
To:	Addendum #1 Charleston Farms Neighborhood, Village Renaissance Project for City of Hanahan	From:	Josh Lilly, PE 4969 Centre Pointe Drive, Suite 200 North Charleston SC 29418-6952
File:	178420944	Date:	January 9, 2020

Reference: **Addendum – Charleston Farms Neighborhood, Village Renaissance Project**

This Addendum is being issued for the bid of the Charleston Farms Neighborhood, Village Renaissance Project. This addendum shall be acknowledged on the bid form.

The following changes have been made to the bidding and contract documents dated December 2nd, 2019.

Section 02221: Building Demolition:

Include the asbestos report prepared by Trident Environmental for the single-family home that is to be demolished. This report may be used for the SCDHEC Notification and for preparing your bid.

Attachments:

Asbestos Report

STANTEC CONSULTING SERVICES INC.

Josh Lilly, P.E.
Civil Engineer
Phone: (843) 740-6332
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Josh.Lilly@stantec.com

End of Addendum

COMPREHENSIVE ASBESTOS SURVEY

**SINGLE-FAMILY RESIDENCE
5813 KNIGHT STREET
HANAHAN, SOUTH CAROLINA 29410**



Prepared For:



**Attention: Mr. Jeff Hajek
1255 Yeamans Hall Road
Hanahan, SC 29410
(843) 885-5045**

Performed By:

TES

Trident Environmental Services, Inc.

*Consultants in Industrial Hygiene and Safety
500 Oakbrook Lane, Suite E
Summerville, SC 29485
(843) 873-3648*

COMPREHENSIVE ASBESTOS SURVEY

Single-Family Residence
5813 Knight Street
Hanahan, SC 29410

TABLE OF CONTENTS

	Page
Executive Summary	1
Background	2
Asbestos Survey	4
• Asbestos Investigative Procedures.....	4
• Asbestos Abbreviations and Hazard Assessment Key.....	6
• Homogenous Area Estimated Footage Table	7
• Asbestos Summary.....	8
• Asbestos Sample Data Table	9
Conclusions / Recommendations	11
• Asbestos Inspection	11
Photographs / Diagrams	12
Inspector / Laboratory Accreditation	16
Laboratory Reports / Chain of Custody Forms	19
• PLM Report	19
• TEM Report	21
• Chain of Custody Forms	22

EXECUTIVE SUMMARY

The comprehensive asbestos survey performed by Trident Environmental Services, Inc. on August 30, 2019 of the Single-Family Residence located at 5813 Knight Street in Hanahan, South Carolina **did not** reveal the presence of asbestos containing building materials. The following summary exhibits the asbestos containing building materials (ACBM) that were identified in the inspection.

Asbestos

Description	Type
NO ASBESTOS DETECTED	

RACM – Regulated Asbestos Containing Material

*PACM – Presumed Asbestos Containing Material

The identified ACBM includes the item(s) listed above. All removal work of the identified ACBM should be performed by a properly trained and licensed abatement contractor prior to the planned renovation/demolition activities.

BACKGROUND

Trident Environmental Services, Inc. was contracted by City of Hanahan to perform an asbestos survey of the Single-Family Residence located at 5813 Knight Street in Hanahan, South Carolina. The survey was performed in order to satisfy the NESHAP requirements for renovation and/or demolition. The single-story structure, constructed in 1965, is built on foundation with crawlspace and consists of approximately 1,021 square feet.

Interior walls are wood paneling and drywall with joint compound applied at seams and patches. Ceilings are drywall. Floor finishes include hardwood and vinyl sheet flooring. Exterior construction is hardwood plank siding. Roofing consist of asphalt shingles with felt paper. The bedroom roof and walls are damaged and the floor is collapsing.

Non-suspect materials include the following: ceramic or natural stone, brick, concrete or concrete block, rubber cove base, metal ducts or structural members, rubber, foam, fiberglass insulation or wood.

Asbestos

The inspection was conducted to identify ACBM which may be disturbed during the renovation/demolition activities. The identification of ACBM will aid in the prevention of occupational exposures and/or environmental releases of airborne asbestos fibers. Identification of ACBM also complies with Title 40 Code of the Federal Regulations, Part 61, and South Carolina Department of Health and Environmental Control (SCDHEC) Regulation 61-86.1, along with Title 29 Code of Federal Regulations, Part 1926 enforced by the Occupational Safety and Hazard Administration (OSHA). The Asbestos Survey describes the investigative procedures utilized, results of the suspect ACBM sampled/analyzed, and recommendations regarding the structures as related to asbestos.

Visual Inspection

The survey began with a visual observation of building and/or structure components to identify homogeneous areas of suspect ACBM. A homogeneous area consists of building materials, which appear similar throughout in terms of color, texture and date of application. Building materials not identified as concrete, glass, wood, masonry, metal, rubber, foam or plastic were not considered ACBM.

Limitations

There is a possibility that suspect ACM may be located in areas that are inaccessible by limited destructive testing and may be present in the following locations including but not limited to: above hard ceilings such as drywall or plaster where this no access point, chases, wall cavities, coatings, waterproofing or mastic behind exterior brick veneer, waterproofing, felt paper or other type of moisture barrier, vinyl floor coverings under non-load bearing walls, cabinets, ceramic tiles, wood floors or floors with multiple layers of sub-flooring, roofing. In the event that suspect ACM is discovered during renovation or demolition activities, work should stop until receipt of laboratory results confirming the material is non asbestos.

