| | |
| | |

**Table #2**
**Non-Friable ACBM**

**Project Name:** **3119 Harrison Road: Main House**
**Project Address:** 3119 Harrison Rd., Columbia, SC **Date:** 12-Mar-19

* Assumed to Contain Asbestos > 1%

| Non-Friable ACBM | |
|---|---|
| Material | Quantity |
| Chimney Flashing | 10 LF |
| | |
| | |

**Table #3**

**Asbestos - Suspect Material Data Sheet**

**Project Name:** **3119 Harrison Road: Main House**

**Project Address:** 3119 Harrison Rd., Columbia, SC **Date:** 12-Mar-19

**Asbestos Finding;** **Asbestos Containing Material (ACM) contains > 1% asbestos by definition**

P = Positive via PLM

P = Positive via TEM

N = Negative: does not meet definition of ACM

A = Assumed to be ACM; no samples collected

PTP = Previously tested Positive

PTN = Previously tested Negative

**Present Condition**

F = Friable

NF= Non Friable

D = Damaged (Damage less than 10 distributed and less than 25 % localized)

G = Good (Very localized damage)

SD = Significantly Damaged (Damage equal to or greater than 10 % distributed/ 25 % localized)

**Potential for Future Disturbance by Contact, Vibration or Air Erosion Mechanisms**

LPD = Low Potential for Disturbance (All Three Mechanisms of Low Concern)

PD = Potential for Damage (Any One Mechanism of Moderate Concern)

PSD = Potential for Significant Damage (One Mechanism of High Concern or More Than One of Moderate Concern)

**EPA AHERA Asbestos Category**

T = Thermal System Insulation (Inhibits heat transfer or prohibits condensation)

S = Surfacing Material (Spray-applied or trowel applied)

M = Miscellaneous Materials (Refer to as "Other" materials by OSHA)

**Hazard Ranking** = 7 thru 1; (7 being the worst i.e. significantly damaged material)

| Suspect Material # | Material Description | Category (S, T, M) | # Samples | Quantity | Present Condition | Disturbance Potential | P or N PLM | P or N TEM | P or N Point Count | Hazard Ranking |
|---|---|---|---|---|---|---|---|---|---|---|
| HM-01 | Sheetrock (Main House) | M | 3 | 2,880 $ft^2$ | F/G | PD | N | | | NA |
| HM-02 | Joint Compound (Main House) | S | 5 | 2,880 $ft^2$ | F/G | PD | P | | | 2 |
| HM-03 | Sheetrock (Office/Utility) | M | 3 | 556 $ft^2$ | F/G | PD | N | | | NA |
| HM-04 | Joint Compound (Office/Utility) | S | 3 | 556 $ft^2$ | F/G | PD | N | | | NA |
| HM-05 | Ceramic Tile Thinset | M | 3 | 64 $ft^2$ | F/G | PD | N | | | NA |
| HM-06 | Ext Window Glazing | M | 3 | 22 ea. | NF/G | PD | N | N | | NA |
| HM-07 | Roof Shingles | M | 3 | 1,764 $ft^2$ | NF/G | PD | N | N | | NA |
| HM-08 | Felt Paper | M | 3 | 1,764 $ft^2$ | NF/G | LPD | N | N | | NA |
| HM-09 | Chimney Flashing | M | 3 | 10 LF | NF/G | PD | N | P | | 2 |

**Table #4**
**Asbestos - Bulk Sample Data Sheet**

**Project Name:** **3119 Harrison Road: Main House**

**Project Address:** 3119 Harrison Rd., Columbia, SC **Date:** 12-Mar-19

Positive; meets definition of Asbestos Containing Material (ACM) (i.e.>1%asbestos) via PLM

Positive; meets definition of Asbestos Containing Material (ACM) (i.e.>1%asbestos) via TEM

Assumed to contain Asbestos > 1%

*** Chry = Chrysotile Amos = Amosite Croc = Crocidolite Anth = Anthophylite NAD = No Asbestos Detected DNA = Did Not Analyze**

| Laboratory Sample # | ABS Sample # | Suspect Material # | Material Description | Location | Type * Asbestos | Percent PLM | Percent TEM | Percent Point Count |
|---|---|---|---|---|---|---|---|---|
| 71903836PLM_1 | 3119-01 - A | HM-01 | Sheetrock (Main House) | Living Room | | NAD | | |
| 71903836PLM_2 | 3119-02 - A | | | Bedroom 1 | | NAD | | |
| 71903836PLM_3 | 3119-03 - A | | | Bathroom | | NAD | | |
| 71903836PLM_21 | 3119-01 - B | HM-02 | Joint Compound (Main House) | Living Room | Chry | 3% | | |
| 71903836PLM_22 | 3119-02 - B | | | Bedroom 1 | Chry | 3% | | |
| 71903836PLM_23 | 3119-03 - B | | | Bathroom | Chry | 3% | | |
| 71903836PLM_4 | 3119-04 | | | Kitchen | | NAD | | |
| 71903836PLM_5 | 3119-05 | | | Bedroom 2 | Chry | 3% | | |
| 71903836PLM_6 | 3119-06 - A | HM-03 | Sheetrock (Office/Utility) | Utility | | NAD | | |
| 71903836PLM_7 | 3119-07 - A | | | Office | | NAD | | |
| 71903836PLM_8 | 3119-08 - A | | | Office | | NAD | | |
| 71903836PLM_24 | 3119-06 - B | HM-04 | Joint Compound (Office/Utility) | Utility | | NAD | | |
| 71903836PLM_25 | 3119-07 - B | | | Office | | NAD | | |
| 71903836PLM_26 | 3119-08 - B | | | Office | | NAD | | |
| 71903836PLM_9 | 3119-09 | HM-05 | Ceramic Tile Thinset | Bathroom | | NAD | | |
| 71903836PLM_10 | 3119-10 | | | Bathroom | | NAD | | |
| 71903836PLM_11 | 3119-11 | | | Bathroom | | NAD | | |
| 71903836PLM_12 | 3119-12 | HM-06 | Exterior Window Glazing | Outside | | NAD | | |
| 71903836PLM_13 | 3119-13 | | | Outside | | NAD | | |
| 71903902TBS_1 | 3119-14 | | | Outside | | | NAD | |

* NAD = No Asbestos Detected DNA = Did Not Analyze Chry = Chrysotile
Amos = Amosite Croc = Crocidilite Anth = Anthophylite

**Table #4**

**Asbestos - Bulk Sample Data Sheet**

**Project Name:** **3119 Harrison Road: Main House**

**Project Address:** 3119 Harrison Rd., Columbia, SC **Date:** 12-Mar-19

Positive; meets definition of Asbestos Containing Material (ACM) (i.e.>1%asbestos) via PLM

Positive; meets definition of Asbestos Containing Material (ACM) (i.e.>1%asbestos) via TEM

Assumed to contain Asbestos > 1%

*** Chry = Chrysotile Amos = Amosite Croc = Crocidolite Anth = Anthophylite NAD = No Asbestos Detected DNA = Did Not Analyze**

| Laboratory Sample # | ABS Sample # | Suspect Material # | Material Description | Location | Type * Asbestos | Percent PLM | Percent TEM | Percent Point Count |
|---|---|---|---|---|---|---|---|---|
| 71903836PLM_15 | 3119-15 | HM-07 | Shingles | Roof | | NAD | | |
| 71903836PLM_16 | 3119-16 | | | | | NAD | | |
| 71903902TBS_2 | 3119-17 | | | | | | NAD | |
| 71903836PLM_18 | 3119-18 | HM-08 | Felt Paper | Roof | | NAD | | |
| 71903836PLM_19 | 3119-19 | | | | | NAD | | |
| 71903902TBS_3 | 3119-20 | | | | | | NAD | |
| 71906235PLM_1 | 3119-21 | HM-09 | Chimney Flashing | | | NAD | | |
| 71906235PLM_2 | 3119-22 | | | | | NAD | | |
| 71906319TBS_1 | 3119-23 | | | | Anth | | 1.5% | |

* NAD = No Asbestos Detected DNA = Did Not Analyze Chry = Chrysotile

Amos = Amosite Croc = Crocidilite Anth = Anthophylite

# LABORATORY RESULTS

# Bulk Asbestos Analysis

**By Polarized Light Microscopy**
**EPA Method: 600/R-93/116 and 40 CFR, Part 763, Subpart E, App.E**

NVLAP Lab Code: 200664-0

**Customer:** ABS Environmental Inc.
1416 Chapin Rd
Chapin, SC 29036

**Attn:** Jeff Rivers

**Project:** 3119 Harrison Road

**Lab Order ID:** 71903836
**Analysis ID:** 71903836_PLM
**Date Received:** 2/13/2019
**Date Reported:** 2/13/2019
***Date Amended:*** *2/14/2019*

| Sample ID / *Lab Sample ID* | Description / *Lab Notes* | Asbestos | Fibrous Components | Non-Fibrous Components | Attributes / Treatment |
|---|---|---|---|---|---|
| 3119-01 - A | Sheetrock/Joint Compound (Main House) | **None Detected** | **90% Cellulose** | **10% Other** | Brown, White<br>Non Fibrous<br>Homogeneous |
| *71903836PLM_1* | *sheetrock* | | | | Teased |
| 3119-01 - B | Sheetrock/Joint Compound (Main House) | **3% Chrysotile** | | **97% Other** | Gray<br>Non Fibrous<br>Homogeneous |
| *71903836PLM_21* | *joint compound* | | | | Teased |
| 3119-02 - A | Sheetrock/Joint Compound (Main House) | **None Detected** | **10% Cellulose** | **90% Other** | Brown, White<br>Non Fibrous<br>Homogeneous |
| *71903836PLM_2* | *sheetrock* | | | | Teased |
| 3119-02 - B | Sheetrock/Joint Compound (Main House) | **3% Chrysotile** | | **97% Other** | Gray<br>Non Fibrous<br>Homogeneous |
| *71903836PLM_22* | *joint compound* | | | | Teased |
| 3119-03 - A | Sheetrock/Joint Compound (Main House) | **None Detected** | **10% Cellulose** | **90% Other** | Brown, White<br>Non Fibrous<br>Homogeneous |
| *71903836PLM_3* | *sheetrock* | | | | Teased |
| 3119-03 - B | Sheetrock/Joint Compound (Main House) | **3% Chrysotile** | | **97% Other** | Gray<br>Non Fibrous<br>Homogeneous |
| *71903836PLM_23* | *joint compound* | | | | Teased |
| 3119-04 | Joint Compound (Main House) | **None Detected** | | **100% Other** | White<br>Non Fibrous<br>Homogeneous |
| *71903836PLM_4* | | | | | Teased |
| 3119-05 | Joint Compound (Main House) | **3% Chrysotile** | | **97% Other** | Gray<br>Non Fibrous<br>Homogeneous |
| *71903836PLM_5* | | | | | Teased |

