



## **ECS Carolinas, LLP**

Report of Limited Asbestos Survey

4748 Wright Avenue  
North Charleston, South Carolina  
ECS Project Number 49-2970

September 30, 2016





September 30, 2016

Ms. Angela McJunkin, CCEA, CFM  
Director of Code Enforcement  
City of North Charleston  
PO Box 190016  
North Charleston, SC 29419

Reference: Report of Limited Asbestos Survey  
4748 Wright Avenue  
North Charleston, South Carolina  
ECS Project Number: 49-2970

Dear Ms. McJunkin:

ECS is pleased to submit this report of our limited asbestos survey at the above referenced site. This report includes a description of our understanding of the project background information, a description of the scope of work performed, including our findings, conclusions and comments.

#### **PROJECT UNDERSTANDING**

ECS Carolinas, LLP (ECS) understands the subject site is located at 4748 Wright Avenue in North Charleston, Charleston County, South Carolina. The site is further identified as Charleston County Parcel Identification Number (PIN) 4700300238. The site is developed with an approximate 900 square-foot manufactured home reportedly constructed in the early 1970's. The residence is slated for demolition. ECS was requested to conduct a limited asbestos survey of the interior and exterior portions of the residence prior to demolition activities.

#### **PROCEDURE/METHODOLOGY**

##### **Limited Asbestos Containing Materials (ACM) Assessment**

ECS was requested to perform a limited asbestos survey of the subject property to identify asbestos-containing materials (ACM) which could be disturbed during demolition or renovation. The National Emission Standard for Hazardous Air Pollutants (NESHAP) requires the identification of friable ACM and non-friable ACM likely to become friable during demolition and/or renovation activities. NESHAP requires that the identified ACM be removed prior to initiating activities likely to disturb the ACM. The EPA defines an ACM as a material containing more than one percent (>1%) asbestos.

The limited asbestos survey was performed on September 12, 2016 by Mr. Justin Roth (South Carolina Asbestos Inspector No. BI-01189). The survey consisted of observing the accessible areas of the building for the presence of suspect materials which may contain asbestos. The survey involved detecting both friable materials (materials which can be pulverized or reduced to a powder by hand pressure when dry) and non-friable materials (materials which pose a hazard when sawn, sanded, drilled or pulverized). Homogeneous materials (based on material type, color, texture, etc.) were identified in various functional spaces during the survey.

As per the South Carolina Department of Health and Environmental Control (SCDHEC), samples were collected from random locations of each homogeneous area, with the material's number of samples based upon the following criteria:

- Thermal Insulation Materials (piping, breeching, boiler insulation, etc.) – A minimum of three (3) samples are required. Patch areas (less than 6 square or linear feet) may have one (1) sample collected.
- Surfacing Materials (plaster, fireproofing, etc.) – A minimum of seven (7) samples are to be taken for areas greater than 5,000 square feet; five (5) for areas greater than 1,000 square feet, but less than 5,000 square feet; three (3) for areas less than 1,000 square feet.
- Miscellaneous Materials (flooring, adhesives, roofing, wallboard, etc.) – A minimum of three (3) samples are required.

In order to determine if the suspect materials observed during the visual survey contained asbestos, representative bulk samples were collected and placed in sealed packages. Samples were placed under chain of custody and submitted to Scientific Analytical Institute, Inc. (SAI) in Greensboro, North Carolina for analysis under standard chain of custody procedures. The analysis was performed using the EPA recommended method of Polarized Light Microscopy (PLM) coupled with dispersion staining (Method No. EPA 600/M4-020-82, Dec. 1982). SAI participates in the National Voluntary Laboratory Accreditation Program (NVLAP). Their NVLAP accreditation number is 200664-0. Samples determined to be negative by PLM but were classified as non-friable organically bound (NOB) materials were reanalyzed by transmission electron microscopy (TEM) using the Chatfield method in accordance with SCDHEC requirements. If a sample of a material from a homogeneous area is found to be positive, then that material is considered positive, regardless of the results of the other samples of that material, within that area. The material type, sample location and analytical results of each bulk sample are also summarized in the attached Asbestos Bulk Analysis report in **Attachments**.

## RESULTS

The analytical data indicated that asbestos was not detected in the samples obtained by ECS. Some samples are considered multi-layered. These samples were comprised of more than one material, and each one is analyzed separately as per NESHAP requirements. The following table summarizes the samples collected during ECS' site visit and the laboratory analysis data.

SUMMARY OF ASBESTOS-CONTAINING MATERIALS 4748 Wright Avenue North Charleston, South Carolina ECS Project 49-2970						
Sample #	Materials	Sample Location	Approx. Quantity	Condition/ Friable or Non-Friable	Lab	Asbestos %
4878-1A-A 4878-1B-A 4878-1C-A	12" Floor Tiles - Layer 1 - Floor Tile	Kitchen	50 SF	Good/Non- Friable	PLM PLM TEM	None Detected None Detected None Detected
4878-1A-B 4878-1B-B 4878-1C-B	Floor Tile Mastic	Kitchen	10 SF	Good/Non- Friable	PLM PLM TEM	None Detected None Detected None Detected
4878-1A-C 4878-1B-C 4878-1C-C	12" Floor Tiles - Layer 2 - Linoleum	Kitchen	10 SF	Good/Non- Friable	PLM PLM TEM	None Detected None Detected None Detected
4878-1A-D 4878-1B-D 4878-1C-D	Linoleum Mastic	Kitchen	10 SF	Good/Non- Friable	PLM PLM TEM	None Detected None Detected None Detected

