Tioga
ENVIRONMENTAL
CONSULTANTS

August 2, 2022

Mary Haizlip
Haizlip Studio
2125 Central Avenue
Memphis, TN 38104

RE: Hazardous Material Survey Report
54 E. Military Road
Marion, Arkansas

Dear Ms. Haizlip,

At your request, Tioga Environmental Consultants, Inc. (Tioga) performed a survey of the above-referenced Property to identify the presence of hazardous materials. Specifically, a hazardous materials survey was performed to identify asbestos containing materials, lead-based paint, and miscellaneous hazardous materials that could be present on the Property. The purpose of this survey was to ensure that none of these materials would have an adverse environmental impact on the planned renovation of the existing facility.

On July 12th, 2022, Donald White, of Tioga Environmental Consultants, an EPA Lead-Based Paint Inspector, and Adam Smith and Caleb Gourley of Harbor Environmental, Inc, State of Arkansas Certified Asbestos Inspectors surveyed the Property. Their findings are contained in the attached report.

If you have any questions about our report or we may be of further service, please contact me at (901) 791-2432.

Sincerely,
TIOGA ENVIRONMENTAL CONSULTANTS, INC.

Joe Littlefield
Program Manager

Hazardous Materials Survey

54 E. Military Road

Marion, Arkansas

August 2022

Project No. 251310.00

Prepared For:

Haizlip Studio

2125 Central Avenue

Memphis, TN 38127

Prepared By:

Tioga
ENVIRONMENTAL CONSULTANTS
357 North Main St.
Memphis, Tennessee 38103

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APPENDICES

1.0 PROJECT SUMMARY

Haizlip Studio requested Tioga Environmental Consultants, Inc. (Tioga) prepare a survey to identify Hazardous Materials present at the Marion School Auditorium structure addressed as 54 E. Military Road, Marion, Arkansas 72364.

The survey was performed on July 12th, 2022, by Donald White, a Lead-Based Paint Inspector of Tioga Environmental, and Adam Smith and Caleb Gourley of Harbor Environmental, Inc., State of Arkansas Certified Asbestos Inspectors.

1.1 Facility Description

The Marion School Auditorium, located at 54 E. Military Road, is a single-story brick and concrete constructed building with a conventional flat Built-Up Roof (BUR) and concrete foundation. The building consists of multiple classrooms, restrooms, shower rooms, a large gymnasium and stage area with built-in stationary bleachers, and a boiler room with storage attached. At the time of this survey, the Property was not in use.

1.2 Scope of Services

Per the authorization of the Haizlip Studio, Tioga and Harbor conducted a survey of the Marion School Auditorium at 54 E. Military Road in accordance with the following scope of work:

Asbestos Survey

- The Property was visually surveyed and samples of suspect asbestos containing materials (ACM) were collected by State of Arkansas Certified Asbestos Inspectors.
- Samples were collected from each homogenous area. These samples were delivered to a NVLAP certified laboratory for analysis by polarized light microscopy (PLM).
- Field sketches were used to mark sample locations and the extent of ACM and were transferred to digital building floor plans.

Lead-based Paint Inspection and Hazardous Materials Inventory

- Representative and accessible painted or coated surfaces were tested for lead content by Tioga's lead-based paint inspector using a Viken Pb200i Lead Paint X-ray Fluorescence Analyzer (XRF).
- An inventory of hazardous building materials was performed at the Property.

Reporting

- Tioga has prepared a Hazardous Materials Survey Report containing site observations, chain-of-custody, sample results including types and locations of hazardous materials, a photographic log, and building floor plans noting sample locations, as well as locations of asbestos and lead-based paint.

1.3 Significant Assumptions

No significant assumptions were made during the performance of this survey.

1.4 Deviations

No deviations from the agreed upon scope of services occurred during the performance of this survey.

1.5 Inaccessible Areas

No inaccessible areas were observed during this survey.

1.6 Limitations and Exceptions of Survey

The scope of this survey was limited to accessible materials only.

This survey report is not intended as a Hazardous Materials abatement specification document. Contractors or consultants should independently verify the location, condition and/or estimated quantities of asbestos containing materials, lead-based paint, and other Hazardous Materials as a component of their preparation of remediation bid documents.

2.0 ASBESTOS

The asbestos inspection was performed on July 12th, by Adam Smith and Caleb Gourley of Harbor Environmental, Inc., State of Arkansas Certified Asbestos Inspectors (Certification Numbers 015579 and 018257 respectively). A copy of these certifications is included in Appendix 1.

Additionally, Harbor Environmental, Inc. is a State of Arkansas certified Asbestos Abatement Consultant, License Number 000477. A copy of this certification is also included in Appendix 1.

This survey was requested by Haizlip Studio, for the purpose of having a comprehensive document that identifies and documents the presence of any asbestos-containing materials (ACM) in the Marion School Auditorium at 54 E. Military Road. Additionally, completing this comprehensive survey provides necessary documentation ensuring compliance with the U.S. Environmental Protection Agency (EPA), Arkansas Department of Environmental Quality (ADEQ), and Occupational Safety and Health Administration (OSHA) regulations. It is also essential information when considering any renovation activities in areas with identified ACM to ensure compliance with National Emission Standards for Hazardous Air Pollutants (NESHAP) and OSHA regulations.

During the inspection, the inspectors collected 36 individual samples from 17 different homogeneous areas and received a result for each individual material sampled. This report documents the findings of this comprehensive asbestos survey. The details regarding this survey and a list of sampled materials are contained in Section 2.3 of this Report. There were ACM identified, and the following summary in Table 1 provides an overview of the findings.

Table 1

54 E. Military Road Marion, AR CONFIRMED ASBESTOS CONTAINING MATERIALS			
Sample Number	**Material**	**Estimated Quantity**	**Location/Condition**
M-02	Gray Roof Mastic	<1,000 Sq. Ft.	Roof / Good
M-04	Black Roof Mastic		Roof / Good
M-05	Black Roof Mastic		Roof / Good
PW-01	1” TSI Pipe Insulation	500 Ln. Ft.*	Restroom 3 / Fair
PW-02	1” TSI Pipe Insulation		Shower 2 / Fair
PW-03	2” TSI Pipe Elbow		Shower 2 / Fair
PW-04	2” TSI Pipe Insulation		Shower 2 / Fair
PW-05	2” TSI Pipe Insulation		Restroom 1 / Fair
PW-06	2” TSI Pipe Insulation	500 Ln. Ft.*	Restroom 1 / Fair
PW-07	4” TSI Pipe Insulation		Gymnasium / Fair
PW-08	4” TSI Pipe Insulation		Gymnasium / Fair
PW-09	4” TSI Pipe Elbow		Gymnasium / Fair
PW-10	2” TSI Pipe Insulation		Gymnasium / Fair

54 E. Military Road Marion, AR CONFIRMED ASBESTOS CONTAINING MATERIALS			
Sample Number	**Material**	**Estimated Quantity**	**Location/Condition**
PW-11	2” TSI Pipe Insulation		Gymnasium / Fair
PW-12	4” TSI Pipe Insulation		Gymnasium / Fair
PW-13	4” TSI Pipe Insulation		Gymnasium / Fair
PW-14	4” TSI Pipe Insulation		Gymnasium / Fair
M-06	Chalk Board Mastic	75 Sq. Ft.	Classrooms 1 & 3 / Good
M-07	Chalk Board Mastic		Classrooms 1 & 3 / Good

*Quantity of Thermal System Insulation (TSI) is cumulative of all TSI found and not broken down by diameter of TSI pipe.

2.1 Visual Observations

Harbor personnel conducted an examination of the building located at 54 E. Military Road to identify suspect ACM. Observations included the type, condition, location, and estimated quantity of any suspect ACM.

Additionally, all suspect materials were evaluated for condition and friability, the ease with which the materials can be crushed with hand pressure. Asbestos materials determined to be friable, or that could be rendered friable during renovation activities are considered Regulated Asbestos Containing Materials (RACM) that must be removed prior to disturbance during renovations.

2.2 Asbestos Sampling

Asbestos has been a widely used component of building materials throughout history due to its unique physical properties: poor heat and electrical conductor, fire resistance, and high tensile strength and low cost. Unfortunately, asbestos also poses potentially serious health concerns for people exposed to the material. Knowing where and how much ACM is in a building allows for proper managing of site activities and providing appropriate protection for building occupants and workers involved in maintenance, renovation, or demolition of asbestos containing materials.

This survey was conducted in general conformance with Asbestos Hazard Emergency Response Act (AHERA) and ASTM Standard E2356-18. It included a walkthrough of all accessible areas to identify suspect asbestos-containing materials, quantification of material amounts, collection of samples from each homogenous area, and assessment per functional space.

For this building, homogeneous areas of suspect Asbestos Containing Materials (ACM) were defined for each material type sampled. A total of 17 homogeneous areas were identified and sampled. In each homogeneous area, Harbor identified, differentiated and sampled suspect materials based on color (i.e., color of tile), texture, and apparent application date. For samples with multiple layers (i.e., floor tile and mastic, thermal

system insulations, sheetrock w/ joint compound, etc.), the laboratory assigns unique sample numbers designated with an A, B, C, and D to identify each layer.

Having identified the homogeneous areas, samples were collected from each for laboratory analysis. Photographs of each material sampled are included in the Photographic Log in Appendix 2.

2.3 Asbestos Findings

Samples were transported via FedEx to Eurofins CEI, an NVLAP certified laboratory, for PLM analysis on July 12th, 2022. Results were received on July 13th, 2022. Materials identified containing greater than one percent (1%) asbestos are considered asbestos containing. A copy of the laboratory report is included in Appendix 4.

The laboratory analysis for samples collected as part of this survey found nine (9) building materials samples containing greater than one percent (1%) asbestos. Table 2 summarizes the homogenous areas and materials sampled during this inspection as well as the results of the analysis.

Table 2

54 E. Military Road Marion, AR ASBESTOS SAMPLE LOG SUMMARY		
Material	**Homogeneous Area Number**	**Results**
Roofing Core	RC-01	None Detected
	RC-02	None Detected
	RC-03	None Detected
Black Roof Mastic	M-01	None Detected
	M-04	Layer 1: Chrysotile 2% Layer 2: Chrysotile 15%
	M-05	Layer 1: Chrysotile 2% Layer 2: Chrysotile 10%
Gray Roof Mastic	M-02	Chrysotile 15%
White Roof Mastic	M-03	None Detected
Cap Stone Mortar	MT-01	None Detected
Brick Mortar	BM-01	None Detected
	BM-02	None Detected
Ceiling Plaster with Texture	P-01	None Detected
	P-03	None Detected
	P-05	None Detected
Wall Plaster	P-02	None Detected
	P-04	None Detected
Yellow Ceiling Tile	CT-01	None Detected
1" TSI Pipe Insulation	PW-01	Layer 1: Chrysotile 3% Layer 2: Chrysotile 60%
	PW-02	Layer 1: Chrysotile 3% Layer 2: Chrysotile 60%
2" TSI Pipe Elbow	PW-03	Layer 1: Chrysotile 45% Layer 2: Chrysotile 3%

54 E. Military Road Marion, AR ASBESTOS SAMPLE LOG SUMMARY		
Material	**Homogeneous Area Number**	**Results**
2" TSI Pipe Insulation	PW-04	Layer 1: Chrysotile 45% Layer 2: Chrysotile 3% Layer 3: Chrysotile 5%
	PW-05	Layer 1: Chrysotile 45% Layer 2: Chrysotile 3%
	PW-06	Layer 1: Chrysotile 15% Layer 2: None Detected Layer 3: Chrysotile 5%
	PW-07	Layer 1: Chrysotile 45% Layer 2: Chrysotile 3%
	PW-11	Chrysotile 60%
4" TSI Pipe Elbow	PW-09	Chrysotile 60%
4" TSI Pipe Insulation	PW-08	Chrysotile 60%
	PW-12	Chrysotile 60%
	PW-13	Chrysotile 60%
3" Pipe Insulation	PW-10	Chrysotile 60%
	PW-14	Chrysotile 60%
Acoustic Ceiling Tile	AC-01	None Detected
	AC-02	None Detected
	AC-03	None Detected
Chalkboard Mastic	M-06	Chrysotile 3%
	M-07	Layer 1: None Detected Layer 2: Chrysotile 3%

Building floor plans in Appendix 3 show the sample locations at the Property.

There are three major categories used to classify asbestos-containing materials (ACM) found in buildings: Surfacing Materials, Thermal System Insulation (TSI), and Miscellaneous Materials. Materials in these broad categories are further classified as either friable or non-friable. Friable materials are materials that can be reduced to powder from hand pressure and may become an inhalation hazard. Non-friable asbestos materials are classified as either Category I or Category II Material.

Category I material is defined as asbestos-containing resilient floor covering, asphalt roofing products, packings and gaskets. Asbestos-containing mastic is also considered a Category I material (EPA determination – April 9, 1991). Category II material is defined as all remaining types of non-friable ACM not included in Category I that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable asbestos-cement products such as transite are an example of Category II material.

Table 3 below identifies homogenous areas within the Property that are positive for asbestos along with the category and location of each. The summary and recommendations related to these ACM Findings are included in Section 5.1.

Table 3

54 E. Military Road Marion, AR CONFIRMED ASBESTOS CONTAINING MATERIALS					
Sample Number	**Material**	**Estimated Quantity**	**Category Friable**	**Location/Condition**	**Figure**
M-02	Gray Roof Mastic	<1000 Sq. Ft.	Category I Non-Friable	Roof / Good	2
M-04	Black Roof Mastic		Category I Non-Friable	Roof / Good	2
M-05	Black Roof Mastic		Category I Non-Friable	Roof / Good	2
PW-01	1” TSI Pipe Insulation	500 Sq. Ft.*	RACM Friable	Restroom 3 / Fair	1
PW-02	1” TSI Pipe Insulation		RACM Friable	Shower 2 / Fair	1
PW-03	2” TSI Pipe Elbow		RACM Friable	Shower 2 / Fair	1
PW-04	2” TSI Pipe Insulation		RACM Friable	Shower 2 / Fair	1
PW-05	2” TSI Pipe Insulation	500 Sq. Ft.*	RACM Friable	Restroom 1 / Fair	1
PW-06	2” TSI Pipe Insulation		RACM Friable	Restroom 1 / Fair	1
PW-07	4” TSI Pipe Insulation		RACM Friable	Gymnasium / Fair	1
PW-08	4” TSI Pipe Insulation		RACM Friable	Gymnasium / Fair	1
PW-09	4” TSI Pipe Elbow		RACM Friable	Gymnasium / Fair	1
PW-10	2” TSI Pipe Insulation		RACM Friable	Gymnasium / Fair	1
PW-11	2” TSI Pipe Insulation		RACM Friable	Gymnasium / Fair	1
PW-12	4” TSI Pipe Insulation		RACM Friable	Gymnasium / Fair	1
PW-13	4” TSI Pipe Insulation		RACM Friable	Gymnasium / Fair	1
PW-14	4” TSI Pipe Insulation		RACM Friable	Gymnasium / Fair	1
M-06	Chalk Board Mastic	75 Sq. Ft.	Category I Non-Friable	Classrooms1, 2, 3/ Good	1
M-07	Chalk Board Mastic		Category I Non-Friable	Classrooms1, 2, 3/ Good	1

*Quantity of TSI is cumulative of all TSI found and not broken down by diameter of TSI pipe.

3.0 LEAD-BASED PAINT

The lead-based paint inspection was performed on July 12th, 2022, by Donald White of Tioga Environmental Consultants, Inc. Mr. White is an EPA trained lead-based paint inspector and is certified as State of Tennessee Lead-Based Paint Inspector, Certification Number TNLBP2022-3494-7854I. A copy of this certification is included in Appendix 1. The Arkansas State Board of Health Rules Pertaining To Lead-Based Paint Activities does not require an individual to be certified unless the property is considered target housing or a child occupied facility.

The inspection was performed using a Viken Model Pb200i X-Ray Fluorescence (XRF) spectrum analyzer instrument, serial number 2815. Donald White has attended the manufacturer's radiation safety course for operation and handling of the instrument and completed an EPA sponsored curriculum in Lead Inspector and Risk Assessment Training. A copy of Viken's equipment Performance Characteristic Sheets is included in Appendix 5.

Additionally, Tioga Environmental Consultants, Inc. is a State of Tennessee certified Lead-Based Paint Activity firm, Certification No. FTN-2009-1987-7820R. A copy of this certification is included in Appendix 1.

3.1 Visual Observations

Painted surfaces were visually examined prior to testing and their condition was noted. Tioga's evaluation of the painted surfaces condition, intact or deteriorated, was based on observations at the time of the inspection. Tioga is not responsible for changing conditions that may alter the relative exposure risk for future changes at the Property.

3.2 Lead-based Paint Sampling

The purpose of this testing was to serve as a baseline investigation by determining the concentration of lead, if any, in all painted surfaces within the Marion School Auditorium at 54 E. Military Road. It is also intended to comply with the US EPA and State of Arkansas regulations regarding identification of lead-based paint (LBP), and Occupational Safety and Health Administration (OSHA) regulations pertaining to worker protections from lead exposure.

3.3 Lead-based Paint Findings

The State of Arkansas defines lead-based paint (LBP) as paint or other surface coatings that contain lead equal to or greater than 1.0 mg/cm^2 or 0.5% by weight. In total, fifty (50) painted or coated surfaces were tested via XRF assay at the property. Nineteen (19) of those surfaces tested positive for lead-based paint at the property and were in a deteriorated condition. Table 4 summarizes the surfaces found to contain lead-based paint. Actual XRF data detailing all results is included in Appendix 6.

Table 4

54 E. Military Road Marion, AR CONFIRMED LEAD-BASED PAINT COATED SURFACES								
Reading Number	**Lead Concentration (mg/cm^2)**	**Room**	**Feature**	**Component**	**Substrate**	**Color**	**Side**	**Condition**
8170	6.5	Exterior	Door	Jamb	Wood	Brown	B	Deteriorated
8173	12.6	Exterior	Door	Casing	Wood	White	D	Deteriorated
8177	3.8	Stage	Wall		Brick	White	A	Intact
8178	3.6	Stage	Wall		Brick	White	B	Intact
8179	3.5	Stage	Wall		Brick	Burgundy	C	Deteriorated
8184	12.1	Restroom 2	Ceiling		Plaster	White		Deteriorated
8189	3.5	Restroom 2	Wall		Brick	Burgundy	D	Deteriorated
8190	2.5	Restroom 1	Wall		Plaster	White	D	Deteriorated
8193	3.1	Restroom 1	Ceiling		Plaster	White		Deteriorated
8194	1.3	Restroom 1	Radiator		Metal	Silver		Deteriorated
8195	7.1	Shop	Wall		Brick	White	B	Deteriorated
8196	6.8	Shop	Wall		Brick	Yellow	B	Deteriorated
8201	3.7	Gym	Wall		Brick	Burgundy	C	Deteriorated
8206	3.3	Class 3	Wall		Plaster	White	A	Deteriorated
8207	3.6	Class 3	Wall		Plaster	Yellow	A	Deteriorated
8211	4.2	Snack	Wall		Plaster	White	A	Deteriorated
8213	4.8	Class 4	Wall		Brick	Yellow	B	Deteriorated
8214	1.6	Bleacher Hall D	Wall		Brick	White	D	Deteriorated
8215	2	Bleacher Hall D	Ceiling		Plaster	White	D	Deteriorated

Appendix 3 contains building floor plans with locations of positive lead-based paint or coated surfaces. Additionally, the floor plan shows names given to rooms sampled during the lead-based paint survey. These names are used during the inspection to differentiate rooms and are included on the XRF data spreadsheet. The walls of the facility are referred to as “A” through “D” as follows: West wall “A”, North “B”, East wall “C”, and South wall “D”.

