



## LEAD BASED PAINT INVESTIGATION REPORT

COMMERCIAL STRUCTURE  
411 LAWAND DRIVE  
COLUMBIA, SOUTH CAROLINA

### PREPARED FOR:



HDR  
C/O Ms. Sheri S. Williamson  
SC Transportation Operations Manager  
157 E. Main Street, Suite 400  
Rock Hill, SC 29730

### PREPARED BY:

FME Consultants  
1825 Blanding Street  
Columbia, South Carolina 29201

**February 7, 2020**

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

FME Project No.: G5662.00

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## 1. EXECUTIVE SUMMARY

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

FME Consultants Inc. (FME) has completed a Lead-Based Paint (LBP) Investigation of the former commercial structure located at 411 Lawand Dr., in Columbia, South Carolina. The purpose of the investigation was to locate and identify components of the building structure that are painted or coated with LBP to be abated prior to the demolition of the structure for a planned road improvement project. Appendix A – Site Vicinity Map is provided to show the location of the building. Appendix B – General Building Plans, is provided to show the lay-out of the building and a reference for locations of XRF scans.

Per an agreed upon scope of work, this LBP Investigation was conducted to identify accessible building 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. Building components were scanned with a Heuresis XRF analyzer (Model # Pb200i, Serial #1888, Reference Date: 07/11/18) with a limit of detection (LOD) of 0.1 mg/cm<sup>2</sup>. This LBP investigation was carried out on February 5, 2020.

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, South Carolina Department of Health and Environmental Control (SCDHEC) 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. Items in red text contain lead in concentrations regulated by SCDHEC and these materials must be addressed upon disposal. Items in blue and red text contain lead in concentrations that must be considered a potential for worker exposure by OSHA.

The results from the XRF quantitative testing of the building components indicate that lead is present in paint and/or coatings in concentrations greater than or equal to ( $\geq$ ) 0.7 mg/cm<sup>2</sup> on the porcelain sink in the bathroom. No other lead-containing or LBP coated building materials were identified during the investigation. See Appendix B – General Building Plans, for the lay-out of the building.



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



**Timothy O. Ross**

SC Lead Based Paint Inspector

EPA Certification No. LBP-I-1198705 (Exp. 2/21/22)



**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, SCDHEC 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

It is FME’s understanding that the objective of this investigation was to identify lead painted or coated building components associated with the interior and exterior of the subject structure in advance of demolition activities. The field investigation was performed on February 5, 2020. The 1400 ft<sup>2</sup> subject structure was constructed in 1985, according to the Richland County Tax Assessor’s office, and is located at 411 Lawand Dr., in Columbia, South Carolina. It is a single-story, raised foundation brick and mortar structure with a pitched shingled roof, and an eight (8)



Photo 1 – 411 Lawand Drive, Columbia, SC



foot overhang on the front porch of the structure. The finishes within the interior of the structure are drywall walls and ceilings with spray applied texture on the ceilings, and wood floors with various floor finishes throughout. See Appendix A – Site Vicinity Map, for the location of the structure. See Appendix B –General Building Plans, for a layout of the building.

## 4. INVESTIGATION PROCEDURES AND RESULTS

FME's LBP Investigation sampling protocol consisted of randomly selecting both interior and exterior building components and scanning them with a Heuresis X-Ray Fluorescence (XRF) Portable Analyzer (Model # Pb200i, Serial #1888). Components scanned with the XRF include the following: walls, ceilings, doors, door jambs and casings, window components, baseboards, chair rails, exterior HVAC ductwork, exterior fascia trim, etc. Substrates included mainly metal, wood, and drywall.

The following building component tested positive for lead in concentrations greater than or equal to ( $\geq$ ) 0.7 mg/cm<sup>2</sup>: The white porcelain sink in the restroom For more information regarding the specific descriptions and locations of the items that were scanned, refer to the Appendix C – Summary of XRF Data. On the XRF Data Table, items highlighted in Red are positive and contain lead in concentrations greater than or equal to ( $\geq$ ) 0.7 mg/cm<sup>2</sup>. Items in Blue and Red text contain lead in concentrations that must be considered a potential for worker exposure by OSHA. See Appendix E – Site Photos for locations and pictures of the materials with concentrations greater than or equal to ( $\geq$ ) 0.7 mg/cm<sup>2</sup>. Appendix D includes the inspector's EPA lead-based paint inspector certification.

