

S-11-99 (Tribal Road) Bridge over I-85 (Exit 104)
Cherokee County, South Carolina

Asbestos and Lead-Based Paint
Survey Report

Structure # 117009900100
ARM Project #16-314-15

March 8, 2017

Prepared For:

HDR-ICA
1122 Lady Street, Suite 1100
Columbia, South Carolina, 29201

Yes, Asbestos was found
 No, Asbestos was not found
 Yes, Lead-Based Paint was found
 No, Lead-Based Paint was not found

Report Compiled By:

Robbie Robertson

Robbie Robertson
ASBESTOS CONSULTANT/
BUILDING INSPECTOR
SCDHEC LICENSE #BI-01179

Report Reviewed By:

Sid Havird

Sid Havird
ASBESTOS CONSULTANT/
BUILDING INSPECTOR
SCDHEC LICENSE #BI-00258

ARM ENVIRONMENTAL
SERVICES, INC.

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ASBESTOS AND LEAD-BASED PAINT SURVEY

On February 21, 2017, ARM Environmental Services, Inc. performed an asbestos and lead-based paint survey at the S-11-99 (Tribal Road) Bridge located in Cherokee County, South Carolina. The bridge is located over I-85 at Exit 104 as shown in Appendix A, Figure 1. The site consists of a highway bridge and can be identified by bridge structure number 117009900100. The asbestos survey has been conducted in accordance with the Asbestos Hazard Emergency Response Act (AHERA) guidelines, as required by the Environmental Protection Agency (EPA) and the South Carolina Department of Health and Environmental Control (DHEC) prior to renovation or demolition of public or commercial structures. The lead-based paint survey was performed to identify lead-based paint (LBP) on the bridge.

BRIDGE MATERIALS

All accessible structural components including columns, piers, bridge decks, beams, bridge shoes, end bents, and buffer materials were examined. Photographs of the site are shown in Appendix F.

The bridge deck of the structure consists of pre-cast concrete deck sections supported by concrete pier caps. The concrete pier caps, which run perpendicular to the bridge deck, are supported by concrete piers. The structure has metal drains along the length of the concrete deck. Concrete and metal guardrails are located on the bridge structure. The bridge structure is estimated to be 210 feet long and 28 feet wide. There is one material identified as a suspect asbestos containing material associated with the structure as described below:

- Black mastic located in the expansion joints between deck sections

ASBESTOS SURVEY

Samples of the suspect materials were collected and submitted for laboratory analysis for Polarized Light Microscopy (PLM). One sample of each material was also collected for transmission electron microscopy (TEM) confirmation analysis in the event that the PLM analysis indicated less than 1 percent asbestos. The sample locations are shown in Appendix A, Figure 2. The results of the laboratory analysis are presented in Table 1 on the following page.

Table 1: Asbestos Sample Analytical Data

Sample Number	Suspect Material	Material Locations	Present Condition	Analytical Results*	Estimated Material Quantity
01,02,03	Black Mastic	Between Concrete Deck Sections	Damaged / F	No Asbestos Detected	150 Linear Feet

***Asbestos Content:** USEPA and SCDHEC regulations (No. 61-86.1) define asbestos containing material as any material greater than one percent asbestos. OSHA recommends that a negative exposure assessment (NEA) be conducted to establish appropriate personal protection equipment needed (if any) for all persons that might disturb asbestos materials.

Notes: **Good** (very localized limited damage) **Damaged** (damage of less than 10% distributed & less than 25% localized) **Significantly Damaged** (damage equal to or greater than 10% distributed/25% localized) **F**=Friable **NF**=Non-Friable

Based on the results of laboratory analysis, none of the sampled material was confirmed to contain asbestos at a concentration greater than one percent (>1%).
The laboratory results are included in Appendix C of this report.

ASBESTOS CONCLUSIONS / RECOMMENDATIONS

On February 21, 2017 ARM Environmental completed an asbestos inspection for a structure, the S-11-99 (Tribal Road) Bridge over I-85 at Exit 104 in Cherokee County, South Carolina. **The results of the asbestos survey indicate that the sampled material does not contain asbestos at a concentration greater than one percent (1%).**

The results of this asbestos survey are limited to the sampled materials, which are considered to be representative of the homogeneous areas from which the samples were collected. **In the event that any suspect asbestos containing materials that were not addressed in this survey are encountered, the materials should be presumed to contain asbestos until laboratory analysis can be conducted.** If the structure is to be demolished or renovated, a copy of this report and a notification of demolition or renovation forms must be submitted to the South Carolina Department of Health and Environmental Control at least ten working days prior to these activities taking place. Copies of the DHEC regulatory requirements for renovations and demolition are included in Appendix E of this report.

