



**Asbestos & Lead-Based Paint Assessment  
Carolina Crossroads I-20/26/126 Project  
Bush River Road Bridge over I-26  
Structure No. 407003100100  
Columbia, Richland County, South Carolina  
S&ME Project No. 1461-16-047**

**INSPECTION PERFORMED BY:**

**Travis Knight & Bobby McAllister  
SCDHEC Lic. BI-00885 & BI-01429  
Inspection Dates: February 19, 2018**

- Asbestos was NOT found
- Asbestos WAS found
  
- Lead-Based Paint was NOT found
- Lead-Based Paint WAS found

**Report Expiration: February 2021**

**PREPARED FOR:**

**HDR Engineering Inc., of the Carolinas  
4400 Leeds Avenue, Suite 450  
North Charleston, SC 29405  
(843) 414-3700**

**PREPARED BY:**

**S&ME, Inc.  
134 Suber Road  
Columbia, SC 29210  
(803) 561-9024**

**May 22, 2018**



May 22, 2018

HDR Engineering Inc., of the Carolinas  
4400 Leeds Avenue, Suite 450  
North Charleston, SC 29405

Attention: Mr. David Kinard, PE

Reference: **Asbestos & Lead-Based Paint Assessment**  
**Carolina Crossroads I-20/26/126 Project**  
**Bush River Road Bridge over I-26**  
**Structure No. 407003100100**  
Columbia, Richland County, South Carolina  
S&ME Project No. 1461-16-047

Dear Mr. Kinard:

S&ME, Inc. (S&ME) is pleased to provide the enclosed report detailing our Asbestos and Lead-Based Paint Assessment of the Bush River Road Bridge over I-26 in Columbia, Richland County, South Carolina (Structure No. 407003100100). Our services consisted of an asbestos assessment and lead-based paint assessment. The work was performed in accordance with our subcontract modification dated January 24, 2018 to our Subconsultant Agreement dated August 17, 2016. The enclosed report includes the executive summary, project background, investigative procedures, findings and results, and conclusions and recommendations as necessary.

This report is provided for the use of the HDR Engineering Inc., of the Carolinas and South Carolina Department of Transportation. Use of this report by any other parties will be at such party's sole risk and S&ME, Inc. disclaims liability for any such use or reliance by third parties. The results presented in this report are indicative of conditions only during the time of the assessment.

In accordance with South Carolina Department of Health and Environmental Control Regulation 61-86.1 Standards of Performance for Asbestos Projects, this asbestos assessment report will remain valid for three years from the date of inspection (February 2021).



**Carolina Crossroads I-20/26/126 Project**  
**Bush River Road Bridge over I-26**  
Columbia, Richland County, South Carolina  
S&ME Project No. 1461-16-047

We appreciate the opportunity to provide you with our industrial hygiene/environmental services. If you have any questions concerning this report, please call us at (803) 561-9024.

Sincerely,

**S&ME, Inc.**

A handwritten signature in black ink, appearing to read 'Bobby McAllister', written over a horizontal line.

Bobby McAllister  
Asbestos Building Inspector  
(SCDHEC License No. BI-01429)

A handwritten signature in black ink, appearing to read 'Tom Behnke', written over a horizontal line.

Tom Behnke, P.G., CHMM  
Project Manager/Senior Reviewer  
(SCDHEC License No. MP-00004)



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## Executive Summary

An asbestos assessment and lead-based paint assessment was conducted on February 20, 2018 of the Bush River Road Bridge over I-26 (Structure No. 407003100100) in Columbia, Richland County, South Carolina. The purpose of the assessment was to identify asbestos-containing materials (ACMs) and lead-based paint coatings associated with the structure prior to renovation or demolition activities.

The bridge consists of a six-lane concrete roadway with a metal deck, steel beams and concrete piers.

### Asbestos

The asbestos assessment was performed in general accordance with the South Carolina Department of Health and Environmental Control (SCDHEC) Regulation 61-86.1, *Standards of Performance for Asbestos Projects* effective May 27, 2011. The asbestos assessment included the bulk sampling and analysis of suspect ACMs from the structure. The suspect materials identified on the bridge structure included vibration dampener, expansion joint, and a black tar material.

