A. Exterior wood trim molding

B. Exterior wood door frames (egress common areas)

CITY OF OAK RIDGE, TN - SAB and Preschool Building LPB Existing Site Condition photos

C. Exterior wood window troughs, sashes, stops, mullions, casings, headers, and flashing

D. Exterior wood soffits and fascia

E. Exterior wood gable ends

F. Other Exterior non lead containing paint areas

ES&H inc.

940 Sanctuary Lane • Knoxville, TN 37932 • 865.671.2374 • FAX 855.299.8370 • www.eshinc.com

February 5, 2015

Mr. Allen Thacker
Supervisor of Maintenance and Operations
Oak Ridge Schools
PO Box 6677
Oak Ridge, TN 37831

Re: Limited Lead Based Paint (LBP) Assessment via XRF Analyzer
Oak Ridge Schools – Administration & Pre-School Building
ES&H, Inc. Project No. 3081-001

Mr. Thacker:

Oak Ridge Schools has retained Environmental, Safety & Health, Inc. (ES&H, Inc.) to conduct a limited Lead Based Paint (LBP) assessment within the Administration and Preschool Building located at 304 New York Ave. in Oak Ridge, TN. The LBP assessment was conducted on February 4, 2015.

The purpose of performing this assessment was to determine the presence of LBP within the designated exterior components of the structure through inspection and verify through sampling. All sample locations were designated by Mr. Allen Thacker during the assessment. This assessment was conducted by *Erik Cueto, USEPA-accredited TDEC-accredited inspector (#TNLBP-2415-4820I).* All LBP data is provided in Appendix A of this report.

APPROACH AND METHODOLOGY

ES&H, Inc. conducted the assessment by identifying potential sources of lead exposures utilizing a non-destructive method of a Thermo Fisher Scientific NITON X-ray fluorescence (XRF). The XRF determines whether lead is positive (as defined by the US EPA as greater than or equal to 1.0 mg/cm^2), or negative. All positive data results are presented in RED within the XRF data sheets within Appendix A of this report. Actual lead values are also displayed permitting users to more accurately quantify the hazards associated with particular samples. According to the Performance Characteristics Sheet for the Niton analyzer utilized during analysis, during the use of K&L mode, no substrate corrections were necessary and were not utilized during this assessment.

Sampling locations followed the protocol (see map for further detail):

Side A: New York Avenue side of the structure
Side B: North side of the structure
Side C: East side of the structure
Side D: E. Newcomb Road side of the structure

DISCLAIMER

This report is provided for the sole use of Oak Ridge Schools of Oak Ridge, TN. Dependence on this report by any third parties will be at such party's sole risk which ES&H, Inc. disclaims liability for any use of this report by third parties. This report including the attached appendices is correlated and essential to this report and shall not be conveyed independent of each other. No other use is authorized by ES&H, Inc.

We appreciate the opportunity to support Oak Ridge Schools and look forward to working together on future projects.

Regards,

ES&H, Inc.

Erik W. Cueto
Project Manager

Appendices:

Appendix A: Lead Based Paint - XRF Data Sheets
Appendix B: Site Drawing
Appendix C: Photographic Documentation
Appendix D: TDEC Certification

APPENDIX A

LEAD BASED PAINT - XRF DATA SHEETS

ES&H inc.