LEAD-BASED PAINT SURVEY

ARM personnel conducted a lead-based paint survey of accessible painted bridge materials on February 21, 2017. The LBP inspection was conducted using a Niton XLP-303A X-ray Fluorescence (XRF) Analyzer (Serial #17307) to measure the lead content of surface coatings on representative bridge building components. A homogenous

bridge building component is a building material that is uniform in color, texture, and appears identical in every respect. EPA guidelines define lead-based paint as any paint with equal to or greater than 1.0 milligram of lead per square centimeter of painted surface (mg/cm^2) when measured by X-ray Fluorescence. In this survey, the limit for lead in paint was decreased to 0.7 milligrams of lead per square centimeter of painted surface when measured by the XRF since the structure may be slated for renovation or demolition. All waste debris coated with lead-based paint equal to or greater than $0.7\text{mg}/\text{cm}^2$ must be disposed of in an approved Class II (C&D) or Class III (MSWLF) landfill or approved metal recycler.

The bridge structure is primarily composed of unpainted concrete. The only materials sampled for lead based paint were the metal bridge shoes, metal bridge bolts and plates, and the concrete bridge piers. **The results of the XRF analyses indicate that the metal bridge shoes, metal bridge bolts and plates, and the concrete bridge piers were found to contain lead-based paint** as summarized in Table 2 below.

Table 2: Bridge Building Material XRF Summary

Sample Number	Material Description	Material Location	Color	Material Condition	LEAD Content mg/cm^2
Readings 75, 76, 77	Metal Bridge Shoes	Left Side of Bridge	Grey	Intact	26.60 to 40.30
Readings 78, 79, 80, 81	Metal Bridge Bolts and Plates	Left Side of Bridge	Grey	Intact	15.80 to 20.70
Readings 83, 84, 85	Concrete Bridge Piers	Left Side of Bridge	Yellow	Intact	2.50 to 3.40

Lead Content: EPA guidelines define lead-based paint as any paint with equal to or greater than 1.0 milligram of lead per square centimeter of painted surface (mg/cm^2) when measured by X-ray Fluorescence. DHEC guidelines define lead-based paint as any paint with equal to or greater than $0.7\text{ mg}/\text{cm}^2$ when measured by X-ray Fluorescence. The OSHA Lead in Construction Standard, 29 CFR 1926.62 is applied if any lead is present in the sample.

****LOD – XRF instrument Limit of Detection**

The results of these analyses indicate that the metal bridge shoes, metal bridge bolts and plates, and the concrete bridge piers were found to contain lead-based paint. The XRF data results are presented in Appendix D. Photographs of the site are located in Appendix F.

LEAD-BASED PAINT CONCLUSIONS / RECOMENDATIONS

A lead-based paint survey was performed for the S-11-99 (Tribal Road) Bridge over I-85 at Exit 104 in Cherokee County, South Carolina. **The results of the XRF analyses indicate that the metal bridge shoes, metal bridge bolts and plates, and the concrete bridge piers were found to be coated with lead-based paint.** If these bridge components are disturbed during renovation or demolition, contractors and workers should be informed as to the presence of lead-based paint and appropriate work

practices and personal protective equipment should be used to prevent exposure to lead dust/fumes or spreading lead contamination from the work site. The building components containing lead based paint should be disposed of in accordance with federal and state regulations. All waste debris coated with lead-based paint equal to or greater than $0.7\text{mg}/\text{cm}^2$ must be disposed of in an approved Class II (C&D) or Class III (MSWLF) landfill or approved metal recycler. The OSHA lead standard for construction work (29CFR 1926.62) would apply to all demolition or renovation activities that disturb any of the materials containing lead.

In the event that any suspect painted materials were not addressed in this survey are encountered, the materials should be presumed to be coated with lead paint until XRF or laboratory analysis can be conducted.

APPENDIX A

Figures



Project

Asbestos & Lead-based Paint Survey
S-11-99 (Tribal Road) Bridge
over I-85 (Exit 104)
Cherokee County, South Carolina