ASBESTOS SURVEY

Asbestos Investigative Procedures

Trident Environmental Services, Inc. conducted an inspection for suspect ACM on August 30, 2019 of the Single-Family Residence located at 5813 Knight Street in Hanahan, South Carolina. The asbestos survey was performed by observing and sampling suspect building materials. Significant destructive testing was not utilized during the inspection. There is a possibility that suspect materials exist in inaccessible areas such as wall cavities and pipe chases. If any additional suspect ACM are discovered during the course of demolition activities, bulk samples should be extracted to identify the presence, or absence, of asbestos prior to continuation of work activities.

A sampling strategy was developed to provide representative samples for analysis. Samples were then extracted from a variety of suspect ACM. Bulk samples collected were recorded on a Chain-of-Custody record and submitted to Electron Microscopy Services Laboratory Analytical, Inc. (EMSL) a Polarized Light Microscopy (PLM) laboratory. The laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP), which is administered by the National Institute of Standards and Technology (NIST). EMSL is accredited by NVLAP for the analysis of bulk asbestos by PLM and Transmission Electron Microscopy (TEM) ([NVLAP Lab Code: 200841-0](#)). Non Friable Organically Bound (NOB) samples were analyzed by TEM.

The suspect materials were analyzed by trained microscopists utilizing PLM techniques coupled with dispersion staining in accordance with EPA Test Method Title 40 Code of Federal Regulations, Chapter I (1-1-87 edition), Part 763, Subpart F- Appendix A. This method identifies asbestos mineral fibers based on six optical characteristics: morphology, birefringence, refractive index, extinction angle, sign of elongation and dispersion staining colors. The laboratory analysis reports the specific type of asbestos identified (there are six asbestos minerals) and the percentage of asbestos present. The EPA and OSHA defines materials as asbestos containing if an asbestos content of greater than one percent (>1%) is detected in a representative sample.

SCDHEC require NOB materials with negative or trace results by PLM to be analyzed by at least one TEM. SCDHEC in accordance with ASTM E 2356-04 defines NOB materials as “materials that are not friable and that consist of fibers and other particulate matter embedded in a solid matrix of asphalt, vinyl or other organic substances.” Examples of NOB materials include but are not limited to flooring materials such as vinyl floor tiles, vinyl sheet flooring, adhesives, mastics, asphalt shingles, roofing materials, glazing, caulks, and cove base.

The EPA classifies ACBM into two categories, friable and non-friable. A friable material creates a greater health hazard due to the fact that it may be “crumbled, pulverized or reduced to powder by the forces expected to act upon it in the course of demolition or renovation operations.”

Friable Asbestos material means any material containing more than one percent asbestos as determined using the method specified in appendix A, subpart F, 40 CFR part 763 section 1, Polarized Light Microscopy, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by polarized light microscopy (PLM), verify the asbestos content by point counting using PLM.

Category I Non Friable Asbestos-Containing Material (ACM) means asbestos-containing packings, gaskets, resilient floor coverings, and asphalt roofing products containing more than one percent asbestos as determined using the method specified in appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy.

Category II Non Friable ACM means any material, excluding Category I non friable ACM, containing more than one percent asbestos as determined using the methods specified in appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. (cement siding, transite board shingles, etc.)

Regulated Asbestos-Containing Material (RACM) means (a) Friable asbestos material, (b) Category I non friable ACM that has become friable, (c) Category I non friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II non friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

The following section summarizes the sample numbers, locations, type material, asbestos type, percent of asbestos detected, present condition of the asbestos containing material, potential for disturbance, and hazard assessment ratings. The asbestos sample laboratory analyses and chain of custody records are included at the end of this report.

Asbestos Abbreviations and Hazard Assessment Key

The EPA and SCDHEC require that confirmed ACBM is given a hazard assessment based on its present condition and potential for future disturbance. This hazard assessment is used as a tool for prioritization in future remedial actions regarding the ACBM. The following key demonstrates the criteria that make up the hazard assessment.

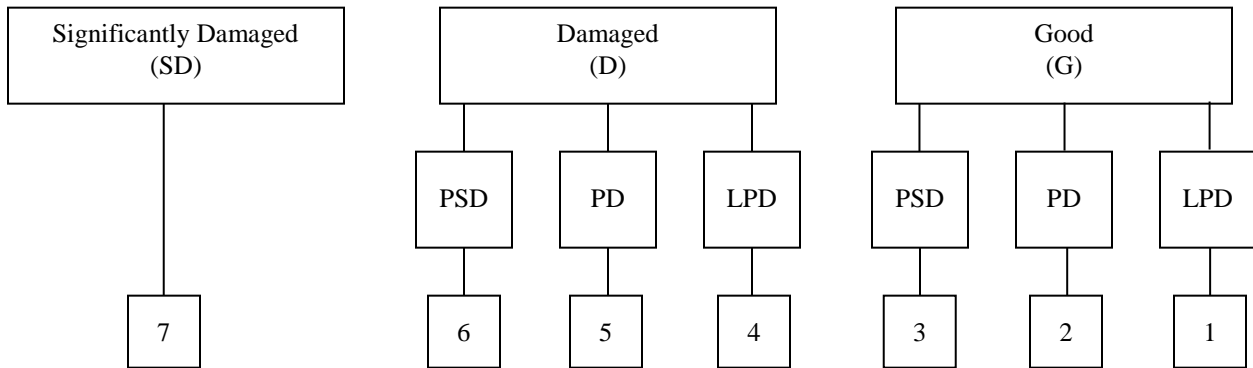
Present Condition

- F = Friable
- NF = Non-friable
- G = Good (very localized limited damage)
- D = Damaged (<10% distributed and/or <25% localized)
- S = Significantly Damaged (≥10% distributed and/or 25% localized)