<b>SUMMARY OF ASBESTOS-CONTAINING MATERIALS</b> <b>4748 Wright Avenue</b> <b>North Charleston, South Carolina</b> <b>ECS Project 49-2970</b>						
Sample #	Materials	Sample Location	Approx. Quantity	Condition/ Friable or Non-Friable	Lab	Asbestos %
4748-2A 4748-2B 4748-2C	White Linoleum	Entrance	10 SF	Good/Non- Friable	PLM PLM TEM	None Detected None Detected None Detected
4748-3A-A 4748-3B-A 4748-3C-A	Off-White Linoleum	Bathroom	50 SF	Good/Non- Friable	PLM PLM TEM	None Detected None Detected None Detected
4748-3A-B 4748-3B-B 4748-3C-B	Linoleum Mastic	Bathroom	50 SF	Good/Non- Friable	PLM PLM TEM	None Detected None Detected None Detected
4748-4A-A 4748-4B-A 4748-4C-A	Orange Linoleum - Layer 1	Bedroom #1	100 SF	Good/Non- Friable	PLM PLM TEM	None Detected None Detected None Detected
4748-4A-B 4748-4B-B 4748-4C-B	Orange Linoleum - Layer 2	Bedroom #1	100 SF	Good/Non- Friable	PLM PLM TEM	None Detected None Detected None Detected
4748-4A-C 4748-4B-C 4878-4C-C	Orange Linoleum - Mastic	Bedroom #1	100 SF	Good/Non- Friable	PLM PLM TEM	None Detected None Detected None Detected
4748-5A 4748-5B 4748-5C	Window Caulking	Exterior	200 LF	Good/Non- Friable	PLM PLM TEM	None Detected None Detected None Detected
4748-6A 4748-6B 4748-6C	Tan Linoleum	Bedroom #2	100 SF	Good/Non- Friable	PLM PLM TEM	None Detected None Detected None Detected
4748-7A 4748-7B 4748-7C	Roof Material	Main Roof	800 SF	Good/Non- Friable	PLM PLM TEM	None Detected None Detected None Detected
4748-8A-A 4748-8B-A 4748-8C-A	Asphalt Shingles	Roof - Entrances	100 SF	Good/Non- Friable	PLM PLM TEM	None Detected None Detected None Detected
4748-8A-B 4748-8B-B 4748-8C-B	Felt Paper	Roof - Entrances	100 SF	Good/Non- Friable	PLM PLM TEM	None Detected None Detected None Detected
4748-9A-A 4748-9B-A 4748-9C-A	Linoleum - Layer 1	Bedroom #3	100 SF	Good/Non- Friable	PLM PLM TEM	None Detected None Detected None Detected
4748-9A-B 4748-9B-B 4748-9C-B	Linoleum - Layer 2	Bedroom #3	100 SF	Good/Non- Friable	PLM PLM TEM	None Detected None Detected None Detected

SUMMARY OF ASBESTOS-CONTAINING MATERIALS						
4748 Wright Avenue						
North Charleston, South Carolina						
ECS Project 49-2970						
Sample #	Materials	Sample Location	Approx. Quantity	Condition/ Friable or Non-Friable	Lab	Asbestos %
4748-10A-A 4748-10B-A 4748-10C-A	Asphalt Shingles	Shed #1	100 SF	Good/Non-Friable	PLM PLM TEM	None Detected None Detected None Detected
4748-10A-B 4748-10B-B 4748-10C-B	Felt Paper	Shed #1	100 SF	Good/Non-Friable	PLM PLM TEM	None Detected None Detected None Detected
4748-11A-A 4748-11B-A 4748-11C-A	Asphalt Shingles	Shed #2	100 SF	Good/Non-Friable	PLM PLM TEM	None Detected None Detected None Detected
4748-11A-B 4748-11B-B 4748-11C-B	Felt Paper	Shed #2	100 SF	Good/Non-Friable	PLM PLM TEM	None Detected None Detected None Detected

Bold = Asbestos-Containing Material

SF = Square Feet

LF = Linear Feet


### CONCLUSIONS AND RECOMMENDATIONS

Based on the findings from laboratory analysis, asbestos concentrations in excess of EPA and State levels were not identified in the samples obtained. ECS does not recommend additional assessment pertaining to asbestos at this time. This report summarizes our evaluation of the conditions observed at the site. The findings prepared by ECS are based upon testing performed in the buildings. ACM may exist (undetected) in other areas due to their inaccessibility or due to the limited nature of our testing. The assessment did not include destructive measures to look in chases, above fixed ceilings, behind permanent or attached fixtures, behind walls, etc. Suspect materials observed in inaccessible areas will have to be assumed positive or be evaluated at the time of discovery.

ECS appreciates the opportunity to provide our asbestos services for this project. If you have questions or need additional information, please contact us.

