COMPREHENSIVE ASBESTOS/LEAD-BASED PAINTSURVEY

U. S. 301 FIVE CHOP ROAD BRIDGE OVER FOUR HOLE SWAMP ORANGEBURG COUNTY, SOUTH CAROLINA

___ Asbestos Detected
___ Lead-Based Paint Detected

_X_ No Asbestos Detected
_X_ No Lead-Based Paint Detected

Prepared For:

ESP ASSOCIATES, INC.
Attn: Mr. Michael S. Ulmer, PE
2154 North Center Street, Suite C-302
North Charleston, SC 29406
(843) 714-2040

Performed By:

TES

Trident Environmental Services, Inc.

Consultants in Industrial Hygiene and Safety
500 Oakbrook Lane, Suite E
Summerville, SC 29485
(843) 873-3648

COMPREHENSIVE ASBESTOSLEAD-BASED PAINT SURVEY

U. S. 301 Five Chop Road Bridge
Over Four Hole Swamp
Orangeburg County, South Carolina

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TES
Trident Environmental Services, Inc.
Consultants in Industrial Hygiene and Safety
500 Oakbrook Lane, Suite E
Summerville, SC 29485
(843) 873-3648

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Trident Environmental Services, Inc.
Consultants in Industrial Hygiene and Safety
500 Oakbrook Lane, Suite E
Summerville, SC 29485
(843) 873-3648

EXECUTIVE SUMMARY

The comprehensive asbestos survey performed by Trident Environmental Services, Inc. on February 8, 2022 of the U. S. 301 Five Chop Road Bridge located over Four Hole Swamp in Orangeburg County, South Carolina **did not** identify the presence of asbestos containing materials (ACM). The following table lists the asbestos identified at the referenced site.

Asbestos

Description	Type
NO ASBESTOS DETECTED	

RACM – Regulated Asbestos Containing Material *PACM – Presumed Asbestos Containing Material

Abatement of the identified ACM should be performed by a properly trained and licensed abatement contractor prior to the planned renovation/demolition activities.

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Trident Environmental Services, Inc.
Consultants in Industrial Hygiene and Safety
500 Oakbrook Lane, Suite E
Summerville, SC 29485
(843) 873-3648

BACKGROUND

Trident Environmental Services, Inc. was contracted by **ESP Associates** to perform a comprehensive asbestos survey of the U. S. 301 Five Chop Road Swamp over Four Hole Swamp in Orangeburg County, South Carolina. This survey was performed in order to satisfy the NESHAP requirements for future repair, maintenance and/or demolition of concrete bridge. The structure is approximately 296 linear feet with four lanes and originally constructed in the 1950's.

Non-suspect material includes wood, glass, concrete or concrete block, brick, masonry or grout, natural stone or ceramic, metal components, ductwork or piping, PVC pipes, fiberglass, foam or rubber insulation.

Asbestos

The inspection was conducted to identify asbestos that may be disturbed during the demolition activities. The identification of asbestos will aid in the prevention of occupational exposures and/or environmental releases of airborne asbestos fibers. Identification of ACM complies with Title 40 Code of the Federal Regulations (CFR), Part 61, South Carolina Department of Health and Environmental Control (SCDHEC) Regulation 61-86.1, and Title 29 CFR, Part 1926 enforced by the Occupational Safety and Hazard Administration (OSHA). The Asbestos Survey describes the investigative procedures utilized, results of the suspect ACM sampled/analyzed, and recommendations regarding the structures as related to asbestos.

Limitations

There is a possibility that suspect materials may be located in areas that are inaccessible during the inspection. These areas include but not limited to the following: walls, voids, chases, above ceilings, or areas where building components obstruct views, where there are operational mechanical/electrical/HVAC systems, under platforms, slabs, foundations, inside attics or crawlspaces, under multiple layers of flooring/floor systems and roofing. When additional un-sampled suspect ACM are discovered during renovation or demolition activities, work shall immediately stop until receipt of laboratory results confirming the material is non asbestos.