Potential for Future Disturbance

- LPD = Low Potential for Disturbance (Contact, Vibration, and/or Air Erosion – low concern)
- PD = Potential for Damage (Contact, Vibration, and/or Air Erosion – moderate concern)
- PSD = Potential for Significant Damage (Contact, Vibration and/or Air Erosion – high concern)

Hazard Assessment



HOMOGENOUS AREA ESTIMATED QUANTITY TABLE
Single-Family Residence – 5813 Knight Street – Hanahan, SC

HOMOGENOUS AREA ID #	DESCRIPTION	ESTIMATED QUANTITY
01	Roof Shingle	1,203 SF
02	Roof Felt Paper	1,203 SF
03	Ceiling Texture	432 SF
04	Drywall	4,012 SF
05	Joint Compound	4,012 SF
06	Floor Felt Paper	432 SF
07	Vinyl Sheet Flooring (green/beige)	282 SF
08	Vinyl Sheet Flooring (green/red)	282 SF
09	Sink Coating (white)	2 SF
10	Exterior Caulking	24 SF

ASBESTOS SUMMARY
Single-Family Residence – 5813 Knight Street – Hanahan, SC

DESCRIPTION	TYPE	LOCATION	ESTIMATED QUANTITY
NO ASBESTOS DETECTED			

RACM – Regulated Asbestos Containing Material

PACM – Presumed Asbestos Containing Material

The estimated quantities provided are to be verified by abatement contractor and building owner with any discrepancies reported to Consultant and addressed prior to abatement. Removal costs vary depending on the contractor, the quantity/condition, and the accessibility/location of the ACBM.

ASBESTOS SAMPLE DATA TABLE

Single-Family Residence – 5813 Knight Street – Hanahan, SC

DESCRIPTION OF EACH SAMPLE AREA				LABORATORY		ASSESSMENT OF MATERIALS	
Homogeneous Are a & Sample ID	Description	Unit # / Room	Friable (Y/N)	Asbestos Present		Condition Assessment Category	Hazard Assessment Category
				Percent	Asbestos		
01-01	Roof Shingle	Roof	N	0.0%	ND	7	N/A
01-02	Roof Shingle	Roof	N	0.0%	ND	7	N/A
01-03 T	Roof Shingle	Roof	N	0.0%	ND	7	N/A
02-04	Roof Felt Paper	Roof	N	0.0%	ND	7	N/A
02-05	Roof Felt Paper	Roof	N	0.0%	ND	7	N/A
02-06 T	Roof Felt Paper	Roof	N	0.0%	ND	7	N/A
03-07	Ceiling Texture	Living Room	Y	0.0%	ND	4	N/A
03-08	Ceiling Texture	Living Room	Y	0.0%	ND	4	N/A
03-09	Ceiling Texture	Living Room	Y	0.0%	ND	4	N/A
04-10	Drywall	Living Room	Y	0.0%	ND	7	N/A
04-11	Drywall	Living Room	Y	0.0%	ND	7	N/A
04-12	Drywall	Living Room	Y	0.0%	ND	7	N/A
05-13	Joint Compound	Living Room	Y	0.0%	ND	4	N/A
05-14	Joint Compound	Living Room	Y	0.0%	ND	4	N/A
05-15	Joint Compound	Bedroom	Y	0.0%	ND	4	N/A
05-16	Joint Compound	Kitchen	Y	0.0%	ND	4	N/A
05-17	Joint Compound	Kitchen	Y	0.0%	ND	4	N/A
06-18	Floor Felt Paper	Living Room	N	0.0%	ND	7	N/A
06-19	Floor Felt Paper	Living Room	N	0.0%	ND	7	N/A
06-20 T	Floor Felt Paper	Living Room	N	0.0%	ND	7	N/A
07-21	Vinyl Sheet Flooring (green/beige)	Living Room – Layer 1	Y	0.0%	ND	7	N/A
07-22	Vinyl Sheet Flooring (green/beige)	Living Room – Layer 1	Y	0.0%	ND	7	N/A
07-23 T	Vinyl Sheet Flooring (green/beige)	Living Room – Layer 1	Y	0.0%	ND	7	N/A
08-24	Vinyl Sheet Flooring (green/red)	Living Room – Layer 2	Y	0.0%	ND	7	N/A
08-25	Vinyl Sheet Flooring (green/red)	Living Room – Layer 2	Y	0.0%	ND	7	N/A
08-26 T	Vinyl Sheet Flooring (green/red)	Living Room – Layer 2	Y	0.0%	ND	7	N/A
09-27	Sink Coating (white)	Kitchen	N	0.0%	ND	7	N/A

Assessment Categories

- | | |
|--|---|
| (1) Thermal Systems Insulation – Good Condition | (5) Surfacing – Damaged |
| (2) Thermal Systems Insulation – Damaged | (6) Surfacing – Significantly Damaged |
| (3) Thermal Systems Insulation – Significantly Damaged | (7) Miscellaneous – Good Condition |
| (4) Surfacing – Good Condition | (8) Miscellaneous – Damaged |
| | (9) Miscellaneous – Significantly Damaged |