## 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. This report has been prepared exclusively for HDR and shall not be disseminated in whole or part to other parties without prior consent from HDR or FME. No other environmental issues were addressed as part of this report.

The results from the XRF quantitative testing of the interior building components scanned indicate that lead is present in paint and/or coatings in concentrations greater than or equal to ( $\geq$ ) 0.7 mg/cm<sup>2</sup> on the white porcelain sink in the restroom. There are no specific recommendations for this building unless salvaging is anticipated where the sink may be removed. Otherwise, the sink can remain in the building during demolition activities. 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  $30\mu\text{g}/\text{cm}^3$ , 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 fifty micrograms per cubic meter of air ( $50\mu\text{g}/\text{m}^3$ ) averaged over an 8-hour period which is the permissible exposure level (PEL).

SCDHEC regulates the proper disposal of LBP and associated debris. SCDHEC 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 result greater than or equal to five milligrams per liter ( $\geq 5\text{ mg/l}$ ) lead must be disposed of in a Subtitle C landfill (Hazardous Waste). However, LBP *residue* from a commercial facility with a TCLP analysis result less than five milligrams per liter ( $< 5\text{ mg/l}$ ) lead is required to be disposed of in a Class 3 landfill.

We sincerely appreciate the opportunity to be of service to HDR 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 Building Plan

