

COMPREHENSIVE ASBESTOS/LEAD-BASED PAINT SURVEY

**SINGLE-FAMILY RESIDENCE
1104 FOLLY ROAD
CHARLESTON, SOUTH CAROLINA**



Prepared For:

**JAMES ISLAND PUBLIC SERVICE DISTRICT
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Performed By:

TES

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**COMPREHENSIVE
ASBESTOS/LEAD-BASED PAINT SURVEY**

Single-Family Residence
1104 Folly Road
Charleston, South Carolina 29412

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EXECUTIVE SUMMARY

The comprehensive asbestos survey performed by Trident Environmental Services, Inc. on February 11, 2019 of the Single-Family Residence located at 1104 Folly Road in Charleston, South Carolina **did** reveal the presence of asbestos containing building materials (ACBM). The following summary exhibits the ACBM that were identified in the inspection.

Asbestos

Description	Type
Vinyl Sheet Flooring (green/beige)	RACM – Friable
Vinyl Sheet Flooring (beige/tan)	RACM – Friable
Sink Coating (black)	Category I – Non Friable
Exterior Caulk	RACM – Friable
Ceiling Texture	RACM – Friable
Drywall/Joint Compound	RACM – Friable

RACM – Regulated Asbestos Containing Material

PACM – Presumed Asbestos Containing Material

The ACBM to include 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 James Island Public Service District to perform an asbestos survey of the Single-Family Residence located at 1104 Folly Road in Charleston, South Carolina. The survey was performed in order to satisfy the NESHAP requirements for renovation and/or demolition. The single-family residence, constructed in 1962, is built on foundation with crawlspace and consists of approximately 1,392 square feet. The structure is currently vacant and in significantly damaged condition due to recent training activities inside the structure.

Interior walls are wood panels and drywall with joint compound applied at seams and patches. Floor finishes include ceramic tile, vinyl sheet flooring and hardwood planks. Exterior construction is brick veneer and cement siding. Exterior trim, windows and doors are wood. Roofing materials are asphalt shingles with felt paper. **Note: The structure was damaged during training activities and the interior is considered contaminated based in the identification of ACBM. This structure should be secured to prevent access by persons not licensed through SCDHEC for asbestos work.**

Non-suspect material includes wood, glass, concrete or concrete block, brick, masonry or grout, natural stone or ceramic, metal components, ductwork or piping, PVC pipes, silicone caulk, fiberglass, foam or rubber insulation.

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 SCDHEC Regulation 61-86.1, along with Title 29 Code of Federal Regulations, Part 1926 enforced by the 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 ACBM may be located in areas that are inaccessible by limited destructive testing and may be present in the following locations: Suspect ACBM 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.

In the event that suspect ACBM is discovered during renovation or demolition activities, work should immediately be stopped. Notify building owner and Consultant to collect samples for laboratory testing. ACMB may be Presumed Asbestos Containing (PACM) or submitted for PLM analysis by a NVLAP accredited laboratory. Avoid further disturbance of ACBM until laboratory results are available. When laboratory analysis confirms the ACBM is non asbestos work activities may resume. Positive results would require contracting with a SCDHEC licensed abatement contractor to remove remaining ACBM

ASBESTOS SURVEY

Asbestos Investigative Procedures

Trident Environmental Services, Inc. conducted an inspection for suspect ACBM on February 11, 2019 of the Single-Family Residence located at 1104 Folly Road in Charleston, South Carolina. It is our understanding that the subject structure will undergo renovation or demolition activities in the near future. 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 ACBM 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 ACBM. 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](#)).

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.

Non-Friable Organically Bound (NOB) samples were submitted to EMSL for analyses by TEM. SCDHEC requires 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.

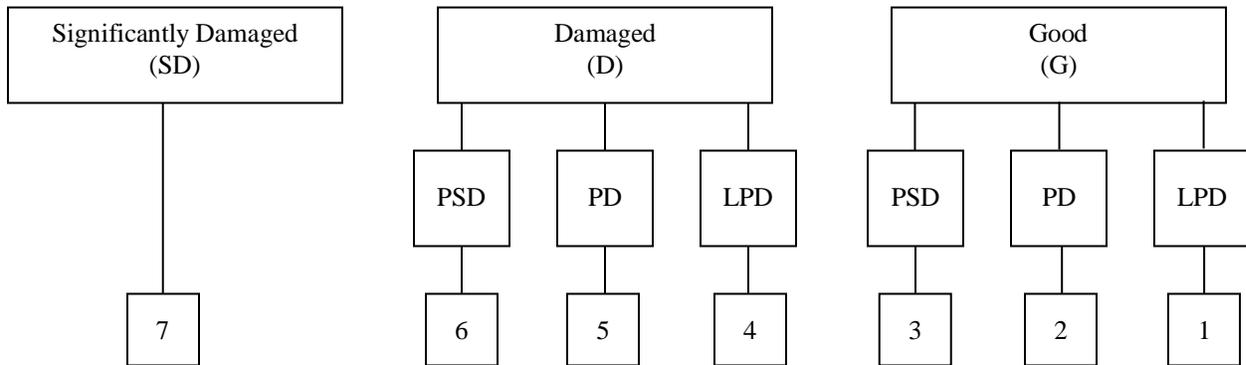
Present Condition

- 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 FOOTAGE TABLE
Single-Family Residence – 1104 Folly Road – Charleston, SC

HOMOGENOUS AREA ID #	DESCRIPTION	ESTIMATED AMOUNT
01	Vinyl Sheet Flooring (green/beige)	420 SF
02	Vinyl Mastic (tan)	420 SF
03	Vinyl Sheet Flooring (beige/tan)	420 SF
04	Vinyl Mastic (brown)	420 SF
05	Sink Coating (black)	4 SF
06	Exterior Caulk	50 SF
07	Roof Shingle	1,670 SF
08	Roof Felt Paper	1,670 SF
09	Drywall	5,568 SF
10	Ceiling Texture	1,392 SF
11	Joint Compound	5,568 SF
12	Cementitious Siding	768 SF
13	Siding Felt Paper	768 SF

ASBESTOS SUMMARY
Single-Family Residence – 1104 Folly Road – Charleston, SC

DESCRIPTION	TYPE	ESTIMATED AMOUNT
Vinyl Sheet Flooring (green/beige)	RACM – Friable	420 SF
Vinyl Sheet Flooring (beige/tan)	RACM – Friable	420 SF
Sink Coating (black)	Category I – Non Friable	4 SF
Exterior Caulk	RACM – Friable	50 SF
Ceiling Texture	RACM – Friable	1,392 SF
Drywall/Joint Compound	RACM – Friable	5,568 SF

RACM – Regulated Asbestos Containing Material

PACM – Presumed Asbestos Containing Material

SCDHEC requires any non-friable material that is identified in an asbestos inspection report in a condition other than good and non-friable must be handled as a Regulated Asbestos Containing Material (RACM) and identified as friable on the asbestos abatement application. This requirement is reflected in the Asbestos Summary Table listed above.