Asbestos Present

- | | |
|----------------------|--------------------------|
| AMOS – Amosite | ACTI – Actinolite |
| CHRY – Chrysotile | ND – None Detected |
| CROC – Crocidolite | NT – Not Tested |
| ANTH – Anthophyllite | PACM – Presumed ACM |
| TREM – Tremolite | Asbestos Detected |

ASBESTOS SAMPLE DATA TABLE

Single-Family Residence – 5813 Knight Street – Hanahan, SC

DESCRIPTION OF EACH SAMPLE AREA				LABORATORY		ASSESSMENT OF MATERIALS	
Homogeneous Area & Sample ID	Description	Unit # / Room	Friable (Y/N)	Asbestos Present		Condition Assessment Category	Hazard Assessment Category
				Percent	Asbestos		
09-28	Sink Coating (white)	Kitchen	N	0.0%	ND	7	N/A
09-29 T	Sink Coating (white)	Kitchen	N	0.0%	ND	7	N/A
10-30	Exterior Caulking	Door	N	0.0%	ND	7	N/A
10-31	Exterior Caulking	Door	N	0.0%	ND	7	N/A
10-32 T	Exterior Caulking	Door	N	0.0%	ND	7	N/A

Assessment Categories

- | | |
|--|---|
| (1) Thermal Systems Insulation – Good Condition | (5) Surfacing – Damaged |
| (2) Thermal Systems Insulation – Damaged | (6) Surfacing – Significantly Damaged |
| (3) Thermal Systems Insulation – Significantly Damaged | (7) Miscellaneous – Good Condition |
| (4) Surfacing – Good Condition | (8) Miscellaneous – Damaged |
| | (9) Miscellaneous – Significantly Damaged |

Asbestos Present

- | | |
|----------------------|--------------------------|
| AMOS – Amosite | ACTI – Actinolite |
| CHRY – Chrysotile | ND – None Detected |
| CROC – Crocidolite | NT – Not Tested |
| ANTH – Anthophyllite | PACM – Presumed ACM |
| TREM – Tremolite | Asbestos Detected |

CONCLUSIONS/RECOMMENDATIONS

Asbestos Inspection

The comprehensive asbestos survey performed by Trident Environmental Services, Inc. on August 30, 2019 of the Single-Family Residence located at 5813 Knight Street in Hanahan, South Carolina **did not** reveal the presence of ACBM. Renovation or demolition activities that will disturb the ACBM will require removal per state and federal regulations. Asbestos materials can become hazardous when, due to damage, disturbance, or deterioration over time, they release asbestos fibers into the air of the building. All areas that contain asbestos should be utilized in a controlled manner to reduce the potential for disturbance. OSHA requires notification to all trades/contractors about the condition of the ACBM to prevent possible occupational exposures.

Demolition activities in public and commercial buildings are regulated by OSHA, EPA, and SCDHEC. Code 40 of Federal Regulations Part 61, Subpart M, Final Rule, “National Emissions Standards for Hazardous Air Pollutants” (NESHAP), and SCDHEC Regulation 61-86.1 require the proper removal and disposal of ACBM that is affected by renovation or demolition. Demolition of the subject structures will require written notification, proper transportation, and disposal per state and federal regulations.

PHOTOGRAPHS

Single-Family Residence – 5813 Knight Street – Hanahan, SC



HOMOGENEOUS AREAS 01, 02
ROOF SHINGLE W/FELT PAPER



HOMOGENEOUS AREA 03
CEILING TEXTURE



HOMOGENEOUS AREA 04
DRYWALL



HOMOGENEOUS AREA 05
JOINT COMPOUND



HOMOGENEOUS AREA 06
FLOOR FELT PAPER



HOMOGENEOUS AREA 07
VINYL SHEET FLOORING (GREEN/BEIGE)

PHOTOGRAPHS

Single-Family Residence – 5813 Knight Street – Hanahan, SC



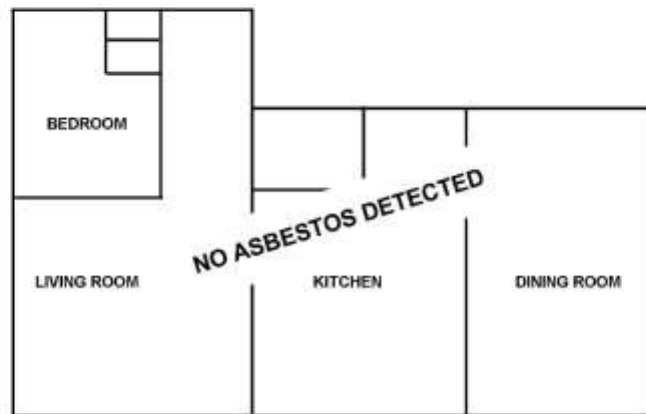
HOMOGENEOUS AREA 08
VINYL SHEET FLOORING (GREEN/RED)



HOMOGENEOUS AREA 09
SINK COATING (WHITE)