OAK RIDGE SCHOOLS
ADMINISTRITION & PRESCHOOL BUILDING

READING NO.	TYPE	UNITS	COMPONENT	SUBSTRATE	SIDE	CONDITION	COLOR	ROOM TYPE	SITE NAME	INSPECTOR	SAMPLE NOTE	SITE NOTE	RESULTS	DEPTH INDEX	ACTION LEVEL	PbC	PbC Error	PbL	PbL Error	PbK	PbK Error
1	SHUTTER_CAL	cps	NA	NA	NA	NA	NA	NA	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	NA	NA	NA	NA	NA	3.27	0	0.76	0	0.01	0
2	PAINT	mg / cm ^2	CALIBRATE - INITIAL	NA	NA	NA	NA	NA	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	UPPER BUILDING	OAKRIDGE SCHOOLS	Null	1.09	1	1	0.1	1	0.1	0.8	0.5
3	PAINT	mg / cm ^2	CALIBRATE - INITIAL	NA	NA	NA	NA	NA	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	UPPER BUILDING	OAKRIDGE SCHOOLS	Positive	1.11	1	1.1	0.1	1.1	0.1	0.9	0.5
4	PAINT	mg / cm ^2	CALIBRATE - INITIAL	NA	NA	NA	NA	NA	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	UPPER BUILDING	OAKRIDGE SCHOOLS	Null	1.06	1	1	0.1	1	0.1	< LOD	1.35
5	PAINT	mg / cm ^2	CALIBRATE - INITIAL	NA	NA	NA	NA	NA	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	UPPER BUILDING	OAKRIDGE SCHOOLS	Positive	1.05	1	1	0.1	1	0.1	0.9	0.3
6	PAINT	mg / cm ^2	EXT. SIDING	WOOD	A	PEELING	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	UPPER BUILDING	OAKRIDGE SCHOOLS	Negative	10	1	< LOD	1.65	< LOD	0.37	< LOD	1.65
7	PAINT	mg / cm ^2	EXT. CEMENT BOARD	CEMESTO	A	INTACT	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	UPPER BUILDING	OAKRIDGE SCHOOLS	Negative	1	1	< LOD	0.03	< LOD	0.03	< LOD	1.28
8	PAINT	mg / cm ^2	WNDW LEFT CASING	WOOD	A	CRACKING	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	UPPER BUILDING	OAKRIDGE SCHOOLS	Negative	5.42	1	< LOD	0.49	< LOD	0.49	< LOD	1.94
9	PAINT	mg / cm ^2	EXT. WOOD TRIM	WOOD	A	PEELING	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	UPPER BUILDING	OAKRIDGE SCHOOLS	Negative	3.6	1	< LOD	0.4	< LOD	0.4	< LOD	1.95
10	PAINT	mg / cm ^2	DOOR	WOOD	A	INTACT	GREY	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	UPPER BUILDING	OAKRIDGE SCHOOLS	Positive	8.29	1	3.2	1.2	2.6	1.3	3.2	1.2
11	PAINT	mg / cm ^2	EXT. SIDING	WOOD	B	INTACT	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	UPPER BUILDING	OAKRIDGE SCHOOLS	Positive	10	1	6.6	3.3	< LOD	1.5	6.6	3.3
12	PAINT	mg / cm ^2	EXT. CEMENT BOARD	CEMESTO	C	PEELING	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	UPPER BUILDING	OAKRIDGE SCHOOLS	Null	1	1	< LOD	0.03	< LOD	0.03	< LOD	2.51
13	PAINT	mg / cm ^2	WNDW APRON	WOOD	C	CRACKING	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	UPPER BUILDING	OAKRIDGE SCHOOLS	Positive	5.02	1	2.1	0.9	1.3	0.4	2.1	0.9
14	PAINT	mg / cm ^2	CEMESTO BOARD	CEMESTO	B	INTACT	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	COURTYARD	OAKRIDGE SCHOOLS	Null	1	1	< LOD	0.03	< LOD	0.03	< LOD	2.46
15	PAINT	mg / cm ^2	CEMESTO BOARD	CEMESTO	B	INTACT	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	COURTYARD	OAKRIDGE SCHOOLS	Null	1	1	< LOD	0.03	< LOD	0.03	< LOD	2.52
16	PAINT	mg / cm ^2	CEMESTO BOARD	CEMESTO	B	INTACT	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	COURTYARD	OAKRIDGE SCHOOLS	Negative	1.18	1	< LOD	0.03	< LOD	0.03	< LOD	1.2
17	PAINT	mg / cm ^2	CEMESTO BOARD	CEMESTO	B	INTACT	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	COURTYARD	OAKRIDGE SCHOOLS	Negative	1.95	1	< LOD	0.04	< LOD	0.04	< LOD	2.5
18	PAINT	mg / cm ^2	WNDW RT CASING	WOOD	B	INTACT	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	COURTYARD	OAKRIDGE SCHOOLS	Positive	8.95	1	5.2	3.2	< LOD	3.6	5.2	3.2
19	PAINT	mg / cm ^2	WNDW LEFT CASING	WOOD	A	PEELING	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	LOWER BUILDING	OAKRIDGE SCHOOLS	Negative	8.57	1	< LOD	0.93	< LOD	0.3	< LOD	0.93
20	PAINT	mg / cm ^2	DOOR CASING LEFT	WOOD	B	FAIR	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	COURTYARD	OAKRIDGE SCHOOLS	Positive	6.76	1	4	2.3	4	2.3	6.5	3.6
21	PAINT	mg / cm ^2	AWNING POST	METAL	B	CRACKING	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	COURTYARD	OAKRIDGE SCHOOLS	Negative	1	1	< LOD	0.03	< LOD	0.03	< LOD	3.36
22	PAINT	mg / cm ^2	DOOR CASING RIGHT	WOOD	B	INTACT	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	LOWER BUILDING	OAKRIDGE SCHOOLS	Negative	1	1	< LOD	0.03	< LOD	0.03	< LOD	2.01
23	PAINT	mg / cm ^2	WNDW RIGHT CASING	WOOD	C	CRACKING	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	LOWER BUILDING	OAKRIDGE SCHOOLS	Negative	8.22	1	< LOD	1.06	0.8	0.4	< LOD	1.06
24	PAINT	mg / cm ^2	WNDW APRON	WOOD	C	CRACKING	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	NA	OAKRIDGE SCHOOLS	Null	3.64	1	< LOD	0.95	< LOD	0.95	< LOD	3.9
25	PAINT	mg / cm ^2	WNDW APRON	WOOD	C	CRACKING	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	NA	OAKRIDGE SCHOOLS	Negative	2.48	1	< LOD	0.24	< LOD	0.24	< LOD	2.44
26	PAINT	mg / cm ^2	CEMESTO BOARD	CEMESTO	C	INTACT	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	NA	OAKRIDGE SCHOOLS	Negative	1	1	< LOD	0.03	< LOD	0.03	< LOD	2.63
27	PAINT	mg / cm ^2	CEMESTO BOARD	CEMESTO	D	INTACT	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	NA	OAKRIDGE SCHOOLS	Negative	1.91	1	< LOD	0.05	< LOD	0.05	< LOD	2.48
28	PAINT	mg / cm ^2	EXT. SIDING	WOOD	D	INTACT	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	NA	OAKRIDGE SCHOOLS	Negative	4.26	1	< LOD	0.6	< LOD	0.6	< LOD	2.1
29	PAINT	mg / cm ^2	DOOR HEADER	WOOD	D	INTACT	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	NA	OAKRIDGE SCHOOLS	Positive	10	1	1.6	0.6	1.5	0.4	1.6	0.6
30	PAINT	mg / cm ^2	CEMESTO BOARD	CEMESTO	A	PEELING	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	LOWER BUILDING	OAKRIDGE SCHOOLS	Negative	1.96	1	< LOD	0.04	< LOD	0.04	< LOD	2.21
31	PAINT	mg / cm ^2	WNDW LF CASING	WOOD	A	PEELING	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	LOWER BUILDING	OAKRIDGE SCHOOLS	Negative	1.52	1	< LOD	0.15	< LOD	0.15	< LOD	2.37
32	PAINT	mg / cm ^2	WALL	CINDER BLOCK	D	INTACT	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	LOWER BUILDING	OAKRIDGE SCHOOLS	Negative	1	1	< LOD	0.03	< LOD	0.03	< LOD	1.29
33	PAINT	mg / cm ^2	WALL	CONCRETE	D	INTACT	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	LOWER BUILDING	OAKRIDGE SCHOOLS	Negative	1.32	1	< LOD	0.04	< LOD	0.04	< LOD	3.56
34	PAINT	mg / cm ^2	WALL	CONCRETE	D	INTACT	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	LOWER BUILDING	OAKRIDGE SCHOOLS	Negative	2.11	1	< LOD	1.51	< LOD	0.03	< LOD	1.51
35	PAINT	mg / cm ^2	WNDW LF CASING	METAL	D	CRACKING	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	LOWER BUILDING	OAKRIDGE SCHOOLS	Positive	7.51	1	8.5	4.1	6.8	3.7	8.5	4.1
36	PAINT	mg / cm ^2	GYM DOOR	WOOD	D	CRACKING	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	UPPER BUILDING	OAKRIDGE SCHOOLS	Negative	2.95	1	< LOD	0.38	< LOD	0.38	< LOD	2.4
37	PAINT	mg / cm ^2	GYM DOOR	WOOD	D	CRACKING	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	UPPER BUILDING	OAKRIDGE SCHOOLS	Negative	3.36	1	< LOD	0.52	< LOD	0.52	< LOD	2.89
38	PAINT	mg / cm ^2	EXT. SIDING	WOOD	D	PEELING	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	UPPER BUILDING	OAKRIDGE SCHOOLS	Positive	10	1	17.8	6.9	< LOD	1.8	17.8	6.9
39	PAINT	mg / cm ^2	EXT. SIDING	WOOD	A	CRACKING	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	UPPER BUILDING	OAKRIDGE SCHOOLS	Negative	5.12	1	< LOD	0.27	< LOD	0.27	< LOD	2.25
40	PAINT	mg / cm ^2	EXT. SIDING	WOOD	B	FAIR	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	UPPER BUILDING	OAKRIDGE SCHOOLS	Positive	10	1	17.9	10.9	< LOD	2.25	17.9	10.9
41	PAINT	mg / cm ^2	DR. CASING RT	WOOD	A	INTACT	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	UPPER BUILDING	OAKRIDGE SCHOOLS	Positive	6.07	1	1.8	0.5	1.8	0.5	1.6	0.8
42	PAINT	mg / cm ^2	PORCH CEILING	WOOD	A	INTACT	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	UPPER BUILDING	OAKRIDGE SCHOOLS	Positive	9.3	1	3.8	2.2	< LOD	1.5	3.8	2.2
43	PAINT	mg / cm ^2	EXT. SOFFIT	WOOD	A	INTACT	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	UPPER BUILDING	OAKRIDGE SCHOOLS	Positive	10	1	4.4	2.8	< LOD	1.8	4.4	2.8
44	PAINT	mg / cm ^2	EXT. SIDING PORCH	WOOD	D	INTACT	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	UPPER BUILDING	OAKRIDGE SCHOOLS	Positive	10	1	< LOD	14.4	< LOD	4.2	< LOD	14.4
45	PAINT	mg / cm ^2	PORCH CEILING	WOOD	C	INTACT	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	UPPER BUILDING	OAKRIDGE SCHOOLS	Positive	10	1	< LOD	3.2	< LOD	2.1	< LOD	3.2
46	PAINT	mg / cm ^2	ROOF VENT	WOOD	NA	POOR	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	UPPER BUILDING	OAKRIDGE SCHOOLS	Negative	10	1	< LOD	0.73	< LOD	0.28	< LOD	0.73

ES&H, inc.