**Disclaimer: Due to the nature of the EPA 600 method, asbestos may not be detected in samples containing low levels of asbestos. We strongly recommend that analysis of floor tiles, vermiculite, and/or heterogeneous soil samples be conducted by TEM for confirmation of "None Detected" by PLM. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. government. Analytical uncertainty available upon request. Scientific Analytical Institute participates in the NVLAP Proficiency Testing program. Unless otherwise noted blank sample correction was not performed. Estimated MDL is 0.1%.**

Byron Stroble (26)

**Analyst**

**Approved Signatory**

P-F-002 r15 1/16/2021

# Bulk Asbestos Analysis

**By Polarized Light Microscopy**
**EPA Method: 600/R-93/116 and 40 CFR, Part 763, Subpart E, App.E**

NVLAP Lab Code: 200664-0

**Customer:** ABS Environmental Inc.
1416 Chapin Rd
Chapin, SC 29036

**Attn:** Jeff Rivers

**Project:** 3119 Harrison Road

**Lab Order ID:** 71903836
**Analysis ID:** 71903836_PLM
**Date Received:** 2/13/2019
**Date Reported:** 2/13/2019
***Date Amended:*** *2/14/2019*

| Sample ID / *Lab Sample ID* | Description / *Lab Notes* | Asbestos | Fibrous Components | Non-Fibrous Components | Attributes / Treatment |
|---|---|---|---|---|---|
| 3119-06 - A / *71903836PLM_6* | Sheetrock/Joint Compound (Office/Utility) / *sheetrock* | **None Detected** | **10% Cellulose** | **90% Other** | Brown, White Non Fibrous Homogeneous / Teased |
| 3119-06 - B / *71903836PLM_24* | Sheetrock/Joint Compound (Office/Utility) / *joint compound* | **None Detected** | | **100% Other** | White Non Fibrous Homogeneous / Teased |
| 3119-07 - A / *71903836PLM_7* | Sheetrock/Joint Compound (Office/Utility) / *sheetrock* | **None Detected** | **10% Cellulose** | **90% Other** | Brown, White Non Fibrous Homogeneous / Teased |
| 3119-07 - B / *71903836PLM_25* | Sheetrock/Joint Compound (Office/Utility) / *joint compound* | **None Detected** | | **100% Other** | White Non Fibrous Homogeneous / Teased |
| 3119-08 - A / *71903836PLM_8* | Sheetrock/Joint Compound (Office/Utility) / *sheetrock* | **None Detected** | **10% Cellulose** | **90% Other** | Brown, White Non Fibrous Homogeneous / Teased |
| 3119-08 - B / *71903836PLM_26* | Sheetrock/Joint Compound (Office/Utility) / *joint compound* | **None Detected** | | **100% Other** | White Non Fibrous Homogeneous / Teased |
| 3119-09 / *71903836PLM_9* | Ceramic Tile Thinset | **None Detected** | | **100% Other** | Gray Non Fibrous Homogeneous / Crushed |
| 3119-10 / *71903836PLM_10* | Ceramic Tile Thinset | **None Detected** | | **100% Other** | Gray Non Fibrous Homogeneous / Crushed |

**Disclaimer: Due to the nature of the EPA 600 method, asbestos may not be detected in samples containing low levels of asbestos. We strongly recommend that analysis of floor tiles, vermiculite, and/or heterogeneous soil samples be conducted by TEM for confirmation of "None Detected" by PLM. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. government. Analytical uncertainty available upon request. Scientific Analytical Institute participates in the NVLAP Proficiency Testing program. Unless otherwise noted blank sample correction was not performed. Estimated MDL is 0.1%.**

Byron Stroble (26)

**Analyst**

**Approved Signatory**

P-F-002 r15 1/16/2021

# Bulk Asbestos Analysis

**By Polarized Light Microscopy**
**EPA Method: 600/R-93/116 and 40 CFR, Part 763, Subpart E, App.E**

NVLAP Lab Code: 200664-0

**Customer:** ABS Environmental Inc.
1416 Chapin Rd
Chapin, SC 29036

**Attn:** Jeff Rivers

**Project:** 3119 Harrison Road

**Lab Order ID:** 71903836
**Analysis ID:** 71903836_PLM
**Date Received:** 2/13/2019
**Date Reported:** 2/13/2019
***Date Amended:*** *2/14/2019*

| Sample ID / *Lab Sample ID* | Description / *Lab Notes* | Asbestos | Fibrous Components | Non-Fibrous Components | Attributes / Treatment |
|---|---|---|---|---|---|
| 3119-11 / *71903836PLM_11* | Ceramic Tile Thinset | **None Detected** | | **100% Other** | Gray<br>Non Fibrous<br>Homogeneous<br>Crushed |
| 3119-12 / *71903836PLM_12* | Exterior Window Glazing | **None Detected** | | **100% Other** | White, Beige<br>Non Fibrous<br>Heterogeneous<br>Dissolved |
| 3119-13 / *71903836PLM_13* | Exterior Window Glazing | **None Detected** | | **100% Other** | White, Beige<br>Non Fibrous<br>Heterogeneous<br>Dissolved |
| 3119-14 / *71903836PLM_14* | Exterior Window Glazing<br>*TEM* | **Not Analyzed** | | | |
| 3119-15 / *71903836PLM_15* | Roof Shingles | **None Detected** | **10% Fiber Glass** | **90% Other** | Gray, Black<br>Non Fibrous<br>Homogeneous<br>Dissolved |
| 3119-16 / *71903836PLM_16* | Roof Shingles | **None Detected** | **10% Fiber Glass** | **90% Other** | Gray, Black<br>Non Fibrous<br>Homogeneous<br>Dissolved |
| 3119-17 / *71903836PLM_17* | Roof Shingles<br>*TEM* | **Not Analyzed** | | | |
| 3119-18 / *71903836PLM_18* | Felt Paper | **None Detected** | **70% Cellulose** | **30% Other** | Black<br>Fibrous<br>Homogeneous<br>Teased, Dissolved |

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Byron Stroble (26)

**Analyst**

**Approved Signatory**

P-F-002 r15 1/16/2021

# Bulk Asbestos Analysis

**By Polarized Light Microscopy**
**EPA Method: 600/R-93/116 and 40 CFR, Part 763, Subpart E, App.E**

NVLAP Lab Code: 200664-0

**Customer:** ABS Environmental Inc.
1416 Chapin Rd
Chapin, SC 29036

**Attn:** Jeff Rivers

**Project:** 3119 Harrison Road

**Lab Order ID:** 71903836
**Analysis ID:** 71903836_PLM
**Date Received:** 2/13/2019
**Date Reported:** 2/13/2019
***Date Amended:*** *2/14/2019*

| Sample ID / *Lab Sample ID* | Description / *Lab Notes* | Asbestos | Fibrous Components | Non-Fibrous Components | Attributes / Treatment |
|---|---|---|---|---|---|
| 3119-19 | Felt Paper | **None Detected** | **70% Cellulose** | **30% Other** | Black<br>Fibrous<br>Homogeneous |
| *71903836PLM_19* | | | | | Teased, Dissolved |
| 3119-20 | Felt Paper | **Not Analyzed** | | | |
| *71903836PLM_20* | *TEM* | | | | |

**Disclaimer: Due to the nature of the EPA 600 method, asbestos may not be detected in samples containing low levels of asbestos. We strongly recommend that analysis of floor tiles, vermiculite, and/or heterogeneous soil samples be conducted by TEM for confirmation of "None Detected" by PLM. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. government. Analytical uncertainty available upon request. Scientific Analytical Institute participates in the NVLAP Proficiency Testing program. Unless otherwise noted blank sample correction was not performed. Estimated MDL is 0.1%.**

Byron Stroble (26)

**Analyst**

**Approved Signatory**

P-F-002 r15 1/16/2021

71903836

| | | |
|---|---|---|
| **Client:** | ABS ENVIRONMENTAL | ***Instructions:*** |
| **Contact:** | Jeff Rivers | *Use Column "B" for your contact info* |
| **Address:** | 1416 Chapin Rd. Chapin SC 29036 | |
| **Phone:** | 803-260-2883 | *To See an Example Click the* |
| **Fax:** | 803-345-2823 | *bottom Example Tab.* |
| **Email:** | jrivers@absenv.com | |
| | | ***Enter samples between "<<" and ">>"*** |
| **Project:** | 3119 Harrison Road | ***Begin Samples with a "<< "above the first sample*** |
| | | ***and end with a ">>" below the last sample.*** |
| **Client Notes:** | TEM NOB 2 Day TAT | *Only Enter your data on the first sheet "Sheet1"* |
| **P.O. #.** | | *Note: Data 1 and Data 2 are optional* |
| **Date Submitted:** | | *fields that do not show up on the official* |
| | | *report, however they will be included* |
| **Analysis:** | EPA PLM 600/ | *in the electronic data returned to you* |
| **TurnAroundTime:** | 24 HR TAT/ | *to facilitate your reintegration of the report data.* |


