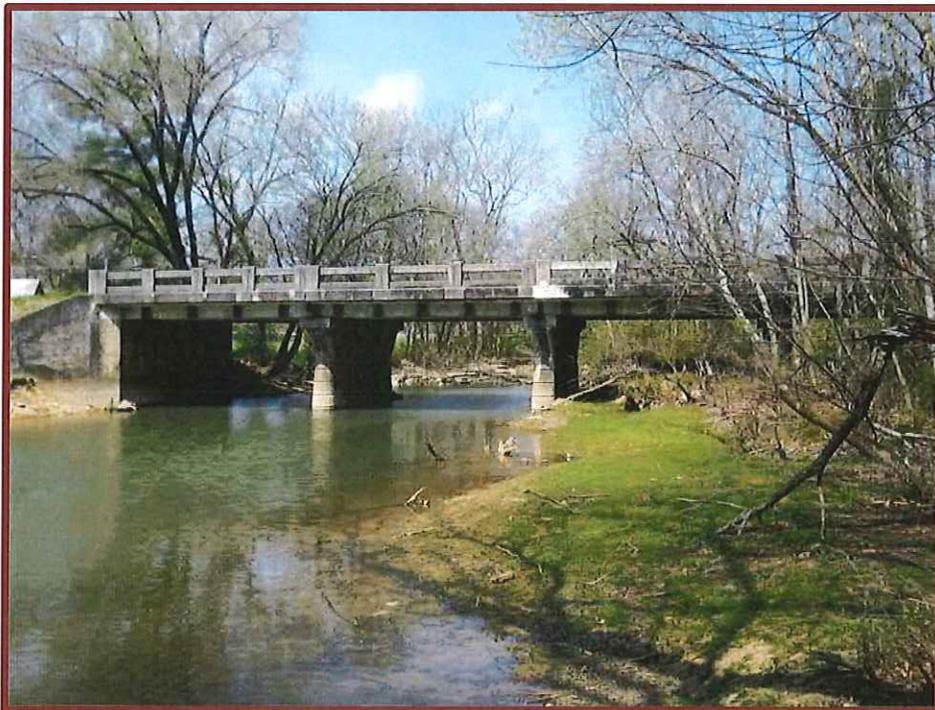




TENNESSEE DEPARTMENT OF TRANSPORTATION ASBESTOS INSPECTION REPORT

SR-378 Bridge over Little Richland Creek, LM 1.58 in Dayton
Bridge No. 72SR0292003
TDOT PE: 72003-4201-04
TDOT PIN: 119957.00
Dayton, Rhea County, Tennessee



Prepared by:

Terracon
5217 Linbar Drive, Suite 309
Nashville, Tennessee 37211

April 18, 2014
Terracon Project Number: E2147027

James A. Duncan, P.E.
Environmental Department Manager

Brian W. Watson
Tennessee Asbestos Inspector Accreditation [A-I-48492-8877]

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1.0 INTRODUCTION

This report presents the findings of an inspection for asbestos containing materials completed on the bridge identified in Section 1.1. The inspection was completed in accordance with the State of Tennessee, Department of Transportation Environmental Division, Social and Cultural Resources Office, Hazardous Materials Section requirements.

1.1 TDOT BRIDGE IDENTIFICATION

The bridge is identified in the TDOT Project System/Bridge Management System as:

TDOT PE Number: 72003-4201-04

TDOT PIN Number: 119957.00

Bridge Inventory Number: 72SR0292003

State Route Number: SR-378

Log Mile Number: 1.58

1.2 GENERAL DESCRIPTION

The concrete north-south bridge overpasses Little Richland Creek. Figure – 1 shows the general location of the bridge.

2.0 INSPECTION

The identification of asbestos containing materials (ACMs) is performed by collecting bulk samples of suspect materials and having those samples analyzed by a laboratory. Asbestos-containing materials (ACMs) are those materials found to contain greater than one percent asbestos by calibrated visual area estimation (CVAE) 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 is applied during the same general time period. Once the homogeneous sampling areas are identified, bulk samples of suspect materials are obtained at the discretion of our inspectors, based on site conditions and past experience.

2.1 PERSONNEL AND DATE(S) OF INSPECTION

The sampling and field activities were performed on March 3, 2014 by Mr. Brian W. Watson, Accredited State of Tennessee Asbestos Inspector. A copy of Mr. Watson's current accreditation from the State of Tennessee is included in Appendix A.

2.2 VISUAL SURVEY

Terracon's survey began with a site reconnaissance and visual survey of the bridge located over Little Richland Creek on State Route 378 (Old Highway 27). The visual survey consisted of:

- sketching the bridge structure and/or verifying the plans provided
- locating and identifying homogeneous areas of suspect materials that may contain asbestos minerals
- determining applicable sampling locations

2.3 ACCESS TO BRIDGE COMPONENTS

Individual bridge components were accessed by the following methods:

2.3.1 Top of Bridge Deck

The top of the concrete bridge deck was accessed and sampled at the shoulder at each of the four abutment corners of the bridge. The remainder of the top of the deck was visually assessed from the shoulder near the abutment corners. Traffic control was not deemed necessary as sample collection and visual assessment was achieved behind the top of bridge deck side rails. Furthermore, Terracon used signage and cones to delineate the work zone.