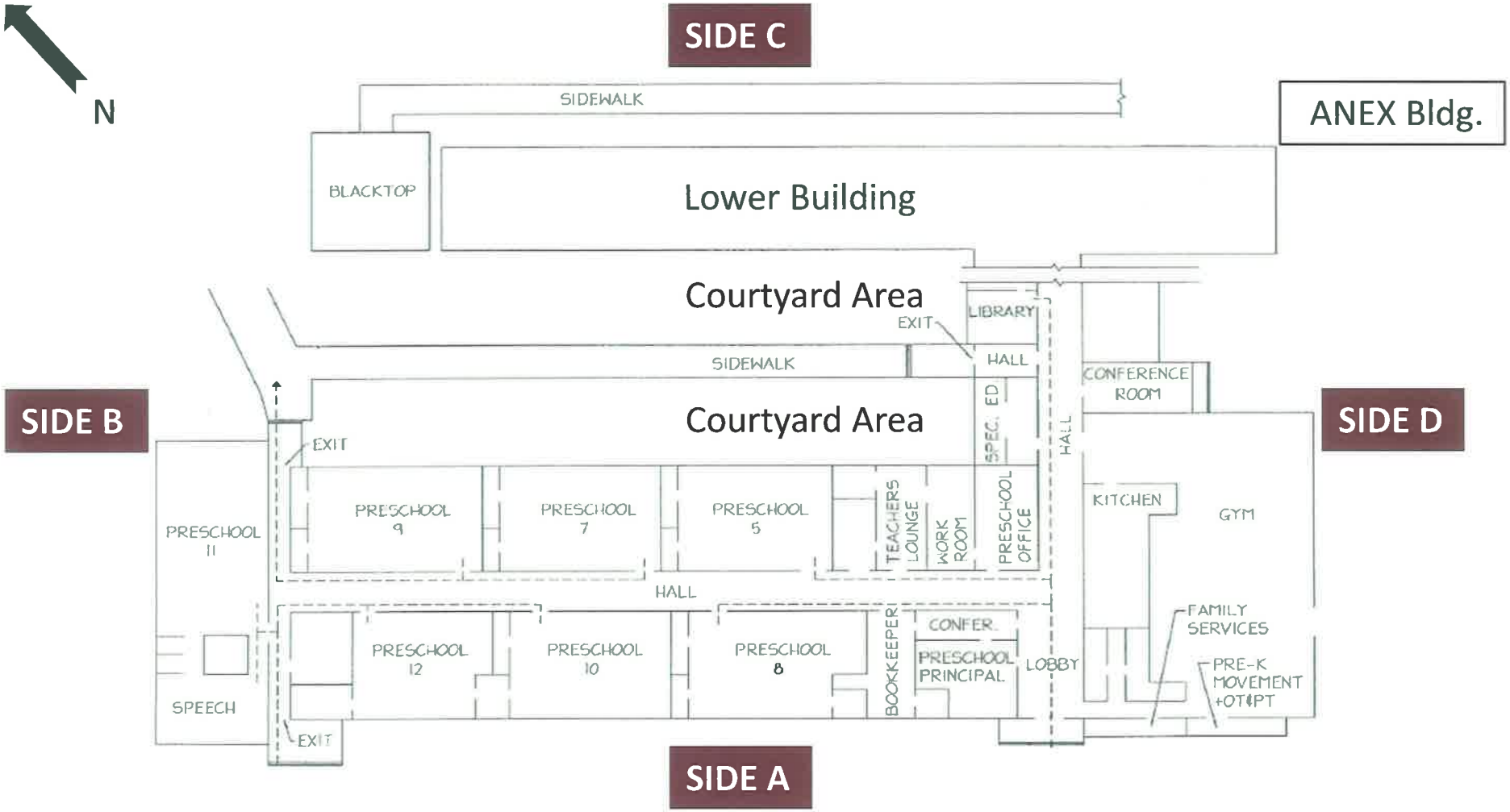
OAK RIDGE SCHOOLS
ADMINISTRITION & PRESCHOOL BUILDING

READING NO.	TYPE	UNITS	COMPONENT	SUBSTRATE	SIDE	CONDITION	COLOR	ROOM TYPE	SITE NAME	INSPECTOR	SAMPLE NOTE	SITE NOTE	RESULTS	DEPTH INDEX	ACTION LEVEL	PbC	PbC Error	PbL	PbL Error	PbK	PbK Error
47	PAINT	mg / cm ^2	ROOF VENT LOUVER	WOOD	NA	CRACKING	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	UPPER BUILDING	OAKRIDGE SCHOOLS	Negative	7 33	1	< LOD	0 9	< LOD	0.9	< LOD	2.25
48	PAINT	mg / cm ^2	PARAPET WALL - ROOF	BRICK	NA	FAIR	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	LOWER BUILDING	OAKRIDGE SCHOOLS	Negative	1.64	1	< LOD	0.07	< LOD	0.07	< LOD	2.57
49	PAINT	mg / cm ^2	EXT. SIDING - UPPER	WOOD	D	PEELING	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	LOWER BUILDING	OAKRIDGE SCHOOLS	Negative	1 53	1	< LOD	0 06	< LOD	0.06	< LOD	2 12
50	PAINT	mg / cm ^2	CORRUGATED PORCH CEILING	CEMESTO	D	PEELING	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	LOWER BUILDING	OAKRIDGE SCHOOLS	Negative	1	1	< LOD	0 03	< LOD	0 03	< LOD	1 39
51	PAINT	mg / cm ^2	PORCH BEAM	WOOD	D	CRACKING	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	LOWER BUILDING	OAKRIDGE SCHOOLS	Null	10	1	0 7	0 2	0 7	0 2	0 8	0 3
52	PAINT	mg / cm ^2	PORCH BEAM	WOOD	D	CRACKING	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	LOWER BUILDING	OAKRIDGE SCHOOLS	Negative	10	1	0 9	0 2	0 9	0 1	0 9	0 2
53	PAINT	mg / cm ^2	WNDW LEFT CASING	WOOD	A	PEELING	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	ANEX	OAKRIDGE SCHOOLS	Negative	2 23	1	< LOD	0.17	< LOD	0.17	< LOD	1.94
54	PAINT	mg / cm ^2	EXT. SOFFIT	WOOD	A	CRACKING	WHITE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	ANEX	OAKRIDGE SCHOOLS	Negative	4.42	1	0.6	0 2	0 6	0.2	0.8	0 5
55	PAINT	mg / cm ^2	DOOR CASING RT	WOOD	B	INTACT	BEIGE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	ANEX	OAKRIDGE SCHOOLS	Negative	5.02	1	< LOD	0 98	0 8	0 3	< LOD	0 98
56	PAINT	mg / cm ^2	DOOR	WOOD	B	INTACT	BEIGE	EXTERIOR	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	ANEX	OAKRIDGE SCHOOLS	Positive	5.79	1	1.1	0.2	1.1	0.2	0.7	0.3
57	PAINT	mg / cm ^2	CALIBRATE - FINAL	NA	NA	NA	NA	NA	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	NA	OAKRIDGE SCHOOLS	Positive	1.08	1	1	0.1	1	0.1	0.9	0.3
58	PAINT	mg / cm ^2	CALIBRATE - FINAL	NA	NA	NA	NA	NA	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	NA	OAKRIDGE SCHOOLS	Positive	1.06	1	1	0.1	1	0.1	0.7	0.3
59	PAINT	mg / cm ^2	CALIBRATE - FINAL	NA	NA	NA	NA	NA	ADMIN - PRESCHOOL BLDG.	E. Cueto - TNLBP2011-2415-4820I	NA	OAKRIDGE SCHOOLS	Positive	1.07	1	1	0.1	1	0.1	0.8	0.3

Sampled and prepared by Erik W. Cueto - TDEC Certification #TNLBP2011-2415-4820I

APPENDIX B

SITE DRAWING



Oak Ridge Schools
Preschool / Administration Building
304 New York Avenue
Oak Ridge, TN 37831
ES&H, Inc. Project No. 3081-001

APPENDIX C

PHOTOGRAPHIC DOCUMENTATION

OAK RIDGE SCHOOLS
ADIMINSTRATION & PRESCHOOL BUILDING

View of positive sample Number 10 - Grey Door

View of positive sample number 11 – Wood Siding

View of positive sample number 13 – Window Casing

View of positive sample number 20 – Door Casing

ES&H inc.

OAK RIDGE SCHOOLS
ADIMINSTRATION & PRESCHOOL BUILDING

View of positive sample number 29 – Door Header

View of positive sample number 35 – Window Casing

View of positive sample number 40 – Wood Siding

View of positive sample number 41 – Door Casing

ES&H inc.