***Scientific Analytical Institute***

***4604 Dundas Drive***
***Greensboro, NC 27407***
***Phone: 336.292.3888***
***Fax: 336.292.3313***
***Email: lab@sailab.com***


| **Sample Number** << | **Data 1** | **Sample Description** | **Data 2** |
|---|---|---|---|
| **3119-01** | | Sheetrock/Joint Compound (Main House) | |
| 3119-02 | | Sheetrock/Joint Compound (Main House) | |
| 3119-03 | | Sheetrock/Joint Compound (Main House) | |
| 3119-04 | | Joint Compound (Main House) | |
| 3119-05 | | Joint Compound (Main House) | |
| 3119-06 | | Sheetrock/Joint Compound (Office/Utility) | |
| 3119-07 | | Sheetrock/Joint Compound (Office/Utility) | |
| 3119-08 | | Sheetrock/Joint Compound (Office/Utility) | |
| 3119-09 | | Ceramic Tile Thinset | |
| 3119-10 | | Ceramic Tile Thinset | |
| 3119-11 | | Ceramic Tile Thinset | |
| 3119-12 | | Exterior Window Glazing | |
| 3119-13 | | Exterior Window Glazing | |
| 3119-14 | | Exterior Window Glazing | TEM NOB If Negative |
| 3119-15 | | Roof Shingles | |
| 3119-16 | | Roof Shingles | |
| 3119-17 | | Roof Shingles | TEM NOB If Negative |
| 3119-18 | | Felt Paper | |
| 3119-19 | | Felt Paper | |

Relinquished By

**Accepted** ☑

**Rejected** ☐

Received By

10:30 2-13

71 903836

| | | | |
|---|---|---|---|
| 3119-20 | | Felt Paper | TEM NOB If Negative |
| >> | | | |

Relinquished By

Received By

# Bulk Asbestos Analysis
# by Transmission Electron Microscopy

**Semi-Quantitative**
**Chatfield SOP 1988-02 Rev. 1**

**Customer:** ABS Environmental Inc.
1416 Chapin Rd
Chapin, SC 29036

**Attn:** Jeff Rivers

**Project:** 3119 Harrison Road

**Lab Order ID:** 71903902

**Analysis ID:** 71903902_TB
**Date Received:** 2/14/2019
**Date Reported:** 2/15/2019

| Sample ID / *Lab Sample ID* | Description / *Lab Notes* | Organic *(Wt. %)* | Acid Sol. *(Wt. %)* | Asbestos *(Wt. %)* | LCL-UCL *(Wt. %)* |
|---|---|---|---|---|---|
| **3119-14** / *71903902TBS_1* | **Exterior window glazning** | **11%** | **81%** | **None Detected** | |
| **3119-17** / *71903902TBS_2* | **Roof shingles** | **21%** | **-** | **None Detected** | |
| **3119-20** / *71903902TBS_3* | **Felt paper** | **96%** | **-** | **None Detected** | |

**Disclaimer: This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. government.**

Russell Shelton (3)

**Analyst**

**Approved Signatory**

71903836

| | | |
|---|---|---|
| **Client:** | ABS ENVIRONMENTAL | ***Instructions:*** |
| **Contact:** | Jeff Rivers | *Use Column "B" for your contact info* |
| **Address:** | 1416 Chapin Rd. Chapin SC 29036 | |
| **Phone:** | 803-260-2883 | *To See an Example Click the* |
| **Fax:** | 803-345-2823 | *bottom Example Tab.* |
| **Email:** | jrivers@absenv.com | |
| | | ***Enter samples between "<<" and ">>"*** |
| **Project:** | 3119 Harrison Road | ***Begin Samples with a "<< "above the first sample*** |
| | | ***and end with a ">>" below the last sample.*** |
| **Client Notes:** | TEM NOB 2 Day TAT | *Only Enter your data on the first sheet "Sheet1"* |
| **P.O. #.** | | *Note: Data 1 and Data 2 are optional* |
| **Date Submitted:** | | *fields that do not show up on the official* |
| | | *report, however they will be included* |
| **Analysis:** | EPA PLM 600/ | *in the electronic data returned to you* |
| **TurnAroundTime:** | 24 HR TAT/ | *to facilitate your reintegration of the report data.* |


***Scientific Analytical Institute***

***4604 Dundas Drive***
***Greensboro, NC 27407***
***Phone: 336.292.3888***
***Fax: 336.292.3313***
***Email: lab@sailab.com***


| **Sample Number** << | **Data 1** | **Sample Description** | **Data 2** |
|---|---|---|---|
| **3119-01** | | Sheetrock/Joint Compound (Main House) | |
| 3119-02 | | Sheetrock/Joint Compound (Main House) | |
| 3119-03 | | Sheetrock/Joint Compound (Main House) | |
| 3119-04 | | Joint Compound (Main House) | |
| 3119-05 | | Joint Compound (Main House) | |
| 3119-06 | | Sheetrock/Joint Compound (Office/Utility) | |
| 3119-07 | | Sheetrock/Joint Compound (Office/Utility) | |
| 3119-08 | | Sheetrock/Joint Compound (Office/Utility) | |
| 3119-09 | | Ceramic Tile Thinset | |
| 3119-10 | | Ceramic Tile Thinset | |
| 3119-11 | | Ceramic Tile Thinset | |
| 3119-12 | | Exterior Window Glazing | |
| 3119-13 | | Exterior Window Glazing | |
| 3119-14 | | Exterior Window Glazing | TEM NOB If Negative |
| 3119-15 | | Roof Shingles | |
| 3119-16 | | Roof Shingles | |
| 3119-17 | | Roof Shingles | TEM NOB If Negative |
| 3119-18 | | Felt Paper | |
| 3119-19 | | Felt Paper | |

Relinquished By

**Accepted** ☑

**Rejected** ☐

Received By

10:30 2-13

71 903836

| | | | |
|---|---|---|---|
| 3119-20 | | Felt Paper | TEM NOB If Negative |
| >> | | | |

Relinquished By

Received By

**March 12, 2019**

# Asbestos Survey
# For

**Shed: 3119 Harrison Road, Columbia, SC**

| | | |
|---|---|---|
| **Prepared for:** | **City of Columbia**<br>**Attn: David Hatcher**<br>**1136 Washington Street**<br>**Columbia, SC 29201** | **Phone: (803) 545-3444** |
| **Prepared by:** | **ABS Environmental, Inc.**<br>**1416 Chapin Road**<br>**Chapin, SC 29036**<br>**ABS Job # 7800.19015A** | **Phone: (803) 345-3833** |

| | | | |
|---|---|---|---|
| Inspection Performed by: | Jeff Rivers | SCDHEC #<br>MP – 00166 | Lic Exp Date<br>8/1/19 |
| Report Prepared by: | Jeff Rivers | SCDHEC #<br>MP – 00166 | Lic Exp Date<br>8/1/19 |
| Report Reviewed by: | Lee Capell | SCDHEC #<br>MP – 00072 | Lic Exp Date<br>8/8/19 |

# TABLE OF CONTENTS

**1.0 EXECUTIVE SUMMARY**

**2.0 APPENDIX**

**A. Site Map**

**B. Tables**

**C. Laboratory Results**

## 1.0 EXECUTIVE SUMMARY

***ABS Environmental, Inc. (ABS)*** was retained by the City of Columbia to perform an asbestos survey at 3119 Harrison Road in Columbia, SC. The primary objective of this survey was to identify, sample and physically assess suspect asbestos-containing building materials (ACBM) associated with the building.

The subject structure is a wood-framed building with wood siding and a pitched, shingled roof. Interior finishes include exposed wood-framed walls and ceilings with a wood floor. The building measures approximately 96 $ft^2$.

One (1) suspect material was identified, sampled and analyzed for the presence of asbestos. Samples were delivered by overnight courier service to SAI, Inc. for analysis using Polarized Light Microscopy (PLM) and Transmission Electron Microscopy (TEM) to confirm negative PLM results for non-friable organically bound materials. As indicated by laboratory analysis, none of the samples collected contained asbestos > 1%.

**Limitations**

This survey and report have been executed at the request of Mr. David Hatcher and City of Columbia and are intended solely for their use. All work related to this project has been conducted in keeping with accepted standards of environmental consulting as practiced in the State of South Carolina. No unnecessary destructive measures were undertaken during this survey. Additional suspect and/or asbestos containing materials may be present. If at any time during the course of renovation or demolition a suspect material is observed that is not identified in this report, stop work immediately until the material can be sampled and analyzed for the presence of asbestos. ***ABS*** has relied, in part, on information derived from secondary sources, and except as set forth herein, ***ABS*** has made no independent investigation as to the accuracy or completeness of the information derived from such secondary sources. No warranty is expressed or implied.

# SITE MAP

# TABLES

**Table #1**

**Asbestos - Suspect Material Data Sheet**

**Project Name:** **3119 Harrison Road - Shed**

**Project Address:** 3119 Harrison Rd., Columbia, SC **Date:** 12-Mar-19

**Asbestos Finding;** **Asbestos Containing Material (ACM) contains > 1% asbestos by definition**

P = Positive via PLM

N = Negative: does not meet definition of ACM

PTP = Previously tested Positive

P = Positive via TEM

A = Assumed to be ACM; no samples collected

PTN = Previously tested Negative

**Present Condition**

F = Friable

NF= Non Friable

D = Damaged (Damage less than 10 distributed and less than 25 % localized)

G = Good (Very localized damage)

SD = Significantly Damaged (Damage equal to or greater than 10 % distributed/ 25 % localized)

**Potential for Future Disturbance by Contact, Vibration or Air Erosion Mechanisms**

LPD = Low Potential for Disturbance (All Three Mechanisms of Low Concern)

PD = Potential for Damage (Any One Mechanism of Moderate Concern)

PSD = Potential for Significant Damage (One Mechanism of High Concern or More Than One of Moderate Concern)

**EPA AHERA Asbestos Category**

T = Thermal System Insulation (Inhibits heat transfer or prohibits condensation)

S = Surfacing Material (Spray-applied or trowel applied)

M = Miscellaneous Materials (Refer to as "Other" materials by OSHA)