Asbestos fibers were identified in the Vinyl Sheet Flooring (green/beige). Approximately 420 square feet is present and in good condition. This material is considered RACM – Friable Asbestos and is located in the kitchen and the dining room. (layer 1) **Note: Vinyl Sheet flooring may be located under cabinets and walls.**

Asbestos fibers were identified in the Vinyl Sheet Flooring (beige/tan). Approximately 420 square feet is present and in good condition. This material is considered RACM – Friable Asbestos and is located in the kitchen and the dining room. (layer 2) **Note: Vinyl Sheet flooring may be located under cabinets and walls.**

Asbestos fibers were identified in the Sink Coating (black). Approximately 4 square feet is present and in good condition. This material is considered Category I – Non Friable Asbestos and is located in the kitchen.

Asbestos fibers were identified in the Exterior Caulk. Approximately 50 square feet is present and in good condition. This material is considered RACM – Friable Asbestos and is located on the exterior windows and doors.

Asbestos fibers were identified in the Ceiling Texture. Approximately 1,392 square feet is present and in significantly damaged condition. This material is considered RACM – Friable Asbestos and is located on the ceilings.

Asbestos fibers were identified in the Drywall/Joint Compound. Approximately 5,568 square feet is present and in significantly damaged condition. This material is considered RACM – Friable Asbestos and is located on walls and ceilings.

The estimated quantities provided should be verified by contractor and/or building owner. Any discrepancies are to be addressed prior to removal of ABCM. Please note that removal costs vary depending on the contractor, the quantity/condition, and the accessibility/location of the ACBM.

ASBESTOS SAMPLE DATA TABLE
 Single-Family Residence – 1104 Folly Road – Charleston, SC

DESCRIPTION OF EACH SAMPLE AREA				LABORATORY		ASSESSMENT OF MATERIALS	
Homogeneous Area & Sample ID	Description	Location/Room #	Friable (Y/N)	Asbestos Present		Condition Assessment Category	Hazard Assessment Category
				Percent	Asbestos		
01-01	Vinyl Sheet Flooring (green/beige)	Dining Room	Y	10.0%	CHRY	7	1
01-02	Vinyl Sheet Flooring (green/beige)	Dining Room	Y	NT	PACM	7	1
01-03	Vinyl Sheet Flooring (green/beige)	Kitchen	Y	NT	PACM	7	1
02-04	Vinyl Mastic (tan)	Dining Room	N	<1.0%	CHRY	7	N/A
02-05	Vinyl Mastic (tan)	Dining Room	N	<1.0%	CHRY	7	N/A
02-06 T	Vinyl Mastic (tan)	Kitchen	N	0.28%	CHRY	7	N/A
03-07	Vinyl Sheet Flooring (beige/tan)	Dining Room	Y	6.0%	CHRY	7	1
03-08	Vinyl Sheet Flooring (beige/tan)	Dining Room	Y	NT	PACM	7	1
03-09	Vinyl Sheet Flooring (beige/tan)	Kitchen	Y	NT	PACM	7	1
04-10	Vinyl Mastic (brown)	Dining Room	N	0.0%	ND	7	N/A
04-11	Vinyl Mastic (brown)	Dining Room	N	0.0%	ND	7	N/A
04-12 T	Vinyl Mastic (brown)	Kitchen	N	0.36%	CHRY	7	N/A
05-13	Sink Coating (black)	Kitchen	N	6.0%	CHRY	7	1
05-14	Sink Coating (black)	Kitchen	N	NT	PACM	7	1
05-15	Sink Coating (black)	Kitchen	N	NT	PACM	7	1
06-16	Exterior Caulk	Front Door	Y	4.0%	CHRY	7	1
06-17	Exterior Caulk	Front Door	Y	NT	PACM	7	1
06-18	Exterior Caulk	Window	Y	NT	PACM	7	1
07-19	Roof Shingle	Roof	Y	0.0%	ND	9	N/A
07-20	Roof Shingle	Roof	Y	0.0%	ND	9	N/A
07-21 T	Roof Shingle	Roof	Y	0.0%	ND	9	N/A
08-22	Roof Felt Paper	Roof	Y	0.0%	ND	9	N/A
08-23	Roof Felt Paper	Roof	Y	0.0%	ND	9	N/A
08-24 T	Roof Felt Paper	Roof	Y	0.0%	ND	9	N/A
09-25	Drywall	Kitchen	Y	0.0%	ND	9	N/A
09-26	Drywall	Kitchen	Y	0.0%	ND	9	N/A
09-27	Drywall	Kitchen	Y	0.0%	ND	9	N/A

Assessment Categories

- (1) Thermal Systems Insulation – Good Condition
- (2) Thermal Systems Insulation – Damaged
- (3) Thermal Systems 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

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

ASBESTOS SAMPLE DATA TABLE
Single-Family Residence – 1104 Folly Road – Charleston, SC

DESCRIPTION OF EACH SAMPLE AREA				LABORATORY		ASSESSMENT OF MATERIALS	
Homogeneous Area & Sample ID	Description	Location/Room #	Friable (Y/N)	Asbestos Present		Condition Assessment Category	Hazard Assessment Category
				Percent	Asbestos		
10-28	Ceiling Texture	Kitchen	Y	2.0%	CHRY	6	7
10-29	Ceiling Texture	Kitchen	Y	NT	PACM	6	7
10-30	Ceiling Texture	Living Room	Y	NT	PACM	6	7
10-31	Ceiling Texture	Dining Room	Y	NT	PACM	6	7
10-32	Ceiling Texture	Hallway	Y	NT	PACM	6	7
11-33	Joint Compound	Bedroom 1	Y	2.0%	CHRY	6	7
11-34	Joint Compound	Bedroom 1	Y	NT	PACM	6	7
11-35	Joint Compound	Bedroom 2	Y	NT	PACM	6	7
11-36	Joint Compound	Bedroom 3	Y	NT	PACM	6	7
11-37	Joint Compound	Hallway	Y	NT	PACM	6	7
11-38	Joint Compound	Living Room	Y	NT	PACM	6	7
11-39	Joint Compound	Kitchen	Y	NT	PACM	6	7
12-40	Cementitious Siding	Exterior	Y	0.0%	ND	9	N/A
12-41	Cementitious Siding	Exterior	Y	0.0%	ND	9	N/A
12-42 T	Cementitious Siding	Exterior	Y	0.0%	ND	9	N/A
13-43	Siding Felt Paper	Exterior	Y	0.0%	ND	9	N/A
13-44	Siding Felt Paper	Exterior	Y	0.0%	ND	9	N/A
13-45 T	Siding Felt Paper	Exterior	Y	0.0%	ND	9	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

Conclusion

The comprehensive asbestos survey performed by Trident Environmental Services, Inc. on February 11, 2019 of the Single-Family Residence located at 1104 Folly Road in Charleston, South Carolina **did** 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.