The Environmental Protection Agency (EPA) and SCDHEC define materials as asbestos-containing if an asbestos content of greater than one percent (>1%) is detected in a representative sample. Asbestos, in concentrations >1%, was **not** identified as a result of this assessment.

### Lead-Based Paint

Painted surfaces associated with the bridge structure were considered suspect and analyzed for lead content. Painted surfaces exceeding the SCDHEC disposal criteria of 0.7 milligrams per square centimeter (mg/cm<sup>2</sup>) were considered lead-based paint for the purpose of this assessment. Lead-based paint was **not** identified as a result of this assessment. However, painted surfaces associated with the structure exhibited detectable levels of lead and the disturbance of these materials is regulated by the OSHA regulation 29 CFR 1926.62 (Lead in Construction).



## 1.0 Introduction

S&ME was contracted to perform an asbestos assessment and lead-based paint assessment of the Bush River Road Bridge over I-26 in Columbia, Richland County, South Carolina. The site location and structure are identified on **Exhibits 1 & 2** in **Appendix II**. The bridge is identified as structure number 407003100100. These services were requested and authorized by the South Carolina Department of Transportation (SCDOT). We understand the bridge is scheduled for renovation and/or demolition activities. The asbestos and lead-based paint assessment was performed on February 20, 2018.

The bridge consists of a six-lane concrete roadway with a metal deck, steel beams and concrete piers. The bridge is approximately 245 feet long and 80 feet wide. Photographs of the structure are provided in **Appendix II**.

### Asbestos Assessment

The asbestos assessment was performed to identify and sample suspect ACMs in accordance with regulatory requirements for structures scheduled to be renovated or demolished. Demolition and renovation activities are regulated by OSHA, EPA and SCDHEC. The EPA and SCDHEC require asbestos assessments, conducted by licensed individuals, prior to renovation and/or demolition projects. Code 40 of Federal Regulations Part 61-86.1 require asbestos assessments, followed by the proper removal, and disposal of ACM that is affected by renovation or demolition. The identification of ACMs will aid in the prevention of occupational exposures and/or environmental releases of airborne asbestos. Identification of ACM is also required by OSHA 1926.1101. The EPA, OSHA and SCDHEC define ACM as materials containing greater than one (1) percent asbestos in a representative sample. However, OSHA regulates materials containing less than or equal to one percent asbestos. Identification of ACMs also complies with Title 40 Code of the Federal Regulations, part 61, and State Regulation 61-86.1 enforced by the SCDHEC, along with Title 29 Code of Federal Regulations, part 1926 enforced by OSHA.

Section 2.0 describes the assessment procedures used, results of the suspect ACMs sampled and analyzed, confirmed ACMs located on the structure, and conclusions and recommendations regarding the subject bridge as related to ACMs.

### Lead-Based Paint Assessment

The purpose of the lead-based paint assessment was to identify observable lead-based paint finishes associated with the structure which may be adversely affected by future renovation or demolition activities. The identification of these materials will aid in the compliance of occupational exposure (OSHA) and/or environmental releases of airborne lead dust in accordance with 29 CFR 1926.62 (Lead in Construction) and provide information to facilitate proper disposal of lead-based paint coated components and debris in accordance with the SCDHEC and EPA.

## 2.0 Asbestos Assessment

### 2.1 Assessment Procedures

The asbestos assessment was performed by observing and collecting random samples of suspect asbestos-containing materials associated with the subject bridge structure. Significant destructive investigative techniques and sampling was not performed as part of this assessment. Consequently, the possibility exists that suspect



materials were not detected in inaccessible areas such as pipe chases, voids, or in areas deemed unsafe to enter by the asbestos inspector. If additional suspect materials are discovered during future renovation or demolition activities, destructive actions to the suspect ACM should not proceed until bulk samples are collected and analyzed for asbestos content.

Suspect ACMS that were observed and sampled consist of expansion joint, surfacing material, felt paper and associated mastic and gray caulking.

