



## XRF LEAD PAINT INSPECTION REPORT

<b>Address:</b>	362-13 <sup>TH</sup> ST
<b>Unit/Location:</b>	3 <sup>rd</sup> Floor
<b>Prepared For:</b>	Total Inspection Pros
<b>Client Contact:</b>	Matthew petiton mpetiton@gmail.com
<b>Information:</b>	516-993-9685
<b>Facility Type:</b>	Multiple Dwelling

<b>Date of inspection:</b>	09/04/2025
<b>Date of report:</b>	09/19/2025
<b>Inspector:</b>	Mumedul Islam Nabil
<b>EPA Certification #:</b>	LII-25-05-7784
<b>Instrument:</b>	Viken Pb 200i
<b>Instrument Serial #:</b>	3701
<b>Year of Construction:</b>	Unknown

### Inspection Unit



#### EXECUTIVE SUMMARY

This inspection found **no lead-based paint** at or above 0.5 mg/cm<sup>2</sup> on any components, qualifying the dwelling for exemption under 24 CFR Part 35 and 40 CFR Part 745. While low levels of lead may still be present, any disturbance of painted surfaces could create potential hazards, so this report should be retained by the inspector, current owner, and future owners for the life of the dwelling.



## INTRODUCTION

The primary objective of this lead-based paint inspection was to assess the presence of lead-based paint within the subject property in accordance with regulatory requirements. This report has been prepared in full compliance with **New York City Local Law 31 of 2019**, which mandates lead-based paint inspections in pre-1960 residential buildings, or those built between 1960 and 1978 where lead paint is known to be present and a child under six resides.

The inspection findings documented herein serve as a critical foundation for developing a comprehensive, legally compliant approach to managing any identified lead-based paint hazards. The report also assists property owners in meeting their obligations under both **Local Law 31** and **Local Law 1 of 2004**, which require proactive steps to protect residents—particularly young children—from the dangers of lead exposure.

By providing a detailed summary of inspection activities, testing methodology, and results, this report supports responsible property management, long-term compliance, and the ongoing health and safety of building occupants.

## METHODOLOGY

On the inspection date indicated above, a certified lead inspector and risk assessor from **Total Inspection Pros** conducted a comprehensive Lead-Based Paint (LBP) inspection at the referenced location to determine the presence or absence of lead-containing coatings.

The inspection was conducted using approved protocols established by the U.S. Department of Housing and Urban Development (HUD), as detailed in the *HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*. Representative painted surfaces of each component type were selected and tested in every room, ensuring that selections accurately reflected the materials present and their likelihood of prior paint applications. This selection process strictly followed HUD protocols and was further guided by the inspector's professional judgment and field assessment. Testing was performed utilizing a calibrated X-Ray Fluorescence (XRF) Spectrum Analyzer, with twelve (12) calibration readings taken to ensure the reliability and precision of the instrument.

### Testing Combinations

Each test was conducted based on a defined testing combination, which represents a unique pairing of room equivalent, component type, and substrate. This method allows for efficient yet comprehensive testing by assuming similar components with shared paint histories may be grouped (e.g., testing one baseboard per room). This approach ensures regulatory compliance while optimizing inspection coverage.

### Wall/Side Labeling Protocol

In multi-family dwellings, Wall A refers to the wall where the apartment entry door is located, with Walls B, C, and D designated in a clockwise direction from Wall A. In single-family homes, Wall A is identified as the wall facing the street, with the remaining walls labeled in the same clockwise manner.

In addition to lead detection, a visual assessment was conducted to evaluate the condition of any painted surfaces in accordance with **NYC Local Law 1 of 2004**. This regulation mandates annual inspections of residential units built prior to 1960 where children under the age of six reside, as well as inspections prior to tenant turnover. This ensures that any deteriorated paint conditions are promptly identified and addressed to protect occupant health and maintain legal compliance.

## VISUAL ASSESSMENT

In addition to XRF testing, a **visual assessment** was conducted to evaluate the condition of any identified lead-based paint in accordance with **NYC Local Law 1 of 2004**. This law mandates annual inspections of residential units built before 1960—when a child under six resides—and also requires inspections prior to tenant turnover, regardless of occupancy status.

