



**Hazardous Materials Survey
Harford Senior Center
4920 Harford Road
Baltimore, Maryland 21214**

Prepared for

RRMM Architects
3700 Koppers Street, Suite 300
Halethorpe, Maryland 21227

Prepared by

EA Engineering, Science, and Technology, Inc., PBC
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

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LIST OF ACRONYMS AND ABBREVIATIONS

ACBM	Asbestos-Containing Building Material
ACM	Asbestos-Containing Material
AHERA	Asbestos Emergency Response Act
EA	EA Engineering, Science, and Technology, Inc., PBC
EPA	U.S. Environmental Protection Agency
CAA	United States Clean Air Act Amendments
CFC	chlorofluorocarbon
CFL	Compact Fluorescent Light
ft	Foot (feet)
HBFC	hydrobromofluorocarbon
HCFC	hydrochlorofluorocarbon
HID	High Intensity Discharge
LBP	Lead-Based Paint
LCP	Lead-Containing Paint
MDE	Maryland Department of the Environment
mg/cm ²	Milligrams per square centimeter
ODS	Ozone-Depleting Substance
PCB	Polychlorinated biphenyl
ppm	Part per million
RACM	Regulated Asbestos-Containing Material
RRMM	RRMM Architects
UW	Universal Waste

EXECUTIVE SUMMARY

EA Engineering, Science, and Technology Inc., PBC. (hereafter referred to as EA) was retained by RRMM Architects (hereafter referred to as RRMM) to perform a Hazardous Materials Survey of the Harford Senior Center located at 4920 Harford Road, Baltimore, Maryland 21214. This included the interior of the building and the exterior façade of the building as well as the roof (hereafter collectively referred to as the Study Area). The interior of the building has a footprint of approximately 6,952 square feet of floor space. The Study Area is slated for renovation to better accommodate the needs of the Senior Center.

This Hazardous Materials Survey was performed to identify hazardous materials that may be impacted by renovation activities. The hazardous materials evaluated for the survey include Asbestos-Containing Building Materials (ACBMs), Lead-Based Paints (LBPs), liquid phase Polychlorinated Biphenyls (PCBs), Ozone-Depleting Substances (ODSs), and Universal Wastes (UWs).

Floor plans of existing conditions were provided to EA by RRMM for referral and use in the Survey. The floor plans were labeled by EA with room numbers for the purpose of documenting and reporting the findings specific to each room; the floor plans with the EA-designated room numbers are included as **Figure 1**. The EA-designated room numbers correlate to the room numbers in the Hazardous Materials Summary Table, provided as **Figure 2**, to identify the types and locations of the hazardous materials identified in the Study Area. Photographs taken during the survey are included in **Appendix A**.

The results of the survey, performed on May 2nd and May 9th, 2025, have identified hazardous materials in the Study Area. The following sections summarize EA's findings.

Asbestos-Containing Building Materials

The results of the survey have identified asbestos-containing building materials in the Study Area. A summary of the asbestos-containing building materials (material types and quantities) is provided in the following **Table ES-1**. The table also contains a column for information indicating whether or not the material is a regulated asbestos-containing material (RACM) per federal regulations.

Material Type	Quantity	Unit of Measure	RACM
Light Gray 9" x 9" Floor Tile ¹	3,388	Square Feet	No
Gray 9" x 9" Floor Tile ¹	2,702	Square Feet	No
Joint Compound ²	5,647 ³	Square Feet	Yes
Black Mastic on Black Covebase	363	Linear Feet	No
Black Expansion Joint	126	Linear Feet	No
Gray Paper Wrap Around Ceiling Joist	8	Square Feet	No
White Window Glazing	140	Linear Feet	Yes
Pipe Flange Gasket (Assumed)	3	Each	No
Fire Door (Assumed)	3	Each	No

¹ This material is present beneath carpeting and/or non-ACM 12" x 12" vinyl floor tile.

² The asbestos-containing joint compound identified during the survey was associated with a wallboard system and is therefore considered an integral part of the wall system by the EPA. Analysis of the wall system was conducted, and the wall system was determined to be non-asbestos containing. The wall system itself is therefore not considered ACM by EPA; however, OSHA regards each of the materials used to construct wall systems as separate materials and each material must be analyzed separately for asbestos content. If any of the individual materials contain asbestos, work practices must be conducted in accordance with OSHA's Construction Asbestos Standard.

³ The quantity listed for joint compound is the estimated quantity of drywall observed at the building, as the joint compound cannot be economically separated from the wall system.

The EPA requires that regulated asbestos-containing material be removed before demolition/renovation activities begin. Further, although certain asbestos-containing building materials identified during the survey were not classified as RACM at the time of the survey, it is EA's professional opinion that these materials should also be removed since proposed renovation techniques are unknown at this time and to prevent the potential release of fibers during renovation and subsequent waste consolidation activities (segregation and reduction of renovation debris).

The pipe gaskets and fire doors were assumed to contain asbestos. These items were assumed to contain asbestos (rather than sampled/tested), as the materials were either inaccessible at the time of the survey or sampling would have caused damage to the structural integrity of the system while the facility is still in use.

It may be cost effective to have these assumed asbestos-containing building materials sampled and analyzed at an appropriate time so that they can be definitively classified as asbestos-containing building materials or non-asbestos materials. The most appropriate time to sample these materials is typically after the project has been turned over to the renovation contractor and work has commenced.

The OSHA "Asbestos in Construction Standard" (29 CFR 1926.1101) imposes restrictions on the disturbance of asbestos during demolition, remodeling, and renovation activities. Removal of any asbestos-containing building materials identified in the Study Area is considered Class II asbestos work by OSHA regulations. Class II asbestos work must be performed by trained employees using work practices required by the OSHA standard.

Lead-Based Paints

Lead-based paints (LBPs) were identified throughout the Study Area on interior and exterior building components. Specifically, LBP was identified on metal and wood substrates. In addition, lead-containing paints (i.e., paints containing lead but at concentrations less than the threshold for lead-based paint) were identified on various surfaces. In addition, a lead pipe and lead-glazed ceramic tiles were identified during the survey.

Removal/abatement of LBP and LCP prior to planned alterations is not required; however, the presence of lead in paint of any concentration triggers OSHA regulatory standard 29 CFR

1926.62. Therefore, contractors must be made aware of the lead hazards in the Study Area. Worker protection requirements and engineering controls to protect the surrounding environment from lead contamination should be implemented by contractors in accordance with pertinent regulations. Untested paint on building components should be considered to contain regulated levels of lead until subsequent testing shows otherwise.

Demolition debris with LBP and lead-glazing may be disposed of as non-hazardous provided the material is not classified as a hazardous waste in accordance with 40 CFR Part 261 and SW-846 (Test Methods for Evaluating Solid Waste Physical/Chemical). Metal objects coated with LBP and the lead pipe can be recycled.

Liquid Polychlorinated Biphenyls

Equipment assumed to contain liquid phase Polychlorinated Biphenyls (PCBs) was identified in the Study Area. The type of equipment observed and the recorded quantity is provided in the following **Table ES-2**.

Table ES-2		
Approximate Quantities for Equipment Containing PCBs		
Equipment Type	Quantity	Unit of Measure
Light Ballast	92	Each

Due to the voluminous quantity, the lighting fixtures in the Study Area were not dismantled to inspect individual light ballasts for markings related to PCB content. Therefore, the ballasts are assumed to contain PCBs.

Ballasts marked as “No PCBs” can be disposed of as non-hazardous waste. Ballasts lacking the “No PCBs” mark should be removed and disposed of in accordance with EPA’s Toxic Substances Control Act (TSCA) 40 CFR Part 761. If an unmarked ballast is not leaking, the associated lighting fixture does not require special handling or disposal. If an unmarked ballast is leaking, any material impacted by the leak should be treated as hazardous waste. Containers storing unmarked ballasts must be labeled in accordance with EPA labeling requirements specified in 40 CFR Part 262 Subpart C.