To comply with current SCDHEC Regulations, a sampling strategy was developed to provide representative samples of suspect asbestos-containing materials in accordance with OSHA, SCDHEC and EPA. Bulk samples were then extracted from suspect ACMs and recorded on a chain of custody record and submitted to EMSL's asbestos laboratory in Pineville, North Carolina for analysis via the following method:

#### *Polarized Light Microscopy (PLM)*

The suspect materials were analyzed by trained microscopists using 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 presents.

#### *Transmission Electron Microscopy (TEM)*

In accordance with SCDHEC Regulation 61-86.1, Transmission Electron Microscopy (TEM) confirmation analysis is required to be performed on one sample of any non-friable organically bound material (NOB) that tests negative via PLM analysis. The TEM analysis was performed by EMSL using EPA 600 Method in accordance with ASTM E2356.

Both the PLM and the TEM laboratories are accredited by the National Voluntary Laboratory Accreditation Program (NVLAP), which is administered by the National Institute of Standards and Technology.

## **2.2 Findings and Results**

The asbestos assessment conducted on February 19, 2018 included the quantification and random bulk sampling of various suspect asbestos-containing materials associated with the bridge structure. The suspect materials consisted of expansion joint material, felt paper and mastic, grey caulk and surfacing material. There are no suspect drainage scuppers associated with the structure. The EPA and SCDHEC define materials as asbestos-containing if an asbestos content >1% is detected in a representative sample. In accordance with SCDHEC Regulation 61-86.1, TEM analysis was performed on one sample of each of the following non-friable, organically-bound (NOB) materials collected from the bridge that displayed a result of no asbestos detected via PLM analysis:

- Expansion joint
- Felt paper & mastic
- Gray caulk



Of the representative materials sampled and analyzed during this assessment, asbestos in concentrations >1% was **not** identified.

A table summarizing the sample number, location, type of material tested, approximate quantity of the material sampled, condition of the material, and corresponding result for each sample is provided in **Appendix I**. A site location figure and photographs are provided in **Appendix II**. A copy of the inspector's SCDHEC license is provided in **Appendix V**.

## 3.0 Lead-Based Paint Assessment

### 3.1 Assessment Procedures

The lead-based paint assessment was conducted for compliance with the SCDHEC limit of 0.7 milligrams (mg) of lead per square centimeter (cm<sup>2</sup>) of painted surface for lead-based paint coated waste. SCDHEC, Health Division defines lead-based paint as a coating containing lead in quantities  $\geq 0.7$  mg/cm<sup>2</sup> (SCDHEC, Health Division definition #4-53-1320f). Any coated surfaces meeting or exceeding the SCDHEC limit of 0.7 mg/cm<sup>2</sup> were considered lead-based paint for the purpose of this assessment.

OSHA does not recognize a threshold level of lead for definition purposes, only the presence or absence of lead. The current OSHA regulations recognize an airborne action level of thirty micrograms of lead per cubic meter of air (30  $\mu\text{g}/\text{m}^3$ ) during an eight-hour day and a permissible exposure level of fifty micrograms per cubic meter (50  $\mu\text{g}/\text{m}^3$ ).

Representative covered components and surfaces were analyzed utilizing a Niton XLP-300A X-Ray Fluorescence (XRF) spectrum analyzer (serial #95004). The suspect painted finishes were selected based on the color of the topcoat and the underlying paint layers and/or the substrate on which it was applied.

Attached in **Appendix IV** is a summary of the paint readings analyzed by the XRF spectrum lead analyzer. The XRF summary provides the sample numbers, sample location, component, substrate, paint color, condition, and results.

### 3.2 Findings and Results

Coated surfaces associated with the bridge structure were tested for the presence of lead-based paint. Painted surfaces meeting or exceeding the SCDHEC limit of 0.7 milligrams of lead per square centimeter (0.7 mg/cm<sup>2</sup>) were considered lead-based paint for the purpose of this survey. None of the tested surfaces were reported to have lead concentrations in excess of the SCDHEC 0.7 mg/cm<sup>2</sup> limit. However, black paint associated with the steel plates exhibited detectable levels of lead and the disturbance of these materials is regulated by the OSHA regulation 29 CFR 1926.62 (Lead in Construction).

A summary of the XRF readings is provided in **Appendix IV**.





