



## LEAD-BASED PAINT INVESTIGATION REPORT

SC 83 BRIDGE OVER LITTLE PEE DEE RIVER  
MARLBORO COUNTY, SOUTH CAROLINA  
PROJECT ID P042879

### PREPARED FOR:



c/o Mr. Trapp Harris, PE  
SCDOT  
955 Park Street  
Columbia, SC 29201

### PREPARED BY:

F&ME Consultants  
211 Business Park Blvd.  
Columbia, South Carolina 29203

**March 3, 2025**

☐ Yes, LBP was found.  
☒ No, LBP was not found.

FME Project No.: G7100.010

## TABLE OF CONTENTS

1.	Executive Summary.....	1
2.	Lead-Based Paint Background Information.....	3
3.	Introduction.....	3
4.	Investigation Procedures and Results.....	3
5.	Recommendations.....	4
	APPENDICES .....	6

Appendix A – Site Vicinity Map

Appendix B – General Bridge Plan

Appendix C – Summary of XRF Data Table

Appendix D – Site Photos

Appendix E – EPA LBP Inspector Certification



## 1. EXECUTIVE SUMMARY

This executive summary is intended as an overview for the reader's convenience. This report should be reviewed in its entirety prior to making any decisions regarding this project.

F&ME Consultants, Inc. (FME) has completed a Lead-Based Paint (LBP) investigation on the SC 83 Bridge over the Little Pee Dee River (Bridge), in Marlboro County, South Carolina. The purpose of the investigation was to locate, identify, and test components of the Bridge that are painted or coated with LBP. The field investigation was performed on February 14, 2025, in anticipation of the on-alignment replacement of the existing Bridge. Refer to Appendix A, Site Vicinity Map, is provided to show the location of the Bridge. Appendix B, General Bridge Plan, is provided to show the layout of the Bridge and a reference for locations of XRF scans.

Per an agreed-upon scope of work, this LBP Investigation was conducted to identify accessible Bridge components that have been painted or coated with lead-containing materials that have concentrations greater than or equal ( $\geq$ ) to the regulatory limit of 0.7 mg/cm<sup>2</sup>. This investigation includes both a visual evaluation of the physical condition of painted materials as well as quantitative testing of surfaces using an X-Ray Fluorescence (XRF) LBP analyzer. The XRF documents the concentration of lead, if any, in the overall paint or coating. Bridge components were scanned with a SciAps XRF analyzer (Model # X550 Pb, Serial #03033, Reference Date: 9/12/24) with a limit of detection (LOD) of 0.1 mg/cm<sup>2</sup>.

LBP is regulated by multiple government agencies, and each requires different response actions when the concentration of lead exceeds specified thresholds. The Occupational Safety and Health Administration (OSHA) regulates worker exposure to lead dust, and as a result, considers materials with any lead content to be a potential hazard. Additionally, the South Carolina Department of Environmental Services (SCDES) requires some waste materials to be disposed of at specific disposal facilities that are able to manage this waste. Appendix C, XRF Data, is provided to present the XRF data in a user-friendly format.

The results from the XRF quantitative testing of the Bridge components indicate that lead is not present in paint and/or coatings in concentrations greater than or equal to ( $\geq$ ) 0.7 mg/cm<sup>2</sup> in the Bridge components scanned during this LBP investigation.

We appreciate the opportunity to assist you in this project. If you have any questions or require additional information, please feel free to contact our office at (803) 254-4540.

Sincerely,

FME CONSULTANTS



**James T. Timmons**

SC Lead-Based Paint Inspector

EPA Certification No. LBP-I-1177392-3

(Exp. 9/30/26)



**Glynn M. Ellen**

Environmental Department Manager

## 2. LEAD-BASED PAINT BACKGROUND INFORMATION

Housing and Urban Development (HUD) defines “LBP” as any coating that has a lead concentration of 1.0 milligrams of lead per square centimeter ( $1.0 \text{ mg/cm}^2$ ) or greater, or if the lead concentration is greater than one half of a percent ( $> 0.5\%$ ) by weight. The Consumer Product Safety Commission (CPSC) currently considers paint to be lead-containing if the concentration of lead exceeds 90 ppm (0.009% by weight). In 1978, the CPSC banned the sale of LBP to consumers, and banned its application in areas where consumers have direct access to painted surfaces. Both the CPSC and HUD definitions of lead-containing paint are aimed at protecting the general population from exposure to lead in residential settings.