Ozone-Depleting Substances

Equipment suspected of containing Ozone-Depleting Substances (ODSs) was identified in the Study Area. The types of equipment observed and the recorded quantities are provided in the following **Table ES-3**.

Table ES-3		
Approximate Quantities for Equipment Containing ODSs		
Equipment Type	Quantity	Unit of Measure
Commercial Refrigerator	2	Each
Household Refrigerator	1	Each
Rooftop Air-Condensing Unit	1	Each
Rooftop Air-Conditioning Unit	2	Each

Under EPA's rule, refrigerant must be recovered from equipment that is typically dismantled on-site before disposal (e.g., retail/commercial food refrigeration, central air-conditioning units, chillers, and industrial process refrigeration) in accordance with the EPA's requirements for servicing.

Equipment that typically enters the waste stream with the charge intact (e.g., household refrigerators, motor vehicle air conditioners, household freezers, and room air conditioners) is subject to special safe disposal requirements. Under the safe disposal requirements, the final person in the disposal chain (e.g., a scrap metal recycler or landfill owner) is responsible for ensuring that refrigerant is recovered from the equipment before the final disposal of the equipment. However, persons "upstream" can remove the refrigerant and provide documentation of its removal to the final person if this is more cost-effective. If the final person in the disposal chain (e.g., a scrap metal recycler or landfill owner) accepts appliances that no longer hold a refrigerant charge, that person is responsible for maintaining a signed statement from whom the appliance(s) is being accepted. The signed statement must include the name and address of the person who recovered the refrigerant and the date that the refrigerant was recovered, or a copy of a contract stating that the refrigerant will be removed prior to delivery.

Universal Wastes

Universal wastes (UW) were identified in the Study Area. The types of universal wastes observed and the recorded quantities are provided in the following **Table ES-4**.

Table ES-4		
Approximate Quantities for UW		
Equipment Type	Quantity	Unit of Measure
4' Fluorescent Light Tube	324	Each
2' Fluorescent Light Tube	1	Each
Compact Fluorescent Light Bulb	1	Each
High Intensity Discharge Bulb	26	Each
Thermostat	2	Each
Battery in Emergency Light Fixture	11	Each

All UW should be placed in a container that is structurally sound, will prevent damage to the contents, is compatible with its contents, and will be kept closed at all times (except when adding items to or removing items from the container). The container must be without damage, or evidence of spillage, that could lead to leakage of the waste contained inside. The disposal of UW is outlined in the EPA regulations in 40 CFR Part 273 and in Maryland regulations in COMAR Title 26, Subtitle 13.

1. INTRODUCTION

The Study Area was surveyed to identify and quantify certain potentially hazardous materials that may be affected by the planned renovation activities. Specifically, the hazardous materials evaluated for this project included Asbestos-Containing Building Materials, Lead-Based Paints, liquid phase Polychlorinated Biphenyls, Ozone-Depleting Substances, and Universal Wastes.

Floor plans of existing conditions were provided to EA prior to the survey. The rooms outlined on the floor plans were assigned room numbers during the survey; the assigned room numbers were used in the Hazardous Materials Summary Table provided as **Figure 2** to identify the locations, types, and quantities of the hazardous materials, by room, in the Study Area. Photographs taken during the survey are included in **Appendix A**.

1.1 ASBESTOS-CONTAINING BUILDING MATERIALS

Asbestos means the asbestiform varieties of chrysotile, crocidolite, amosite, anthophyllite, tremolite, and actinolite. Asbestos-containing materials (ACM) means any material or product which contains greater than one percent (1%) asbestos. Asbestos-containing building materials (ACBM) means ACM that is found in or on interior structural members or other parts of a building. ACBM is divided into three categories in the EPA regulations (40 CFR Part 763). These categories are thermal system insulation, surfacing materials, and miscellaneous materials. Each category is generally described as follows:

- Thermal System Insulation (TSI) includes those materials applied to pipes, fittings, boilers, breeching tanks, ducts, or other interior/exterior structural components to prevent heat loss or gain, or water condensation, or for other purposes of maintaining temperatures.
- Surfacing (S) Materials include those materials sprayed on, troweled-on, or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes.
- Miscellaneous (M) Materials include interior/exterior building material on structural components, structural members or fixtures, such as roofing, floor and ceiling tiles, caulks, mastics/adhesives, and does not include surfacing material or thermal system insulation.

The EPA requires that Regulated Asbestos-Containing Materials (RACM) be removed before demolition/renovation begins in accordance with the “National Emission Standards for Hazardous Air Pollutants” (NESHAP) 40 CFR Part 61. The State of Maryland also regulates the removal/abatement of asbestos in buildings (COMAR 26.11.21). RACM includes the following:

- Friable ACM;
- Category I non-friable ACM (resilient floor covering, resilient floor covering mastic, asphalt roofing products, packings, and gaskets) that has become friable;

- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading; and
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated in 40 CFR 61 Subpart M.

Asbestos is further classified as either 'Friable' or 'Non-Friable'. Friable asbestos material is defined as any material containing more than 1% asbestos that, when dry, can be crumbled, pulverized or reduced to powder by hand pressure. Non-friable asbestos materials are subcategorized as Category I and Category II, where Category I materials include resilient floor covering, resilient floor covering mastic, asphalt roofing products, packings, and gaskets. Category II materials include all other non-friable asbestos-containing materials.

1.2 LEAD-BASED PAINTS

The Maryland Department of the Environment (MDE) definition of lead-based paint (LBP) is used as the basis for this screening. Lead-based paint is defined as paint or coating that contains lead at a concentration greater than 0.7 milligrams per square centimeter, as determined by an X-Ray Fluorescence (XRF) instrument.

XRF is a common quantitative analytical technique used to measure the concentration of elements in solid or liquid materials. In this technique, the sample is bombarded by some form of ionizing radiation such as X-rays, or gamma-rays, which can cause the atoms of the sample to emit characteristic X-rays. These characteristic X-rays from the sample, known as fluorescent X-rays, can be detected and analyzed to provide information as to what concentration of atoms are contained in the sample. Since this technique does not harm the sample in any way, it is considered a nondestructive testing technique.

Lead-based paint is also defined by the MDE as paint chips containing greater than 0.5% lead by weight, as determined through laboratory analysis (Method SW846-7420). Since removal of paint chips from the substrate are required, this method is considered a destructive testing technique.

1.3 LIQUID POLYCHLORINATED BIPHENYLS

Polychlorinated Biphenyls (PCBs) are man-made mixtures of synthetic organic chemicals known as chlorinated hydrocarbons ranging from oily liquids to waxy solids. Due to their non-flammability, chemical stability, high boiling point, and electrical insulating properties, PCBs were used in a wide range of industrial and commercial applications. These applications included but were not limited to electrical, heat transfer, and hydraulic equipment; as plasticizers in paints, plastics and rubber products; and in pigments, dyes and carbonless copy paper.

Concern over the toxicity and occurrence in the environment of PCBs led Congress in 1976 to enact §6(e) of the Toxic Substances Control Act (TSCA) that included among other things, prohibitions on the manufacture, processing, and distribution in commerce of PCBs. Thus, TSCA

legislated true "cradle to grave" (i.e., from manufacture to disposal) management of PCBs in the United States.

PCB content has been categorized into three classifications by the federal government. Electrical equipment that contains less than 50 parts per million (ppm) of PCBs is defined as non-PCB. Electrical equipment that contains between 50 ppm and less than 500 ppm of PCBs is defined as PCB-contaminated. Electrical equipment with a PCB content of 500 ppm and greater is classified as PCB.