## 4.0 Conclusions and Recommendations

Based on the findings of this assessment, we provide the following conclusions and recommendations.

### 4.1 Asbestos

No asbestos containing materials were identified on the structure. If additional suspect materials are discovered during future renovation or demolition activities, destructive actions to the suspect ACM should not proceed until bulk samples are collected and analyzed for asbestos content.

### 4.2 Lead-Based Paint

No tested coatings exceeded the SCDHEC 0.7 mg/cm<sup>2</sup> limit for lead-based paint. However, black paint associated with the steel plates exhibited detectable levels of lead and the disturbance of these materials is regulated by the OSHA regulation 29 CFR 1926.62 (Lead in Construction).

The client is advised that OSHA does not recognize a threshold level of lead for definition purposes, only the presence or absence of lead. Consequently, the OSHA regulations governing worker protection for lead-based paint may apply to work practices including the disturbance of paint systems with detectable levels of lead. Destructive actions (sanding, burning, demolition, component removal, paint preparation) to the lead-containing paint surfaces will require the contractor comply with the standards of OSHA, including but not limited to initial exposure monitoring, the use of personal protective equipment, and medical surveillance.

SCDHEC Regulation 61-107.19 permits demolition materials painted with lead-based paint ( $\geq 0.7$  mg/cm<sup>2</sup>) to be disposed in a permitted Class Two (C&D) or Class Three Subtitle D, Municipal Solid Waste (MSW) landfill.

Accumulations of paint waste (chips, dust, or flakes) must be tested by the Toxicity Characteristic Leaching Procedure (TCLP) to determine if the waste is classified as hazardous, which requires disposal in a Subtitle C (hazardous waste) landfill. Lead waste, at a minimum, must be disposed in a Class Two or Three landfill.

## 5.0 Limitations

This report is provided for the sole use of the Client. Use of this report by any other parties will be at such party's sole risk, and S&ME disclaims liability for any such use or reliance by third parties. The results presented in this report are indicative of conditions only during the time of the sampling period and of the specific areas referenced. Under no circumstances is this report to be used as a bidding document, or as a project design or specification.

S&ME performed the services in accordance with generally accepted practices of reputable environmental consultants undertaking similar studies at the same time and in the same geographical area. S&ME has endeavored to meet this standard of care. No other warranty, expressed or implied, is intended or made with respect to this report or S&ME's services. Users of this report should consider the scope and limitations related to these services when developing opinions as to risks associated with the site. Additional limitations to our survey are as follows:

## **Asbestos & Lead-Based Paint Assessment**

### **Bush River Road Bridge over I-26**

Columbia, Richland County, South Carolina

S&ME Project No. 1461-16-047



- Significant destructive sampling was not performed during the asbestos survey. Additional suspect ACMs may be present in inaccessible locations such as materials encased in concrete. Consequently, if additional suspect materials are discovered during future renovation or demolition activities, bulk samples must be collected and analyzed for asbestos content.

## **Appendices**

## **Appendix I – Summary of Asbestos Sampling**

## Summary of Asbestos Sampling

<b>Project Name:</b> Bush River Road Bridge over I-26 (Structure No. 407003100100)	<b>Project Number:</b> 1461-16-047
<b>Location:</b> Columbia, Richland County, South Carolina	<b>Sampling Date(s):</b> February 20, 2018