4.0 HAZARDOUS MATERIALS

A survey of hazardous materials present at the Property was conducted to identify materials which may have special handling and disposal requirements during the renovation of the building if they are to be removed.

On July 12th, 2022, Tioga inspector Donald White conducted a visual assessment of the Property for the presence of hazardous materials.

4.1 Visual Observations

The building was visually assessed for the presence of hazardous materials. Tioga was granted access to all areas of the subject Property for this survey.

4.2 Hazardous Material Findings

Mercury

Six (6) mercury containing fluorescent light bulbs were observed in a storage area and not in the light fixtures.

Prior to demolition activity impacting these mercury-containing lamps, they should be removed and disposed of as universal hazardous waste as per state and federal regulations.

PCBs

Electrical ballasts for fluorescent lights have the potential to contain hazardous polychlorinated biphenyls (PCBs). No electrical ballasts were observed in the majority of the survey area, instead the inspector found labels stating the light fixtures have been modified to use LED lamps only.

Fluorescent light fixtures were observed in the gym and were located at too great of a height to be inspected. These uninspected ballasts could potentially contain PCB's. If the renovation contractor identifies ballasts without "Non-PCB" labelling during renovation activities they must be disposed of as hazardous waste in accordance with state and federal regulations.

Refrigerants

Two (2) water fountains, and three (3) stand-alone refrigerators were found at the property. These systems may contain refrigerants.

Prior to demolition or removal, any units containing refrigerant that are to be dismantled must have the refrigerant captured and recovered for recycling by an EPA-certified technician prior to disposal. If the units can be removed intact and sent for disposal, it is the responsibility of the final disposal facility to ensure that refrigerant has been recovered in accordance with the EPA evacuation requirements for small appliances.

Batteries

Four (4) powered exit signs were observed at the property. Exit signs of this type likely contain heavy metal containing back up batteries which will need to be disposed of properly if they will be removed as a component of the demolition.

Lead Pipe Flashing

Roof pipe-penetrations were observed to have lead pipe-flashing boots. Lead is a toxic hazardous waste that must be managed and disposed of in accordance with Resource Conservation and Recovery Act (RCRA). These lead materials should be removed or handled using proper personal protective equipment or have a properly equipped contractor do so. Lead waste must be disposed of as hazardous waste at a disposal facility that accepts lead waste.

Chemicals

Numerous miscellaneous chemicals were found in the areas surveyed. Chemicals observed included fire suppression chemicals in fire extinguishers, paints, paint additives, and other cleaning chemicals. These materials should be profiled to determine the proper disposal method and determine if they are considered a hazardous waste, special waste, or whether they can be recycled.

Fire Resistant File Cabinets

Five (5) fire-resistant file cabinets were observed on site and have the potential to contain asbestos or other hazardous materials. If these cabinets are to be disposed of during the renovation, we recommend that these materials be wrapped and removed from the buildings by a licensed asbestos abatement contractor and disposed of as asbestos containing material.

Antique Intercom System

A large stand-alone intercom system was observed on site. This machine contains vacuum tubes and other older electrical components within. Vacuum tubes have the potential to contain leaded glass and or mercury and therefore should be considered as a hazardous waste and disposed of properly, recycled, or donated to antique collectors. The remaining electronic components also have the potential to be assembled using lead solder and should also be considered hazardous waste and disposed of in accordance with state and federal regulations.

Table 6 below outlines the hazardous materials identified and the approximate quantities on the property.

Table 6

54 E. Military Road Marion, AR Hazardous Material Survey Findings	
Item	**Quantity**
Mercury-containing Fluorescent Bulbs	6
Ballasts (possible PCBs if “Non-PCB” labeling is not present)	None Identified but Potential Exists, Examine Fixtures During Renovation
Refrigerants in Appliances	5
Exit Signs with Batteries	4
Lead Flashing	Numerous
Chemicals	Numerous

54 E. Military Road Marion, AR Hazardous Material Survey Findings	
Item	**Quantity**
Fire Extinguishers	4
Fire Resistant File Cabinets	5
Antique Intercom	1

The summary and recommendations related to hazardous materials are included in Section 5.3.

5.0 SUMMARY AND RECOMMENDATIONS

5.1 Asbestos

All materials identified as asbestos containing should be maintained in good condition to avoid potential fiber release due to disturbance. In the event of renovation activities impacting these materials, the State of Arkansas and NESHAP require that all friable ACM and non-friable ACM that could become friable during renovation activities must be removed by a certified Asbestos Abatement Contractor prior to disturbance.

In all instances, non-certified personnel should not disturb or attempt removal of any of the asbestos-containing materials identified in this survey. OSHA regulation 29 CFR 1926.1101 requires that a qualified, certified Asbestos Abatement Contractor must be retained to perform abatement of ACM prior to renovation activities at the Property. At no time are non-certified personnel allowed to disturb or remove ACM.

It is recommended that any Asbestos Abatement Contractor retained to perform abatement activities at the facility should be required to maintain proper engineering control measures prior to and during the disturbance of all ACM to ensure protection of human health and safety for personnel involved with this project. These control measures are also required for the protection of the surrounding environment by preventing the possibility of contamination outside of the abatement areas. Appropriate area air and/or personnel monitoring during the removal of these materials must be conducted as per federal, state, and local regulations.

The following recommendations are based on the findings as identified in Section 2.3 and are in general conformance with the State of Arkansas Regulation 21, EPA, NESHAP and OSHA requirements:

- TSI pipe run and elbow material are friable ACM. The pipe run and elbow material should be removed by a licensed abatement contractor before renovation using proper abatement methods and disposed of as asbestos containing waste at a landfill that accepts asbestos. Asbestos waste manifests should be kept for records.
- Asbestos containing mastic was identified behind chalk and cork boards and could also be found in glue dots behind these boards. This mastic isa non-friable Category I material. If these boards are to be removed as or disturbed as a component of this renovation, they should be removed by a licensed abatement contractor using proper abatement methods and disposed of as asbestos containing waste at a landfill that accepts asbestos. Asbestos waste manifests should be kept for records.
- Roof Flashing/Mastic is a non-friable Category I Material. If this material will be disturbed by renovations it should be removed by a licensed asbestos abatement contractor and asbestos waste manifests should be kept for records.
- If suspect materials are identified behind walls, beneath floor tile or in any other accessible or inaccessible areas during demolition, additional testing should be performed to verify that these materials do not contain asbestos.

5.2 Lead-based Paint

The lead-based paint inspection identified nineteen (19) lead-based paint coated surfaces at the time of this inspection. Similar paint in other rooms and on other substrates should also be considered lead-based paint based upon the widespread number of samples that tested positive. The lead-based paint coated surfaces were nearly all in a deteriorated condition.

Lead-based paint, to include solid material coated wholly or partly with lead-based paint resulting from a renovation may be disposed of as C&D waste at an Arkansas landfill facility that accepts lead-based paint waste under a facility specific hazardous waste exclusion plan. Some landfill facilities may require lead-based paint waste to be profiled by TCLP for lead content prior to disposal.

Additionally, if lead-based paint has been scraped, sanded, or chipped off, the debris must be profiled be TCLP to determine lead content and leaching characteristics before being disposed of as hazardous waste.

The following recommendations are based on the findings as identified in Section 3.3.

- Lead-based paint was found on the exterior and interior components in a deteriorated condition. It is recommended that these components be either scraped clean of lead-based paint or encapsulated by a contractor licensed to perform lead-based paint activities prior to the renovation to ensure that deteriorated paint will not chip or flake off during renovation activities.
- If building components coated with lead-based paint are to be removed, the landfill selected for disposal should be contacted as they may need to be profiled to determine lead content prior to disposal.
- If the lead-based paint has been sanded or chipped off, a determination should be made for hazardous lead concentrations. Lead-based paint dust and chips should be handled properly prior to disposal to avoid health risks to the public.
- Because lead is present, standard wetting operations, as required by EPA NESHAP and other engineering and work practice controls as required by 29 CFR 1926.62(e), Methods of Compliance, shall be used to control fugitive dust emission and employee exposure.
- Because lead is present, during renovation activities of lead-containing materials at this facility, employee exposure monitoring should be conducted per OSHA Lead Construction Standards (29 CFR 1926.62).

The OSHA Lead in Construction regulation contained in 29 CFR 1926.62 makes no distinction regarding source or content (%) of lead, only exposure potentials. As such, any substance with a measurable concentration of lead may be subject to the provisions of 29 CFR 1926.62 regardless of source, including such materials as ceramics, masonry, paints, flashings, and extruded metal products, etc.

5.3 Hazardous Materials

The hazardous materials survey of 54 E. Military Road identified hazardous materials that may need to be removed from the property prior to the renovation or may require special handling if they are sent for disposal.

- Mercury-Containing Bulbs must be properly recycled or disposed of as universal waste.
- If PCB containing ballasts are identified in the gym during demolition activities, they must be disposed of as hazardous waste.
- Refrigerants contained in small appliances may be recovered at the final disposal facility.
- Exit Signs containing batteries must be disposed of as universal waste.
- Lead materials, such as lead pipe flashing, should be removed or handled using proper personal protective equipment or have a properly equipped contractor do so. Lead waste must be recycled or disposed of at a hazardous waste disposal site.
- Chemicals must be profiled for disposal as hazardous waste, special waste, or recycling. Miscellaneous Flammables and Combustible must be profiled for disposal as hazardous waste, special waste, or recycling.
- Fire extinguishers that are critical to the existing building's fire safety program should be delivered to the building facilities manager. Empty fire extinguishers can be recycled. Fully or partially charged fire extinguishers, can either be sent to a local fire department that accepts fire extinguishers, or be disposed of as hazardous waste at a hazardous waste disposal facility.
- Fire resistant file cabinets have the potential to contain asbestos or other hazardous materials within and therefore must be wrapped and removed from the buildings by a licensed asbestos abatement contractor and disposed of as asbestos containing material.
- The intercom system contains vacuum tubes and other older electrical components that have the potential to contain leaded glass and or mercury and assembled using lead solder and should be considered hazardous waste and disposed of in accordance with state and federal regulations.

Tioga recommends the proper documentation of the recovery and/or disposal of all hazardous materials. The documentation of this recovery and/or disposal must be kept for a minimum of three years.

Appendix 1
Certifications and Licenses

Arkansas Department of Environmental Quality

CALEB GOURLEY

having satisfied the requirements necessary to meet the provisions of AHERA/ASHARA under TSCA Title II and the Arkansas Pollution Control and Ecology Commission's Regulation 21 and is hereby certified in the State of Arkansas in the discipline(s) of Asbestos

Discipline	Issue Date	Effective Date	Expiration Date
Inspector	05/12/2022	06/14/2022	05/31/2023

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY

Certification Number: **018257**

Becky W. Keogh
ADEQ Director

Arkansas Department of Environmental Quality

ADAM SMITH

having satisfied the requirements necessary to meet the provisions of AHERA/ASHARA under TSCA Title II and the Arkansas Pollution Control and Ecology Commission's Regulation 21 and is hereby certified in the State of Arkansas in the discipline(s) of Asbestos

Discipline	Issue Date	Effective Date	Expiration Date
Inspector	08/04/2021	08/10/2021	08/31/2022

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY

Certification Number: **015579**

Becky W. Keogh
ADEQ Director

Arkansas Department of Environmental Quality

HARBOR ENVIRONMENTAL, INC.

is a licensed

Asbestos Abatement Consultant

having qualified as required by law in accordance with the regulations adopted by the Arkansas Pollution Control and Ecology Commission's Regulation 21 pursuant to Arkansas Code Annotated §20-27-1001 et seq., relative to abatement of asbestos -containing material within the state of Arkansas.

License Number: 000477
Issue Date: 03/26/2022
Expire Date: 03/26/2023

Becky W. Keogh
ADEQ Director

Appendix 2
Photographic Log

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 1	**Date:** 07/12/2022

Description:

General View

“A” Side Exterior

Photo # 2	**Date:** 07/12/2022

Description:

General View

“B” Side Exterior

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 3	**Date:** 07/12/2022

Description:

General View

“C” Side Exterior

Photo # 4	**Date:** 07/12/2022

Description:

General View

“D” Side Exterior

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 5	**Date:** 07/12/2022

Description:

General View

Gymnasium

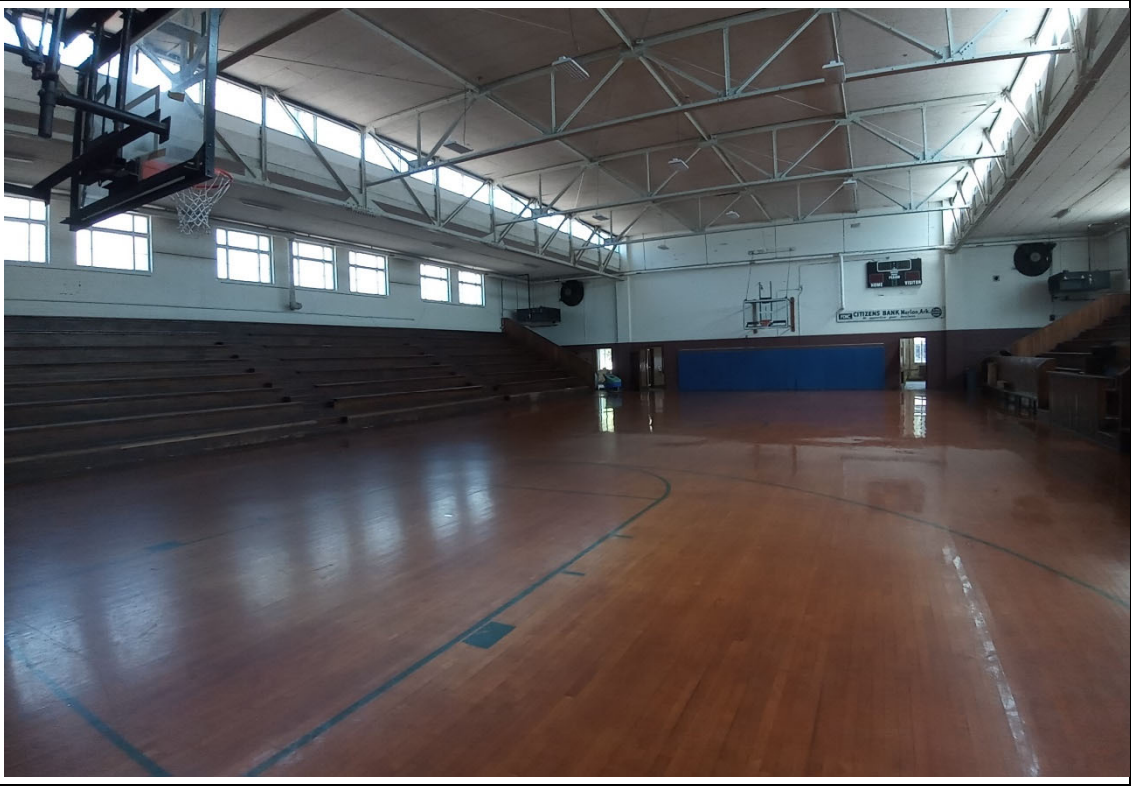


Photo # 6	**Date:** 07/12/2022

Description:

General View

Classroom 3

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 7	**Date:** 07/12/2022

Description:

Sample: RC-01

Roofing Core

Photo # 8	**Date:** 07/12/2022

Description:

Sample: RC-02

Roofing Core

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 9	**Date:** 07/12/2022

Description:

Sample: M-01

Black Roof Mastic

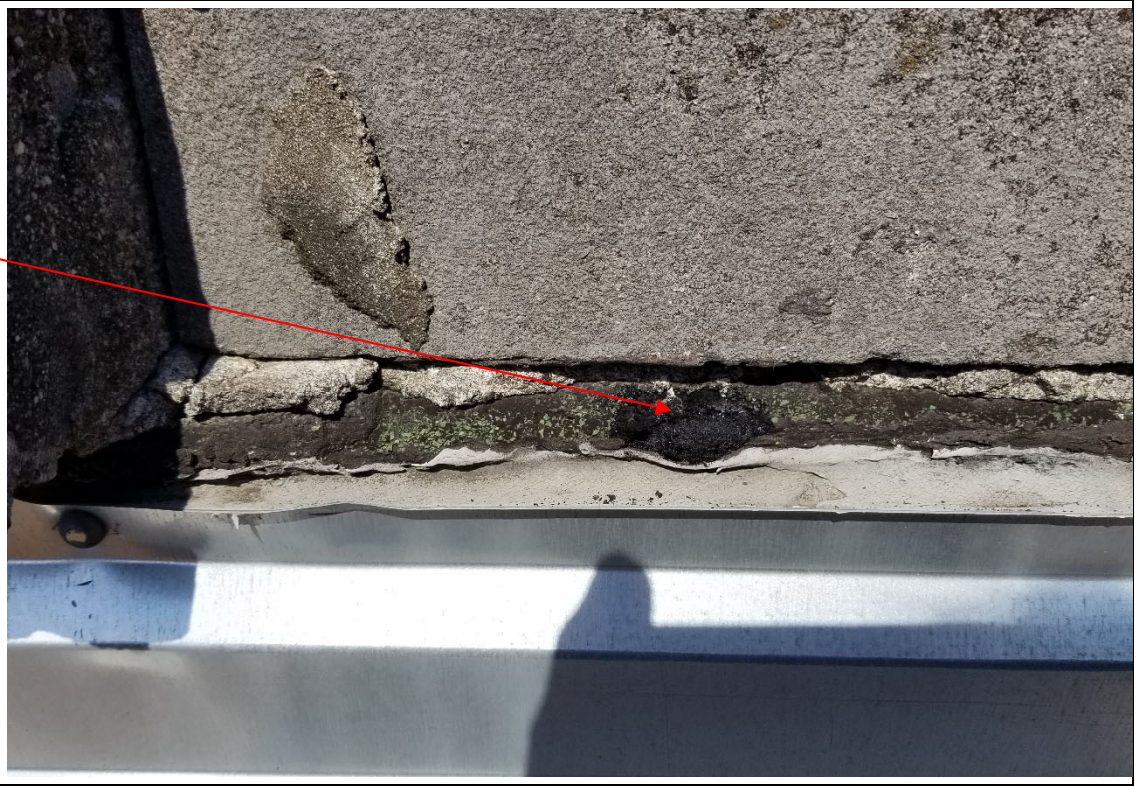


Photo # 10	**Date:** 07/12/2022

Description:

Sample: M-02

Gray Roof Mastic

Tested Positive for Asbestos

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 11	**Date:** 07/12/2022

Description:

Sample: M-03

White Roof Mastic

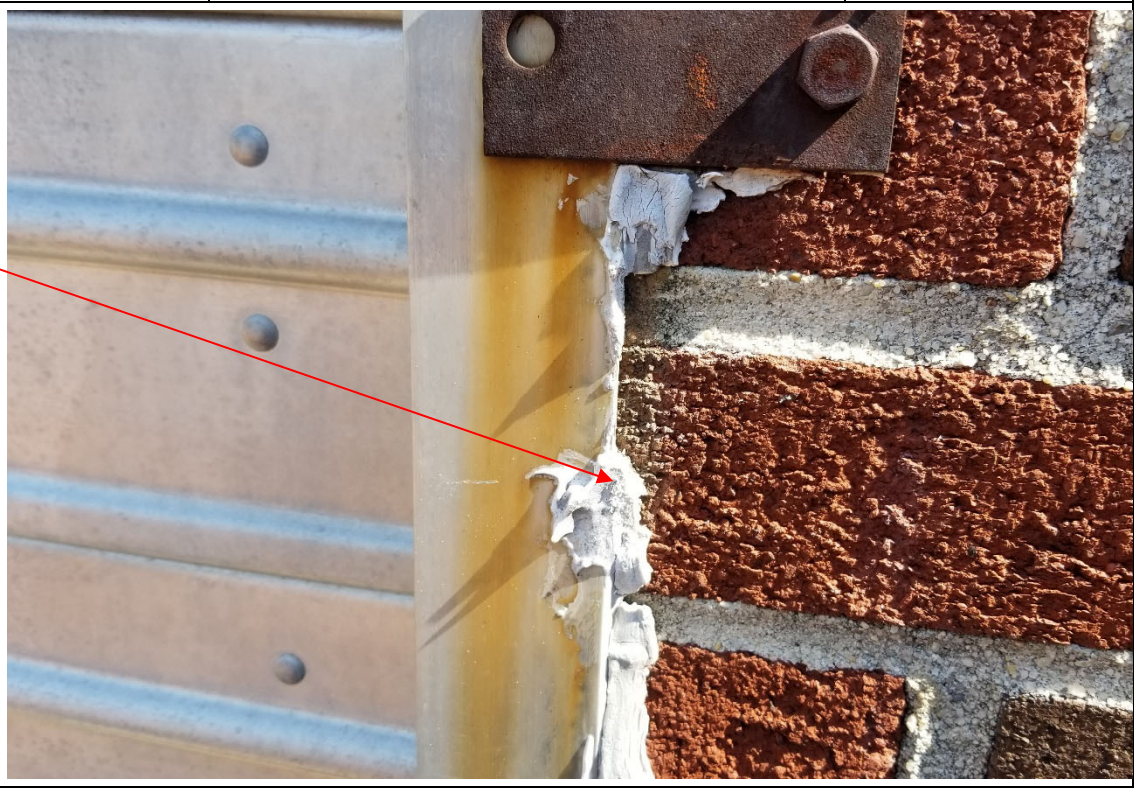


Photo # 12	**Date:** 07/12/2022

Description:

Sample: M-04

Black Roof Mastic

Tested Positive for Asbestos

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 13	**Date:** 07/12/2022

Description:

Sample: RC-03

Roof Core

Photo # 14	**Date:** 07/12/2022

Description:

Sample: M-05

Black Roof Mastic

Tested Positive for Asbestos

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 15	**Date:** 07/12/2022

Description:

Sample: MT-01

Cap Stone Mortar

Photo # 16	**Date:** 07/12/2022

Description:

Sample: BM-01

Brick Mortar

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 17	**Date:** 07/12/2022

Description:

Sample: BM-02

Brick Mortar

Photo # 18	**Date:** 07/12/2022

Description:

Sample: P-01

Ceiling Plaster

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 19	**Date:** 07/12/2022

Description:

Sample: P-02

Wall Plaster

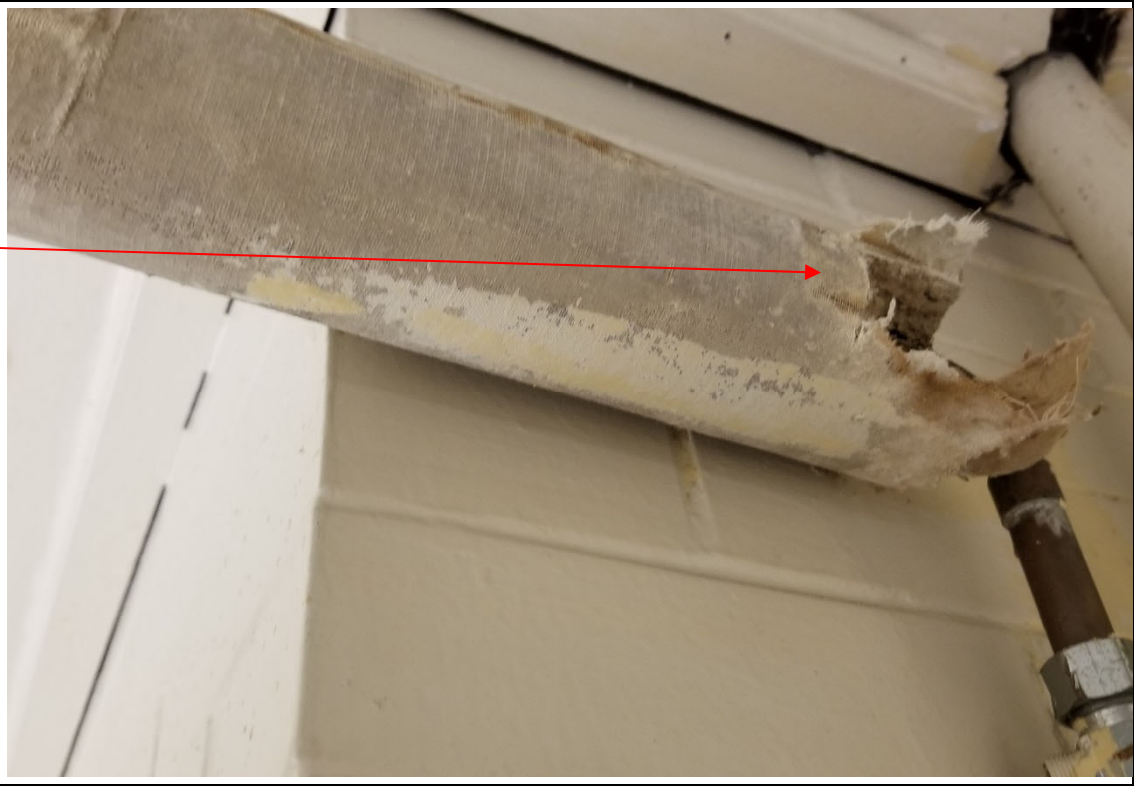
Photo # 20	**Date:** 07/12/2022

Description:

Sample: PW-01

1” TSI Pipe Insulation

Tested Positive for Asbestos



Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 21	**Date:** 07/12/2022

Description:

Sample: PW-02

1’ TSI Pipe Insulation

Tested Positive for Asbestos

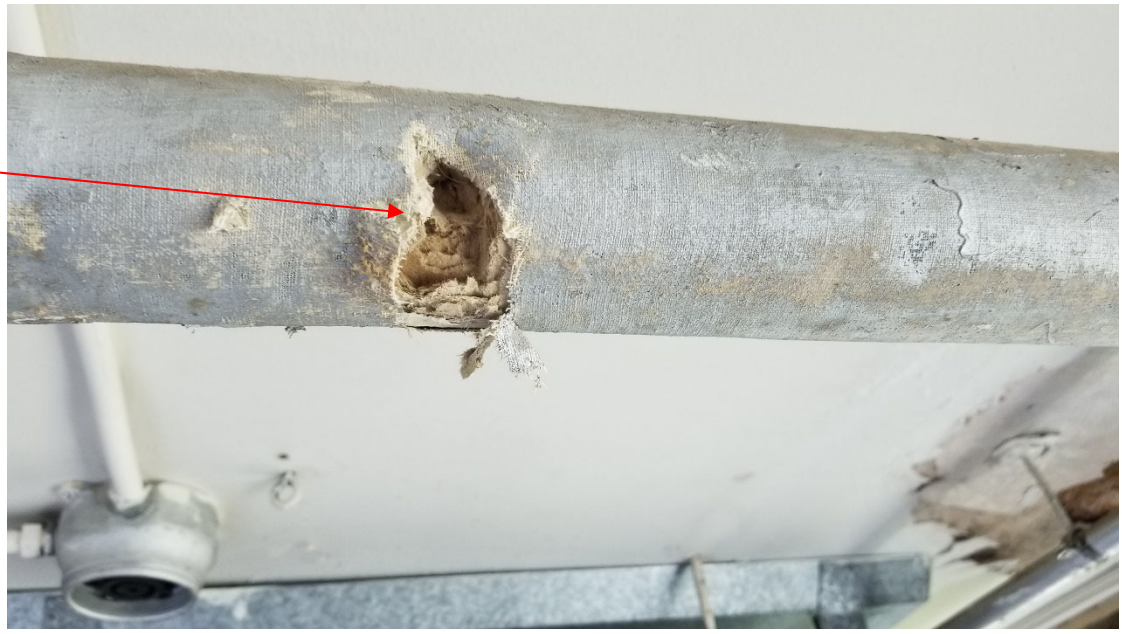


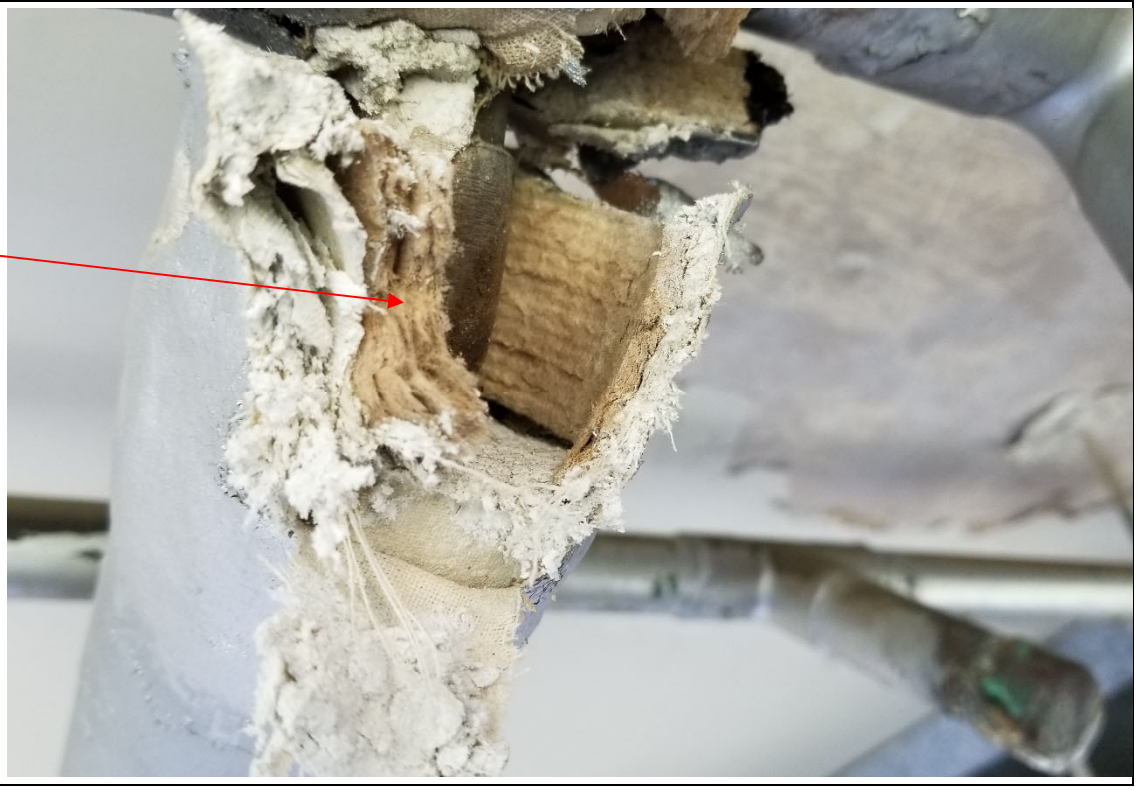
Photo # 22	**Date:** 07/12/2022

Description:

Sample: PW-03

2” TSI Pipe Elbow

Tested Positive for Asbestos



Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 23	**Date:** 07/12/2022

Description:

Sample: PW-04

2” TSI Pipe Insulation

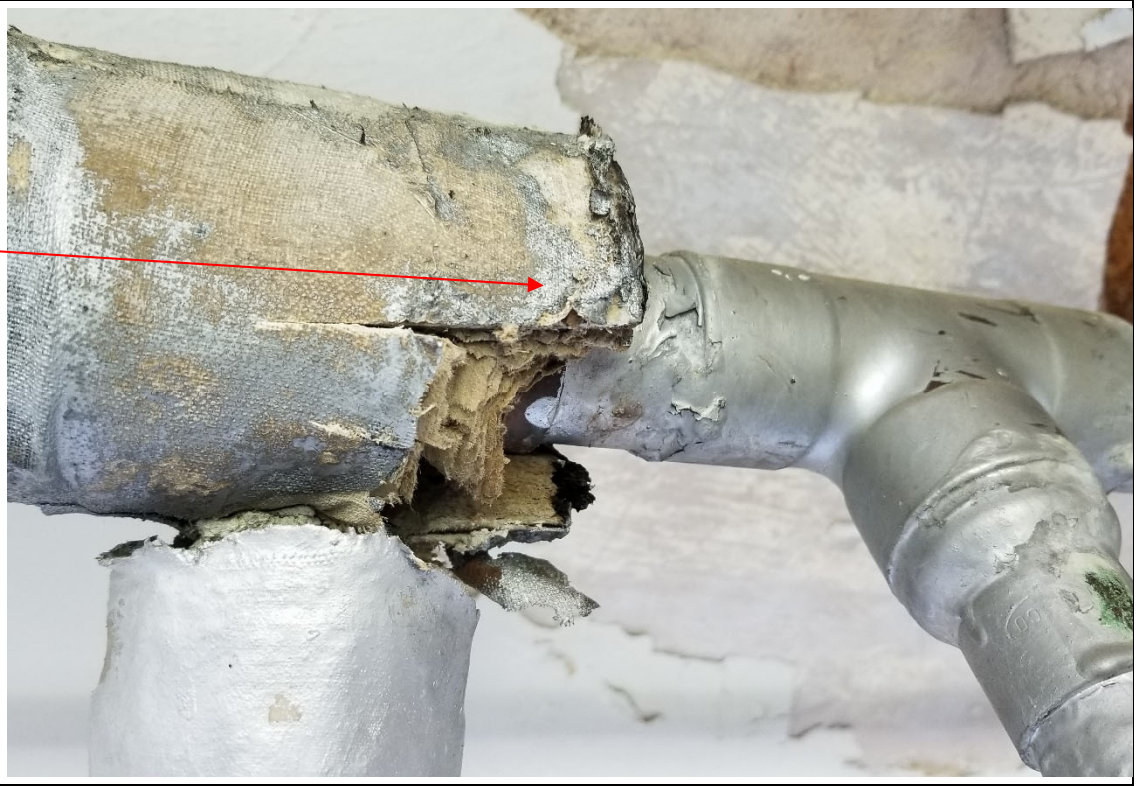


Photo # 24	**Date:** 07/12/2022

Description:

Sample: P-03

Ceiling Plaster

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # **25**	**Date:** 07/12/2022

Description:

Sample: P-04

Wall Plaster

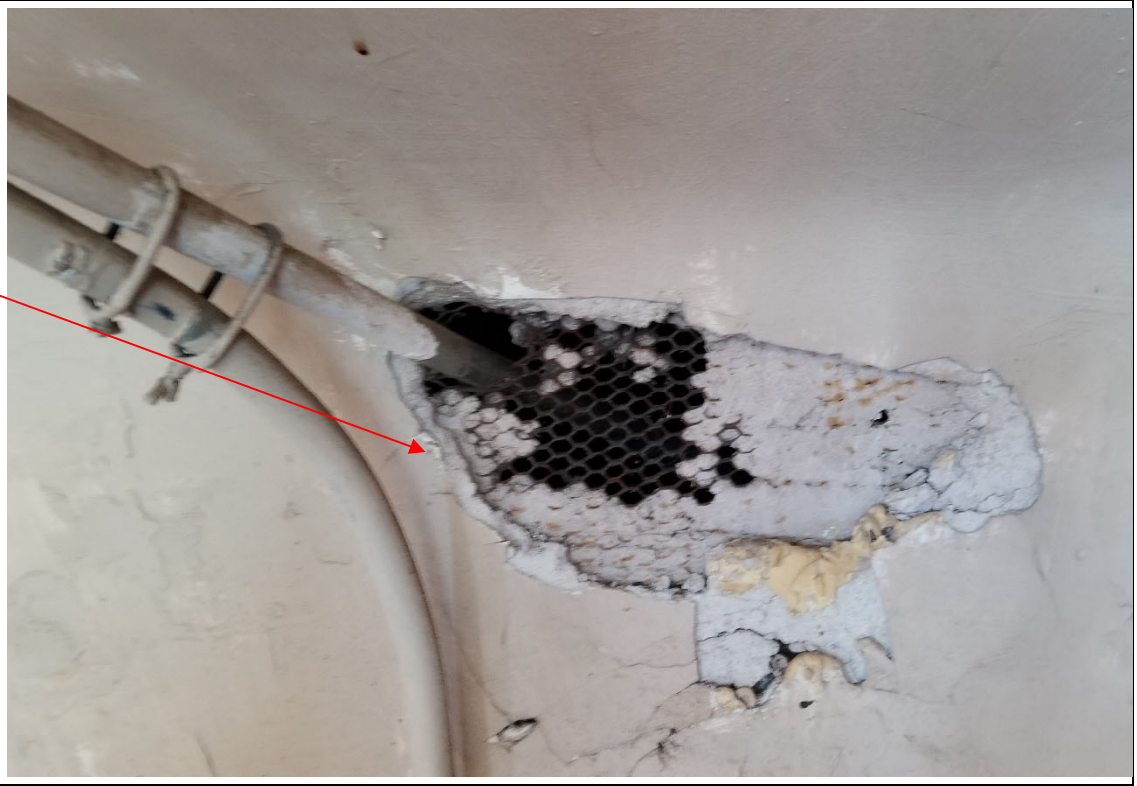


Photo # **26**	**Date:** 07/12/2022

Description:

Sample: P-05

Ceiling Plaster (With Texture)

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # **27**	**Date:** 07/12/2022

Description:

Sample: M-06

Chalk Board Mastic

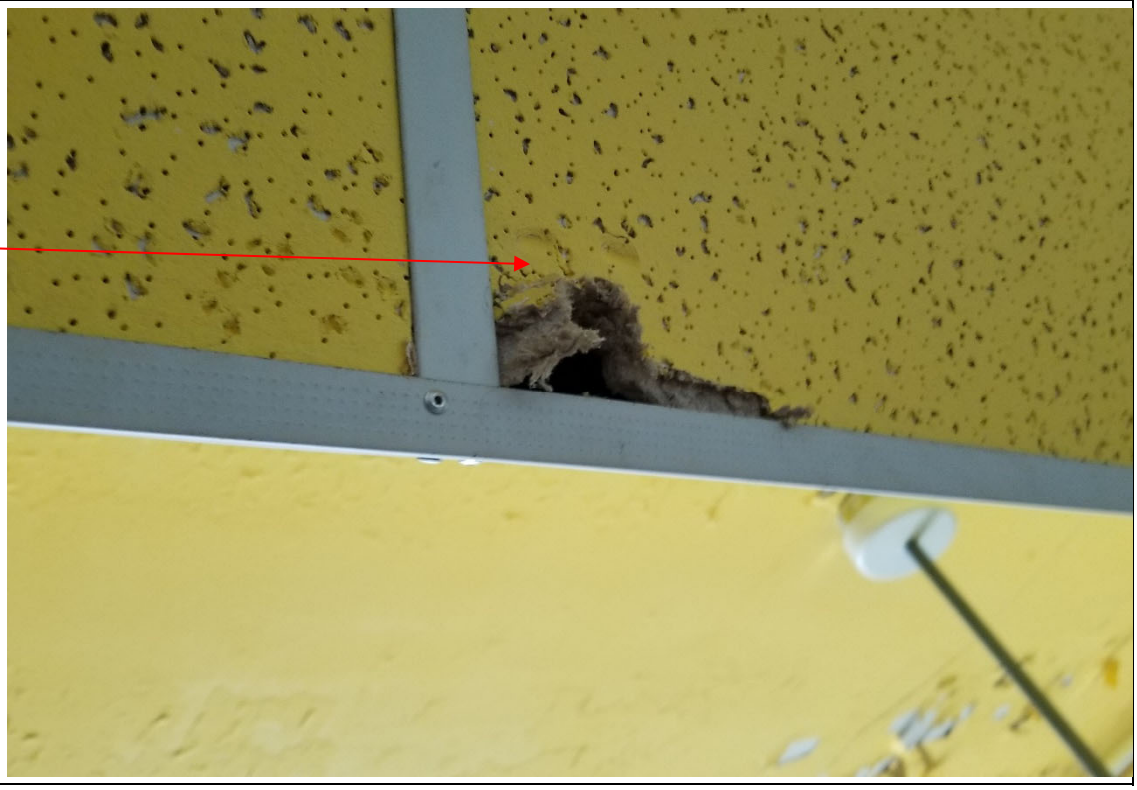
Tested Positive for Asbestos

Photo # **28**	**Date:** 07/12/2022

Description:

Sample: CT-01

Yellow Ceiling Tile



Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 29	**Date:** 07/12/2022

Description:

Sample: PW-05

2” TSI Pipe Insulation

Tested Positive for Asbestos

(Not Pictured)

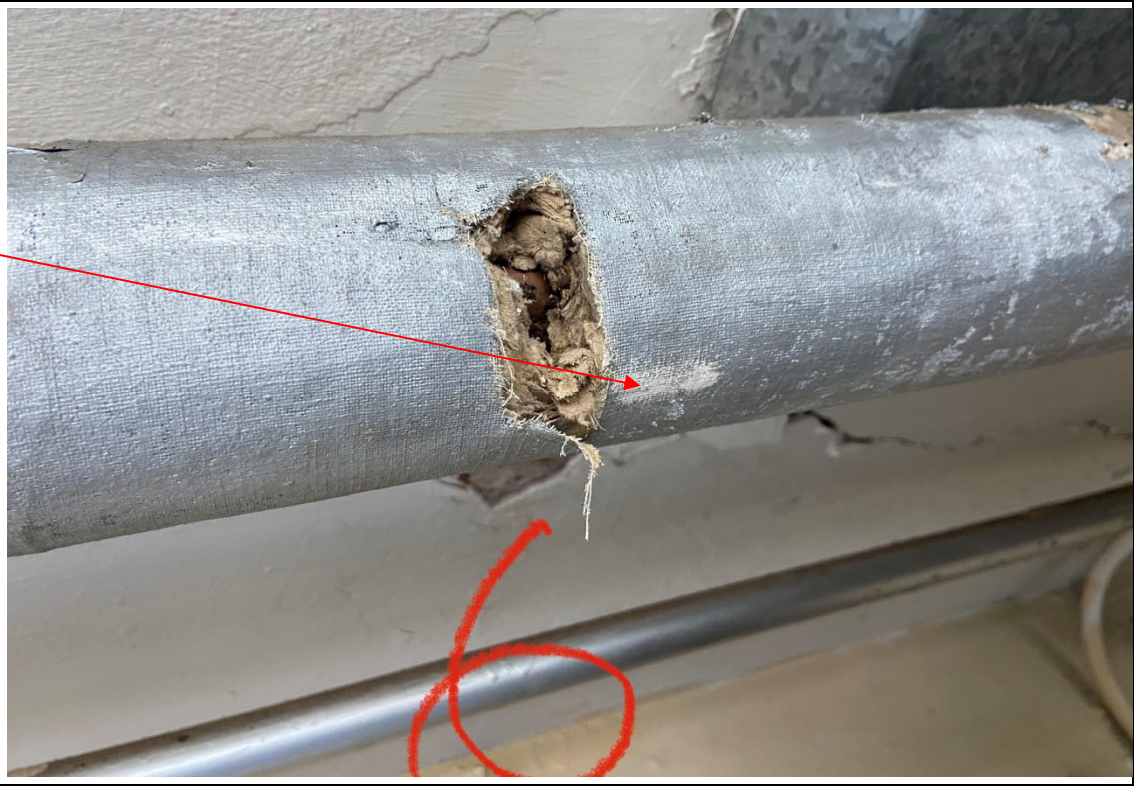
Photo # 30	**Date:** 07/12/2022

Description:

Sample: PW-06

2” TSI Pipe Insulation

Tested Positive for Asbestos



Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 31	**Date:** 07/12/2022

Description:

Sample: PW-07

4” TSI Pipe Insulation

Tested Positive for Asbestos

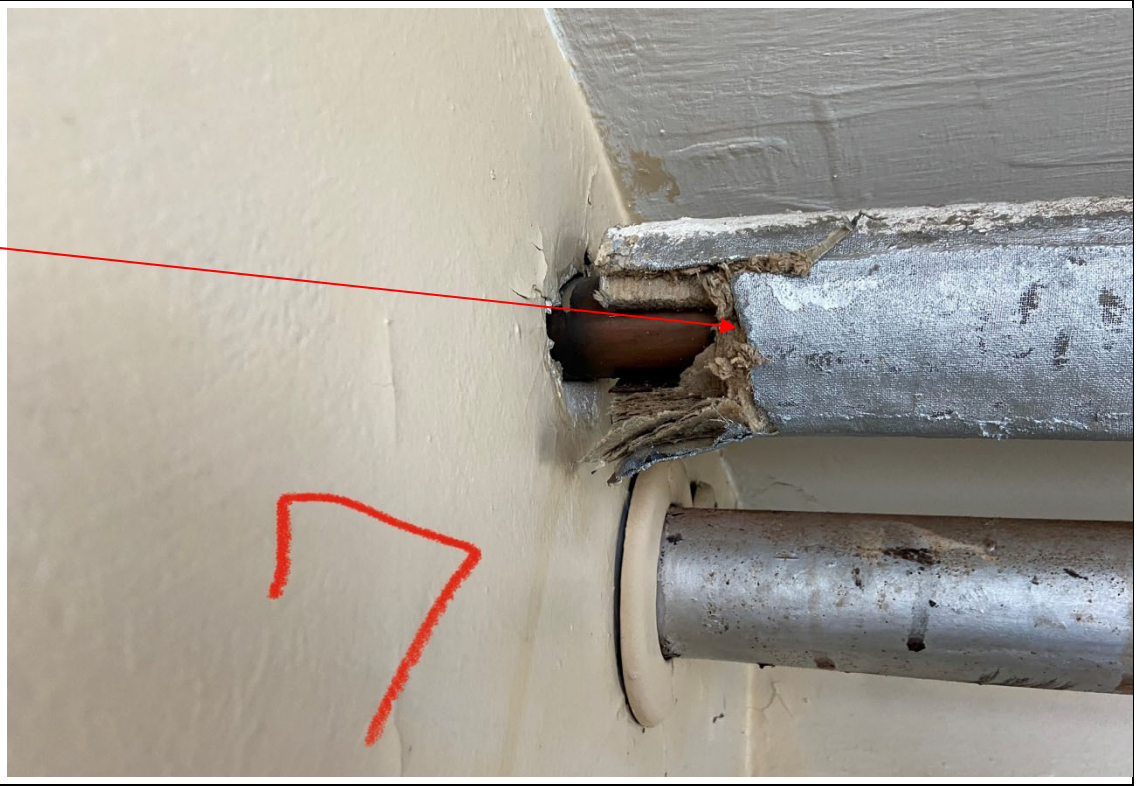


Photo # 32	**Date:** 07/12/2022

Description:

Sample: PW-08

4” TSI Pipe Insulation

Tested Positive for Asbestos

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 33	**Date:** 07/12/2022

Description:

Sample: PW-09

4” TSI Pipe Elbow

Tested Positive for Asbestos

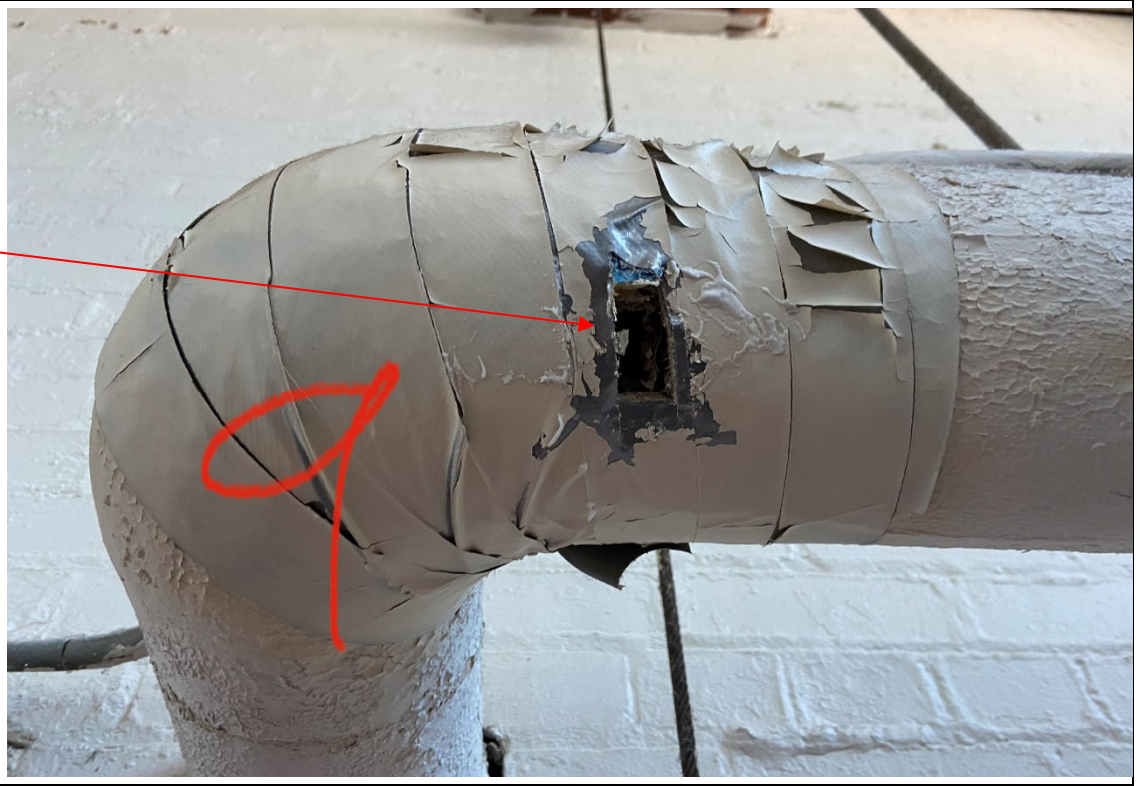


Photo # 34	**Date:** 07/12/2022

Description:

Sample: PW-10

2” TSI Pipe Insulation

Tested Positive for Asbestos

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 35	**Date:** 07/12/2022

Description:

Sample: PW-11

2” TSI Pipe Insulation

Tested Positive for Asbestos

Photo # 36	**Date:** 07/12/2022

Description:

Sample: PW-12

4” TSI Pipe Insulation

Tested Positive for Asbestos

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 37	**Date:** 07/12/2022

Description:

Sample: PW-13

4” TSI Pipe Insulation

Tested Positive for Asbestos

Photo # 38	**Date:** 07/12/2022

Description:

Sample: PW-14

4” TSI Pipe Insulation

Tested Positive for Asbestos

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 39	**Date:** 07/12/2022

Description:

Sample: AC-01

Acoustic Ceiling Tile

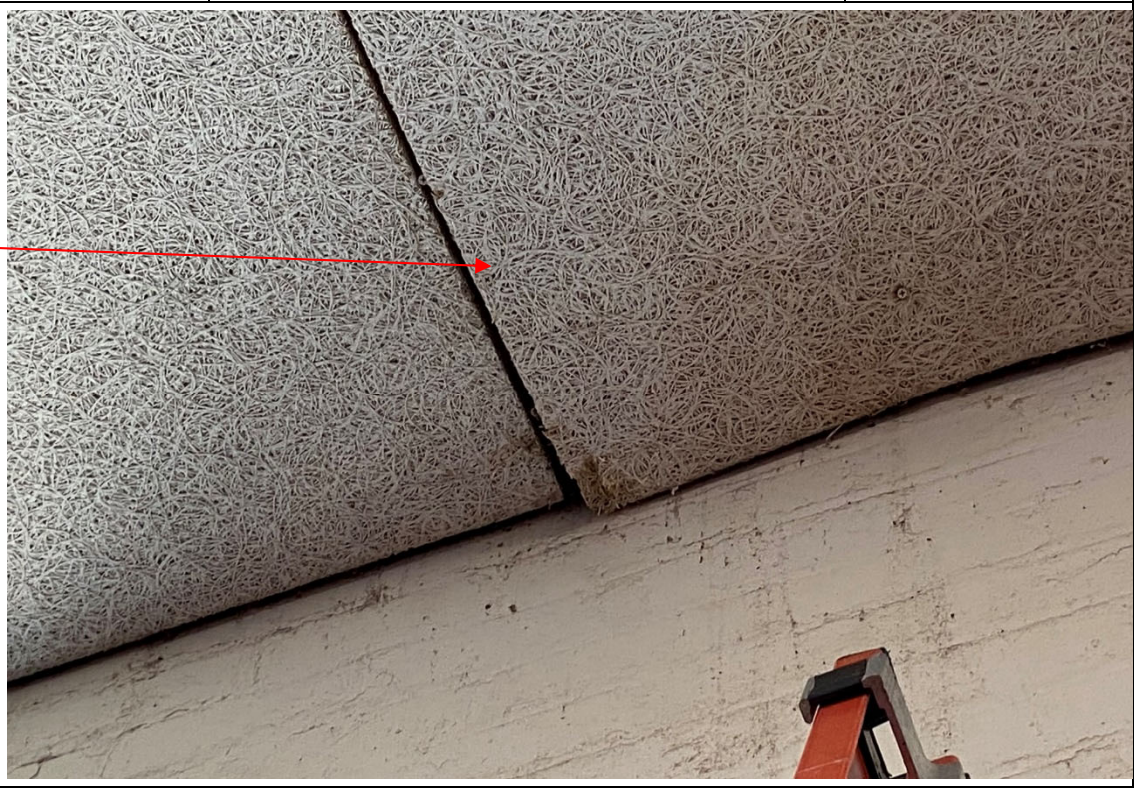


Photo # 40	**Date:** 07/12/2022

Description:

Sample: AC-02

Acoustic Sieling Tile

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 41	**Date:** 07/12/2022

Description:

Sample: AC-03

Acoustic Ceiling Tile

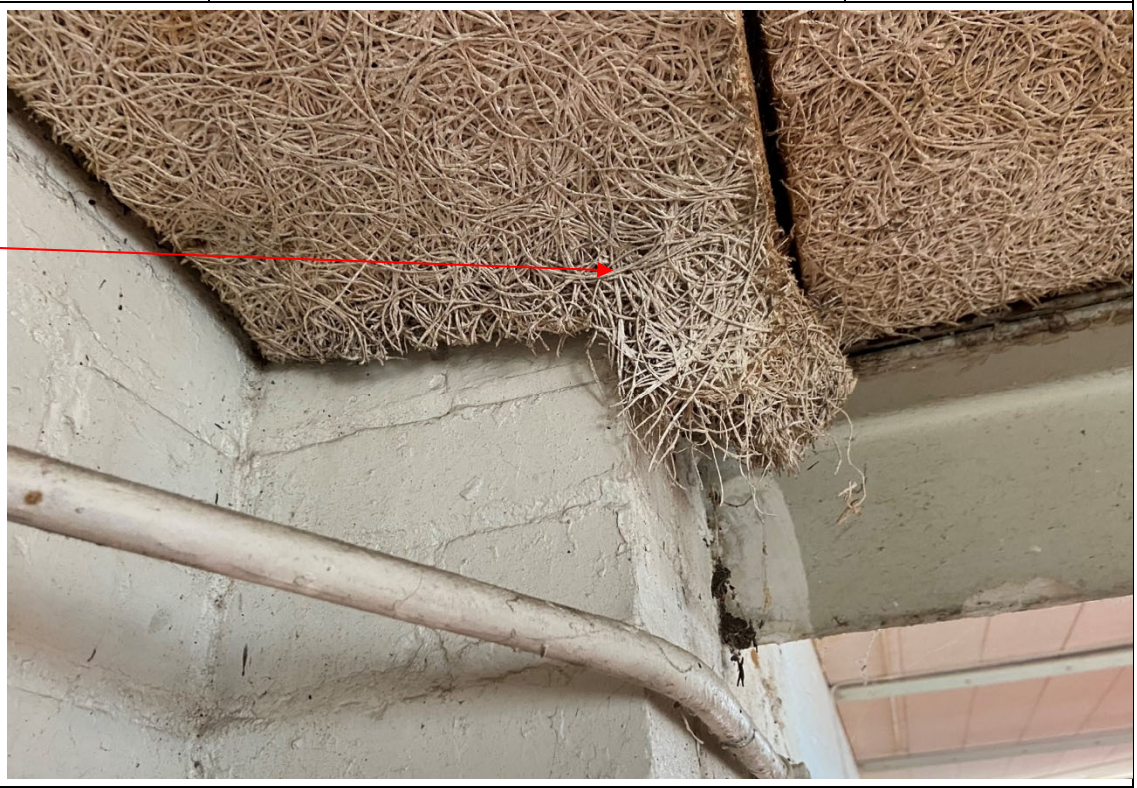


Photo # 42	**Date:** 07/12/2022

Description:

Sample: M-07

Chalk Board Mastic

Tested Positive for Asbestos

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 43	**Date:** 07/12/2022

Description:

XRF Reading Number:

8170

Brown Door Jamb

Tested Positive for Lead-Based Paint

Photo # 44	**Date:** 07/12/2022

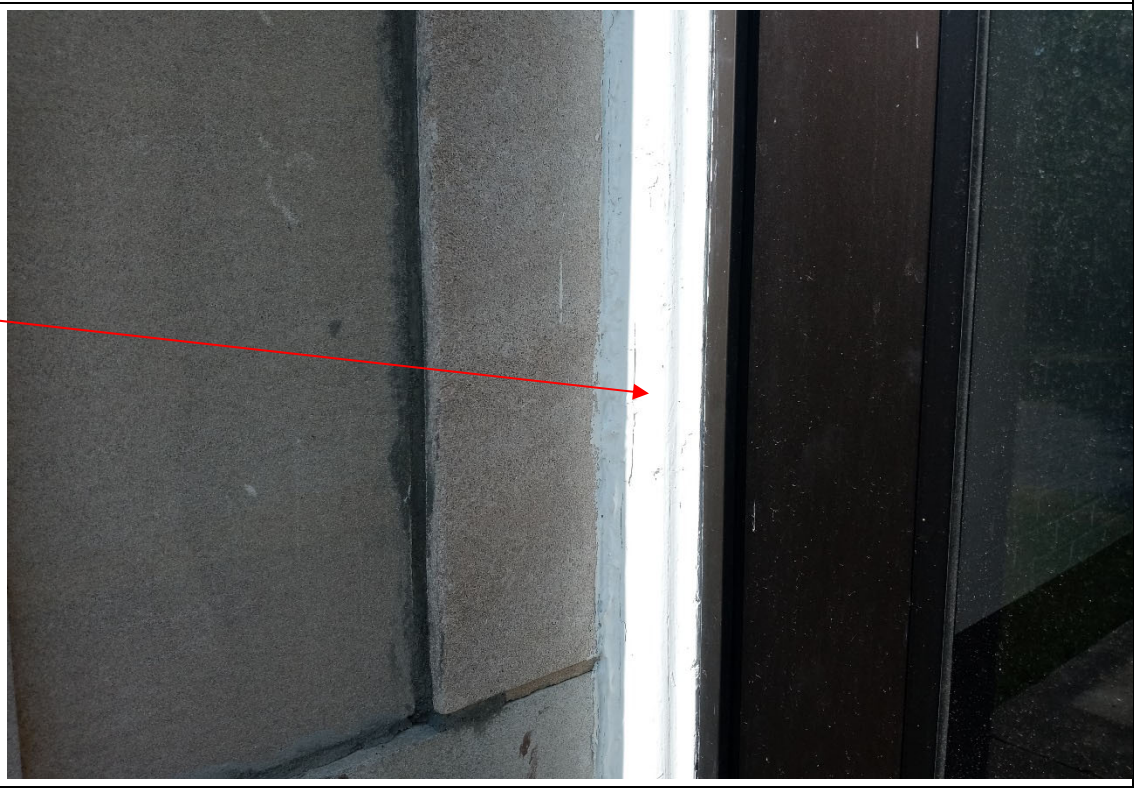
Description:

XRF Reading Number:

8173

White Door Casing

Tested Positive for Lead-Based Paint



Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # **45**	**Date:** 07/12/2022

Description:

XRF Reading Number:

8177

White Brick Wall

Tested Positive for Lead-Based Paint

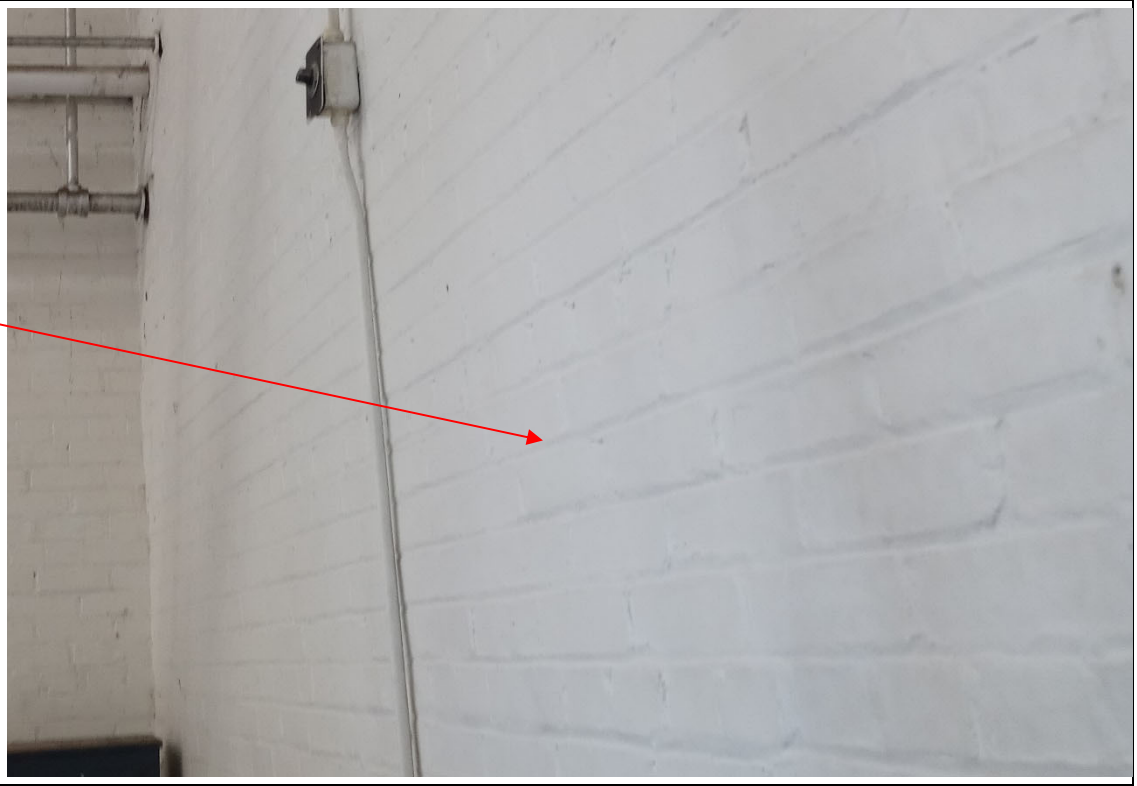


Photo # **46**	**Date:** 07/12/2022

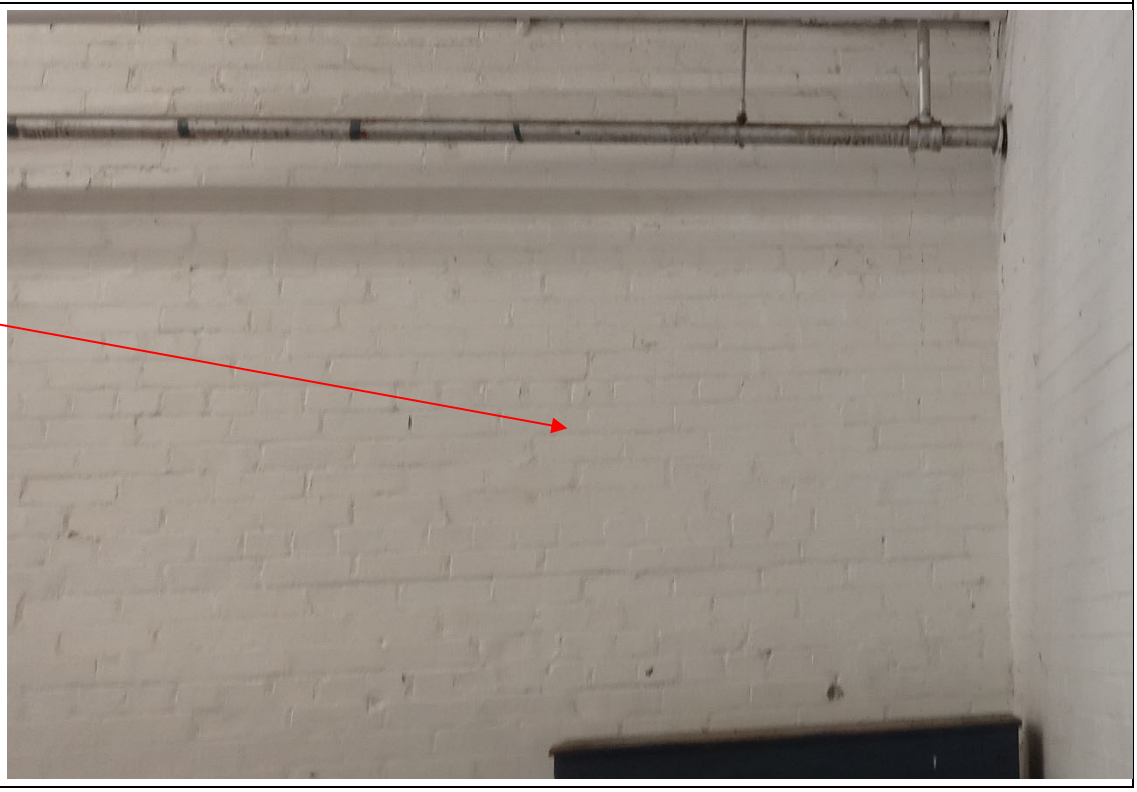
Description:

XRF Reading Number:

8178

White Brick Wall

Tested Positive for Lead-Based Paint



Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # **47**	**Date:** 07/12/2022

Description:

XRF Reading Number:

8179

Burgandy Brick Wall

Tested Positive for Lead-Based Paint

Photo # **48**	**Date:** 07/12/2022

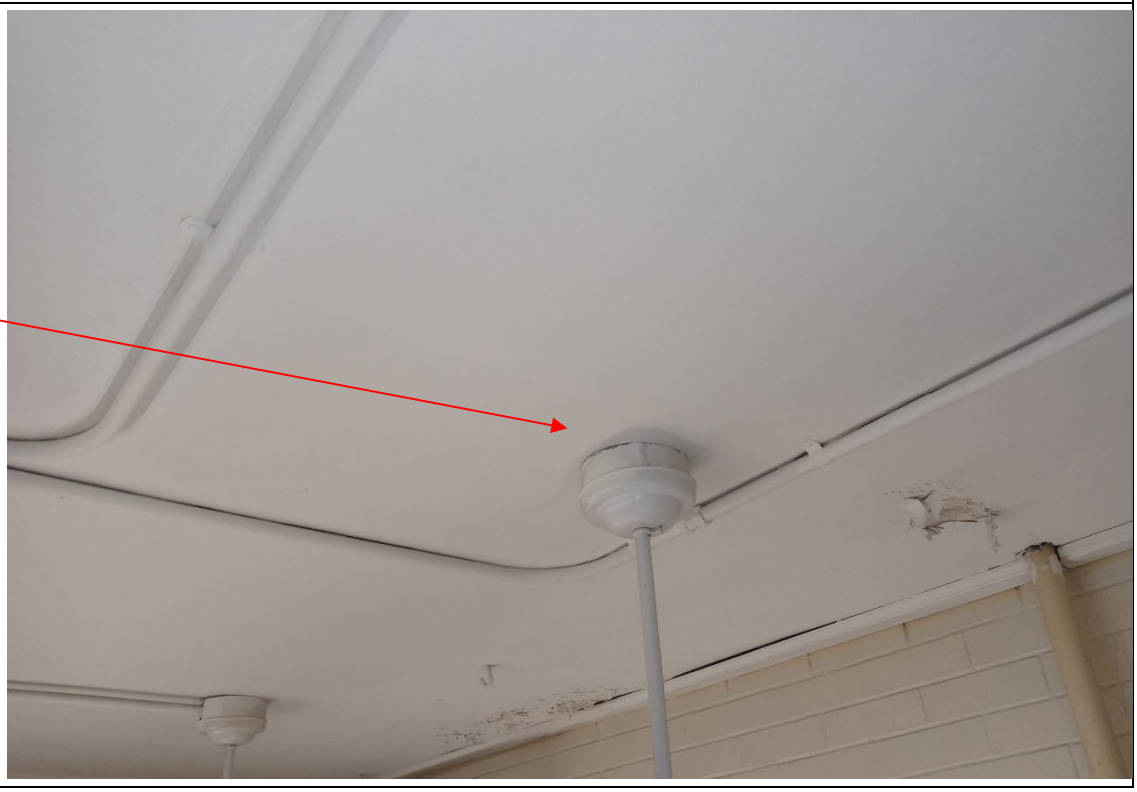
Description:

XRF Reading Number:

8184

White Plaster Ceiling

Tested Positive for Lead-Based Paint



Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 49	**Date:** 07/12/2022

Description:

XRF Reading Number:

8189

Burgandy Brick Wall

Tested Positive for Lead-Based Paint

Photo # 50	**Date:** 07/12/2022

Description:

XRF Reading Number:

8190

White Plaster Wall

Tested Positive for Lead-Based Paint

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # **51**	**Date:** 07/12/2022

Description:

XRF Reading Number:

8193

White Plaster Ceiling

Tested Positive for Lead-Based Paint

Photo # **52**	**Date:** 07/12/2022

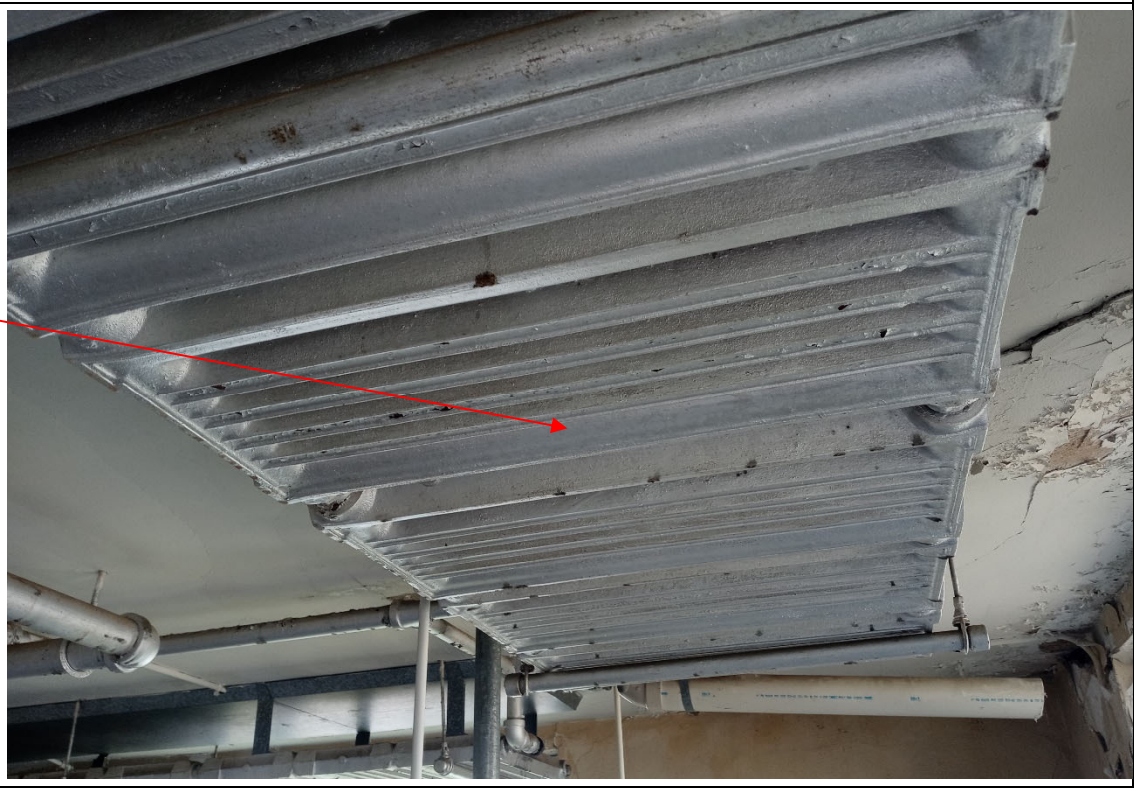
Description:

XRF Reading Number:

8194

Silver Metal Radiator

Tested Positive for Lead-Based Paint



Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # **53**	**Date:** 07/12/2022

Description:

XRF Reading Number:

8195

White Brick Wall

Tested Positive for Lead-Based Paint

Photo # **54**	**Date:** 07/12/2022

Description:

XRF Reading Number:

8196

Yellow Brick Wall

Tested Positive for Lead-Based Paint

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # **55**	**Date:** 07/12/2022

Description:

XRF Reading Number:

8201

Burgandy Brick Wall

Tested Positive for Lead-Based Paint

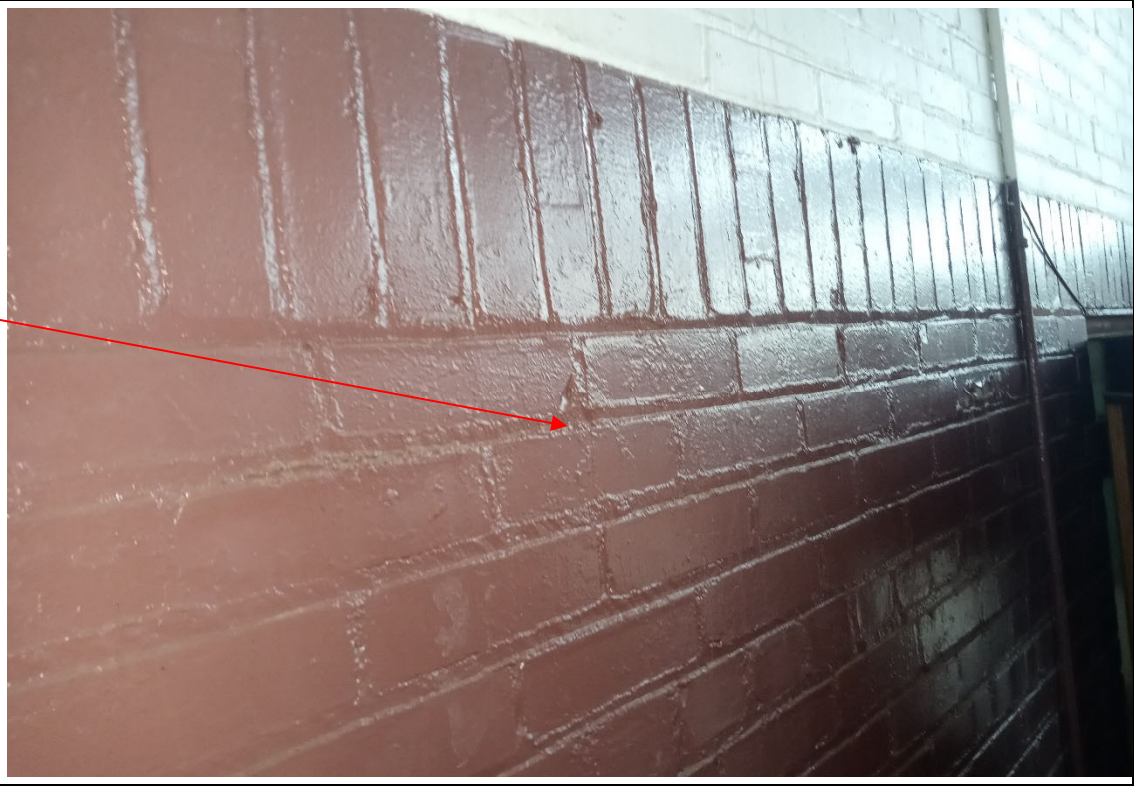


Photo # **56**	**Date:** 07/12/2022

Description:

XRF Reading Number:

8206

White Plaster Wall

Tested Positive for Lead-Based Paint

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # **57**	**Date:** 07/12/2022

Description:

XRF Reading Number:

8207

Yellow Plaster Wall

Tested Positive for Lead-Based Paint

Photo # **58**	**Date:** 07/12/2022

Description:

XRF Reading Number:

8211

White Plaster Wall

Tested Positive for Lead-Based Paint

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # **59**	**Date:** 07/12/2022

Description:

XRF Reading Number:

8213

Yellow Brick Wall

Tested Positive for Lead-Based Paint

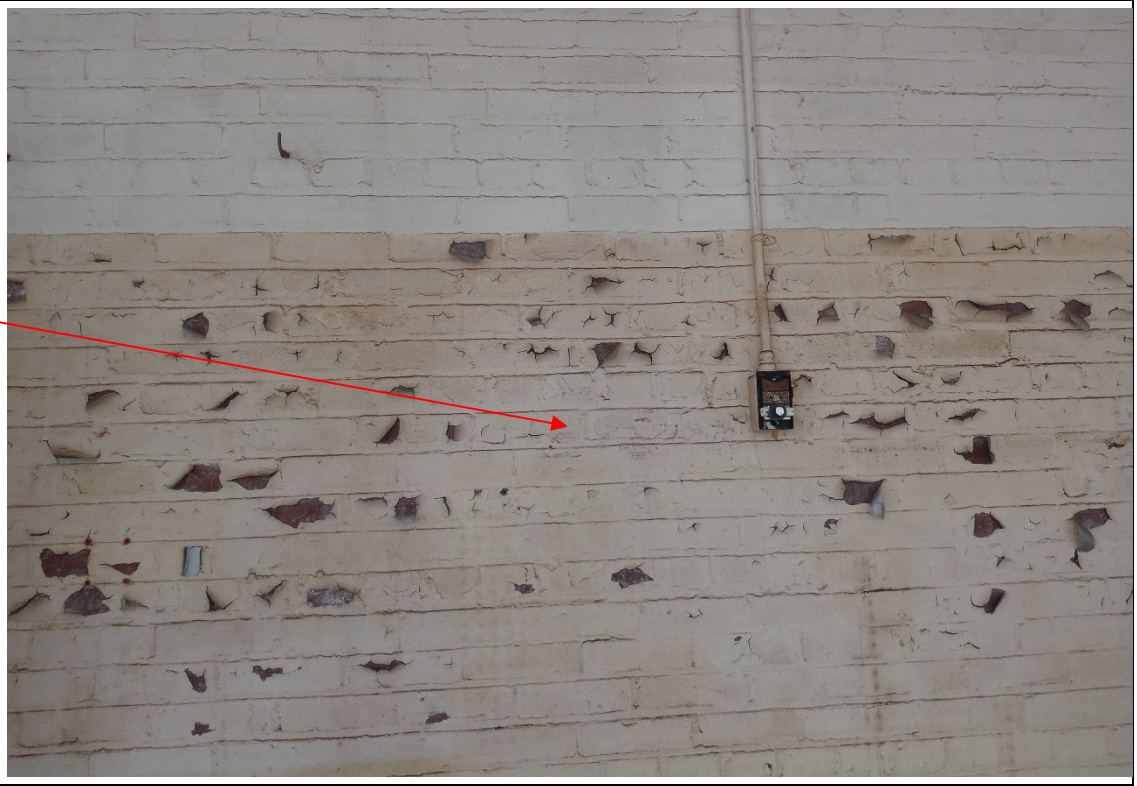


Photo # **60**	**Date:** 07/12/2022

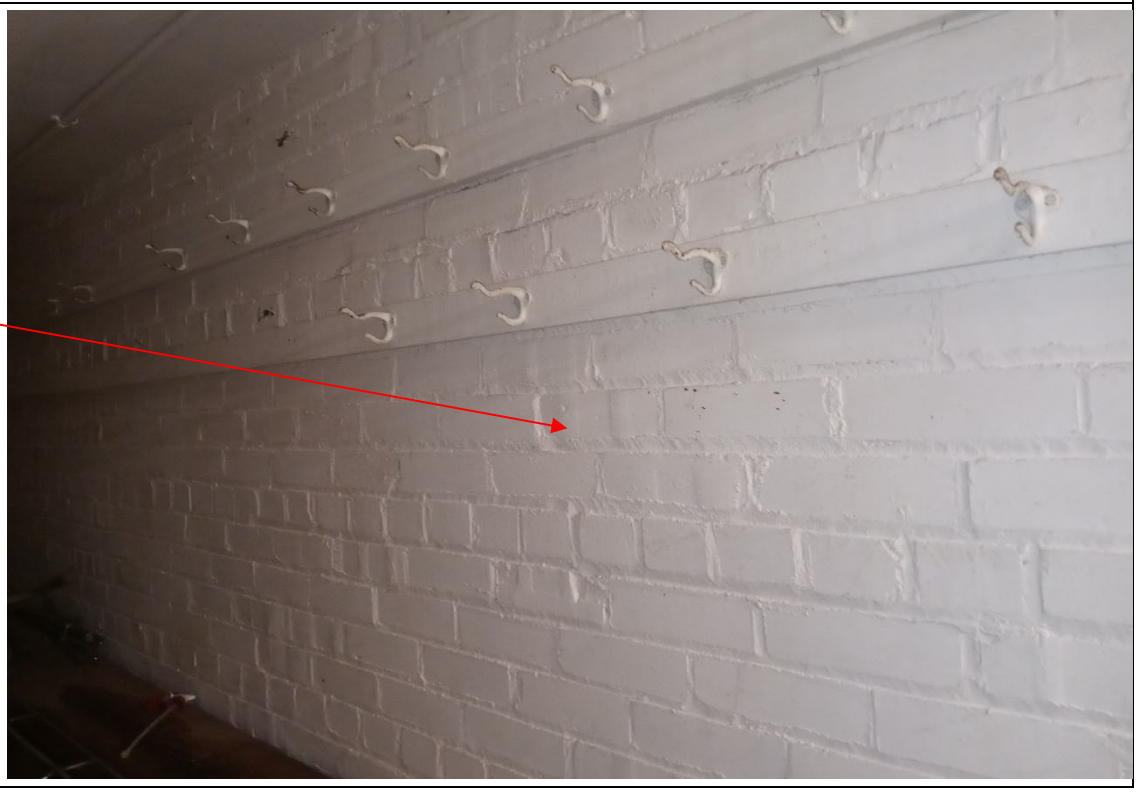
Description:

XRF Reading Number:

8214

White Brick Wall

Tested Positive for Lead-Based Paint



Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 61	**Date:** 07/12/2022

Description:

XRF Reading Number:

8215

White Plaster Ceiling

Tested Positive for Lead-Based Paint

Photo # 62	**Date:** 07/12/2022

Description:

Hazardous Materials:

Mercury-containing Florescent Bulb Example

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # **63**	**Date:** 07/12/2022

Description:

Hazardous Materials:

Refrigerants in Appliances Example

Photo # **64**	**Date:** 07/12/2022

Description:

Hazardous Materials:

Refrigerants in Appliances Example

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 65	**Date:** 07/12/2022

Description:

Hazardous Materials:

Exit Sign with Batteries Example

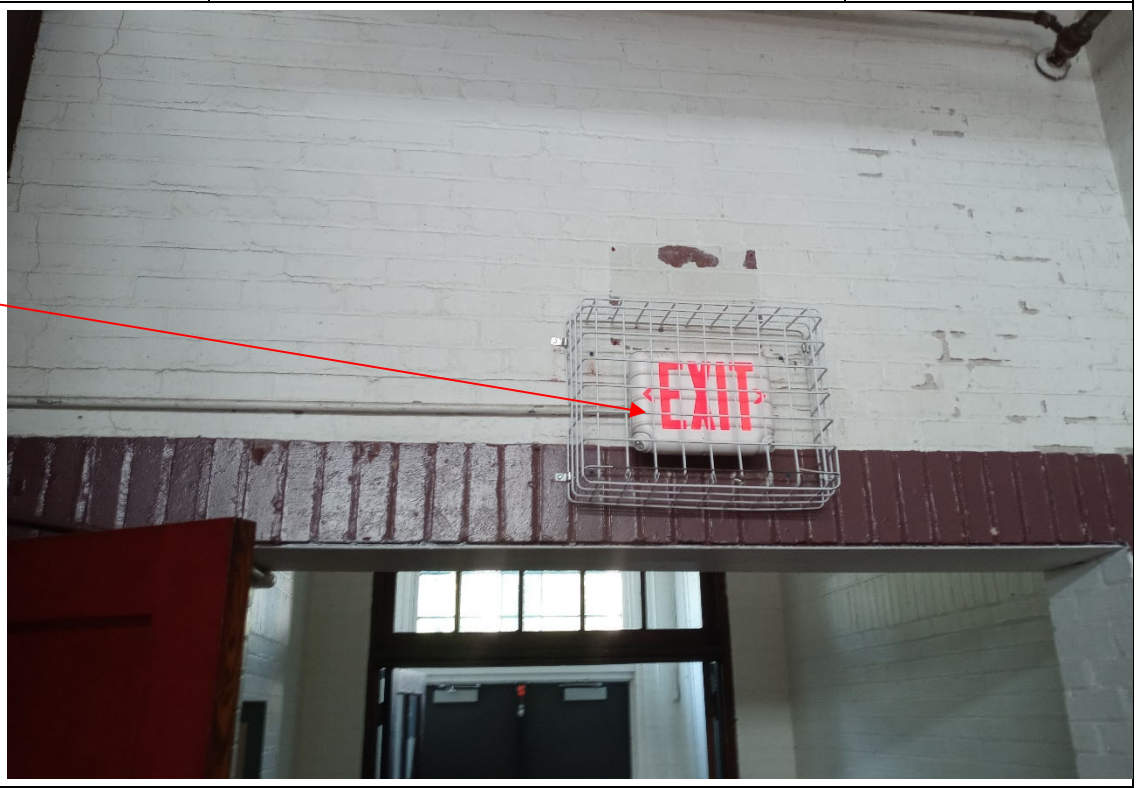
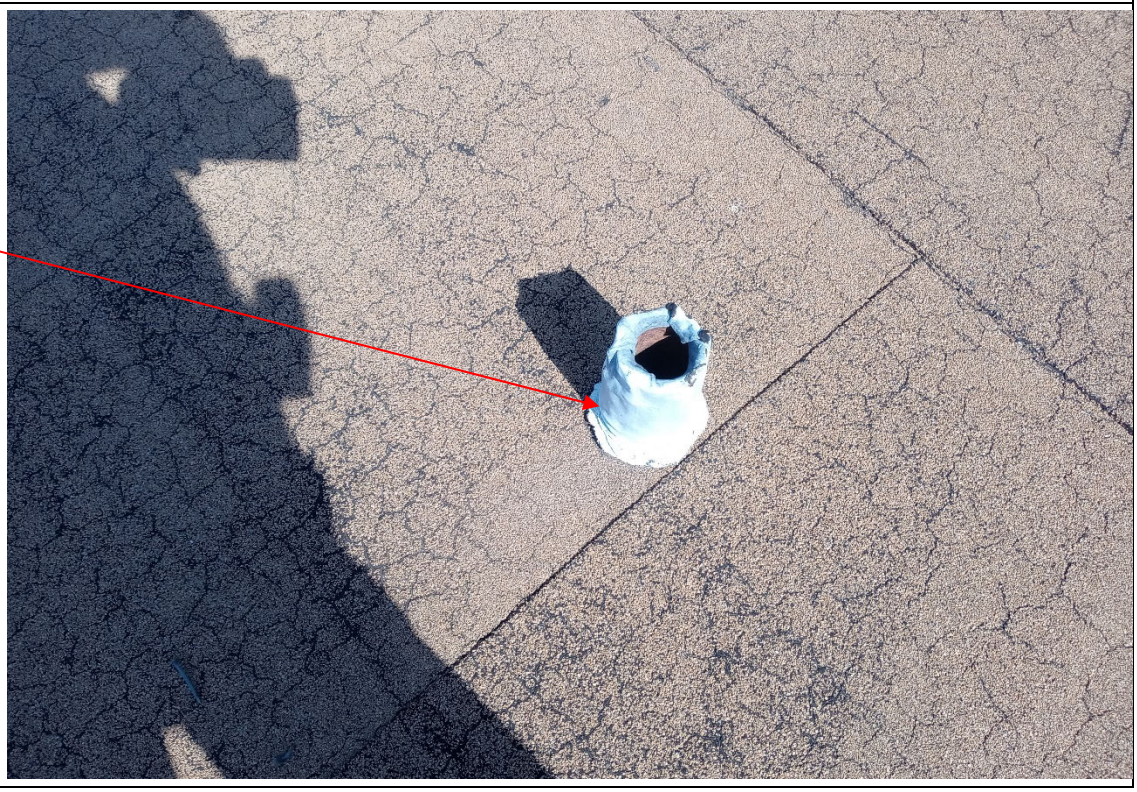


Photo # 66	**Date:** 07/12/2022

Description:

Hazardous Materials:

Lead Flashing Example



Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 67	**Date:** 07/12/2022

Description:

Hazardous Materials:

Chemicals Example

Photo # 68	**Date:** 07/12/2022

Description:

Hazardous Materials:

Chemicals Example

Tioga
ENVIRONMENTAL CONSULTANTS

PHOTOGRAPHIC LOG

Client Name: Haizlip Studio	**Site Location:** 54 E. Military Road	**Project No.** 251310.00

Photo # 69	**Date:** 07/12/2022

Description:

Hazardous Materials:

Fire Extinguisher Example

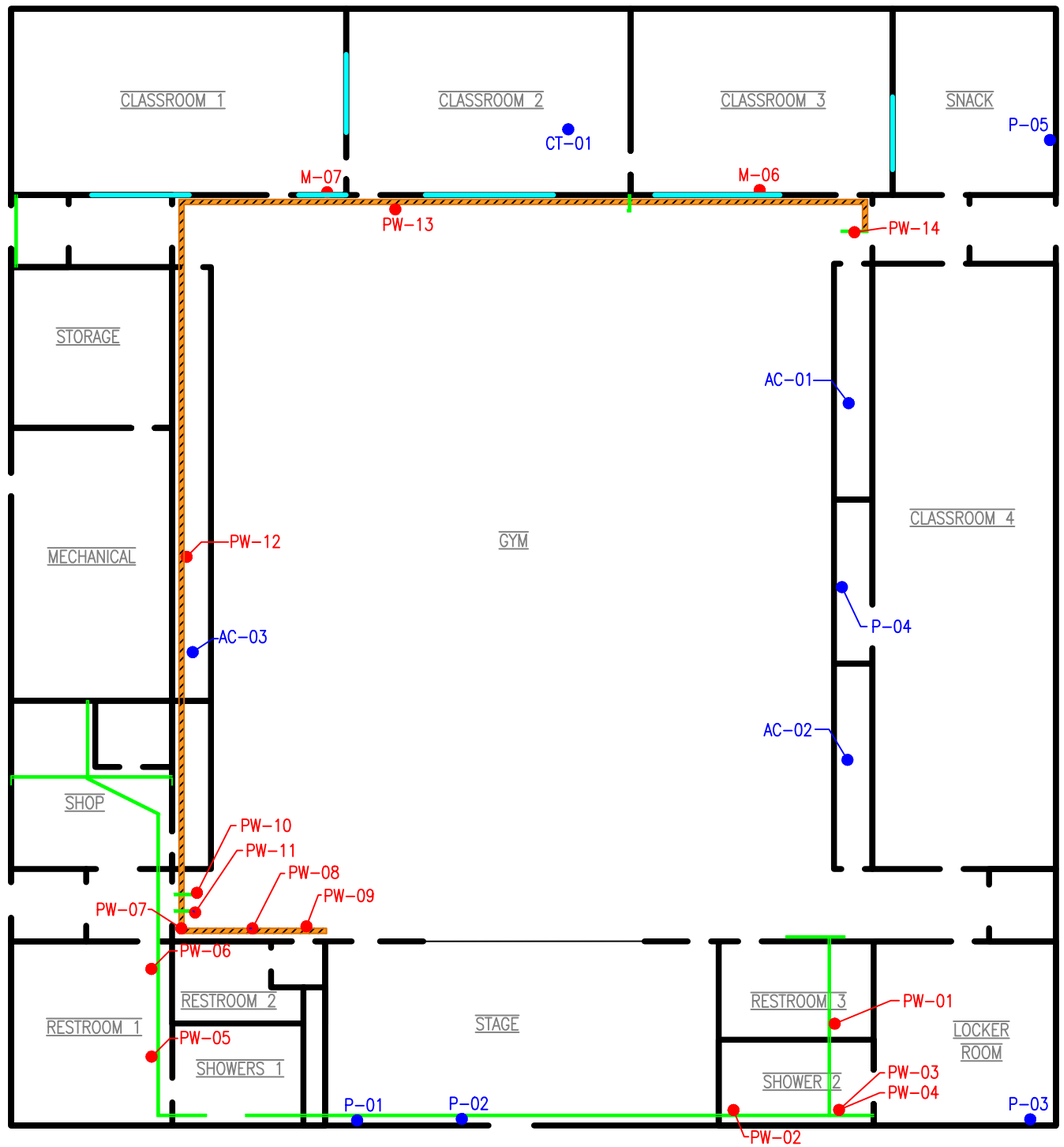
Photo # 70	**Date:** 07/12/2022

Description:

Hazardous Materials:

Fire Resistant File Cabinet Example

Appendix 3
Building Floor Plans



NOT TO SCALE

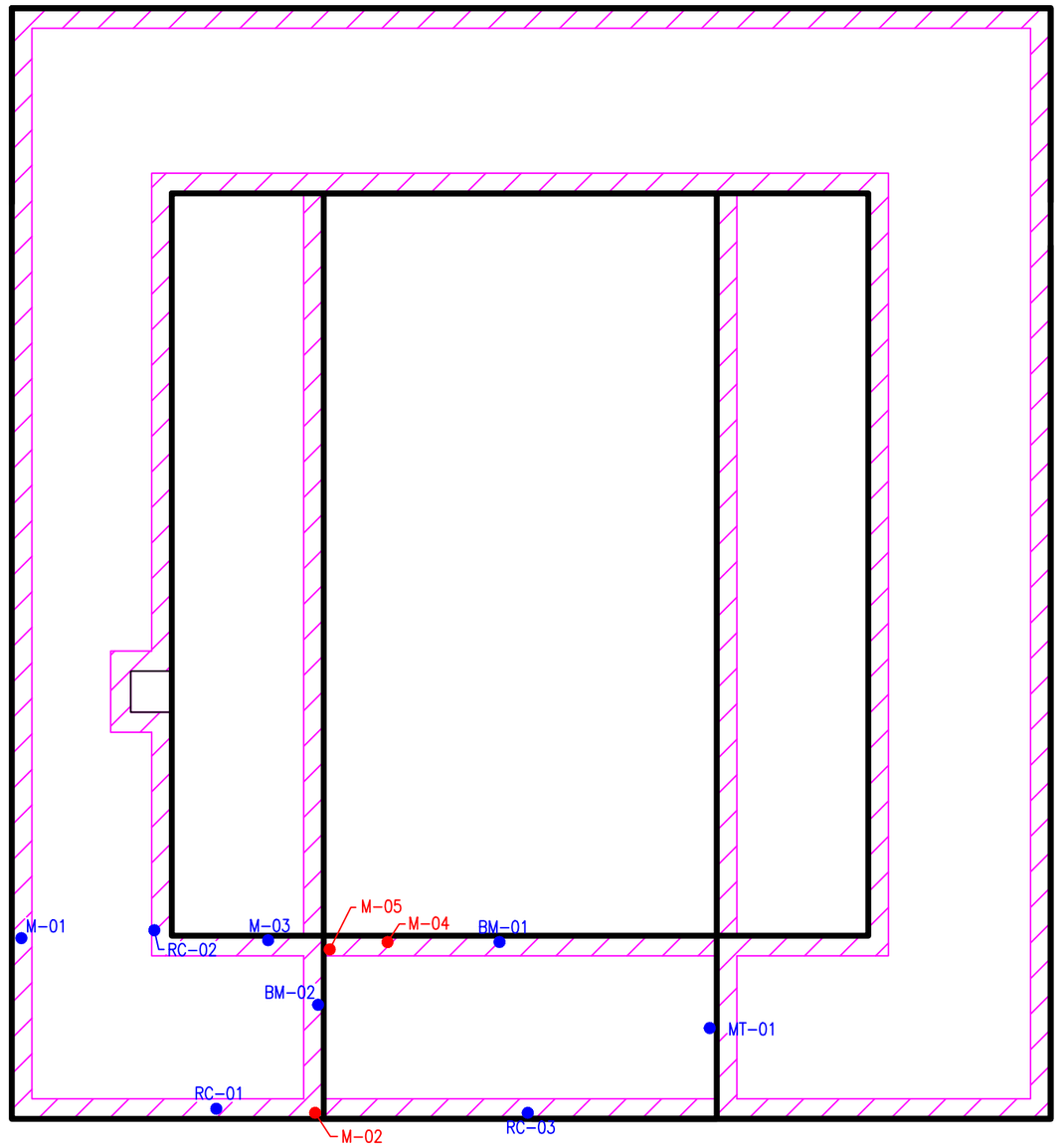
LEGEND

01A	=	POSITIVE ACM LOCATION
01A	=	NEGATIVE ACM LOCATION
	=	4" TSI PIPE RUN
	=	2" TSI PIPE RUN
	=	CHALK BOARD MASTIC

Tioga ENVIRONMENTAL CONSULTANTS

54 E. MILITARY RD.
FIRST FLOOR
HAZARDOUS MATERIAL SURVEY

DESCRIPTION: ACM SAMPLE LOCATIONS
PROJECT #: 251310.00
DATE: AUGUST 2022
LOCATION: 54 EAST MILITARY RD. MARION, AR 72364



NOT TO SCALE

LEGEND

01A	=	POSITIVE ACM LOCATION
01A	=	NEGATIVE ACM LOCATION
	=	BLACK AND GRAY ROOF MASTIC

Tioga
ENVIRONMENTAL CONSULTANTS

54 E. MILITARY RD.
ROOF
HAZARDOUS MATERIAL SURVEY

DESCRIPTION:	ACM SAMPLE LOCATIONS
LOCATION:	54 EAST MILITARY RD. MARION, AR 72364
PROJECT #:	251310.00
DATE:	AUGUST 2022

Appendix 4
Asbestos Laboratory Results and Chain of Custody

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July 13, 2022

Tioga Environmental Consultants
357 North Main Street
Memphis, TN 38103

CLIENT PROJECT: Haizlip 54 E. Military, 251310.00
CEI LAB CODE: A228756

Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on July 13, 2022. The samples were analyzed for asbestos using polarizing light microscopy (PLM) per the EPA 600 Method.