OAK RIDGE SCHOOLS
ADIMINSTRATION & PRESCHOOL BUILDING

View of positive sample number 42 – Porch Ceiling (Side A)

View of positive sample number 45 – Porch Ceiling (Side C)

View of positive sample number 56 – Wood Door (Amex)

ES&H inc.

APPENDIX D

TDEC INSPECTOR CERTIFICATION

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT & CONSERVATION
LEAD HAZARD PROGRAM- CERTIFICATION ID CARD

TNLBP2011-2415-4820I

Erik
CUETO

TNLBP2011-2415-4820I

Erik **Cueto**

DOB	SEX	HGT	WGT
06/10/1982	M	5 9	225

CERTIFICATION	ISSUED	EXPIRES
WORKER		
SUPERVISOR		
PROJECT DESIGNER		
INSPECTOR	07/23/2014	07/30/2015
RISK ASSESSOR		

May 9, 2014

Mr. Allen Thacker
Oak Ridge City Schools
Oak Ridge Tennessee

LIMITED ASBESTOS AND LEAD BASED PAINT SAMPLING
OAK RIDGE ADMINISTRATION AND PRE-SCHOOL BUILDING
OAK RIDGE TENNESSEE

Dear Mr. Thacker:

On May 7th 2014, Frost Environmental Services, LLC (FES) collected samples to be analyzed for asbestos and lead of exterior siding and windows at the Oak Ridge Administration and Pre School Building. The sampling was performed by Seth Frost. The sampling was performed prior to painting stabilization was to take place.

A total of three (3) samples of suspect asbestos containing material (ACM) were collected. Samples consisted of window caulk and window glaze. After sample analysis **none** of the materials were determined to be Asbestos Containing Material (ACM).

A total of six (6) lead paint chips were collected. The following was determined to be considered Lead Based Paint (LBP) by EPA Renovation, Repair and Painting Rules (RRP):

Exterior Wood Trim
Exterior Wood Siding
Exterior Windows

Following the asbestos samples the window caulk and glaze was determined not asbestos, therefore no further action is required for the window caulking and glazing. The building did have transite siding. If this material is to be disturbed it must be performed by asbestos trained workers.

Following the lead paint chip results, LBP was identified within exterior wood trim and wood siding paint. LBP is defined by the EPA as paint with a lead content of 5000 parts per million or greater. Since LBP was identified, Lead RRP rules would be applied to the building during paint stabilization. Contractor would be required to be a certified Lead Safe Firm by the EPA and follow RRP requirements for paint stabilization. This would require protecting the areas of stabilization by placing plastic covering on the ground, wet scraping of loose and peeling paint, proper clean-up of paint debris, and repainting of the surfaces. In addition all paint debris must be determined if it is hazardous prior to disposal.

If you have any questions or comments, please do not hesitate to contact FES.

Sincerely,

Seth Frost
Project Manager

SCHNEIDER LABORATORIES GLOBAL

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804-353-6778 • 800-785-LABS (5227) • (FAX) 804-359-1475
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LABORATORY ANALYSIS REPORT

Asbestos Identification by EPA Method[1] 600/R-93/116; EPA 600/M4-82-020

ACCOUNT #: 4015-14-926
CUSTOMER: Frost Environmental Services, LLC.
ADDRESS: 339 Rockland Road, Suite E
Hendersonville, TN 37075
PROJECT NAME: Lake Ridge Admir Blg
JOB LOCATION: Oak Ridge, TN
PROJECT NO.:
PO NO.:

DATE COLLECTED: 5/7/2014
DATE RECEIVED: 5/8/2014
DATE ANALYZED: 5/8/2014
DATE REPORTED: 5/9/2014

SampleType: BULK

Customer Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	PLM Analysis Results: Asbestos Fibers	PLM Analysis Results: Other Materials
A-1	32208116	Window Glaze		
Layer 1:		Window Glaze White, Granular	None Detected	100% NON FIBROUS MATERIAL
A-2	32208117	Window Glaze		
Layer 1:		Window Glaze White, Granular	None Detected	100% NON FIBROUS MATERIAL
A-3	32208118	Window Caulk		
Layer 1:		Window Caulk Beige, Soft	None Detected	100% NON FIBROUS MATERIAL

Analyst: MOHAMMED B. HASHIM
Reviewed By: Hind Eldanaf, Microscopy Supervisor

Total Number of Pages in Report: 1

Results relate only to samples as received by the laboratory.
Visit www.slabinc.com for current certifications.

Accrediting bodies: AIHA-LAP, LLC 100527, NVLAP 101150-0, VELAP/NELAC 460135 - Call laboratory for current national and state certifications.

Method reporting limit is 1%. PLM analysis is based on Visual Estimation and NESHAP recommends that any asbestos content less than 10 percent be verified by PLM Point Count or TEM Analysis. This report must not be reproduced except in full with the approval of the laboratory.

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www.slabinc.com e-mail: info@slabinc.com

WorkOrderKey V : \ 1009 \ 1009112

Submitting Co.	Frost Environmental	Lab WO#	405-14-928		
329 Rockland Rd. Ste E		Acct #		Fax	
Hendersonville, Tennessee 37075		*State of Collection		E-Mail	
Project Name:	Oak Ridge - Admin Bldg	Special Instructions [include requests for special reporting or data packages]			
Project Location:	Oak Ridge TN				
Project Number:					
PO Number:					

Turn Around Time
- ☐ 2 hours*
- ☐ Same day*
- ☒ 1 business day*
- ☐ 2 business days*
- ☐ 3 business days*
- ☐ 5 business days*
- ☐ Full TCLP (10d)
- ☐ Weekend*

* not available for all tests

Schedule rush organics, multi-metals & weekend tests in advance.

Matrix / Sample Type (Select ONE)

All samples on form should be of SAME matrix type. Use additional forms as needed.

☐ Air	☐ Solid
☐ Aqueous	☐ Waste
☒ Bulk	☐ Wastewater
☐ Hi-Vol Filter (PM10)	☐ Water,Drinking
☐ Hi-Vol Filter (TSP)	☐ Compliance
☐ Oil	☐ Wipe
☐ Paint	☐ Wipe, Composite
☐ Sludge	☐ _____
☐ Soil	☐ _____

Tests / Analytes (Select ALL that Apply)

Asbestos Air / Fiber Counts
- ☐ PCM (NIOSH 7400)
- ☐ TEM (AHERA)
- ☐ TEM (EPA Level II)
- ☐ _____

Miscellaneous Tests
- ☐ Total Dust (NIOSH 0500)
- ☐ Resp. Dust (NIOSH 0600)
- ☐ Silica - FTIR (NIOSH 7602)
- ☐ Silica - XRD (NIOSH 7500)
- ☐ _____

Asbestos Bulk / Asb ID
- ☒ PLM (EPA 600/R-93/116)
- ☐ PLM (EPA Point Count)
- ☐ PLM (Qualitative only)
- ☐ NYELAP 198.1/.4/.6
- ☐ CAELAP (EPA Interim)
- ☐ TEM (Chatfield)
- ☐ _____

FOR ASBESTOS AIR:
TYPE OF RESPIRATOR USED: _____

Metals-Total Conc.
- ☐ Lead
- ☐ RCRA Metals
- ☐ _____
- ☐ _____

Metals-Extract
- ☐ TCLP / Lead
- ☐ TCLP / RCRA Metals
- ☐ TCLP / Full (w/ organics)

Others
- ☐ _____

Sample #	Date Sampled**	Time Sampled**	Sample Identification (e.g. Employee, SSN, Bldg, Material)	Wiped Area (ft²)	Type[1] A,B,P,E	Time[2] Start	Time[2] Stop	Flow Rate[3] Start	Flow Rate[3] Stop	Total[4] Air
A-1	5/7/14		Window Glaze							
A-2	"		" "							
A-3	"		Window Caulk							

[1]Type: A=area B=blank P=personal E=excursion [2]Beginning/End of Sample Period [3]Pump Calibration in Liters/Minute [4]Volume in Liters (time in min * flow in L/min)

Sampled by
NAME Kelly Frost
SIGNATURE [signature]
DATE/TIME 5/7/14

Relinquished to lab by
NAME _____
SIGNATURE _____
DATE/TIME _____

5-8-14 [signature]

Sample Disposal
If samples over req. weight (Refer to Fee Schedule)
- ☐ Return to Sender (Shipping fees)
- ☐ Disposal by lab ($50 fee)

Shipping Methode
- ☒ FX ☐ UPS ☐ USM
- ☐ HD ☐ DB

WB: 5279

☐ Sample return requested ☐ Ambient temp ☐ Ice °C * pH Cl ☐R ☐S ☐X ☐ Receive a physical copy of report.