### Table I-I Summary of Asbestos Sampling

Sample No.	Sample Location	Material	Approx. Quantity <sup>1</sup>	Asbestos Type	% <sup>2</sup>	Condition <sup>3</sup>	P.F.D. <sup>3</sup>	H.A. <sup>4</sup>
EJ-1	Retaining wall	Expansion joint	2,500 SF	NAD	NA	NA	NA	NA
EJ-2	Retaining wall	Expansion joint		NAD	NA	NA	NA	NA
EJ-3 (TEM)	Sidewalk	Expansion joint		NAD	NA	NA	NA	NA
C-1	Concrete retaining wall	Surfacing material	8,600 SF	NAD	NA	NA	NA	NA
C-2	Concrete retaining wall	Surfacing material		NAD	NA	NA	NA	NA
C-3	Concrete retaining wall	Surfacing material		NAD	NA	NA	NA	NA
C-4	Concrete retaining wall	Surfacing material		NAD	NA	NA	NA	NA
C-5	Concrete retaining wall	Surfacing material		NAD	NA	NA	NA	NA
C-6	Concrete retaining wall	Surfacing material		NAD	NA	NA	NA	NA
C-7	Concrete retaining wall	Surfacing material		NAD	NA	NA	NA	NA
FP-1	Patch on east boundary wall	Felt paper & Mastic	4 SF	NAD	NA	NA	NA	NA
FP-2	Patch on east boundary wall	Felt paper & Mastic		NAD	NA	NA	NA	NA
FP-3 (TEM)	Patch on east boundary wall	Felt paper & Mastic		NAD	NA	NA	NA	NA
CL-1	East boundary wall	Gray Caulk	5 LF	NAD	NA	NA	NA	NA
CL-2	East boundary wall	Gray Caulk		NAD	NA	NA	NA	NA
CL-3 (TEM)	East boundary wall	Gray Caulk		NAD	NA	NA	NA	NA

SF = square feet    NAD = No Asbestos Detected    NA = Not Applicable

Note 1: Estimated quantities. The quantities should not be used for bidding purposes, as field conditions should be verified.

Note 2: The EPA, SCDHEC and OSHA define a material as asbestos-containing if an asbestos content greater than one percent (>1%) is detected in a representative sample.

Note 3: Potential for Disturbance

Note 4: Hazard Assessment

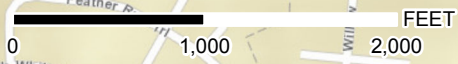
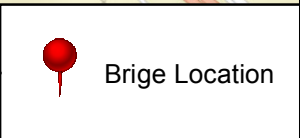
## **Appendix II – Exhibits and Photographs**

**REFERENCE:**  
 PLEASE NOTE THIS EXHIBIT IS FOR INFORMATIONAL PURPOSES ONLY. IT IS NOT MEANT FOR DESIGN, LEGAL, OR ANY OTHER USES. THERE ARE NO GUARANTEES ABOUT ITS ACCURACY. S&M, INC. ASSUMES NO RESPONSIBILITY FOR ANY DECISION MADE OR ANY ACTIONS TAKEN BY THE USER BASED UPON THIS EXHIBIT.



**Bush River Road Over I-26**

**APPROXIMATE SITE LOCATION**  
 -81.1039, 34.0306



Drawing Path: Q:\Environmental\Projects\2016\1461-16-047 Ph. 3 Corridor Improvement Project\mxds\Bush River Road Over I-26 Vicinity.mxd plotted by Chandley 03-06-2018



**Vicinity Exhibit**

Bush River Road Over Interstate 26

Columbia, Richland County, South Carolina

Source: World Street Map

SCALE:  
 1" = 1,000'  
 DATE:  
 3-6-18  
 PROJECT NUMBER  
 1461-16-047 Ph. 3

EXHIBIT NO.

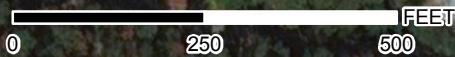
**1**


**REFERENCE:**  
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**Bush River Road Over I-26**

**APPROXIMATE SITE LOCATION**  
 -81.1039, 34.0306



 **Brige Location**

Drawing Path: Q:\Environmental\Projects\2016\1461-16-047 Ph. 3 Corridor Improvement Project\mxds\Bush River Road Over I-26\Aerial.mxd plotted by: C.Hendley 03-06-2018



**Aerial Exhibit**

Bush River Road Over Interstate 26

Columbia, Richland County, South Carolina

Source: World Imagery 2016

SCALE:  
1" = 250'