Recommendation & Regulatory Requirements

The structure is damaged due to recent training activities. Should it be determined that abatement of the identified ACM cannot be performed, then the building will be treated as a RACM (regulated demolition) with all building materials disposed as ACBM waste performed Based on the identification of ACBM. Perimeter air monitoring is required throughout the duration of the demolition and clean-up per SCDHEC protocol. Additionally, the structure will need to be secured to present access by individuals not licensed through SCDHEC for asbestos work. The state requires an asbestos abatement project design when the identified ACBM is >3,000 square feet.

PHOTOGRAPHS

Single-Family Residence – 1104 Folly Road – Charleston, SC



HOMOGENEOUS AREAS 01, 02
VINYL SHEET FLOORING (GREEN/BEIGE)
MASTIC (TAN)



HOMOGENEOUS AREAS 03, 04
VINYL SHEET FLOORING (BEIGE/TAN)
MASTIC (BROWN)



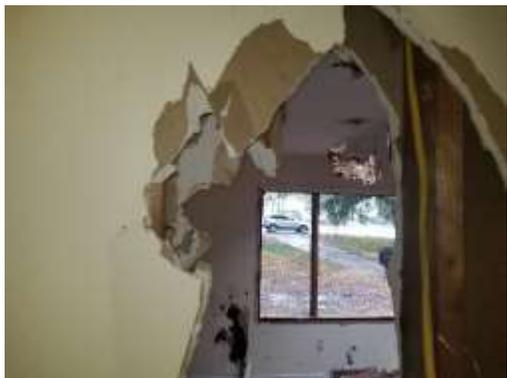
HOMOGENEOUS AREA 05
SINK COATING (BLACK)