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Trident Environmental Services, Inc.
Consultants in Industrial Hygiene and Safety
500 Oakbrook Lane, Suite E
Summerville, SC 29485
(843) 873-3648

ASBESTOS SURVEY

Asbestos Investigative Procedures

It is our understanding that the subject structure is scheduled for demolition in the near future. The asbestos survey was performed by observing and sampling suspect building materials. Significant destructive testing was not utilized during the inspection. There is a possibility that suspect materials exist in inaccessible areas such as wall cavities and pipe chases. If any additional suspect ACM are discovered during the course of demolition activities, bulk samples should be extracted to identify the presence, or absence, of asbestos prior to continuation of work activities.

Visual Inspection

The survey began with a visual observation of building and/or structure components to identify homogeneous areas of suspect ACM. A homogeneous area consists of building materials, which appear similar throughout in terms of color, texture and date of application. Building materials not identified as concrete, glass, wood, masonry, metal, rubber, foam or plastic were not considered ACM. A sampling strategy was developed to provide representative samples for analysis. Samples were then extracted from a variety of suspect ACM.

Laboratory & Analysis

Bulk samples collected were recorded on a Chain-of-Custody record and submitted to Electron Microscopy Services Laboratory Analytical, Inc. (EMSL) a Polarized Light Microscopy (PLM) laboratory. The laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP), administered by the National Institute of Standards and Technology (NIST). EMSL is accredited by NVLAP for the analysis of bulk asbestos by PLM and Transmission Electron Microscopy (TEM) (NVLAP Lab Code: 200841-0). Non-Friable Organically Bound (NOB) samples were analyzed by TEM.

The suspect materials were analyzed by trained microscopists utilizing PLM techniques coupled with dispersion staining in accordance with EPA Test Method Title 40 CFR Regulations, Chapter I (1-1-87 edition), Part 763, Subpart F- Appendix A. This method identifies asbestos mineral fibers based on six optical characteristics: morphology, birefringence, refractive index, extinction angle, sign of elongation and dispersion staining colors. The laboratory analysis reports the specific type of asbestos identified (there are six asbestos minerals) and the percentage of asbestos present. The EPA and SCDHEC defines materials as asbestos containing if an asbestos content of greater than one percent (>1%) is detected in a representative sample. OSHA considered a material with any content of asbestos as an ACM.

The State requires NOB materials with negative or trace results by PLM to be analyzed by at least one TEM. SCDHEC in accordance with ASTM E 2356-04 defines NOB materials as "materials that are not friable and that consist of fibers and other particulate matter embedded in a solid matrix of asphalt, vinyl or other organic substances." Examples of NOB materials include but are not limited to flooring materials such as vinyl floor tiles, vinyl sheet flooring, adhesives, mastics, asphalt shingles, roofing materials, glazing, caulks, and cove base.

Asbestos Classifications & Categories

The EPA classifies ACM into two categories, friable and non-friable. A friable material creates a greater health hazard due to the fact that it may be "crumbled, pulverized or reduced to powder by the forces expected to act upon it in the course of demolition or renovation operations."

Friable Asbestos material means any material containing more than one percent asbestos as determined using the method specified in appendix A, subpart F, 40 CFR part 763 section 1, Polarized Light Microscopy, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by polarized light microscopy (PLM), verify the asbestos content by point counting using PLM.

Category I Non Friable Asbestos-Containing Material (ACM) means asbestos-containing packings, gaskets, resilient floor coverings, and asphalt roofing products containing more than one percent asbestos as determined using the method specified in appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy.

Category II Non Friable ACM means any material, excluding Category I non friable ACM, containing more than one percent asbestos as determined using the methods specified in appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. (cement siding, transite board shingles, etc.)

Regulated Asbestos-Containing Material (RACM) means (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.

The following section summarizes the sample numbers, locations, type material, asbestos type, percent of asbestos detected, present condition of the asbestos containing material, potential for disturbance, and hazard assessment ratings. The asbestos sample laboratory analyses and chain of custody records are included at the end of this report.

Asbestos Abbreviations and Hazard Assessment Key

The EPA and SCDHEC require that confirmed ACM is given a hazard assessment based on its present condition and potential for future disturbance. This hazard assessment is used as a tool for prioritization in future remedial actions regarding the ACM. The following key demonstrates the criteria that make up the hazard assessment.

