



## ALAMANCE COUNTY

### Health Department

Environmental Health Section  
209 North Graham-Hopedale Road  
Burlington, NC 27217-2971

<http://www.alamance-nc.com/envhealth/>

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## **Environmental Investigation for Lead Poisoning Hazards**

**DATES OF INVESTIGATION:**

**January 12 & February 9, 2017**

**PRIMARY  
ADDRESS INVESTIGATED:**

2847 Pleasant Grove Union School Rd.  
Burlington, NC 27217

**PROPERTY OWNER:**

Alamance-Burlington School System  
1712 Vaughn Rd.  
Burlington, NC 27217

**AGE OF PROPERTY:**

Built in phases starting in 1957

**INVESTIGATORS:**

David Brown, Regional REHS  
Registered Environmental Health Specialist  
Children's Environmental Health Branch

Elizabeth Ellmore & Kenneth Greene, REHS  
Registered Environmental Health Specialists  
Alamance County Department of  
Public Health

**PURPOSE OF THE INVESTIGATION:**

An environmental investigation was conducted to determine the presence of lead poisoning hazards in accordance with North Carolina General Statutes 130A-131.9A.



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**PRELIMINARY FINDINGS:**

Interior painted surfaces of the school contain lead. The surfaces which are worn, chipping, peeling, flaking or subject to abrasion are considered a lead hazard.

**LEAD POISONING HAZARDS MEANS:**

1. Any lead-based paint or other substance that contains lead in an amount equal to or greater than 1.0 milligrams lead per square centimeter as determined by X-ray fluorescence or five-tenths of a percent (0.5%) lead by weight as determined by chemical analysis: (i) on any readily accessible substance or chewable surface on which there is evidence of teeth marks or mouthing; or (ii) on any other deteriorated or otherwise damaged interior or exterior surface.
2. Any substance that contains lead intended for use by children less than six years of age in an amount equal to or greater than 0.06 percent (0.06%) lead by weight as determined by chemical analysis.
3. Any concentration of lead dust that is equal to or greater than 40 micrograms per square foot on floors or 250 micrograms per square foot on interior windowsills, vinyl miniblinds, bathtubs, kitchen sinks, or lavatories.
4. Any lead-based paint or other substance that contains lead on a friction or impact surface that is subject to abrasion, rubbing, binding, or damage by repeated contact and where the lead dust concentrations on the nearest horizontal surface underneath the friction or impact surface are equal to or greater than 40 micrograms per square foot on floors or 250 micrograms per square foot on interior windowsills.
5. Any concentration of lead in bare soil in play areas, gardens, pet sleeping areas, and areas within three feet of a residential housing unit or child-occupied facility equal to or greater than 400 parts per million. Any concentration of lead in bare soil in other locations of the yard equal to or greater than 1,200 parts per million.
6. Any ceramic ware generating equal to or greater than three micrograms of lead per milliliter of leaching solution for flatware or 0.5 micrograms of lead per milliliter for cups, mugs, and pitchers as determined by Method 973.32 of the Association of Official Analytical Chemists.
7. Any concentration of lead in drinking water equal to or greater than 15 parts per billion.



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**INVESTIGATION METHODS USED:**

- X-Ray Fluorescence Analyzer to test painted surfaces for the presence of lead
- Dust Sampling
- Soil Sampling
- Water Sampling

**TABLE OF XRF READINGS TAKEN:**

**XRF readings of 1.0 mg/cm<sup>2</sup> or above indicate the presence of lead-based paint.**

**Side:** A, B, C, or D locations relative to the street front entrance.

**Condition descriptions:** Non-Intact (NI) which could include (peeling, flaking, chipping, chalking, worn or subject to abrasion)

**\*Not all surfaces were tested with the XRF analyzer but similar components and paint histories are considered positive for the presence of the lead-based paint.**

**(SEE THE ATTACHED DRAWING FOR THE LOCATION OF THE XRF) READINGS TAKEN**

Sample No.	Location and Description	Side	Substrate	Condition	Color	XRF Readings (mg/cm <sup>2</sup> )
1	Pre-K Classroom window #8 casing	B	Metal	NI	White	1.7
2	Pre-K Classroom window #8 casing	B	Metal	NI	White	2.4
3	Pre-K Classroom window #8 casing	B	Metal	NI	White	5.2
4	Pre-K Classroom window #8 casing (interior)	B	Metal	NI	White	3.2
5	Pre-K Classroom window #8 casing	B	Metal	NI	Brown	3.3
6	Pre-K Classroom window #9/10 frame	B	Metal	NI	White	2.9
7	Pre-K Classroom window #10 casing	B	Metal	NI	White	2.0
8	Pre-K Classroom bulletin board bottom rail	C	Wood	NI	Yellow	3.1
Sample	Location and Description	Side	Substrate	Condition	Color	XRF Readings