HOMOGENEOUS AREA 06
EXTERIOR CAULK



HOMOGENEOUS AREAS 07, 08
ROOF SHINGLE W/ FELT PAPER



HOMOGENEOUS AREA 09
DRYWALL

PHOTOGRAPHS

Single-Family Residence – 1104 Folly Road – Charleston, SC



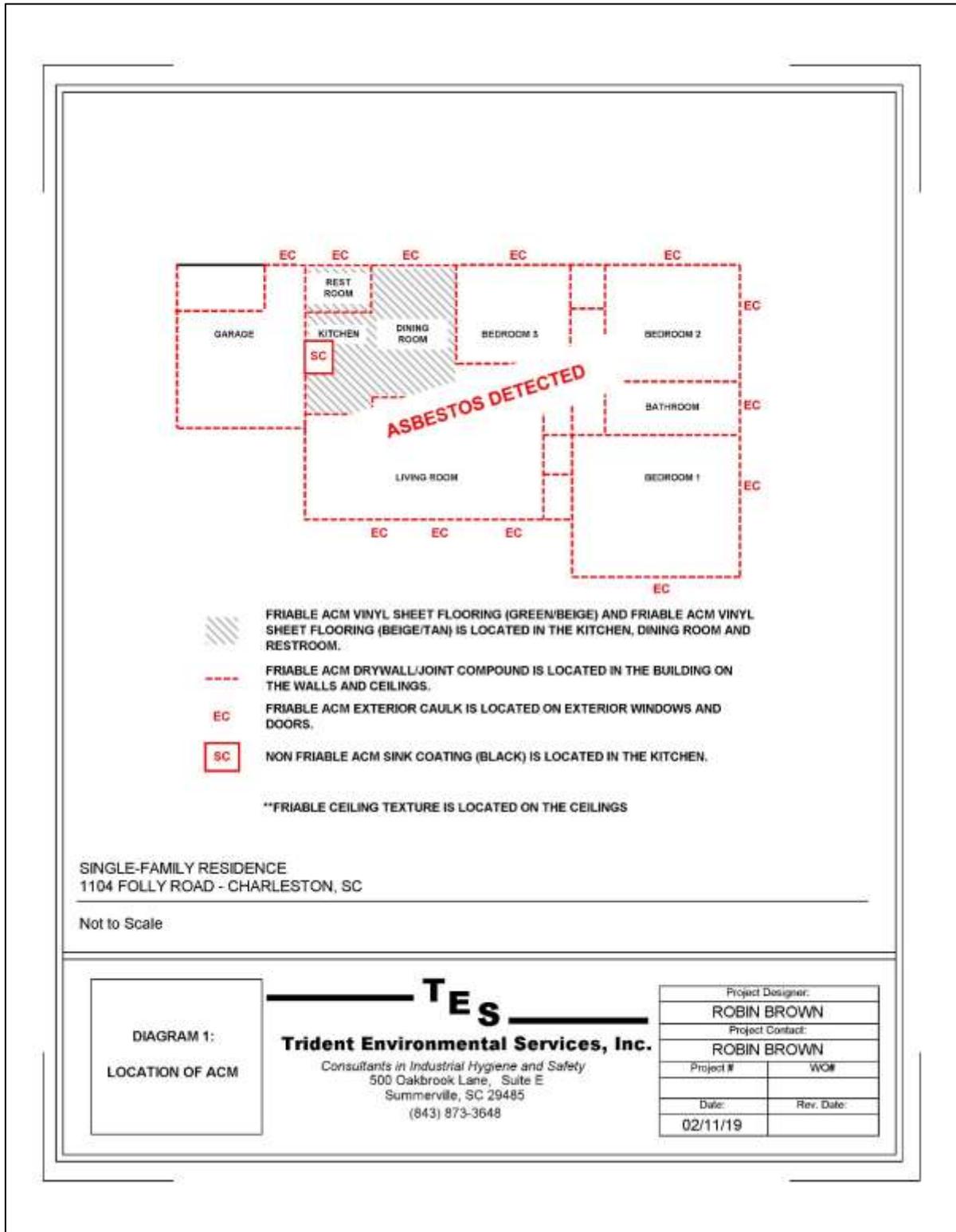
HOMOGENEOUS AREA 10
CEILING TEXTURE



HOMOGENEOUS AREA 11
JOINT COMPOUND



HOMOGENEOUS AREAS 12, 13
CEMENTITIOUS SIDING
SIDING FELT PAPER



COMPREHENSIVE ASBESTOS/LEAD-BASED PAINT SURVEY

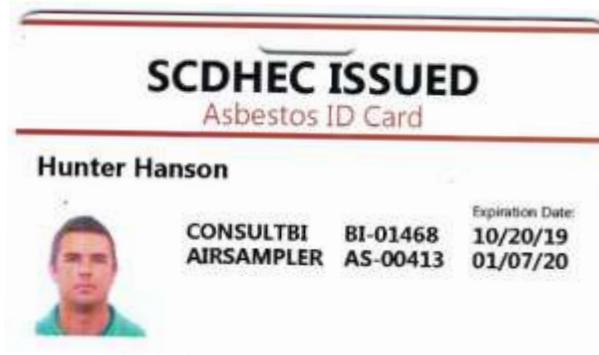
Inspection Date: 02/11/2019

Preparation Date: 02/14/2019

Inspected & Prepared By:



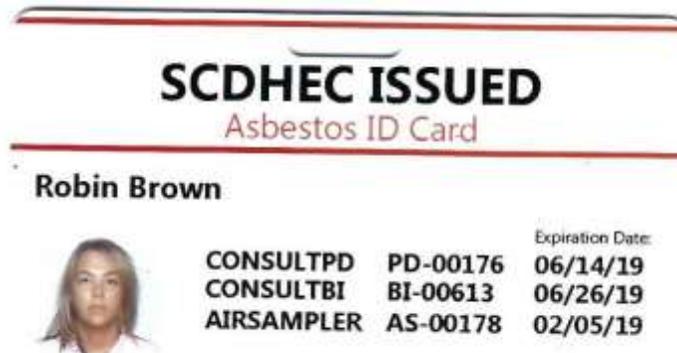
Hunter Hanson
S.C. Inspector License BI – 01468



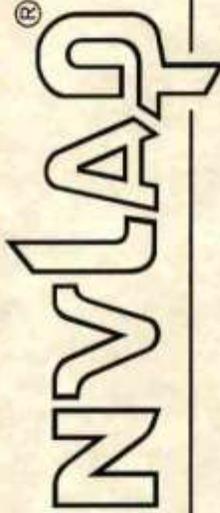
Reviewed By:



Robin A. Brown
S.C. Inspector License PD – 00613



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:

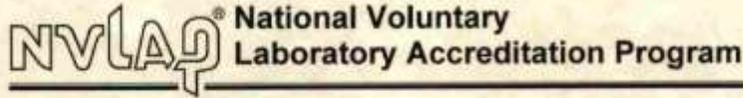
Asbestos Fiber Analysis

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-IAC-IAF Communiqué dated January 2009).



2018-07-01 through 2019-06-30
Effective Dates

John S. Lamm
For the National Voluntary Laboratory Accreditation Program



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

EMSL Analytical, Inc.
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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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EMSL Order: 411901414
 Customer ID: TRID50
 Customer PO:
 Project ID:

Attention: Hunter Hanson
 Trident Environmental Services, Inc.
 500 Oakbrook Lane
 Suite E
 Summerville, SC 29485
Project: 1104 Folly Road, Charleston, SC

Phone: (843) 873-3648
Fax:
Received Date: 02/13/2019 8:30 AM
Analysis Date: 02/13/2019
Collected Date: 02/11/2019

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 <small>4119014-0001</small>	Dining Room - Vinyl Sheet Flooring (Green/Beige) Layer 1	Beige Fibrous Homogeneous	5% Cellulose	85% Non-fibrous (Other)	10% Chrysotile
01-02 <small>4119014-0002</small>	Vinyl Sheet Flooring (Green/Beige) Layer 1				Positive Stop (Not Analyzed)
02-04 <small>4119014-0003</small> <i>Possible contamination</i>	Dining Room - Vinyl Mastic Layer 1	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Chrysotile
02-05 <small>4119014-0004</small> <i>Possible Contamination</i>	Vinyl Mastic Layer 1	Tan Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	<1% Chrysotile
03-07 <small>4119014-0005</small>	Dining Room - Vinyl Sheet Flooring (Beige/Tan) Layer 2	Tan/Beige Non-Fibrous Homogeneous		20% Ca Carbonate 74% Non-fibrous (Other)	6% Chrysotile
03-08 <small>4119014-0006</small>	Vinyl Sheet Flooring (Beige/Tan) Layer 2				Positive Stop (Not Analyzed)
04-10 <small>4119014-0007</small>	Dining Room - Vinyl Mastic Layer 2	Brown Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
04-11 <small>4119014-0008</small>	Vinyl Mastic Layer 2	Brown Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
05-13 <small>4119014-0009</small>	Kitchen - Sink Coating (Black)	Black Non-Fibrous Homogeneous		94% Non-fibrous (Other)	6% Chrysotile
05-14 <small>4119014-0010</small>	Sink Coating (Black)				Positive Stop (Not Analyzed)
05-16 <small>4119014-0011</small>	Front Door - Exterior Caulk	Gray Non-Fibrous Homogeneous		15% Ca Carbonate 81% Non-fibrous (Other)	4% Chrysotile
06-17 <small>4119014-0012</small>	Front Door - Exterior Caulk				Positive Stop (Not Analyzed)
07-19 <small>4119014-0013</small>	Roof - Roof Shingle	Black Fibrous Homogeneous	5% Glass	10% Quartz 85% Non-fibrous (Other)	None Detected
07-20 <small>4119014-0014</small>	Roof Shingle	Gray/Black Fibrous Homogeneous	5% Glass	10% Quartz 85% Non-fibrous (Other)	None Detected
08-22 <small>4119014-0015</small>	Roof - Roof Felt Paper	Black Fibrous Homogeneous	80% Cellulose	40% Non-fibrous (Other)	None Detected

Initial report from: 02/13/2019 16:09:16



EMSL Analytical, Inc.
 10801 Southern Loop Blvd Pineville, NC 28134
 Tel/Fax: (704) 525-2205 / (704) 525-2382
<http://www.EMSL.com> / charlotte@emsl.com