Figure 1

Site Location Map

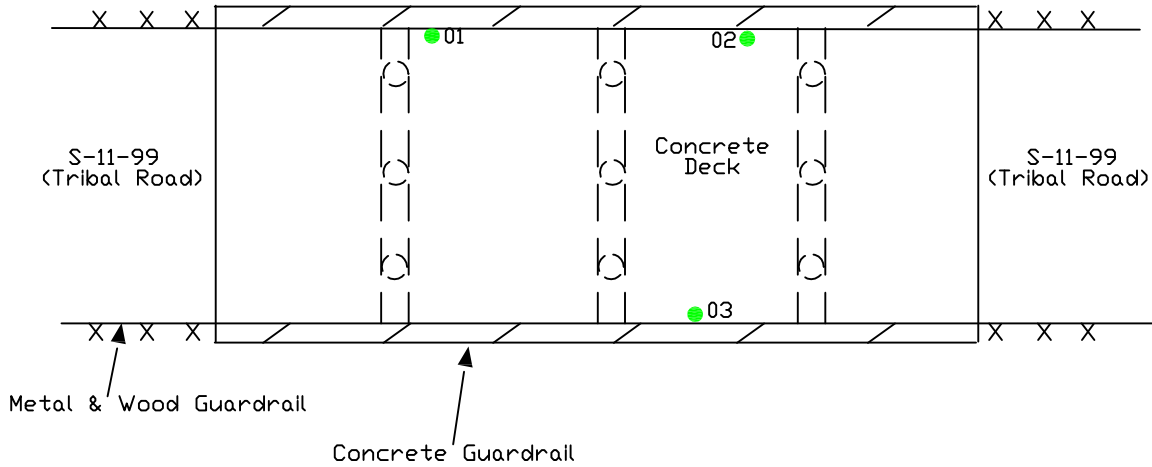
Scale

Not to scale

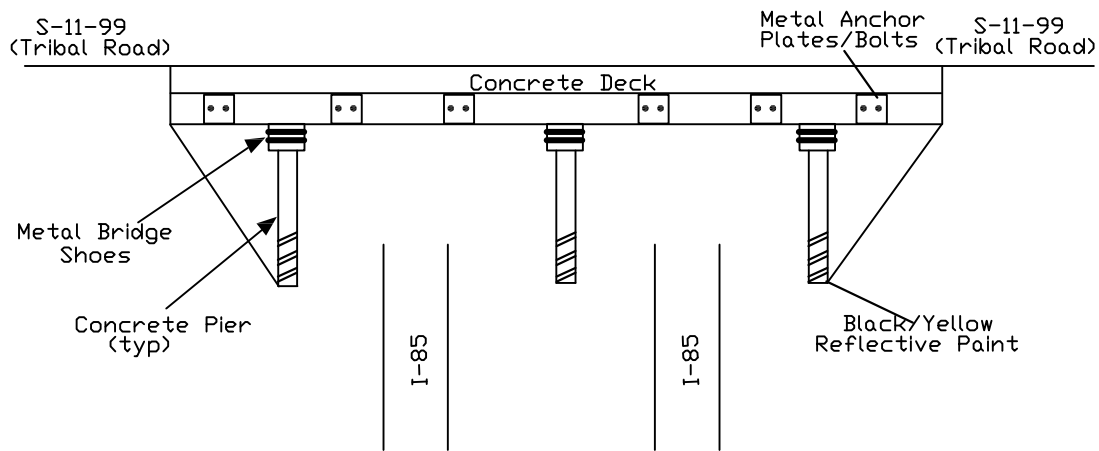
Date

March 2017

ARM ENVIRONMENTAL
SERVICES, INC.



Plan View



Profile View

PROJECT:

Asbestos & Lead-Based
Paint Survey
S-11-99 (Tribal Road) Bridge
over I-85 (Exit 104)
Cherokee County, South Carolina
ARM Project # 16-314-15

DESCRIPTION:

Site Plan Showing
Sample Locations

(Map Not To Scale)

FIGURE 2

DATE:

March 2017



REFERENCE:

Field Notes

LEGEND:

Negative
Asbestos Sample = ●
Positive
Asbestos Sample = ▲

APPENDIX B

Licenses / Certifications

SCDHEC ISSUED
Asbestos ID Card

Robbie Robertson



Expiration Date
CONSULTBI BI-01179 11/30/17
SUPERAHERA SA-01861 11/29/17



APPLIED BUILDING SCIENCES INC.
ENGINEERS, ARCHITECTS AND
ENVIRONMENTAL CONSULTANTS

Myrtle Beach, South Carolina 29577

803-345-3833

Robbie Robertson

SSN xxx-xx-3715

This is to certify that the above named student has completed the requisite training for asbestos accreditation under TSCA Title II and has met the requirements of and passed the examination for an EPA approved:

AHERA Asbestos Inspector Refresher

Course Location: Irmo SC

Certificate Number: 20161130Ab301-04

Start Date November 30, 2016

End Date November 30, 2016

Exam Date: November 30, 2016

Expiration Date November 29, 2017

Principal Instructor / Training Administrator - Lee Capell

11/30/2016

Date

SCDHEC ISSUED
Asbestos ID Card

Cyril O Havird Jr



Expiration Date
CONSULTBI BI-00258 11/30/17
SUPERAHERA SA-02162 11/29/17



APPLIED BUILDING SCIENCES INC.
ENGINEERS, ARCHITECTS AND
ENVIRONMENTAL CONSULTANTS

Myrtle Beach, South Carolina 29577 803-345-3833

Sid Havird

SSN xxx-xx-4506

This is to certify that the above named student has completed the requisite training for asbestos accreditation under TSCA Title II and has met the requirements of and passed the examination for an EPA approved:

AHERA Asbestos Inspector Refresher

Course Location: Irmo SC

Certificate Number: 20161130Ab301-03

Start Date November 30, 2016

End Date November 30, 2016

Exam Date: November 30, 2016

Expiration Date November 29, 2017

Principal Instructor / Training Administrator - Lee Capell

11/30/2016

Date

APPENDIX C

Lab Results



EMSL Analytical, Inc.