**Hazard Ranking** = 7 thru 1; (7 being the worst i.e. significantly damaged material)

| Suspect Material # | Material Description | Category (S, T, M) | # Samples | Quantity | Present Condition | Disturbance Potential | P or N PLM | P or N TEM | P or N Point Count | Hazard Ranking |
|---|---|---|---|---|---|---|---|---|---|---|
| HM-01 | Roof Shingles | M | 3 | 10 LF | NF/G | PD | N | N | | NA |
| | | | | | | | | | | |
| | | | | | | | | | | |

**Table #2**

**Asbestos - Bulk Sample Data Sheet**

**Project Name:** **3119 Harrison Road - Shed**

**Project Address:** 3119 Harrison Rd., Columbia, SC **Date:** 12-Mar-19

Positive; meets definition of Asbestos Containing Material (ACM) (i.e.>1%asbestos) via PLM

Positive; meets definition of Asbestos Containing Material (ACM) (i.e.>1%asbestos) via TEM

Assumed to contain Asbestos > 1%

*** Chry = Chrysotile Amos = Amosite Croc = Crocidolite Anth = Anthophylite NAD = No Asbestos Detected DNA = Did Not Analyze**

| Laboratory Sample # | ABS Sample # | Suspect Material # | Material Description | Location | Type * Asbestos | Percent PLM | Percent TEM | Percent Point Count |
|---|---|---|---|---|---|---|---|---|
| 71906203PLM_1 | 3119S-01 | HM-01 | Roof Shingles | | | NAD | | |
| 71906203PLM_2 | 3119S-02 | | | | | NAD | | |
| 71906291TBS_1 | 3119S-03 | | | | | | NAD | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

* NAD = No Asbestos Detected DNA = Did Not Analyze Chry = Chrysotile

Amos = Amosite Croc = Crocidilite Anth = Anthophylite

# LABORATORY RESULTS

# Bulk Asbestos Analysis

**By Polarized Light Microscopy**
**EPA Method: 600/R-93/116 and 40 CFR, Part 763, Subpart E, App.E**

NVLAP Lab Code: 200664-0 [redacted]

**Customer:** ABS Environmental Inc.
1416 Chapin Rd
Chapin, SC 29036

**Attn:** Jeff Rivers

**Project:** 3119 Harrison - Shed

**Lab Order ID:** 71906203
**Analysis ID:** 71906203_PLM
**Date Received:** 3/7/2019
**Date Reported:** 3/7/2019

| Sample ID / *Lab Sample ID* | Description / *Lab Notes* | Asbestos | Fibrous Components | Non-Fibrous Components | Attributes / Treatment |
|---|---|---|---|---|---|
| 3119S-01 | Roof Shingles | None Detected | 10% Fiber Glass | 90% Other | Black<br>Non Fibrous<br>Homogeneous |
| *71906203PLM_1* | | | | | Dissolved |
| 3119S-02 | Roof Shingles | None Detected | 10% Fiber Glass | 90% Other | Black<br>Non Fibrous<br>Homogeneous |
| *71906203PLM_2* | | | | | Dissolved |
| 3119S-03 | Roof Shingles | Not Analyzed | | | |
| *71906203PLM_3* | *TEM* | | | | |

**Disclaimer: Due to the nature of the EPA 600 method, asbestos may not be detected in samples containing low levels of asbestos. We strongly recommend that analysis of floor tiles, vermiculite, and/or heterogeneous soil samples be conducted by TEM for confirmation of "None Detected" by PLM. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. government. Analytical uncertainty available upon request. Scientific Analytical Institute participates in the NVLAP Proficiency Testing program. Unless otherwise noted blank sample correction was not performed. Estimated MDL is 0.1%.**

Philip Szabo (3)

**Analyst**

**Approved Signatory**

P-F-002 r15 1/16/2021

719 06203

| | | |
|---|---|---|
| **Client:** | ABS ENVIRONMENTAL | ***Instructions:*** |
| **Contact:** | JEFF RIVERS | *Use Column "B" for your contact info* |
| **Address:** | 1416 CHAPIN RD.-CHAPIN, SC | |
| **Phone:** | 803-260-2883 | *To See an Example Click the bottom Example Tab.* |
| **Fax:** | 803-345-2823 | |
| **Email:** | JRIVERS@ABSENV.COM | |
| **Project:** | 3119 Harrison - Shed | ***Enter samples between "<<" and ">>" Begin Samples with a "<< "above the first sample and end with a ">>" below the last sample.*** |
| **Client Notes:** | 72 HR TAT for TEM NOB | *Only Enter your data on the first sheet "Sheet1"* |
| **P.O. #.** | [Enter P.O. # Here] | *Note: Data 1 and Data 2 are optional fields that do not show up on the official report, however they will be included in the electronic data returned to you to facilitate your reintegration of the report data.* |
| **Date Submitted:** | 3/6/2019 0:00 | |
| **Analysis:** | EPA PLM 600 | |
| **TurnAroundTime:** | 24 HR TAT | |


*Scientific Analytical Institute*

***4604 Dundas Drive***
***Greensboro, NC 27407***
***Phone: 336.292.3888***
***Fax: 336.292.3313***
***Email: lab@sailab.com***


| Sample Number | Data 1 | Sample Description | Data 2 |
|---|---|---|---|
| << | | | |
| 3119S-01 | [Enter data of your choosing here] | Roof Shingles | [Enter data of your choosing here] |
| 3119S-02 | [Enter data of your choosing here] | Roof Shingles | [Enter data of your choosing here] |
| 3119S-03 | [Enter data of your choosing here] | Roof Shingles | TEM NOB If Negative |
| >> | | | |

**Accepted** ☑

**Rejected** ☐

Relinquished By

Received By

L Dimmy 3.7 10:30AM

# Bulk Asbestos Analysis
# by Transmission Electron Microscopy

**Semi-Quantitative**
**Chatfield SOP 1988-02 Rev. 1**

**Customer:** ABS Environmental Inc.
1416 Chapin Rd
Chapin, SC 29036

**Attn:** Jeff Rivers

**Project:** 3119 Harrison - Shed

**Lab Order ID:** 71906291

**Analysis ID:** 71906291_TB
**Date Received:** 3/8/2019
**Date Reported:** 3/13/2019

| Sample ID | Description | Organic | Acid Sol. | Asbestos | LCL-UCL |
|---|---|---|---|---|---|
| *Lab Sample ID* | *Lab Notes* | *(Wt. %)* | *(Wt. %)* | *(Wt. %)* | *(Wt. %)* |
| **3119S-03** | **Roof shingles** | **23%** | **-** | **None Detected** | |
| *71906291TBS_1* | | | | | |

**Disclaimer: This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. government.**

Russell Shelton (1)

**Analyst**

**Approved Signatory**

~~71904203~~
71906291

| | | |
|---|---|---|
| **Client:** | ABS ENVIRONMENTAL | ***Instructions:*** |
| **Contact:** | JEFF RIVERS | *Use Column "B" for your contact info* |
| **Address:** | 1416 CHAPIN RD.-CHAPIN, SC | |
| **Phone:** | 803-260-2883 | *To See an Example Click the bottom Example Tab.* |
| **Fax:** | 803-345-2823 | |
| **Email:** | JRIVERS@ABSENV.COM | |
| | | ***Enter samples between "<<" and ">>"*** |
| **Project:** | 3119 Harrison - Shed | ***Begin Samples with a "<< "above the first sample and end with a ">>" below the last sample.*** |
| **Client Notes:** | 72 HR TAT for TEM NOB | *Only Enter your data on the first sheet "Sheet1"* |
| **P.O. #.** | [Enter P.O. # Here] | *Note: Data 1 and Data 2 are optional fields that do not show up on the official report, however they will be included in the electronic data returned to you to facilitate your reintegration of the report data.* |
| **Date Submitted:** | 3/6/2019 0:00 | |
| **Analysis:** | EPA PLM 600 | |
| **TurnAroundTime:** | 24 HR TAT PS | |


***Scientific Analytical Institute***

***4604 Dundas Drive***
***Greensboro, NC 27407***
***Phone: 336.292.3888***
***Fax: 336.292.3313***
***Email: lab@sailab.com***


| Sample Number | Data 1 | Sample Description | Data 2 |
|---|---|---|---|
| << | | | |
| 3119S-01 | [Enter data of your choosing here] | Roof Shingles | [Enter data of your choosing here] |
| 3119S-02 | [Enter data of your choosing here] | Roof Shingles | [Enter data of your choosing here] |
| 3119S-03 | [Enter data of your choosing here] | Roof Shingles | TEM NOB If Negative |
| >> | | | |

**Accepted** ☑

**Rejected** ☐

Relinquished By

Received By

L Simmons 3-7 10:30AM

**March 12, 2019**

# Asbestos Survey
# For

**4924 Kilbourne Road, Columbia, SC**

| | | |
|---|---|---|
| **Prepared for:** | **City of Columbia**<br>**Attn: David Hatcher**<br>**1136 Washington Street**<br>**Columbia, SC 29201** | **Phone: (803) 545-3444** |
| **Prepared by:** | **ABS Environmental, Inc.**<br>**1416 Chapin Road**<br>**Chapin, SC 29036**<br>**ABS Job # 7800.19016** | **Phone: (803) 345-3833** |

| | | | |
|---|---|---|---|
| Inspection Performed by: | Jeff Rivers | SCDHEC #<br>MP – 00166 | Lic Exp Date<br>8/1/19 |
| Report Prepared by: | Jeff Rivers | SCDHEC #<br>MP – 00166 | Lic Exp Date<br>8/1/19 |
| Report Reviewed by: | Lee Capell | SCDHEC #<br>MP – 00072 | Lic Exp Date<br>8/8/19 |

# TABLE OF CONTENTS

**1.0 EXECUTIVE SUMMARY**

**2.0 APPENDIX**

**A. Drawing**

**B. Site Map**

**C. Tables**

**D. Laboratory Results**

## 1.0 EXECUTIVE SUMMARY

***ABS Environmental, Inc. (ABS)*** was retained by the City of Columbia to perform an asbestos survey at 4924 Kilbourne Road in Columbia, SC. The primary objective of this survey was to identify, sample and physically assess suspect asbestos-containing building materials (ACBM) associated with the vacant residence.