PCBs were commonly sold in the United States of America under the trade name "Arocolor." However, companies that used PCBs in the manufacture of transformers and capacitors often used other trade names. According to the EPA, electrical light ballasts manufactured prior to July 1978 have a greater than 50% chance of containing PCBs at concentrations of 50 ppm or greater. Ballasts manufactured after July 1978 are required to bear a "No PCB" label indicating they do not contain PCBs.

This study did not include inspection or testing for non-liquid PCBs.

1.4 OZONE-DEPLETING SUBSTANCES

Ozone-depleting substances (ODSs) are generally small organic molecules (less than three carbons) that contain chlorine, fluorine, or bromine. Some uses of ODSs include refrigerants, fire suppressants, and cleaning compounds. Title VI of the United States Clean Air Act Amendments (CAA) of 1990 has classified ozone-depleting substances as belonging to Class I substances (most harmful) or Class II substances (less harmful).

Class I substances are those with a greater ozone-depletion potential. Class I substances identified in Title VI are chlorofluorocarbons (CFCs), halons, carbon tetrachloride, methyl chloroform (1,1,1-trichloroethane), hydrobromofluorocarbon (HBFC) and methyl bromide. Class II substances are those with a lesser ozone-depletion potential. All hydrochlorofluorocarbons (HCFCs) are Class II substances.

Effective July 1, 1992, Section 608 of the CAA prohibits individuals from knowingly venting ozone-depleting substances (generally CFCs and HCFCs) used as refrigerants into the atmosphere while maintaining, servicing, repairing, or disposing of air-conditioning or refrigeration equipment.

1.5 UNIVERSAL WASTES

A universal waste is a common product/material that exhibits low-level hazards. Universal wastes include batteries, pesticides, mercury-containing equipment, bulbs/lamps, and aerosol cans. All universal waste must be handled in a manner to prevent the release of the hazardous substance into the environment, contained in a secure manner, labeled, and safely transported to a destination facility. Definitions of universal waste are detailed in 40 CFR 273.9, and general descriptions of universal waste are provided as follows.

A battery is an electrochemical cell that receives, stores, and delivers electric energy. Batteries can be disassembled into cells before removal and transportation as described in 40 CFR 273.13 (small quantity handlers) and 40 CFR 273.33 (large quantity handlers).

In general, there are several types of batteries, including primary and secondary. Primary batteries are most common in households and are known as single-use batteries. Primary batteries automatically convert chemical energy into electrical energy using zinc and manganese chemistry. Secondary batteries are known as re-chargeable batteries. Recharging occurs when electrical current is applied to the battery, reversing the chemical reaction that occurs during battery use. Secondary batteries are usually composed of nickel cadmium, nickel metal hydride or lithium-ion chemistry. Lead-acid batteries are the oldest type of the secondary batteries and are typically used to power vehicles.

Pesticides include any substance/chemical designed to control and manage pests.

Mercury-containing equipment includes a device or part of a device (including thermostats but excluding batteries and bulbs/lamps) that contains elemental mercury integral to its function. Thermostats are typically used to control a heating or cooling system. A thermostat is an electro-mechanical on/off switch that is activated by temperature changes. The sensing element is usually a spiral bimetallic strip that coils and uncoils in response to temperature changes because of differential expansion of the two bonded metals. In a mercury-switch thermostat, a ball of mercury rolls between contacts in one or more sealed glass ampoules, which are attached to a metal strip. The switch works when the mercury makes or breaks an electrical circuit, which creates a signal for heating or cooling from a furnace or central air conditioning system. Each glass ampoule contains approximately three grams of mercury, which is approximately the size of a dime. Mercury's unique properties, high conductivity, high surface tension and liquidity at room temperature, have made it a useful component in many electric switches.

A lamp, also referred to as a universal waste lamp, is the bulb or tube portion of an electric lighting device specifically designed to produce radiant energy. Examples of common universal waste lamps include, but are not limited to, fluorescent, high intensity discharge, neon, mercury vapor, high pressure sodium, and metal halide lamps.

An aerosol can is a non-refillable receptacle containing a compressed, liquefied, or dissolved gas under pressure (propellant) for the sole purpose of releasing a liquid, paste, or powder (product). Equipped with a self-closing release device, aerosol cans are widely used for dispensing a broad range of products including paints, solvents, pesticides, food and personal care products, and many others. Aerosol cans are frequently hazardous due to their ignitability characteristic (as propellants are often propane or butane), and in some cases may also contain listed or exhibit other hazardous waste characteristics.

1.6 LIMITATIONS AND EXCLUSIONS

The following limitations and exclusions apply to this project:

- Areas above and behind fixed substrates (e.g., plaster, drywall, masonry block, concrete, etc.) were not accessed, as the survey was limited to non-intrusive measures due to its occupied status.
- Sampling of energized components was not performed due to risk of electrical hazards.
- Quantities of hazardous materials identified herein were approximate on the dates of the survey and are limited to accessible, observable materials. Quantities may change in the future due to daily operations in the Study Area.
- The conclusions presented in this report are based on the visual findings observed on the dates of the survey.
- Subsurface investigation measures were excluded per the scope of work for this project.
- Patching of sample locations for non-friable materials was not conducted, with the exception of roofing materials. Areas of sampled roofing materials were patched by a roofing contractor retained by others.
- Non-liquid PCBs were not characterized.
- The survey did not include dismantling of equipment (e.g., mechanical, process, industrial, etc.) to identify potential hazardous materials within the equipment.

2. ASBESTOS-CONTAINING BUILDING MATERIALS

The National Emission Standard for Hazardous Air Pollutants (NESHAP) requires the building owner/operator to perform an asbestos inspection of affected portions of facilities prior to demolition or renovation activities.

Maryland Department of the Environment (MDE) accredited Asbestos Inspectors performed an asbestos inspection of accessible portions of the Study Area. Certificates of the inspectors are included in **Appendix B**.

2.1 INSPECTION AND ANALYTICAL METHODOLOGY

The survey consisted of performing a records review followed by an inspection to identify suspect asbestos-containing building materials (ACBMs) in accessible building areas. The inspection was non-intrusive (i.e., the inspection did not include accessing areas behind hard walls, above hard ceilings, below hard floors, or behind other fixed substrates).

2.1.1 Records Review

A records review consists of reviewing previous asbestos inspection/survey reports, abatement records, and/or as-built drawings, if available, associated with the facility.

2.1.2 On-site Inspection

The on-site inspection involved a combination of visual assessment and minimally destructive sampling methodologies. The visual assessment primarily focused on identifying homogeneous areas of suspect materials present within the Study Area. Sampling of each homogeneous area was then conducted from random locations where the suspect homogeneous area of ACBM was identified and accessible. Where possible, samples were collected from inconspicuous locations. Samples from suspect friable materials were patched in a manner to limit the release of potential asbestos fibers; however, these locations were not permanently or professionally repaired.

2.1.3 Sample Collection and Analysis

EA collected samples of materials that were suspected of containing asbestos in accordance with the Asbestos Hazard Emergency Response Act (AHERA) (40 CFR 763 Subpart E). All areas of surfacing materials, thermal system insulation materials, or miscellaneous materials that were uniform in color and texture were grouped into homogeneous areas and sampled according to the AHERA asbestos sampling protocol as shown in the following **Table 2-1**.

