MILLER LANE BRIDGE
ASBESTOS SURVEY REPORT

Miller Lane Bridge
Johnson City, Tennessee

PREPARED BY

S&ME, Inc.
644 Eastern Star Road
Kingsport, Tennessee 37663

February 26, 2020
S&ME Project No. 4140-20-003

Patsy L. Shupe

Patsy L. Shupe
Tennessee Asbestos Inspector
Accreditation No: A-I-125930-78035

TABLE OF CONTENTS

1.0 INTRODUCTION

This report presents the findings of an inspection for asbestos-containing materials (ACM) completed on the bridge identified in Section 1.1. The inspection was completed by S&ME, Inc. (S&ME) in general accordance with National Emissions Standards for Hazardous Air Pollutants (NESHAP) and the sampling protocol described in the Asbestos Hazard Emergency Response Act (AHERA) to provide representative samples of each suspect ACM.

1.1 Bridge Identification

The bridge is identified as:

Miller Lane Bridge
Johnson City, Tennessee

1.2 General Description

Miller Lane Bridge is located on Miller Lane over Sinking Creek in Johnson City, Tennessee. The bridge is an approximate 20-foot, concrete reinforced deck, and comprising abutment walls, wing walls and curbing with seven steel I-beams imbedded into the bottom of the concrete deck. The surface appears to consist of concrete with patches of asphalt on the entrance and exit of the bridge. The bridge is scheduled for replacement. No bridge plans were provided.

2.0 INSPECTION

The identification of ACM is performed by collecting bulk samples of suspect materials and having those samples analyzed by a laboratory. ACM are those materials found to contain greater than 1% asbestos by calibrated visual area estimation by Polarized Light Microscopy (PLM).

Bulk sampling is a procedure in which representative homogeneous sampling areas in a structure are identified and then sampled. A homogeneous sampling area is defined as an area that contains material of the same type (uniform in color and texture) and was applied during the same general time period. Once the homogeneous sampling areas are identified, bulk samples of suspect materials were obtained from the homogeneous areas (HAs) at the discretion of our inspectors, based on site conditions and past experience.

The survey was limited to an evaluation and confirmation of the presence and approximate quantity of accessible ACMs for the bridge. The survey did not include assessments for other regulated building materials such as lead paint and did not include destructive sampling to identify potential presence of concealed ACMs.

2.1 Personnel and Date(s) of Inspection

The sampling and field activities were performed on February 17, 2020, by Patsy L. Shupe and Amy L. Charles, both Accredited State of Tennessee Asbestos Inspectors. Copies of the inspector's and S&ME's current accreditation from the State of Tennessee are included in **Appendix A**.

2.2 Visual Survey

The survey began with a walk-through and visual survey of the structure located on the property. The visual survey consisted of:

- Locating and identifying HAs of suspect materials that may contain asbestos minerals
- Determining applicable sampling locations

2.3 Access to Bridge Components

Individual bridge components were accessed as described in the following subsections. S&ME collected bulk samples of suspect materials with a focus on materials appearing homogeneous with like color and composition. Metal, fiberglass, and wood materials are not considered as suspect ACM and were not sampled.

A total of 21 samples from seven HAs were collected and submitted for laboratory analysis. **Figure 1** depicts the bridge location map. Photographs of the bridge and various sampling locations are presented in **Appendix B**, and laboratory analytical data sheets are included in **Appendix C**.

2.3.1 Top of Bridge Deck/ Upper Concrete Coating (Homogenous Area 1)

Construction materials that comprise the bridge includes sections of asphaltic wearing surface at the entrance and exit of the bridge over concrete decking with metal I-beams. Suspect ACM was sampled from the asphaltic wearing surface. Three samples labeled 0217-1A, 0217-1B, and 0217-1C were collected from the upper asphaltic coating.

2.3.2 Underside of Bridge Deck (Homogenous Areas 4 and 5)

Below the decking, along the underside of the bridge contained a white trowel-applied coating, and three samples labeled 0217-5A, 0217-5B, and 0217-5C were collected from the coating. Black felt paper was also observed along the underside of the bridge. Three samples labeled 0217-4A, 0217-4B, and 0217-4C were collected of the black felt paper.

