

# Asbestos & Lead Paint Survey Report

Interstate 20 Bridges Over Wateree River  
Kershaw County, South Carolina  
Bridge Nos. 05779 & 05784

March 11, 2022  
Terracon Project No. 7321P043A  
SCDOT Project ID P029450

ASBESTOS DETECTED (ASSET 05779): **NO**

LEAD PAINT DETECTED (ASSET 05779): **YES**

ASBESTOS DETECTED (ASSET 05784): **NO**

LEAD PAINT DETECTED (ASSET 05784): **YES**

Prepared for:  
RS&H, Inc.  
North Charleston, South Carolina

Prepared by:  
Terracon Consultants, Inc.  
Columbia, South Carolina

terracon.com

**Terracon**

Environmental



Facilities



Geotechnical



Materials



March 11, 2022

RS&H, Inc.  
4000 Faber Place Drive, Suite 130  
North Charleston, South Carolina 29405

Attn: Mr. Andrew Smith, P.E., S.E.  
P: (843) 203-7810  
E: Andrew.Smith@rsandh.com

Re: **Asbestos & Lead Paint Survey Report**  
Interstate 20 Bridges over the Wateree River  
Asset Nos. 05779 & 05784  
Kershaw County, South Carolina  
SCDOT Project No. P029450  
Terracon Project No. 7321P043A  
RS&H Project No. 1444024002

Dear Mr. Smith:

**Terracon Consultants, Inc. (Terracon)** is pleased to present the results of the asbestos and lead paint survey performed on March 3, 2022, at the Interstate 20 bridges over the Wateree River located in Kershaw County, South Carolina. We understand that this survey was requested due to the planned replacement of the structures.

Terracon appreciates the opportunity to provide environmental consulting services for RS&H, Inc. and the South Carolina Department of Transportation. If you should have any questions regarding this report, please contact the undersigned at (803) 741-9000.

Sincerely,  
**Terracon Consultants, Inc.**

Owen Astwood, P.G.  
Project Geologist  
SC Asbestos Building Inspector No. BI-00475

Norman E. Partin, Jr., CHMM  
Department Manager



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**ASBESTOS & LEAD PAINT SURVEY REPORT**  
**INTERSTATE 20 BRIDGES OVER WATEREE RIVER**  
**KERSHAW COUNTY, SOUTH CAROLINA**  
**Terracon Project No. 7321P043A**  
**SCDOT Project No. P029450**  
**RS&H Project No. 1444024002**

## **1.0 INTRODUCTION**

Terracon Consultants, Inc. (Terracon) conducted an asbestos and lead paint survey of building materials at the eastbound and westbound Interstate 20 Bridges (Asset Nos. 05779 & 05784) over the Wateree River located in Kershaw County, South Carolina. The asbestos survey was conducted on March 3, 2022 by a South Carolina Department of Health and Environmental Control (SCDHEC) licensed asbestos building inspector in general accordance with our Work Order No. 1, dated March 25, 2021. Structure components were surveyed and homogeneous areas of suspect asbestos-containing materials (ACM) were visually identified and documented. Although reasonable effort was made to survey accessible suspect materials, additional suspect but unsampled materials could be located in walls, in voids or in other concealed areas. Suspect ACM was sampled in general accordance with the sampling protocols outlined in EPA Regulation 40 CFR 763 (Asbestos Hazard Emergency Response Act, AHERA). Samples were delivered to an accredited laboratory for analysis.

### **1.1. Project Objective**

We understand the asbestos survey was requested due to the planned replacement of the bridges. EPA regulation 40 CFR 61, Subpart M, National Emission Standards for Hazardous Air Pollutants (NESHAP), prohibits the release of asbestos fibers to the atmosphere during renovation/demolition activities. NESHAP requires that potentially regulated ACM be identified, classified and quantified prior to planned disturbances or renovation activities.

The objective of the lead paint evaluation was to identify lead containing paint on the structures that may require special handling and disposal considerations. SCDHEC regulates solid waste disposal under Regulation 61-107.19. Testing was performed to meet specific State disposal requirements and does not comply with all parts of the Occupational Health and Safety Administrations (OSHA) lead regulations. Testing to comply with OSHA regulations are not covered in our scope of work since it is the responsibility of the contractor to protect its employees.

Paint samples were collected from visible and accessible structural components and submitted to an Environmental Laboratory Accreditation Program (ELAP) approved laboratory for analysis of lead.

## **2.0 STRUCTURE DESCRIPTION**

The subject bridges service two-lane interstate highways approximately two miles west of Camden in Kershaw County. The bridges consist of concrete deck sections supported by steel beams. The bridge deck is concrete and has concrete curbs and rails. The bridge deck is supported by concrete bent caps which are located on concrete piles. The bridge structures are approximately 1,950 feet long. The northern bridge (westbound) is approximately 40 feet wide. The southern eastbound bridge is approximately 30 feet wide. The bridges were in-use at the time of the assessment.

## **3.0 ASBESTOS SURVEY**

The asbestos survey was conducted by South Carolina Department of Health and Environmental Control (SCDHEC) licensed Asbestos Building Inspector Mr. Adam Chapiesky (License No. BI-01971, exp. 1/18/23). The survey was conducted on March 3, 2022, in general accordance with the sampling protocols established by EPA Regulation 40 CFR 763, AHERA and the SCDHEC Regulation 61-86.1. A summary of survey activities is provided below.

### **3.1 Regulatory Overview**

The asbestos NESHAP (40 CFR Part 61, Subpart M) regulates asbestos fiber emissions and asbestos waste disposal practices. It also requires the identification and classification of existing building materials prior to demolition or renovation activity. Under NESHAP, asbestos-containing materials are classified as either friable, Category I non-friable or Category II non-friable ACM. Friable materials are those that, when dry, may be crumbled, pulverized or reduced to powder by hand pressure. Category I non-friable ACM includes packing materials, gaskets, resilient floor coverings and asphalt roofing products containing more than 1 percent (%) asbestos. Category II non-friable ACM are non-friable materials that contain more than 1% asbestos and cannot be classified as Category I materials.