EMSL Order: 411901414
 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 % Type
			% Fibrous	% Non-Fibrous	
09-23 #1190 N 14-0016	Roof Felt Paper	Black Fibrous Homogeneous	80% Cellulose	40% Non-fibrous (Other)	None Detected
09-25 #1190 N 14-0017	Kitchen - Drywall	Gray Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
09-26 #1190 N 14-0018	Drywall	Gray Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
09-27 #1190 N 14-0019	Drywall	Brown/Gray Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
10-28 #1190 N 14-0020	Kitchen - Ceiling Texture	Tan/White Non-Fibrous Homogeneous		96% Non-fibrous (Other)	2% Chrysotile
10-29 #1190 N 14-0021	Kitchen - Ceiling Texture				Positive Stop (Not Analyzed)
10-30 #1190 N 14-0022	Living Room - Ceiling Texture				Positive Stop (Not Analyzed)
10-31 #1190 N 14-0023	Dining Room - Ceiling Texture				Positive Stop (Not Analyzed)
10-32 #1190 N 14-0024	Halfway - Ceiling Texture				Positive Stop (Not Analyzed)
11-33 #1190 N 14-0025	Bedroom 1 - Joint Compound	Tan Non-Fibrous Homogeneous		20% Ca Carbonate 5% Mica 73% Non-fibrous (Other)	2% Chrysotile
11-34 #1190 N 14-0026	Bedroom 1 - Joint Compound				Positive Stop (Not Analyzed)
11-35 #1190 N 14-0027	Bedroom 2 - Joint Compound				Positive Stop (Not Analyzed)
11-36 #1190 N 14-0028	Bedroom 3 - Joint Compound				Positive Stop (Not Analyzed)
11-37 #1190 N 14-0029	Halfway - Joint Compound				Positive Stop (Not Analyzed)
11-38 #1190 N 14-0030	Living Room - Joint Compound				Positive Stop (Not Analyzed)
11-39 #1190 N 14-0031	Kitchen - Joint Compound				Positive Stop (Not Analyzed)
12-40 #1190 N 14-0032	Exterior - Cementitious Siding	Gray Fibrous Homogeneous	10% Cellulose	40% Quartz 50% Non-fibrous (Other)	None Detected
12-41 #1190 N 14-0033	Cementitious Siding	Gray Fibrous Homogeneous	20% Cellulose	20% Quartz 5% Ca Carbonate 55% Non-fibrous (Other)	None Detected
12-42 #1190 N 14-0034	Cementitious Siding	Gray Fibrous Homogeneous	20% Cellulose	20% Quartz 5% Ca Carbonate 55% Non-fibrous (Other)	None Detected

Initial report from: 02/13/2019 16:09:16



EMSL Analytical, Inc.
 10001 Southern Loop Blvd Pineville, NC 28134
 Tel/Fax: (704) 525-2205 / (704) 525-2382
 http://www.EMSL.com / charlottelab@emsl.com

EMSL Order: 411901414
 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
13-43	Siding Felt Paper	Black Fibrous Homogeneous	80% Cellulose	40% Non-fibrous (Other)	None Detected
#118014-0025					
13-44	Siding Felt Paper	Black Fibrous Homogeneous	80% Cellulose	40% Non-fibrous (Other)	None Detected
#118014-0018					

Analysis(s)
 Katherine Sluder (3)
 Lacy Searcy (14)

Lee Plumley
 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, WA 3303 00312

Initial report from: 02/13/2019 16:09:16

Comprehensive Asbestos/Lead-Based Paint Survey
 Single-Family Residence
 1104 Folly Road – Charleston, SC
 Survey Date: February 11, 2019



EMSL Analytical, Inc.
 10801 Southern Loop Blvd Pineville, NC 28134
 Tel/Fax: (704) 525-2205 / (704) 525-2382
<http://www.EMSL.com> / charlotte@emsl.com

EMSL Order: 411901414
 Customer ID: TRID50
 Customer PO:
 Project ID:

Attention: Hunter Hanson
 Trident Environmental Services, Inc.
 500 Oakbrook Lane
 Suite E
 Summerville, SC 29485
Project: 1104 Folly Road, Charleston, SC

Phone: (843) 873-3648
Fax:
Received Date: 02/13/2019 9:30 AM
Analysis Date: 02/15/2019
Collected Date: 02/11/2019

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
02-06 411901414-0037	Kitchen - Vinyl Mastic Layer 1	Tan Non-Fibrous Heterogeneous	99.72 Other	None	0.28% Chrysotile
04-12 411901414-0038	Kitchen - Vinyl Mastic Layer 2	Brown Non-Fibrous Heterogeneous	100.0 Other	None	<0.35% Chrysotile
07-21 411901414-0039	Roof - Roof Shingle	Black Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
08-24 411901414-0040	Roof - Roof Felt Paper	Black Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
13-45 411901414-0041	Skirting Felt Paper	Brown/Black Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected

Analyst(s)
 Aaron Hatley (S)

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. linoleum, wallboard, etc.) are reported as a single sample.

Samples analyzed by EMSL Analytical, Inc. Pineville, NC

Initial report from: 02/18/2019 08:12:31

OrderID: 411901017



Asbestos Chain of Custody

EMSL Order Number (Lab Use Only):

411901017

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: <i>Initial wood roof</i>		EMSL Project ID (Internal Use Only):	
U.S. State Samples Taken: <i>Charleston SC</i>		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Taxable	

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 Weeks

*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 for authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

<p>PCM - Air <input type="checkbox"/> Check if samples are from NY</p> <p><input type="checkbox"/> NIOSH 7400</p> <p><input type="checkbox"/> w/ OSHA 8hr. TWA</p> <p>PLM - Bulk (reporting limit) <i>24HR</i></p> <p><input checked="" type="checkbox"/> PLM EPA 800/R-93/116 (<1%)</p> <p><input type="checkbox"/> PLM EPA NOB (<1%)</p> <p>Point Count</p> <p><input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%)</p> <p>Point Count w/ Gravimetric</p> <p><input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%)</p> <p><input type="checkbox"/> NYS 198.1 (friable in NY)</p> <p><input type="checkbox"/> NYS 198.6 NOB (non-friable-NY)</p> <p><input type="checkbox"/> NYS 198.8 SOF-V</p> <p><input type="checkbox"/> NIOSH 9002 (<1%)</p>	<p>TEM - Air <input type="checkbox"/> 4-4.5hr TAT (AHERA only)</p> <p><input type="checkbox"/> AHERA 40 CFR, Part 763</p> <p><input type="checkbox"/> NIOSH 7402</p> <p><input type="checkbox"/> EPA Level II</p> <p><input type="checkbox"/> ISO 10312</p> <p>TEM - Bulk <i>72HR</i></p> <p><input checked="" type="checkbox"/> TEM EPA NOB</p> <p><input type="checkbox"/> NYS NOB 198.4 (non-friable-NY)</p> <p><input type="checkbox"/> Chatfield SOP</p> <p><input type="checkbox"/> TEM Mass Analysis-EPA 600 sec. 2.5</p> <p>TEM - Water EPA 100.2</p> <p>Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking</p> <p>All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking</p>	<p>TEM - Dust</p> <p><input type="checkbox"/> Microvac - ASTM D 5755</p> <p><input type="checkbox"/> Wipe - ASTM D6480</p> <p><input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167)</p> <p>Soil/Rock/Vermiculite</p> <p><input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep 1%</p> <p><input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep 3.2</p> <p><input type="checkbox"/> TEM EPA 600/R-93/116 with milling prep 3.1</p> <p><input type="checkbox"/> TEM Qualitative via Filtration Prep</p> <p><input type="checkbox"/> TEM Qualitative via Drop Mount Prep</p> <p><input type="checkbox"/> Cincinnati Method EPA 600/R-04/004 - P-1/T (BC only)</p> <p>Other: <input type="checkbox"/></p>
--	--	--