2.3.3 Bridge Beams

The bridge has four metal bridge beams. There was no coating on the bridge beams other than rust, therefore no samples were collected from the bridge beams.

2.3.4 Bridge Piers/Bents and Support

The bridge is constructed as a span bridge. No piers or bents are present; therefore, no suspect ACM was sampled.

2.3.5 Bridge Rails (Homogenous Areas 2 and 3)

The bridge is constructed with short concrete curbs; three samples labeled 0217-2A, 0217-2B, and 0217-2C were collected from the filler material between concrete gaps along the bridge curbs. The concrete curbs exhibited a concrete coating along the exterior sides of the curbs, and three samples labeled 0217-3A, 0217-3B, and 0217-3C were collected of the coating.

2.3.6 Abutments (Homogeneous Areas 6 and 7)

The bridge abutments are constructed of concrete. Three samples labeled 0217-7A, 0217-7B, and 0217-7C were collected from the coating on the concrete bridge abutments. The bridge abutments were constructed on concrete footings of different apparent construction material and three samples labeled 0217-6A, 0217-6B, and 0217-6C were collected from the coating on the footings.

2.3.7 Bridge Drainage

S&ME did not observe any method of drainage for the bridge other than sheet flow off the deck.

2.3.8 Additional Bridge Construction Material

No additional bridge construction material was observed.

3.0 ANALYTICAL PROCEDURES

3.1 Asbestos Analysis Procedures

The bulk samples are analyzed in the laboratory using PLM coupled with dispersion staining (Environmental Protection Agency (EPA) Method 600/R-93/116). PLM is an analytical method for asbestos identification, which identifies the specific asbestos minerals by their unique optical properties. The optical properties are a result of the mineral's chemical composition, physical atomic structure, and visual morphology. This is the U.S. EPA recommended method of analysis for asbestos identification in bulk samples.

Samples which contain multiple layers, or that have associated mastic or adhesive backing, are analyzed as two or more separate samples when possible.

3.2 Laboratory Name and Accreditation

The bulk samples collected for this inspection were analyzed by a laboratory that has received certification from the American Industrial Hygiene Association's (AIHA) Laboratory Accreditation

Program. The name and laboratory number of the analytical laboratory that analyzed the samples for this inspection is indicated in Table 1.

Table 1 - Analytical Laboratory

Laboratory Name	Scientific Analytical Institute, Inc.
Laboratory ID Number	200664-0

4.0 REGULATORY OVERVIEW

4.1 National Emission Standards for Hazardous Air Pollutants

The EPA's NESHAP regulations (40 CFR 61, Subpart B) requires that all regulated asbestos-containing materials (RACM) be properly removed prior to any renovation or demolition activities that will disturb them. These regulations define RACM as:

- Friable ACM.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subject to sanding, grinding, cutting, or abrading.
- 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.

4.1.1 Definitions

Significant definitions related to regulation of asbestos under NESHAP regulations include:

Friable asbestos-containing material (ACM), is defined by the Asbestos NESHAP, as any material containing more than one percent (1%) asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, PLM, that, when dry, can be crumbled, pulverized or reduced to powder by hand pressure. (Sec. 61.141).

Non-friable ACM is any material containing more than one percent (1%) asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, PLM, that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. EPA also defines two categories of non-friable ACM, Category I and Category II non-friable ACM, which are described as follows:

Category I non-friable ACM is any asbestos-containing packing, gasket, resilient floor covering or asphalt roofing product which contains more than one percent (1%) asbestos as determined

using PLM according to the method specified in Appendix A, Subpart F, 40 CFR Part 763. (Sec. 61.141).

Category II non-friable ACM is any material, excluding Category I non-friable ACM, containing more than one percent (1%) asbestos as determined using PLM according to the methods specified in Appendix A, Subpart F, 40 CFR Part 763 that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. (Sec. 61.141).