Present Condition

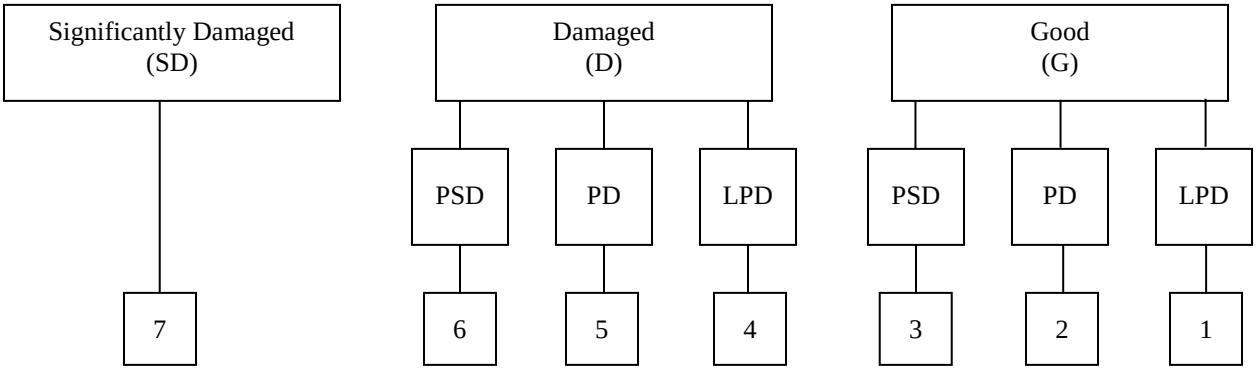
F = Friable
NF = Non-friable

G = Good (very localized limited damage)
D = Damaged (<10% distributed and/or <25% localized)
S = Significantly Damaged (≥10% distributed and/or 25% localized)

Potential for Future Disturbance

LPD = Low Potential for Disturbance (Contact, Vibration, and/or Air Erosion – low concern)
PD = Potential for Damage (Contact, Vibration, and/or Air Erosion – moderate concern)
PSD = Potential for Significant Damage (Contact, Vibration and/or Air Erosion – high concern)

Hazard Assessment



TES
Trident Environmental Services, Inc.
Consultants in Industrial Hygiene and Safety
500 Oakbrook Lane, Suite E
Summerville, SC 29485
(843) 873-3648

ASBESTOS SUMMARY

DESCRIPTION	TYPE	LOCATION	ESTIMATED QUANTITY
NO ASBESTOS DETECTED			

RACM – Regulated Asbestos Containing Material *PACM – Presumed Asbestos Containing Material

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HOMOGENOUS AREA ESTIMATED QUANTITY TABLE

HOMOGENOUS AREA ID #	DESCRIPTION	ESTIMATED QUANTITY
01	Reflective Marker Mastic (black)	10 SF
02	Guard Rail Mastic (gray)	50 SF
03	Road Expansion Joint	30 SF
04	Bridge Expansion Joint	30 SF

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500 Oakbrook Lane, Suite E
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ASBESTOS SAMPLE DATA TABLE

DESCRIPTION OF EACH SAMPLE AREA				LABORATORY		ASSESSMENT OF MATERIALS	
Homogeneous Area & Sample ID	Description	Location Unit # / Room	Friable (Y/N)	Asbestos Present		Condition Assessment Category	Hazard Assessment Category
				Percent	Asbestos		
01-01	Reflective Marker Mastic (black)	Road Bed	N	0.0%	ND	7	N/A
01-02	Reflective Marker Mastic (black)	Road Bed	N	0.0%	ND	7	N/A
01-03 T	Reflective Marker Mastic (black)	Road Bed	N	0.0%	ND	7	N/A
02-04	Guard Rail Mastic (gray)	Guard Rail	N	0.0%	ND	7	N/A
02-05	Guard Rail Mastic (gray)	Guard Rail	N	0.0%	ND	7	N/A
02-06 T	Guard Rail Mastic (gray)	Guard Rail	N	0.0%	ND	7	N/A
03-07	Road Expansion Joint	Roadway (E)	N	0.0%	ND	7	N/A
03-08	Road Expansion Joint	Roadway (E)	N	0.0%	ND	7	N/A
03-09 T	Road Expansion Joint	Roadway (E)	N	0.0%	ND	7	N/A
04-10	Bridge Expansion Joint	Bridge (E)	N	0.0%	ND	7	N/A
04-11	Bridge Expansion Joint	Bridge (E)	N	0.0%	ND	7	N/A
04-12 T	Bridge Expansion Joint	Bridge (W)	N	0.0%	ND	7	N/A