A **lead-based paint hazard** is defined as any condition that causes exposure to lead from deteriorated lead-based paint or painted surfaces that are friction, impact, or chewable in nature—posing a risk of adverse health effects. If such hazards are identified, they must be remediated by a licensed **EPA-certified abatement contractor** in compliance with federal, state, and local regulations.

### Common Examples of Lead-Based Paint Hazards:

- **Peeling or flaking paint**
- **Deteriorated sub-surfaces**, such as crumbling plaster or damaged wood trim
- **Friction surfaces**, including windows and doors that rub or stick during operation
- **Impact surfaces**, such as baseboards, door frames, and moldings prone to repeated contact or collision
- **Chewable surfaces**, especially painted windowsills or areas accessible to young children

All findings from the visual assessment are included in the report to guide appropriate corrective action where needed.

## CLASSIFICATION OF RESULTS

XRF (X-ray fluorescence) results are classified as **POSITIVE** when lead concentrations are **greater than or equal to 0.5 mg/cm<sup>2</sup>**, and **NEGATIVE** when they are below this threshold. This classification aligns with the **Performance Characteristics Sheet (PCS)** issued by the **U.S. Environmental Protection Agency (EPA)** and reflects the official definition of lead-based paint used in this report. The XRF instrument used does not yield inconclusive results; all readings are definitive and fully reported.

## LOCAL LAW 66 - UPDATED LEAD PAINT STANDARD

**Local Law 66 of 2019** revised the definition of lead-based paint by lowering the regulatory threshold from **1.0 mg/cm<sup>2</sup>** to **0.5 mg/cm<sup>2</sup>**. This updated standard became **effective on December 1, 2021**, and must be used for all inspections and compliance activities conducted under New York City's lead safety laws.

## RESULTS

Numerous readings were collected during the inspection, including 12 calibration readings to verify the precision of the XRF instrument. **Every reading was well below the regulatory action level of 0.5 mg/cm<sup>2</sup>, conclusively confirming the absence of lead-based paint in accordance with all applicable standards.**

**Table 1** provides a complete sequential record of all readings obtained during the inspection. Based on these results, **no further action is required at this time.**

## DISCLAIMER

Under **Federal Law (24 CFR Part 35 and 40 CFR Part 745)**, a copy of this summary must be provided to all new tenants and prospective buyers **prior to signing a lease or sales agreement.** The **full inspection report must be made available to buyers** and provided upon request to all new tenants. In addition, landlords and property sellers are required to distribute an **EPA-approved educational pamphlet** and include the **federally mandated lead disclosure language** in all lease or sales contracts to ensure residents are fully informed about potential lead-based paint hazards. For further guidance, refer to **Section IV of Chapter 7** of the HUD Guidelines.

This report is intended solely for the use of the client and serves only as a **reference for identifying the presence and condition of lead-based paint (LBP)** on components tested at the time of inspection. The conclusions are based exclusively on **visual assessment and XRF testing** conducted during the site visit and do **not apply to untested areas** or areas that were inaccessible at the time of inspection.

**Total Inspection Pros** makes **no guarantees or warranties**—express or imply regarding compliance with federal, state, or local laws, rules, or regulations. While select excerpts from official HUD publications may be referenced in this report, we **assume no responsibility for their accuracy, completeness, or for any future revisions.** Liability on the part of Total Inspection Pros is strictly limited to the **cost of this inspection report**, and the company shall bear **no responsibility for consequential, compensatory, punitive, or special damages** arising from its findings or use.

### INSPECTION LIMITATIONS

The inspection was limited to **readily accessible areas** only. The following areas were deemed **inaccessible** at the time of inspection and were not evaluated:

- Walls or ceiling surfaces covered by drywall, paneling, or skim-coated plaster
- Locked rooms or storage areas
- Areas requiring destructive access (e.g., cutting or demolition)
- Components requiring access that could disturb **other environmental hazards**, such as suspected **asbestos-containing materials**, mold, or fungi
- Surfaces were located more than **nine feet above the floor** unless an **OSHA-compliant ladder** was provided.



## FLOOR PLAN DISCLAIMER

Floor plans included in this report are **not to scale** and are based solely on **visible and accessible portions** of the dwelling at the time of inspection. These diagrams are provided for general reference only and **must not be used for legal, architectural, or dimensional purposes.**

## GENERAL STATEMENT ON DATA VALIDITY

All findings, measurements, and evaluations in this report reflect conditions observed on the **date of the site visit**. Data are not intended to predict future conditions and may vary based on environmental changes or differing interpretations by other professionals.