* Temperature taken with IR Gun A. **Required.

Chain-of-Custody documentation continued internally within lab. Terms and conditions page 2.

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LABORATORY ANALYSIS REPORT

Lead Analysis based on EPA 7000B Method
Using Preparation Method EPA 3050B

ACCOUNT #: 4015-14-925
CUSTOMER: Frost Environmental Services, LLC.
ADDRESS: 339 Rockland Road, Suite E
Hendersonville, TN 37075
PROJECT NAME: Oak Ridge Admin Bldg
JOB LOCATION: Oak Ridge, TN
PROJECT NO.:
PO NO.:

DATE RECEIVED: 5/8/2014
DATE ANALYZED: 5/8/2014
DATE REPORTED: 5/8/2014

Sample Type: PAINT

SLI Sample No.	Customer Sample No.	Collection Date	Sample Description	Sample Wt (mg)	Total Lead (µg)	Lead Conc (% by wt)	Lead Conc PPM
32207976	1	5/7/2014	Ext Wood Siding A Side	312	634.7	0.203	2,034
32207977	2	5/7/2014	Ext Wood Trim A Side	339	22,531.1	6.646	66,463
32207978	3	5/7/2014	Ext Transite Siding A Side	340	75.7	0.022	223
32207979	4	5/7/2014	Ext Wood Siding B Side	343	17,200.4	5.015	50,147
32207980	5	5/7/2014	Ext Transite Siding C Side	338	41.9	0.012	124
32207981	6	5/7/2014	1954 Add. A Side Window	342	5,668.3	1.657	16,574

Analysis Run ID: 53378

Analyst: **MARTI H. BAIRD**
Total Number of Pages In Report: 1
Results relate only to samples as received by the laboratory.

Reviewed By **Mohammed Eltlib, Metals Team Leader**
Visit www.slabinc.com for current certifications.

Accrediting bodies: AIHA-LAP, LLC 100527, NVLAP 101150-0, VELAP/NELAC 460135 - Call laboratory for current national and state certifications.

Minimum Reporting Limit: 10.0 µg. Lead Based Paint contains 0.5% lead by weight per Federal statute. The OSHA Lead in Construction Standard, 29 CFR 1926.62, is invoked if any lead is present in the sample. All internal QC parameters were met. Unusual sample conditions, if any, are described.

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www.slabinc.com e-mail: info@slabinc.com

WorkOrderKey V : \ 1009 \ 1009107

Submitting Co.	Frost Environmental	Lab WO#	4015-14-925	Phone	
339 Rockland Rd. Ste E		Acct #		Fax	
Hendersonville, Tennessee 37075		Date of Collection		E-Mail	
Project Name:	Oak Ridge - Admin Bldg	Special Instructions [include requests for special reporting or data packages]			
Project Location:	Oak Ridge TN				
Project Number:					
PO Number:					

Turn Around Time

- ☐ 2 hours*
- ☐ Same day*
- ☒ 1 business day*
- ☐ 2 business day*
- ☐ 3 business days*
- ☐ 5 business days*
- ☐ Full TCLP (10d)
- ☐ Weekend*

* not available for all tests

Schedule rush organics, multi-metals & weekend tests in advance.

Matrix / Sample Type (select ONE)

All samples on form should be of SAME matrix type. Use additional forms as needed.

- ☐ Air
- ☐ Aqueous
- ☐ Bulk
- ☐ Hi-Vol Filter (PM10)
- ☐ Hi-Vol Filter (TSP)
- ☐ Oil
- ☒ Paint
- ☐ Sludge
- ☐ Soil
- ☐ Solid
- ☐ Waste
- ☐ Wastewater
- ☐ Water,Drinking
- ☐ Compliance
- ☐ Wipe
- ☐ Wipe, Composite
- ☐ _____
- ☐ _____

Tests / Analyses (Select ALL that Apply)

Asbestos Air / Fiber Count
- ☐ PCM (NIOSH 7400)
- ☐ TEM (AHERA)
- ☐ TEM (EPA Level II)
- ☐ _____

Miscellaneous Tests
- ☐ Total Dust (NIOSH 0500)
- ☐ Resp. Dust (NIOSH 0600)
- ☐ Silica - FTIR (NIOSH 7602)
- ☐ Silica - XRD (NIOSH 7500)
- ☐ _____

Asbestos Bulk / Air ID
- ☐ PLM (EPA 600/R-93/116)
- ☐ PLM (EPA Point Count)
- ☐ PLM (Qualitative only)
- ☐ NYELAP 198.1/.4/.6
- ☐ CAELAP (EPA Interim)
- ☐ TEM (Chatfield)
- ☐ _____

FOR ASBESTOS AIR:
TYPE OF RESPIRATOR USED: _____

Metals Total Conc.
- ☒ Lead
- ☐ RCRA Metals
- ☐ _____
- ☐ _____

Metals Extract
- ☐ TCLP / Lead
- ☐ TCLP / RCRA Metals
- ☐ TCLP / Full (w/ organics)

Other
- ☐ _____

Sample #	Date Sampled	Time Sampled	Sample Identification (e.g. Employee, SSN, Bldg, Material)	Wiped Area (ft²)	Type¹ A,B,P,E	Time² Start	Time² Stop	Flow Rate³ Start	Flow Rate³ Stop	Total⁴ Air
1	5/1/14		Ext Work Sidg A Side							
2	"	"	" " Trim "							
3	"	"	Ext Transite Sidg A Side							
4	"	"	" Wood Sidg A Side							
5	"	"	Ext Transite Sidg C Side							
6	"	"	1954 Add'n - A Side Window							

¹Type: A=area B=bulk P=personal E=excursion ²Beginning/End of Sample Period ³Pump Calibration in Liters/Minute ⁴Volume in Liters [time in min * flow in L/min]

Sampled by
NAME Seth Frost
SIGNATURE
DATE/TIME 5/2/14

Relinquished to lab by
NAME
SIGNATURE
DATE/TIME

5-8-14

☐ Sample return requested ☐ Ambient temp ☐ Ice °C * pH Cl ☐R ☐S ☒X ☐ Receive a physical copy of report.

* Temperature taken with IR Gun A. **Required. Chain-of-Custody documentation continued internally within lab. Terms and conditions page 2.

Sample Disposal
If samples over req. weight (refer to Fee Schedule)
☐ Return to Sender (Shipping Fees)
☐ Disposal by lab ($50 fee)

Shipping Methods
☒ FX ☐ UPS ☐ USM ☐ HD ☐ DB
WB: 9279

Case Study:
Effectiveness of ECOBOND® LBP to Seal and Treat Lead Paint Hazards

ECOBOND LBP

Company	ECOBOND LBP, LLC	
Address	14045 W 66th Ave	
City, state, ZIP Code	Arvada, CO 80004	
Phone number	303-456-6977	888-520-7132
Fax number	303-456-6998	

Contact name	James M Barthel
Title	President/CEO
Phone number	303-456-6977
Fax number	303-456-6998
E-mail address	jbarthel@ecobondlbp.com

Executive Overview

Lead paint is reportedly found in approximately 60% of all structures in the US and increases to over 80% in the major population centers. Lead presents a major hazard and risk to children, families and workers who come in contact with lead based paint. Historically, options for dealing with lead paint have been expensive, complicated and limited to either removal or encapsulation, which is why lead paint remains a major challenge despite its sale being discounted in 1978.