Sample results containing >1% asbestos are considered asbestos-containing materials (ACMs) per EPA regulatory requirements. The detection limit for the EPA 600 Method is <1% asbestos by weight as determined by visual estimation.

Thank you for your business and we look forward to continuing good relations.

Kind Regards,

Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP® TESTING
NVLAP LAB CODE 101768-0

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ASBESTOS ANALYTICAL REPORT
By: Polarized Light Microscopy

Prepared for

Tioga Environmental Consultants

CLIENT PROJECT: Haizlip 54 E. Military, 251310.00

LAB CODE: A228756

TEST METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORT DATE: 07/13/22

TOTAL SAMPLES ANALYZED: 36

SAMPLES >1% ASBESTOS: 29

730 SE Maynard Road • Cary, NC 27511 • 919.481.1413

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Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Haizlip 54 E. Military, 251310.00 **LAB CODE: A228756**

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
RC-01		A228756.01	Silver,Black	Roof Core	None Detected
RC-02		A228756.02	Black	Roof Core	None Detected
M-01		A228756.03	Black	Mastic	None Detected
M-02		A228756.04	Gray	Mastic	Chrysotile 15%
M-03		A228756.05	White	Mastic	None Detected
M-04	Layer 1	A228756.06	Silver	Silver Paint	Chrysotile 2%
	Layer 2	A228756.06	Black	Mastic	Chrysotile 15%
RC-03		A228756.07	Silver,Black	Roof Core	None Detected
M-05	Layer 1	A228756.08	Silver	Silver Paint	Chrysotile 2%
	Layer 2	A228756.08	Black	Mastic	Chrysotile 10%
MT-01		A228756.09A	Gray	Mortar	None Detected
		A228756.09B	Gray	Caulking	None Detected
BM-01		A228756.10	Gray	Brick Mortar	None Detected
BM-02		A228756.11	Gray,Brown	Brick Mortar	None Detected
P-01	Layer 1	A228756.12	White	Plaster Skim Coat	None Detected
	Layer 2	A228756.12	Beige	Plaster Base Coat	None Detected
P-02		A228756.13	Beige,White	Mud	None Detected
PW-01	Layer 1	A228756.14	Brown	Pipe Wrap	Chrysotile 3%
	Layer 2	A228756.14	White	Pipe Wrap	Chrysotile 60%
PW-02	Layer 1	A228756.15	Brown	Pipe Wrap	Chrysotile 3%
	Layer 2	A228756.15	White	Pipe Wrap	Chrysotile 60%
PW-03	Layer 1	A228756.16	Silver,White	Pipe Wrap Elbow	Chrysotile 45%
	Layer 2	A228756.16	Brown	Pipe Wrap Elbow	Chrysotile 3%
PW-04	Layer 1	A228756.17	Silver,White	Pipe Wrap Elbow	Chrysotile 45%
	Layer 2	A228756.17	Brown	Pipe Wrap Elbow	Chrysotile 3%
	Layer 3	A228756.17	Brown,Black	Pipe Wrap Elbow	Chrysotile 5%
P-03	Layer 1	A228756.18	White	Plaster Skim Coat	None Detected
	Layer 2	A228756.18	Gray	Plaster Base Coat	None Detected
P-04	Layer 1	A228756.19	Yellow	Surface Material	None Detected
	Layer 2	A228756.19	Gray	Plaster	None Detected
P-05	Layer 1	A228756.20	Beige	Texture	None Detected

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Haizlip 54 E. Military, 251310.00 **LAB CODE: A228756**

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
	Layer 2	A228756.20	White	Plaster	None Detected
M-06		A228756.21	Beige,Brown	Surface Material / Mastic	Chrysotile 3%
CT-01		A228756.22	Yellow,Beige	Ceiling Tile	None Detected
PW-05	Layer 1	A228756.23	Silver,White	Pipe Wrap	Chrysotile 45%
	Layer 2	A228756.23	Brown	Pipe Wrap	Chrysotile 3%
PW-06	Layer 1	A228756.24	Silver,White	Pipe Wrap	Chrysotile 15%
	Layer 2	A228756.24	Brown	Pipe Wrap	None Detected
	Layer 3	A228756.24	Brown,Black	Pipe Wrap	Chrysotile 5%
PW-07	Layer 1	A228756.25	White	Pipe Wrap	Chrysotile 45%
	Layer 2	A228756.25	Brown	Pipe Wrap	Chrysotile 3%
PW-08		A228756.26	White,Gray	Pipe Wrap	Chrysotile 60%
PW-09		A228756.27	White,Gray	Pipe Wrap Elbow	Chrysotile 60%
PW-10		A228756.28	White,Gray	Pipe Wrap (Drop)	Chrysotile 60%
PW-11		A228756.29	Brown,Gray	Pipe Wrap (Drop)	Chrysotile 60%
PW-12		A228756.30	Brown,Gray	Pipe Wrap	Chrysotile 60%
PW-13		A228756.31	Brown,Gray	Pipe Wrap	Chrysotile 60%
PW-14		A228756.32	Brown,Gray	Pipe Wrap	Chrysotile 60%
AC-01		A228756.33	White,Brown	Acoustic Ceiling	None Detected
AC-02		A228756.34	White,Brown	Acoustic Ceiling	None Detected
AC-03		A228756.35	White,Brown	Acoustic Ceiling	None Detected
M-07	Layer 1	A228756.37	Black	Mastic	None Detected
	Layer 2	A228756.37	Gray	Mud	Chrysotile 3%

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Tioga Environmental Consultants
357 North Main Street
Memphis, TN 38103

Lab Code: A228756
Date Received: 07-13-22
Date Analyzed: 07-13-22
Date Reported: 07-13-22

Project: Haizlip 54 E. Military, 251310.00

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
RC-01 A228756.01	Roof Core	Heterogeneous Silver,Black Fibrous Bound	5% 10%	Cellulose Fiberglass	85% <1%	Tar Metal Foil	None Detected
RC-02 A228756.02	Roof Core	Heterogeneous Black Fibrous Bound	5% 10%	Cellulose Fiberglass	85%	Tar	None Detected
M-01 A228756.03	Mastic	Heterogeneous Black Non-fibrous Bound	5%	Cellulose	95%	Tar	None Detected
M-02 A228756.04	Mastic	Heterogeneous Gray Fibrous Bound			85%	Tar	**15% Chrysotile**
M-03 A228756.05	Mastic	Heterogeneous White Fibrous Bound	3%	Talc	97%	Binder	None Detected
M-04 Layer 1 A228756.06	Silver Paint	Heterogeneous Silver Non-fibrous Bound			78% 20%	Paint Tar	**2% Chrysotile**
Layer 2 A228756.06	Mastic	Heterogeneous Black Fibrous Bound	10%	Fiberglass	75%	Binder	**15% Chrysotile**

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Tioga Environmental Consultants
357 North Main Street
Memphis, TN 38103

Lab Code: A228756
Date Received: 07-13-22
Date Analyzed: 07-13-22
Date Reported: 07-13-22

Project: Haizlip 54 E. Military, 251310.00

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
RC-03 A228756.07	Roof Core	Heterogeneous Silver,Black Fibrous Bound	5% 10%	Cellulose Fiberglass	85% <1%	Tar Metal Foil	None Detected
M-05 Layer 1 A228756.08	Silver Paint	Heterogeneous Silver Non-fibrous Bound			80% 18%	Paint Tar	2% Chrysotile
Layer 2 A228756.08	Mastic	Heterogeneous Black Non-fibrous Bound	5%	Cellulose	85%	Tar	10% Chrysotile
MT-01 A228756.09A	Mortar	Homogeneous Gray Non-fibrous Bound			65% 35%	Silicates Binder	None Detected
A228756.09B	Caulking	Homogeneous Gray Non-fibrous Bound			100%	Caulk	None Detected
BM-01 A228756.10	Brick Mortar	Homogeneous Gray Non-fibrous Bound			65% 35%	Silicates Binder	None Detected
BM-02 A228756.11	Brick Mortar	Homogeneous Gray,Brown Non-fibrous Bound			65% 35%	Silicates Binder	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Tioga Environmental Consultants
357 North Main Street
Memphis, TN 38103

Lab Code: A228756
Date Received: 07-13-22
Date Analyzed: 07-13-22
Date Reported: 07-13-22

Project: Haizlip 54 E. Military, 251310.00

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
P-01	Plaster Skim Coat	Heterogeneous			95%	Binder	None Detected
Layer 1		White			5%	Paint	
A228756.12		Non-fibrous					
		Bound					
Layer 2	Plaster Base Coat	Homogeneous	<1%	Cellulose	65%	Silicates	None Detected
A228756.12		Beige			35%	Binder	
		Non-fibrous					
		Bound					
P-02	Mud	Heterogeneous			60%	Binder	None Detected
A228756.13		Beige,White			35%	Calc Carb	
		Non-fibrous			5%	Paint	
		Bound					
Sample appears to be mud. No plaster present.							
PW-01	Pipe Wrap	Heterogeneous	97%	Cellulose			**3% Chrysotile**
Layer 1		Brown					
A228756.14		Fibrous					
		Loosely Bound					
Analyst opinion: Possible contamination from adjacent pipe wrap.							
Layer 2	Pipe Wrap	Heterogeneous			40%	Binder	**60% Chrysotile**
A228756.14		White					
		Fibrous					
		Loosely Bound					
PW-02	Pipe Wrap	Heterogeneous	97%	Cellulose			**3% Chrysotile**
Layer 1		Brown					
A228756.15		Fibrous					
		Loosely Bound					
Analyst opinion: Possible contamination from adjacent pipe wrap.							
Layer 2	Pipe Wrap	Heterogeneous			40%	Binder	**60% Chrysotile**
A228756.15		White					
		Fibrous					
		Loosely Bound					

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Tioga Environmental Consultants
357 North Main Street
Memphis, TN 38103

Lab Code: A228756
Date Received: 07-13-22
Date Analyzed: 07-13-22
Date Reported: 07-13-22

Project: Haizlip 54 E. Military, 251310.00

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
PW-03	Pipe Wrap Elbow	Heterogeneous	10%	Cellulose	40%	Binder	**45% Chrysotile**
Layer 1		Silver,White			5%	Paint	
A228756.16		Fibrous					
		Loosely Bound					
Layer 2	Pipe Wrap Elbow	Heterogeneous	97%	Cellulose			**3% Chrysotile**
A228756.16		Brown					
		Fibrous					
		Loosely Bound					
Analyst opinion: Possible contamination from adjacent pipe wrap elbow.							
PW-04	Pipe Wrap Elbow	Heterogeneous	10%	Cellulose	40%	Binder	**45% Chrysotile**
Layer 1		Silver,White			5%	Paint	
A228756.17		Fibrous					
		Loosely Bound					
Layer 2	Pipe Wrap Elbow	Heterogeneous	97%	Cellulose			**3% Chrysotile**
A228756.17		Brown					
		Fibrous					
		Loosely Bound					
Analyst opinion: Possible contamination from adjacent pipe wrap elbow.							
Layer 3	Pipe Wrap Elbow	Heterogeneous	65%	Cellulose	30%	Tar	**5% Chrysotile**
A228756.17		Brown,Black					
		Fibrous					
		Loosely Bound					
P-03	Plaster Skim Coat	Heterogeneous			95%	Binder	None Detected
Layer 1		White			5%	Paint	
A228756.18		Non-fibrous					
		Bound					
Layer 2	Plaster Base Coat	Homogeneous	<1%	Cellulose	65%	Silicates	None Detected
A228756.18		Gray			35%	Binder	
		Non-fibrous					
		Bound					

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Tioga Environmental Consultants
357 North Main Street
Memphis, TN 38103

Lab Code: A228756
Date Received: 07-13-22
Date Analyzed: 07-13-22
Date Reported: 07-13-22

Project: Haizlip 54 E. Military, 251310.00

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
P-04 Layer 1 A228756.19	Surface Material	Homogeneous Yellow Non-fibrous Bound			100%	Binder	None Detected
Layer 2 A228756.19	Plaster	Homogeneous Gray Non-fibrous Bound	<1%	Cellulose	65% 35%	Silicates Binder	None Detected
P-05 Layer 1 A228756.20	Texture	Heterogeneous Beige Non-fibrous Bound			85% 10% 5%	Binder Vermiculite Paint	None Detected
Layer 2 A228756.20	Plaster	Homogeneous White Non-fibrous Bound			65% 35%	Binder Calc Carb	None Detected
M-06 A228756.21	Surface Material / Mastic	Heterogeneous Beige,Brown Non-fibrous Bound			72% 25%	Mastic Binder	**3% Chrysotile**
Unable to separate surface material and mastic.							
CT-01 A228756.22	Ceiling Tile	Heterogeneous Yellow,Beige Fibrous Loosely Bound	65% 15%	Cellulose Fiberglass	15% 5%	Perlite Paint	None Detected
PW-05 Layer 1 A228756.23	Pipe Wrap	Heterogeneous Silver,White Fibrous Loosely Bound	20%	Cellulose	30% 5%	Binder Paint	**45% Chrysotile**

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ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Tioga Environmental Consultants
357 North Main Street
Memphis, TN 38103

Lab Code: A228756
Date Received: 07-13-22
Date Analyzed: 07-13-22
Date Reported: 07-13-22

Project: Haizlip 54 E. Military, 251310.00

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
Layer 2 A228756.23	Pipe Wrap	Heterogeneous Brown Fibrous Loosely Bound	97%	Cellulose			3% Chrysotile
Analyst opinion: Possible contamination from adjacent pipe wrap elbow.							
PW-06 Layer 1 A228756.24	Pipe Wrap	Heterogeneous Silver,White Fibrous Loosely Bound	35%	Cellulose	45% 5%	Binder Paint	15% Chrysotile
Layer 2 A228756.24	Pipe Wrap	Heterogeneous Brown Fibrous Loosely Bound	100%	Cellulose			None Detected
Layer 3 A228756.24	Pipe Wrap	Heterogeneous Brown,Black Fibrous Loosely Bound	65%	Cellulose	30%	Tar	5% Chrysotile
PW-07 Layer 1 A228756.25	Pipe Wrap	Heterogeneous White Fibrous Loosely Bound	25%	Cellulose	30%	Binder	45% Chrysotile
Layer 2 A228756.25	Pipe Wrap	Heterogeneous Brown Fibrous Loosely Bound	97%	Cellulose			3% Chrysotile
Analyst opinion: Possible contamination from adjacent pipe wrap elbow.							
PW-08 A228756.26	Pipe Wrap	Heterogeneous White,Gray Fibrous Loosely Bound	20%	Cellulose	18% 2%	Binder Paint	60% Chrysotile

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Tioga Environmental Consultants
357 North Main Street
Memphis, TN 38103

Lab Code: A228756
Date Received: 07-13-22
Date Analyzed: 07-13-22
Date Reported: 07-13-22

Project: Haizlip 54 E. Military, 251310.00

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
PW-09 A228756.27	Pipe Wrap Elbow	Heterogeneous White,Gray Fibrous Loosely Bound	20%	Cellulose	18% 2%	Binder Paint	60% Chrysotile
PW-10 A228756.28	Pipe Wrap (Drop)	Heterogeneous White,Gray Fibrous Loosely Bound	20%	Cellulose	18% 2%	Binder Paint	60% Chrysotile
PW-11 A228756.29	Pipe Wrap (Drop)	Heterogeneous Brown,Gray Fibrous Loosely Bound	20%	Cellulose	20%	Binder	60% Chrysotile
PW-12 A228756.30	Pipe Wrap	Heterogeneous Brown,Gray Fibrous Loosely Bound	20%	Cellulose	18% 2%	Binder Paint	60% Chrysotile
PW-13 A228756.31	Pipe Wrap	Heterogeneous Brown,Gray Fibrous Loosely Bound	20%	Cellulose	18% 2%	Binder Paint	60% Chrysotile
PW-14 A228756.32	Pipe Wrap	Heterogeneous Brown,Gray Fibrous Loosely Bound	20%	Cellulose	18% 2%	Binder Paint	60% Chrysotile
AC-01 A228756.33	Acoustic Ceiling	Heterogeneous White,Brown Fibrous Loosely Bound	80%	Cellulose	20%	Binder	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Tioga Environmental Consultants
357 North Main Street
Memphis, TN 38103

Lab Code: A228756
Date Received: 07-13-22
Date Analyzed: 07-13-22
Date Reported: 07-13-22

Project: Haizlip 54 E. Military, 251310.00

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
AC-02 A228756.34	Acoustic Ceiling	Heterogeneous White,Brown Fibrous Loosely Bound	80%	Cellulose	20%	Binder	None Detected
AC-03 A228756.35	Acoustic Ceiling	Heterogeneous White,Brown Fibrous Loosely Bound	80%	Cellulose	20%	Binder	None Detected
M-07 Layer 1 A228756.37	Mastic	Homogeneous Black Non-fibrous Bound			100%	Mastic	None Detected
Layer 2 A228756.37	Mud	Heterogeneous Gray Non-fibrous Bound			97%	Binder	**3% Chrysotile**

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LEGEND: Non-Anth = Non-Asbestiform Anthophyllite
Non-Trem = Non-Asbestiform Tremolite
Calc Carb = Calcium Carbonate

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORTING LIMIT: <1% by visual estimation

REPORTING LIMIT FOR POINT COUNTS: 0.25% by 400 Points or 0.1% by 1,000 Points

REGULATORY LIMIT: >1% by weight

Due to the limitations of the EPA 600 method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarized light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation. *Estimated measurement of uncertainty is available on request.*

This report relates only to the samples tested or analyzed and may not be reproduced, except in full, without written approval by Eurofins CEI. Eurofins CEI makes no warranty representation regarding the accuracy of client submitted information in preparing and presenting analytical results. Interpretation of the analytical results is the sole responsibility of the client. Samples were received in acceptable condition unless otherwise noted. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.

Information provided by customer includes customer sample ID and sample description.

ANALYST: Nicholas Moore

APPROVED BY: Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP® TESTING
NVLAP LAB CODE 101768-0

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CHAIN OF CUSTODY

730 SE Maynard Road, Cary, NC 27511
Tel: 866-481-1412; Fax: 919-481-1442

LAB USE ONLY:
CEI Lab Code:
CEI Lab I.D. Range:

COMPANY INFORMATION	PROJECT INFORMATION
CEI CLIENT #:	Job Contact: Joe Littlefield
Company: Tioga Environmental	Email / Tel: Jlittlefield@TiogaENV.com
Address: 357 N. Main Street Memphis, TN 38103	Project Name: Hazlip 54 E. Military
	Project ID#: 251310.00
Email: Jlittlefield@TiogaENV.com	PO #:
Tel: 901-791-2432 Fax: 901-791-2442	STATE SAMPLES COLLECTED IN: TN

IF TAT IS NOT MARKED STANDARD 3 DAY TAT APPLIES.