## INDEPENDENT OPERATION

Total Inspection Pros is an **independent, third-party environmental inspection firm**. We are **not affiliated with any remediation contractors, laboratories, or product manufacturers**, thereby ensuring impartiality in our reporting.

For any questions, clarifications, or additional information, please contact our office directly at **718-300-0595**.

Sincerely,

**Total Inspection Pros**  
Certification: NAT-F285105-1



## Uninspected Structures and Components

During the **XRF Lead-Based Paint Inspection**, certain structures and components were **not tested**. The table below outlines each item along with the specific reason for its exclusion from testing.

Location	Structure	Component(s)	Side	Reason for Not Testing
Ceiling		Wall		Too high
Bath in B1		Wall	C	Had tiles
Bath in Hall		wall	B	Had tiles
Kitchen		Wall	A	Had tiles

## Statement of Acknowledgment

I, **Mumedul Islam Nabil**, acknowledge that the above list accurately reflects all components and surfaces that were **not tested** or determined to be **unpainted** during this XRF Lead-Based Paint Inspection. I hereby approve and confirm the exclusion of these items from the scope of testing in this report.

Signature:



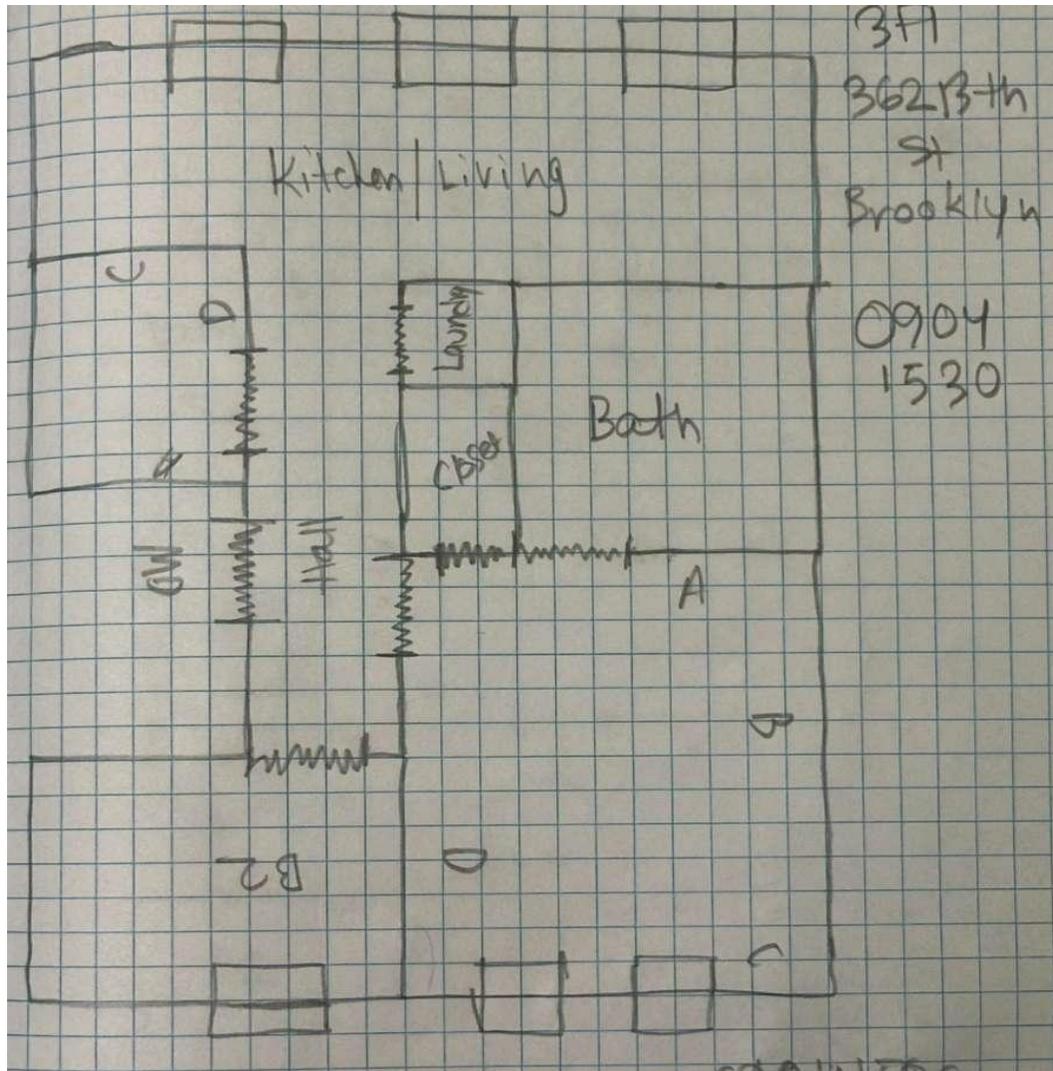
Name: Mumedul Islam Nabil

Date: 06/17/2025

# APPENDIX #2: INSPECTION SITE LAYOUT

*(ALL MEASUREMENTS ARE APPROXIMATE)*





# APPENDIX #1: EPA CERTIFICATIONS



# United States Environmental Protection Agency

This is to certify that



Total Inspection Pros

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint renovation, repair, and painting activities pursuant to 40 CFR Part 745.89

In the Jurisdiction of:

All EPA Administered States, Tribes, and Territories

This certification is valid from the date of issuance and expires February 20, 2030

NAT-F285105-1  
Certification #  
February 06, 2025  
Issued On



Marc Edmonds, Chief  
Risk Assessment Management Branch 2.

# Big Apple Occupational Safety Inc

505 Eighth Avenue, #2305, New York, NY 10018  
(212) 564-7656

This Is To Certify That

## Md Mumedal Islam Nabil

SS#: XXX-XX-XXXX  
71-12 35th Avenue 2 FL, Jackson Heights, NY, 11372