A new option is now available – ECOBOND LBP, LLC (ECOBOND) is dedicated to protecting workers, children, families and the environment with our line of specialty paint products designed to address the hazards of lead dust and lead based paint in an easy to use, safe, and environmentally protective water-based paint formulation.

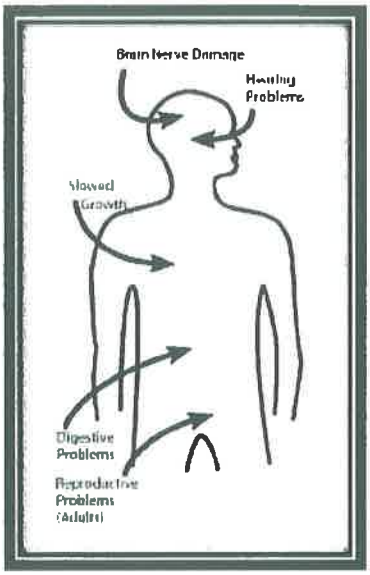
A comprehensive scientific study was recently conducted to summarize the successful 10 year performance record and provide independent validation ECOBOND® LBP's ability to seal and treat lead paint hazards under the wide variety of lead paint remediation activities. Lead paint hazards included lead dust, peeling and chipping lead paint, and multiple layers of lead paint for both interior and exterior applications. The lead paint materials selected for testing were specifically selected for their multiple layers of lead paint and unusually high lead concentrations; proving ECOBOND® LBPs robust capabilities.

Testing was conducted by an independent laboratory following US EPA test methods.

This case study provides a summary of typical use scenarios, test results, and conclusions. Section A describes six (6) typical lead paint scenarios. Section B provides independent analytical test data obtained from a US EPA NELAC-certified laboratory; and Section C provides conclusions and recommendations.

Overview

Health Effects of Lead
http://www2.epa.gov/sites/production/files/documents/pyf_brochure_landscape_b_w_1-16-13.pdf



Lead affects the body in many ways. It is important to know that even exposure to low levels of lead can severely harm children. In children, exposure to lead can cause:

- Nervous system and kidney damage
- Learning disabilities, attention deficit disorder, and decreased intelligence
- Speech, language, and behavior problems
- Poor muscle coordination
- Decreased muscle and bone growth
- Hearing damage

While low-lead exposure is most common, exposure to high amounts of lead can have devastating effects on children, including seizures, unconsciousness, and, in some cases, death.

Although children are especially susceptible to lead exposure, lead can be dangerous for adults, too. In adults, exposure to lead can cause:

- Harm to a developing fetus
- Increased chance of high blood pressure during pregnancy
- Fertility problems (in men and women)
- High blood pressure
- Digestive problems
- Nerve disorders
- Memory and concentration problems
- Muscle and joint pain

Solution

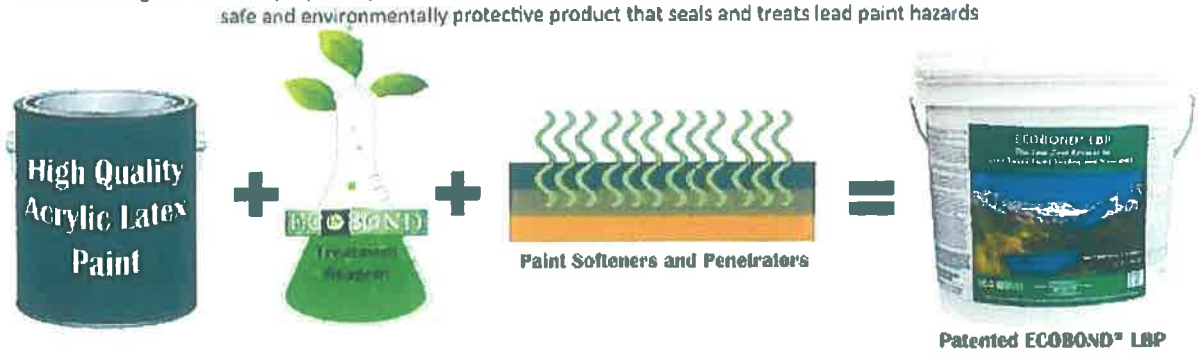
Lead paint is reportedly found in approximately 60% of all structures in the US and increases to over 80% in the major population centers. Lead presents a major hazard and risk to children, families and workers who come in contact with lead based paint. Historically, options for dealing with lead paint have been expensive, complicated and limited to either removal or encapsulation, which is why lead paint remains a major challenge despite its sale being discounted in 1978.

A new option is now available – ECOBOND LBP, LLC (ECOBOND) is dedicated to protecting workers, children, families and the environment with our line of specialty paint products designed to address the hazards of lead dust and lead based paint in an easy to use, safe, and environmentally protective water-based paint formulation.

This case study provides an overview of ECOBND® LBP, summary of typical uses, test results, and conclusions. Section A describes five (5) typical lead paint scenarios. Section B provides independent analytical test data obtained from a US EPA NELAC-certified laboratory; and Section C provides Conclusions and Recommendations.

WHAT IS ECOBOND® LBP?

ECOBOND® LBP is a patented specialty paint product that combines a high quality acrylic latex paint formula with natural lead treatment reagents and safe proprietary softeners and penetrators (to enhance adhesion and permeation) to form an easy to use, safe and environmentally protective product that seals and treats lead paint hazards



ECOBOND® LBP is a specialty paint product formulated to seal and treat the hazards of lead based paint. It is so versatile it is used by homeowners, residential, commercial and industrial contractors, and is specified by numerous government agencies.

Uses of ECOBOND® LBP: Not only is ECOBOND® LBP preferred by a wide variety of users, but it is also a multi-purpose product applicable for a wide range of lead based paint projects such as:

Remodeling, Renovation and Painting (RRP) (Residential and Commercial Structures)
- Interior primer and tintable topcoat (walls, doors, cabinets, and trim)
- Exterior primer (siding, trim, and exterior structures)

Renovation, Maintenance and Demolition (Industrial Buildings, Bridges, Tanks, etc.)
- Prevent the spread of lead dust, treat lead dust
- Treat lead in lead paint for non-hazardous disposal

Prior to Lead Paint Component Removal
- Use ECOBOND® LBP to seal and treat lead dust and lead paint prior to component removal. Through proper application of ECOBOND® LBP, removed and collected solid waste will typically provide eco-friendly disposal as non-hazardous for lead.

Interim Control
- ECOBOND® LBP is allowed for use in all 50 states as Lead Paint Interim Control (42 USC 63A 4851b(13))

Lead Dust and Lead Paint Treatment
- ECOBOND® LBP is specially formulated to address lead dust and lead paint issues. Its patented formula chemically converts lead in lead paint and lead dust to provide stabilization that virtually eliminates leaching of lead to the environment allowing for lower cost non-hazardous, eco-friendly waste disposal; reduces lead hazards up to 95%; and improves worker/occupant safety

Section A: Typical Lead Paint Scenarios

Use #1	**Interior Primer and Topcoat All-in-One**
Material	Interior Door Frame coated with <u>two layers</u> of lead based paint (blue over white), light peeling/chipping
Lead Levels	Up to 80,000 mg/kg (ppm) 38.5 mg/L (TCLP)
Application Tested	Effectiveness of ECOBOND® LBP as an **interior primer and topcoat in one**
Application Method	One coat of ECOBOND® LBP was applied by brush, no primer was required Allowed to dry 12 hours
Application Thickness	8 mil wet: 2 coats – 4 mil + 4 mil

Use #2	**Exterior Primer with Name Brand Topcoat**
Material	Exterior Slot Siding coated with <u>three layers</u> of paint: one layer of white latex over lead based paint (green over yellow)
Lead Levels	Over 100,000 mg/kg (ppm) 28.5 mg/L (TCLP)
Application Tested	Effectiveness of ECOBOND® LBP's as an **exterior primer** prior to topcoat of exterior semi-gloss latex paint
Application Method	One coat of ECOBOND® LBP was applied by roller Allowed to dry 12 hours
Application Thickness	Applied one coat of exterior latex paint topcoat ECOBOND® LBP: 8 mil wet: 2 coats – 6 mil + 2 mil Name Brand Exterior Latex Topcoat: 4 mil wet