In contrast, the mission of OSHA with respect to lead-containing paint is to protect workers during construction activities that may generate elevated airborne lead concentrations. OSHA states that construction work (including renovation, maintenance, and demolition) carried-out on structures coated with paint having lead concentrations lower than the HUD or CPSC can still result in airborne lead concentrations in excess of regulatory limits. For this reason, OSHA has not defined lead-containing paint, but states that paint having any measurable level of lead may pose a substantial exposure hazard during construction work, depending upon the work performed. Therefore, in these situations, OSHA guidelines and safety procedures should be followed. By OSHA standards and regulations, the employer shall ensure that no employee is exposed to lead at concentrations greater than fifty micrograms per cubic meter of air ( $50 \text{ ug/m}^3$ ) averaged over an 8-hour period.

Additionally, SCDES requires the use of specific waste disposal sites if materials contain lead concentrations greater than or equal to ( $\geq$ )  $0.7 \text{ mg/cm}^2$ . Due to the anticipated demolition of the structure, the SCDHEC lead disposal requirements were used as a threshold.

## 3. INTRODUCTION

The existing Bridge ( $\approx 252' \text{ L} \times 23' \text{ W}$ , inside curb to inside curb) is located on SC 83 and crosses over Little Pee Dee River in Marlboro County, South Carolina. The construction date of the Bridge is unknown. The structure is a two (2) lane, ten (10) span Bridge constructed with a poured-in-place (PIP) concrete Bridge deck and concrete curbing/guardrails. The bridge deck is supported by five (5) horizontal structural steel I-beams. Each timber bent cap is supported by five (5) structural timber piles. Metal drainage scuppers were noted along each side of the Bridge. Each end bent is covered by a combination of soil and rip rap. A utility conduit was attached to the underside of



Photo 1: SC 83 Bridge over Little Pee Dee River in Marlboro County, South Carolina

the Bridge on the southeastern side and ran its entire length. Refer to Appendix A, Site Vicinity Map, for the location of the Bridge. Refer to Appendix B, General Bridge Plan, for a layout of the Bridge.

## 4. INVESTIGATION PROCEDURES AND RESULTS

FME's LBP Investigation sampling protocol consisted of randomly selecting bridge components and scanning them with a SciAps XRF analyzer (Model # X550 Pb, Serial #03033, Reference Date: 9/12/24) with a limit of detection (LOD) of 0.1 mg/cm<sup>2</sup>. During the investigation, none of the Bridge components tested positive for lead in concentrations greater than or equal to ( $\geq$ ) 0.7 mg/cm<sup>2</sup>.

## 5. RECOMMENDATIONS

The results, conclusions, and recommendations from this investigation are representative of the conditions observed at the site on the date of the field investigation. FME does not assume responsibility for any changes in conditions or circumstances that occur after the date of the field investigation. No other environmental issues were addressed as part of this report.

The results from the XRF quantitative testing of bridge components scanned indicate that lead was not found to be present in paint and/or coatings in concentrations greater than or equal to ( $\geq$ ) 0.7 mg/cm<sup>2</sup> in the Bridge components scanned during this LBP investigation. If any concealed and/or inaccessible suspect LBP are encountered during the demolition activities, the affected contractor(s) must stop work, take appropriate actions, and notify the Owner/LBP Consultant for an appropriate response action.

As stated previously, OSHA regulates any measurable level of lead, as it may pose a substantial exposure hazard to workers. Therefore, in these situations, OSHA regulations and safety procedures should be followed. These regulations also list the proper personal protective equipment to be used by the workers disturbing the LBP items and the requirements for personal air monitoring. OSHA's exposure action level (AL) for lead, regardless of respirator use, is an airborne concentration of 30 micrograms per cubic centimeter ( $\mu\text{g}/\text{cm}^3$ ), averaged over an eight-hour period. The action level (AL) is the level at which an employer must begin specific compliance activities as outlined in OSHA's lead standards. By OSHA standards and regulations, the employer shall ensure that no employee is exposed to lead at concentrations greater than 50  $\mu\text{g}/\text{m}^3$  averaged over an 8-hour period which is the permissible exposure level (PEL).