The subject structure is a single-family residence built over a basement. The roof is built in a gable configuration, with the west side stepped down. The roof is covered with three-tab composition shingles. The exterior is clad primarily with brick veneer. Interior finishes include:

Ceilings/Walls: Plaster Ceilings with unfinished sheetrock above the plaster and wood framed walls.
Floors: Combination of wood, vinyl, and ceramic.

The residence measures approximately 2,166 $ft^2$.

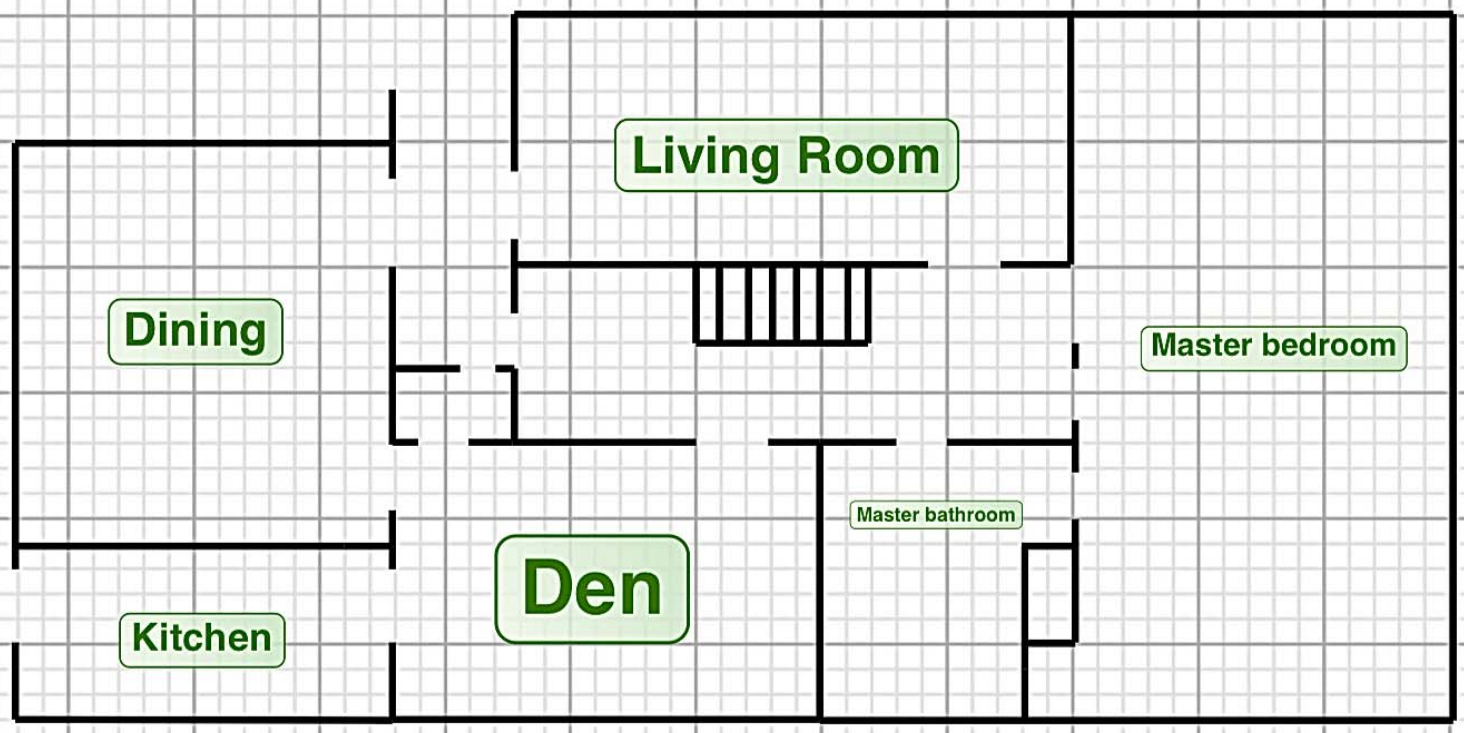
Thirteen (13) suspect materials were identified, sampled and analyzed for the presence of asbestos. Samples were delivered by overnight courier service to SAI, Inc. for analysis using Polarized Light Microscopy (PLM) and Transmission Electron Microscopy (TEM) to confirm negative PLM results for non-friable organically bound materials. As indicated by laboratory analysis, those materials containing asbestos > 1 % include approximately:

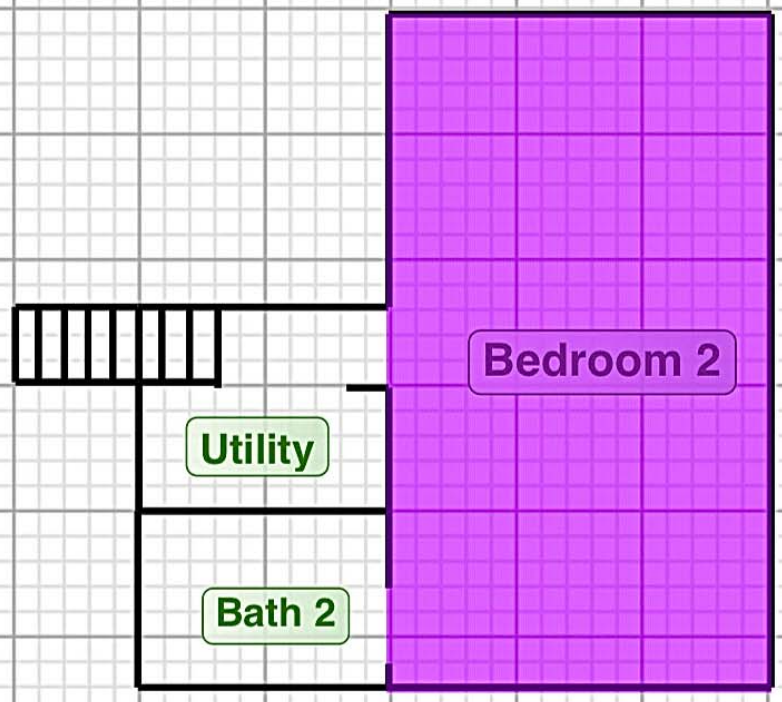
- 570 $ft^2$ of 9" green floor tile and mastic in the Basement.
- 72 LF of HVAC tape.
- 330 $ft^2$ of ceramic tile thinset in the bathrooms.
- Exterior caulk around 19 doors and 3 windows.
- 8 LF of chimney flashing.

**<u>Limitations</u>**

This survey and report have been executed at the request of Mr. David Hatcher and City of Columbia and are intended solely for their use. All work related to this project has been conducted in keeping with accepted standards of environmental consulting as practiced in the State of South Carolina. No unnecessary destructive measures were undertaken during this survey. Additional suspect and/or asbestos containing materials may be present. If at any time during the course of renovation or demolition a suspect material is observed that is not identified in this report, stop work immediately until the material can be sampled and analyzed for the presence of asbestos. ***ABS*** has relied, in part, on information derived from secondary sources, and except as set forth herein, ***ABS*** has made no independent investigation as to the accuracy or completeness of the information derived from such secondary sources. No warranty is expressed or implied.

# DRAWING




Asbestos Containing 9” Green Floor Tile and Mastic

# SITE MAP

# TABLES

**Table #1**
**Asbestos Containing Building Material (ACBM)**

**Project Name:** **4924 Kilbourne Road**
**Project Address:** 4924 Kilbourne Rd., Columbia, SC **Date:** 12-Mar-19

* Assumed to Contain Asbestos > 1%

| Observed ACBM | | |
|---|---|---|
| Material | EPA AHERA Category | Quantity |
| 9" Green Floor Tile/Mastic | Miscellaneous | 570 $ft^2$ |
| HVAC Tape | Miscellaneous | 72 LF |
| Ceramic Tile Thinset | Miscellaneous | 330 $ft^2$ |
| Exterior Caulk | Miscellaneous | 19 windows; 3 doors |
| Chimney Flashing | Miscellaneous | 8 LF |

**Table #2**
**Friable ACBM**

**Project Name:** **4924 Kilbourne Road**
**Project Address:** 4924 Kilbourne Rd., Columbia, SC **Date:** 12-Mar-19

* Assumed to Contain Asbestos > 1%

| Friable ACBM | |
|---|---|
| Material | Quantity |
| HVAC Tape | 72 LF |
| | |
| | |

**Table #3**
**Non-Friable ACBM**

**Project Name:** **4924 Kilbourne Road**
**Project Address:** 4924 Kilbourne Rd., Columbia, SC **Date:** 12-Mar-19

* Assumed to Contain Asbestos > 1%

| Non-Friable ACBM | |
|---|---|
| Material | Quantity |
| 9" Green Floor Tile/Mastic | 570 $ft^2$ |
| Ceramic Tile Thinset | 330 $ft^2$ |
| Exterior Caulk | 19 windows; 3 doors |
| Chimney Flashing | 8 LF |

**Table #4**

**Asbestos - Suspect Material Data Sheet**

**Project Name:** **4924 Kilbourne Road**

**Project Address:** 4924 Kilbourne Rd., Columbia, SC **Date:** 12-Mar-19

**Asbestos Finding;** **Asbestos Containing Material (ACM) contains > 1% asbestos by definition**

P = Positive via PLM

N = Negative: does not meet definition of ACM

PTP = Previously tested Positive

P = Positive via TEM

A = Assumed to be ACM; no samples collected

PTN = Previously tested Negative

**Present Condition**

F = Friable

NF= Non Friable

D = Damaged (Damage less than 10 distributed and less than 25 % localized)

G = Good (Very localized damage)

SD = Significantly Damaged (Damage equal to or greater than 10 % distributed/ 25 % localized)

**Potential for Future Disturbance by Contact, Vibration or Air Erosion Mechanisms**

LPD = Low Potential for Disturbance (All Three Mechanisms of Low Concern)

PD = Potential for Damage (Any One Mechanism of Moderate Concern)

PSD = Potential for Significant Damage (One Mechanism of High Concern or More Than One of Moderate Concern)

**EPA AHERA Asbestos Category**

T = Thermal System Insulation (Inhibits heat transfer or prohibits condensation)