ASBESTOS	METHOD	TURN AROUND TIME					
		4 HR	8 HR	1 DAY	2 DAY	3 DAY	5 DAY
PLM BULK	EPA 600	☐	☑	☐	☐	☐	☐
PLM POINT COUNT (400)	EPA 600	☐	☐	☐	☐	☐	☐
PLM POINT COUNT (1000)	EPA 600	☐	☐	☐	☐	☐	☐
PLM GRAV w POINT COUNT	EPA 600		☐	☐	☐	☐	☐
PLM BULK	CARB 435		☐	☐	☐	☐	☐
PCM AIR	NIOSH 7400	☐	☐	☐	☐	☐	☐
TEM AIR	EPA AHERA	☐	☐	☐	☐	☐	☐
TEM AIR	NIOSH 7402	☐	☐	☐	☐	☐	☐
TEM AIR (PCME)	ISO 10312	☐	☐	☐	☐	☐	☐
TEM AIR	ASTM 6281-15	☐	☐	☐	☐	☐	☐
TEM BULK	CHATFIELD		☐	☐	☐	☐	☐
TEM DUST WIPE	ASTM D6480-05 (2010)	☐	☐	☐	☐	☐	☐
TEM DUST MICROVAC	ASTM D5755-09 (2014)	☐	☐	☐	☐	☐	☐
TEM SOIL	ASTM D7521-16			☐	☐	☐	☐
TEM VERMICULITE	CINCINNATI METHOD			☐	☐	☐	☐
TEM QUALITTATIVE	IN-HOUSE METHOD		☐	☐	☐	☐	☐
OTHER:		☐	☐	☐	☐	☐	☐

REMARKS / SPECIAL INSTRUCTIONS:	☐ Accept Samples ☐ Reject Samples

Relinquished By:	Date/Time	Received By:	Date/Time
Adam Smith	7-12-22 / 1:47 PM	Donald Wade	7/12/2022 13:47

Samples will be disposed of 30 days after analysis

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SAMPLING FORM

COMPANY CONTACT INFORMATION	
Company: Tioga Environmental	Job Contact: Joe Littlefield
Project Name: Hazlip 54 E. Military	JLittlefield@TiogaENV.com
Project ID #: 251310.00	Tel: 901-791-2432

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST	
RC-01	ROOF CORE		PLM ☑	TEM ☐
RC-02	ROOF CORE		PLM ☑	TEM ☐
M-01	MASTIC (BLACK)		PLM ☑	TEM ☐
M-02	MASTIC (GRAY)		PLM ☑	TEM ☐
M-03	MASTIC (WHITE)		PLM ☑	TEM ☐
M-04	MASTIC (BLACK)		PLM ☑	TEM ☐
RC-03	ROOF CORE		PLM ☑	TEM ☐
M-05	MASTIC (BLACK)		PLM ☑	TEM ☐
MT-01	MORTAR		PLM ☑	TEM ☐
BM-01	BRICK MORTAR		PLM ☑	TEM ☐
BM-02	BRICK MORTAR		PLM ☑	TEM ☐
P-01	PLASTER		PLM ☑	TEM ☐
P-02	PLASTER		PLM ☑	TEM ☐
PW-01	1" PIPE WRAP		PLM ☑	TEM ☐
PW-02	1" PIPE WRAP		PLM ☑	TEM ☐
PW-03	2" PIPE WRAP ELBOW		PLM ☑	TEM ☐
PW-04	2" PIPE WRAP		PLM ☑	TEM ☐
P-03	PLASTER		PLM ☑	TEM ☐
P-04	PLASTER		PLM ☑	TEM ☐
P-05	PLASTER W/ TEXTURE		PLM ☑	TEM ☐
M-06	MASTIC (BROWN)		PLM ☑	TEM ☐
CT-01	2'x4' CEILING TILE		PLM ☑	TEM ☐
PW-05	2" PIPE WRAP		PLM ☑	TEM ☐
PW-06	2" PIPE WRAP		PLM ☑	TEM ☐
PW-07	2" PIPE WRAP		PLM ☑	TEM ☐
PW-08	4" PIPE WRAP		PLM ☑	TEM ☐
PW-09	4" PIPE WRAP ELBOW		PLM ☑	TEM ☐
PW-10	3" PIPE WRAP (DROP)		PLM ☑	TEM ☐

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SAMPLING FORM

COMPANY CONTACT INFORMATION	
Company: Tioga Environmental	Job Contact: Joe Littlefield
Project Name: Haizlip 54 E. Military	JLittlefield@TiogaENV.com
Project ID #: 251310.00	Tel: 901-791-2432

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST	
PW-11	2" PIPE WRAP (DROP)		PLM ✓	TEM
PW-12	4" PIPE WRAP		PLM ✓	TEM
PW-13	4" PIPE WRAP		PLM ✓	TEM
PW-14	3" PIPE WRAP (DROP)		PLM ✓	TEM
AC-01	ACOUSTIC CEILING		PLM ✓	TEM
AC-02	ACOUSTIC CEILING		PLM ✓	TEM
AC-03	ACOUSTIC CEILING		PLM ✓	TEM
M-07	MASTIC (BLACK)		PLM ✓	TEM
			PLM	TEM
			PLM	TEM
			PLM	TEM
			PLM	TEM
			PLM	TEM
			PLM	TEM
			PLM	TEM
			PLM	TEM
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			PLM	TEM
			PLM	TEM

Appendix 5
Viken PCS Sheets

Performance Characteristic Sheet

EFFECTIVE DATE: December 1, 2020

MANUFACTURER AND MODEL:

Make: ***Viken Detection*** (previously Heuresis)
Models: ***Model Pb200i***
Source: ***^{57}Co, 5 mCi (nominal – new source)***

FIELD OPERATION GUIDANCE

ACTION LEVEL SETTING:

0.5 mg/cm^2

OPERATING PARAMETERS:

Action Level mode

XRF CALIBRATION CHECK LIMITS:

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

SUBSTRATE CORRECTION:

Not applicable

INCONCLUSIVE RANGE OR THRESHOLD:

ACTION LEVEL MODE READING DESCRIPTION	SUBSTRATE	INCONCLUSIVE RANGE (mg/cm^2)
Results not corrected for substrate bias on any substrate	Brick Concrete Drywall Metal Plaster Wood	0.4 – 0.6 0.4 – 0.6 0.4 – 0.6 0.4 – 0.6 0.4 – 0.6 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, with two separate instruments running software version Pb200i 5.0 (DEBUG version) in Action Level test mode. The actual source strength of each instrument on the day of testing was approximately 2.9 mCi; source ages were approximately 9 months.

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^2*** using the paint film nearest 1.0 mg/cm^2 in the NIST Standard Reference Material (SRM) used (e.g., for NIST SRM 2579, use the 1.02 mg/cm^2 film; for NIST SRM 2579a, use the 1.04 mg/cm^2 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 instrument time to take a reading varied within a narrow range from 5 to 6 seconds, with a small number (3%) of longer times from 7 to 11 seconds. The longer readings were almost all on wood substrates. This range of reading times applies only to instruments with the same source strength as those tested (2.9 mCi at the time of PCS testing). Instruments with stronger sources will have shorter reading times and those with weaker sources, longer reading times.

CLASSIFICATION OF RESULTS:

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

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^2, 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.

Appendix 6
Lead-Based Paint XRF Data

Job Id	Reading #	Concentration	Units	Result	Calibration Reading	Action Level	Date	Time	User	Mode	Analytic Mode	Component	Feature	Substrate	Color	Side	Condition	Room
54 E Military	8162	0.9	mg/cm2		TRUE	1	7/12/2022	9:38:26	White	Action Level	Lead Paint							
54 E Military	8163	0.9	mg/cm2		TRUE	1	7/12/2022	9:38:57	White	Action Level	Lead Paint							
54 E Military	8164	1	mg/cm2		TRUE	1	7/12/2022	9:39:57	White	Action Level	Lead Paint							
54 E Military	8165	-0.1	mg/cm2		TRUE	1	7/12/2022	9:41:06	White	Action Level	Lead Paint							
54 E Military	8166	0	mg/cm2		TRUE	1	7/12/2022	9:41:21	White	Action Level	Lead Paint							
54 E Military	8167	-0.1	mg/cm2		TRUE	1	7/12/2022	9:41:35	White	Action Level	Lead Paint							
54 E Military	8168	0.9	mg/cm2	Negative	FALSE	1	7/12/2022	9:43:50	White	Action Level	Lead Paint	Door	Casing	Wood	White	B	Deteriorated	Exterior
54 E Military	8169	0	mg/cm2	Negative	FALSE	1	7/12/2022	9:45:49	White	Action Level	Lead Paint	Door		Metal	Brown	B	Deteriorated	Exterior
54 E Military	8170	6.5	mg/cm2	Positive	FALSE	1	7/12/2022	9:46:16	White	Action Level	Lead Paint	Door	Jamb	Wood	Brown	B	Deteriorated	Exterior
54 E Military	8171	0.1	mg/cm2	Negative	FALSE	1	7/12/2022	9:47:13	White	Action Level	Lead Paint	Gas Line		Metal	Brown	B	Deteriorated	Exterior
54 E Military	8172	0.6	mg/cm2	Negative	FALSE	1	7/12/2022	9:59:14	White	Action Level	Lead Paint	Coal Door		Metal	Brown	B	Deteriorated	Exterior
54 E Military	8173	12.6	mg/cm2	Positive	FALSE	1	7/12/2022	10:02:04	White	Action Level	Lead Paint	Door	Casing	Wood	White	D	Deteriorated	Exterior
54 E Military	8174	-0.1	mg/cm2	Negative	FALSE	1	7/12/2022	10:03:08	White	Action Level	Lead Paint	Door	Jamb	Metal	White	D	Deteriorated	Exterior
54 E Military	8175	0	mg/cm2	Negative	FALSE	1	7/12/2022	10:03:29	White	Action Level	Lead Paint	Door	Jamb	Wood	White	D	Deteriorated	Exterior
54 E Military	8176	0	mg/cm2	Negative	FALSE	1	7/12/2022	10:04:28	White	Action Level	Lead Paint	Door		Metal	White	A	Intact	Exterior
54 E Military	8177	3.8	mg/cm2	Positive	FALSE	1	7/12/2022	10:10:37	White	Action Level	Lead Paint	Wall		Brick	White	A	Intact	Stage
54 E Military	8178	3.6	mg/cm2	Positive	FALSE	1	7/12/2022	10:11:18	White	Action Level	Lead Paint	Wall		Brick	White	B	Intact	Stage
54 E Military	8179	3.5	mg/cm2	Positive	FALSE	1	7/12/2022	10:12:23	White	Action Level	Lead Paint	Wall		Brick	Burgundy	C	Deteriorated	Stage
54 E Military	8180	-0.1	mg/cm2	Negative	FALSE	1	7/12/2022	10:13:49	White	Action Level	Lead Paint	Wall		Brick	White	A	Intact	Restroom 2
54 E Military	8181	0.2	mg/cm2	Negative	FALSE	1	7/12/2022	10:14:16	White	Action Level	Lead Paint	Wall		Brick	White	B	Intact	Restroom 2
54 E Military	8182	0.2	mg/cm2	Negative	FALSE	1	7/12/2022	10:24:44	White	Action Level	Lead Paint	Drain Vent		Metal	White	C	Intact	Restroom 2
54 E Military	8183	0.3	mg/cm2	Negative	FALSE	1	7/12/2022	10:26:32	White	Action Level	Lead Paint	Drain Vent		Metal	Silver	C	Intact	Restroom 2
54 E Military	8184	12.1	mg/cm2	Positive	FALSE	1	7/12/2022	10:27:34	White	Action Level	Lead Paint	Ceiling		Plaster	White		Deteriorated	Restroom 2
54 E Military	8185	0.1	mg/cm2	Negative	FALSE	1	7/12/2022	10:28:13	White	Action Level	Lead Paint	Crown Molding		Wood	White	All	Deteriorated	Restroom 2
54 E Military	8186	-0.3	mg/cm2	Negative	FALSE	1	7/12/2022	10:28:55	White	Action Level	Lead Paint	Door		Wood	Burgundy	D	Deteriorated	Restroom 2
54 E Military	8187	0.1	mg/cm2	Negative	FALSE	1	7/12/2022	10:29:22	White	Action Level	Lead Paint	Door	Casing	Wood	Burgundy	D	Deteriorated	Restroom 2
54 E Military	8188	-0.1	mg/cm2	Negative	FALSE	1	7/12/2022	10:29:42	White	Action Level	Lead Paint	Door	Jamb	Wood	Burgundy	D	Deteriorated	Restroom 2
54 E Military	8189	3.5	mg/cm2	Positive	FALSE	1	7/12/2022	10:30:16	White	Action Level	Lead Paint	Wall		Brick	Burgundy	D	Deteriorated	Restroom 2
54 E Military	8190	2.5	mg/cm2	Positive	FALSE	1	7/12/2022	10:33:02	White	Action Level	Lead Paint	Wall		Plaster	White	D	Deteriorated	Restroom 1
54 E Military	8191	0.1	mg/cm2	Negative	FALSE	1	7/12/2022	10:36:19	White	Action Level	Lead Paint	Wall		Brick	White	A	Deteriorated	Shower
54 E Military	8192	0.4	mg/cm2	Negative	FALSE	1	7/12/2022	10:37:03	White	Action Level	Lead Paint	Door	Casing	Metal	Burgundy	A	Deteriorated	Shower
54 E Military	8193	3.1	mg/cm2	Positive	FALSE	1	7/12/2022	10:38:33	White	Action Level	Lead Paint	Ceiling		Plaster	White		Deteriorated	Restroom 1
54 E Military	8194	1.3	mg/cm2	Positive	FALSE	1	7/12/2022	10:39:46	White	Action Level	Lead Paint	Radiator		Metal	Silver		Deteriorated	Restroom 1
54 E Military	8195	7.1	mg/cm2	Positive	FALSE	1	7/12/2022	10:44:20	White	Action Level	Lead Paint	Wall		Brick	White	B	Deteriorated	Shop
54 E Military	8196	6.8	mg/cm2	Positive	FALSE	1	7/12/2022	10:44:53	White	Action Level	Lead Paint	Wall		Brick	Yellow	B	Deteriorated	Shop
54 E Military	8197	0	mg/cm2	Negative	FALSE	1	7/12/2022	10:45:37	White	Action Level	Lead Paint	Wall		Wood	White	D	Deteriorated	Shop
54 E Military	8198	0.2	mg/cm2	Negative	FALSE	1	7/12/2022	10:48:25	White	Action Level	Lead Paint	Wall		Brick	White	B	Deteriorated	Gym
54 E Military	8199	0.3	mg/cm2	Negative	FALSE	1	7/12/2022	10:48:56	White	Action Level	Lead Paint	Wall		Brick	White	B	Deteriorated	Gym
54 E Military	8200	0.2	mg/cm2	Negative	FALSE	1	7/12/2022	10:49:40	White	Action Level	Lead Paint	Wall		Brick	White	C	Deteriorated	Gym
54 E Military	8201	3.7	mg/cm2	Positive	FALSE	1	7/12/2022	10:50:05	White	Action Level	Lead Paint	Wall		Brick	Burgundy	C	Deteriorated	Gym
54 E Military	8202	0.9	mg/cm2	Negative	FALSE	1	7/12/2022	11:04:21	White	Action Level	Lead Paint	Wall		Plaster	White	A	Deteriorated	Class 1
54 E Military	8203	0.3	mg/cm2	Negative	FALSE	1	7/12/2022	11:05:02	White	Action Level	Lead Paint	Wall		Plaster	White	C	Deteriorated	Class 1
54 E Military	8204	0.6	mg/cm2	Negative	FALSE	1	7/12/2022	11:05:38	White	Action Level	Lead Paint	Window	Stool	Wood	White	C	Deteriorated	Class 1
54 E Military	8205	0.6	mg/cm2	Negative	FALSE	1	7/12/2022	11:07:02	White	Action Level	Lead Paint	Window	Stool	Wood	White	C	Deteriorated	Class 3
54 E Military	8206	3.3	mg/cm2	Positive	FALSE	1	7/12/2022	11:07:39	White	Action Level	Lead Paint	Wall		Plaster	White	A	Deteriorated	Class 3
54 E Military	8207	3.6	mg/cm2	Positive	FALSE	1	7/12/2022	11:08:15	White	Action Level	Lead Paint	Wall		Plaster	Yellow	A	Deteriorated	Class 3
54 E Military	8208	0.9	mg/cm2	Negative	FALSE	1	7/12/2022	11:08:47	White	Action Level	Lead Paint	Wall		Plaster	Yellow	C	Deteriorated	Class 3
54 E Military	8209	0.2	mg/cm2	Negative	FALSE	1	7/12/2022	11:10:25	White	Action Level	Lead Paint	Radiator		Metal	Silver	C	Deteriorated	Class 3
54 E Military	8210	0.1	mg/cm2	Negative	FALSE	1	7/12/2022	11:10:49	White	Action Level	Lead Paint	Radiator		Metal	Silver	C	Deteriorated	Class 3
54 E Military	8211	4.2	mg/cm2	Positive	FALSE	1	7/12/2022	11:12:11	White	Action Level	Lead Paint	Wall		Plaster	White	A	Deteriorated	Snack
54 E Military	8212	0.4	mg/cm2	Negative	FALSE	1	7/12/2022	11:13:17	White	Action Level	Lead Paint	Wall		Brick	Yellow	D	Deteriorated	Class 4
54 E Military	8213	4.8	mg/cm2	Positive	FALSE	1	7/12/2022	11:13:41	White	Action Level	Lead Paint	Wall		Brick	Yellow	B	Deteriorated	Class 4
54 E Military	8214	1.6	mg/cm2	Positive	FALSE	1	7/12/2022	11:17:53	White	Action Level	Lead Paint	Wall		Brick	White	D	Deteriorated	Bleacher Hall D

Job Id	Reading #	Concentration	Units	Result	Calibration Reading	Action Level	Date	Time	User	Mode	Analytic Mode	Component	Feature	Substrate	Color	Side	Condition	Room
54 E Military	8215	2	mg/cm2	Positive	FALSE	1	7/12/2022	11:18:35	White	Action Level	Lead Paint	Ceiling		Plaster	White	D	Deteriorated	Bleacher Hall D
54 E Military	8216	0.1	mg/cm2	Negative	FALSE	1	7/12/2022	11:39:29	White	Action Level	Lead Paint	Floor	Lines	Wood	Green	All	Intact	Gym
54 E Military	8217	0.2	mg/cm2	Negative	FALSE	1	7/12/2022	11:39:59	White	Action Level	Lead Paint	Floor	Lines	Wood	Green	All	Intact	Gym
54 E Military	8218	1	mg/cm2		TRUE	1	7/12/2022	12:30:04	White	Action Level	Lead Paint							
54 E Military	8219	0.9	mg/cm2		TRUE	1	7/12/2022	12:30:34	White	Action Level	Lead Paint							
54 E Military	8220	1	mg/cm2		TRUE	1	7/12/2022	12:31:02	White	Action Level	Lead Paint							
54 E Military	8221	0	mg/cm2		TRUE	1	7/12/2022	12:31:33	White	Action Level	Lead Paint							
54 E Military	8222	0	mg/cm2		TRUE	1	7/12/2022	12:31:48	White	Action Level	Lead Paint							
54 E Military	8223	0	mg/cm2		TRUE	1	7/12/2022	12:32:04	White	Action Level	Lead Paint							