HAS SUCCESSFULLY COMPLETED THE ENVIRONMENTAL PROTECTION AGENCY APPROVED COURSE

### EPA-Lead Based Paint Inspector Initial

*THIS COURSE IS APPROVED FOR PURPOSES OF CERTIFICATION UNDER THE  
ENVIRONMENTAL PROTECTION AGENCY - 40 CFR PART 745.225*

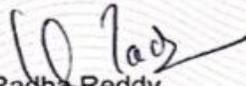
Course Date: 04/29/2025 - 05/01/2025

Course Completion Date: 05/01/2025

Expiration Date of Interim Certification: 11/01/2025

Certificate Number: LII-25-05-7784

Examination Grade: 92%

  
Radha Reddy  
Training Director

## **TABLE #1: XRF SEQUENTIAL DATA REPORT**

## Lead-Based Paint Report

Total Inspection Pros

INSPECTION SITE: 362 13th St

INSPECTION DATE: 9/4/2025 - 9/4/2025

INSTRUMENT TYPE: Viken Detection  
Pb200i XRF Lead Paint Analyzer  
3701

ACTION LEVEL: 1.0, 0.5 (mg/cm<sup>2</sup>)

Job ID: 09041530

STATEMENT: LEAD BASED PAINT INSPECTION

## Lead-Based Paint Report

Inspection Date: 9/4/2025 - 9/4/2025  
 Action Level: 1.0, 0.5 (mg/cm<sup>2</sup>)  
 Total Readings: 67  
 Unit Started: 09/04/2025 15:31:53  
 Unit Ended: 09/04/2025 15:51:30

Inspection Site: 362 13th St

Read #	Result	RTA Present	COMPONENTS	SUBSTRATE	SIDE CONDITION	COLOR	ROOM	FLOOR	OTHER Lead	Mode
									(mg/cm <sup>2</sup> )	
12175 (CAL)		Off							0.8 mg/cm <sup>2</sup>	Action Level (1.0)
12176 (CAL)		Off							0.9 mg/cm <sup>2</sup>	Action Level (1.0)
12177 (CAL)		Off							1.0 mg/cm <sup>2</sup>	Action Level (1.0)
12178 (CAL)		Off							0.0 mg/cm <sup>2</sup>	Action Level (1.0)
12179 (CAL)		Off							0.0 mg/cm <sup>2</sup>	Action Level (1.0)
12180 (CAL)		Off							0.0 mg/cm <sup>2</sup>	Action Level (1.0)
12181	Negative	Off	DOOR	METAL	INTACT		HALL	THIRD	0.1 mg/cm <sup>2</sup>	Action Level (0.5)
12182	Negative	Off	DOOR CASE	METAL	INTACT		HALL	THIRD	-0.1 mg/cm <sup>2</sup>	Action Level (0.5)
12183	Negative	Off	DOOR JAMB	METAL	INTACT		HALL	THIRD	-0.1 mg/cm <sup>2</sup>	Action Level (0.5)
12184	Negative	Off	DOOR	WOOD	INTACT		BATH	THIRD	0.1 mg/cm <sup>2</sup>	Action Level (0.5)
12185	Negative	Off	DOOR CASE	WOOD	INTACT		BATH	THIRD	-0.1 mg/cm <sup>2</sup>	Action Level (0.5)
12186	Negative	Off	DOOR JAMB	WOOD	INTACT		BATH	THIRD	-0.1 mg/cm <sup>2</sup>	Action Level (0.5)