S = Surfacing Material (Spray-applied or trowel applied)

M = Miscellaneous Materials (Refer to as "Other" materials by OSHA)

**Hazard Ranking** = 7 thru 1; (7 being the worst i.e. significantly damaged material)

| Suspect Material # | Material Description | Category (S, T, M) | # Samples | Quantity | Present Condition | Disturbance Potential | P or N PLM | P or N TEM | P or N Point Count | Hazard Ranking |
|---|---|---|---|---|---|---|---|---|---|---|
| HM-01 | Plaster: Finish | S | 5 | 2,166 $ft^2$ | F/G | PD | N | | | NA |
| HM-02 | Plaster: Base | S | 5 | 2,166 $ft^2$ | F/G | PD | N | | | NA |
| HM-03 | Sheetrock (Unfinished) | M | 3 | 2,166 $ft^2$ | F/G | LPD | N | | | NA |
| HM-04 | 9" Green Floor Tile | M | 3 | 570 $ft^2$ | NF/G | PD | P | | | 2 |
| HM-05 | Mastic below HM-04 | M | 3 | 570 $ft^2$ | NF/G | LPD | P | | | 1 |
| HM-06 | Wire Wrap | M | 3 | 24 LF | F/G | PD | N | N | | NA |
| HM-07 | HVAC Tape | M | 3 | 72 LF | F/G | PD | P | | | 2 |
| HM-08 | Ceramic Tile Thinset | M | 3 | 330 $ft^2$ | NF/G | PD | P | | | 2 |
| HM-09 | Tan HVAC Mastic | M | 3 | 72 LF | NF/G | PD | N | N | | NA |
| HM-10 | Exterior Caulk | M | 3 | 19 windows 3 doors | NF/G | PD | P | | | 2 |

## Table #4
## Asbestos - Suspect Material Data Sheet

**Project Name:** **4924 Kilbourne Road**

**Project Address:** 4924 Kilbourne Rd., Columbia, SC **Date:** 12-Mar-19

**Asbestos Finding;** **Asbestos Containing Material (ACM) contains > 1% asbestos by definition**

P = Positive via PLM

N = Negative: does not meet definition of ACM

PTP = Previously tested Positive

P = Positive via TEM

A = Assumed to be ACM; no samples collected

PTN = Previously tested Negative

**Present Condition**

F = Friable

NF= Non Friable

D = Damaged (Damage less than 10 distributed and less than 25 % localized)

G = Good (Very localized damage)

SD = Significantly Damaged (Damage equal to or greater than 10 % distributed/ 25 % localized)

**Potential for Future Disturbance by Contact, Vibration or Air Erosion Mechanisms**

LPD = Low Potential for Disturbance (All Three Mechanisms of Low Concern)

PD = Potential for Damage (Any One Mechanism of Moderate Concern)

PSD = Potential for Significant Damage (One Mechanism of High Concern or More Than One of Moderate Concern)

**EPA AHERA Asbestos Category**

T = Thermal System Insulation (Inhibits heat transfer or prohibits condensation)

S = Surfacing Material (Spray-applied or trowel applied)

M = Miscellaneous Materials (Refer to as "Other" materials by OSHA)

**Hazard Ranking** = 7 thru 1; (7 being the worst i.e. significantly damaged material)

| Suspect Material # | Material Description | Category (S, T, M) | # Samples | Quantity | Present Condition | Disturbance Potential | P or N PLM | P or N TEM | P or N Point Count | Hazard Ranking |
|---|---|---|---|---|---|---|---|---|---|---|
| HM-11 | Roof Shingles | M | 3 | 2,355 $ft^2$ | NF/G | PD | N | N | | NA |
| HM-12 | Felt Paper | M | 3 | 2,355 $ft^2$ | NF/G | LPD | N | N | | NA |
| HM-13 | Chimney Flashing | M | 3 | 8 LF | NF/G | PD | N | P | | 2 |

**Table #5**
**Asbestos - Bulk Sample Data Sheet**

**Project Name:** **4924 Kilbourne Road**

**Project Address:** 4924 Kilbourne Rd., Columbia, SC **Date:** 12-Mar-19

Positive; meets definition of Asbestos Containing Material (ACM) (i.e.>1%asbestos) via PLM

Positive; meets definition of Asbestos Containing Material (ACM) (i.e.>1%asbestos) via TEM

Assumed to contain Asbestos > 1%

*** Chry = Chrysotile Amos = Amosite Croc = Crocidolite Anth = Anthophylite NAD = No Asbestos Detected DNA = Did Not Analyze**

| Laboratory Sample # | ABS Sample # | Suspect Material # | Material Description | Location | Type * Asbestos | Percent PLM | Percent TEM | Percent Point Count |
|---|---|---|---|---|---|---|---|---|
| 71904213PLM_1 | 4924-01 - A | HM-01 | Plaster: Finish | | | NAD | | |
| 71904213PLM_2 | 4924-02 - A | | | | | NAD | | |
| 71904213PLM_3 | 4924-03 - A | | | | | NAD | | |
| 71904213PLM_4 | 4924-04 - A | | | | | NAD | | |
| 71904213PLM_5 | 4924-05 - A | | | | | NAD | | |
| 71904213PLM_33 | 4924-01 - B | HM-02 | Plaster: Base | | | NAD | | |
| 71904213PLM_34 | 4924-02 - B | | | | | NAD | | |
| 71904213PLM_35 | 4924-03 - B | | | | | NAD | | |
| 71904213PLM_36 | 4924-04 - B | | | | | NAD | | |
| 71904213PLM_37 | 4924-05 - B | | | | | NAD | | |
| 71904213PLM_6 | 4924-06 | HM-03 | Sheetrock (Unfinished) | | | NAD | | |
| 71904213PLM_7 | 4924-07 | | | | | NAD | | |
| 71904213PLM_8 | 4924-08 | | | | | NAD | | |
| 71904213PLM_9 | 4924-09 - A | HM-04 | 9" Green Floor Tile | | Chry | 8% | | |
| 71904213PLM_10 | 4924-10 - A | | | | Chry | 8% | | |
| 71904213PLM_11 | 4924-11 - A | | | | | DNA | | |
| 71904213PLM_38 | 4924-09 - B | HM-05 | Mastic below HM-04 | | Chry | 10% | | |
| 71904213PLM_39 | 4924-10 - B | | | | Chry | 10% | | |
| 71904213PLM_40 | 4924-11 - B | | | | | DNA | | |

* NAD = No Asbestos Detected
Amos = Amosite

DNA = Did Not Analyze
Croc = Crocidilite

Chry = Chrysotile
Anth = Anthophylite

**Table #5**
**Asbestos - Bulk Sample Data Sheet**

**Project Name:** **4924 Kilbourne Road**

**Project Address:** 4924 Kilbourne Rd., Columbia, SC **Date:** 12-Mar-19

Positive; meets definition of Asbestos Containing Material (ACM) (i.e.>1%asbestos) via PLM

Positive; meets definition of Asbestos Containing Material (ACM) (i.e.>1%asbestos) via TEM

Assumed to contain Asbestos > 1%

*** Chry = Chrysotile Amos = Amosite Croc = Crocidolite Anth = Anthophylite NAD = No Asbestos Detected DNA = Did Not Analyze**

| Laboratory Sample # | ABS Sample # | Suspect Material # | Material Description | Location | Type * Asbestos | Percent PLM | Percent TEM | Percent Point Count |
|---|---|---|---|---|---|---|---|---|
| 71904213PLM_12 | 4924-12 | HM-06 | Wire Wrap | | | NAD | | |
| 71904213PLM_13 | 4924-13 | | | | | NAD | | |
| 71904535TBS_1 | 4924-14 | | | | Act | | 0.34% | |
| 71904213PLM_15 | 4924-15 | HM-07 | HVAC Tape | | Chry | 30% | | |
| 71904213PLM_16 | 4924-16 | | | | Chry | 30% | | |
| 71904213PLM_17 | 4924-17 | | | | Chry | 30% | | |
| 71904213PLM_18 | 4924-18 | HM-08 | Ceramic Tile Thinset | | Chry | 2% | | |
| 71904213PLM_19 | 4924-19 | | | | Chry | 2% | | |
| 71904213PLM_20 | 4924-20 | | | | Chry | 2% | | |
| 71904213PLM_21 | 4924-21 | HM-09 | Tan HVAC Mastic | | | NAD | | |
| 71904213PLM_22 | 4924-22 | | | | | NAD | | |
| 71904535TBS_2 | 4924-23 | | | | | | NAD | |
| 71904213PLM_24 | 4924-24 | HM-10 | Exterior Caulk | | Chry | 2% | | |
| 71904213PLM_25 | 4924-25 | | | | Chry | 2% | | |
| 71904213PLM_26 | 4924-26 | | | | | DNA | | |
| 71904213PLM_27 | 4924-27 | HM-11 | Shingles | Roof | | NAD | | |
| 71904213PLM_28 | 4924-28 | | | | | NAD | | |
| 71904535TBS_4 | 4924-29 | | | | | | NAD | |

* NAD = No Asbestos Detected DNA = Did Not Analyze Chry = Chrysotile
Amos = Amosite Croc = Crocidilite Anth = Anthophylite

**Table #5**
**Asbestos - Bulk Sample Data Sheet**

**Project Name:** **4924 Kilbourne Road**

**Project Address:** 4924 Kilbourne Rd., Columbia, SC **Date:** 12-Mar-19

Positive; meets definition of Asbestos Containing Material (ACM) (i.e.>1%asbestos) via PLM

Positive; meets definition of Asbestos Containing Material (ACM) (i.e.>1%asbestos) via TEM