Surfacing Materials	Thermal System Insulation	Miscellaneous Materials
3 samples per area $\leq 1,000$ ft ²	3 samples for each TSI material	Sample in a manner sufficient to determine (Note – EA's Standard Operating Procedure is to collect at least 2 samples per homogenous area)
5 samples per area $> 1,000$ ft ² but $\leq 5,000$ ft ²	1 sample per area of patched insulation (<6 linear or square feet)	
7 samples per area $> 5,000$ ft ²	Sample in a manner sufficient per mechanical system not assumed to be ACBM where cement or plaster is used on fittings such as tees, elbows, or valves (Note – EA's Standard Operating Procedure is to collect at least 2 samples per homogenous area)	

Samples were submitted to BATTAs Laboratories, LLC (BATTAs) for analysis by Polarized Light Microscopy (PLM) in accordance with the EPA Method for the Determination of Bulk Asbestos Samples (EPA 600/R-93/116). Based on the laboratory findings, further analysis of samples by Transmission Electron Microscopy (TEM) was not considered necessary. BATTAs is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP #101032-0) for the analysis of bulk asbestos by PLM and bulk asbestos by TEM.

2.2 RESULTS

2.2.1 Records Review

No records in the form of previous inspection/survey reports, abatement records, or as-builts drawings were made available to EA.

2.2.2 On-site Inspection and Sampling Results

As a result of the inspection, suspect ACBMs were identified within the Study Area. Samples of the accessible suspect materials were collected, and the samples were analyzed by BATTAs. Based upon the laboratory analysis, ACBMs were identified and are listed in the following **Table 2-2**.

EA Sample No.	Material Description	Color	Location	Category*	Friable (Yes/No)	PLM Analysis
HSC-EA-04B-1	Joint Compound	White	Wall	M	Yes	2% Chrysotile
HSC-EA-06A	Expansion Joint	Black	Wall	M	No	5% Chrysotile
HSC-EA-06B	Expansion Joint	Black	Wall	M	No	5% Chrysotile
HSC-EA-07A	Window Glazing	White	Window	M	No	2% Chrysotile
HSC-EA-07B	Window Glazing	White	Window	M	No	2% Chrysotile

Table 2-2 Laboratory Analytical Results						
EA Sample No.	Material Description	Color	Location	Category*	Friable (Yes/No)	PLM Analysis
HSC-EA-08A	Expansion Joint	Black	Wall	M	No	5% Chrysotile
HSC-EA-08B	Expansion Joint	Black	Wall	M	No	5% Chrysotile
HSC-EA-09A	Paper Wrap on Ceiling Joist	White	Wall	M	Yes	40% Chrysotile
HSC-EA-09B	Paper Wrap on Ceiling Joist	White	Wall	M	Yes	50% Chrysotile
HSC-EA-13A	Floor Tile	Light Gray	Floor	M	No	2% Chrysotile
HSC-EA-13B	Floor Tile	Light Gray	Floor	M	No	2% Chrysotile
HSC-EA-15A	Covebase Mastic	Black	Floor	M	No	2% Chrysotile
HSC-EA-27A	9" x 9" Floor Tile	Gray	Floor	M	No	3% Chrysotile
HSC-EA-27B	9" x 9" Floor Tile	Gray	Floor	M	No	3% Chrysotile
HSC-EA-29A	9" x 9" Floor Tile	Light Gray	Floor	M	No	2% Chrysotile
HSC-EA-29B	9" x 9" Floor Tile	Light Gray	Floor	M	No	3% Chrysotile

*Category: M=Miscellaneous

Representative photographs of the ACBMs are included in **Appendix A**. BATTA's asbestos laboratory analytical report, including a listing of all samples collected in the Study Area and the chain-of-custody for the samples, is included in **Appendix C**.

2.2.3 Presumed Asbestos-Containing Materials

Presumed Asbestos-Containing Materials (PACM) as defined by OSHA include thermal system insulation and surfacing material found in a building constructed no later than 1980. No materials meeting the definition of PACM were observed within the Study Area.

2.2.4 Assumed Asbestos-Containing Building Materials

Assumed ACBMs include any material that is suspected to contain asbestos and that was not sampled. Pipe gaskets and fire doors were assumed to contain asbestos. These items were assumed to contain asbestos (rather than sampled/tested), as the materials were either inaccessible at the time of the survey or sampling would have caused damage to the structural integrity of the system while the facility is still in use.

Representative photographs of the assumed ACBMs are included in **Appendix A**. The quantities and locations of assumed ACBMs are provided in the Hazardous Materials Summary Table in **Figure 2**.

2.2.5 Homogeneous Areas Documented as Non Asbestos-Containing

The following homogeneous areas were documented as non asbestos-containing based upon sampling and laboratory analysis:

Interior

- Pink 12" x 12" Floor Tile with White and Black Streaks
- Off-White 12" x 12" Floor Tile with Tan Streaks
- Gray 12" x 12" Floor Tile with White Streaks
- Black Mastic Under Floor Tiles
- Yellow Carpet Mastic
- Tan Covebase Mastic
- Gray Duct Mastic
- White Sink Caulk
- Gray Door Caulk
- White Door Caulk
- 2' x 4' Dropped Ceiling Tiles
- 1' x 1' Dropped Ceiling Tiles

Exterior

- Light Gray Expansion Joint
- White Door Caulk

Roof

- Built-Up Roofing System
- Gray Roof Caulk
- White Roof Caulk
- Shingled Roof System Over Entrance

2.2.6 Quantities for Asbestos-Containing Building Materials

Approximate quantities for the identified and assumed ACBMs are listed by material type in the following **Table 2-3**. The table also contains a column for information indicating whether or not the material was a regulated asbestos-containing material (RACM) at the time of the inspection, per federal regulations. The locations, types, and approximate quantities of ACBMs in the Study Area are provided, by room number, in the Hazardous Materials Summary Table in **Figure 2**.

Table 2-3 Approximate Quantities of ACBMs			
Material Type	Quantity	Unit of Measure	RACM
Light Gray 9" x 9" Floor Tile ¹	3,388	Square Feet	No
Gray 9" x 9" Floor Tile ¹	2,702	Square Feet	No
Joint Compound ²	5,647 ³	Square Feet	Yes
Black Mastic on Black Covebase	363	Linear Feet	No
Black Expansion Joint	126	Linear Feet	No
Gray Paper Wrap Around Ceiling Joist	8	Square Feet	No

Table 2-3			
Approximate Quantities of ACMs			
Material Type	Quantity	Unit of Measure	RACM
White Window Glazing	140	Linear Feet	Yes
Pipe Flange Gasket (Assumed)	3	Each	No
Fire Door (Assumed)	3	Each	No

¹ This material is present beneath carpeting and/or non-ACM 12" x 12" vinyl floor tile.

² The asbestos-containing joint compound identified during the survey was associated with a wallboard system and is therefore considered an integral part of the wall system by the EPA. Analysis of the wall system was conducted, and the wall system was determined to be non-asbestos containing. The wall system itself is therefore not considered ACM by EPA; however, OSHA regards each of the materials used to construct wall systems as separate materials and each material must be analyzed separately for asbestos content. If any of the individual materials contain asbestos, work practices must be conducted in accordance with OSHA's Construction Asbestos Standard.

³ The quantity listed for joint compound is the estimated quantity of drywall observed at the building, as the joint compound cannot be economically separated from the wall system.

3. LEAD-BASED PAINTS

A Lead-Based Paint (LBP) Inspector certified through the Maryland Department of the Environment (MDE) performed a LBP survey of the Study Area. A certificate of the inspector is included in **Appendix D**.

3.1 INSPECTION AND ANALYTICAL METHODOLOGY

EA performed a limited (screening) survey to identify locations of LBP that may be disturbed by renovation activities. The survey was intended to determine whether or not lead-based paint is present in the Study Area, and if present, which building components contain lead-based paint.