Friable ACM, Category I and Category II non-friable ACM which is in poor condition and has become friable or which will be subjected to drilling, sanding, grinding, cutting or abrading and which could be crushed or pulverized during anticipated demolition activities are considered regulated ACM (RACM). RACM must be removed prior to renovation or demolition activities.

In the state of South Carolina, asbestos activities are regulated by SCDHEC under SCDHEC Regulation 61-86.1 *Standards of Performance for Asbestos Projects*. SCDHEC requires that any asbestos-related activity conducted in a public building be performed by personnel licensed by SCDHEC. The owner or operator must provide SCDHEC with written notification of planned removal activities at least 10 working days prior to the commencement of asbestos abatement activities involving RACM. Asbestos abatement must be performed by SCDHEC-licensed asbestos

abatement contractors in accordance with a Project Design prepared by a SCDHEC-licensed Asbestos Consultant. Third-party air monitoring must be conducted during the abatement activities.

The Occupational Safety and Health Administration (OSHA) Asbestos Standard for Construction Industry (29 CFR 1926.1101) regulates workplace exposure to asbestos. The OSHA standard requires that employee exposure to airborne asbestos fibers be maintained below 0.1 asbestos fibers per cubic centimeter of air (0.1 f/cc). The OSHA standard classifies construction and maintenance activities, which could disturb ACM, and specifies work practices and precautions which employers must follow when engaging in each class of regulated work.

### **3.2 Visual Assessment**

Our survey activities began with visual observation of the structure to identify apparent homogeneous areas of suspect ACM. A homogeneous area consists of building materials, which appear similar throughout in terms of color, texture and apparent date of application. Building materials which were not identified as concrete, glass, wood, masonry, metal or rubber were considered suspect ACM.

### **3.3 Physical Assessment**

A physical assessment of each homogeneous area of suspect ACM was conducted to assess the friability and condition of the materials. A friable material is defined by the EPA as a material, which can be crumbled, pulverized or reduced to powder by hand pressure when dry. Friability was assessed by physically touching suspect materials.

### **3.4 Sample Collection**

Based on the results of the visual sampling, bulk samples of suspect ACM were collected in general accordance with AHERA sample collection protocols. Random samples of suspect materials were collected in each homogeneous area. Bulk samples were collected using wet methods as applicable to reduce the potential for fiber release. Samples were placed in sealable containers and labeled with unique sample numbers using an indelible marker.

Eighteen (18) bulk samples were collected from areas of suspect ACM on the bridges. The bulk samples were collected from the following materials:

- Black, bituminous expansion joint material;
- Putty expansion joint material; and
- Asphalt shingle friction pads.

A summary of the suspect ACM samples collected during the survey is presented in Table 1 in Appendix A.

### 3.5 Sample Analysis

Bulk samples were submitted under chain of custody to EMSL Analytical, Inc. (EMSL), of Pineville, North Carolina for analysis by polarized light microscopy (PLM) with dispersion staining techniques per EPA methodology (600/R-93/116). The percentage of asbestos, where applicable, was determined by microscopical visual estimation. EMSL is accredited under the National Voluntary Laboratory Accreditation Program NVLAP (200841-0).

SCDHEC Regulation 61-86.1 *Standards of Performance for Asbestos Projects*, requires negative results for non-friable organically bound (NOB) materials (such as flooring and roofing materials) be verified using Transmission Electron Microscopy (TEM) analysis.

The three suspect materials are considered NOB materials. The materials tested negative for asbestos by PLM analysis and thus one sample of each was submitted and analyzed by TEM.

### 3.6 Finding and Recommendations

Based on the results of laboratory analyses, **no asbestos was detected** in the expansion joint and friction barrier samples collected from the bridges. These results were confirmed by TEM analysis. Asbestos laboratory analytical reports are included in Appendix B.

## 4.0 LEAD-CONTAINING PAINT SURVEY

### 4.1 Regulatory Overview

Lead is regulated by the EPA, SCDHEC and OSHA. The EPA and SCDHEC regulate lead use, removal, and disposal, and OSHA regulates lead exposure to workers. The EPA defines LBP as paint, varnish, stain, or other applied coating that contains lead equal to or greater than 1.0 mg/cm<sup>2</sup>, 5,000 mg/kg, or 0.5% by dry weight as determined by laboratory analysis. The SCDHEC regulations 61-107.19 require that painted demolition debris with a lead concentration greater than 0.06% by weight be disposed in a permitted Class II landfill. For the purpose of the OSHA lead standard, lead includes metallic lead, all inorganic lead compounds, and organic lead soaps. The complete OSHA standard for compliance can be found on OSHA's website ([www.osha.gov](http://www.osha.gov)). A synopsis of the OSHA regulations (29 CFR 1926.62) and the applicability are as follows:

The OSHA *Lead Standard for Construction* (29 CFR 1926.62) applies to all construction work where an employee may be occupationally exposed to lead. All work related to construction, alteration, or repair (including painting and decorating) is included. The lead-in-construction standard applies to any detectable concentration of lead in paint, as even small concentrations of lead can result in unacceptable employee exposures depending upon on the method of removal and other workplace conditions. Under this standard, construction includes, but is not limited to, the following:

- Demolition or salvage of structures where lead or materials containing lead are present
- Removal or encapsulation of materials containing lead
- New construction, alteration, repair, or renovation of structures, substrates, or portions containing lead, or materials containing lead
- Installation of products containing lead
- Lead contamination/emergency clean-up
- Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed
- Maintenance operations associated with construction activities described above

## **4.2 Sampling and Analytical Protocol**

Mr. Adam Chapiesky of Terracon conducted the lead paint sampling on March 3, 2022. The paint sampling was conducted by collecting paint chip samples from painted bridge surfaces likely to contain lead. The paint samples were collected down to the surface substrate so as to include any underlying paint systems in the analysis. The random paint chip samples were selected based on current paint schemes and may not be inclusive of old paint systems covered with existing painted systems. The paint chip samples were submitted to an ELAP approved laboratory for analysis of lead by NIOSH Method 7082M (atomic absorption).