Appendix C – Summary of XRF Data Table

Appendix D – EPA LBP Inspector Certification

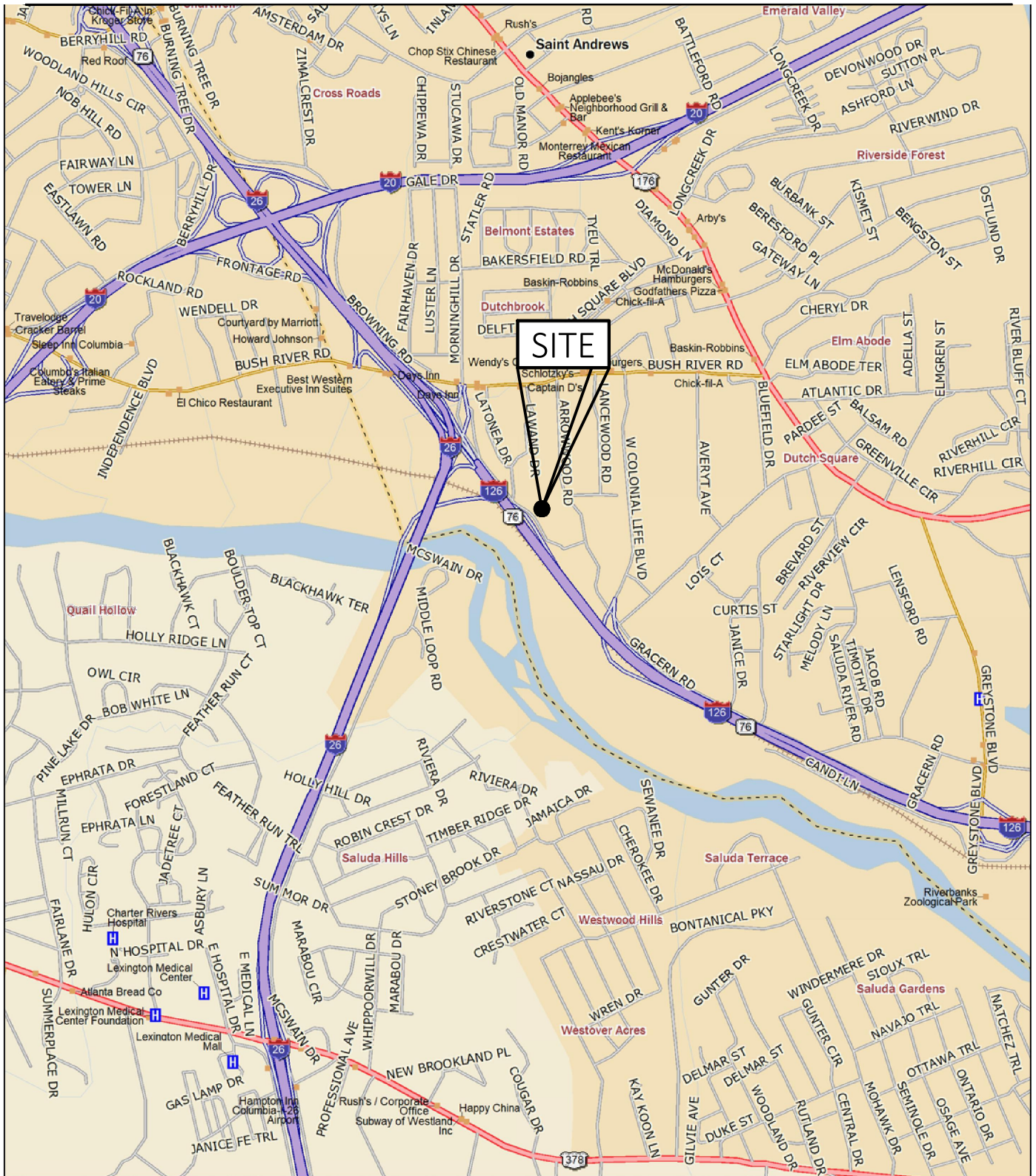
Appendix E –Site Photos





## Appendix A

### Site Vicinity Map



Data use subject to license.

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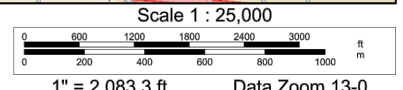
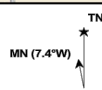


FIGURE  
NUMBER:

1

F&ME CONSULTANTS  
PROJECT NUMBER:

G5662.000

LEAD-BASED PAINT INVESTIGATION REPORT  
411 Lawand Drive  
Columbia, SC  
Appendix A - Site Vicinity Map