Building areas and components that appear to have a similar painting history and substrate were grouped together for screening/testing purposes. This survey was not intended to be a comprehensive surface-by-surface inspection (i.e., HUD level inspection) of the Study Area, nor is a survey of that type necessary or required for planned renovation activities. The survey was limited to areas that were readily accessible.

For survey and testing purposes, each direction within the Study Area was given a specific name as follows: wall A correlates with the side of the building facing Harford Road, with walls B through D being labeled in a clockwise orientation from wall A.

3.1.1 Records Review

A records review consists of reviewing previous lead inspection reports, abatement records and/or as-built drawings, if available, associated with the facility.

3.1.2 XRF Instrumentation

Direct reading X-Ray Fluorescence (XRF) instrumentation was used to identify LBP. Specifically, a Niton XLp 300 analyzer manufactured by Niton LLC was utilized during the survey. Surface coatings were considered LBP if the XRF result exceeds the State of Maryland definition of LBP of greater than 0.7 milligrams of lead per square centimeter ($> 0.7\text{mg}/\text{cm}^2$). The XRF performance characteristic sheets are included in **Appendix E**. The performance characteristic sheet specifies calibration tolerances, XRF indices for positive and negative results, and modes of operation.

3.1.3 Paint Chip Analysis

Lead-based paint is also defined by the MDE as paint chips containing greater than 0.5% lead by weight, as determined through laboratory analysis (Method SW846-7420). Paint chip samples are collected in the event there is limited access to or irregularly-shaped surfaces of the substrate.

3.2 RESULTS

3.2.1 Records Review

No records in the form of as-built drawings, previous lead inspection reports, or lead abatement records were made available to EA.

3.2.2 XRF Results

Lead-based paints were detected in the Study Area through use of the XRF as identified in the following **Table 3-1**.

Reading No.	Component	Substrate	Color	EA Room No.	Result (mg/cm ²)
27	Door Frame	Wood	White	13	2.0
52	Door Frame	Wood	White	22	0.9
53	Door	Wood	White	22	0.8
59	Pipe	Metal	White	23	4.7
191	Pipe	Metal	Beige	Exterior	7.3
195	Bollard	Metal	Yellow	Exterior	0.8

A lead pipe and lead-glazed tiles were also identified within the Study Area.

The general locations of lead-based paints, lead pipe, and lead-glazed tiles within the Study Area are provided in the Hazardous Materials Summary Table in **Figure 2**. Representative photographs of the LBP are included in **Appendix A**.

In addition, lead-containing paints (paints containing lead but at concentrations less than the threshold for lead-based paint) were identified on various surfaces tested within the Study Area.

The XRF data from all tested surfaces is included in **Appendix F**.

3.2.3 Paint Chip Analysis

No paint chip samples were collected during the survey.

4. LIQUID POLYCHLORINATED BIPHENYLS

The on-site inspectors investigated the Study Area for equipment containing liquid phase Polychlorinated Biphenyls (PCBs) during the survey.

4.1 INSPECTION AND ANALYTICAL METHODOLOGY

The Study Area was inspected for equipment that may contain liquid phase PCBs. Such equipment commonly includes light ballasts located within fluorescent light fixtures, electrical transformers, and hydraulic equipment. For this survey, no sampling or laboratory analysis was performed in association with the inspection for suspect PCB-containing equipment. Inspection for materials/items containing non-liquid PCBs was not included in this survey.

4.1.1 Records Review

A records review consists of reviewing previous PCB-containing equipment inspection reports, abatement records, and/or as-built drawings, if available, associated with the facility.

4.1.2 On-site Inspection

The on-site inspection for liquid phase PCBs involved a visual inspection for suspect equipment that may contain PCBs, including light ballasts associated with fluorescent light fixtures, electrical transformers, and hydraulic equipment.

4.1.3 Manufacturer and Utility Review

If the presence or absence of PCBs in suspect equipment could not be confirmed in the field, EA conducted additional research by contacting the manufacturer and/or utility provider in order to obtain information on the suspect equipment. It should be noted that the manufacturer was not contacted for every piece of suspect equipment present in the Study Area, as certain types of equipment were present in voluminous quantities (e.g., light ballasts).

4.2 RESULTS

4.2.1 Records Review

No records in the form of as-built drawings, previous inspection reports, or abatement records were made available to EA.

4.2.2 On-site Inspection

EA's inspection of the Study Area resulted in the identification of light ballasts associated with fluorescent light fixtures. Due to the voluminous quantity, the lighting fixtures were not dismantled to inspect individual light ballasts for markings related to PCB content. Therefore, the ballasts are assumed to contain PCBs.

Representative photographs of the equipment determined to be suspect PCB-containing as a result of the inspection are included in **Appendix A**.

4.2.3 Manufacturer Review

Suspect PCB-containing equipment was identified; however, contact with the manufacturer was not conducted due to the voluminous quantity of light fixtures present in the Study Area.

4.2.4 Quantities for Liquid PCBs

Approximate quantities for PCBs are listed by equipment type in the following **Table 4-1**. The locations as well as the approximate quantity of equipment assumed to contain PCBs within the limits of the Study Area are provided, by room number, in the Hazardous Materials Summary Table in **Figure 2**.

Equipment Type	Quantity	Unit of Measure
Light Ballast	92	Each

5. OZONE-DEPLETING SUBSTANCES

The on-site inspectors investigated the Study Area for equipment containing Ozone-Depleting Substances (ODSs) during the survey.

5.1 INSPECTION AND ANALYTICAL METHODOLOGY

The Study Area was inspected for known types of equipment containing ODSs. Such equipment commonly includes refrigerators, window air-conditioning units, water fountains, and chillers. No sample collection or laboratory analysis was performed in association with the inspection for equipment suspected of containing ODSs.

5.1.1 Records Review

A records review consists of reviewing previous inspection reports, abatement records and/or as-built drawings, if available, associated with the facility.

5.1.2 On-Site Inspection

The on-site inspection involved a visual assessment of the Study Area for suspect equipment that could contain ODSs. Dismantling of suspect equipment was not performed to confirm the presence or absence of ODSs.

5.1.3 Manufacturer and Utility Review

If the presence or absence of ODSs in suspect equipment could not be confirmed in the field, EA conducted additional research by contacting the manufacturer in order to obtain information on the suspect equipment.

5.2 RESULTS

5.2.1 Records Review

No records in the form of as-built drawings, previous inspection reports, or abatement records were made available to EA.

5.2.2 On-site Inspection

Equipment assumed to contain ODSs was identified in the Study Area in the following forms:

- Refrigerators – One (1) household refrigerator unit and two (2) commercial refrigerator units were observed. Based upon the working condition of these units, it is anticipated that these units still contain ozone-depleting substances.
- Rooftop Air-Conditioning Units – Two (2) air-conditioning units were observed. The manufacturer labels on these units expressly identifies the presence of 410A refrigerant in the units.

- Rooftop Air-Condensing Unit – One (1) air-condensing unit is present in the Study Area. The manufacturer label on this unit that would identify the presence of refrigerant in the unit was not legible, and therefore refrigerant is assumed to be present.

Representative photographs of assumed sources of ODSs are included in **Appendix A**.

5.2.3 Manufacturer Review

Equipment suspected of containing ODSs was identified; however, contact with the manufacturer was not considered necessary.

5.2.4 Quantities for Ozone-Depleting Substances

Approximate quantities for equipment assumed to contain ODSs are listed by equipment type in the following **Table**. The locations, types, and the approximate quantities of suspect equipment within the Study Area are provided, by room number, in the Hazardous Materials Summary Table in **Figure 2**.