## **4.3 Sample Collection**

Two (2) paint samples were collected from exterior painted surfaces on the structures. The paint and substrate sampled is included below:

- Gray paint on metal beams.

## **4.4 Findings and Recommendations**

Laboratory analysis detected lead concentrations in both samples at 0.014% by weight. This concentration is below the SCDHEC threshold of 0.06% by weight and the EPA threshold of 0.5% by weight for definition as lead-based paint.

SCDHEC regulations require that lead painted demolition debris be disposed in a permitted Class II landfill. Landfills should be contacted to determine their specific disposal requirements. Metal components painted with lead-based paint may be recycled however the recycler should be contacted to determine their specific requirements. Additionally, the provisions in the OSHA Standard for Lead (29 CFR 1926.62) should be followed by contractor personnel conducting work activity during the demolition. A summary of the lead paint laboratory results is presented in Table 2 in Appendix A. The analytical report is included in Appendix B.



## **5.0 GENERAL COMMENTS**

This survey was conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the same locale. The results, findings, conclusions and recommendations expressed in this report are based on conditions observed during our survey of the structure. The information contained in this report is relevant to the date on which this survey was performed and should not be relied upon to represent conditions at a later date.

This report has been prepared on behalf of and exclusively for use by RS&H, Inc. and the SCDOT for specific application to their project as discussed.

This report is not a bidding document. Contractors or consultants reviewing this report must draw their own conclusions regarding further investigation or remediation deemed necessary. Terracon does not warrant the work of regulatory agencies, laboratories or other third parties supplying information, which may have been used in the preparation of this report. No warranty, express or implied is made.

# **APPENDIX A**

## **TABLES**

**TABLE 1 - Asbestos Sample Summary**  
**I-20 Bridges over Wateree River**  
**Kershaw County, South Carolina**  
**Project No. 7321P043A**

**Eastbound - 05779**

HA	Approx. Quantity	Sample Number	Description	Sample Location	Lab Result	Category	Condition
1	900 LF	1E.1	Tar	Expansion Joints	NAD	NF, MISC	Good
		1E.2	Tar	Expansion Joints	NAD	NF, MISC	Good
		1E.3	Tar	Expansion Joints	TEM - NAD	NF, MISC	Good
2	150 LF	2E.1	Putty	Expansion Joints	NAD	NF, MISC	Good
		2E.2	Putty	Expansion Joints	NAD	NF, MISC	Good
		2E.3	Putty	Expansion Joints	TEM - NAD	NF, MISC	Good
3	520 SF	3E.1	Vibration Dampener	Between decking beams/pier caps	NAD	NF, MISC	Good
		3E.2	Vibration Dampener	Between decking beams/pier caps	NAD	NF, MISC	Good
		3E.3	Vibration Dampener	Between decking beams/pier caps	TEM - NAD	NF, MISC	Good

**Westbound - 05784**

HA	Approx. Quantity	Sample Number	Description	Sample Location	Lab Result	Category	Condition
1	900 LF	1W.1	Tar	Expansion Joints	NAD	NF, MISC	Good
		1W.2	Tar	Expansion Joints	NAD	NF, MISC	Good
		1W.3	Tar	Expansion Joints	TEM - NAD	NF, MISC	Good
2	150 LF	2W.1	Putty	Expansion Joints	NAD	NF, MISC	Good
		2W.2	Putty	Expansion Joints	NAD	NF, MISC	Good
		2W.3	Putty	Expansion Joints	TEM - NAD	NF, MISC	Good
3	520 SF	3W.1	Vibration Dampener	Between decking beams/pier caps	NAD	NF, MISC	Good
		3W.2	Vibration Dampener	Between decking beams/pier caps	NAD	NF, MISC	Good
		3W.3	Vibration Dampener	Between decking beams/pier caps	TEM - NAD	NF, MISC	Good

**Notes**

Due to planned demolition all materials have a high potential for disturbance

HA Homogeneous Area

NAD No asbestos detected

PLM Polarized Light Microscopy

TEM Transmission Electron Microscopy

Misc Miscellaneous Material

NF Non-Friable

SF Square feet

LF Linear feet

**TABLE 2 - Lead Paint Sample Summary**  
**I-20 Bridge over Wateree River**  
**Kershaw County, South Carolina**  
**Project No. 7321P043A**

**Eastbound - 05779**

<b>Sample Number</b>	<b>Description</b>	<b>Location</b>	<b>Lab Result</b>
LPE-1	Gray	Steel Beams	0.014%

**Westbound - 05784**

<b>Sample Number</b>	<b>Description</b>	<b>Location</b>	<b>Lab Result</b>
LPW-1	Gray	Steel Beams	0.014%

Note:

Results in boldface indicate concentration above the SCDHEC regulatory limit (0.06%)

**APPENDIX B**  
**LABORATORY REPORTS**



# EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

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

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

EMSL Order: 412202336

Customer ID: GAGE62

Customer PO: 7321PO43A

Project ID:

**Attention:** Owen Astwood  
Terracon Consultants, Inc.  
521 Clemson Road  
Columbia, SC 29229

**Phone:** (803) 741-9000

**Fax:** (803) 741-9900

**Received Date:** 03/04/2022 9:55 AM

**Analysis Date:** 03/04/2022

**Collected Date:** 03/03/2022

**Project:** 7321PO43A / East + West River

## 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
1E.1 412202336-0001	Tar Expansion Joint	Black Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
1E.2 412202336-0002	Tar Expansion Joint	Black Non-Fibrous Homogeneous	10% Cellulose	10% Ca Carbonate 80% Non-fibrous (Other)	None Detected
2E.1 412202336-0003	Putty Expansion Joint	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2E.2 412202336-0004	Putty Expansion Joint	Gray/White Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
3E.1 412202336-0005	Shingle Vibration Dampener	Tan/Black Fibrous Heterogeneous	5% Cellulose 2% Glass	93% Non-fibrous (Other)	None Detected
3E.2 412202336-0006	Shingle Vibration Dampener	Tan/Black Non-Fibrous Homogeneous	10% Cellulose 5% Glass	85% Non-fibrous (Other)	None Detected
1W.1 412202336-0007	Tar Expansion Joint	Black Non-Fibrous Homogeneous		5% Mica 95% Non-fibrous (Other)	None Detected
1W.2 412202336-0008	Tar Expansion Joint	Black Non-Fibrous Homogeneous	15% Cellulose	10% Quartz 75% Non-fibrous (Other)	None Detected
2W.1 412202336-0009	Putty Expansion Joint	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2W.2 412202336-0010	Putty Expansion Joint	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
3W.1 412202336-0011	Shingle Vibration Dampener	Gray/Black Non-Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected
3W.2 412202336-0012	Shingle Vibration Dampener	Tan/Black Non-Fibrous Homogeneous		15% Ca Carbonate 85% Non-fibrous (Other)	None Detected



## EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

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

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

EMSL Order: 412202336

Customer ID: GAGE62

Customer PO: 7321PO43A

Project ID:

Analyst(s)

*Ky Nguyen (6)*

*Madeline Baldelli (6)*

Lee Plumley, Laboratory Manager  
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, 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. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method") but augmented with procedures outlined in the 1993 ("final") version of the method. 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. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Estimation of uncertainty is available on request.

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

Initial report from: 03/07/2022 08:34:23



# EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

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

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

EMSL Order: 412202336

Customer ID: GAGE62

Customer PO: 7321PO43A

Project ID:

**Attention:** Owen Astwood  
Terracon Consultants, Inc.  
521 Clemson Road  
Columbia, SC 29229

**Phone:** (803) 741-9000

**Fax:** (803) 741-9900

**Received Date:** 03/04/2022 9:55 AM

**Analysis Date:** 03/05/2022

**Collected Date:** 03/03/2022

**Project:** 7321PO43A / East + West River

## 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
1E.3 412202336-0013	Tar Expansion Joint	Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
2E.3 412202336-0014	Putty Expansion Joint	Gray Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
3E.3 412202336-0015	Shingle Vibration Dampener	Tan/Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
1W.3 412202336-0016	Tar Expansion Joint	Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
2W.3 412202336-0017	Putty Expansion Joint	Gray Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
3W.3 412202336-0018	Shingle Vibration Dampener	Brown/Tan Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

Analyst(s)

Sarah Breneman (6)

Lee Plumley, Laboratory Manager  
or other approved signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, 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. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. EMSL recommends that samples reported as none detected or <1% undergo additional analysis via PLM to avoid the possibility of false negatives.

Samples analyzed by EMSL Analytical, Inc. Pineville, NC

Initial report from: 03/07/2022 08:34:21



EMSL ANALYTICAL, INC.  
LABORATORY PRODUCTS TRADING

## Asbestos Chain of Custody

EMSL Order Number (Lab Use Only):

412202336

Pineville, NC 28134

PHONE: (704) 525-2205

FAX: (704) 525-2382

Company Name : Terracon Consultants, Inc.		EMSL Customer ID:	
Street: 521 Clemson Road		City: Columbia	State/Province: SC
Zip/Postal Code: 29229	Country: US	Telephone #: 803-212-0064	Fax #: 803-741-9900
Report To (Name): Owen Astwood		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
Email Address: Owen.Astwood@terracon.com		Purchase Order:	
Project Name/Number: 7321 P043A / East-west rivier		EMSL Project ID (Internal Use Only):	
U.S. State Samples Taken: SC		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	
EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different - If Bill to is Different note instructions in Comments** Third Party Billing requires written authorization from third party			
Turnaround Time (TAT) Options* - Please Check			
<input type="checkbox"/> 3 Hour <input type="checkbox"/> 6 Hour <input checked="" type="checkbox"/> 24 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input type="checkbox"/> 1 Week <input type="checkbox"/> 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.			
<b>PCM - Air</b> <input type="checkbox"/> Check if samples are from NY <input type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA <b>PLM - Bulk (reporting limit)</b> <input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) <input type="checkbox"/> NYS 198.1 (friable in NY) <input type="checkbox"/> NYS 198.6 NOB (non-friable-NY) <input type="checkbox"/> NYS 198.8 SOF-V <input type="checkbox"/> NIOSH 9002 (<1%)		<b>TEM - Air</b> <input type="checkbox"/> 4-4.5hr TAT (AHERA only) <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> EPA Level II <input type="checkbox"/> ISO 10312 <b>TEM - Bulk</b> <input checked="" type="checkbox"/> TEM EPA NOB <input type="checkbox"/> NYS NOB 198.4 (non-friable-NY) <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM Mass Analysis-EPA 600 sec. 2.5 <b>TEM - Water:</b> EPA 100.2 Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking	
<b>TEM- Dust</b> <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167) <b>Soil/Rock/Vermiculite</b> <input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (<1%) <input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (<0.25%) <input type="checkbox"/> TEM EPA 600/R-93/116 with milling prep (<0.1%) <input type="checkbox"/> TEM Qualitative via Filtration Prep <input type="checkbox"/> TEM Qualitative via Drop Mount Prep <input type="checkbox"/> Cincinnati Method EPA 600/R-04/004 - PLM/TEM (BC) <b>Other:</b> <input type="checkbox"/>			
<input type="checkbox"/> Check For Positive Stop - Clearly Identify Homogenous Group		Filter Pore Size (Air Samples): <input type="checkbox"/> 0.8µm <input type="checkbox"/> 0.45µm	
Samplers Name:		Samplers Signature:	
Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
IE.1	Top expansion joint		3-3-22
<del>tw. 7</del> IE.2	↓		
IE.3	↓		
2E.1	putty expansion joint		3.3-22
2E.2	↓		
Client Sample # (s): IE.1 - 3W.3		Total # of Samples: 18	
Relinquished (Client): Adam Amby		Date: 3-3-22	Time: 1000
Received (Lab): TP		Date: 3/4/22	Time: 955 AM
Comments/Special Instructions: * Run TEM concurrently			