Total Inspection Pros

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Inspection Site: 362 13th St

Read #	Result	RTA Present	COMPONENTS	SUBSTRATE	SIDE	CONDITION	COLOR	ROOM	FLOOR	OTHER	Lead (mg/cm <sup>2</sup> )	Mode
								TYPE				
12187	Negative	Off	WALL	DRYWALL	A	INTACT		BATH	THIRD		0.1 mg/cm <sup>2</sup>	Action Level (0.5)
12188	Negative	Off	WALL	DRYWALL	C	INTACT		BATH	THIRD		0.1 mg/cm <sup>2</sup>	Action Level (0.5)
12189	Negative	Off	WALL	DRYWALL	D	INTACT		BATH	THIRD		0.1 mg/cm <sup>2</sup>	Action Level (0.5)
12190	Negative	Off	DOOR	WOOD		INTACT		LAUNDRY	THIRD		0.1 mg/cm <sup>2</sup>	Action Level (0.5)
12191	Negative	Off	DOOR CASE	WOOD		INTACT		LAUNDRY	THIRD		0.0 mg/cm <sup>2</sup>	Action Level (0.5)
12192	Negative	Off	DOOR JAMB	WOOD		INTACT		LAUNDRY	THIRD		0.0 mg/cm <sup>2</sup>	Action Level (0.5)
12193	Negative	Off	DOOR	WOOD		INTACT		BED 2	THIRD		-0.1 mg/cm <sup>2</sup>	Action Level (0.5)
12194	Negative	Off	WINDOW SILL	WOOD		INTACT		BED 2	THIRD		0.0 mg/cm <sup>2</sup>	Action Level (0.5)
12195	Negative	Off	WINDOW CASE	WOOD		INTACT		BED 2	THIRD		0.0 mg/cm <sup>2</sup>	Action Level (0.5)
12196	Negative	Off	WINDOW JAMB	WOOD		INTACT		BED 2	THIRD		-0.1 mg/cm <sup>2</sup>	Action Level (0.5)
12197	Negative	Off	WALL	DRYWALL	A	INTACT		BED 2	THIRD		0.0 mg/cm <sup>2</sup>	Action Level (0.5)
12198	Negative	Off	WALL	DRYWALL	B	INTACT		BED 2	THIRD		0.1 mg/cm <sup>2</sup>	Action Level (0.5)

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Inspection Site: 362 13th St

Read #	Result	RTA Present	COMPONENTS	SUBSTRATE	SIDE	CONDITION	COLOR	ROOM	FLOOR	OTHER	Lead (mg/cm <sup>2</sup> )	Mode
								TYPE				
12199	Negative	Off	WALL	DRYWALL	C	INTACT		BED 2	THIRD		0.0 mg/cm <sup>2</sup>	Action Level (0.5)
12200	Negative	Off	WALL	DRYWALL	D	INTACT		BED 2	THIRD		0.0 mg/cm <sup>2</sup>	Action Level (0.5)
12201	Negative	Off	DOOR	WOOD		INTACT		BED 1	THIRD		0.0 mg/cm <sup>2</sup>	Action Level (0.5)
12202	Negative	Off	DOOR CASE	WOOD		INTACT		BED 1	THIRD		0.0 mg/cm <sup>2</sup>	Action Level (0.5)
12203	Negative	Off	DOOR JAMB	WOOD		INTACT		BED 1	THIRD		0.0 mg/cm <sup>2</sup>	Action Level (0.5)
12204	Negative	Off	WINDOW SILL	WOOD		INTACT		BED 1	THIRD		0.0 mg/cm <sup>2</sup>	Action Level (0.5)
12205	Negative	Off	WINDOW SILL	WOOD		INTACT		BED 1	THIRD		-0.2 mg/cm <sup>2</sup>	Action Level (0.5)
12206	Negative	Off	WINDOW CASE	WOOD		INTACT		BED 1	THIRD		0.0 mg/cm <sup>2</sup>	Action Level (0.5)
12207	Negative	Off	WINDOW CASE	WOOD		INTACT		BED 1	THIRD		-0.1 mg/cm <sup>2</sup>	Action Level (0.5)
12208	Negative	Off	WINDOW JAMB	WOOD		INTACT		BED 1	THIRD		0.0 mg/cm <sup>2</sup>	Action Level (0.5)
12209	Negative	Off	WINDOW JAMB	WOOD		INTACT		BED 1	THIRD		0.0 mg/cm <sup>2</sup>	Action Level (0.5)
12210	Negative	Off	WALL	DRYWALL	A	INTACT		BED 1	THIRD		0.0 mg/cm <sup>2</sup>	Action Level (0.5)