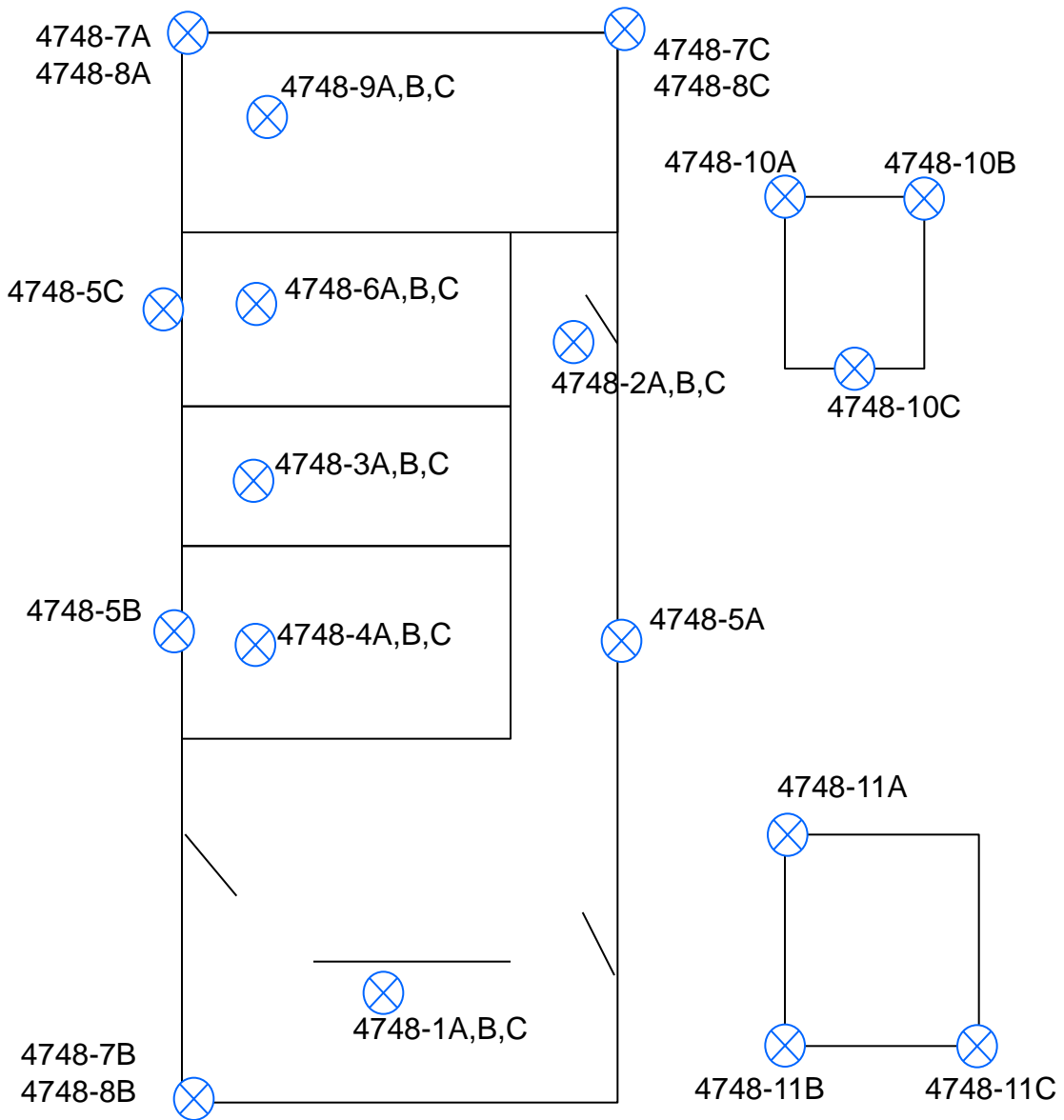
Respectfully,

#### ECS CAROLINAS, LLP



  
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Attachments: Figure  
Photographs  
Laboratory Bulk Asbestos Analysis & Chain of Custody  
SC Asbestos Building Inspector License



**LEGEND:**

-  Sample Location
-  Sample Positive

**Sample Locations**

ECS Project Number  
49-2970

Not to Scale



**Limited Asbestos Assessment**

4748 Wright Avenue  
North Charleston, Charleston County,  
South Carolina



Photo 1: View of the residence at 4748 Wright Avenue.



Photo 2: Multi-layered 12"x12" floor tile/linoleum & associated adhesive.



Photo 3: White linoleum.



Photo 4: Off-white linoleum.





Photo 5: Tan linoleum.



Photo 6: Roof material.



# Bulk Asbestos Analysis

By Polarized Light Microscopy  
EPA Method: 600/R-93/116 and 600/M4-82-020



NVLAP Lab Code: 200664-0

**Customer:** ECS Carolinas, LLP  
3820 Faber Place  
North Charleston, SC 29405

**Attn:** Justin Roth

**Lab Order ID:** 1618042  
**Analysis ID:** 1618042\_PLM  
**Date Received:** 9/13/2016  
**Date Reported:** 9/19/2016

**Project:** 4746 Wright

Sample ID	Description	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes
Lab Sample ID	Lab Notes				Treatment
4746-1A - A	12x12 VFT	None Detected		100% Other	Beige Non Fibrous Heterogeneous
1618042PLM_1	floor tile				Dissolved
4746-1A - B	12x12 VFT	None Detected		100% Other	Tan Non Fibrous Heterogeneous
1618042PLM_34	mastic 1				Dissolved
4746-1A - C	12x12 VFT	None Detected	30% Cellulose	70% Other	Yellow Non Fibrous Heterogeneous
1618042PLM_35	linoleum				Teased
4746-1A - D	12x12 VFT	None Detected		100% Other	Brown Non Fibrous Heterogeneous
1618042PLM_36	mastic 2				Dissolved
4746-1B - A	12x12 VFT	None Detected		100% Other	Beige Non Fibrous Heterogeneous
1618042PLM_2	floor tile				Dissolved
4746-1B - B	12x12 VFT	None Detected		100% Other	Tan Non Fibrous Heterogeneous
1618042PLM_37	mastic 1				Dissolved
4746-1B - C	12x12 VFT	None Detected	30% Cellulose	70% Other	Yellow Non Fibrous Heterogeneous
1618042PLM_38	linoleum				Teased
4746-1B - D	12x12 VFT	None Detected		100% Other	Brown Non Fibrous Heterogeneous
1618042PLM_39	mastic 2				Dissolved