**EN** **EMSL ANALYTICAL, INC.**  
**LAB** **LABORATORY • PRODUCTS • TRAINING**

## Asbestos Chain of Custody

**EMSL Order Number (Lab Use Only):**

412202336

**Pineville, NC 28134**

PHONE: (704) 525-2205

FAX: (704) 525-2382

*Additional Pages of the Chain of Custody are only necessary if needed for additional sample information*

[illegible]

**\*Comments/Special Instructions:**

~~Run~~ Run TEM Concurrently

**EMSL Analytical, Inc.**

10801 Southern Loop Blvd, Pineville, NC 28134

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

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

EMSL Order: 412202357  
CustomerID: GAGE62  
CustomerPO: 7321P043A  
ProjectID:

Attn: **Owen Astwood**  
**Terracon Consultants, Inc.**  
**521 Clemson Road**  
**Columbia, SC 29229**

Phone: (803) 741-9000  
Fax: (803) 741-9900  
Received: 3/4/2022 12:27 PM  
Collected: 3/3/2022

Project: **7321P043A/ East and West River Bridges****Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)\***

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Weight</i>	<i>Lead Concentration</i>
LPE-1	412202357-0001	3/3/2022	3/5/2022	.2096 g	0.014 % wt
	Desc: Eastbound Metal Bridge Gray				
LPW-1	412202357-0002	3/3/2022	3/5/2022	.2457 g	0.014 % wt
	Desc: Westbound Metal Bridge Gray				

Aaron Hartley, Lead Technical Manager  
or other approved signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, 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. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted.

\* Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.008% wt based on the minimum sample weight per our SOP. "<" (less than) result signifies the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. Definitions of modifications are available upon request.

Samples analyzed by EMSL Analytical, Inc. Pineville, NC AIHA-LAP, LLC - ELLAP 192283

Initial report from 03/07/2022 09:20:24



EMSL ANALYTICAL, INC.  
LABORATORY • PRODUCTS • TRAINING

## Lead Chain of Custody

EMSL Order Number / Lab Use Only

EMSL Analytical, Inc.  
10801 Southern Loop Blvd

Pineville, NC 28134  
PHONE: (704) 525-2205  
EMAIL: charlottelab@EMSL.com

412202357

Customer ID:		Billing ID:	
Company Name: Terracon Consultants, Inc.		Company Name: Terracon Consultants, Inc.	
Contact Name: Owen Astwood		Billing Contact: Accounts Receivable	
Street Address: 521 Clemson Road		Street Address: 10841 S. Ridgeview Rd	
City, State, Zip: Columbia SC 29229 Country: US		City, State, Zip: Olathe KS 66061 Country: US	
Phone: 803-924-0944		Phone: 913-599-6886	
Email(s) for Report: owen.astwood@terracon.com		Email(s) for Invoice:	

Project Information			
Project Name/No: 7321P043A / East + west river bridges		Purchase Order:	
EMSL LIMS Project ID: (If applicable, EMSL will provide)		US State where samples collected: SC	
Sampled By Name: Adam Chipiesky		State of Connecticut (CT) must select project location: <input type="checkbox"/> Commercial (Taxable) <input type="checkbox"/> Residential (Non-Taxable)	
Sampled By Signature: Adam Chipiesky		No. of Samples in Shipment: 2	
Turn-Around Time (TAT)			
<input type="checkbox"/> 3 Hour <input type="checkbox"/> 6 Hour <input checked="" type="checkbox"/> 24 Hour <input type="checkbox"/> 32 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week			
Please call ahead for large projects and/or turnaround times 6 Hours or Less. *32 Hour TAT available for select tests only, samples must be submitted by 11:30am.			

MATRIX	METHOD	INSTRUMENT	REPORTING LIMIT	SELECTION
CHIPS <input checked="" type="checkbox"/> % by wt. <input type="checkbox"/> ppm (mg/kg) <input type="checkbox"/> mg/cm <sup>2</sup>	SW 846-7000B	Flame Atomic Absorption	0.008% (80ppm)	<input checked="" type="checkbox"/>
*Reporting Limit based on a minimum 0.25g sample weight	SW 846-6010D*	ICP-OES	0.0004% (4ppm)	<input type="checkbox"/>
AIR	NIOSH 7082	Flame Atomic Absorption	4µg/filter	<input type="checkbox"/>
	NIOSH 7300M / NIOSH 7303M	ICP-OES	0.5µg/filter	<input type="checkbox"/>
	NIOSH 7300M / NIOSH 7303M	ICP-MS	0.05µg/filter	<input type="checkbox"/>
WIPE <input type="checkbox"/> ASTM <input type="checkbox"/> NON-ASTM	SW 846-7000B	Flame Atomic Absorption	10µg/wipe	<input type="checkbox"/>
*If no box is checked, non-ASTM Wipe is assumed	SW 846-6010D*	ICP-OES	1.0µg/wipe	<input type="checkbox"/>
TCLP	SW 846-1311 / 7000B / SM 3111B	Flame Atomic Absorption	0.4 mg/L (ppm)	<input type="checkbox"/>
	SW 846-1311 / SW 846-6010D*	ICP-OES	0.1 mg/L (ppm)	<input type="checkbox"/>
SPLP	SW 846-1312 / 7000B / SM 3111B	Flame Atomic Absorption	0.4 mg/L (ppm)	<input type="checkbox"/>
	SW 846-1312 / SW 846-6010D*	ICP-OES	0.1 mg/L (ppm)	<input type="checkbox"/>
TTLIC	22 CCR App. II, 7000B	Flame Atomic Absorption	40mg/kg (ppm)	<input type="checkbox"/>
	22 CCR App. II, SW 846-6010D*	ICP-OES	2mg/kg (ppm)	<input type="checkbox"/>
STLC	22 CCR App. II, 7000B	Flame Atomic Absorption	0.4 mg/L (ppm)	<input type="checkbox"/>
	22 CCR App. II, SW 846-6010D*	ICP-OES	0.1 mg/L (ppm)	<input type="checkbox"/>
Soil	SW 846-7000B	Flame Atomic Absorption	40mg/kg (ppm)	<input type="checkbox"/>
	SW 846-6010D*	ICP-OES	2mg/kg (ppm)	<input type="checkbox"/>
Wastewater	SM 3111B / SW 846-7000B	Flame Atomic Absorption	0.4 mg/L (ppm)	<input type="checkbox"/>
Unpreserved <input type="checkbox"/>	EPA 200.7	ICP-OES	0.020 mg/L (ppm)	<input type="checkbox"/>
Preserved with HNO <sub>3</sub> <input type="checkbox"/> PH<2	EPA 200.5	ICP-OES	0.003 mg/L (ppm)	<input type="checkbox"/>
Drinking Water	EPA 200.8	ICP-MS	0.001 mg/L (ppm)	<input type="checkbox"/>
Unpreserved <input type="checkbox"/>				<input type="checkbox"/>
Preserved with HNO <sub>3</sub> <input type="checkbox"/> PH<2				<input type="checkbox"/>
TSP/SPM Filter	40 CFR Part 50	ICP-OES	12 µg/filter	<input type="checkbox"/>
Other:				<input type="checkbox"/>