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Read #	Result	RTA Present	COMPONENTS	SUBSTRATE	SIDE	CONDITION	COLOR	ROOM	FLOOR	OTHER	Lead (mg/cm <sup>2</sup> )	Mode
								TYPE				
12211	Negative	Off	WALL	DRYWALL	B	INTACT		BED 1	THIRD		0.1 mg/cm <sup>2</sup>	Action Level (0.5)
12212	Negative	Off	WALL	DRYWALL	C	INTACT		BED 1	THIRD		0.0 mg/cm <sup>2</sup>	Action Level (0.5)
12213	Negative	Off	WALL	DRYWALL	D	INTACT		BED 1	THIRD		0.0 mg/cm <sup>2</sup>	Action Level (0.5)
12214	Negative	Off	DOOR	WOOD		INTACT		BED 1	THIRD	BATH	0.1 mg/cm <sup>2</sup>	Action Level (0.5)
12215	Negative	Off	DOOR CASE	WOOD		INTACT		BED 1	THIRD	BATH	-0.2 mg/cm <sup>2</sup>	Action Level (0.5)
12216	Negative	Off	DOOR JAMB	WOOD		INTACT		BED 1	THIRD	BATH	0.1 mg/cm <sup>2</sup>	Action Level (0.5)
12217	Negative	Off	WALL	DRYWALL	A	INTACT		BED 1	THIRD	BATH	0.2 mg/cm <sup>2</sup>	Action Level (0.5)
12218	Negative	Off	WALL	DRYWALL	B	INTACT		BED 1	THIRD	BATH	0.1 mg/cm <sup>2</sup>	Action Level (0.5)
12219	Negative	Off	WALL	DRYWALL	D	INTACT		BED 1	THIRD	BATH	0.1 mg/cm <sup>2</sup>	Action Level (0.5)
12220	Negative	Off	DOOR	WOOD		INTACT		BED 1	THIRD	CLOSET	0.1 mg/cm <sup>2</sup>	Action Level (0.5)
12221	Negative	Off	DOOR CASE	WOOD		INTACT		BED 1	THIRD	CLOSET	0.0 mg/cm <sup>2</sup>	Action Level (0.5)
12222	Negative	Off	DOOR JAMB	WOOD		INTACT		BED 1	THIRD	CLOSET	-0.1 mg/cm <sup>2</sup>	Action Level (0.5)