Assessment Categories

(1) Thermal Systems Insulation – Good Condition
(2) Thermal Systems Insulation – Damaged
(3) Thermal Systems Insulation – Significantly Damaged
(4) Surfacing – Good Condition
(5) Surfacing – Damaged
(6) Surfacing – Significantly Damaged
(7) Miscellaneous – Good Condition
(8) Miscellaneous – Damaged
(9) Miscellaneous – Significantly Damaged

Asbestos Present

AMOS – Amosite
CHRY – Chrysotile
CROC – Crocidolite
ANTH – Anthophylite
TREM – Tremolite
ACTI – Actinolite
ND – None Detected
NT – Not Tested
PACM – Presumed ACM
Asbestos Detected

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Consultants in Industrial Hygiene and Safety
500 Oakbrook Lane, Suite E
Summerville, SC 29485
(843) 873-3648

CONCLUSIONS/RECOMMENDATIONS

Conclusions

The comprehensive asbestos survey performed by Trident Environmental Services on February 8, 2022 of the U. S. 301 Five Chop Road Bridge located over Four Hole Swamp in Orangeburg County, South Carolina **did not** identify the presence of asbestos. Renovation or demolition activities that will disturb the ACM require removal per state and federal regulations. Asbestos materials can become hazardous when, due to damage, disturbance, or deterioration over time, they release asbestos fibers into the air of the building. All areas that contain asbestos should be utilized in a controlled manner to reduce the potential for disturbance. OSHA requires notification to all trades/contractors about the condition of the ACM to prevent possible occupational exposures.

Recommendations

Based on the findings of the survey, no further action is required in regards to asbestos. Obtain a demolition permit from SCDHEC Asbestos Section prior to demolition of each structure. Keep a copy of the asbestos inspection report on site during repair, maintenance, or demolition activities.

TES
Trident Environmental Services, Inc.
Consultants in Industrial Hygiene and Safety
500 Oakbrook Lane, Suite E
Summerville, SC 29485
(843) 873-3648

REGULATORY REQUIREMENTS

Demolitions

Demolition activities in public and commercial buildings are regulated by OSHA, EPA, and SCDHEC in compliance with CFR Part 61, subpart M, Final Rule (NESHAP) and SCDHEC Regulation 61-86.1. Demolition is defined as the wrecking or taking out any load-supporting structural member. These regulations require the proper removal and disposal of ACM that is affected by renovation or demolition. Demolition of the subject structures will require written notification, proper transportation, and disposal per state and federal regulations.

SCDHEC Asbestos Section requires the following prior to demolitions of each structure:

- Submit an electronic or written demolition project license application for each separate structure/facility that includes all information required on the application form and a $50.00 fee (payable to SCDHEC) at least **10 working days prior to the start date**. A copy of the asbestos survey report (no older than 3 years) must accompany the application.
- Obtain an asbestos demolition license for each structure/facility, regardless of whether the required building inspection indicates the presence of ACM and prior to demolition activities.

For additional information concerning regulatory requirements, contact our office or visit the SCDHEC web site at http://www.scdhec.gov/environment/baq/asbestos

OSHA

OSHA considers a material with any content of asbestos as an ACM. The OSHA construction standard 29 CFR 1926.1101 covers construction, alteration, repair, maintenance, or renovation and demolition of structures containing asbestos. Employers are required to notify affected employees and contractors of the presence and location of asbestos-containing materials and test results (see OSHA3507 Fact Sheet for additional requirements).