2.3.2 Underside of Bridge Deck

A portion of the underside of the concrete bridge deck was accessed and sampled near the bridge abutments. The remainder of the underside of the deck was visually assessed from the ground surface beneath the bridge. Traffic control was not deemed necessary as sample collection and visual assessment was achieved from the ground surface on the slopes of Little Richland Creek. Furthermore, Terracon used signage and cones to delineate the work zone.

Bridge deck drainage piping were observed to be of cement asbestos construction and were observed from the underside of the deck.

2.3.3 Bridge Beams

A portion of the concrete beams were accessed near the abutments. The remainder of the beams was visually assessed from the ground surface beneath the bridge on the slopes of Little Richland Creek. TDOT traffic control was not deemed necessary as visual assessment and sampling was achieved beneath the bridge. Furthermore, Terracon used signage and cones to delineate the work zone.

2.3.4 Bridge Piers/Bents and Supports

The base of the concrete supports were accessed and sampled from the ground surface, and the top of the supports were accessed from an extension ladder. TDOT traffic control was not deemed necessary as visual assessment and sampling was achieved beneath the bridge. Furthermore, Terracon used signage and cones to delineate the work zone.

2.3.5 Side Rails

A portion of the concrete side rails were accessed and sampled at the four abutment corners. The remainder of the side rails was visually assessed from near the abutment corners. TDOT traffic control was not deemed necessary as sample collection and visual assessment was achieved from the ground surface behind the side rails. Furthermore, Terracon used signage and cones to delineate the work zone.

2.3.6 Abutments

The concrete abutments were assessed and sampled from beneath the bridge. TDOT traffic control was not deemed necessary as visual assessment and sampling was achieved beneath the bridge. Furthermore, Terracon used signage and cones to delineate the work zone.

3.0 ANALYTICAL PROCEDURES

3.1 ASBESTOS ANALYSIS PROCEDURES

The bulk samples are analyzed in the laboratory using Polarized Light Microscopy (PLM) coupled with dispersion staining. 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. Environmental Protection Agency (EPA) recommended method of analysis for asbestos identification in bulk samples.

In most instances samples from each homogeneous area are analyzed on a "first positive stop" basis. "First positive stop" means that if one sample from a homogeneous area of material is found to contain greater than one percent asbestos, the remaining samples from that homogeneous area are not analyzed and the material is assumed to contain asbestos. In addition, samples which contain multiple layers, or that have associated mastic or adhesive backing, are analyzed as two or more separate samples. Samples that are identified to contain 1% or less asbestos minerals have been point counted by the laboratory for confirmation.

3.2 LABORATORY NAME AND ACCREDITATION

The bulk samples collected for this inspection were analyzed by a laboratory that has received accreditation from the National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP). The name and accreditation number of the analytical laboratory that analyzed the samples for this inspection is indicated in Table - 1:

Laboratory	Steve Moody Micro Services, LLC
NVLAP Number	102056

4.0 REGULATORY OVERVIEW

4.1 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

The EPA's National Emission Standards for Hazardous Air Pollutants (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.

The NESHAP regulations also establish specific notification and control requirements for renovation and demolition work.

4.1.1 Definitions

Significant definitions related to regulation of asbestos under NESHAPS include:

Friable asbestos-containing material (ACM), is defined by the 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, Polarized Light Microscopy (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, Polarized Light Microscopy (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 polarized light microscopy (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 polarized light microscopy 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)

"Regulated Asbestos-Containing Material" (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.

5.0 RESULTS

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

5.1 RESULTS OF ASBESTOS BULK SAMPLE ANALYSIS

Thirty-three (33) samples were obtained from the bridge. Multiple samples of each homogeneous area were collected in accordance with State of Tennessee, Department of Transportation Environmental Division, Social and Cultural Resources Office, Hazardous Materials Section requirements and delivered to the laboratory for visual observation and microscopic analysis. The samples were selected based on homogeneous areas of suspect materials, as described in Section 2.3.

Table – 2 below, summarizes the various sampled materials which were found to contain greater than 1% asbestos minerals. Table – 3 summarizes the various sampled materials which were found to contain trace amounts of asbestos (<1% asbestos). Figure – 2 delineates the sample locations of asbestos containing materials on the property. Photographs of the different homogeneous areas sampled are presented in Appendix B and the analytical result of all the samples collected from the property along with the chain-of-custody records are included in Appendix C.