Sample Number	Sample Location	Volume / Area	Date / Time Sampled
LPE-1	Eastbound metal bridge bay		3-3-22
LFW-1	Westbound metal bridge bay		3-3-22

Method of Shipment: FEDEX		Sample Condition Upon Receipt:	
Relinquished by: Adam Chipiesky	Date/Time: 3-3-22 1000	Received by: [Signature]	Date/Time: 3/4/22
Relinquished by:	Date/Time:	Received by: [Signature]	Date/Time: 955 AM

Controlled Document - COC-25 Lead R16 4/19/2021

\*6010C Available Upon Request

☐ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

EMSL Analytical, Inc.'s Laboratory Terms and Conditions are incorporated into this Chain of Custody by reference in their entirety. Submission of samples to EMSL Analytical, Inc. constitutes acceptance and acknowledgment of all terms and conditions by Customer.

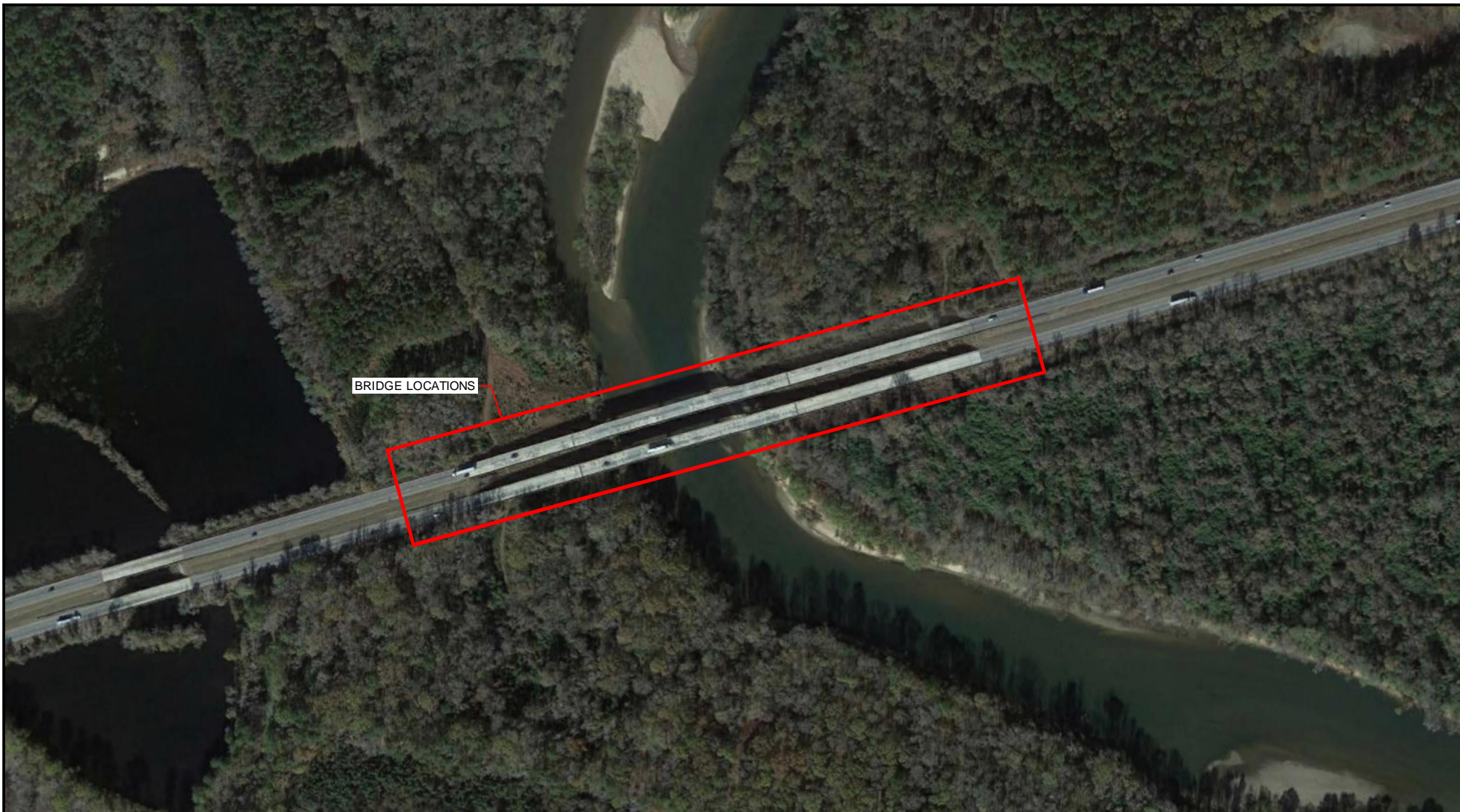
## **APPENDIX C**

**Exhibit 1 – Site Location Map**

**Exhibit 2 – Sample Location Plan - Eastbound**

**Exhibit 3 – Sample Location Plan - Westbound**






BRIDGE LOCATIONS