**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 SAL. 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 (63)

Analyst

Approved Signatory



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EPA Method: 600/R-93/116 and 600/M4-82-020



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Sample ID	Description	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes
Lab Sample ID	Lab Notes				Treatment
4746-1C - A	12x12 VFT	None Detected		100% Other	Beige Non Fibrous Heterogeneous
1618042PLM_3	floor tile - TEM				Dissolved
4746-1C - B	12x12 VFT	None Detected		100% Other	Tan Non Fibrous Heterogeneous
1618042PLM_40	mastic 1 - TEM				Dissolved
4746-1C - C	12x12 VFT	None Detected	30% Cellulose	70% Other	Yellow Non Fibrous Heterogeneous
1618042PLM_41	linoleum - TEM				Teased
4746-1C - D	12x12 VFT	None Detected		100% Other	Brown Non Fibrous Heterogeneous
1618042PLM_42	mastic 2 - TEM				Dissolved
4746-2A	White linoleum	None Detected	30% Cellulose	70% Other	White Non Fibrous Heterogeneous
1618042PLM_4					Teased
4746-2B	White linoleum	None Detected	30% Cellulose	70% Other	White Non Fibrous Heterogeneous
1618042PLM_5					Teased
4746-2C	White linoleum	None Detected	30% Cellulose	70% Other	White Non Fibrous Heterogeneous
1618042PLM_6	TEM				Teased
4746-3A - A	Off white linoleum	None Detected	30% Cellulose	70% Other	Beige Non Fibrous Heterogeneous
1618042PLM_7	linoleum				Teased

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Lab Sample ID	Lab Notes				Treatment
4746-3A - B	Off white linoleum	None Detected		100% Other	Beige Non Fibrous Heterogeneous
1618042PLM_43	mastic				Dissolved
4746-3B - A	Off white linoleum	None Detected	30% Cellulose	70% Other	Beige Non Fibrous Heterogeneous
1618042PLM_8	linoleum				Teased
4746-3B - B	Off white linoleum	None Detected		100% Other	Beige Non Fibrous Heterogeneous
1618042PLM_44	mastic				Dissolved
4746-3C - A	Off white linoleum	None Detected	30% Cellulose	70% Other	Beige Non Fibrous Heterogeneous
1618042PLM_9	linoleum - TEM				Teased
4746-3C - B	Off white linoleum	None Detected		100% Other	Beige Non Fibrous Heterogeneous
1618042PLM_45	mastic - TEM				Dissolved
4746-4A - A	Orange linoleum	None Detected	30% Cellulose	70% Other	Yellow Non Fibrous Heterogeneous
1618042PLM_10	linoleum 1				Teased
4746-4A - B	Orange linoleum	None Detected	30% Cellulose	70% Other	Brown, Yellow Non Fibrous Heterogeneous
1618042PLM_46	linoleum 2				Teased
4746-4A - C	Orange linoleum	None Detected		100% Other	Beige Non Fibrous Heterogeneous
1618042PLM_47	mastic				Dissolved

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Lab Sample ID	Lab Notes				Treatment
4746-4B - A	Orange linoleum	None Detected	30% Cellulose	70% Other	Yellow Non Fibrous Heterogeneous
1618042PLM_11	linoleum 1				Teased
4746-4B - B	Orange linoleum	None Detected	30% Cellulose	70% Other	Brown, Yellow Non Fibrous Heterogeneous
1618042PLM_48	linoleum 2				Teased
4746-4B - C	Orange linoleum	None Detected		100% Other	Beige Non Fibrous Heterogeneous
1618042PLM_49	mastic				Dissolved
4746-4C - A	Orange linoleum	None Detected	30% Cellulose	70% Other	Yellow Non Fibrous Heterogeneous
1618042PLM_12	linoleum 1 - TEM				Teased
4746-4C - B	Orange linoleum	None Detected	30% Cellulose	70% Other	Brown, Yellow Non Fibrous Heterogeneous
1618042PLM_50	linoleum 2 - TEM				Teased
4746-4C - C	Orange linoleum	None Detected		100% Other	Beige Non Fibrous Heterogeneous
1618042PLM_51	mastic - TEM				Dissolved
4746-5A	Caulking	None Detected		100% Other	Gray Non Fibrous Heterogeneous
1618042PLM_13					Dissolved
4746-5B	Caulking	None Detected		100% Other	Gray Non Fibrous Heterogeneous
1618042PLM_14					Dissolved