Equipment Type	Quantity	Unit of Measure
Commercial Refrigerator	2	Each
Household Refrigerator	1	Each
Rooftop Air-Condensing Unit	1	Each
Rooftop Air-Conditioning Unit	2	Each

6. UNIVERSAL WASTES

The on-site inspectors investigated the Study Area for items classified as Universal Wastes (UW) during the survey.

6.1 INSPECTION AND ANALYTICAL METHODOLOGY

The Study Area was inspected for equipment and items classified as UW. Such equipment commonly includes batteries, pesticides, mercury-containing equipment, bulbs/lamps, and aerosol cans. No sampling or laboratory analysis was performed in association with the inspection for UW.

6.1.1 Records Review

Records review consists of reviewing previous UW inspection reports, abatement records and/or as-built drawings, if available, associated with the facility.

6.1.2 On-site Inspection

The on-site inspection involved a visual assessment that focused on identifying UW in the Study Area. If considered necessary during the survey, EA performed limited dismantling of suspect equipment to confirm the presence or absence of a UW.

6.1.3 Manufacturer Review

If the presence or absence of UW (e.g., the presence or absence of mercury in equipment) could not be confirmed in the field, EA conducted additional research by contacting the manufacturer and attempting to obtain information on the suspect equipment.

6.2 RESULTS

6.2.1 Records Review

No records in the form of as-built drawings, previous inspection reports, or abatement records were provided to EA.

6.2.2 On-site Inspection

The results of the on-site inspection confirmed the presence of UW in the Study Area in the following forms:

- Light Bulbs and Tubes - Light fixtures were observed to contain 4' and 2' fluorescent tubes, high-intensity discharge bulbs (HID), and compact fluorescent light bulbs (CFLs).
- Batteries – Lead-acid batteries were observed within the Study Area in emergency light fixtures.

- Thermostats – Thermostats manufactured by Dayton were identified to contain mercury ampoules.

EA identified additional thermostats that could potentially contain mercury. These thermostats were subsequently dismantled and determined not to contain mercury ampoules. These non-mercury containing thermostats were manufactured by Paragon Electric Company, Inc.

Representative photographs of the UW are included in **Appendix A**.

6.2.3 Manufacturer Review

Universal waste was identified in the Study Area; however, contact with the manufacturer was not considered necessary.

6.2.4 Quantities for Universal Waste

Approximate quantities for UW are listed by equipment type in the following **Table**. The locations, type, and approximate quantities of UW within the Study Area are provided, by room number, in the Hazardous Materials Summary Table in **Figure 2**.

Equipment Type	Quantity	Unit of Measure
4' Fluorescent Light Tube	324	Each
2' Fluorescent Light Tube	1	Each
CFL Bulb	1	Each
HID Bulb	26	Each
Thermostat	2	Each
Battery in Emergency Light Fixture	11	Each

7. CONCLUSIONS/RECOMMENDATIONS

The results of the survey have identified hazardous materials within the Study Area. A Hazardous Materials Summary Table provided in **Figure 2** identifies the locations, types, and approximate quantities of the hazardous materials in the Study Area. The disturbance of these hazardous materials during renovation activities will trigger requirements to comply with Federal, State, and Local regulations.

7.1 ASBESTOS-CONTAINING BUILDING MATERIALS

The results of the survey have identified the following types of asbestos-containing building materials: floor tile, expansion joint, paper wrap around ceiling joist, joint compound, black mastic on black covebase, window glazing, fire doors (assumed), and pipe flange gaskets (assumed).

The fire doors and pipe flange gaskets were assumed to contain asbestos, as the materials were either inaccessible at the time of the survey or sampling would have caused damage to the structural integrity of the system while the facility is still in use. It may be cost effective to have these assumed asbestos-containing materials sampled and analyzed at an appropriate time so that asbestos content can be determined. The most appropriate time to sample these materials is typically after the project has been turned over to the renovation contractor and work has commenced.

The EPA requires that regulated asbestos-containing material be removed before demolition/renovation activities begin. Further, although certain asbestos-containing building materials identified during the survey were not classified as RACM at the time of the survey, it is EA's professional opinion that these materials should also be removed since proposed renovation techniques are unknown at this time and to prevent the potential release of asbestos fibers during renovation and subsequent waste consolidation activities (segregation and reduction of renovation debris).

The OSHA "Asbestos in Construction Standard" (29 CFR 1926.1101) imposes restrictions on the disturbance of asbestos during demolition, remodeling, and renovation activities. Removal of any asbestos-containing building materials identified in the Study Area is considered Class II asbestos work by OSHA regulations. Class II asbestos work must be performed by trained employees using work practices required by the OSHA standard.

7.2 LEAD-BASED PAINTS

Lead-based paints (LBPs) were identified throughout the Study Area. In addition, lead-containing paints (LCP) (i.e., paints containing lead but at concentrations less than the threshold for lead-based paint) were identified on various surfaces. In addition, a lead pipe and lead-glazed ceramic tile were identified in the Study Area.

Removal/abatement of LBP and LCP prior to planned alterations is not required; however, the presence of lead in paint of any concentration triggers OSHA regulatory standard 29 CFR

1926.62. Therefore, contractors must be made aware of the lead in paint hazards in the Study Area. Worker protection requirements and engineering controls to protect the surrounding environment from lead contamination should be implemented by contractors in accordance with pertinent regulations. Untested paint on building components should be considered to contain regulated levels of lead until subsequent testing shows otherwise.

Demolition debris with LBP and lead-glazing may be disposed of as non-hazardous provided the material is not classified as a hazardous waste in accordance with 40 CFR Part 261 and SW-846 (Test Methods for Evaluating Solid Waste Physical/Chemical). Metal objects coated with LBP and the lead pipe can be recycled.

7.3 LIQUID POLYCHLORINATED BIPHENYLS

Liquid Polychlorinated Biphenyl (PCB) containing equipment was identified in the form of light ballasts. Based upon the voluminous quantity of light fixtures, the light fixtures were not dismantled to inspect individual light ballasts for markings related to PCB content. The uninspected ballasts are assumed to contain PCBs.

Ballasts marked as "No PCBs" can be disposed of as non-hazardous waste. Ballasts lacking the "No PCBs" mark should be removed and disposed of in accordance with EPA's Toxic Substances Control Act (TSCA), 40 CFR Part 761. If an unmarked ballast is not leaking, the associated lighting fixture does not require special handling or disposal. If an unmarked ballast is leaking, any material impacted by the leak should be treated as hazardous waste. Containers storing unmarked ballasts must be labeled in accordance with EPA labeling requirements specified in 40 CFR Part 262 Subpart C.

7.4 OZONE-DEPLETING SUBSTANCES

Ozone-depleting substances were identified in equipment including commercial refrigerators, a household refrigerator, a rooftop air-condensing unit, and rooftop air-conditioning units. Such substances must be recovered from any related equipment that will be impacted by the planned renovation activities.

Under EPA's rule, refrigerant must be recovered from equipment that is typically dismantled on-site before disposal (e.g., retail/commercial food refrigeration, central air-conditioning, chillers, and industrial process refrigeration) in accordance with the EPA's requirements for servicing.

Equipment that typically enters the waste stream with the charge intact (e.g., household refrigerators, motor vehicle air conditioners, household freezers, and room air conditioners) is subject to special safe disposal requirements. Under the safe disposal requirements, the final person in the disposal chain (e.g., a scrap metal recycler or landfill owner) is responsible for ensuring that refrigerant is recovered from equipment before the final disposal of the equipment. However, persons "upstream" can remove the refrigerant and provide documentation of its removal to the final person if this is more cost-effective. If the final person in the disposal chain (e.g., a scrap metal recycler or landfill owner) accepts appliances that no longer hold a refrigerant charge, that person is responsible for maintaining a signed statement from whom the appliance(s)

is being accepted. The signed statement must include the name and address of the person who recovered the refrigerant, and the date that the refrigerant was recovered, or a copy of a contract stating that the refrigerant will be removed prior to delivery.