HOMOGENEOUS AREA 10
EXTERIOR CAULKING



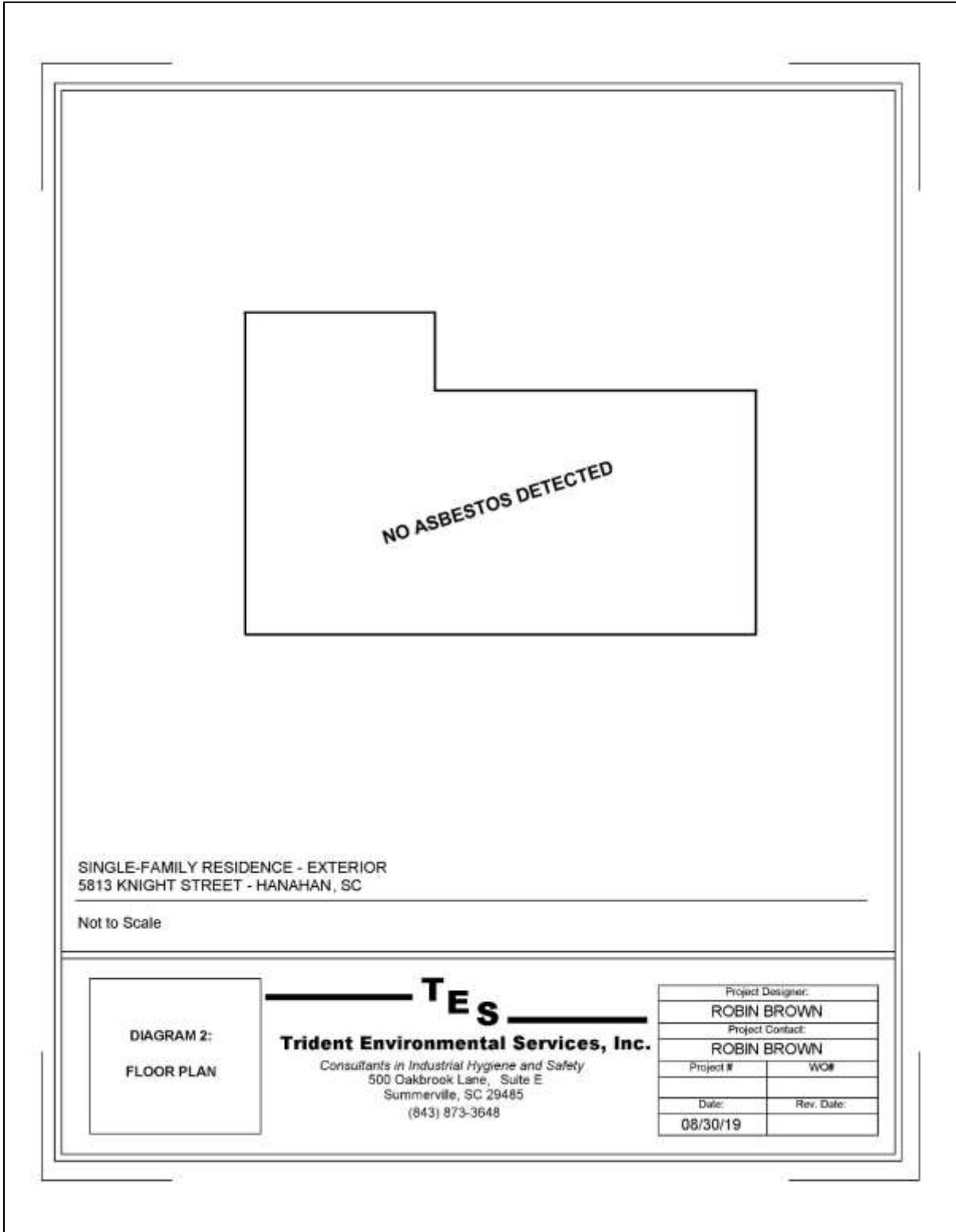
SINGLE-FAMILY RESIDENCE - INTERIOR
 5813 KNIGHT STREET - HANAHAN, SC

Not to Scale

DIAGRAM 1:
 FLOOR PLAN

TES
Trident Environmental Services, Inc.
Consultants in Industrial Hygiene and Safety
 500 Oakbrook Lane, Suite E
 Summerville, SC 29485
 (843) 873-3648

Project Designer:	
ROBIN BROWN	
Project Contact:	
ROBIN BROWN	
Project #	WO#
Date:	Rev. Date:
08/30/19	



COMPREHENSIVE ASBESTOS SURVEY

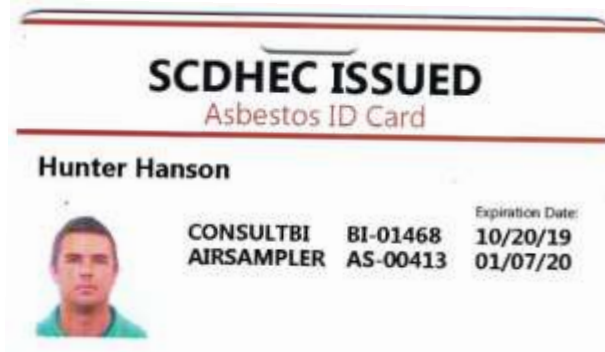
Inspection Date: 08/30/2019

Preparation Date: 09/19/2019

Inspected & Prepared By:



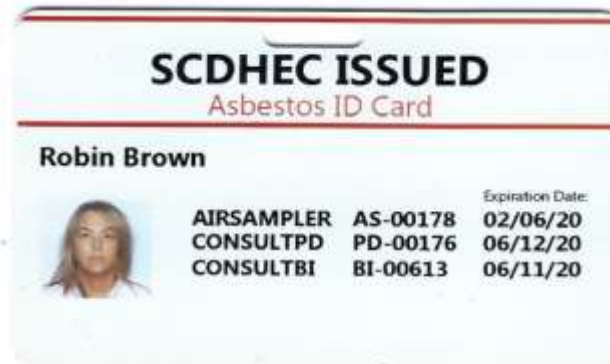
Hunter Hanson
S.C. Inspector License BI – 01468