Use #3	**Primer Prior to Standard Epoxy Encapsulation**
Material	Interior Wood Paneling coated with <u>two layers</u> of lead paint (white over yellow)
Lead Levels	Up to 60,000 mg/kg (ppm) 15.8 mg/L (TCLP)
Application Tested	Effectiveness of ECOBOND® as an **interior primer** prior to application of standard epoxy encapsulant product
Application Method	One coat of ECOBOND® LBP was applied by brush Allowed to dry 12 hours Applied two coats of encapsulant, per product instructions
Application Thickness	ECOBOND® LBP: 8 mils wet: 2 coats – 6 mil + 2 mil Encapsulant: 14 mil wet: 2 coats – 7 mil + 7 mil

Use #4	**Commercial: Seal and Treat Lead Dust and Lead Paint Prior to Demolition and Disposal**
Material	Exterior wood siding and concrete coated with multiple layers of lead paint
Lead Levels	Up to 114,000 mg/kg (ppm) 72.4 mg/L (TCLP)
Application Tested	Effectiveness of ECOBOND® LBP to **seal and treat lead dust and lead paint** prior to building **demolition** and waste disposal
Application Method	One coat of ECOBOND® LBP was applied by commercial paint sprayer, no primer was required Allowed to dry 12-24 hours
Application Thickness	10 – 12 mil wet

Use #5	**Industrial: Seal and treat lead paint chips prior to disposal**
Material	Lead paint chips
Lead Levels	Over 100,000 kg/mg (ppm) 52.9 mg/L (TCLP)
Application Tested	Effectiveness of ECOBOND® LBP to **seal and treat lead paint chips** prior to disposal
Application Method	One coat of ECOBOND® LBP was applied by commercial paint sprayer, no primer was required Allowed to dry 12 hours
Application Thickness	10 mil wet

Use #6	**Industrial: Lead dust/paint sealant and treatment prior to demolition**
Material	Wood, cinder block, concrete, ceramic tile, and sheet rock
Lead Levels	Over 100,000 kg/mg (ppm) 52.9 mg/L (TCLP)
Application Tested	Effectiveness of ECOBOND® LBP to **seal and treat lead dust & lead paint** prior to demolition
Application Method	One coat of ECOBOND® LBP was applied by commercial paint sprayer, no primer was required Allowed to dry 12 hours
Application Thickness	12 mil wet

Section B: EPA Test Procedure Analytical Results – ECOBOND® LBP

ECOBOND® LBP has been used for nearly 10 years on thousands of commercial and heavy industrial projects and more recently for residential properties. The ability of ECOBOND® LBP to seal and treat lead dust and lead in paint, including peeling and chipping paint as well as prior to lead paint component removal has been extensively tested utilizing EPA test methods (EPA 1311). The following table presents test results from this study examining multiple use scenarios for various lead paint coated materials for lead treatment and relative lead bioavailability (EPA 9200.1-86).

Note: To test the robust treatment capabilities of ECOBOND® LBP, test material selected contained extremely high lead levels of 60,000 – 100,000 mg/kg; typical residential lead levels average 10,000 – 40,000 mg/kg. Also provided below is an example of ECOBOND® LBP treatment results for typical residential lead levels with application of one coat of ECOBOND® LBP at 8 mils wet; confirming ECOBOND® LBP treatment results well below RCRA TCLP limit of 5.0 mg/l.

Example: ECOBOND® LBP Test Results – Typical Residential Lead Levels

Use	Application (Base Material)	Total Lead Levels (mg/kg)	Before As-Is (mg/L)	After ECOBOND® Treatment (mg/L)	% Reduction
1	**Primer & Topcoat** (Interior Wood Trim)	37,000	7.3	1.2	84%

ECOBOND® LBP Test Results – High Level Lead Treatment (TCLP)

Use	Application (Base Material)	RCRA TCLP Limit (mg/L)	Before As-Is (mg/L)	After ECOBOND® Treatment (mg/L)	% Reduction
1	**Primer & Topcoat** (Interior Wood Trim)	5.0	38.5	2.79	93%
2	**Primer + Name Brand Latex Paint** (Exterior Wood Siding)	5.0	28.5	1.22	96%
3	**Primer + Standard Poly Encapsulant** (Interior Wood Paneling)	5.0	15.8	1.58	90%
4	**Sealant & Treatment Prior to Demolition & Disposal** (Exterior Wood Siding/Concrete)	5.0	72.3	2.4	97%
5	**Prior to Disposal** (Paint Chips)	5.0	52.9	1.49	97%
6	**Sealant & Treatment of Lead Dust/Paint Prior to Demolition** (Wood, Cinder Block, Concrete, Ceramic Tile, Sheet Rock)	5.0	~53.0	<0.60	99%

ECOBOND® LBP Test Results – Relative Lead Bioavailability (EPA 9200.1-86)

Use	Application (Base Material)	Before As-Is (mg/L)	After ECOBOND® Treatment (mg/L)	% Reduction
1	**Primer & Topcoat** (Interior Wood Trim)	371	179	52%
2	**Primer + Name Brand Latex Paint** (Exterior Wood Siding)	1,040	320	69%
3	**Primer + Standard Poly Encapsulant** (Interior Wood Paneling)	338	133	61%
5	**Prior to Disposal** (Paint Chips)	451	185	59%

One coat of ECOBOND® LBP, 6-12 mil wet; at non-fasting pH 2.2 modified

Section C: Conculsions and Recommendations

The following table summarizes the observations and test results from the study's five application uses of ECOBOND® LBP as well as test criteria and results. Testing confirmed that ECOBOND® LBP is applicable for use on a variety of interior and exterior materials as well as multiple lead paint remediation activities.

Use	Application (Base Material)	% Reduction Lead Hazard (EPA 1311)	% Reduction Relative Pb Bioavailability (EPA 9200.1-86EPA)	Application (mils wet)	Application Method	Peeling/Chipping Paint Sealant	Conclusions
1	**Primer & Topcoat** (Interior Wood Trim)	93%	52%	8	Brush	✓	• Good final paint quality, tintable coloring • Addressed peeling/chipping paint • Addressed two layers of lead paint • Sealed and treated lead based paint and lead dust
2	**Primer + Name Brand Latex Paint** (Exterior Wood Siding)	96%	69%	6	Roller	✓	• Proven primer quality • Compatible with name brand exterior latex topcoat • Addressed three layers of lead paint • Sealed and treated lead based paint
3	**Primer + Standard Poly Encapsulant** (Interior Wood Paneling)	90%	61%	8	Brush	✓	• Good primer quality • Compatible with standard encapsulant • Addressed two layers of lead paint • Treated lead based paint along with encapsulant top coat
4	**Sealant & Treatment Prior to Demolition & Disposal** (Exterior Wood Siding/Concrete)	97%	N/A	10-12	Sprayer	✓	• Effective sealant • Addressed multiple layers of lead paint • Prevents spread of lead based paint chips and dust • Treated lead based paint for demolition and non-hazardous disposal
5	**Prior to Disposal** (Paint Chips)	97%	59%	10	Sprayer	✓	• Effective dust sealant • Supports worker protection • Treated lead based paint for disposal
6	**Sealant & Treatment of Lead Dust/Paint Prior to Demolition** (Wood, Cinder Block, Concrete, Ceramic Tile, Sheet Rock)	99%	N/A	12	Sprayer	✓	• Effective sealant • Addressed multiple layers of lead paint • Prevents spread of lead dust and paint chips • Treated lead based paint prior to demolition

Conclusions and Recommendations

Typical Use #1 When used as an **All-In-One Primer and Topcoat**, ECOBOND® LBP is highly effective in sealing and treating lead in lead dust and lead paint for interior wood surfaces with high lead levels and multiple layers of peeling and chipping lead based paint.