7.5 UNIVERSAL WASTES

EA identified universal wastes within the Study Area in the form of 4' and 2' fluorescent light tubes, high-intensity discharge (HID) bulbs, compact fluorescent light bulbs (CFLs), mercury-containing thermostats, and batteries in emergency light fixtures.

All universal waste impacted by planned renovation activities should be placed in a container that is structurally sound, will prevent damage to the contents, is compatible with its contents, and will be kept closed at all times (except when adding items to or removing items from the container). The container must be without damage, or evidence of spillage, that could lead to leakage of the waste contained inside. The disposal of universal waste is outlined in the EPA regulations in 40 CFR Part 273 and in Maryland regulations in COMAR Title 26, Subtitle 13.

Figure 1
Floor Plans

Figure 2

Hazardous Materials Summary Table

**Hazardous Materials Summary Table
Harford Senior Center**

AREA		ASBESTOS-CONTAINING BUILDING MATERIALS										PCBs		OZONE-DEPLETING COMPOUNDS				UNIVERSAL WASTE				LEAD-BASED PAINT *		
EA Assigned Room Number	Room Name	Asbestos Description (Material, Color, Size)	Black Expansion Joint (LF)	Gray Paper Wrap Around Ceiling Joist (SF)	Joint Compound (SF)	Light Gray 9" x 9" Vinyl Floor Tile w/ Black Specs (SF) ¹	Black Mastic on Black Covebase (LF)	Gray 9" x 9" Vinyl Floor Tile w/ Black Streaks (SF) ¹	White Window Glazing (LF)	Fire Door (Assumed) (Each)	Pipe Flange Gasket (Assumed) (Each)	Light Ballast (Each) (Assumed)	hydraulic Door Stop (Each) (Assumed)	Commercial Refrigerator (Each)	Household Refrigerator (Each)	Air-Conditioning Unit (Each)	Air-Conditioning Unit (Each)	Light Bulb / Tube (Each)				Thermostat (Each)	Battery in Emergency Light Fixture (Each)	• LBP Present
			4'	2'	CFL	HID																		
1	Storage	Black Expansion Joint	8								5							10						
1	Storage	Gray Paper Wrap Around Ceiling Joist		8																				
1	Storage	Joint Compound			28																			
2	Multi-Purpose 2	Black Mastic Behind Black Covebase					206				23							92			8	4		
2	Multi-Purpose 2	Gray 9x9 Vinyl Floor Tile w/ Black Streaks						1994																
2	Multi-Purpose 2	Fire Door (Assumed)							1															
2	Multi-Purpose 2	Joint Compound			2060																			
3	Storage/ Mechanical	Gray 9x9 Vinyl Floor Tile w/ Black Streaks						168			4							8						
3	Storage/ Mechanical	Pipe Flange Gasket (Assumed)								3														
4	Conference Room	Joint Compound			120						4							8						
4	Conference Room	Light Gray 9x9 Vinyl Floor Tile w/ Black Specs				206																		
5	File Room	Joint Compound			54						2							8						
5	File Room	Light Gray 9x9 Vinyl Floor Tile w/ Black Specs				165																		
6	Office	Joint Compound			54						2							8						
6	Office	Light Gray 9x9 Vinyl Floor Tile w/ Black Specs				169																		
7	Computer Lab	Light Gray 9x9 Vinyl Floor Tile w/ Black Specs				170					2							8						
8	Office Area	Joint Compound			224						6							24						
8	Office Area	Light Gray 9x9 Vinyl Floor Tile w/ Black Specs				403																		
9	Storage	Gray 9x9 Vinyl Floor Tile w/ Black Streaks						72			2							8						
10	TV Room	Light Gray 9x9 Vinyl Floor Tile w/ Black Specs				180					2							8						
10	TV Room	Joint Compound			44																			

**Hazardous Materials Summary Table
Harford Senior Center**

AREA		ASBESTOS-CONTAINING BUILDING MATERIALS										PCBs		OZONE-DEPLETING COMPOUNDS				UNIVERSAL WASTE					LEAD-BASED PAINT *	
EA Assigned Room Number	Room Name	Asbestos Description (Material, Color, Size)	Black Expansion Joint (LF)	Gray Paper Wrap Around Ceiling Joist (SF)	Joint Compound (SF)	Light Gray 9" x 9" Vinyl Floor Tile w/ Black Specs (SF) ¹	Black Mastic on Black Covebase (LF)	Gray 9" x 9" Vinyl Floor Tile w/ Black Streaks (SF) ¹	White Window Glazing (LF)	Fire Door (Assumed) (Each)	Pipe Flange Gasket (Assumed) (Each)	Light Ballast (Each) (Assumed)	hydraulic Door Stop (Each) (Assumed)	Commercial Refrigerator (Each)	Household Refrigerator (Each)	Air-Conditioning Unit (Each)	Air-Conditioning Unit (Each)	Light Bulb / Tube (Each)				Thermostat (Each)	Battery in Emergency Light Fixture (Each)	• LBP Present
																		4'	2'	CFL	HID			
11	Card Room	Light Gray 9x9 Vinyl Floor Tile w/ Black Specs				202						2						8						
11	Card Room	Joint Compound			224																			
12	Reception	Joint Compound			256							2						8						
12	Reception	Light Gray 9x9 Vinyl Floor Tile w/ Black Specs				244																		
13	Vestibule	Black Mastic Behind Black Covebase					21																	
13	Vestibule	Joint Compound			104																			
13	Vestibule	Gray 9x9 Vinyl Floor Tile w/ Black Streaks						94																
13	Vestibule	Fire Door (Assumed)								1														•
14	Closet 3	Black Mastic Behind Black Covebase					18																	
14	Closet 3	Joint Compound			188																			
15	Closet 2	Joint Compound			88																			
15	Closet 2	Light Gray 9x9 Vinyl Floor Tile w/ Black Specs				14																		
15	Closet 2	Black Mastic Behind Black Covebase					11																	
16	Hallway	Joint Compound			540							3	1					12			5		3	
16	Hallway	Light Gray 9x9 Vinyl Floor Tile w/ Black Specs				256																		
16	Hallway	Black Mastic Behind Black Covebase					63																	
17	Closet 1	Joint Compound			112																			
17	Closet 1	Light Gray 9x9 Vinyl Floor Tile w/ Black Specs				16																		
17	Closet 1	Black Mastic Behind Black Covebase					12																	
18	Janitor Storage	Black Expansion Joint	20									2						6						
18	Janitor Storage	Fire Door (Assumed)								1														
18	Janitor Storage	Joint Compound			143																			
19	Women's Restroom	Joint Compound			168							3						8	1					•
20	Multi-Purpose 1	Light Gray 9x9 Vinyl Floor Tile w/ Black Specs				932						12						48			2	2	1	
21	Art Room	Joint Compound			104							4						8						
21	Art Room	Light Gray 9x9 Vinyl Floor Tile w/ Black Specs				240																		
22	Kitchen Storage	Black Mastic Behind Black Covebase					8					2						8			2		1	•