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Lab Sample ID	Lab Notes				Treatment
4746-5C	Caulking	None Detected		100% Other	Gray Non Fibrous Heterogeneous
1618042PLM_15	TEM				Dissolved
4746-6A	Tan linoleum	None Detected	30% Cellulose	70% Other	Beige Non Fibrous Heterogeneous
1618042PLM_16					Teased
4746-6B	Tan linoleum	None Detected	30% Cellulose	70% Other	Beige Non Fibrous Heterogeneous
1618042PLM_17					Teased
4746-6C	Tan linoleum	None Detected	30% Cellulose	70% Other	Beige Non Fibrous Heterogeneous
1618042PLM_18	TEM				Teased
4746-7A	Roof material	None Detected		100% Other	Black Non Fibrous Heterogeneous
1618042PLM_19					Dissolved
4746-7B	Roof material	None Detected		100% Other	Black Non Fibrous Heterogeneous
1618042PLM_20					Dissolved
4746-7C	Roof material	None Detected		100% Other	Black Non Fibrous Heterogeneous
1618042PLM_21	TEM				Dissolved
4746-8A - A	Asphalt shingle & felt	None Detected	10% Fiber Glass	90% Other	Black Non Fibrous Heterogeneous
1618042PLM_22	shingle				Dissolved

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Lab Sample ID	Lab Notes				Treatment
4746-8A - B	Asphalt shingle & felt	None Detected	70% Cellulose	30% Other	Black Fibrous Heterogeneous
1618042PLM_52	felt				Teased, Dissolved
4746-8B - A	Asphalt shingle & felt	None Detected	10% Fiber Glass	90% Other	Black Non Fibrous Heterogeneous
1618042PLM_23	shingle				Dissolved
4746-8B - B	Asphalt shingle & felt	None Detected	70% Cellulose	30% Other	Black Fibrous Heterogeneous
1618042PLM_53	felt				Teased, Dissolved
4746-8C - A	Asphalt shingle & felt	None Detected	10% Fiber Glass	90% Other	Black Non Fibrous Heterogeneous
1618042PLM_24	shingle - TEM				Dissolved
4746-8C - B	Asphalt shingle & felt	None Detected	70% Cellulose	30% Other	Black Fibrous Heterogeneous
1618042PLM_54	felt - TEM				Teased, Dissolved
4746-9A - A	Linoleum	None Detected	30% Cellulose	70% Other	Red Non Fibrous Heterogeneous
1618042PLM_25	linoleum 1				Teased
4746-9A - B	Linoleum	None Detected	30% Cellulose	70% Other	Orange Non Fibrous Heterogeneous
1618042PLM_55	linoleum 2				Teased
4746-9B - A	Linoleum	None Detected	30% Cellulose	70% Other	Red Non Fibrous Heterogeneous
1618042PLM_26	linoleum 1				Teased

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Lab Sample ID	Lab Notes				Treatment
4746-9B - B	Linoleum	None Detected	30% Cellulose	70% Other	Orange Non Fibrous Heterogeneous
1618042PLM_56	linoleum 2				Teased
4746-9C - A	Linoleum	None Detected	30% Cellulose	70% Other	Red Non Fibrous Heterogeneous
1618042PLM_27	linoleum 1 - TEM				Teased
4746-9C - B	Linoleum	None Detected	30% Cellulose	70% Other	Orange Non Fibrous Heterogeneous
1618042PLM_57	linoleum 2 - TEM				Teased
4746-10A - A	Asphalt shingle	None Detected	10% Fiber Glass	90% Other	Gray, Black Non Fibrous Heterogeneous
1618042PLM_28	shingle				Dissolved
4746-10A - B	Asphalt shingle	None Detected	70% Cellulose	30% Other	Black Fibrous Heterogeneous
1618042PLM_58	felt				Teased, Crushed
4746-10B - A	Asphalt shingle	None Detected	10% Fiber Glass	90% Other	Gray, Black Non Fibrous Heterogeneous
1618042PLM_29	shingle				Dissolved
4746-10B - B	Asphalt shingle	None Detected	70% Cellulose	30% Other	Black Fibrous Heterogeneous
1618042PLM_59	felt				Teased, Dissolved
4746-10C - A	Asphalt shingle	None Detected	10% Fiber Glass	90% Other	Gray, Black Non Fibrous Heterogeneous
1618042PLM_30	shingle - TEM				Dissolved