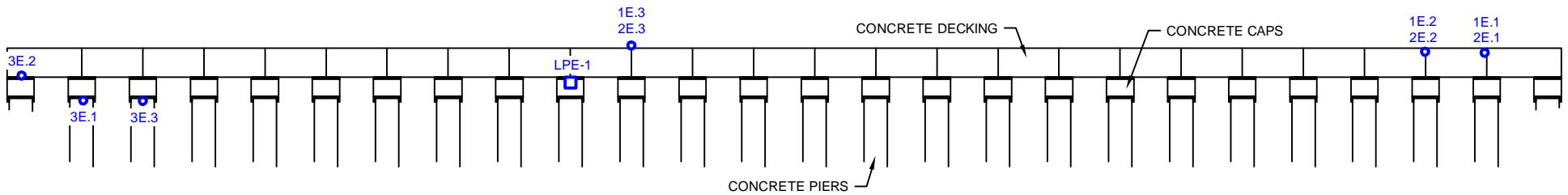
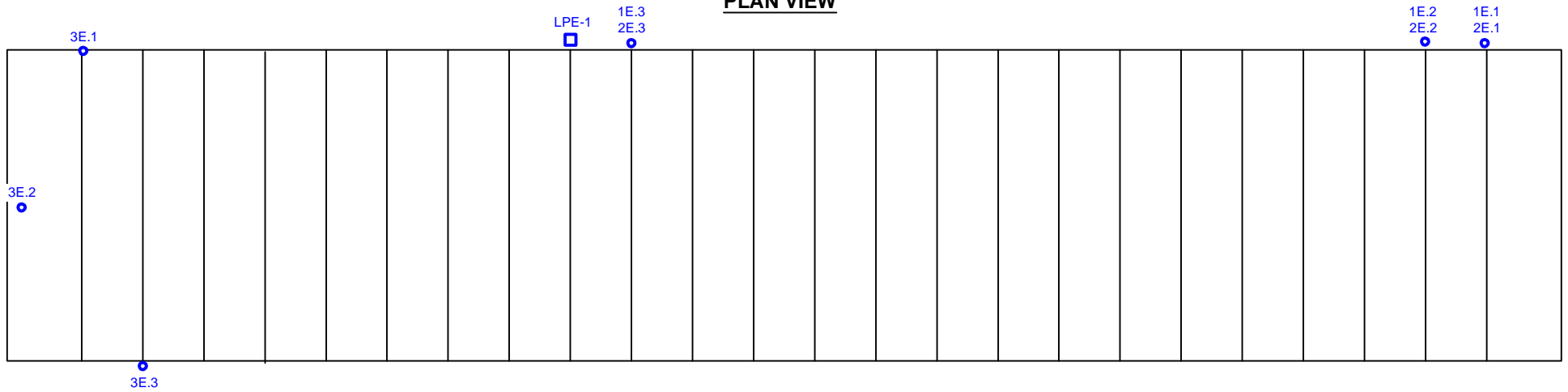


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND  
IS NOT INTENDED FOR CONSTRUCTION PURPOSES

NOTE: AERIAL PHOTOGRAPH WAS OBTAINED FROM GOOGLE EARTH PRO.

Project Mngr: ADC	Project No. 7321P043A	 Consulting Engineers and Scientists 521 CLEMSON ROAD COLUMBIA, SOUTH CAROLINA PH. (803) 741-9000 FAX. (803) 741-9900	SITE LOCATION MAP - RVIER I-20 WATEREE RIVER BRIDGE REPAIRS I-20 KERSHAW COUNTY, SOUTH CAROLINA	Exhibit 1
Drawn By: PTK	Scale: NOT TO SCALE			
Checked By: ADC	File No. 7321P043A ASB			
Approved By: NEP	Date: MARCH 2022			

## PLAN VIEW



## PROFILE VIEW

### EXPLANATION

- POSITIVE ACM SAMPLE LOCATION
- NEGATIVE ACM SAMPLE LOCATION
- POSITIVE LEAD PAINT SAMPLE LOCATION
- NEGATIVE LEAD PAINT SAMPLE LOCATION

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Mng:	ADC	Project No.	7321P043A
Drawn By:	PTK	Scale:	NOT TO SCALE
Checked By:	ADC	File No.	7321P043A ASB
Approved By:	NEP	Date:	MARCH 2022