Reviewed By:



Robin A. Brown
S.C. Inspector License BI-00513



United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 200841-0

EMSL Analytical, Inc.
Pineville, NC

is accredited by the National Voluntary Laboratory Accreditation Program for specific services,
listed on the Scope of Accreditation, for:

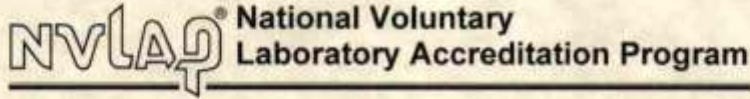
Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality
management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).



2019-07-01 through 2020-06-30
Effective Dates

A handwritten signature in black ink, appearing to read "Peter S. Lamm".
For the National Voluntary Laboratory Accreditation Program



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

EMSL Analytical, Inc.
10801 Southern Loop Blvd.
Pineville, NC 28134
Mr. Lee Plumley
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Email: lplumley@emsl.com
<http://www.emsl.com>

ASBESTOS FIBER ANALYSIS

NVLAP LAB CODE 200841-0

Bulk Asbestos Analysis

<u>Code</u>	<u>Description</u>
18/A01	EPA – 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

<u>Code</u>	<u>Description</u>
18/A02	U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.

For the National Voluntary Laboratory Accreditation Program



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 10801 Southern Loop Blvd Pineville, NC 28134
 Tel/Fax: (704) 525-2305 / (704) 525-2382
<http://www.EMSL.com> / charlotte@emsl.com

EMSL Order: 411908706
 Customer ID: TRID50
 Customer PO:
 Project ID:

Attention: Hunter Hanson
 Trident Environmental Services, Inc.
 500 Oakbrook Lane
 Suite E
 Summerville, SC 29485
Project: 5813 Knight Street

Phone: (843) 873-3648
Fax:
Received Date: 09/03/2019 8:30 AM
Analysis Date: 09/03/2019
Collected Date:

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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
01-01 #11908706-0001	Roof - Roof Shingle	Black Fibrous Homogeneous	10% Glass	8% Quartz 8% Ca Carbonate 74% Non-fibrous (Other)	None Detected
01-02 #11908706-0002	Roof - Roof Shingle	Gray/Black Fibrous Homogeneous	5% Glass	10% Quartz 20% Ca Carbonate 68% Non-fibrous (Other)	None Detected
02-04 #11908706-0003	Roof Felt Paper	Black Fibrous Homogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected
02-05 #11908706-0004	Roof Felt Paper	Black Fibrous Homogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected
03-07 #11908706-0005	Living Room - Ceiling Texture	White Non-Fibrous Homogeneous		35% Ca Carbonate 65% Non-fibrous (Other)	None Detected
03-08 #11908706-0006	Ceiling Texture	White Non-Fibrous Homogeneous		35% Ca Carbonate 65% Non-fibrous (Other)	None Detected
03-09 #11908706-0007	Ceiling Texture	Gray/White Non-Fibrous Homogeneous		30% Ca Carbonate 70% Non-fibrous (Other)	None Detected
04-10 #11908706-0008	Living Room - Drywall	Gray Fibrous Homogeneous	8% Cellulose	92% Non-fibrous (Other)	None Detected
04-11 #11908706-0009	Drywall	Gray Fibrous Homogeneous	8% Cellulose	92% Non-fibrous (Other)	None Detected
04-12 #11908706-0010	Drywall	Brown/Gray Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
05-13 #11908706-0011	Living Room - Joint Compound	White Non-Fibrous Homogeneous		40% Ca Carbonate 60% Non-fibrous (Other)	None Detected
05-14 #11908706-0012	Living Room - Joint Compound	White Non-Fibrous Homogeneous		40% Ca Carbonate 60% Non-fibrous (Other)	None Detected
05-15 #11908706-0013	Joint Compound	White Non-Fibrous Homogeneous		35% Ca Carbonate 65% Non-fibrous (Other)	None Detected
05-16 #11908706-0014	Joint Compound	White Non-Fibrous Homogeneous		40% Ca Carbonate 60% Non-fibrous (Other)	None Detected
05-17 #11908706-0015	Joint Compound	White Non-Fibrous Homogeneous		40% Ca Carbonate 60% Non-fibrous (Other)	None Detected
06-18 #11908706-0016	Living Room - Floor Felt Paper	Black Fibrous Homogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected

Initial report from: 08/04/2019 08:14:37



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 Tel/Fax: (704) 525-2305 / (704) 525-2382
<http://www.EMSL.com> / charlottelab@emsl.com

EMSL Order: 411908706
 Customer ID: TRID50
 Customer PO:
 Project ID:

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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
06-19 #11908706-0017	Floor Felt Paper	Black Fibrous Homogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected
07-21 #11908706-0018	Living Room - Vinyl Sheet Flooring (Green/Beige) No Mastic	Beige Fibrous Homogeneous	45% Cellulose 3% Synthetic	52% Non-fibrous (Other)	None Detected
07-22 #11908706-0019	Layer 3 - Vinyl Sheet Flooring (Green/Beige) No Mastic	Tan/Black Fibrous Homogeneous	50% Cellulose 2% Synthetic	48% Non-fibrous (Other)	None Detected
08-24 #11908706-0020	Layer 4 - Vinyl Sheet Flooring (Green/Red) No Mastic	Red/Green Fibrous Homogeneous	45% Cellulose 3% Synthetic	52% Non-fibrous (Other)	None Detected
08-25 #11908706-0021	Vinyl Sheet Flooring (Green/Red) No Mastic	Red/Black Fibrous Homogeneous	50% Cellulose 2% Synthetic	48% Non-fibrous (Other)	None Detected
09-27 #11908706-0022	Kitchen - Sink Coating (White)	White Fibrous Homogeneous	5% Cellulose	10% Ca Carbonate 2% Mica 83% Non-fibrous (Other)	None Detected
09-28 #11908706-0023	Sink Coating (White)	White Non-Fibrous Homogeneous	10% Cellulose	10% Ca Carbonate 80% Non-fibrous (Other)	None Detected
10-30 #11908706-0024	Door - Exterior Caulking	White Non-Fibrous Homogeneous		8% Ca Carbonate 92% Non-fibrous (Other)	None Detected
10-31 #11908706-0025	Exterior Caulking	White Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected

Analyst(s)
 Anupriya Tyagi (14)
 Katherine Sluder (11)

Lee Plumley, Laboratory Manager
 or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/4-82-020 "Interim Method"), but augmented with procedures outlined in the 1995 ("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-fragile organically bound materials prior to analysis. Estimation of uncertainty is available on request.
 Samples analyzed by EMSL Analytical, Inc. Pineville, NC NVLAP Lab Code 200841-0, VA 3303 00312

Initial report from: 08/04/2019 08:14:37



EMSL Analytical, Inc.
 10801 Southern Loop Blvd Pineville, NC 28134
 Tel/Fax: (704) 525-2305 / (704) 525-2382
<http://www.EMSL.com> / charlotte@emsl.com

EMSL Order: 411908706
 Customer ID: TRID50
 Customer PO:
 Project ID:

Attention: Hunter Hanson
 Trident Environmental Services, Inc.
 500 Oakbrook Lane
 Suite E
 Summerville, SC 29485
Project: 5813 Knight Street

Phone: (843) 873-3648
Fax:
Received Date: 09/03/2019 8:30 AM
Analysis Date: 09/06/2019
Collected Date:

**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
01-03 411908706-0026	Roof - Roof Shingle	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
02-06 411908706-0027	Roof Felt Paper	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
06-20 411908706-0028	Floor Felt Paper	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
07-23 411908706-0029	Vinyl Sheet & Flooring (Green/Beige)	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
09-29 411908706-0030	Sink Coating (White)	White Non-Fibrous Homogeneous	97.2 Other	2.8 Fibrous_Other	No Asbestos Detected
10-32 411908706-0031	Exterior Caulking	White Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

Analyst(s)
 Aaron Hartley (6)


Lee Plumley
 Lee Plumley, Laboratory Manager
 or other approved signatory

This laboratory is not responsible for % asbestos in total sample when the residue only is submitted for analysis. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. Insulcon, wallboard, etc.) are reported as a single sample.

Samples analyzed by EMSL Analytical, Inc. Pineville, NC

Initial report from: 08/06/2019 14:28:10

OrderID: 411908706



Asbestos Chain of Custody
EMSL Order Number (Lab Use Only):

411908706

PHONE: _____ FAX: _____

Company Name: Trident Environmental Services, Inc.		EMSL Customer ID:	
Street: 500 Oakbrook Lane, Suite E		City: Summerville	State/Province: SC
Zip/Postal Code: 29485	Country: US	Telephone #: 843-873-3648	Fax #:
Report To (Name): Hunter Hanson		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
Email Address: hunterhanson@tridentenvironmental.com		Purchase Order:	
Project Name/Number: 5813 Knight Street		EMSL Project ID (Internal Use Only):	
U.S. State Samples Taken: Hanahan SC		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax <input type="checkbox"/> Export	
EMSL-Bill to: <input type="checkbox"/> Same <input type="checkbox"/> Different - # Bill to is Different note instructions in Comments** Third Party Billing requires written authorization from third party			
Turnaround Time (TAT) Options* - Please Check			
<input type="checkbox"/> 3 Hour <input type="checkbox"/> 6 Hour <input type="checkbox"/> 24 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input type="checkbox"/> 1 Week <input type="checkbox"/> 2+ weeks			
*For TEM Air 3 hr through 9 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 authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.			
PCM - Air <input type="checkbox"/> Check if samples are from NY <input type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA		TEM - Air <input type="checkbox"/> 4-4.5hr TAT (AHERA only) <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> EPA Level II <input type="checkbox"/> ISO 10312	
PLM - Bulk (reporting limit) 72HR <input checked="" type="checkbox"/> PLM EPA 800/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) <input type="checkbox"/> NYS 198.1 (friable in NY) <input type="checkbox"/> NYS 198.6 NOB (non-friable-NY) <input type="checkbox"/> NYS 198.8 SOF-V <input type="checkbox"/> NIOSH 9002 (<1%)		TEM - Bulk 72HR <input checked="" type="checkbox"/> TEM EPA NOB <input type="checkbox"/> NYS NOB 198.4 (non-friable-NY) <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM Mass Analysis-EPA 800 sec. 2.5 TEM - Water EPA 100.2 Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking	
TEM - Dust <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 800/J-93/167)		Soil/Rock/Vermiculite <input type="checkbox"/> PLM EPA 800/R-93/116 with milling prep (<1%) <input type="checkbox"/> PLM EPA 800/R-93/116 with milling prep (<3.25%) <input type="checkbox"/> TEM EPA 800/R-93/116 with milling prep (<3.15%) <input type="checkbox"/> TEM Qualitative via Filtration Prep <input type="checkbox"/> TEM Qualitative via Drop Mount Prep <input type="checkbox"/> Cincinnati Method EPA 800/R-04/004 - PLM/TE (BC only) Other: <input type="checkbox"/>	
<input checked="" type="checkbox"/> Check For Positive Stop - Clearly Identify Homogenous Group		Filter Pore Size (Air Samples): <input checked="" type="checkbox"/> 0.8µm <input type="checkbox"/> 0.4µm	
Samplers Name: Hunter Hanson		Samplers Signature: <i>Hunter Hanson</i>	
Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
Client Sample # (s): _____		Total # of Samples: 32	
Relinquished (Client): <i>Hunter Hanson</i>		Date: 8/30/19	Time: _____
Received (Lab): <i>BAN Coll</i>		Date: 9/3/19	Time: 8:30 PM EST
Comments/Special Instructions:		4148 6337 2263	
Layer upon Request, Positive Stop, SCDHEC Rules for NOB			