**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 SAL. 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 (63)

Analyst

Approved Signatory





# Bulk Asbestos Analysis

By Polarized Light Microscopy  
EPA Method: 600/R-93/116 and 600/M4-82-020



NVLAP Lab Code: 200664-0

**Customer:** ECS Carolinas, LLP  
3820 Faber Place  
North Charleston, SC 29405

**Attn:** Justin Roth

**Lab Order ID:** 1618042  
**Analysis ID:** 1618042\_PLM  
**Date Received:** 9/13/2016  
**Date Reported:** 9/19/2016

**Project:** 4746 Wright

Sample ID	Description	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes
Lab Sample ID	Lab Notes				Treatment
4746-10C - B	Asphalt shingle	None Detected	70% Cellulose	30% Other	Black Fibrous Heterogeneous
1618042PLM_60	felt - TEM				Teased, Dissolved
4746-11A - A	Asphalt shingle	None Detected	10% Fiber Glass	90% Other	Gray, Black Non Fibrous Heterogeneous
1618042PLM_31	shingle				Dissolved
4746-11A - B	Asphalt shingle	None Detected	70% Cellulose	30% Other	Black Fibrous Heterogeneous
1618042PLM_61	felt				Teased, Dissolved
4746-11B - A	Asphalt shingle	None Detected	10% Fiber Glass	90% Other	Gray, Black Non Fibrous Heterogeneous
1618042PLM_32	shingle				Dissolved
4746-11B - B	Asphalt shingle	None Detected	70% Cellulose	30% Other	Black Fibrous Heterogeneous
1618042PLM_62	felt				Teased, Dissolved
4746-11C - A	Asphalt shingle	None Detected	10% Fiber Glass	90% Other	Gray, Black Non Fibrous Heterogeneous
1618042PLM_33	shingle - TEM				Dissolved
4746-11C - B	Asphalt shingle	None Detected	70% Cellulose	30% Other	Black Fibrous Heterogeneous
1618042PLM_63	felt - TEM				Teased, Dissolved

**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 SAL. 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 (63)

Analyst

Approved Signatory



**Scientific Analytical Institute**  
 4604 Dundas Dr. Greensboro, NC 27407  
 Phone: 336.292.3888 Fax: 336.292.3313  
 www.sailab.com lab@sailab.com

Lab Use Only  
 Lab Order ID: 1618042  
 Client Code: \_\_\_\_\_

Company Contact Information	
Company: ECS Carolinas, LLP	Contact: Justin Roth
Address: 3820 Faber Place Drive, Suite 500 North Charleston, SC 29405	Phone <input type="checkbox"/> : 843-654-4448 Fax <input type="checkbox"/> : Email <input type="checkbox"/> : jRoth@ecslimited.com

Billing/Invoice Information	Turn Around Times	
Company: SAME	90 Min. <input type="checkbox"/>	48 Hours <input type="checkbox"/>
Contact:	3 Hours <input type="checkbox"/>	72 Hours <input type="checkbox"/>
Address:	6 Hours <input type="checkbox"/>	96 Hours <input type="checkbox"/>
	12 Hours <input type="checkbox"/>	120 Hours <input checked="" type="checkbox"/>
	24 Hours <input type="checkbox"/>	144 Hours <input type="checkbox"/>

PO Number: \_\_\_\_\_  
 Project Name/Number: 4746 Wright

Asbestos Test Types	
PLM EPA 600/R-93/116 (PLM)	<input checked="" type="checkbox"/>
Positive stop	<input checked="" type="checkbox"/>
PLM Point Count 400 (PT4)	<input type="checkbox"/>
PLM Point Count 1000 (PTM)	<input type="checkbox"/>
PCM NIOSH 7400-A Rules (PCM)	<input type="checkbox"/>
B Rules (PCB) <input type="checkbox"/> TWA (PTA) <input type="checkbox"/>	
TEM AHERA (AHE)	<input type="checkbox"/>
TEM Level II (LI)	<input type="checkbox"/>
TEM NIOSH 7402 (TNI)	<input type="checkbox"/>
TEM Bulk Qualitative (TBL)	<input type="checkbox"/>
TEM Bulk Chatfield (TBS)	<input checked="" type="checkbox"/>
TEM Bulk Quantitative (TBQ)	<input type="checkbox"/>
TEM Wipe ASTM D6480-05	<input type="checkbox"/>
TEM Microvac ASTM D5755-02	<input type="checkbox"/>
TEM Water EPA 100.2 (TW1)	<input type="checkbox"/>
Other: _____	<input type="checkbox"/>

Sample ID #	Volume/Area	Comments
		As per SCDHEC requirements. Please analyze all samples by PLM. For NOB Materials, please analyze one sample from each group by TEM if all of the samples are reported negative by PLM.

Accepted   
 Rejected

Total # of Samples 33

Relinquished by	Date/Time	Received by	Date/Time
<u>[Signature]</u>	<u>9/12/16 - 5:00 PM</u>	<u>[Signature]</u>	<u>9/13 10:00</u>



1618042  
Job 2

Asbestos Survey Field Data Sheet

Project Name: 4746 Wright  
Project Location: \_\_\_\_\_  
Building Number: \_\_\_\_\_

Sampled By: JAR  
Project Manager: \_\_\_\_\_  
Project Number: \_\_\_\_\_

Sample No.	Homogeneous Area	Sample Description	Quantity	Friable Y/N	Location	Accessibility/Potential for Damage
4746-1A,B,C	Floor	12x12 VFT	50SF	N	Kitchen	multiple layers
4746-2A,B,C	Floor	White linoleum	10SF	N	Rear Entrance	
4746-3A,B,C	Floor	Off white linoleum	50SF	N	Between	
4746-4A,B,C	Floor	Orange linoleum	100SF	N	Bed Room #1	
4746-5A,B,C	Windows	Caulking	200LF	N	Windows	
4746-6A,B,C	Floor	Tan linoleum	100SF	N	Bed Room #2	
4746-7A,B,C	Roof	Roof material	800SF	N	Roof	
4746-8A,B,C	Roof	Asphalt shingle + felt	100SF	N	Entrances	
4746-9A,B,C	Floor	linoleum	100SF	N	Bed Room #3	
4746-10A,B,C	Roof	Asphalt shingle	100SF	N	Shed #1	
4746-11A,B,C	Roof	Asphalt shingle	100SF	N	Shed #2	