Check For Positive Stop -- Clearly Identify Homogenous Group Filter Pore Size (Air Samples): 0.8µm 0.4µm

Samplers Name: **Hunter Hanson** Samplers Signature: *Hunter Hanson*

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date / Time Sampled

Client Sample # (s): _____ Total # of Samples: *21*

Relinquished (Client): *Hunter Hanson* Date: *1/31/19* Time: _____

Received (Lab): *EMSL* Date: *2/11/19* Time: *1010 EMSL Fx*

Comments/Special Instructions:
Layers upon Request, SCDFE Rules for NOB, Positive Stop *8137 0021 6830*

Page 1 of _____ pages

Controlled Document - Activities CDD - R18 - 08032016

Page 1 Of 2

OrderID: 411901414



Asbestos Chain of Custody

EMSL Order Number (Lab Use Only):

411901414

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: 1104 Folly Road		EMSL Project ID (Internal Use Only):	
U.S. State Samples Taken: Charleston		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax <input type="checkbox"/> Export	

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 Weeks

*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 <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	TEM - Dust <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167)
PLM - Bulk (reporting limit) 24hr <input checked="" type="checkbox"/> PLM EPA 600/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 600 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	Soil/Rock/Vermiculite <input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (< 1%) <input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (< 0.25%) <input type="checkbox"/> TEM EPA 600/R-93/116 with milling prep (< 0.1%) <input type="checkbox"/> TEM Qualitative via Filtration Prep <input type="checkbox"/> TEM Qualitative via Drop Mount Prep <input type="checkbox"/> Cincinnati Method EPA 600/R-04/004 - PLM/TEM (BC only) Other: <input type="checkbox"/>

Check For Positive Stop - Clearly Identify Homogenous Group Filter Pore Size (Air Samples): 0.8µm 0.4µm

Samplers Name: Hunter Hanson Samplers Signature: *Hunter Hanson*

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled

Client Sample # (s): _____ Total # of Samples: 15

Relinquished (Client): *Hunter Hanson* Date: 2/11/19 Time: _____

Received (Lab): *Inte* Date: 2/13/19 Time: 9:32m

Comments/Special Instructions: *layer upon Request, 5c D HRL Ruler for Vols, Positive Stop*

Page 1 of _____ pages

8137 0001 7003

Confidential Document - Activities (OC) - 119 - 09/09/2016

Page 1 Of 4

OrderID: 411901414 411901414

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: 1104 Folly Road Date: 2-11-19
 Location: Charleston SC

DESCRIPTION OF EACH SAMPLE AREA						ASSESSMENT OF MATERIALS		
Homog Area	Sample ID	Location	Description	Friable (F)	Friable (H)	Asbestos Type	COND Assess	AZ
01	01	Dining Room	Wax/Sheet Flooring	/				
	02		(Grout/Grout)					
	03	Kitchen	layer 1		/			
02	04	Dining Room	Vinyl/maastic					
	05							
	06	Kitchen	layer 2		/			
03	07	Dining Room	Vinyl Sheet flooring	/				
	08		(Beige/Am)					
	09	Kitchen	layer 2		/			
04	10	Dining Room	Vinyl Maastic					
	11		layer 2					
	12	Kitchen			/			
05	13	Kitchen	Sink Grout					
	14		(Black)					
	15							
06	16	Front Door	Exterior Caulk	/				
	17							
	18	Window						
07	19	Roof	Roof Shingle	/				
	20							
	21							

Condition Assessment Categories
 (1) Thermal Systems Insulation - Good Condition
 (2) Thermal Systems Insulation - Damaged
 (3) Thermal Systems 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 (6) Crocidolite
 (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. [Signature] Date / Time: 2-11-19
 Samples Received by: _____ Date / Time: _____

Page 2 Of 4

OrderID: 411901414 411901414

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) 821-1787

CHAIN OF CUSTODY FORM
 Asbestos Bulk Sample

Project Name: 1104 Folly Rd Date: 2-11-19
 Location: Charleston SC

DESCRIPTION OF EACH SAMPLE AREA					ASSESSMENT OF MATERIALS			
Homog Area	Sample ID	Location	Description	Friable (F)	Friable (H)	Asbestos Type	COND Assess	AZ 1986
8	23	Roof	Roof felt paper	/				
	23							
	24							
09	25	Kitchen	Dry wall	/				
	26							
	27							
10	28	Kitchen	Ceiling texture	/				
	29	Kitchen						
	30	Living Room						
	31	Dining Room						
	32	Hallway						
11	33	Bedroom 1	Joint compound	/				
	34	Bedroom 2						
	35	Bedroom 3						
	36							
	37	Hallway						
	38	Living Room						
	39	Kitchen						
12	40	Exterior	Cementitious Siding	/				
	41							
	42							

Condition Assessment Categories
 (1) Thermal System Insulation - Good Condition
 (2) Thermal System Insulation - Damaged
 (3) Thermal System Insulation - Significant 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 (6) 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: 2-11-19
 Samples Received by: _____ Date / Time: _____

Page 3 Of 4

LEAD BASED PAINT INSPECTION

Lead-based paint testing was conducted in order to identify finishes that contain lead and which may be disturbed during the scheduled demolition/renovation. The identification of these lead painted finishes will aid in the prevention of occupational exposure and/or environmental releases of lead dust. The lead survey describes the types, locations, and recommendations regarding the areas as related to lead-based paint.