Table – 2: Materials Containing Greater than 1% Asbestos

40 Transite Cement Asbestos Drain Pipes – (13% Chrysotile/2% Crocidolite)
located underside of bridge and southern abutment

Table – 3: Materials Containing Trace (<1% Asbestos)

No trace asbestos-containing materials were identified

6.0 QUALIFICATIONS

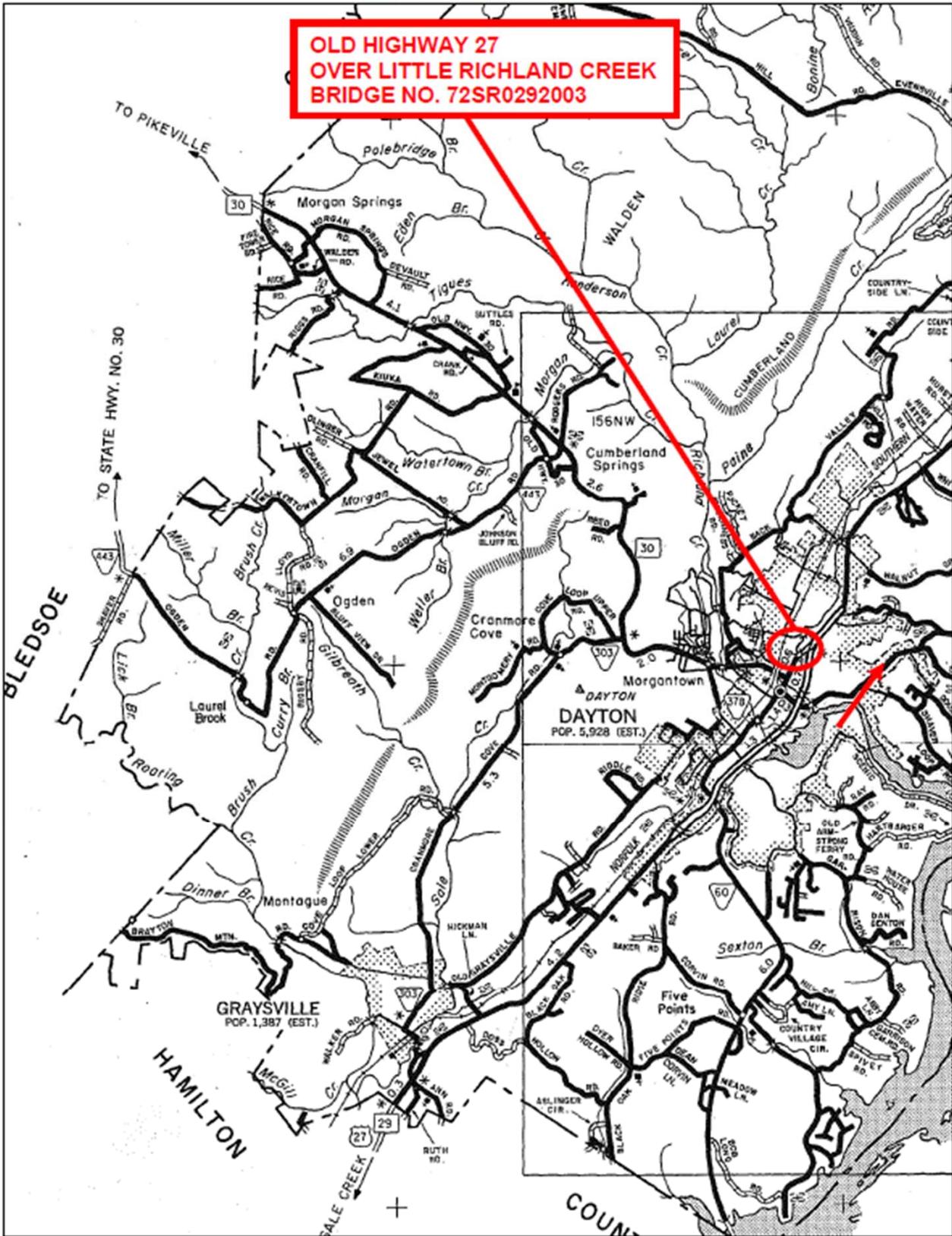
The information presented herein is based on information obtained during the site visit(s) and from previous experience. If additional information becomes available which might impact our conclusions or recommendations, Terracon requests the opportunity to review the information, reassess the potential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

This report has been prepared on behalf of the Tennessee Department of Transportation. 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 – 1: Site Vicinity Map

RHEA COUNTY

**OLD HIGHWAY 27
OVER LITTLE RICHLAND CREEK
BRIDGE NO. 72SR0292003**



RHEA COUNTY MAP MAGE COURTESY OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION (TDOT)
BRIDGE MAINTENANCE RECOMMENDATIONS REPORT DATED 03/10/2014

Project Manager: BWW	Project No. E2147027
Drawn By: BWW	Scale: NTS
Checked By: DEW	File Name: E2147027
Approved By: DEW	Date: 04/18/14

Terracon
Consulting Engineers & Scientists

51 Lost Mound Drive, Suite 135 Chattanooga, TN 37406
PH. (423) 499-6111 FAX. (423) 499-8099

Site Vicinity Map
Asbestos Survey
72SR0292003
SR-378 Bridge over Little Richland Creek, LM 1.58
Dayton, Rhea County, Tennessee