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Read #	Result	RTA Present	COMPONENTS	SUBSTRATE	SIDE	CONDITION	COLOR	ROOM	FLOOR	OTHER	Lead (mg/cm <sup>2</sup> )	Mode
12223	Negative	Off	SHELF	WOOD		INTACT		BED 1	THIRD	CLOSET	-0.1 mg/cm <sup>2</sup>	Action Level (0.5)
12224	Negative	Off	WALL	DRYWALL	B	INTACT		KITCHEN	THIRD		0.0 mg/cm <sup>2</sup>	Action Level (0.5)
12225	Negative	Off	WALL	DRYWALL	C	INTACT		KITCHEN	THIRD		0.2 mg/cm <sup>2</sup>	Action Level (0.5)
12226	Negative	Off	WALL	DRYWALL	D	INTACT		KITCHEN	THIRD		0.0 mg/cm <sup>2</sup>	Action Level (0.5)
12227	Negative	Off	WINDOW SILL	WOOD		INTACT		KITCHEN	THIRD		-0.1 mg/cm <sup>2</sup>	Action Level (0.5)
12228	Negative	Off	WINDOW SILL	WOOD		INTACT		KITCHEN	THIRD		-0.1 mg/cm <sup>2</sup>	Action Level (0.5)
12229	Negative	Off	WINDOW SILL	WOOD		INTACT		KITCHEN	THIRD		-0.2 mg/cm <sup>2</sup>	Action Level (0.5)
12230	Negative	Off	WINDOW JAMB	WOOD		INTACT		KITCHEN	THIRD		0.0 mg/cm <sup>2</sup>	Action Level (0.5)
12231	Negative	Off	WINDOW JAMB	WOOD		INTACT		KITCHEN	THIRD		0.0 mg/cm <sup>2</sup>	Action Level (0.5)
12232	Negative	Off	WINDOW JAMB	WOOD		INTACT		KITCHEN	THIRD		0.0 mg/cm <sup>2</sup>	Action Level (0.5)
12233	Negative	Off	WINDOW APRON	WOOD		INTACT		KITCHEN	THIRD		0.0 mg/cm <sup>2</sup>	Action Level (0.5)
12234	Negative	Off	WINDOW APRON	WOOD		INTACT		KITCHEN	THIRD		0.0 mg/cm <sup>2</sup>	Action Level (0.5)

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Read #	Result	RTA Present	COMPONENTS	SUBSTRATE	SIDE CONDITION	COLOR	ROOM	FLOOR	OTHER	Lead (mg/cm <sup>2</sup> )	Mode
12235	Negative	Off	WINDOW	WOOD	INTACT		KITCHEN	THIRD		-0.1 mg/cm <sup>2</sup>	Action Level (0.5)
12236 (CAL)		Off								1.0 mg/cm <sup>2</sup>	Action Level (1.0)
12237 (CAL)		Off								0.9 mg/cm <sup>2</sup>	Action Level (1.0)
12238 (CAL)		Off								1.0 mg/cm <sup>2</sup>	Action Level (1.0)
12239 (CAL)		Off								0.0 mg/cm <sup>2</sup>	Action Level (1.0)
12240 (CAL)		Off								0.0 mg/cm <sup>2</sup>	Action Level (1.0)
12241 (CAL)		Off								0.0 mg/cm <sup>2</sup>	Action Level (1.0)

----- END OF READINGS -----



## APPENDIX #3: PERFORMANCE CHARACTERISTICS SHEET



## Performance Characteristic Sheet

**EFFECTIVE DATE:** September 1, 2022

**MANUFACTURER AND MODEL:**

Make: **Viken Detection** (previously Heuresis)

Models: **Model Pb200i, Pb200e**

Source: **<sup>57</sup>Co, 5 mCi (nominal – new source)**

### FIELD OPERATION GUIDANCE

**ACTION LEVEL SETTING:**

0.5 mg/cm<sup>2</sup>

**OPERATING PARAMETERS:**

Action Level mode, fixed 5-second reading (nominal), software version Pb 200i-5.0-DEBUG or higher.

Action Level mode, variable-time reading (2-5 seconds nominal), software version Pb 200i-7.0.0 or higher.

**XRF CALIBRATION CHECK LIMITS:**

0.8 to 1.2 mg/cm<sup>2</sup> (inclusive) at Action Level setting = 1.0 mg/cm<sup>2</sup>

**SUBSTRATE CORRECTION:**

Not applicable

**INCONCLUSIVE RANGE OR THRESHOLD:**

ACTION LEVEL MODE READING DESCRIPTION	SUBSTRATE	INCONCLUSIVE RANGE (mg/cm <sup>2</sup> )
Results not corrected for substrate bias on any substrate	Brick	0.4 – 0.6
	Concrete	0.4 – 0.6
	Drywall	0.4 – 0.6
	Metal	0.4 – 0.6
	Plaster	0.4 – 0.6
	Wood	0.4 – 0.6

## BACKGROUND INFORMATION

### EVALUATION DATA SOURCE AND DATE:

This sheet is supplemental information to be used in conjunction with Chapter 7 of the HUD *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*, 2012 Edition ("HUD Guidelines"). Performance parameters shown on this sheet are calculated using test results on building components in the HUD archive. Testing was conducted on 146 test samples in January 2020 and January 2021, with four separate instruments running software version Pb200i 5.0 (DEBUG version) in Action Level test mode. The actual source strength of each instrument in 2020 was approximately 2.9 mCi; source ages were approximately 9 months. The 2021 sources were new with source strength 5 mCi.