RACM is (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.

Friable materials are defined as those which can be crumbled, pulverized, or reduced to powder by hand pressure when dry. The NESHAP regulations also establish specific notification and control requirements for renovation and demolition work.

5.0 RESULTS

The results of the asbestos inspection are presented in the following sections.

5.1 Results of Asbestos Bulk Sample Analysis

A total of nine suspect ACM samples were obtained from the bridge. Multiple samples of each HA were collected in general accordance with NESHAP and the sampling protocol described in the AHERA to provide representative samples of each suspect ACM and delivered to the laboratory for visual observation and microscopic analysis. The samples were selected based on HAs of suspect materials, as described in Section 2.2.

None of the samples analyzed contained detectable asbestos minerals. The analytical results of all the samples collected from the structure, along with the chain-of-custody records, are included in **Appendix C**.

6.0 QUALIFICATIONS

The information presented herein is based on information obtained during the site visit(s) and from previous experience. If additional information becomes available, which might impact our conclusions or recommendations, S&ME requests the opportunity to review the information, reassess the potential concerns, and modify opinions, if warranted.

This report has been prepared on behalf of Vaughn & Melton Consulting Engineers on behalf of the City of Johnson City, Tennessee. This document is not a Bid Document or a Contract Document. Use of this report or reliance upon information contained in this report by any other party implies an agreement by that party to the same terms and conditions under which service was provided. Furthermore, any party, other than our Client, relying on this document is cautioned that all conclusions made or decisions arrived at based on their review of this document are those solely of the third party, without warranty, guarantee or promise by the author. These findings are relevant to the dates of our services and should not be relied upon to represent conditions at substantially earlier or later dates.

Figure

FIGURE 1: BRIDGE LOCATION MAP

Appendix A:
Asbestos Inspection Credentials


THE STATE OF TENNESSEE
Department of Environment and Conservation
Division of Solid Waste Management
Toxic Substances Program
Patsy L Shupe
DOB
02-Sep-1985
Sex
F
HGT
5' 4"
WGT
135
Discipline
Accreditation
Expiration
Inspector
A-I-125930-78035
May-31-2020
Project Monitor
A-PM-125930-78034
May-31-2020
Asbestos Accreditation
Initial


THE STATE OF TENNESSEE
Department of Environment and Conservation
Division of Solid Waste Management
Toxic Substances Program
Amy L Charles
Asbestos Accreditation
Initial

THE STATE OF TENNESSEE

Department of Environment and Conservation Division of Solid Waste Management
Toxic Substances Program
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 14th Floor Nashville TN 37243

By virtue of the authority vested by the Division of Solid Waste Management, the Company named below is hereby accreditted to offer and/or conduct Asbestos activities pursuant to Rule 1200-01-20:

S&ME Inc.

1413 Topside Road Louisville TN, 37777

to conduct ASBESTOS ACTIVITIES in schools or public and commercial buildings in Tennessee. This firm is responsible for compliance with the applicable requirements of Rule 1200-01-20.

Discipline	Type	Accreditation Number	Effective Date	Expiration Date
Accreditation	Re-Accreditation	A-F-68-78276	August 27, 2019	September 30, 2020

Given under the Seal of the State of Tennessee in Nashville.

This 27th Day of August 2019

Division of Solid Waste Management
Toxic Substance Program

CN-1324 (Rev 6/13) RDA-3020

Appendix B:
Photographs

Photographer: Patsy L. Shupe **Date:** 02/17/2020 **Description:** Photograph 1 – Homogeneous Area 1 Asphaltic Coating Sample Locations 0217-1A 0217-1B 0217-1C	
Photographer: Patsy L. Shupe **Date:** 02/17/2020 **Description:** Photograph 2 – Homogeneous Area 2 Concrete Gap Fill Sample Locations 0217-2A 0217-2B 0217-2C	