Lead-Based Paint

The CPSC and the SCDHEC define lead-based paint as paint or other surface coatings, including varnish, shellac, stains, and enamels, that contain lead equal to or greater than 0.5% by weight or 5000 parts per million (ppm). OSHA does not recognize a percentage of lead by weight for definition purposes, only the presence or absence of lead. The current OSHA regulations recognize an airborne action level of thirty micrograms per cubic meter (30ug/m³) during an eight-hour work shift, and a permissible exposure limit of fifty micrograms per cubic meter (50ug/m³). For the purpose of this survey, the OSHA Standard of any detectable limit is considered a lead-based paint.

Lead-Based Paint Investigative Procedures

The survey and test methods used to identify lead-based paint from the Single Family Residence located at 1108 Folly Road in Charleston, South Carolina generally followed guidelines set forth by the Department of Housing and Urban Development (HUD) entitled “Guidelines for the Evaluation and Control of Lead Based Paint Hazards in Housing”, June 1995. These guidelines represent a national compilation of technical protocols, practices, procedures on testing, abatement, worker protection, clean-up, and disposal of lead-based paint in structures. Representative samples were collected from suspect paint finishes of the subject structure. Samples were collected by scoring the area of a suspect paint down to the substrate utilizing a sharp implement and placing the sample in a sealed container. The suspect finishes were based on the color of the topcoat and the underlying layers and/or the substrate on which it has been applied.

The necessary data including sample number, location, and description were recorded. A chain-of-custody form was completed for the samples and accompanied the samples when shipped via Federal Express to the laboratory for analysis. The suspect lead-based paint samples were recorded on a Chain of Custody and shipped to Electron Microscopy Services Laboratory Analytical, Inc. (EMSL) to be analyzed by Flame Atomic Absorption Spectrophotometer (AAS) NIOSH method 7082 per the American Society for Testing and Materials (ASTM) Standard D3335-85A. The laboratory is accredited by the AIHA Lab Accreditation Program. ([Lab Code: 19283](#)).

LEAD-BASED PAINT SUMMARY & DATA TABLE

Lead-Based Paint Summary

Two of the four suspected lead-based paint samples collected and analyzed from the Single Family Residence located at 1104 Folly Road in Charleston, South Carolina exhibited concentrations above the SCDHEC Bureau of Land and Waste Management and CPSC threshold of equal to, or greater than, 0.05% total lead by weight. Two of the four suspected lead-based paint samples met the OSHA standard of any detectable limit of lead-based paint.

Lead-Based Paint Data Table

SAMPLE AREA / SAMPLE ID		LABORATORY	PAINT DESCRIPTION
Sample ID	Substrate	Lead Concentration	
Pb-01	Drywall	<0.0098%	White
Pb-02	Interior Trim	0.035%	White
Pb-03	Drywall	<0.0095%	Off-White
Pb-04	Exterior Trim	0.63%	Green

OSHA Regulatory Limit = any detectable level of lead

The table above reflects the OSHA Standard of any detectable limit is considered a lead-based paint.

LEAD-BASED PAINT CONCLUSION / RECOMMENDATIONS

Conclusions

The lead-based paint survey revealed that two of the four painted surfaces contained lead above the SCDHEC and CPSC of 0.05%, by weight. The presence or absence of lead-based paint applies to sampled or assessed surfaces on the dates of the field testing with the understanding that conditions may change due to deterioration or maintenance. It should be noted that some painted surfaces may contain levels of lead below the SCDHEC and/or HUD action levels which could create lead-dust hazards if the paint is turned into dust by abrasion, scraping, or sanding.

Recommendations

Refer to State (SCDHEC) guidelines for additional information about the state-specific requirements regarding the disposal of materials containing lead paint including Toxicity Characteristic Leaching Procedure (TCLP) analysis. Accumulations of lead paint (chips, blasting debris, etc.) must be analyzed by TCLP to determine if the debris is classified as “hazardous waste” (greater than or equal to 5mg/kg). Collection and analysis of a TCLP sample is recommended prior to disposal of any waste with a potential to contain lead.

Destructive actions to lead-based paint finishes that may create a lead exposure hazard (sanding, manual demolition, torch cutting, blasting, etc.) require compliance with OSHA, including proper training, exposure monitoring and proper disposal. OSHA considers all lead containing paints applicable to enforcement, and would require training, engineering controls, and administrative controls in accordance with 29 CFR 1926.62. In the event building components that tested positive for lead are disturbed during renovations, then contractors and workers should be informed as to the presence of LBP. Air monitoring for airborne lead concentrations is recommended during any lead abatement activities.

Building components containing lead are to be handled and disposed of in accordance with federal and state regulations when removed from the building. Components containing lead can be segregated from other building materials, wrapped in plastic, secured, and disposed of at a **Municipal Solid Waste Landfill**, also termed Subtitle D landfill. The waste generated by renovation and/or demolition activities is also regulated.



AIHA Laboratory Accreditation Programs, LLC

acknowledges that

EMSL Analytical, Inc.

376 Crompton Street, Unit 71, Charlotte, NC 28273

Laboratory ID: 197283

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA-LAP), LLC accreditation to the ISO/IEC 17025:2005 international standard, *General Requirements for the Competence of Testing and Calibration Laboratories* in the following:

LABORATORY ACCREDITATION PROGRAMS

- INDUSTRIAL HYGIENE
- ENVIRONMENTAL LEAD
- ENVIRONMENTAL MICROBIOLOGY
- FOOD
- UNIQUE SCOPES

- Accreditation Expires: September 01, 2018
- Accreditation Expires: September 01, 2018
- Accreditation Expires: September 01, 2018
- Accreditation Expires:
- Accreditation Expires:

Specific Field(s) of Testing (FoTy/Method(s)) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached **Scope of Accreditation**. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2005 and AIHA-LAP, LLC requirements. This certificate is not valid without the attached **Scope of Accreditation**. Please review the AIHA-LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

William Walsh

William Walsh, CHH
Chairperson, Analytical Accreditation Board

Revision 15: 03/30/2016

Cheryl O. Morton

Cheryl O. Morton
Managing Director, AIHA Laboratory Accreditation Programs, LLC

Date Issued: 09/29/2016

LEAD-BASED PAINT PHOTOGRAPHS



PB-01
WHITE ON DRYWALL



PB-02
WHITE ON INTERIOR TRIM



PB-03
OFF-WHITE ON DRYWALL



PB-04
GREEN ON EXTERIOR TRIM

OrderID: 411901416



EMSL ANALYTICAL, INC.
LABORATORY SERVICES

Lead (Pb) Chain of Custody

EMSL Order ID (Lab Use Only):