DATE:  
3-6-18

PROJECT NUMBER  
1461-16-047 Ph. 3

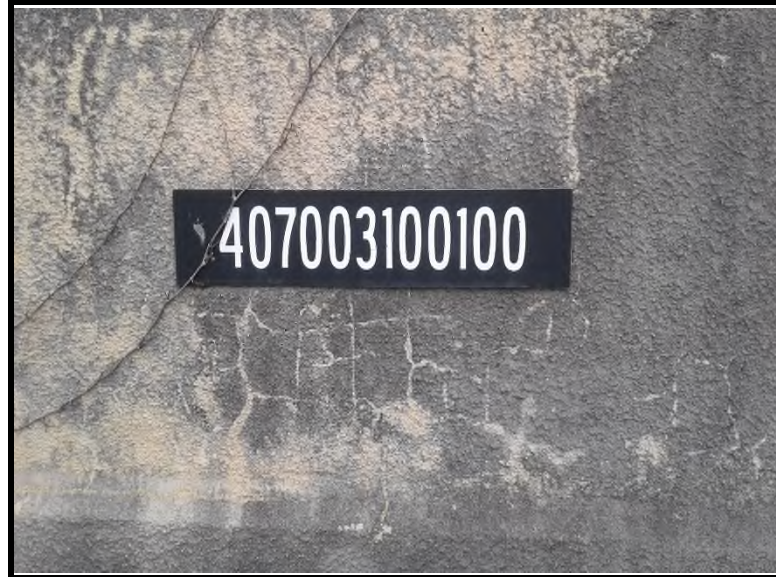
EXHIBIT NO.

**2**





**1** View of the Bush River Road Bridge over I-26.



**2** The bridge is identified as structure # 407003100100.



**3** View of the underside of the bridge. Shows metal decking, steel beams, and concrete piers.



**4** The gray caulking tested negative for asbestos via PLM and TEM analysis.



**5** The expansion joint material located on the boundary wall tested negative for asbestos via PLM and TEM analysis. The textured material tested negative for asbestos via PLM analysis.



**6** No scuppers were observed during the assessment of the bridge.



**Site Photographs**  
**Bush River Road Bridge over I-26**  
**Structure No. 407003100100**  
**Columbia, Richland County, South Carolina**

S&ME Project 1461-16-047

Taken by: B. McAllister & T.  
Knight

Date: February 20, 2018

**Appendix III – Asbestos Bulk Sample Analysis Sheets and Chain of Custody Record**



# EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

Tel/Fax: (704) 525-2205 / (704) 525-2382

<http://www.EMSL.com> / [charlottelab@emsl.com](mailto:charlottelab@emsl.com)

EMSL Order: 411801405

Customer ID: S&ME50

Customer PO: 1461-16-047 P

Project ID:

**Attention:** Travis Knight  
S&ME, Inc.  
134 Suber Rd.  
Columbia, SC 29210

**Phone:** (803) 561-9024

**Fax:** (803) 561-9177

**Received Date:** 02/22/2018 9:35 AM

**Analysis Date:** 02/22/2018 - 02/23/2018

**Collected Date:** 02/20/2018

**Project:** Bush River over I-26

## 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
EJ-1 411801405-0001	Expansion Joint	Brown/Black Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (Other)	None Detected
EJ-2 411801405-0002	Expansion Joint	Brown/Black Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (Other)	None Detected
C-1 411801405-0003	Concrete Retaining Wall - Surfacing Material	Gray Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
C-2 411801405-0004	Concrete Retaining Wall - Surfacing Material	Gray Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
C-3 411801405-0005	Concrete Retaining Wall - Surfacing Material	Gray Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
C-4 411801405-0006	Concrete Retaining Wall - Surfacing Material	Gray Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
C-5 411801405-0007	Concrete Retaining Wall - Surfacing Material	Gray Non-Fibrous Homogeneous		5% Quartz 10% Ca Carbonate 85% Non-fibrous (Other)	None Detected
C-6 411801405-0008	Concrete Retaining Wall - Surfacing Material	Gray Non-Fibrous Homogeneous		5% Quartz 10% Ca Carbonate 85% Non-fibrous (Other)	None Detected
C-7 411801405-0009	Concrete Retaining Wall - Surfacing Material	Gray Non-Fibrous Homogeneous		8% Quartz 15% Ca Carbonate 77% Non-fibrous (Other)	None Detected
FP-1-Felt 411801405-0010	Patch on East Boundary Wall - Felt Paper & Mastic	Black Fibrous Homogeneous	15% Synthetic	85% Non-fibrous (Other)	None Detected
FP-1-Mastic 411801405-0010A	Patch on East Boundary Wall - Felt Paper & Mastic	Black Non-Fibrous Homogeneous	1% Synthetic	99% Non-fibrous (Other)	None Detected
FP-2-Felt 411801405-0011	Patch on East Boundary Wall - Felt Paper & Mastic	Black Fibrous Homogeneous	5% Synthetic	95% Non-fibrous (Other)	None Detected
FP-2-Mastic 411801405-0011A	Patch on East Boundary Wall - Felt Paper & Mastic	Black Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
CL-1 411801405-0012	East Boundary Wall - Gray Caulk	Gray Non-Fibrous Homogeneous		15% Ca Carbonate 85% Non-fibrous (Other)	None Detected
CL-2 411801405-0013	East Boundary Wall - Gray Caulk	Gray Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected

Initial report from: 02/23/2018 13:12:02



# EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

Tel/Fax: (704) 525-2205 / (704) 525-2382

<http://www.EMSL.com> / [charlottelab@emsl.com](mailto:charlottelab@emsl.com)

EMSL Order: 411801405

Customer ID: S&ME50

Customer PO: 1461-16-047 P

Project ID:

Analyst(s)

*Aaron Hartley (8)*

*Lacy Searcy (7)*

Lee Plumley, Laboratory Manager  
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported 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. 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. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

Samples analyzed by EMSL Analytical, Inc. Pineville, NC NVLAP Lab Code 200841-0, VA 3333 00312

Initial report from: 02/23/2018 13:12:02



# EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

Tel/Fax: (704) 525-2205 / (704) 525-2382

<http://www.EMSL.com> / [charlottelab@emsl.com](mailto:charlottelab@emsl.com)

<b>EMSL Order:</b> 411801405
<b>Customer ID:</b> S&ME50
<b>Customer PO:</b> 1461-16-047 P
<b>Project ID:</b>

<b>Attention:</b> Travis Knight S&ME, Inc. 134 Suber Rd. Columbia, SC 29210	<b>Phone:</b> (803) 561-9024 <b>Fax:</b> (803) 561-9177 <b>Received Date:</b> 02/22/2018 9:35 AM <b>Analysis Date:</b> 02/27/2018 <b>Collected Date:</b> 02/20/2018
<b>Project:</b> Bush River over I-26	

## 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
EJ-3 411801405-0014	Expansion Joint	Brown Fibrous Homogeneous	100	None	No Asbestos Detected
FP-3-Felt 411801405-0015	Patch on East Boundary Wall - Felt Paper & Mastic	Black Fibrous Homogeneous	100	None	No Asbestos Detected
FP-3-Mastic 411801405-0016	Patch on East Boundary Wall - Felt Paper & Mastic	Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected
CL-3 411801405-0017	East Boundary Wall - Gray Caulk	Gray Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Aaron Hartley (4)

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: 02/27/2018 12:57:43



EMSL ANALYTICAL, INC.  
LABORATORY • PRODUCTS • TRAINING

### Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (Lab Use Only):

411801405

Pineville, NC 28134  
PHONE: (704) 525-2205  
FAX: (704) 525-2382

Company : S&ME, Inc.		EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different If Bill to is Different note instructions in Comments**	
Street: 134 Suber Rd.		Third Party Billing requires written authorization from third party	
City: Columbia	State/Province: SC	Zip/Postal Code: 29210	Country: US
Report To (Name): Travis Knight		Telephone #: 803-561-9024	
Email Address: tknight@smeinc.com		Fax #: 803-561-9177	Purchase Order: 1461-16-047 P
Project Name/Number: Bush River Over 1-26		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email <input type="checkbox"/> Mail	
U.S. State Samples Taken: SC		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	

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

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

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

PLM - Bulk (reporting limit)	TEM - Bulk
<input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (<1%)	<input checked="" type="checkbox"/> TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
<input type="checkbox"/> PLM EPA NOB (<1%)	<input type="checkbox"/> NY ELAP Method 198.4 (TEM)
Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%)	<input type="checkbox"/> Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%)	<input type="checkbox"/> TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
<input type="checkbox"/> NIOSH 9002 (<1%)	<input type="checkbox"/> TEM Qualitative via Filtration Prep Technique
<input type="checkbox"/> NY ELAP Method 198.1 (friable in NY)	<input type="checkbox"/> TEM Qualitative via Drop Mount Prep Technique
<input type="checkbox"/> NY ELAP Method 198.6 NOB (non-friable-NY)	<b>Other</b>
<input type="checkbox"/> OSHA ID-191 Modified	<input type="checkbox"/>
<input type="checkbox"/> Standard Addition Method	