SCDES regulates the proper disposal of LBP and associated debris. SCDES defines two types of LBP debris. The first is LBP *waste*, which is defined as material such as wood, brick, and metal that is painted with LBP. The other is LBP *residue* which is defined as residue that is generated from the removal (e.g., scraped, chipped, sandblasted, or chemical) of LBP from a structure. LBP *waste* that comes from a commercial or residential facility may be disposed of in either a Class 2 or 3 landfill, while LBP *residue* from a commercial facility must have a toxicity characteristic leaching procedure (TCLP) analysis to determine the lead content. TCLP analysis is used to determine whether or not a waste is a characteristic hazardous waste due to leachability under the South Carolina Hazardous Waste Management Regulations. LBP *residue* with a TCLP analysis results greater than or equal to five milligrams per liter ( $\geq 5$  mg/l) lead must be disposed of in a Subtitle C landfill (Hazardous Waste). However, LBP *residue* from a commercial facility with a TCLP analysis results less than five  $< 5$  mg/l lead is required to be disposed of in a Class 3 landfill.

We sincerely appreciate the opportunity to be of service to the SCDOT on this project. If you have any questions regarding the information presented herein, please contact our office at (803) 254-4540.

## APPENDICES

Appendix A – Site Vicinity Map

Appendix B – General Bridge Plan

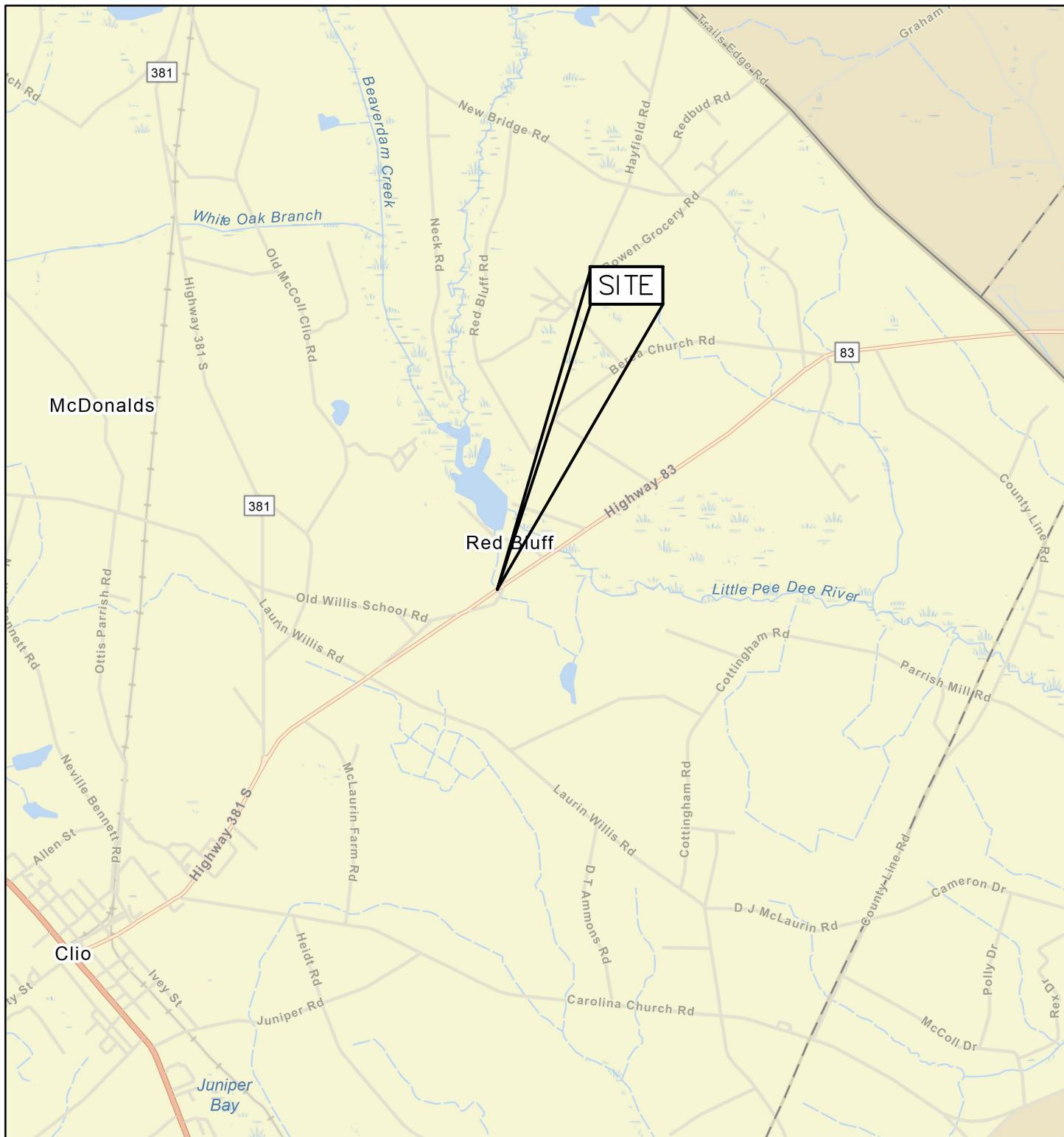
Appendix C – Summary of XRF Data Table

Appendix D – Site Photos

Appendix E – EPA LBP Inspector Certification

## Appendix A

### Site Vicinity Map



1:58,000

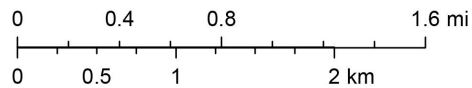


FIGURE  
NUMBER:

1

F&ME CONSULTANTS  
PROJECT NUMBER:

G67100.010

LEAD-BASED PAINT INVESTIGATION  
SC 83 Bridge over Little Pee Dee River  
Marlboro County, SC  
Site Vicinity Map  
Prepared for: SCDOT  
955 Park Street  
Columbia, SC 29201



211 BUSINESS PARK BLVD.  
COLUMBIA, SC 29203

ORIGINAL:  
February 18, 2025

REVISIONS:

1  
2  
3

SCALE:  
AS SHOWN

DRWN. BY: MSM  
CHKD. BY: JTT  
APPR. BY: GME

NOTES:

## Appendix B

### General Bridge Plan

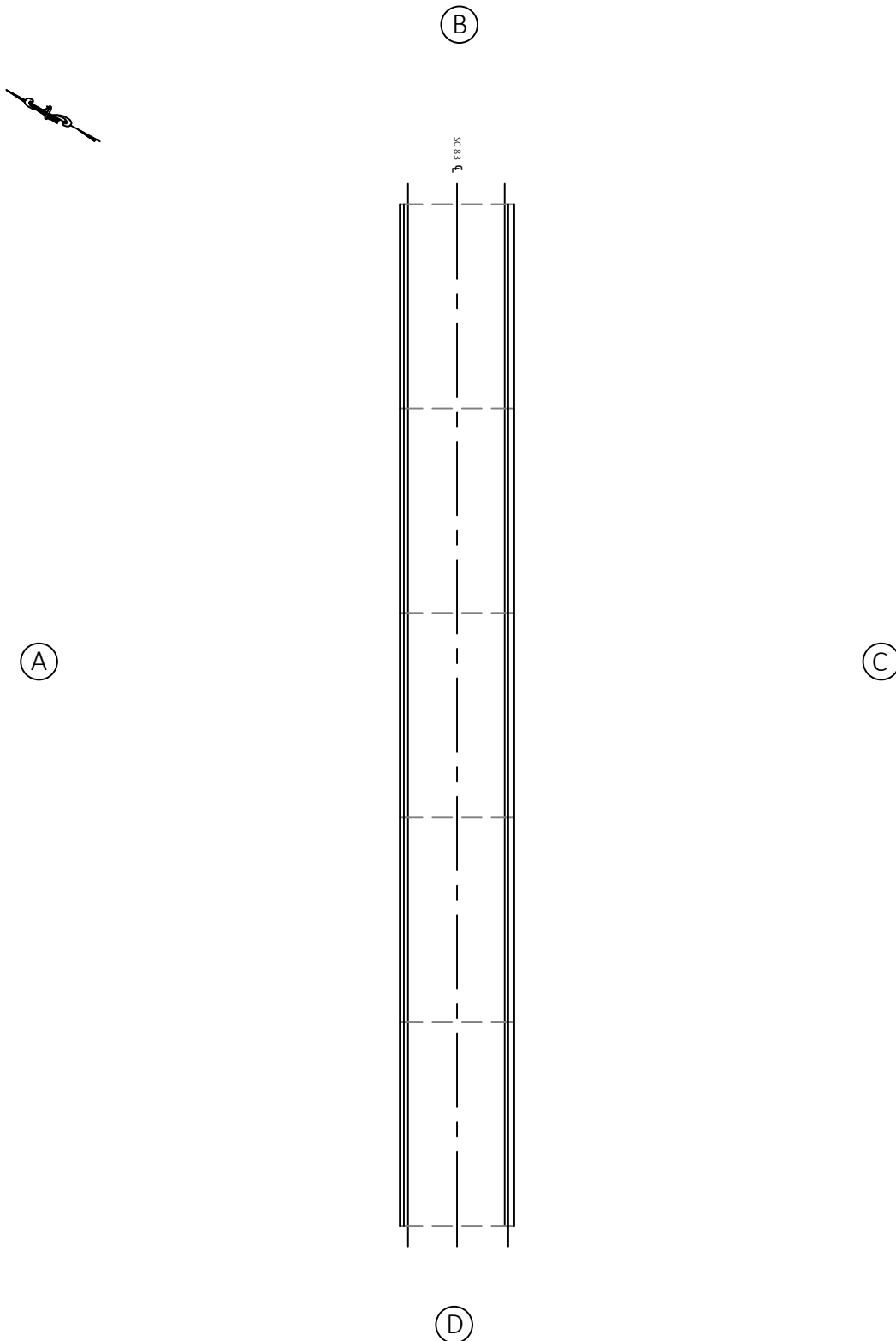


FIGURE  
NUMBER:

2

F&ME CONSULTANTS  
PROJECT NUMBER:

G7100.010

LEAD-BASED PAINT INVESTIGATION  
SC 83 Bridge over Little Pee Dee River  
Marlboro County, SC  
Sample Location Plan

Prepared for: SCDOT  
955 Park Street  
Columbia, SC 29201



211 BUSINESS PARK BLVD.  
COLUMBIA, SC 29203

ORIGINAL:  
February 18, 2025

REVISIONS:

1 \_\_\_\_\_  
2 \_\_\_\_\_  
3 \_\_\_\_\_

SCALE:  
N.T.S.

DRWN. BY: MSM  
CHKD. BY: JTT  
APPR. BY: GME

NOTES:

## Appendix C

### Summary of XRF Data Table

Appendix C – XRF Data  
Date Scanned: 02/14/2025  
S 83 Bridge over Little Pee Dee River

Scan No.	Pbc (mg/cm <sup>2</sup> )	Component	Substrate	Side	Condition	Color
1	1.07	Calibrate				
2	1.05	Calibrate				
3	1.02	Calibrate				
4	1.02	Calibrate				
5	<LOD	I-Beam	Metal	A	Poor	Gray
6	<LOD	I-Beam	Metal	Center	Poor	Gray
7	<LOD	I-Beam	Metal	C	Poor	Gray
8	<LOD	Electrical Conduit	Metal	C	Poor	Gray
9	<LOD	Electrical Conduit	Metal	C	Poor	Gray
10	<LOD	Electrical Conduit	Metal	C	Poor	Gray
11	<LOD	Cross Bracing Anchor	Metal	A	Poor	Gray
12	<LOD	Cross Bracing Anchor	Metal	Center	Poor	Gray
13	<LOD	Cross Bracing Anchor	Metal	C	Poor	Gray
14	1.06	Calibrate				
15	1.04	Calibrate				
16	1.01	Calibrate				

LOD (Limit of Detection) = 0.1 mg/cm<sup>2</sup>

Blue text indicates any concentrations of LBP which OSHA considers a potential exposure risk when removed.

Red text indicates concentrations of LBP that have specific disposal requirements regulated by SCDHEC.

## Appendix D

### Site Photos



**Photo 1.** Top View of Bridge Deck.



**Photo 2.** Underside View of Bridge.



**Photo 3.** Southeast Corner View of Bridge.



**Photo 4.** Southwest Corner View of Bridge.



**Photo 5.** Metal Utility Conduit on Southeast Side of Bridge.



**Photo 6.** SCDOT Bridge Asset # Attached to the Concrete Guardrail.



## Appendix E

### EPA LBP Inspector Certification

# United States Environmental Protection Agency

This is to certify that



James T Timmons

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.226 as:

Risk Assessor

In the Jurisdiction of:

All EPA Administered Lead-based Paint Activities Program States, Tribes and Territories

This certification is valid from the date of issuance and expires September 30, 2026

LBP-R-I177392-3

Certification #

September 22, 2023

Issued On



Adrienne Priselac, Manager, Toxics Office

Land Division