No.						(mg/cm <sup>2</sup> )
9	Pre-K Classroom bulletin board bottom rail	C	Wood	NI	Yellow	2.5
10	Pre-K Classroom bulletin board frame (right side)	C	Wood	NI	Yellow	4.9
11	Pre-K Classroom base cove (left of back door)	D	Wood	NI	Tan	2.7
12	Pre-K Classroom back door casing (latch side)	C	Wood	NI	Black	2.1
13	Pre-K Classroom back door	D	Wood	NI	Black	3.4
14	Pre-K Classroom back door casing (hinge side)	D	Wood	NI	Black	2.3
15	Pre-K Classroom back door casing (hinge side)	D	Wood	NI	Black	3.9
16	Pre-K Classroom bulletin board (back) bottom rail	A	Wood	NI	Red	2.8
17	Pre-K Classroom bulletin board (back) frame right side	A	Wood	NI	Red	5.2
18	Pre-K Classroom bulletin board (back) rail	D	Wood	NI	Tan	3.2
19	Pre-K Classroom bulletin board (back) right side frame	D	Wood	NI	Tan	4.1
20	Kindergarten Rm #25 latch side door jamb	C	Wood	NI	White	2.5
21	Kindergarten Rm #25 latch side door jamb	C	Wood	NI	White	4.6
22	Kindergarten Rm #25 latch side door jamb	C	Wood	NI	White	2.4
23	Kindergarten Rm #25 latch side door casing	A	Wood	NI	White	2.0
24	Kindergarten Rm #25 door header	A	Wood	NI	White	2.1
25	Kindergarten Rm #25 door (interior)	A	Wood	NI	White	5.2
26	Kindergarten Rm #25 window #3	C	Metal	NI	White	2.3
27	Kindergarten Rm #25 window #3 casing	C	Metal	NI	White	7.1
Sample	Location and Description	Side	Substrate	Condition	Color	XRF Readings

No.						(mg/cm <sup>2</sup> )
28	Kindergarten Rm #25 window #4 casing	C	Metal	NI	White	3.2
29	Kindergarten Rm #25 window #4/5 frame	C	Metal	NI	White	4.8
30	AIG Rm #33 door (interior)	A	Wood	NI	Blue	2.8
31	AIG Rm #33 baseboard	A	Wood	NI	Blue	3.1
32	AIG Rm #33 bulletin board chalk tray	A	Wood	NI	Blue	1.7
33	AIG Rm #33 bulletin board frame (left)	A	Wood	NI	Blue	3.0
34	AIG Rm #33 bulletin board chalk tray	A	Wood	NI	Blue	1.8
35	AIG Rm #33 baseboard	A	Wood	NI	Blue	2.1
36	AIG Rm #33 bulletin board chalk tray	B	Wood	NI	Blue	2.5
37	AIG Rm #33 bulletin board frame	B	Wood	NI	White	1.9
38	AIG Rm #33 wainscoting	B	Wood	NI	White	3.2
38	AIG Rm #33 baseboard	B	Wood	NI	White	2.7
40	AIG Rm #33 wainscoting	D	Wood	NI	White	2.7
41	AIG Rm #33 coat hook rail	B	Wood	NI	White	3.1
42	AIG Rm #33 window #4 frame	C	Metal	NI	White	2.7
43	AIG Rm #33 window #4/5 casing	C	Metal	NI	White	3.5
44	AIG Rm #33 window #5 frame	C	Metal	NI	White	3.5
45	AIG Rm #33 bulletin board chalk tray	D	Wood	NI	Blue	1.3
46	EC Rm #29 door jamb hinge side	C	Wood	NI	White	2.0
47	EC Rm #29 door (interior)	A	Wood	NI	White	2.2
48	EC Rm #29 door casing hinge side	A	Wood	NI	White	2.1
49	EC Rm #29 window #1 frame	C	Metal	NI	White	2.9
50	EC Rm #29 window #1/2 casing	C	Metal	NI	White	2.2
51	Gym main hall left double door (interior)	B	Wood	NI	Blue	1.7
Sample No.	Location and Description	Side	Substrate	Condition	Color	XRF Readings (mg/cm <sup>2</sup> )

52	Gym main hall double door stop hinge side	D	Wood	NI	Blue	1.8
53	Gym main hall double door casing	D	Wood	NI	Blue	2.8
54	Gym left double doors right door (interior)	A	Wood	NI	Blue	2.9
55	Gym left double doors right door (interior)	A	Wood	NI	Blue	2.2
56	Gym left double doors right door casing (interior)	A	Wood	NI	Blue	1.5
57	Gym right double doors left door (interior)	A	Wood	NI	Blue	2.4
58	Gym right double doors right door (interior)	A	Wood	NI	Blue	2.3
59	Gym double doors to hall left door	B	Wood	NI	Blue	3.0
60	Gym double doors to hall stop	B	Wood	NI	Blue	2.2
61	Gym double doors to hall casing (left)	B	Wood	NI	Blue	4.3
62	Counselor's office door casing (interior)	C	Wood	NI	Cream	2.0
63	Counselor's office baseboard	C	Wood	NI	Cream	1.5
64	Counselor's office baseboard	D	Wood	NI	Cream	1.5
65	Counselor's office, interior door to adjacent office	B	Wood	NI	White	1.5
66	Counselor's office, interior door to adjacent office	B	Wood	NI	White	2.1
67	Counselor's office door (interior)	C	Wood	NI	White	2.2
68	Main office door (interior)	D	Wood	NI	Cream	3.3
69	Main office door casing	D	Wood	NI	Cream	3.3