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Trident Environmental Services, Inc.
Consultants in Industrial Hygiene and Safety
500 Oakbrook Lane, Suite E
Summerville, SC 29485
(843) 873-3648

PHOTOGRAPHS

HOMOGENEOUS AREA 01
REFLECTIVE MARKER
MASTIC (BLACK)

HOMOGENEOUS AREA 02
GUARD RAIL MASTIC (GRAY)

HOMOGENEOUS AREA 03
ROAD/BRIDGE EXPANSION JOINT

HOMOGENEOUS AREA 04
BRIDGE EXPANSION JOINT

PHOTOGRAPH 05
BRIDGE TOP VIEW

PHOTOGRAPH 06
UNDER BRIDGE VIEW

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Trident Environmental Services, Inc.
Consultants in Industrial Hygiene and Safety
500 Oakbrook Lane, Suite E
Summerville, SC 29485
(843) 873-3648

INSPECTOR ACCREDITATION

Inspection Date: 02/09/2022

Preparation Date: 02/17/2022

Prepared By:

:

Robin A, Brown
S.C. Inspector License BI – 00613

Inspected By:

Kevin E Leedy
S.C. Inspector License ASB – 20589

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 200841-0

EMSL Analytical, Inc.
Pineville, NC

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2021-07-01 through 2022-06-30
Effective Dates

For the National Voluntary Laboratory Accreditation Program

NVLAP® National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

EMSL Analytical, Inc.
10801 Southern Loop Blvd.
Pineville, NC 28134
Mr. Lee Plumley
Phone: 704-525-2205 Fax: 704-525-2382
Email: lplumley@emsl.com
http://www.emsl.com

ASBESTOS FIBER ANALYSIS **NVLAP LAB CODE 200841-0**

Bulk Asbestos Analysis

Code	*Description*
18/A01	EPA – 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

Code	*Description*
18/A02	U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.

For the National Voluntary Laboratory Accreditation Program

Effective 2021-07-01 through 2022-06-30

Page 1 of 1

OrderID: 412201472

EMSL ANALYTICAL, INC.

Asbestos Bulk Building Materials - Chain of Custody

EMSL Order Number / Lab Use Only: 412201472

EMSL Analytical, Inc.
10801 Southern Loop Blvd
Pineville, NC 28134
PHONE: (704) 525-2205
EMAIL: charlottelab@EMSL.com

Customer Information		Billing Information	
Customer ID:		Billing ID:	
Company Name:	Trident Environmental Services, Inc.	Company Name:	Trident Environmental Services, Inc.
Contact Name:	Kevin Leedy	Billing Contact:	Kevin Leedy
Street Address:	500 Oakbrook Lane Suite E	Street Address:	500 Oakbrook Lane, Suite E
City, State, Zip:	Summerville SC 29485	City, State, Zip:	Summerville SC
Country:	US	Country:	US
Phone:	8438733648	Phone:	8438733648
Email(s) for Report:	kevinleedy@tridentenvironmental.com	Email(s) for Invoice:	

Project Information

Project Name/No: US 301 Bridge over Four Hole Swamp
Purchase Order:
EMSL LIMS Project ID: (If applicable, EMSL will provide)
US State where samples collected: SC
State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name: Leedy
Sampled By Signature:
Date Sampled: 02/08/22
No. of Samples in Shipment: 12

Turn-Around-Time (TAT)

☐ 3 Hour ☐ 6 Hour ☑ 24 Hour ☐ 32 Hour ☐ 48 Hour ☑ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week

Please call ahead for large projects and/or 1-hr/4-hr/8-hr TAT. *32-Hour TAT available for select items only; samples must be submitted by 11:30am.