Assumed to contain Asbestos > 1%

*** Chry = Chrysotile Amos = Amosite Croc = Crocidolite Anth = Anthophylite NAD = No Asbestos Detected DNA = Did Not Analyze**

| Laboratory Sample # | ABS Sample # | Suspect Material # | Material Description | Location | Type * Asbestos | Percent PLM | Percent TEM | Percent Point Count |
|---|---|---|---|---|---|---|---|---|
| 71904213PLM_30 | 4924-30 | HM-12 | Felt Paper | Roof | | NAD | | |
| 71904213PLM_31 | 4924-31 | | | | | NAD | | |
| 71904535TBS_5 | 4924-32 | | | | | | NAD | |
| 71906217PLM_1 | 4924-33 | HM-13 | Chimney Flashing | | | NAD | | |
| 71906217PLM_2 | 4924-34 | | | | | NAD | | |
| 71906300TBS_1 | 4924-35 | | | | Anth | | 1.7% | |

* NAD = No Asbestos Detected DNA = Did Not Analyze Chry = Chrysotile
Amos = Amosite Croc = Crocidilite Anth = Anthophylite

# LABORATORY RESULTS

# Bulk Asbestos Analysis

**By Polarized Light Microscopy**
**EPA Method: 600/R-93/116 and 40 CFR, Part 763, Subpart E, App.E**

NVLAP Lab Code: 200664-0

**Customer:** ABS Environmental Inc.
1416 Chapin Rd
Chapin, SC 29036

**Attn:** Jeff Rivers

**Lab Order ID:** 71904213
**Analysis ID:** 71904213_PLM
**Date Received:** 2/18/2019
**Date Reported:** 2/19/2019

**Project:** 4924 KILBOURNE

| Sample ID / *Lab Sample ID* | Description / *Lab Notes* | Asbestos | Fibrous Components | Non-Fibrous Components | Attributes / Treatment |
|---|---|---|---|---|---|
| 4924-01 - A | PLASTER | None Detected | | 100% Other | White<br>Non Fibrous<br>Homogeneous |
| *71904213PLM_1* | *finish* | | | | Teased |
| 4924-01 - B | PLASTER | None Detected | | 100% Other | Gray<br>Non Fibrous<br>Heterogeneous |
| *71904213PLM_33* | *base* | | | | Crushed |
| 4924-02 - A | PLASTER | None Detected | | 100% Other | White<br>Non Fibrous<br>Homogeneous |
| *71904213PLM_2* | *finish* | | | | Teased |
| 4924-02 - B | PLASTER | None Detected | | 100% Other | Gray<br>Non Fibrous<br>Heterogeneous |
| *71904213PLM_34* | *base* | | | | Crushed |
| 4924-03 - A | PLASTER | None Detected | | 100% Other | White<br>Non Fibrous<br>Homogeneous |
| *71904213PLM_3* | *finish* | | | | Teased |
| 4924-03 - B | PLASTER | None Detected | | 100% Other | Gray<br>Non Fibrous<br>Heterogeneous |
| *71904213PLM_35* | *base* | | | | Crushed |
| 4924-04 - A | PLASTER | None Detected | | 100% Other | White<br>Non Fibrous<br>Homogeneous |
| *71904213PLM_4* | *finish* | | | | Teased |
| 4924-04 - B | PLASTER | None Detected | | 100% Other | Gray<br>Non Fibrous<br>Heterogeneous |
| *71904213PLM_36* | *base* | | | | Crushed |

**Disclaimer: Due to the nature of the EPA 600 method, asbestos may not be detected in samples containing low levels of asbestos. We strongly recommend that analysis of floor tiles, vermiculite, and/or heterogeneous soil samples be conducted by TEM for confirmation of "None Detected" by PLM. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. government. Analytical uncertainty available upon request. Scientific Analytical Institute participates in the NVLAP Proficiency Testing program. Unless otherwise noted blank sample correction was not performed. Estimated MDL is 0.1%.**

Byron Stroble (40)

**Analyst**

**Approved Signatory**

P-F-002 r15 1/16/2021

# Bulk Asbestos Analysis

**By Polarized Light Microscopy**
**EPA Method: 600/R-93/116 and 40 CFR, Part 763, Subpart E, App.E**

NVLAP Lab Code: 200664-0

**Customer:** ABS Environmental Inc.
1416 Chapin Rd
Chapin, SC 29036

**Attn:** Jeff Rivers

**Lab Order ID:** 71904213
**Analysis ID:** 71904213_PLM
**Date Received:** 2/18/2019
**Date Reported:** 2/19/2019

**Project:** 4924 KILBOURNE

| Sample ID / *Lab Sample ID* | Description / *Lab Notes* | Asbestos | Fibrous Components | Non-Fibrous Components | Attributes / Treatment |
|---|---|---|---|---|---|
| 4924-05 - A | PLASTER | None Detected | | 100% Other | White<br>Non Fibrous<br>Homogeneous |
| *71904213PLM_5* | *finish* | | | | Teased |
| 4924-05 - B | PLASTER | None Detected | | 100% Other | Gray<br>Non Fibrous<br>Heterogeneous |
| *71904213PLM_37* | *base* | | | | Crushed |
| 4924-06 | SHEETROCK (UNFINISHED) | None Detected | 10% Cellulose | 90% Other | Brown, White<br>Non Fibrous<br>Homogeneous |
| *71904213PLM_6* | | | | | Teased |
| 4924-07 | SHEETROCK (UNFINISHED) | None Detected | 10% Cellulose | 90% Other | Brown, White<br>Non Fibrous<br>Homogeneous |
| *71904213PLM_7* | | | | | Teased |
| 4924-08 | SHEETROCK (UNFINISHED) | None Detected | 10% Cellulose | 90% Other | Brown, White<br>Non Fibrous<br>Homogeneous |
| *71904213PLM_8* | | | | | Teased |
| 4924-09 - A | 9" GREEN FLOOR TILE AND MASTIC | 8% Chrysotile | | 92% Other | Black<br>Non Fibrous<br>Homogeneous |
| *71904213PLM_9* | *floor tile* | | | | Dissolved |
| 4924-09 - B | 9" GREEN FLOOR TILE AND MASTIC | 10% Chrysotile | | 90% Other | Black<br>Non Fibrous<br>Homogeneous |
| *71904213PLM_38* | *mastic* | | | | Dissolved |
| 4924-10 - A | 9" GREEN FLOOR TILE AND MASTIC | 8% Chrysotile | | 92% Other | Green<br>Non Fibrous<br>Homogeneous |
| *71904213PLM_10* | *floor tile* | | | | Dissolved |

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Byron Stroble (40)

**Analyst**

**Approved Signatory**

P-F-002 r15 1/16/2021

# Bulk Asbestos Analysis

**By Polarized Light Microscopy**
**EPA Method: 600/R-93/116 and 40 CFR, Part 763, Subpart E, App.E**

NVLAP Lab Code: 200664-0

**Customer:** ABS Environmental Inc.
1416 Chapin Rd
Chapin, SC 29036

**Attn:** Jeff Rivers

**Lab Order ID:** 71904213
**Analysis ID:** 71904213_PLM
**Date Received:** 2/18/2019
**Date Reported:** 2/19/2019

**Project:** 4924 KILBOURNE

| Sample ID / *Lab Sample ID* | Description / *Lab Notes* | Asbestos | Fibrous Components | Non-Fibrous Components | Attributes / Treatment |
|---|---|---|---|---|---|
| 4924-10 - B | 9" GREEN FLOOR TILE AND MASTIC | **10% Chrysotile** | | **90% Other** | Black<br>Non Fibrous<br>Homogeneous |
| *71904213PLM_39* | *mastic* | | | | Dissolved |
| 4924-11 - A | 9" GREEN FLOOR TILE AND MASTIC | **Not Analyzed** | | | |
| *71904213PLM_11* | *floor tile* | | | | |
| 4924-11 - B | 9" GREEN FLOOR TILE AND MASTIC | **Not Analyzed** | | | |
| *71904213PLM_40* | *mastic* | | | | |
| 4924-12 | WIRE INSULATION | **None Detected** | **40% Fiber Glass** | **60% Other** | Brown, Black<br>Fibrous<br>Heterogeneous |
| *71904213PLM_12* | | | | | Teased, Dissolved |
| 4924-13 | WIRE INSULATION | **None Detected** | **40% Fiber Glass** | **60% Other** | Brown, Black<br>Fibrous<br>Heterogeneous |
| *71904213PLM_13* | | | | | Teased, Dissolved |
| 4924-14 | WIRE INSULATION | **Not Analyzed** | | | |
| *71904213PLM_14* | *TEM* | | | | |
| 4924-15 | HVAC TAPE | **30% Chrysotile** | **40% Cellulose** | **30% Other** | White<br>Fibrous<br>Homogeneous |
| *71904213PLM_15* | | | | | Teased |
| 4924-16 | HVAC TAPE | **30% Chrysotile** | **40% Cellulose** | **30% Other** | White<br>Fibrous<br>Homogeneous |
| *71904213PLM_16* | | | | | Teased |

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Byron Stroble (40)

**Analyst**

**Approved Signatory**

P-F-002 r15 1/16/2021

# Bulk Asbestos Analysis

**By Polarized Light Microscopy**
**EPA Method: 600/R-93/116 and 40 CFR, Part 763, Subpart E, App.E**

NVLAP Lab Code: 200664-0

**Customer:** ABS Environmental Inc.
1416 Chapin Rd
Chapin, SC 29036

**Attn:** Jeff Rivers

**Lab Order ID:** 71904213
**Analysis ID:** 71904213_PLM
**Date Received:** 2/18/2019
**Date Reported:** 2/19/2019

**Project:** 4924 KILBOURNE

| Sample ID / *Lab Sample ID* | Description / *Lab Notes* | Asbestos | Fibrous Components | Non-Fibrous Components | Attributes / Treatment |
|---|---|---|---|---|---|
| 4924-17 | HVAC TAPE | **30% Chrysotile** | **40% Cellulose** | **30% Other** | White<br>Fibrous<br>Homogeneous |
| *71904213PLM_17* | | | | | Teased |
| 4924-18 | CERAMIC TILE THINSET | **2% Chrysotile** | | **98% Other** | Gray<br>Non Fibrous<br>Homogeneous |
| *71904213PLM_18* | | | | | Crushed |
| 4924-19 | CERAMIC TILE THINSET | **2% Chrysotile** | | **98% Other** | Gray<br>Non Fibrous<br>Homogeneous |
| *71904213PLM_19* | | | | | Crushed |
| 4924-20 | CERAMIC TILE THINSET | **2% Chrysotile** | | **98% Other** | Gray<br>Non Fibrous<br>Homogeneous |
| *71904213PLM_20* | | | | | Crushed |
| 4924-21 | TAN HVAC MASTIC | **None Detected** | | **100% Other** | Gray<br>Non Fibrous<br>Homogeneous |
| *71904213PLM_21* | | | | | Dissolved |
| 4924-22 | TAN HVAC MASTIC | **None Detected** | | **100% Other** | Gray<br>Non Fibrous<br>Homogeneous |
| *71904213PLM_22* | | | | | Dissolved |
| 4924-23 | TAN HVAC MASTIC | **Not Analyzed** | | | |
| *71904213PLM_23* | *TEM* | | | | |
| 4924-24 | EXTERIOR CAULK | **2% Chrysotile** | | **98% Other** | Beige<br>Non Fibrous<br>Homogeneous |
| *71904213PLM_24* | | | | | Dissolved |