376 Crompton Street Charlotte, NC 28273

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

<http://www.EMSL.com> / charlottelab@emsl.com


EMSL Order: 411701481
Customer ID: ARM62
Customer PO: 16-314-15
Project ID:

Attention: Sid Havird ARM Environmental Services, Inc. 1210 1st Street South Extension Columbia, SC 29209	Phone: (803) 783-3314 Fax: (803) 783-2587 Received Date: 02/23/2017 9:35 AM Analysis Date: 02/23/2017 Collected Date: 02/21/2017
Project: HDR-ICA (Exit 104 Bridge over I-85)	

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 <small>411701481-0001</small>	Between Deck Sections - Black Mastic	Black Fibrous Heterogeneous	4% Cellulose	8% Quartz 5% Ca Carbonate 83% Non-fibrous (Other)	None Detected
02 <small>411701481-0002</small>	Between Deck Sections - Black Mastic	Black Non-Fibrous Homogeneous	3% Cellulose	5% Quartz 5% Ca Carbonate 87% Non-fibrous (Other)	None Detected

Analyst(s) _____
Eric Loomis (1)
Lyterra Barrow (1)



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. Charlotte, NC NVLAP Lab Code 200841-0, VA 3333 00312

Initial report from: 02/23/2017 13:18:36



EMSL Analytical, Inc.

376 Crompton Street Charlotte, NC 28273
Tel/Fax: (704) 525-2205 / (704) 525-2382
<http://www.EMSL.com> / charlottelab@emsl.com

EMSL Order: 411701481
Customer ID: ARM62
Customer PO: 16-314-15
Project ID:

Attention: Sid Havird
ARM Environmental Services, Inc.
1210 1st Street South Extension
Columbia, SC 29209
Project: HDR-ICA (Exit 104 Bridge over I-85)

Phone: (803) 783-3314
Fax: (803) 783-2587
Received Date: 02/23/2017 9:35 AM
Analysis Date: 02/24/2017
Collected Date: 02/21/2017

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
03 411701481-0003	Between Deck Sections - Black Mastic	Black Fibrous Heterogeneous	100	None	No Asbestos Detected

Analyst(s)

Derrick Young (1)

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. Charlotte, NC

Initial report from: 02/24/2017 11:48:31



EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (Lab Use Only):

411701481

Charlotte, NC 28273
PHONE: (704) 525-2205
FAX: (704) 525 2382

Company: ARM Environmental		EMSL-Bill to: <input type="checkbox"/> Same <input checked="" type="checkbox"/> Different <small>If Bill to is Different note instructions in Comments**</small>	
Street: 1210 First Street South Ext.		<i>Third Party Billing requires written authorization from third party</i>	
City: Columbia	State/Province: SC	Zip/Postal Code: 29209	Country: United States
Report To (Name): Sid Havird		Telephone #: 803-783-3314	
Email Address: shavird@armenv.com, rrobertson@armenv.com		Fax #: 803-783-2587	Purchase Order: 16-314-15
Project Name/Number: HDR-ICA (Exit 104 bridge over I-85)		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)	Other
<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: 2-21-17

Samplers Name: **Robbie Robertson** Samplers Signature: *Robbie Robertson*

Sample #	HA #	Sample Location	Material Description
01,02	1	Between deck sections	Black mastic (PLM)
03	1	Between deck sections	Black mastic (TEM)

Client Sample # (s):	01 - 03	Total # of Samples:	3
Relinquished (Client):	<i>Robbie Robertson</i>	Date:	2-22-17 2-22-17 Time: 1100
Received (Lab):	<i>Kyle Nelson</i>	Date:	2/23/17 Time: 9:35AM Fk
Comments/Special Instructions: <small>Run PLM analyses first and if less than 1% run TEM confirmation on all NOB materials. Bill To: ARM Environmental, 1210 First Street South Ext., Columbia, SC, 29209, United States Attention: Gail Cruz Phone: 803-783-3314 Email: gcruz@armenv.com Purchase Order:</small>		7952 0476 9150	