Test Selection

PLM - Bulk (reporting limit)

☑ PLM EPA 600/R-93/116 (<1%)
☐ PLM EPA NOB (<1%)
☐ POINT COUNT
☐ 400 (<0.25%) ☐ 1,000 (<0.1%)
☐ POINT COUNT w/ GRAVIMETRIC
☐ 400 (<0.25%) ☐ 1,000 (<0.1%)
☐ NIOSH 9002 (<1%)
☐ NYS 198.1 (Friable - NY)
☐ NYS 198.6 NOB (Non-Friable - NY)
☐ NYS 198.8 (Vermiculite SM-V)

TEM - Bulk

☑ TEM EPA NOB
☐ NYS NOB 198.4 (Non-Friable - NY)
☐ TEM EPA 600/R-93/116 w Milling Prep (0.1%)

Other Tests (please specify)

☐ Positive Stop - Clearly Identified Homogeneous Areas (HA)

Sample Number	HA Number	Sample Location	Material Description
		See Attached COC	

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

Method of Shipment: FedEx
Sample Condition Upon Receipt:
Relinquished by: Leedy Date/Time: 02/08/22
Received by: Date/Time: 2/11/22
Relinquished by: Date/Time:
Received by: FX 8163 9172 1575 Date/Time: 11:00am

Controlled Document - Asbestos Bulk TOC 8/14/2021

☐ 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.

Page 1 of 2

Page 1 of

OrderID: 412201472

412201472

Trident Environmental Services, Inc.
Consultants in Industrial Hygiene and Safety
500 Oakbrook Lane, Suite E
Summerville, SC 29485
Phone (843) 873-3648
Fax (843) 821-1787

CHAIN OF CUSTODY FORM
Asbestos Bulk Samples

Project Name: US 301 Bridge over Four Hole Swamp Date: 2/8/22

Location: Orangeburg County, SC

DESCRIPTION OF EACH SAMPLE AREA						ASSESSMENT OF MATERIALS		
Homog Area	Sample ID	Location	Description	Friable (+)	Friable (-)	Asbestos Type	COND Assess	HAZ Assess
01	01	Road Bed	reflective marking mastic		X			
	02	〃	〃 (black)		X			
	03	〃	〃		X			
02	04	Guard Rail	guard rail mastic		X			
	05	〃	〃 (gray)		X			
	06	〃	〃		X			
03	07	Road/Bridge	expansion joint		X			
	08	〃	〃		X			
	09	〃	〃		X			
04	10	Bridge	expansion jt		X			
	11	〃	〃		X			
	12	〃	〃		X			

CONDITION Assessment Categories
(1) Thermal System Insulation – Good Condition
(2) Thermal Systems Insulation – Damaged
(3) Thermal Systems Insulation – Significantly Damaged
(4) Surfacing – Good Condition
(5) Surfacing – Damaged
(6) Surfacing – Significantly Damaged
(7) Miscellaneous – Good Condition
(8) Miscellaneous – Damaged

Asbestos Present
(1) Amosite
(2) Chrysotile
(3) Crocidolite
(4) Anthophyllite
(5) Tremolite
(6) Actinolite
ND – None Detected
NT – Not Tested

HAZARD Assessment Categories
G = Good Condition
D = Damaged
S = Significantly Damaged
LPD = Low Potential for Disturbance
PD = Potential for Damage
PSD = Potential for Significant Damage

Samples Collected by: [signature] Date / Time: 2/8/22

Samples Received by: _____ Date / Time: _____

Page 2 Of 2

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

EMSL Order: 412201472
Customer ID: TRID60
Customer PO:
Project ID:

Attention: Kevin Leedy
Trident Environmental Services, Inc.
500 Oakbrook Lane
Suite E
Summerville, SC 29485
Project: US 301 Bridge over Four Hole Swamp

Phone: (843) 670-9987
Fax:
Received Date: 02/11/2022 11:10 AM
Analysis Date: 02/11/2022
Collected Date: 02/08/2022