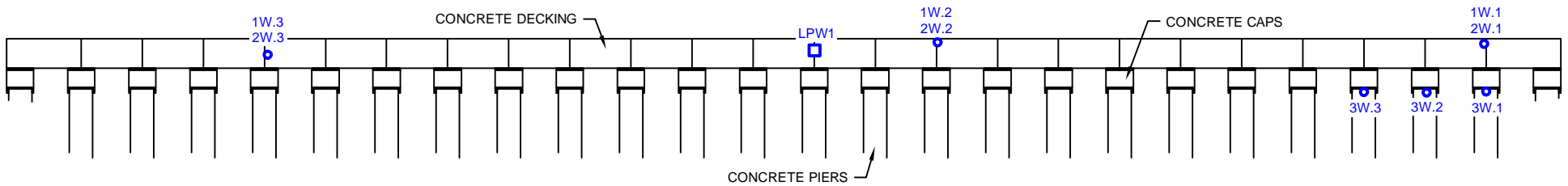
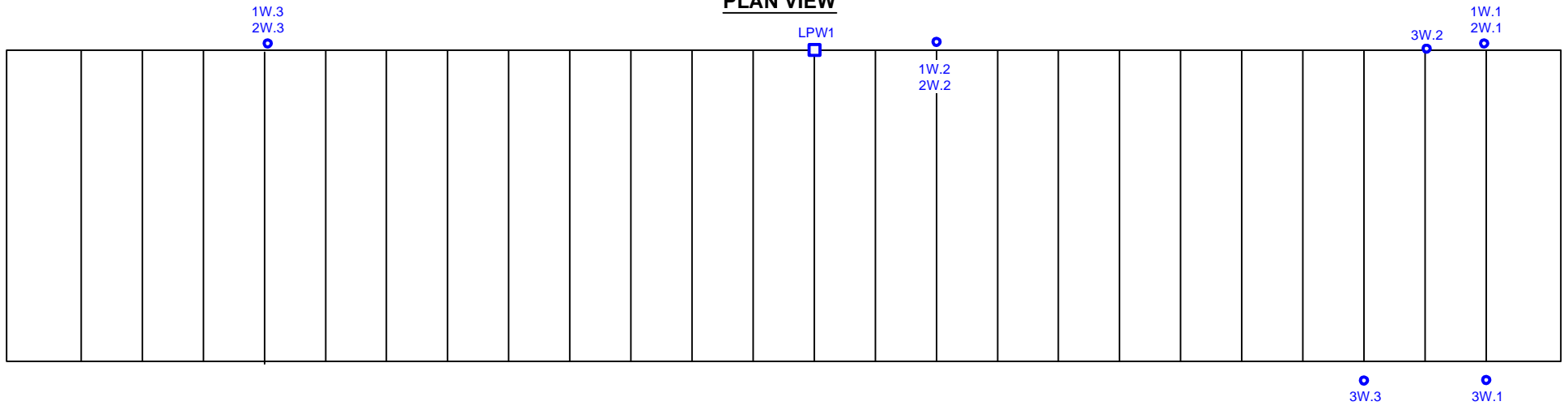
### SAMPLE LOCATION PLAN - EASTBOUND RIVER

I-20 WATEREE RIVER BRIDGE REPAIRS  
I-20  
KERSHAW COUNTY, SOUTH CAROLINA  
BRIDGE #5779

Exhibit

2

## PLAN VIEW



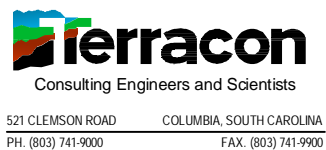
## PROFILE VIEW

### EXPLANATION

- POSITIVE ACM SAMPLE LOCATION
- NEGATIVE ACM SAMPLE LOCATION
- POSITIVE LEAD PAINT SAMPLE LOCATION
- NEGATIVE LEAD PAINT SAMPLE LOCATION

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Mng:	ADC	Project No.	7321P043A
Drawn By:	PTK	Scale:	NOT TO SCALE
Checked By:	ADC	File No.	7321P043A ASB
Approved By:	NEP	Date:	MARCH 2022



### SAMPLE LOCATION PLAN - WESTBOUND RIVER

I-20 WATEREE RIVER BRIDGE REPAIRS  
I-20  
KERSHAW COUNTY, SOUTH CAROLINA  
BRIDGE #5784

Exhibit

3



**APPENDIX D**  
**PHOTOGRAPHS**

# Asbestos & Lead Paint Inspection

I-20 Bridges Eastbound (05779) and Westbound (05784) ■ Kershaw County, SC  
 Photos Taken 3/3/2022 ■ Project No. 7321P043A



**Photo 1:** Bridge number eastbound lane (05779)



**Photo 2:** Bridge looking eastbound (05779)



**Photo 3:** Side view of bridge facing eastbound (05779)



**Photo 4:** HA #1E and HA #1W Tar expansion joint (05779 + 05784)



# Asbestos & Lead Paint Inspection

I-20 Bridges Eastbound (05779) and Westbound (05784) ■ Kershaw County, SC

Photos Taken 3/3/2022 ■ Project No. 7321P043A



**Photo 5:** HA #2E and HA #2W Putty expansion joint (05779 + 05784)



**Photo 6:** HA #3E and HA #3W Shingle vibration dampener (05779+ 05784)



**Photo 7:** LPE-1 and LPW-1 Grey paint on side of bridges (05779+ 05784)



**Photo 8:** Bridge Number on westbound lane

# Asbestos & Lead Paint Inspection

I-20 Bridges Eastbound (05779) and Westbound (05784) ■ Kershaw County, SC  
 Photos Taken 3/3/2022 ■ Project No. 7321P043A

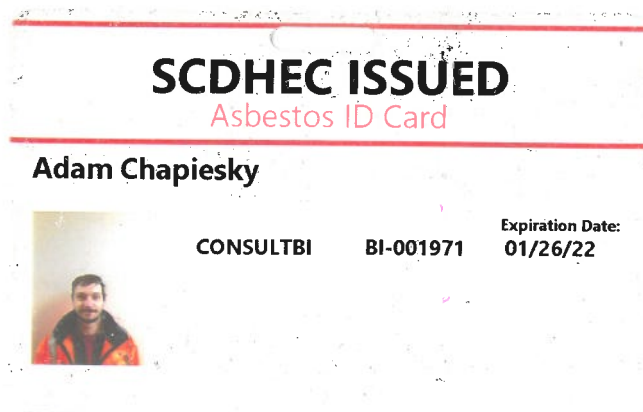


**Photo 9:** View of westbound bridge (05784) facing east



**Photo 10:** View of side of bridge (05784)

**APPENDIX E**  
**INSPECTOR CREDENTIALS**





# AAA Environmental

2036 Chesnee Hwy. Spartanburg, South Carolina 29303 (864)582-1222

**ADAM CHAPIESKY**

521 Clemson Road, Columbia, SC 29229

2006

*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 Inspector Refresher Training Course

Charlotte, NC

10-6053

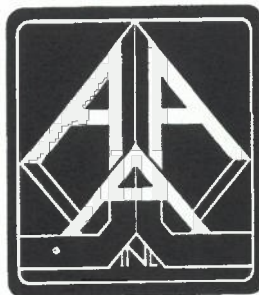
Certificate Number

January 18, 2022

Course Date(s)

January 18, 2022 ©

Examination Date



Tammy L. Champion

Principal Instructor

Pamela A. Smith, Training Manager

January 18, 2023

Expiration Date

Technical Contact Hours: 3.75