Figure
1

Figure – 2: Sampling Locations

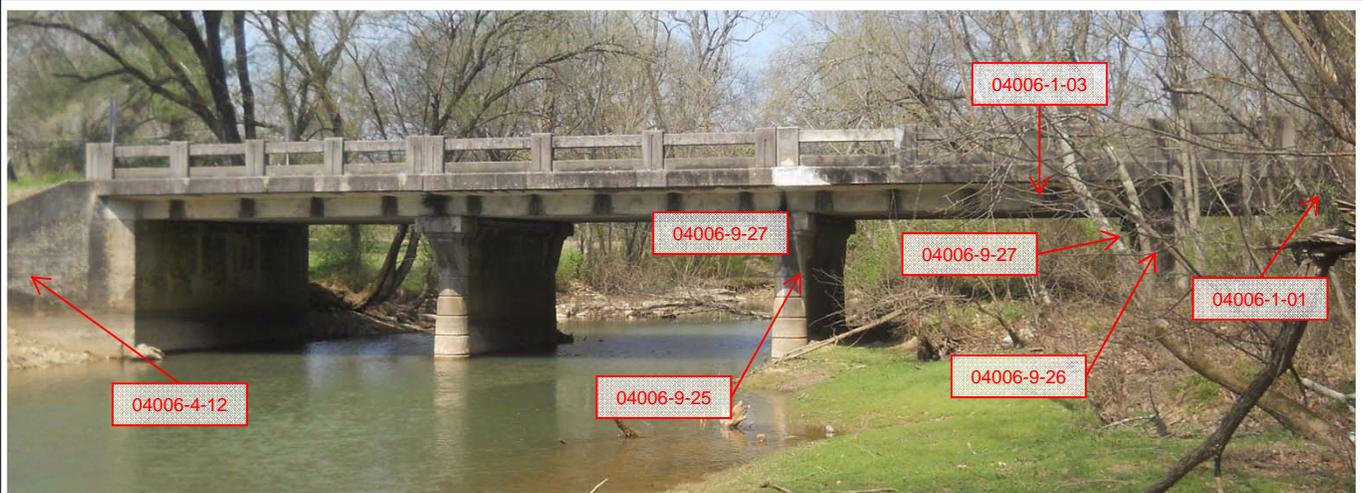


Photo #1: View of bridge looking west from bank of Little Richland Creek.



Photo #2: View of bridge looking east from bank of Little Richland Creek.

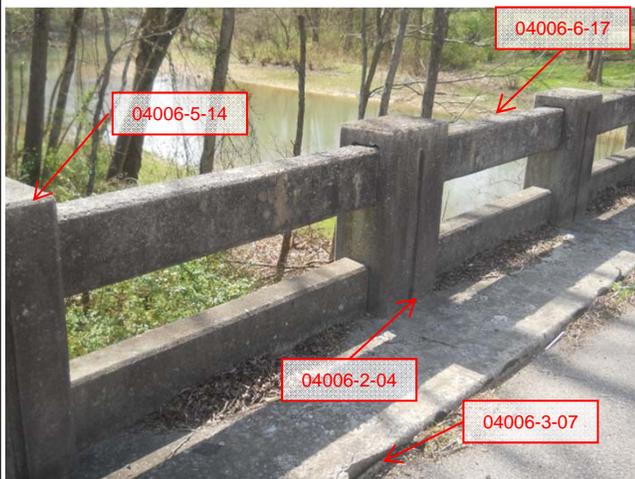
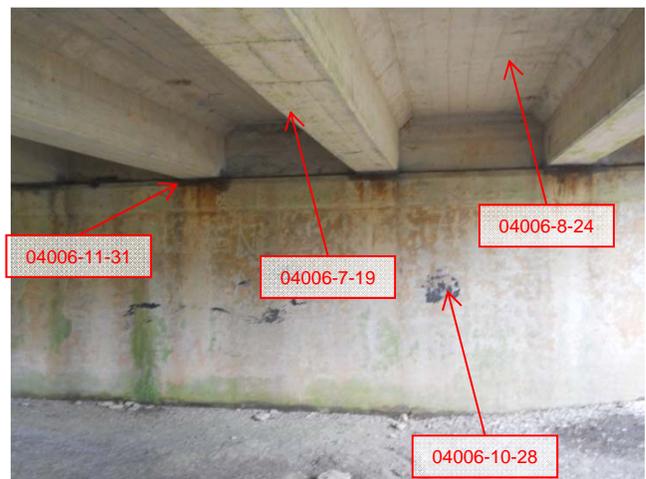


Photo #3: View of bridge looking east from bank of Little Richland Creek.