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Type
01-01 412201472-0001	Road Bed - Reflective Marker Mastic (Black)	Black Non-Fibrous Homogeneous		30% Ca Carbonate 70% Non-fibrous (Other)	None Detected
01-02 412201472-0002	Road Bed - Reflective Marker Mastic (Black)	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
02-04 412201472-0003	Guard Rail - Guard Rail Mastic (Gray)	Gray Non-Fibrous Homogeneous		2% Ca Carbonate 98% Non-fibrous (Other)	None Detected
02-05 412201472-0004	Guard Rail - Guard Rail Mastic (Gray)	Gray Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
03-07 412201472-0005	Road/Bridge - Expansion Joint	Black Non-Fibrous Homogeneous	5% Cellulose	3% Quartz 92% Non-fibrous (Other)	None Detected
03-08 412201472-0006	Road/Bridge - Expansion Joint	Black Non-Fibrous Homogeneous	2% Cellulose	5% Quartz 93% Non-fibrous (Other)	None Detected
04-10 412201472-0007	Bridge - Expansion Joint	Black Non-Fibrous Homogeneous	5% Cellulose	2% Quartz 93% Non-fibrous (Other)	None Detected
04-11 412201472-0008	Bridge - Expansion Joint	Black Non-Fibrous Homogeneous		10% Quartz 90% Non-fibrous (Other)	None Detected

Analyst(s)
Brant Aljyea (4)
Jessica Cooper (4)

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 00012

Initial report from: 02/11/2022 16:19:53

ASB_PLM_0008_0001 - 1.19 Printed: 2/11/2022 4:19 PM

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

EMSL Order: 412201472
Customer ID: TRID50
Customer PO:
Project ID:

Attention: Kevin Leedy
Trident Environmental Services, Inc.
500 Oakbrook Lane
Suite E
Summerville, SC 29485
Project: US 301 Bridge over Four Hole Swamp

Phone: (843) 670-9987
Fax:
Received Date: 02/11/2022 11:10 AM
Analysis Date: 02/15/2022
Collected Date: 02/08/2022

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
01-03 412201472-0009	Road Bed - Reflective Marker Mastic (Black)	Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
02-06 412201472-0010	Guard Rail - Guard Rail Mastic (Gray)	Gray Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
03-09 412201472-0011	Road/Bridge - Expansion Joint	Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
04-12 412201472-0012	Bridge - Expansion Joint	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

Analyst(s)
Derrick Young (4)

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: 02/15/2022 16:09:34

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TES
Trident Environmental Services, Inc.
Consultants in Industrial Hygiene and Safety
500 Oakbrook Lane, Suite E
Summerville, SC 29485
(843) 873-3648

LEAD BASED PAINT INSPECTION

Lead-based paint testing was conducted in order to identify finishes that contain lead and which may be disturbed during the scheduled demolition/renovation. The identification of lead painted finishes will aid in the prevention of occupational exposure and/or environmental releases of lead dust in accordance with 29CFR 1926.62 (Lead in Construction) and provide information to facilitate proper disposal of lead-based paint components and debris. The lead survey describes the types, locations, and recommendations regarding the areas as related to lead-based paint.

Lead-Based Paint

The SCDHEC Bureau of Land and Waste Management defines lead-based paint as paint or other surface coatings, including varnish, shellac, stains, and enamels, that contain lead equal to or greater than 0.06% by weight (>600 ppm) **total lead or** >0.7mg/cm2 via XR**F.** OSHA does not recognize a percentage of lead by weight for definition purposes, only the presence or absence of lead. The current OSHA regulations recognize an airborne action level of thirty micrograms per cubic meter ($30ug/m^3$) during an eight-hour work shift, and a permissible exposure limit of fifty micrograms per cubic meter ($50ug/m^3$). For the purpose of this survey, the OSHA Standard of any detectable limit is considered a lead-based paint.

Lead-Based Paint Investigative Procedures

Fifteen (15) representative samples were analyzed from suspect paint finishes of the subject structure. The suspect finishes were based on the color of the topcoat and the underlying layers and/or the substrate on which it has been applied. Fifty (50) X-Ray fluorescence (XRF) readings were taken by a Heueresis Corp XRF Lead Paint Analyzer, Model number Pb200i (Serial # 2103) providing on-site results.

Lead-Based Paint Summary

For the purpose of this inspection, painted surfaces exceeding the SCDHEC disposal limit of 0.06 % by weight or 0.7 mg/cm2 are considered lead-based paint. No samples meet the SCDHEC definition of lead-based paint. No paint finishes are considered lead based paint in accordance with the OSHA definition of any detectable limit.