Typical Use #2 When used as an **Exterior Primer** prior to application of a standard exterior latex topcoat, ECOBOND LBP is highly effective in sealing and treating lead in lead paint and lead dust for exterior surface with high lead levels and multiple coats of lead based paint.

Typical Use #3 When used **Prior to Standard Epoxy Encapsulation** ECOBOND® LBP is highly effective in sealing and treating lead dust and lead for interior surfaces with medium lead levels and multiple layers of lead based paint.

Typical Use #4 When used **Prior to Demolition and Disposal**, ECOBOND® LBP is highly effective in sealing and treating lead dust and lead paint for exterior surfaces with high lead levels and multiple layers of lead based paint.

Typical Use #5 When used **Prior to Disposal**, ECOBOND® LBP is highly effective in sealing and treating lead dust and lead paint for lead paint chips removed from various surfaces generating a non-hazardous solid waste.

Typical Use #6 When used **Prior to Demolition**, ECOBOND® LBP is highly effective in sealing and treating lead dust and lead paint for multiple substrate materials (wood, cinder block, concrete, ceramic tile, sheet rock) with multiple layers of lead paint and high lead levels.

ECOBOND® LBP is also tested to:

1. Reduce lead paint hazards up to 95% (EPA Method 1311)
2. Reduce airborne lead dust up to 99% (ASTM E1613-12)
3. Reduce relative lead bioavailability up to 75% (EPA 9200.1-86)
4. Mold and mildew resistant (ASTM D5590-00 modified)
5. Fire resistant (ASTM E84) Flame spread 0, Smoke developed 0 NFPA/IBC Class A Coating

CASE STUDY: LEAD POISONING PREVENTION
ECOBOND® LBP provides effective lead poisoning prevention solution;
Reduces potential for relative lead bioavailability by up to 74%

OVERVIEW

New data reveals that 1 in 38 children, ages 1-5, in America are currently affected by lead poisoning. Lead is especially dangerous to children under the age of 6; at this age, children's brains and nervous systems are more sensitive to the damaging effects of lead. Lead exposure in children can cause:

- Nervous system and kidney damage
- Learning disabilities, attention deficit disorder, and decreased intelligence
- Speech, language, and behavior problems; Hearing damage
- Poor muscle coordination; Decreased muscle and bone growth

PROBLEM

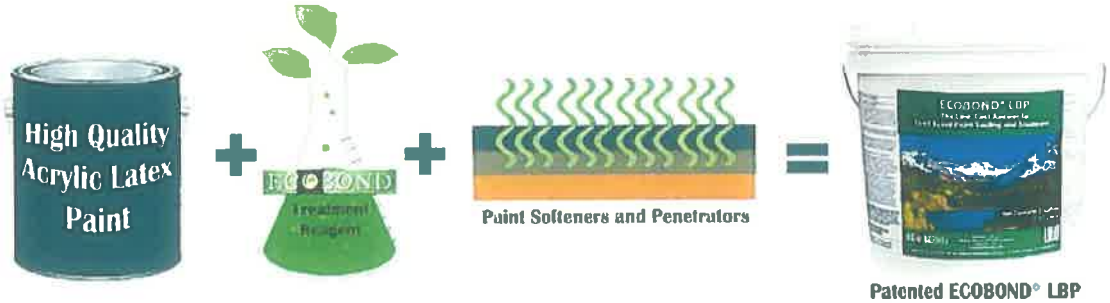
According to the US EPA, the leading cause of childhood lead poisoning is lead paint exposure. Although there is national focus (US EPA, HUD) on reducing lead paint hazards, especially for children; with up to 80% of all structures in the United States containing lead based paint, it is not a problem that can be solved quickly. Historical lead hazard reduction methods, e.g. encapsulation and removal, can be costly and may use caustic chemicals; alternative methods for lead poisoning prevention and limiting the impact of lead on young children are needed. To be most effective, these methods must be readily available, economical and easy to use.

SOLUTION

ECOBOND LBP, LLC has invested significant resources in order to develop an effective and easy to use lead poisoning prevention product to seal and treat lead paint hazards, and reduce relative lead bioavailability (the ability of the body to absorb lead). This product, ECOBOND® LBP, is based on the same ECOBOND® technology that has been used successfully for over a decade to treat lead and other metals in over 1,000,000 tons of solid waste. Independent testing performed to US EPA-approved procedures for relative bioavailability of lead confirmed in multiple testing that a standard coating application of ECOBOND® LBP successfully reduced the bioavailability of lead-paint containing materials.

WHAT IS ECOBOND® LBP?

ECOBOND® LBP is a patented specialty paint product that combines a high quality acrylic latex paint formula with natural lead treatment reagents and safe proprietary softeners and penetrators (to enhance adhesion and permeation) to form an easy to use, safe, and environmentally protective product that seals and treats lead paint hazards.



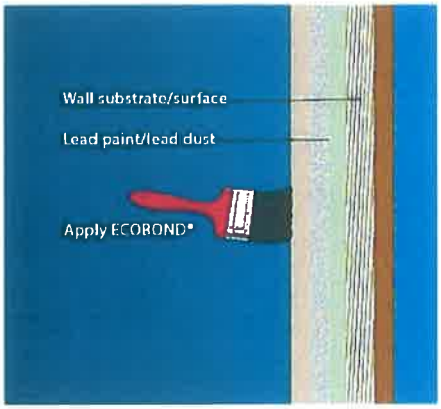
Patented ECOBOND® LBP

CASE STUDY: LEAD POISONING PREVENTION
ECOBOND® LBP provides effective lead poisoning prevention solution;
Reduces potential for relative lead bioavailability by up to 74%

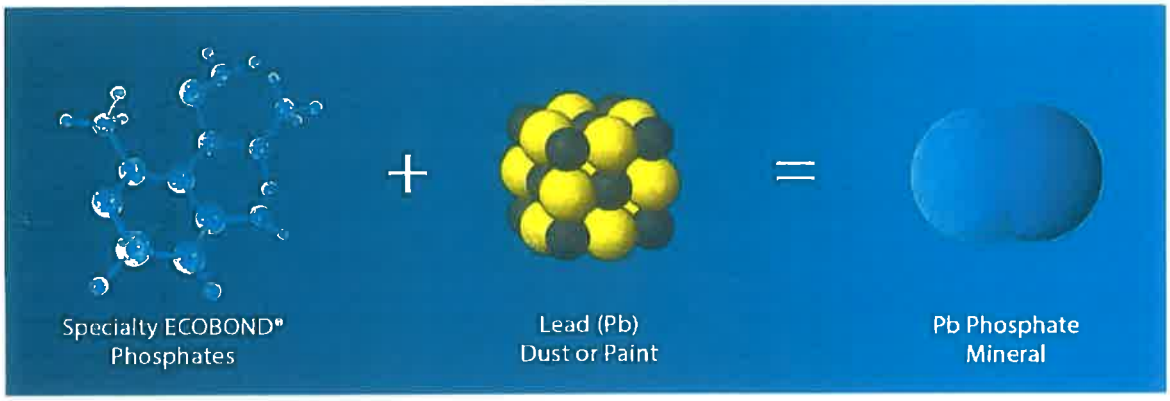
USES OF ECOBOND® LBP

ECOBOND® LBP is a multi-purpose product applicable for a wide range of lead based paint projects such as:

- Interior primer and tintable topcoat (walls, doors, cabinets, and trim)
- Exterior primer (siding, trim, and exterior structures)
- Prevent the spread of lead dust, treat lead dust
- Treat lead in lead paint for non-hazardous disposal
- Seal and treat lead dust and lead paint prior to component removal
- Allowed for use in all 50 states as Lead Paint Interim Control (42 USC 63A 4851b(13))



HOW DOES ECOBOND® LBP REDUCE RELATIVE LEAD BIOAVAILABILITY?



Specialty ECOBOND® phosphates combine with lead dust/paint to create a lead-phosphate mineral that reduces the ability to absorb lead into the blood stream, thereby reducing relative lead bioavailability.