Project Manager: BWW	Project No. E2147027
Drawn By: BWW	Scale: NTS
Checked By: DEW	File Name: E2147027
Approved By: DEW	Date: 04/18/14

Terracon
Consulting Engineers & Scientists

51 Lost Mound Drive, Suite 135 Chattanooga, TN 37406
PH. (423) 499-6111 FAX. (423) 499-8099

Sampling Locations
Asbestos Survey 72SR0292003
SR-378 Bridge over Little Richland Creek, LM 1.58 Dayton, Rhea County, Tennessee

Figure
2

APPENDIX A: ASBESTOS INSPECTION PERSONNEL ACCREDITATIONS



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 accredited to offer and/or conduct Asbestos activities pursuant to Rule 1200-01-20:

Terracon Consultants, Inc.

5217 Linbar Dr. Suite 309 Nashville TN, 37211

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-692-32280	December 01, 2013	December 31, 2014



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

This **3rd** Day of **February 2014**

Division of Solid Waste Management
Toxic Substance Program

THE STATE OF TENNESSEE

Department of Environment and Conservation
Division of Solid Waste Management
Toxic Substances Program

54073-00984



Re-Accreditation

Brian W Watson

DOB 05-Dec-1974 Sex M HGT 5' 9" WGT 200

Discipline	Accreditation	Expiration
Inspector	A-148492-33051	Jan-31-2015

Asbestos Accreditation

Is hereby Accredited pursuant to Rule 1200-01-20 Asbestos Accreditation Requirements to perform Asbestos Activities associated with the Discipline(s) listed on the front of this card. A false statement pertaining to accreditation(s) is subject to the penalties of perjury.

Date Issued: 2/27/2014

Note: In order for this Tennessee issued accreditation to remain valid through the expiration date, the individual must maintain current applicable accredited asbestos refresher training course(s)

THIS CARD IS NOT TO BE USED FOR ANY OTHER IDENTIFICATION

PURPOSES. IF FOUND, RETURN TO:
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

CN-1324

(Rev 6/13)

RDA-3020

APPENDIX B: PHOTOGRAPHS

ASBESTOS-CONTAINING MATERIALS WERE IDENTIFIED IN THE DRAIN PIPES



Photo #1: View of drain pipe at underside of bridge.



Photo #2: View of drain pipes at underside of bridge.

Asbestos Survey

SR-378 Bridge over Little Richland Creek ■ 72SR0292003
Dayton, Tennessee ■ Terracon Project No. E2147027



Photo #1 View of top of bridge looking north from right shoulder of road.



Photo #2 View of top of bridge looking south from right shoulder of road.



Photo #3 View of bridge looking east from bank of Little Richland Creek.



Photo #4 View of bridge looking west from bank of Little Richland Creek.



Photo #5 View of downstream of Little Richland Creek looking east from east side of bridge.



Photo #6 View of bridge number on southwest corner of topside railing.

Asbestos Survey

SR-378 Bridge over Little Richland Creek ■ 72SR0292003
Dayton, Tennessee ■ Terracon Project No. E2147027



Photo #7 View of the east side of the southern abutment.



Photo #8 View of the west side of the southern abutment.



Photo #9 View of the east side of the northern abutment.



Photo #10 View of the west side of the northern abutment.



Photo #11 View of the pier support column on the south side of the bridge.



Photo #12 View of the pier support column on the north side of the bridge.

Asbestos Survey

SR-378 Bridge over Little Richland Creek ■ 72SR0292003
Dayton, Tennessee ■ Terracon Project No. E2147027



Photo #13 View of underside of bridge decking.



Photo #14 View of transite drain pipe at underside of bridge decking.



Photo #15 View of transite drain pipes at southern abutment.



Photo #16 View of the western side of the railing system looking south.



Photo #17 View of eastern side of railing system looking south.



Photo #18 View of top of bridge and railing systems.

APPENDIX C: ASBESTOS SAMPLE LABORATORY ANALYSIS DATA

PLM Summary Report

Steve Moody Micro Services, LLC

2051 Valley View Lane

Farmers Branch, TX 75234 Phone: (972) 241-8460

NVLAP Lab Code 102056-0

TDSHS License No. 30-0084

Client :	Terracon - Chattanooga, TN	Lab Job No. : 14B-04066
Project :	TDOT Bridge, SR-378 Bridge over Little Richland Creek	Report Date : 04/11/2014
Project # :	E2147027	Sample Date : 03/03/2014
Identification :	Asbestos, Bulk Sample Analysis	
Test Method :	Polarized Light Microscopy / Dispersion Staining (PLM/DS) EPA Method 600 / R-93 / 116	

Page 1 of 2

On 4/7/2014, thirty three (33) bulk material samples were submitted by Brian Watson of Terracon - Chattanooga, TN for asbestos analysis by PLM/DS. The PLM Detail Report is attached; additional information may be found therein. The results are summarized below:

Sample Number	Client Sample Description / Location	Asbestos Content
1-1	Transite Drain Pipe, Northeast Side (#2 from North)	13% Chrysotile - Cement Asbestos Pipe 2% Crocidolite - Cement Asbestos Pipe
1-2	Transite Drain Pipe, Northwest Side (#5 from North)	13% Chrysotile - Cement Asbestos Pipe 2% Crocidolite - Cement Asbestos Pipe
1-3	Transite Drain Pipe, Northeast Side (#7 from North)	13% Chrysotile - Cement Asbestos Pipe 2% Crocidolite - Cement Asbestos Pipe
2-4	Caulking (Grey), Top of Deck at Seams Northeast	None Detected - Caulking
2-5	Caulking (Grey), Top of Deck at Seams Northwest	None Detected - Caulking
2-6	Caulking (Grey), Top of Deck at Seams Southwest	None Detected - Caulking
3-7	Tar Sealant (Black), Top of Deck at Seams Northeast	None Detected - Tar Sealant
3-8	Tar Sealant (Black), Top of Deck at Seams Northwest	None Detected - Tar Sealant
3-9	Tar Sealant (Black), Top of Deck at Seams Southwest	None Detected - Tar Sealant
4-10	Abutment Concrete, Wing Wall Northwest	None Detected - Concrete
4-11	Abutment Concrete, Wing Wall Southeast	None Detected - Concrete
4-12	Abutment Concrete, Wing Wall Northeast	None Detected - Concrete
5-13	Concrete Vertical Rail, Northwest Corner Railing	None Detected - Concrete
5-14	Concrete Vertical Rail, Northeast Corner Railing	None Detected - Concrete
5-15	Concrete Vertical Rail, Southeast Corner Railing	None Detected - Concrete
6-16	Concrete Horizontal Rail, Northwest Side Railing	None Detected - Concrete
6-17	Concrete Horizontal Rail, Northeast Side Railing	None Detected - Concrete
6-18	Concrete Horizontal Rail, Southeast Side Railing	None Detected - Concrete
7-19	Concrete Girder Beam, Northeast Side 6th from Left Facing North	None Detected - Concrete

PLM Summary Report

Steve Moody Micro Services, LLC

2051 Valley View Lane

Farmers Branch, TX 75234 Phone: (972) 241-8460

NVLAP Lab Code 102056-0

TDSHS License No. 30-0084

Client :	Terracon - Chattanooga, TN	Lab Job No. : 14B-04066
Project :	TDOT Bridge, SR-378 Bridge over Little Richland Creek	Report Date : 04/11/2014
Project # :	E2147027	Sample Date : 03/03/2014
Identification :	Asbestos, Bulk Sample Analysis	
Test Method :	Polarized Light Microscopy / Dispersion Staining (PLM/DS) EPA Method 600 / R-93 / 116	

Page 2 of 2

On 4/7/2014, thirty three (33) bulk material samples were submitted by Brian Watson of Terracon - Chattanooga, TN for asbestos analysis by PLM/DS. The PLM Detail Report is attached; additional information may be found therein. The results are summarized below:

Sample Number	Client Sample Description / Location	Asbestos Content
7-20	Concrete Girder Beam, North Central Side 3rd from Left	None Detected - Concrete
7-21	Concrete Girder Beam, Northwest Side 1st from Left	None Detected - Concrete
8-22	Concrete Decking underside, North Central 3rd Bay	None Detected - Concrete
8-23	Concrete Decking underside, North Central 4th Bay	None Detected - Concrete
8-24	Concrete Decking underside, North Central 5th Bay	None Detected - Concrete
9-25	Pier Column Concrete, Pier 3 Front Right Side	None Detected - Concrete
9-26	Pier Column Concrete, Pier 2 Back Left Side	None Detected - Concrete
9-27	Pier Column Concrete, Pier 3 Back Right Side	None Detected - Concrete
10-28	Concrete Patch, North Side at Abutment	None Detected - Concrete
10-29	Concrete Patch, North Side Foundation	None Detected - Concrete
10-30	Concrete Patch, North Side at Abutment	None Detected - Concrete
11-31	Corrosion Pack, North Side 4th from Left	None Detected - Pack Rust
11-32	Corrosion Pack, North Side 5th from Left	None Detected - Pack Rust
11-33	Corrosion Pack, North Side 6th from Left	None Detected - Pack Rust

These samples were analyzed by layers. Quantification, unless otherwise noted, is performed by calibrated visual estimate. The test report shall not be reproduced, except in full, without written approval of the laboratory. The results relate only to the items tested. These test results do not imply endorsement by NVLAP or any agency of the U.S. Government. Accredited by the National Voluntary Laboratory Accreditation Program for Bulk Asbestos Fiber Analysis under Lab Code 102056-0.