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XRF LEAD-BASED PAINT SAMPLE DATA TABLE

Reading #	Location	Component Description	Substrate	Color	Condition	Result	XRF Reading (mg/cm2)
1	Pre-Inspection Instrument Calibration Check (NIST Standard)						1.0
2	Calibration Check (NIST Standard) Pre-Test						0.9
3	Calibration Check (NIST Standard) Pre-Test						1.0
4	East Bound Lane	Traffic Paint, Inner Edge Marking	Concrete	Yellow	Intact	Negative	0.1
5	East Bound Lane	Traffic Paint Center Lane (dashed)	Concrete	White	Intact	Negative	0
6	East Bound Lane	Traffic Paint Road Shoulder Marking	Concrete	White	Intact	Negative	0
7	West Median of Bridge	Storm Drain Grate	Metal	Red	Intact	Negative	0.2
8	East Bound Inner Lane	Guard Rail Support	Metal	Gray/Silver	Intact	Negative	0.3
9	West Bound Inner Lane	Guard Rail Support	Metal	Gray/Silver	Intact	Negative	0.4
10	West Bound Lane, Inner Edge Marking	Traffic Paint	Asphalt	Yellow	Intact	Negative	0.1
11	West Bound Lane, Lane Marking	Traffic Paint	Asphalt	White	Intact	Negative	-0.1
12	West Bound Lane, Road Shoulder Marking	Traffic Paint	Asphalt	White	Intact	Negative	-0.1
13	West Bound Outer Lane	Guard Rail Support	Metal	Gray/Silver	Intact	Negative	0.5
14	East Median of Bridge	Storm Drain Grate	Metal	Red	Intact	Negative	0.4
15	West Bound	Bridge Support Column	Metal	Silver	Intact	Negative	0.3
16	Post Inspection Instrument Calibration Check (NIST Standard)						PASS
17	Calibration Check (NIST Standard)						1.1
18	Calibration Check (NIST Standard)						0.9

SCDHEC Action Level (0.7 mg/cm2) **EPA Action Level (1.0 mg/cm2)**

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LEAD-BASED PAINT CONCLUSION / RECOMMENDATIONS

Conclusions

Lead-based paint was not identified by XRF readings. Destructive actions to lead-based, painted finishes that may create a lead exposure hazard (sanding, torching, blasting, etc.) require compliance with OSHA, including proper training and exposure monitoring.

Recommendations

Refer to State (SCDHEC) guidelines for additional information about the state-specific requirements regarding the disposal of materials containing lead paint including Toxicity Characteristic Leaching Procedure (TCLP) analysis. Accumulations of lead paint (chips, blasting debris, etc.) must be analyzed by TCLP to determine if the debris is classified as "hazardous waste" (greater than or equal to 5mg/kg). Collection and analysis of a TCLP sample is recommended prior to disposal of any waste with a potential to contain lead.

Destructive actions to lead-based paint finishes that may create a lead exposure hazard (sanding, manual demolition, torch cutting, blasting, etc.) require compliance with OSHA, including proper training, exposure monitoring and proper disposal. OSHA considers all lead containing paints applicable to enforcement, and would require training, engineering controls, and administrative controls in accordance with 29 CFR 1926.62. In the event building components that tested positive for lead are disturbed during renovations, then contractors and workers should be informed as to the presence of LBP. Air monitoring for airborne lead concentrations is recommended during any lead abatement activities.

United States Environmental Protection Agency

This is to certify that

James Pease

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 August 31, 2023

Adrienne Priselac, Manager, Toxics Office

Land Division

LBP-R-7570-2

Certification #

July 24, 2020

Issued On

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XRF LEAD-BASED PAINT PHOTOGRAPHS

READING # 4, 5, 6,
TYPICAL TRAFFIC PAINT/ GUARD RAILS
(EAST BOUND LANES)

READING # 10, 11, 12
TYPICAL TRAFFIC PAINT/ GUARD RAILS
(WEST BOUND LANES)

READING # 8, 9, 13
TYPICAL GUARD RAIL SUPPORT

READING # 7, 14
TYPICAL METAL STORM DRAIN GRATE

READING # 15
TYPICAL BRIDGE METAL SUPPORT
COLUMN