Photographer: Patsy L. Shupe **Date:** 02-17-2020 **Description:** Photograph 3 – Homogeneous Area 3 Bridge Wall Coating Sample Locations 0217-3A 0217-3B 0217-3C	
Photographer: Patsy L. Shupe **Date:** 02/17/2020 **Description:** Photograph 4 – Homogeneous Area 4 Black Felt Paper Sample Locations 0217-4A 0217-4B 0217-4C	

Photographer: Patsy L. Shupe **Date:** 02/17/2020 **Description:** Photograph 5 – Homogeneous Area 5 White Coating Sample Locations 0217-5A 0217-5B 0217-5C	
Photographer: Patsy L. Shupe **Date:** 02/17/2020 **Description:** Photograph 1 – Homogeneous Area 6 Coating on Bridge Footing Sample Locations 0217-6A 0217-6B 0217-6C	

Photographer: Patsy L. Shupe	
Date: 02/17/2020	
Description: Photograph 7 – Homogeneous Area 7 Abutment Wall Coating Sample Locations 0217-7A 0217-7B 0217-7C	

Appendix C:
Asbestos Sample Laboratory Analysis Data

Bulk Asbestos Analysis

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

NVLAP LAB CODE 200644-0

Customer: S&ME, Inc. Tri-Cities
644 Eastern Star Rd
Kingsport, TN 37663

Attn: Carol Ford
Patsy Shupe

Project: Miller Lane Bridge

Lab Order ID: 71936556
Analysis ID: 71936556_PLM
Date Received: 2/19/2020
Date Reported: 2/21/2020

Sample ID *Lab Sample ID*	Description *Lab Notes*	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes Treatment
0217-1A *71936556PLM_1*	Asphaltic Coating	None Detected		100% Other	Black, Gray Non Fibrous Heterogeneous Crushed, Dissolved
0217-1B *71936556PLM_2*	Asphaltic Coating	None Detected		100% Other	Black, Gray Non Fibrous Heterogeneous Crushed, Dissolved
0217-1C *71936556PLM_3*	Asphaltic Coating	None Detected		100% Other	Black, Gray Non Fibrous Heterogeneous Crushed, Dissolved
0217-2A *71936556PLM_4*	Concrete Gap Fill	None Detected		100% Other	Gray Non Fibrous Heterogeneous Crushed
0217-2B *71936556PLM_5*	Concrete Gap Fill	None Detected		100% Other	Gray Non Fibrous Heterogeneous Crushed
0217-2C *71936556PLM_6*	Concrete Gap Fill	None Detected		100% Other	Gray Non Fibrous Heterogeneous Crushed
0217-3A *71936556PLM_7*	West Wall Coating	None Detected		100% Other	Gray Non Fibrous Heterogeneous Crushed
0217-3B *71936556PLM_8*	West Wall Coating	None Detected		100% Other	Gray Non Fibrous Heterogeneous Crushed

Yanelis Delgado (21)

Analyst

Approved Signatory

Bulk Asbestos Analysis

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

NVLAP LAB CODE 200644-0

Customer: S&ME, Inc. Tri-Cities
644 Eastern Star Rd
Kingsport, TN 37663

Attn: Carol Ford
Patsy Shupe

Project: Miller Lane Bridge

Lab Order ID: 71936556
Analysis ID: 71936556_PLM
Date Received: 2/19/2020
Date Reported: 2/21/2020

Sample ID / *Lab Sample ID*	Description / *Lab Notes*	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes / Treatment
0217-3C	West Wall Coating	None Detected		100% Other	Gray Non Fibrous Heterogeneous
71936556PLM_9					Crushed
0217-4A	Black Felt Coating	None Detected	60% Cellulose	40% Other	Black Fibrous Homogeneous
71936556PLM_10					Ashed
0217-4B	Black Felt Coating	None Detected	60% Cellulose	40% Other	Black Fibrous Homogeneous
71936556PLM_11					Ashed
0217-4C	Black Felt Coating	None Detected	60% Cellulose	40% Other	Black Fibrous Homogeneous
71936556PLM_12					Ashed
0217-5A	White Coating	None Detected	3% Cellulose	97% Other	Gray Non Fibrous Heterogeneous
71936556PLM_13					Crushed
0217-5B	White Coating	None Detected	3% Cellulose	97% Other	Gray Non Fibrous Heterogeneous
71936556PLM_14					Crushed
0217-5C	White Coating	None Detected	3% Cellulose	97% Other	Gray Non Fibrous Heterogeneous
71936556PLM_15					Crushed
0217-6A	Bridge Footing Coating	None Detected		100% Other	Tan Non Fibrous Heterogeneous
71936556PLM_16					Crushed