Surveyor Signature: \_\_\_\_\_

Date: 9/12/16



# Bulk Asbestos Analysis by Transmission Electron Microscopy

Semi-Quantitative  
Chatfield SOP 1988-02 Rev. 1

**Customer:** ECS Carolinas, LLP  
3820 Faber Place  
North Charleston, SC 29405

**Attn:** Justin Roth

**Lab Order ID:** 1618488

**Project:** 4746 Wright

**Analysis ID:** 1618488\_TBS

**Date Received:** 9/19/2016

**Date Reported:** 9/26/2016

Sample ID	Description	Organic	Acid Sol.	Asbestos	LCL-UCL
<i>Lab Sample ID</i>	<i>Lab Notes</i>	(Wt. %)	(Wt. %)	(Wt. %)	(Wt. %)
4746-1C-A	12x12 VFT	19%	77%	None Detected	
1618488TBS_1	floor tile				
4746-1C-B	12x12 VFT	53%	-	None Detected	
1618488TBS_2	mastic				
4746-1C-C	12x12 VFT	82%	-	None Detected	
1618488TBS_3	linoleum				
4746-1C-D	12x12 VFT	82%	-	None Detected	
1618488TBS_4	mastic				
4746-2C	White linoleum	60.0%	-	None Detected	
1618488TBS_5	linoleum				
4746-3C-B	Off white linoleum	85%	-	None Detected	
1618488TBS_6	mastic				

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Ired Gulley (21)

**Analyst**

**Approved Signatory**



# Bulk Asbestos Analysis by Transmission Electron Microscopy

Semi-Quantitative  
Chatfield SOP 1988-02 Rev. 1

**Customer:** ECS Carolinas, LLP  
3820 Faber Place  
North Charleston, SC 29405

**Attn:** Justin Roth

**Lab Order ID:** 1618488

**Project:** 4746 Wright

**Analysis ID:** 1618488\_TBS

**Date Received:** 9/19/2016

**Date Reported:** 9/26/2016

Sample ID	Description	Organic	Acid Sol.	Asbestos	LCL-UCL
<i>Lab Sample ID</i>	<i>Lab Notes</i>	(Wt. %)	(Wt. %)	(Wt. %)	(Wt. %)
4746-3C-A	Off white linoleum	34%	-	None Detected	
1618488TBS_21	linoleum				
4746-4C-A	Orange linoleum	78%	-	None Detected	
1618488TBS_7	linoleum 1				
4746-4C-B	Orange linoleum	83%	-	None Detected	
1618488TBS_8	linoleum 2				
4746-4C-C	Orange linoleum	72%	-	None Detected	
1618488TBS_9	mastic				
4746-5C	Caulking	21%	-	None Detected	
1618488TBS_10	mastic				
4746-6C	Tan linoleum	50.0%	-	None Detected	
1618488TBS_11					

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Ired Gulley (21)

**Analyst**

**Approved Signatory**



# Bulk Asbestos Analysis by Transmission Electron Microscopy

Semi-Quantitative  
Chatfield SOP 1988-02 Rev. 1

**Customer:** ECS Carolinas, LLP  
3820 Faber Place  
North Charleston, SC 29405

**Attn:** Justin Roth

**Lab Order ID:** 1618488

**Project:** 4746 Wright

**Analysis ID:** 1618488\_TBS

**Date Received:** 9/19/2016

**Date Reported:** 9/26/2016

Sample ID	Description	Organic	Acid Sol.	Asbestos	LCL-UCL
<i>Lab Sample ID</i>	<i>Lab Notes</i>	(Wt. %)	(Wt. %)	(Wt. %)	(Wt. %)
4746-7C	Roof material	82%	-	None Detected	
1618488TBS_12					
4746-8C-A	Asphalt shingle & felt	18%	-	None Detected	
1618488TBS_13	shingle				
4746-8C-B	Asphalt shingle & felt	87%	-	None Detected	
1618488TBS_14	felt				
4746-9C-A	Linoleum	56%	-	None Detected	
1618488TBS_15	linoleum 1				
4746-9C-B	Linoleum	64%	-	None Detected	
1618488TBS_16	linoleum 2				
4746-10C-A	Asphalt shingle	30.0%	-	None Detected	
1618488TBS_17	shingle				

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Ired Gulley (21)

**Analyst**

**Approved Signatory**



# Bulk Asbestos Analysis by Transmission Electron Microscopy

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

**Customer:** ECS Carolinas, LLP  
3820 Faber Place  
North Charleston, SC 29405

**Attn:** Justin Roth

**Lab Order ID:** 1618488

**Analysis ID:** 1618488\_TBS

**Date Received:** 9/19/2016

**Date Reported:** 9/26/2016

**Project:** 4746 Wright

Sample ID	Description	Organic	Acid Sol.	Asbestos	LCL-UCL
<i>Lab Sample ID</i>	<i>Lab Notes</i>	<i>(Wt. %)</i>	<i>(Wt. %)</i>	<i>(Wt. %)</i>	<i>(Wt. %)</i>
4746-10C-B	Asphalt shingle	97%	-	None Detected	
1618488TBS_18	<i>felt</i>				
4746-11C-A	Asphalt shingle	23%	-	None Detected	
1618488TBS_19	<i>shingle</i>				
4746-11C-B	Asphalt shingle	97%	-	None Detected	
1618488TBS_20	<i>felt</i>				

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Ired Gulley (21)