Analyst(s): Bruce Crabb

Lab Manager : Heather Lopez

Lab Director : Bruce Crabb

Approved Signatory : *Heather Lopez*

Approved Signatory : *Bruce Crabb*

Thank you for choosing Steve Moody Micro Services

Steve Moody Micro Services, LLC
 2051 Valley View Lane
 Farmers Branch, TX 75234 Phone: (972) 241-8460

PLM Detail Report
 Supplement to PLM Summary Report

NVLAP Lab Code 102056-0
 TDSHS License No. 30-0084

Client : Terracon - Chattanooga, TN
 Project : TDOT Bridge, SR-378 Bridge over Little Richland Creek
 Project # : E2147027

Lab Job No. : 14B-04066
 Report Date : 04/11/2014

Sample Number	Layer	% Of Sample	Components	% of Layer	Analysis Date	Analyst
1-1	Cement Asbestos Pipe (Grey)	100%	Chrysotile Crocidolite Cement Binders	13% 2% 85%	04/11	BC
1-2	Cement Asbestos Pipe (Grey)	100%	Chrysotile Crocidolite Cement Binders	13% 2% 85%	04/11	BC
1-3	Cement Asbestos Pipe (Grey)	100%	Chrysotile Crocidolite Cement Binders	13% 2% 85%	04/11	BC
2-4	Caulking (Grey)	100%	Calcite Binders / Fillers	50% 50%	04/11	BC
2-5	Caulking (Grey)	100%	Calcite Binders / Fillers	50% 50%	04/11	BC
2-6	Caulking (Grey)	100%	Calcite Binders / Fillers	50% 50%	04/11	BC
3-7	Tar Sealant (Black)	100%	Calcite / Tar Binders	100%	04/11	BC
3-8	Tar Sealant (Black)	100%	Calcite / Tar Binders	100%	04/11	BC
3-9	Tar Sealant (Black)	100%	Calcite / Tar Binders	100%	04/11	BC
4-10	Concrete (Beige)	100%	Aggregate Cement Binders	65% 35%	04/11	BC
4-11	Concrete (Beige)	100%	Aggregate Cement Binders	65% 35%	04/11	BC
4-12	Concrete (Beige)	100%	Aggregate Cement Binders	65% 35%	04/11	BC
5-13	Concrete (Beige)	100%	Aggregate Cement Binders	65% 35%	04/11	BC
5-14	Concrete (Beige)	100%	Aggregate Cement Binders	65% 35%	04/11	BC

Steve Moody Micro Services, LLC
 2051 Valley View Lane
 Farmers Branch, TX 75234 Phone: (972) 241-8460

PLM Detail Report
 Supplement to PLM Summary Report

NVLAP Lab Code 102056-0
 TDSHS License No. 30-0084

Client : Terracon - Chattanooga, TN
 Project : TDOT Bridge, SR-378 Bridge over Little Richland Creek
 Project # : E2147027

Lab Job No. : 14B-04066
 Report Date : 04/11/2014

Sample Number	Layer	% Of Sample	Components	% of Layer	Analysis Date	Analyst
5-15	Concrete (Beige / Grey)	100%	Aggregate	65%	04/11	BC
			Cement Binders	35%		
6-16	Concrete (Beige)	100%	Aggregate	65%	04/11	BC
			Cement Binders	35%		
6-17	Concrete (Beige)	100%	Aggregate	65%	04/11	BC
			Cement Binders	35%		
6-18	Concrete (Beige / Grey)	100%	Aggregate	65%	04/11	BC
			Cement Binders	35%		
7-19	Concrete (Beige)	100%	Aggregate	65%	04/11	BC
			Cement Binders	35%		
7-20	Concrete (Beige)	100%	Aggregate	65%	04/11	BC
			Cement Binders	35%		
7-21	Concrete (Beige)	100%	Aggregate	65%	04/11	BC
			Cement Binders	35%		
8-22	Concrete (Beige)	100%	Mica	1%	04/11	BC
			Aggregate	64%		
			Cement Binders	35%		
8-23	Concrete (Beige)	100%	Mica	1%	04/11	BC
			Aggregate	64%		
			Cement Binders	35%		
8-24	Concrete (Beige)	100%	Mica	1%	04/11	BC
			Aggregate	64%		
			Cement Binders	35%		
9-25	Concrete (Grey)	100%	Aggregate	65%	04/11	BC
			Cement Binders	35%		
9-26	Concrete (Grey)	80%	Aggregate	65%	04/11	BC
			Cement Binders	35%		
	Surface Deposit (White)	20%	Mineral precipitate			

Steve Moody Micro Services, LLC
 2051 Valley View Lane
 Farmers Branch, TX 75234 Phone: (972) 241-8460

PLM Detail Report
Supplement to PLM Summary Report

NVLAP Lab Code 102056-0
 TDSHS License No. 30-0084

Client : Terracon - Chattanooga, TN
 Project : TDOT Bridge, SR-378 Bridge over Little Richland Creek
 Project # : E2147027

Lab Job No. : 14B-04066
 Report Date : 04/11/2014

Sample Number	Layer	% Of Sample	Components	% of Layer	Analysis Date	Analyst
9-27	Concrete (Grey)	100%	Aggregate Cement Binders	65% 35%	04/11	BC
10-28	Concrete (Grey)	100%	Aggregate Cement Binders	65% 35%	04/11	BC
10-29	Concrete (Grey)	100%	Aggregate Cement Binders	65% 35%	04/11	BC
10-30	Concrete (Grey)	100%	Aggregate Cement Binders	65% 35%	04/11	BC
11-31	Pack Rust (Black / Rust Red)	100%	Metal / Rust	%	04/11	BC
11-32	Pack Rust (Black / Rust Red)	100%	Metal / Rust	%	04/11	BC
11-33	Pack Rust (Black / Rust Red)	100%	Metal / Rust	%	04/11	BC



Chain of Custody

Lab Job # 14B-01000 PLM:33
Lab Job #
Lab Job #

Please call in advance for immediate, after-hour, & weekend pricing & availability.