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Byron Stroble (40)

**Analyst**

**Approved Signatory**

P-F-002 r15 1/16/2021

# Bulk Asbestos Analysis

**By Polarized Light Microscopy**
**EPA Method: 600/R-93/116 and 40 CFR, Part 763, Subpart E, App.E**

NVLAP Lab Code: 200664-0

**Customer:** ABS Environmental Inc.
1416 Chapin Rd
Chapin, SC 29036

**Attn:** Jeff Rivers

**Lab Order ID:** 71904213
**Analysis ID:** 71904213_PLM
**Date Received:** 2/18/2019
**Date Reported:** 2/19/2019

**Project:** 4924 KILBOURNE

| Sample ID / *Lab Sample ID* | Description / *Lab Notes* | Asbestos | Fibrous Components | Non-Fibrous Components | Attributes / Treatment |
|---|---|---|---|---|---|
| 4924-25 | EXTERIOR CAULK | 2% Chrysotile | | 98% Other | Beige<br>Non Fibrous<br>Homogeneous |
| *71904213PLM_25* | | | | | Dissolved |
| 4924-26 | EXTERIOR CAULK | Not Analyzed | | | |
| *71904213PLM_26* | *TEM* | | | | |
| 4924-27 | ROOF SHINGLES | None Detected | 10% Fiber Glass | 90% Other | Black<br>Non Fibrous<br>Homogeneous |
| *71904213PLM_27* | | | | | Dissolved |
| 4924-28 | ROOF SHINGLES | None Detected | 10% Fiber Glass | 90% Other | Black<br>Non Fibrous<br>Homogeneous |
| *71904213PLM_28* | | | | | Dissolved |
| 4924-29 | ROOF SHINGLES | Not Analyzed | | | |
| *71904213PLM_29* | *TEM* | | | | |
| 4924-30 | FELT PAPER | None Detected | 70% Cellulose | 30% Other | Black<br>Fibrous<br>Homogeneous |
| *71904213PLM_30* | | | | | Teased, Dissolved |
| 4924-31 | FELT PAPER | None Detected | 70% Cellulose | 30% Other | Black<br>Fibrous<br>Homogeneous |
| *71904213PLM_31* | | | | | Teased, Dissolved |
| 4924-32 | FELT PAPER | Not Analyzed | | | |
| *71904213PLM_32* | *TEM* | | | | |

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Byron Stroble (40)

**Analyst**

**Approved Signatory**

P-F-002 r15 1/16/2021

71904213

| | |
|---|---|
| Client: | ABS ENVIRONMENTAL |
| Contact: | JEFF RIVERS |
| Address: | 1416 CHAPIN RD.-CHAPIN, SC |
| Phone: | 803-260-2883 |
| Fax: | 803-345-2823 |
| Email: | JRIVERS@ABSENV.COM |
| Project: | 4924 KILBOURNE |
| Client Notes: | [Enter Client Notes Here] |
| P.O. #. | [Enter P.O. # Here] |
| Date Submitted: | 2/15/2019 0:00 |
| Analysis: | EPA PLM 600 |
| TurnAroundTime: | 24 HR TAT |

*Instructions:
Use Column "B" for your contact info

To See an Example Click the bottom Example Tab.

**Enter samples between "<<" and ">>"**
**Begin Samples with a "<< "above the first sample and end with a ">>" below the last sample.**
Only Enter your data on the first sheet "Sheet1"

Note: Data 1 and Data 2 are optional fields that do not show up on the official report, however they will be included in the electronic data returned to you to facilitate your reintegration of the report data

Scientific Analytical Institute
4604 Dundas Drive
Greensboro, NC 27407
Phone: 336.292.3888
Fax: 336.292.3313
Email: lab@sailab.com

| Sample Number | Data 1 | Sample Description | Data 2 |
|---|---|---|---|
| << | | | |
| 4924-01 | [Enter data of your choosing here] | PLASTER | [Enter data of your choosing here] |
| 4924-02 | [Enter data of your choosing here] | PLASTER | [Enter data of your choosing here] |
| 4924-03 | [Enter data of your choosing here] | PLASTER | [Enter data of your choosing here] |
| 4924-04 | [Enter data of your choosing here] | PLASTER | [Enter data of your choosing here] |
| 4924-05 | [Enter data of your choosing here] | PLASTER | [Enter data of your choosing here] |
| 4924-06 | [Enter data of your choosing here] | SHEETROCK (UNFINISHED) | [Enter data of your choosing here] |
| 4924-07 | [Enter data of your choosing here] | SHEETROCK (UNFINISHED) | [Enter data of your choosing here] |
| 4924-08 | [Enter data of your choosing here] | SHEETROCK (UNFINISHED) | [Enter data of your choosing here] |
| 4924-09 | [Enter data of your choosing here] | 9" GREEN FLOOR TILE AND MASTIC | [Enter data of your choosing here] |
| 4924-10 | [Enter data of your choosing here] | 9" GREEN FLOOR TILE AND MASTIC | [Enter data of your choosing here] |
| 4924-11 | [Enter data of your choosing here] | 9" GREEN FLOOR TILE AND MASTIC | TEM NOB IF NEGATIVE |
| 4924-12 | | WIRE INSULATION | |
| 4924-13 | | WIRE INSULATION | |
| 4924-14 | | WIRE INSULATION | |
| 4924-15 | | HVAC TAPE | |
| 4924-16 | | HVAC TAPE | |
| 4924-17 | | HVAC TAPE | |
| 4924-18 | | CERAMIC TILE THINSET | |
| 4924-19 | | CERAMIC TILE THINSET | |
| 4924-20 | | CERAMIC TILE THINSET | |
| 4924-21 | | TAN HVAC MASTIC | |
| 4924-22 | | TAN HVAC MASTIC | |
| 4924-23 | | TAN HVAC MASTIC | TEM NOB IF NEGATIVE |
| 4924-24 | | EXTERIOR CAULK | |
| 4924-25 | | EXTERIOR CAULK | |
| 4924-26 | | EXTERIOR CAULK | |
| 4924-27 | | ROOF SHINGLES | |
| 4924-28 | | ROOF SHINGLES | |
| 4924-29 | | ROOF SHINGLES | TEM NOB IF NEGATIVE |
| 4924-30 | | FELT PAPER | |
| 4924-31 | | FELT PAPER | |
| 4924-32 | | FELT PAPER | TEM NOB IF NEGATIVE |
| >> | | | |

**Accepted** ☑

**Rejected** ☐

Relinquished By

Received By 2.18

10:30AM

# Bulk Asbestos Analysis
# by Transmission Electron Microscopy

**Semi-Quantitative**
**Chatfield SOP 1988-02 Rev. 1**

**Customer:** ABS Environmental Inc.
1416 Chapin Rd
Chapin, SC 29036

**Attn:** Jeff Rivers

**Project:** 4924 KILBOURNE

**Lab Order ID:** 71904535
**Analysis ID:** 71904535_TB
**Date Received:** 2/19/2019
**Date Reported:** 2/20/2019

| Sample ID / *Lab Sample ID* | Description / *Lab Notes* | Organic *(Wt. %)* | Acid Sol. *(Wt. %)* | Asbestos *(Wt. %)* | | LCL-UCL *(Wt. %)* |
|---|---|---|---|---|---|---|
| 4924-14 / *71904535TBS_1* | WIRE INSULATION | 66% | - | 0.34 % | Actinolite | 0.31% - 0.37% |
| 4924-23 / *71904535TBS_2* | TAN HVAC MASTIC | 47% | - | None Detected | | |
| 4924-29 / *71904535TBS_4* | ROOF SHINGLES | 24% | - | None Detected | | |
| 4924-32 / *71904535TBS_5* | FELT PAPER | 99% | - | None Detected | | |

**Disclaimer: This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. government.**

Russell Shelton (4)

**Analyst**

**Approved Signatory**

~~71904213~~
71904535

| | |
|---|---|
| Client: | ABS ENVIRONMENTAL |
| Contact: | JEFF RIVERS |
| Address: | 1416 CHAPIN RD.-CHAPIN, SC |
| Phone: | 803-260-2883 |
| Fax: | 803-345-2823 |
| Email: | JRIVERS@ABSENV.COM |
| Project: | 4924 KILBOURNE |
| Client Notes: | [Enter Client Notes Here] |
| P.O. #: | [Enter P.O. # Here] |
| Date Submitted: | 2/15/2019 0:00 |
| Analysis: | EPA PLM 600 |
| Turnaround Time: | 24 HR TAT |

*Instructions:
Use Column "B" for your contact info

To See an Example Click the bottom Example Tab.

Enter samples between "<<" and ">>"
Begin Samples with a "<< "above the first sample and end with a ">>" below the last sample.
Only Enter your data on the first sheet "Sheet1"

Note: Data 1 and Data 2 are optional fields that do not show up on the official report, however they will be included in the electronic data returned to you to facilitate your reintegration of the report data.

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| 4924-32 | | FELT PAPER | TEM NOB IF NEGATIVE |
| >> | | | |

1-4

Accepted ☑

Rejected ☐

Relinquished By

Received By 2.18

10:30