APPENDIX D

XRF Data

Index	Time	Component	Substrate	Side	Condition	Color	Site	Results	Action Level	PbC
65	2017-02-21 11:14			CALIBRATE				Positive	0.70	1.20 ± 0.50
66	2017-02-21 11:14			CALIBRATE				Positive	0.70	1.10 ± 0.40
67	2017-02-21 11:14			CALIBRATE				Positive	0.70	1.20 ± 0.50
68	2017-02-21 11:34			CALIBRATE				Null	0.70	0.90 ± 0.30
69	2017-02-21 11:34			CALIBRATE				Positive	0.70	1.20 ± 0.40
70	2017-02-21 11:34			CALIBRATE				Positive	0.70	1.40 ± 0.50
71	2017-02-21 11:35			CALIBRATE				Positive	0.70	1.00 ± 0.30
72	2017-02-21 11:35			CALIBRATE				Positive	0.70	1.10 ± 0.40
73	2017-02-21 11:35			CALIBRATE				Positive	0.70	1.00 ± 0.30
74	2017-02-21 11:40	Bridge shoes	METAL	LEFT	INTACT	GREY	I85 EXIT 104.Tribal rd	Null	0.70	10.10 ± 33.50
75	2017-02-21 11:40	Bridge shoes	METAL	LEFT	INTACT	GREY	I85 EXIT 104.Tribal rd	Positive	0.70	40.30 ± 32.20
76	2017-02-21 11:40	Bridge shoes	METAL	LEFT	INTACT	GREY	I85 EXIT 104.Tribal rd	Positive	0.70	38.60 ± 31.00
77	2017-02-21 11:41	Bridge shoes	METAL	LEFT	INTACT	GREY	I85 EXIT 104.Tribal rd	Positive	0.70	26.60 ± 24.50
78	2017-02-21 11:42	Bridge bolts and plates	METAL	LEFT	INTACT	GREY	I85 EXIT 104.Tribal rd	Positive	0.70	20.70 ± 15.70
79	2017-02-21 11:42	Bridge bolts and plates	METAL	LEFT	INTACT	GREY	I85 EXIT 104.Tribal rd	Positive	0.70	16.00 ± 14.00
80	2017-02-21 11:42	Bridge bolts and plates	METAL	LEFT	INTACT	GREY	I85 EXIT 104.Tribal rd	Positive	0.70	18.70 ± 15.00
81	2017-02-21 11:43	Bridge bolts and plates	METAL	LEFT	INTACT	GREY	I85 EXIT 104.Tribal rd	Positive	0.70	15.80 ± 14.30
82	2017-02-21 11:45	Bridge piers	CONCRETE	LEFT	INTACT	YELLOW	I85 EXIT 104.Tribal rd	Null	0.70	0.01 ± 0.03
83	2017-02-21 11:46	Bridge piers	CONCRETE	LEFT	INTACT	YELLOW	I85 EXIT 104.Tribal rd	Positive	0.70	3.40 ± 2.30
84	2017-02-21 11:46	Bridge piers	CONCRETE	LEFT	INTACT	YELLOW	I85 EXIT 104.Tribal rd	Positive	0.70	2.90 ± 2.00
85	2017-02-21 11:46	Bridge piers	CONCRETE	LEFT	INTACT	YELLOW	I85 EXIT 104.Tribal rd	Positive	0.70	2.50 ± 1.60
86	2017-02-21 11:47	Bridge piers	CONCRETE	LEFT	INTACT	black	I85 EXIT 104.Tribal rd	Null	0.70	0.13 ± 0.14
87	2017-02-21 11:48	Bridge piers	CONCRETE	LEFT	INTACT	black	I85 EXIT 104.Tribal rd	Null	0.70	0.11 ± 0.12
88	2017-02-21 11:48	Bridge piers	CONCRETE	LEFT	INTACT	black	I85 EXIT 104.Tribal rd	Null	0.70	0.07 ± 0.09
89	2017-02-21 11:48	Bridge piers	CONCRETE	LEFT	INTACT	black	I85 EXIT 104.Tribal rd	Negative	0.70	0.06 ± 0.08
90	2017-02-21 11:48	Bridge piers	CONCRETE	LEFT	INTACT	black	I85 EXIT 104.Tribal rd	Null	0.70	0.04 ± 0.05
91	2017-02-21 11:56			CALIBRATE				Positive	0.70	1.00 ± 0.30
92	2017-02-21 11:56			CALIBRATE				Positive	0.70	1.20 ± 0.40
93	2017-02-21 11:57			CALIBRATE				Positive	0.70	1.00 ± 0.30
94	2017-02-21 13:17			CALIBRATE				Positive	0.70	1.10 ± 0.40
95	2017-02-21 13:18			CALIBRATE				Positive	0.70	1.10 ± 0.40
96	2017-02-21 13:18			CALIBRATE				Null	0.70	0.90 ± 0.30

APPENDIX E

SCDHEC Renovation and Demolition Guidelines

Q. Am I required to submit notification of all renovation projects?

A. Each owner/operator must notify DHEC's Asbestos Section in writing before beginning any renovation activity of a regulated facility/structure only if the scope of work contains asbestos. (see chart below)

Project Type	Minimum Required Notification Period
DEMOLITION	10 Working Days
NESHAP Removal (> or = 160 SF, 260 LF, or 35 CF)	10 Working Days
SMALL Removal (> 25 SF but < 160 SF, 260 LF, or 35 CF)	4 Working Days
MINOR Removal (< or = 25 SF)	2 Working Days
Non-Friable NESHAP-Sized Removal (non-friable > or = 160 SF, 260 LF, or 35 CF)	4 Working Days

Q. How do I notify DHEC's Asbestos Section?

A. Get notification forms by calling or writing to:

S.C. DHEC Asbestos Section
 2600 Bull Street
 Columbia, SC 29201
 (803) 898-4289

DHEC's Asbestos Section will mail you the necessary forms and can answer any questions you may have.