ASBESTOS PLM

Bulk Immediate 1 day 2 day 3 day 5 day
Analyze All Positive Stop

PCM Air (7400)

Immediate 1 day 2 day 3 day 5 day

TOTAL DUST (0500/0600)

1 day 2 day

ASBESTOS TEM

Air AHERA Method 6 hr 12 hr 24 hr
Air 7402 (Modified) 1 day 2 day 3 day
Bulk/Wipe/Micro Vac 1 day 2 day 3 day 5 day
Water 1 day 2 day 3 day
Analyze Blanks Yes No

MOLD

Direct Exam Immediate 1 day 2 day
Standard Air Immediate 1 day 2 day
Expanded Air Immediate 1 day 2 day
Culture** 10-14 days
Analyze Blanks Yes No

Turnaround of Culture Samples subject to Culture Growth

BACTERIA*

Total Colony Counts (CC) 3 day 5 day
CC + Gram Stain 3 day 5 day
Total Coliform & E. coli (P/A) 2-3 day

OTHER:

Billing Company / City: TERRACON / CHATTANOOGA
Submitter's Company: TERRACON CONSULTANTS, INC.
Submitter's Name: BRIAN W. WATSON
Project: TOOT BRIDGE
Contact Information: Name: BRIAN W. WATSON
E-mail Results to: bwwatson@terracon.com
Invoice Address: 51 LOST MOUND DRIVE, CHATTANOOGA, TN

of Samples:
Sample Date: MARCH 3, 2014
Project #: E2147027
Phone #: 423-499-6111
Mobile #: 423-463-6355
Fax #: 423-499-8099
P.O. #: E2147027

Please review paperwork and samples before submitting to lab. Unsealed / improperly packaged / damaged / expired samples or excessive administrative requests may incur additional fees

Notes: SR-378 BRIDGE OVER LITTLE RICHLAND CREEK, DAYTON, TN

Table with 4 columns: Sample #, Sample Description, Vol. / Area (if applicable), Location / Notes. Contains 15 rows of sample data including drain pipes, caulking, sealant, and concrete.

Released By: B.W.W. Date/Time: 04/04/2014
Received By: via Fed-Ex Date/Time:
Released By: FED-EX Date/Time: 04/04/2014
Received By: Chelsea Plm Date/Time: 4-7-14 9:25AM



Lab Job # 14B-04060
 Lab Job # _____
 Lab Job # _____

Project: TDOT BRIDGE - SR-378 OVER LITTLE RICHLAND Project #: E2147027

Sample #	Sample Description	Vol. / Area if applicable	Location / Notes
6-16	CONCRETE HORIZONTAL RAIL		N.W. SIDE RAILING
6-17	CONCRETE HORIZONTAL RAIL		N.E. SIDE RAILING
6-18	CONCRETE HORIZONTAL RAIL		S.E. SIDE RAILING
7-19	CONCRETE GIRDER BEAM		N.E. SIDE 6 TH FROM LEFT END N
7-20	CONCRETE GIRDER BEAM		N. CENTRAL SIDE 3 RD FROM LEFT
7-21	CONCRETE GIRDER BEAM		N.W. SIDE 1 ST FROM LEFT
8-22	CONCRETE DECKING UNDERSIDE		N. CENTRAL 3 RD BAY
8-23	CONCRETE DECKING UNDERSIDE		N. CENTRAL 4 TH BAY
8-24	CONCRETE DECKING UNDERSIDE		N. CENTRAL 5 TH BAY
9-25	PIER COLUMN CONCRETE		PIER 3 FRONT RIGHT SIDE
9-26	PIER COLUMN CONCRETE		PIER 2 BACK LEFT SIDE
9-27	PIER COLUMN CONCRETE		PIER 3 BACK RIGHT SIDE
10-28	CONCRETE PATCH		NORTH SIDE @ ABUTMENT
10-29	CONCRETE PATCH		NORTH SIDE FOUNDATION
10-30	CONCRETE PATCH		NORTH SIDE @ ABUTMENT
11-31	CORROSION PACK		NORTH SIDE 4 TH FROM LEFT
11-32	CORROSION PACK		NORTH SIDE 5 TH FROM LEFT
11-33	CORROSION PACK		NORTH SIDE 6 TH FROM LEFT
Blank			