#### Areas for Recommended Remediation:

Doors: stop, jamb, casing, header

Windows: frame, casing, sill

Bulletin boards

Baseboards

#### TABLE OF ENVIRONMENTAL SAMPLES:



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The following chart contains the Atomic Absorption Spectroscopy analysis results from the environmental samples submitted to “The North Carolina State Laboratory of Public Health”. Results highlighted in **RED** are above the standard and therefore considered lead poisoning hazards.

Sample No.	Sample Type	Sample Location	Sample Size	Sample Results Lead ( $\mu\text{g}/\text{ft}^2$ or ppm)	Standard
01	Dust	Pre-K Classroom window #8 sill	2" x 18"	396 $\mu\text{g}/\text{ft}^2$	250 $\mu\text{g}/\text{ft}^2$
02	Dust	Pre-K Classroom floor below window #7	12" x 12"	220 $\mu\text{g}/\text{ft}^2$	40 $\mu\text{g}/\text{ft}^2$
03	Dust	Pre-K Classroom floor below window #3	12" x 12"	680 $\mu\text{g}/\text{ft}^2$	40 $\mu\text{g}/\text{ft}^2$
04	Dust	Pre-K Classroom window #2 sill	2" x 18"	116 $\mu\text{g}/\text{ft}^2$	250 $\mu\text{g}/\text{ft}^2$
05	Dust	Pre-K Classroom floor below window #6	12" x 12"	33 $\mu\text{g}/\text{ft}^2$	40 $\mu\text{g}/\text{ft}^2$
06	Dust	Pre-K Classroom window #6 sill	2" x 18"	720 $\mu\text{g}/\text{ft}^2$	250 $\mu\text{g}/\text{ft}^2$
07	Dust	Pre-K Classroom bulletin board side C chalk tray	2" x 18"	< 10 $\mu\text{g}/\text{ft}^2$	250 $\mu\text{g}/\text{ft}^2$
08	Dust	Pre-K Classroom floor below back bulletin board side C	12" x 12"	< 10 $\mu\text{g}/\text{ft}^2$	40 $\mu\text{g}/\text{ft}^2$
09	Dust	Pre-K Classroom floor below back bulletin board side D	12" x 12"	< 10 $\mu\text{g}/\text{ft}^2$	40 $\mu\text{g}/\text{ft}^2$
10	Dust	Pre-K Classroom floor by coat corner at front door	12" x 12"	< 10 $\mu\text{g}/\text{ft}^2$	40 $\mu\text{g}/\text{ft}^2$
11	Dust	Kindergarten Rm #25 window #3 sill	2" x 18"	68 $\mu\text{g}/\text{ft}^2$	250 $\mu\text{g}/\text{ft}^2$
12	Dust	Kindergarten Rm #25 window #4 sill	2" x 18"	100 $\mu\text{g}/\text{ft}^2$	250 $\mu\text{g}/\text{ft}^2$
13	Dust	Kindergarten Rm #25 floor below window #4	12" x 12"	< 10 $\mu\text{g}/\text{ft}^2$	40 $\mu\text{g}/\text{ft}^2$
14	Dust	Kindergarten Rm #25 floor at entry	12" x 12"	< 10 $\mu\text{g}/\text{ft}^2$	40 $\mu\text{g}/\text{ft}^2$
15	Dust	Kindergarten Rm #27 floor below window #3	12" x 12"	< 10 $\mu\text{g}/\text{ft}^2$	40 $\mu\text{g}/\text{ft}^2$
16	Dust	AIG Rm #33 window #5 sill		< 10 $\mu\text{g}/\text{ft}^2$	250 $\mu\text{g}/\text{ft}^2$
17	Dust	AIG Rm #33 floor below window #3	12" x 12"	< 10 $\mu\text{g}/\text{ft}^2$	40 $\mu\text{g}/\text{ft}^2$
18	Dust	EC Rm #29 window #1/2 sill	2" x 18"	272 $\mu\text{g}/\text{ft}^2$	250 $\mu\text{g}/\text{ft}^2$
19	Dust	EC Rm #29 floor below window #3	12" x 12"	< 10 $\mu\text{g}/\text{ft}^2$	40 $\mu\text{g}/\text{ft}^2$
20	Dust	Gym main hall entry door	12" x 12"	32 $\mu\text{g}/\text{ft}^2$	40 $\mu\text{g}/\text{ft}^2$
21	Soil	Composite Foundation Side C	N/A	22 ppm	400 ppm

The water sample result for lead is < 5 parts per billion (ppb) which is below the allowable limit of 15 ppb.

#### **RESULTS OF INVESTIGATION:**



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