The forms and additional information are also available to view and download from the DHEC Asbestos Section's Web site at:

www.scdhec.gov/asbestos

This brochure is a brief overview of South Carolina's asbestos regulations pertaining to demolition and renovation activities. Before owners or operators become involved in demolition and renovation activities, they are encouraged to contact the DHEC-Asbestos Section to make sure they understand the applicable regulations, accreditation and permitting requirements.



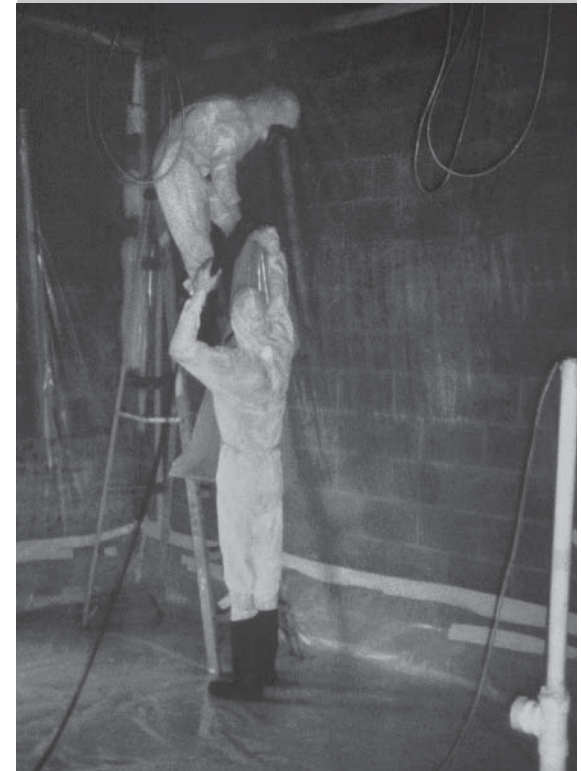
www.scdhec.gov

We promote and protect the health of the public and the environment.

ML-025415 7/09

Renovation, Demolition & Asbestos

What Building Owners & Contractors Should Know



S.C. Department of Health and Environmental Control

**Asbestos Section
 803-898-4289**

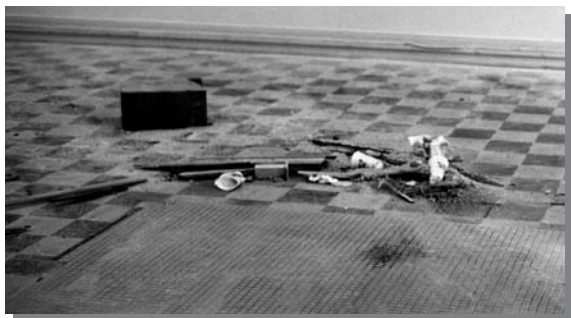
What is Asbestos?

Asbestos is the common name for a group of naturally occurring minerals made up of long, thin fibers. Asbestos is very strong and resistant to stress or forces that might tear it apart. It's also heat resistant. Asbestos fibers can be toxic to humans if inhaled. Despite this, it can still be found in a number of building products, including:

- Heating system insulation
- Spray-applied insulation
- Vinyl floor tiles
- Vinyl sheet flooring
- Ceiling tiles
- Roofing paper and shingles
- Cement siding shingles
- Plaster and joint compound

***It is still possible to purchase new products that contain asbestos. ***

When materials that contain asbestos are disturbed during renovations or demolitions, people nearby may get the dangerous fibers in their lungs. So before beginning a building project that could disturb asbestos-containing materials, property owners need to know how to spot asbestos and ensure the safety of those working nearby.



Frequently Asked Questions

Q. What is demolition?

A. Demolition is the wrecking or removal of a regulated facility/structure's load-bearing structure(s). It also refers to related handling operations, the burning of a regulated facility, or moving of a regulated structure.

Q. What is renovation?

A. It's altering all or part of a regulated facility/structure in any way (except demolition). Stripping or removing regulated asbestos-containing materials (RACM) from a regulated facility/structure is considered renovation.