### OPERATING PARAMETERS

Performance parameters shown in this sheet are applicable only when properly operating the instrument using the manufacturer's instructions and procedures described in Chapter 7 of the HUD Guidelines.

### XRF CALIBRATION CHECK:

The calibration of the XRF instrument should be checked with the Action Level set to 1.0 mg/cm<sup>2</sup> using the paint film nearest 1.0 mg/cm<sup>2</sup> in the NIST Standard Reference Material (SRM) used (e.g., for NIST SRM 2579, use the 1.02 mg/cm<sup>2</sup> film; for NIST SRM 2579a, use the 1.04 mg/cm<sup>2</sup> film).

If the average (rounded to 1 decimal place) of three readings is outside the acceptable calibration check range, follow the manufacturer's instructions to bring the instrument into control before XRF testing proceeds.

### EVALUATING THE QUALITY OF XRF TESTING:

Randomly select ten testing combinations for retesting from each house or from two randomly selected units in multifamily housing.

Conduct XRF re-testing at the ten testing combinations selected for retesting.

Determine if the XRF testing in the units or house passed or failed the test by applying the steps below. Compute the Retest Tolerance Limit by the following steps:

Determine XRF results for the original and retest XRF readings. In single-family and multi-family housing, a result is defined as a single reading. Therefore, there will be ten original and ten retest XRF results for each house or for the two selected units.

Calculate the average of the original XRF result and the retest XRF result for each testing combination.

Square the average for each testing combination.

Add the ten squared averages together. Call this quantity C.

Multiply the number C by 0.0072. Call this quantity D.

Add the number 0.032 to D. Call this quantity E.

Take the square root of E. Call this quantity F.

Multiply F by 1.645. The result is the Retest Tolerance Limit.

Compute the average of all ten original XRF readings.

Compute the average of all ten re-test XRF readings.

Find the absolute difference of the two averages.

If the difference is less than the Retest Tolerance Limit, the inspection has passed the retest. If the difference of the overall averages equals or exceeds the Retest Tolerance Limit, this procedure should be repeated with ten new testing combinations. If the difference of the overall averages is equal to or greater than the Retest Tolerance Limit a second time, then the inspection should be considered deficient.

Use of this procedure is estimated to produce a spurious result approximately 1% of the time. That is, results of this procedure will call for further examination when no examination is warranted in approximately 1 out of 100 dwelling units tested.

#### TESTING TIMES:

The nominal reading time recorded in Archive tests averaged 5.39 seconds in fixed time mode and 2.67 seconds in variable-time mode. Nominal reading time means the time the instrument's shutter is open when the <sup>57</sup>Co source is new. Actual reading time depends on the age of the source. Since <sup>57</sup>Co has a half-life of approximately 9 months, reading time doubles for every 9 months of source age.

#### CLASSIFICATION OF RESULTS:

XRF results are classified as **positive** if they are **greater than or equal** to 0.6 mg/cm<sup>2</sup>, **negative** if they are **less than or equal** to 0.4 mg/cm<sup>2</sup> and **inconclusive** if they are **equal** to 0.5 mg/cm<sup>2</sup>.

#### DOCUMENTATION:

This XRF Performance Characteristic Sheet (PCS) was developed by QuanTech, Inc., under a contract with the U.S. Department of Housing and Urban Development, Office of Lead Hazard Control and Healthy Homes.

A report titled *Methodology for XRF Performance Characteristic Sheets* (EPA 747-R-95-008) provides an explanation of the statistical methodology used to develop Performance Characteristic Sheets at the Federal standard (Action Level) of 1.0 mg/cm<sup>2</sup>, and provides empirical results from using the recommended inconclusive ranges or thresholds for specific XRF instruments. The report may be downloaded at <http://www2.epa.gov/lead/methodology-xrf-performance-characteristic-sheets-epa-747-r-95-008-september-1997>. The methodology was subsequently generalized by QuanTech for application to other Action Levels.