OrderID: 411908706 411908706

TES
 Trident Environmental Services, Inc.
 Consultants in Industrial Hygiene and Safety
 500 Oakbrook Lane, Suite E
 Summerville, SC 29485
 Phone (843) 873-3648
 Fax (843) 821-1767

CHAIN OF CUSTODY FORM
 Asbestos Bulk Sample

Project Name: 5813 Knight Street Date: 8-30-19
 Location: Hanahan SC

DESCRIPTION OF EACH SAMPLE AREA					ASSESSMENT OF MATERIALS				
Homog Area	Sample ID	Location	Description	Friable (F)	Friable (NF)	Asbestos Type	COND Assess	AZ	Notes
01	01	Roof	Roof Shingle		✓		7		
	02								
	03								
02	04		Roof Felt/Paper		✓		7		
	05								
	06								
03	07	Living Room	Ceiling Texture						
	08								
	09								
04	10	Living Room	Drywall						
	11								
	12								
05	13	Living Room	Joint Compound						
	14	Living Room							
	15								
	16								
	17								
06	18	Living Room	Floor Felt/Paper						
	19								
	20								

Condition Assessment Categories
 (1) Thermal System Insulation - Good Condition
 (2) Thermal System Insulation - Damaged
 (3) Thermal System Insulation - Significantly Damaged
 (4) Surfacing - Good Condition
 (5) Surfacing - Damaged
 (6) Surfacing - Significantly Damaged
 (7) Miscellaneous - Good Condition
 (8) Miscellaneous - Damaged
 (9) Miscellaneous - Significantly Damaged

Asbestos Present
 (1) Amosite (5) Actinolite
 (2) Chrysotile
 (3) Crocidolite
 (4) Anthophyllite
 (6) Tremolite

HAZARD Assessment Categories
 G = Good Condition
 D = Damaged
 S = Significantly Damaged
 LPD = Low Potential for Disturbance
 PD = Potential for Damage
 PSD = Potential for Significant Damage

Samples Collected by: Hunter J. Jones Date / Time: 8-30-19
 Samples Received by: _____ Date / Time: _____

Page 2 Of 3

OrderID: 411908706 411908706

TES
 Trident Environmental Services, Inc.
 Consultants in Industrial Hygiene and Safety
 500 Oakbrook Lane, Suite E
 Summerville, SC 29485
 Phone (843) 873-3648
 Fax (843) 821-1767

CHAIN OF CUSTODY FORM
 Asbestos Bulk Sample

Project Name: 5813 Knight Street Date: 8-30-19
 Location: Hanahan SC

DESCRIPTION OF EACH SAMPLE AREA					ASSESSMENT OF MATERIALS				
Homog Area	Sample ID	Location	Description	Fibers (M)	Fibers (H)	Asbestos Type	COND Assess	AZ	AS
07	21	living room	Vinyl sheet flooring						
	22	layer 3	(Green/Beige)						
	23		no matrix						
08	24	layer 4	Vinyl sheet flooring						
	25		Green/Red						
	26		no matrix						
09	27	Kitchen	Seal Coating						
	28		(white)						
	29								
10	30	Door	Extensive Caulking						
	31								
	32								

Condition Assessment Categories
 (1) Thermal System Insulation - Good Condition
 (2) Thermal System Insulation - Damaged
 (3) Thermal System Insulation - Significantly Damaged
 (4) Surfacing - Good Condition
 (5) Surfacing - Damaged
 (6) Surfacing - Significantly Damaged
 (7) Miscellaneous - Good Condition (8) Miscellaneous - Damaged
 (9) Miscellaneous - Significantly Damaged

Asbestos Present
 (1) Amosite (8) Actinolite
 (2) Chrysotile
 (3) Crocidolite
 (4) Anthophyllite
 (5) Tremolite

HAZARD Assessment Categories
 G = Good Condition
 D = Damaged
 S = Significantly Damaged
 LPD = Low Potential for Disturbance
 PD = Potential for Damage
 PSD = Potential for Significant Damage

Samples Collected by: Hunter J. Ansa Date / Time: 8-30-19
 Samples Received by: _____ Date / Time: _____

Page 3 Of 3