Q. What is a regulated facility?

- A.
- Any institutional, commercial, public, industrial, or residential structure, installation, or building (including condominiums or individual dwelling units operated as a residential cooperative, but excluding residential buildings having four or fewer dwelling units);
 - any bridge;
 - any ship;
 - any active or inactive waste disposal site; and

- any structure, installation or building that was previously subject to this requirement, regardless of its current use or function.

Note: Under this definition, any building, structure, or installation that contains a loft used as a dwelling is not considered a residential structure, installation, or building.

Q. Do asbestos regulations require me to have my property inspected for asbestos?

A. S.C. DHEC Regulation 61-86.1 states that prior to any demolition or renovation at a regulated facility, a thorough inspection must be done to detect any asbestos-containing materials. The inspection must be carried out by a person licensed by DHEC's Asbestos Section as an asbestos building inspector.

If asbestos is found in an area that will be disturbed during renovation or repair work, it must be removed properly and disposed of at an approved landfill. DHEC's Asbestos Section keeps a list of South Carolina landfills that accept asbestos. These actions also must occur prior to any building demolition project. In most cases, asbestos removal and disposal activities must be performed by a licensed asbestos abatement contractor.

Q. Am I required to submit notification of all *demolition* projects?

A. Each owner/operator must notify DHEC's Asbestos Section in writing before beginning any demolition of a regulated facility/structure regardless of the amount of asbestos present (and even when no asbestos is present).

APPENDIX F

Photos



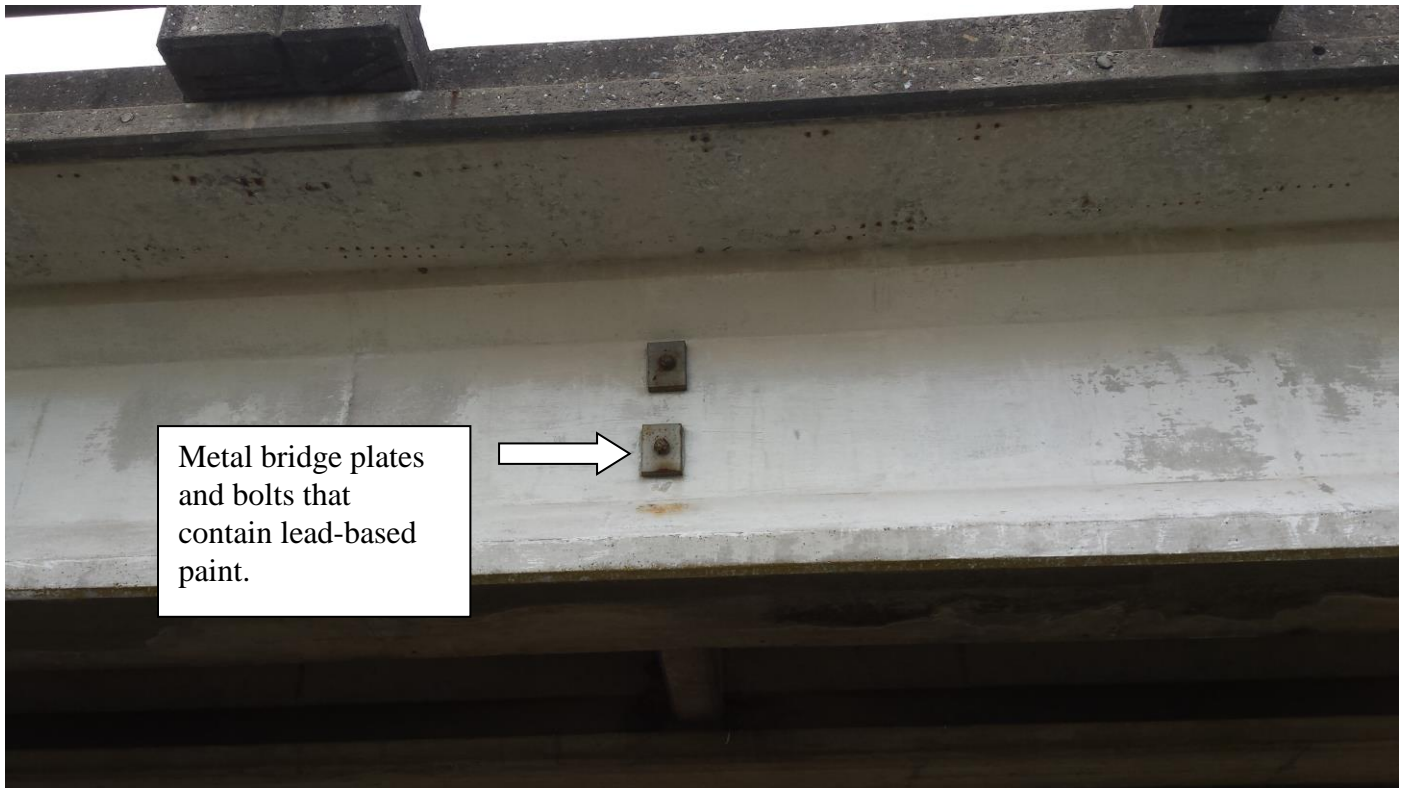
Photograph 1 – View of the bridge structure number at the S-11-99 (Tribal Road) Bridge over I-85 in Cherokee County, South Carolina.