Check For Positive Stop – Clearly Identify Homogenous Group

Date Sampled: 2/20/18

Samplers Name: Travis Knight

Samplers Signature:

Sample #	HA #	Sample Location	Material Description
		Please See Attached COC	

Client Sample # (s):	-	Total # of Samples:	
Relinquished (Client):		Date: 2/21/18	Time: 1600
Received (Lab):		Date: 2/22/18	Time: 9:35AM Fk
Comments/Special Instructions: NOB = 2 PLMs and 1 TEM if both PLMs are negative.			7954 3428 9410

411801405

**BULK SAMPLE Chain of Custody Record**

PROJECT NO.		PROJECT NAME: <i>Bush</i>		DATE TAKEN		SIGNATURE:		LOCATION	QUANTITY	COMMENTS / SPECIAL INSTRUCTIONS
FACILITY		<i>BR</i> / <i>TK</i>		<i>2/20/18</i>						
SAMPLER(S)	HA	MATERIAL	LOCATION	QUANTITY	COMMENTS / SPECIAL INSTRUCTIONS					
<i>EJ-1</i>		<i>Expansion Joint</i>								
<i>2</i>										
<i>3</i>										<i>NOID</i>
<i>C-1</i>		<i>Surfacing material</i>	<i>Concrete Retaining Wall</i>							
<i>2</i>										
<i>3</i>										
<i>4</i>										
<i>5</i>										
<i>6</i>										
<i>7</i>										
<i>FP-1</i>		<i>Felt Paper, Mastic</i>	<i>Patch on East Boundary Wall</i>							
<i>2</i>										
<i>3</i>										<i>NOID</i>
<i>CL-1</i>		<i>Grey Gavel R</i>	<i>EAST Boundary Wall</i>							
<i>2</i>										
<i>3</i>										<i>NOID</i>



**Appendix IV – XRF Lead-Based Paint Reading Summary Table**

## XRF LEAD-BASED PAINT READING SUMMARY TABLE

Serial #95004  
 PAINT  
 Project No.: 1461-16-047  
 Site: Bush River over I-26  
 Date: February 20, 2018  
 Ranges (NEG<INC<POS): Device PCS



Reading Number	Floor/Area	Room	Feature	Substrate	Condition	Color	Result	XRF Reading (mg/cm <sup>2</sup> )
109			Shutter Calibrate					--
110			Calibrate					1.00
111			Calibrate					1.00
112			Calibrate					1.10
113	Bridge		I-Beam	Metal	Good	Gray	Negative	<LOD
114	Bridge		Plate	Metal	Good	Black	Negative	0.19
115	Road		White line	Asphalt	Good	White	Negative	<LOD
116	Road		Yellow line	Asphalt	Good	Yellow	Negative	<LOD

**Appendix V – Copy of SDHEC Inspectors' Licenses**




South Carolina Department  
of  
Health and Environmental Control

Asbestos License

Bobby J. McAllister

**SCDHEC ISSUED**  
Asbestos ID Card

**Bobby Mcallister**

	<b>CONSULTBI</b>	<b>BI-01429</b>	<b>04/24/19</b>
	<b>AIRSAMPLER</b>	<b>AS-00450</b>	<b>01/08/19</b>
	<b>SUPERAHERA</b>	<b>SA-02404</b>	<b>01/08/19</b>



South Carolina Department  
of  
Health and Environmental Control


Asbestos License

Travis L. Knight

## SCDHEC ISSUED

Asbestos ID Card

### Travis Knight



		Expiration Date:
CONSULTPD	PD-00166	11/09/18
SUPERAMERA	SA-01266	01/08/19
CONSULTBI	BI-00885	01/09/19
AIRSAMPLER	AS-00237	01/08/19