Prepared for:  
HDR  
157 E. Main Street, Suite 400  
Rock Hill, SC 29730



2825 BLANDING STREET  
COLUMBIA, SC 29201

ORIGINAL: February 6, 2020	DRWN. BY: MSM
REVISIONS:	CHKD. BY: TOR
1	APPR. BY: GME
2	NOTES:
3	
SCALE As Shown	

## Appendix B

### General Building Plan

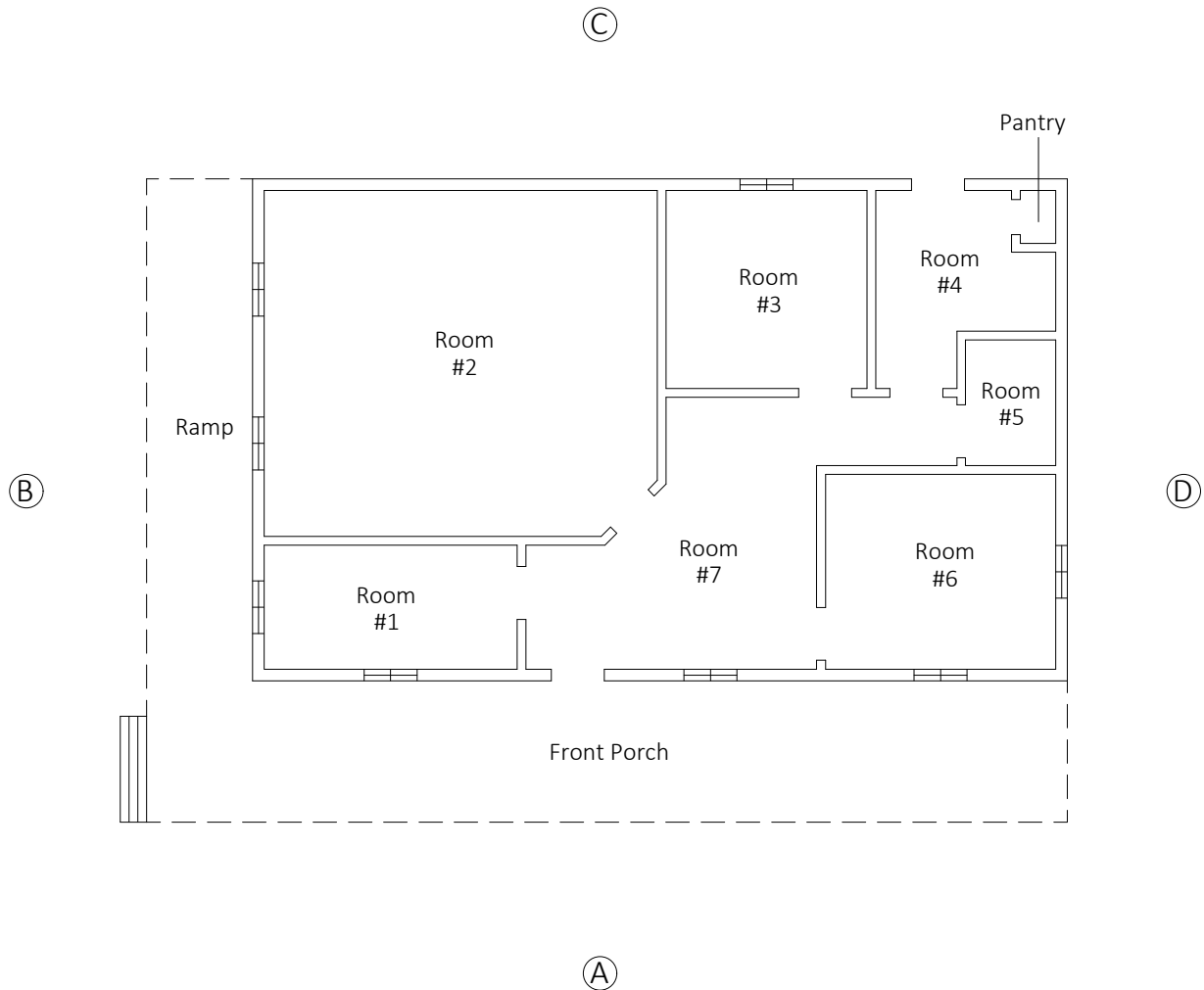


FIGURE  
NUMBER:

2

F&ME CONSULTANTS  
PROJECT NUMBER:

G5662.000

LEAD-BASED PAINT INVESTIGATION REPORT  
411 Lawand Drive  
Columbia, SC  
Appendix B - General Building Plan

Prepared for:  
HDR  
157 E. Main Street, Suite 400  
Rock Hill, SC 29730



2825 BLANDING STREET  
COLUMBIA, SC 29201

ORIGINAL:  
February 6, 2020

REVISIONS:

1  
2  
3

SCALE  
 $\frac{3}{8}" = 1'$

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

NOTES:

## Appendix C

### Summary of XRF Data Table

## Appendix C – Summary of XRF Data

Date Scanned: 02/5/20

Reading No.	PbC (mg/cm <sup>2</sup> )	Room No.	Component	Substrate	Side	Condition	Color
1	0.95						
2	1.01						
3	0.94						
4	0.11	Exterior	Handrail	Metal	A	Peeling	Brown
5	<LOD	Exterior	Handrail	Metal	B	Peeling	Brown
6	0.1	Exterior	Window Casing	Metal	B	Intact	Off White
7	<LOD	Exterior	Window Frame	Metal	B	Intact	Off White
8	<LOD	Exterior	Roof Fascia	Metal	B	Intact	Off White
9	<LOD	Exterior	Gutter	Metal	C	Intact	White
10	<LOD	Exterior	Gutter Downspout	Metal	C	Intact	White
11	0.04	Exterior	Window Casing	Metal	C	Intact	Off White
12	<LOD	Exterior	Window Frame	Metal	C	Intact	Off White
13	<LOD	Exterior	Back Door Casing	Wood	C	Intact	Off White
14	<LOD	Exterior	Back Door	Metal	C	Intact	Off White
15	<LOD	Exterior	Crawl Space Door	Wood	D	Peeling	Off White
16	<LOD	Exterior	Crawl Space Door Casing	Wood	D	Peeling	Off White
17	0.02	Exterior	Window Shutters	Plastic	A	Intact	Black
18	0	Exterior	Window Casing	Metal	A	Peeling	Off White
19	<LOD	Exterior	Window Frame	Metal	A	Intact	Off White
20	<LOD	Exterior	Front Door Casing	Wood	A	Intact	Off White
21	<LOD	Exterior	Front Door	Metal	A	Intact	Black
22	0.01	Exterior	Roof Fascia	Metal	A	Intact	Off White
23	0.01	1	Wall	Drywall	A	Intact	Off White
24	<LOD	1	Window Casing	Wood	A	Intact	Brown
25	0.03	1	Window Blind	Metal	A	Intact	Off White
26	0.03	1	Window Frame	Metal	B	Intact	Off White
27	0.03	1	Wall	Drywall	B	Intact	Off White
28	0	1	Wall	Drywall	C	Intact	Off White
29	<LOD	1	Door	Wood	D	Intact	Brown
30	<LOD	1	Wall	Drywall	D	Intact	Off White
31	<LOD	2	Wall	Drywall	A	Intact	Off White
32	<LOD	2	Window Casing	Wood	B	Intact	Brown
33	<LOD	2	Wall	Drywall	B	Intact	Off White
34	<LOD	2	Wall	Drywall	C	Intact	Off White
35	<LOD	2	Wall	Drywall	D	Intact	Off White
36	0	2	Electronics Rack	Wood	D	Intact	Off White
37	<LOD	2	Light Fixture	Metal	Ceiling	Intact	White
38	<LOD	3	Door Casing	Wood	A	Intact	Brown
39	<LOD	3	Wall	Drywall	A	Intact	Off White
40	<LOD	3	Wall	Drywall	B	Intact	Off White