411901416

PHONE ()
 FAX ()

Company: Trident Environmental Services, Inc		EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different <small>If Bill is Different note instructions in Comments**</small>		
Street: 500 Oakbrook Lane, Suite E		<small>Third Party Billing requires written authorization from third party</small>		
City: Summerville	State/Province: SC	Zip/Postal Code: 29485	Country: USA	
Report To (Name): Kevin Leedy		Telephone #: 843-873-3648		
Email Address: kevinleedy@tridentenvironmental.com		Fax #:	Purchase Order:	
Project Name/Number: 1104 Folly Road		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email		
U.S. State Samples Taken:		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt		
Turnaround Time (TAT) Options* - Please Check				
<input type="checkbox"/> 3 Hour <input type="checkbox"/> 6 Hour <input type="checkbox"/> 24 Hour <input checked="" type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week:				
<small>*Analysis completed in accordance with EMSL's Terms and Conditions located in the Price Guide</small>				
Matrix	Method	Instrument	Reporting Limit	Check
Chips <input checked="" type="checkbox"/> % by wt. <input type="checkbox"/> mg/cm ² <input type="checkbox"/> ppm (mg/kg)	SW846-7000B	Flame Atomic Absorption	0.01%	<input checked="" type="checkbox"/>
Air	NIOSH 7082	Flame Atomic Absorption	4 µg/filter	<input type="checkbox"/>
	NIOSH 7105	Graphite Furnace AA	0.03 µg/filter	<input type="checkbox"/>
	NIOSH 7300M/NIOSH 7303	ICP-OES	0.5 µg/filter	<input type="checkbox"/>
Wipe* ASTM <input type="checkbox"/> non ASTM <input type="checkbox"/> <small>*If no box checked, non-ASTM Wipe assumed</small>	SW846-7000B	Flame Atomic Absorption	10 µg/wipe	<input type="checkbox"/>
	SW846-6010B or C	ICP-OES	1.0 µg/wipe	<input type="checkbox"/>
TCLP	SW846-1311/7000B/SM 3111B	Flame Atomic Absorption	0.4 mg/L (ppm)	<input type="checkbox"/>
	SW846-1311/SW846-6010B or C	ICP-OES	0.1 mg/L (ppm)	<input type="checkbox"/>
SPLP	SW846-1312/7000B/SM 3111B	Flame Atomic Absorption	0.4 mg/L (ppm)	<input type="checkbox"/>
	SW846-1312/SW846-6010B or C	ICP-OES	0.1 mg/L (ppm)	<input type="checkbox"/>
TTLIC	22 CCR App. II, 7000B/7420	Flame Atomic Absorption	40 mg/kg (ppm)	<input type="checkbox"/>
	22 CCR App. II, SW846-6010B or C	ICP-OES	2 mg/kg (ppm)	<input type="checkbox"/>
STLC	22 CCR App. II, 7000B/7420	Flame Atomic Absorption	0.4 mg/L (ppm)	<input type="checkbox"/>
	22 CCR App. II, SW846-6010B or C	ICP-OES	0.1 mg/L (ppm)	<input type="checkbox"/>
Soil	SW846-7000B	Flame Atomic Absorption	40 mg/kg (ppm)	<input type="checkbox"/>
	SW846-6010B or C	ICP-OES	2 mg/kg (ppm)	<input type="checkbox"/>
Wastewater Unpreserved <input type="checkbox"/> Preserved with HNO ₃ pH < 2 <input type="checkbox"/>	SM3111B/SW846-7000B	Flame Atomic Absorption	0.4 mg/L (ppm)	<input type="checkbox"/>
	EPA 200.9	Graphite Furnace AA	0.003 mg/L (ppm)	<input type="checkbox"/>
	EPA 200.7	ICP-OES	0.020 mg/L (ppm)	<input type="checkbox"/>
Drinking Water Unpreserved <input type="checkbox"/> Preserved with HNO ₃ pH < 2 <input type="checkbox"/>	EPA 200.8	ICP-MS	0.001 mg/L (ppm)	<input type="checkbox"/>
	EPA 200.9	Graphite Furnace AA	0.003 mg/L (ppm)	<input type="checkbox"/>
	EPA 200.5	ICP-OES	0.003 mg/L (ppm)	<input type="checkbox"/>
TSP/SPM Filter	40 CFR Part 50	ICP-OES	12 µg/filter	<input type="checkbox"/>
	40 CFR Part 50	Graphite Furnace AA	3.6 µg/filter	<input type="checkbox"/>
Other:				
Name of Sampler: Hunter Hanson		Signature of Sampler: <i>Hunter Hanson</i>		
Sample #	Location	Volume/Area	Date/Time Sampled	
Client Sample #s	Total # of Samples:		4	
Relinquished (Client):	<i>Hunter Hanson</i>	Date:	2-11-19	Time:
Received (Lab):	<i>[Signature]</i>	Date:	2-13-19	Time:
Comments: EMSL 8137 000 7363				

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EMSL Analytical, Inc.

10801 Southern Loop Blvd, Pineville, NC 28134
 Phone/Fax: (704) 525-2205 / (704) 525-2382
<http://www.EMSL.com> charlotte@emsl.com

EMSL Order: 411901416
 CustomerID: TRID50
 CustomerPO:
 ProjectID:

Attn: **Kevin Leedy**
Trident Environmental Services, Inc.
500 Oakbrook Lane
Suite E
Summerville, SC 29485

Phone: (843) 873-3648
 Fax:
 Received: 02/13/19 9:30 AM
 Collected: 2/11/2019

Project: 1104 Folly Road

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

Client Sample Description	Lab ID	Collected	Analyzed	Weight	Lead Concentration
Pb-01 Site: White on Drywall	411901416-0001	2/11/2019	2/14/2019	0.2033 g	<0.0086 % wt
Pb-02 Site: White on Interior Trim	411901416-0002	2/11/2019	2/14/2019	0.2099 g	0.035 % wt
Pb-03 Site: Off White on Drywall	411901416-0003	2/11/2019	2/14/2019	0.2111 g	<0.0085 % wt
Pb-04 Site: Green on Ext. Trim	411901416-0004	2/11/2019	2/14/2019	0.2139 g	0.63 % wt

Kyle Collins, Technical Manager
 or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. 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. Samples received in good condition unless otherwise noted. "n" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request.
 Samples analyzed by EMSL Analytical, Inc. Pineville, NC AHA-LAP, LLC - ELLAP 162283

Initial report from 02/15/2019 07:42:03