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

Yanelis Delgado (21)

Analyst

Approved Signatory

P-F-002 r15 1/16/2021

Bulk Asbestos Analysis

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

NVLAP LAB CODE 200644-0

Customer: S&ME, Inc. Tri-Cities
644 Eastern Star Rd
Kingsport, TN 37663

Attn: Carol Ford
Patsy Shupe

Project: Miller Lane Bridge

Lab Order ID: 71936556
Analysis ID: 71936556_PLM
Date Received: 2/19/2020
Date Reported: 2/21/2020

Sample ID *Lab Sample ID*	Description *Lab Notes*	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes Treatment
0217-6B *71936556PLM_17*	Bridge Footing Coating	None Detected		100% Other	Tan Non Fibrous Heterogeneous Crushed
0217-6C *71936556PLM_18*	Bridge Footing Coating	None Detected		100% Other	Tan Non Fibrous Heterogeneous Crushed
0217-7A *71936556PLM_19*	Abutment wall Coating	None Detected		100% Other	Gray Non Fibrous Heterogeneous Crushed
0217-7B *71936556PLM_20*	Abutment wall Coating	None Detected		100% Other	Gray Non Fibrous Heterogeneous Crushed
0217-7C *71936556PLM_21*	Abutment wall Coating	None Detected		100% Other	Gray Non Fibrous Heterogeneous Crushed

Yanelis Delgado (21)

Analyst

Approved Signatory

71936556

Client:	S&ME
Contact:	Carol Ford
Address:	644 Eastern Star Road, Ksp. TN
Phone:	423-349-2800
Fax:	423-349-2817
Email:	pshupe@smeinc.com cford@smeinc.com
Project:	Miller Lane Bridge
Client Notes:	Positive stop per HA
P.O. #.	4140-20-003
Date Submitted:	02-17-2020 1400
Analysis:	PLM
TurnAroundTime:	3-day

Instructions:
Use Column "B" for your contact info

To See an Example Click the bottom Example Tab.

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

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

Scientific Analytical Institute, Inc.

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

Sample Number	Data 1	Sample Description	Data 2
<<			
0217-1A	Southeast of Bridge	Asphaltic Coating	
0217-1B	Southeast of Bridge	Asphaltic Coating	
0217-1C	Southeast of Bridge	Asphaltic Coating	
0217-2A	Southeast Corner	Concrete Gap Fill	
0217-2B	East Center	Concrete Gap Fill	
0217-2C	West Center	Concrete Gap Fill	
0217-3A	West Center Wall	West Wall Coating	
0217-3B	West Center Wall	West Wall Coating	
0217-3C	West Center Wall	West Wall Coating	
0217-4A	Southeast Underside of Bridge	Black Felt Coating	
0217-4B	Center of Underside of Bridge	Black Felt Coating	
0217-4C	Southwest Underside of Bridge	Black Felt Coating	
0217-5A	Southeast Underside of Bridge	White Coating	
0217-5B	Center of Underside of Bridge	White Coating	
0217-5C	West End of Bridge	White Coating	
0217-6A	North Footing	Bridge Footing Coating	
0217-6B	North Footing	Bridge Footing Coating	
0217-6C	North Footing	Bridge Footing Coating	

BStalley 2/19 10:32A

Accepted ☒

Rejected ☐

7193655

0217-7A	North Abutment	Abutment wall Coating
0217-7B	North Abutment	Abutment wall Coating
0217-7C	North Abutment	Abutment wall Coating