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 C – Summary of XRF Data

Date Scanned: 02/5/20

Reading No.	PbC (mg/cm <sup>2</sup> )	Room No.	Component	Substrate	Side	Condition	Color
41	<LOD	3	Window Blind	Metal	C	Intact	Off White
42	<LOD	3	Wall	Drywall	C	Intact	Off White
43	<LOD	3	Wall	Drywall	D	Intact	Off White
44	<LOD	4	Wall	Drywall	A	Intact	Off White
45	<LOD	4	Door Frame	Wood	A	Intact	Brown
46	<LOD	4	Wall	Drywall	B	Intact	Off White
47	<LOD	4	Back Door Frame	Metal	C	Intact	Grey
48	<LOD	4	Electrical Panel Box	Metal	C	Intact	Off White
49	<LOD	4	Pantry Door	Wood	D	Intact	Off White
50	<LOD	4	Pantry Door Casing	Wood	D	Intact	Off White
51	0.02	4	Pantry Shelf	Wood	D	Intact	Off White
52	<LOD	4	Pantry Molding	Wood	D	Intact	Off White
53	0.07	4	Cabinet Door	Wood	D	Intact	Brown
54	0.01	4	Wall	Drywall	A	Intact	Off White
55	<LOD	4	Stove Hood	Metal	A	Intact	Off White
56	<LOD	5	Door	Wood	B	Intact	Brown
57	<LOD	5	Wall	Drywall	B	Intact	Off White
58	1.07	5	Sink	Porcelain	C	Intact	White
59	0.13	5	Wall	Drywall	C	Intact	Off White
60	<LOD	5	Toilet	Porcelain	C	Intact	White
61	<LOD	5	Wall	Drywall	D	Intact	Off White
62	<LOD	5	Wall	Drywall	A	Intact	Off White
63	<LOD	6	Window Casing	Wood	A	Intact	Brown
64	<LOD	6	Wall	Drywall	A	Intact	Off White
65	<LOD	6	Door	Wood	B	Intact	Brown
66	0.01	6	Wall	Drywall	B	Intact	Off White
67	<LOD	6	Wall	Drywall	C	Intact	Off White
68	<LOD	6	Window Frame	Metal	D	Intact	Tan
69	<LOD	6	Wall	Drywall	D	Intact	Off White
70	<LOD	7	Wall	Drywall	A	Intact	Off White
71	<LOD	7	Window Frame	Metal	A	Intact	Off White
72	<LOD	7	Front Door	Metal	A	Intact	Brown
73	<LOD	7	Wall	Drywall	B	Intact	Off White
74	<LOD	7	Door	Wood	B	Intact	Brown
75	<LOD	7	Wall	Drywall	C	Intact	Off White
76	<LOD	7	Door Frame	Wood	C	Intact	Brown
77	<LOD	7	Wall	Drywall	D	Intact	Off White
78	<LOD	7	Door Frame	Wood	D	Intact	Brown
79	1.02	Calibrate					
80	0.98	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 C – Summary of XRF Data

Date Scanned: 02/5/20

Reading No.	PbC (mg/cm <sup>2</sup> )	Room No.	Component	Substrate	Side	Condition	Color
81	1.06	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

### EPA LBP Inspector Certification

# United States Environmental Protection Agency

This is to certify that

Timothy O Ross



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:

Inspector

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 February 21, 2022

LBP-I-1198705-1

Certification #

February 07, 2019

Issued On



Adrienne Priselac, Manager, Toxics Office

Land Division

## Appendix E

### Site Photos



**Photo 1.** 411 Lawand Dr., Columbia, SC



**Photo 2.** Porcelain Sink in Restroom