\_\_\_\_\_  
**Analyst**

Scientific Analytical Institute, Inc. 4604 Dundas Dr. Greensboro, NC 27407 (336) 292-3888

\_\_\_\_\_  
**Approved Signatory**



**Scientific Analytical Institute**  
 4604 Dundas Dr. Greensboro, NC 27407  
 Phone: 336.292.3888 Fax: 336.292.3313  
 www.sailab.com lab@sailab.com

1118488

Lab Use Only: 1118488  
 Lab Order ID: 1618042  
 Client Code: \_\_\_\_\_

Company Contact Information	
Company: ECS Carolinas, LLP	Contact: Justin Roth
Address: 3820 Faber Place Drive, Suite 500 North Charleston, SC 29405	Phone <input type="checkbox"/> : 843-654-4448 Fax <input type="checkbox"/> : Email <input type="checkbox"/> jRoth@ecslimited.com

Asbestos Test Types	
PLM EPA 600/R-93/116 (PLM)	<input checked="" type="checkbox"/>
Positive stop	<input checked="" type="checkbox"/>
PLM Point Count 400 (PT4)	<input type="checkbox"/>
PLM Point Count 1000 (PTM)	<input type="checkbox"/>
PCM NIOSH 7400-A Rules (PCM)	<input type="checkbox"/>
B Rules (PCB) <input type="checkbox"/> TWA (PTA) <input type="checkbox"/>	
TEM AHERA (AHE)	<input type="checkbox"/>
TEM Level II (LII)	<input type="checkbox"/>
TEM NIOSH 7402 (TNf)	<input type="checkbox"/>
TEM Bulk Qualitative (TBL)	<input type="checkbox"/>
TEM Bulk Chatfield (TBS)	<input checked="" type="checkbox"/>
TEM Bulk Quantitative (TBQ)	<input type="checkbox"/>
TEM Wipe ASTM D6480-05	<input type="checkbox"/>
TEM Microvac ASTM D5755-02	<input type="checkbox"/>
TEM Water EPA 100.2 (TW1)	<input type="checkbox"/>
Other: _____	<input type="checkbox"/>

Billing/Invoice Information	Turn Around Times	
Company: SAME	90 Min. <input type="checkbox"/>	48 Hours <input type="checkbox"/>
Contact:	3 Hours <input type="checkbox"/>	72 Hours <input type="checkbox"/>
Address:	6 Hours <input type="checkbox"/>	96 Hours <input type="checkbox"/>
	12 Hours <input type="checkbox"/>	120 Hours <input checked="" type="checkbox"/>
	24 Hours <input type="checkbox"/>	144 Hours <input type="checkbox"/>

PO Number: \_\_\_\_\_  
 Project Name/Number: 4746 Wright

Sample ID #	Volume/Area	Comments
		As per SCDHEC requirements. Please analyze all samples by PLM. For NOB Materials, please analyze one sample from each group by TEM if all of the samples are reported negative by PLM.

Accepted   
 Rejected

Total # of Samples 33

Relinquished by	Date/Time	Received by	Date/Time
<u>[Signature]</u>	<u>9/12/16 - 5:00pm</u>	<u>[Signature]</u>	<u>9/13 10:00</u>





1618042  
1618488  
Job 2

Asbestos Survey Field Data Sheet

Project Name: 4746 Wright      Sampled By: JAR  
Project Location: \_\_\_\_\_      Project Manager: \_\_\_\_\_  
Building Number: \_\_\_\_\_      Project Number: \_\_\_\_\_

Sample No.	Homogeneous Area	Sample Description	Quantity	Friable Y/N	Location	Accessibility/Potential for Damage
4746-1A,B,C	Floor	12x12 VFT	50SF	N	Kitchen	monthly 6 bags
4746-2A,B,C	Floor	White linoleum	10SF	N	near Entrance	
4746-3A,B,C	Floor	off white linoleum	50SF	N	Bedroom	
4746-4A,B,C	Floor	Orange linoleum	100SF	N	Bed Room #1	
4746-5A,B,C	Windows	Caulking	200LF	N	windows	
4746-6A,B,C	Floor	Tan linoleum	100SF	N	Bed Room #2	
4746-7A,B,C	Roof	Roof material	500SF	N	Roof	
4746-8A,B,C	Roof	Asphalt shingle felt	100SF	N	entrances	
4746-9A,B,C	Floor	linoleum	100SF	N	Bed Room #3	
4746-10A,B,C	Roof	Asphalt shingle	100SF	N	shed #1	
4746-11A,B,C	Roof	Asphalt shingle	100SF	N	Shed #2	

Surveyor Signature: \_\_\_\_\_      Date: 9/27/16

---

**SCDHEC ISSUED**  
Asbestos ID Card

---

**Braxton B Dawson III**

Expiration Date

<b>CONSULTBI</b>	<b>BI-01194</b>	<b>03/16/17</b>
<b>CONSULTPD</b>	<b>PD-00163</b>	<b>03/16/17</b>



**SCDHEC ISSUED**  
Asbestos ID Card

**Lindsey Lucas**



Expiration Date

<b>CONSULTBI</b>	<b>BI-00603</b>	<b>06/21/17</b>
<b>CONSULTPD</b>	<b>PD-00140</b>	<b>08/18/16</b>
<b>AIRAMPLER</b>	<b>AS-00176</b>	<b>06/20/17</b>