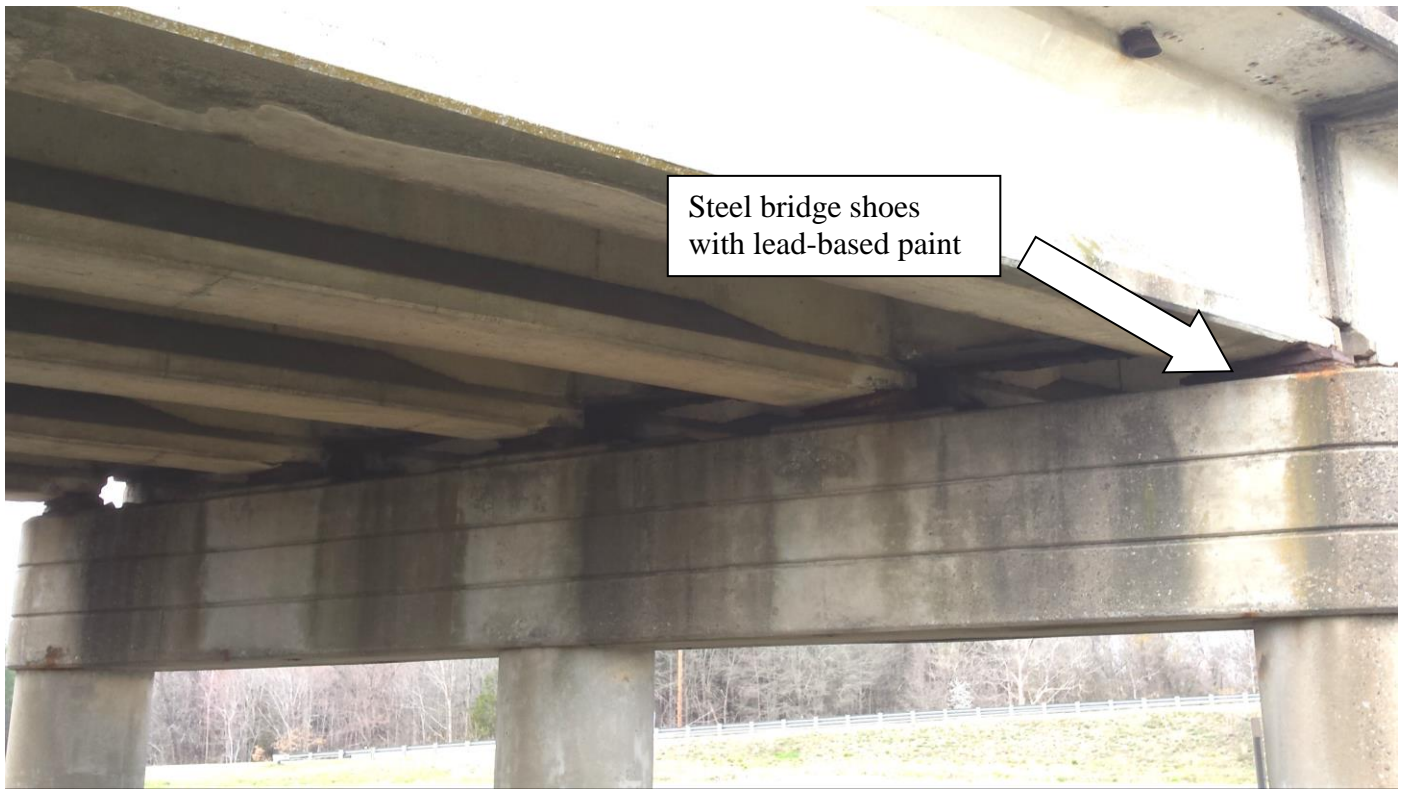
Photograph 2 – View of the top of the bridge structure at the S-11-99 (Tribal Road) Bridge over I-85 in Cherokee County, South Carolina.



Photograph 3 –View of the side of the S-11-99 (Tribal Road) Bridge over I-85 in Cherokee County, South Carolina.



Photograph 4 – View of the metal bridge plates and bolts that were positive for lead-based paint.



Steel bridge shoes
with lead-based paint

Photograph 5 – View underneath the bridge showing the steel bridge shoes between the concrete pier caps and the concrete deck that tested positive for lead-based paint.



Yellow lead-based
paint on concrete piers

Photograph 6 – View of the yellow paint on the concrete piers that tested positive for lead-based paint.