**Hazardous Materials Summary Table
Harford Senior Center**

AREA		ASBESTOS-CONTAINING BUILDING MATERIALS										PCBs		OZONE-DEPLETING COMPOUNDS				UNIVERSAL WASTE					LEAD-BASED PAINT *	
EA Assigned Room Number	Room Name	Asbestos Description (Material, Color, Size)	Black Expansion Joint (LF)	Gray Paper Wrap Around Ceiling Joist (SF)	Joint Compound (SF)	Light Gray 9" x 9" Vinyl Floor Tile w/ Black Specs (SF) ¹	Black Mastic on Black Covebase (LF)	Gray 9" x 9" Vinyl Floor Tile w/ Black Streaks (SF) ¹	White Window Glazing (LF)	Fire Door (Assumed) (Each)	Pipe Flange Gasket (Assumed) (Each)	Light Ballast (Each) (Assumed)	hydraulic Door Stop (Each) (Assumed)	Commercial Refrigerator (Each)	Household Refrigerator (Each)	Air-Conditioning Unit (Each)	Air-Conditioning Unit (Each)	Light Bulb / Tube (Each)	Thermostat (Each)	Battery in Emergency Light Fixture (Each)	• LBP Present			
			4'	2'	CFL	HID																		
23	Kitchen	Gray 9x9 Vinyl Floor Tile w/ Black Streaks						342				5		2	1			20		1	4		2	•
23	Kitchen	Joint Compound			672																			
24	Men's Restroom	Joint Compound			144							1						4						
25	Kitchen Mechanical	Gray 9x9 Vinyl Floor Tile w/ Black Streaks						32																
25	Kitchen Mechanical	Joint Compound			192																			
26	Game Room	Black Mastic Behind Black Covebase					24					4						12						
26	Game Room	Light Gray 9x9 Vinyl Floor Tile w/ Black Specs				191																		
26	Game Room	Joint Compound			128																			
27	Storage - 2nd Floor	Black Expansion Joint	8																					
---	Exterior - Ground Level	Black Expansion Joint	90																	5				•
---	Exterior - Ground Level	White Window Glazing							140															
---	Exterior - Roof															1	2							•
			126	8	5,647	3,388	363	2,702	140	3	3	92	1	2	1	1	2	324	1	1	26	2	11	*

Notes:

SF - Square Feet

LF - Linear Feet

* In addition to Lead-Based Paints, Lead-containing paints (i.e., paints containing lead but at concentrations less than the threshold for lead-based paint) were identified on various components throughout the Study Area.

¹ This material is present beneath carpeting and/or non-ACM 12" x 12" vinyl floor tile.

Appendix A

Photographs

PHOTOGRAPH LOG
Harford Senior Center



Harford Senior Center
Front of Building



Harford Senior Center
Rear of Building



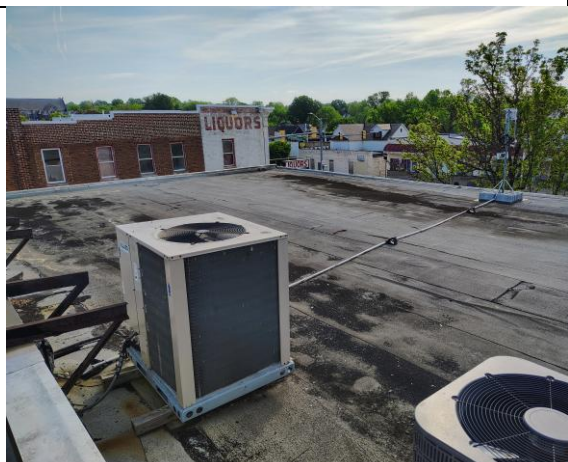
Harford Senior Center
Alley Side



Harford Senior Center
Side Street



Overview of Roof
Upper Level



Overview of Roof
Lower Level

PHOTOGRAPH LOG
Harford Senior Center



Overview of Room 1
Storage



Overview of Room 2
Multi-Purpose Room



Overview of Room 3
Storage/Mechanical Room



Overview of Room 4
Conference Room



Overview of Room 5
File Room



Overview of Room 6
Office

PHOTOGRAPH LOG
Harford Senior Center



Overview of Room 7
Computer Lab



Overview of Room 8
Office Area



Overview of Room 9
Storage



Overview of Room 10
TV Room



Overview of Room 11
Card Room



Overview of Room 12
Reception

PHOTOGRAPH LOG
Harford Senior Center



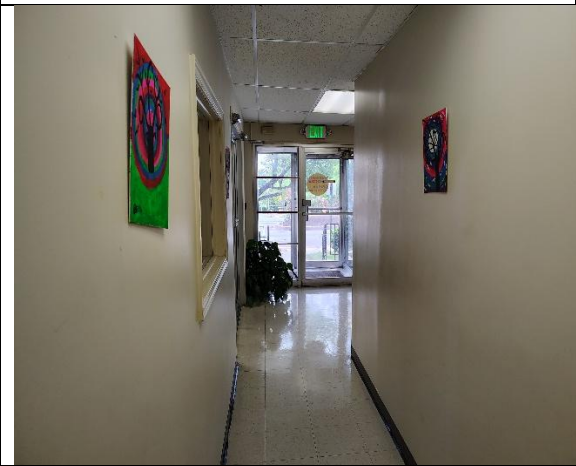
Overview of Room 13
Vestibule



Overview of Room 14
Closet 3



Overview of Room 15
Closet 2



Overview of Room 16
Hallway



Overview of Room 17
Closet 1



Overview of Room 18
Janitor Storage

PHOTOGRAPH LOG
Harford Senior Center



Overview of Room 19
Women's Restroom



Overview of Room 20
Multi-Purpose Room 1



Overview of Room 21
Art Room



Overview of Room 22
Kitchen Storage



Overview of Room 23
Kitchen

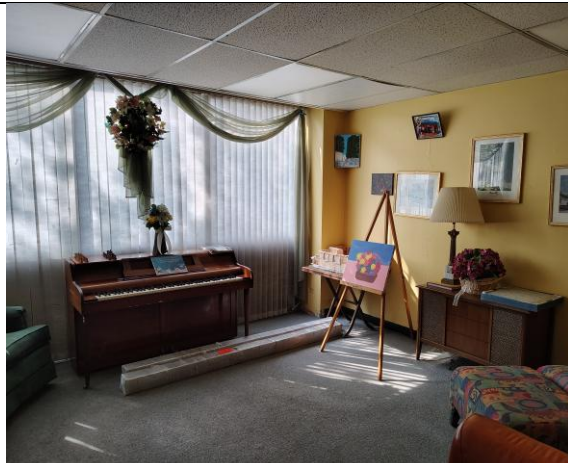


Overview of Room 24
Men's Restroom

PHOTOGRAPH LOG
Harford Senior Center



Overview of Room 25
Kitchen Mechanical Room



Overview of Room 26
Game Room



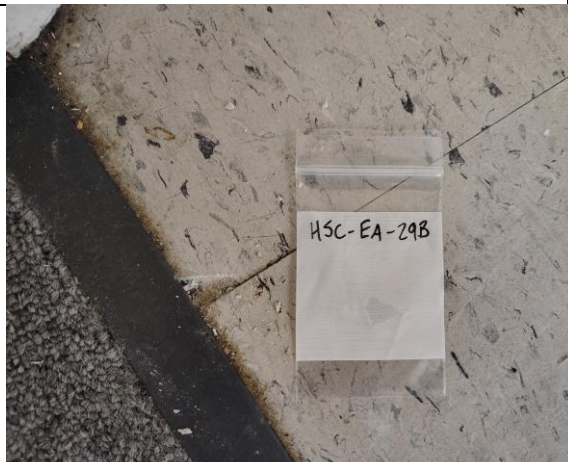
Overview of Room 27
Storage – Second Floor



Gray Paper Wrap on Ceiling Joist
ACM – 50% Chrysotile



9" x 9" Gray Vinyl Floor Tile with Black Streaks
ACM – 3% Chrysotile



9" x 9" Light Gray Vinyl Floor Tile with Black and Gray Streaks
ACM – 3% Chrysotile

PHOTOGRAPH LOG
Harford Senior Center



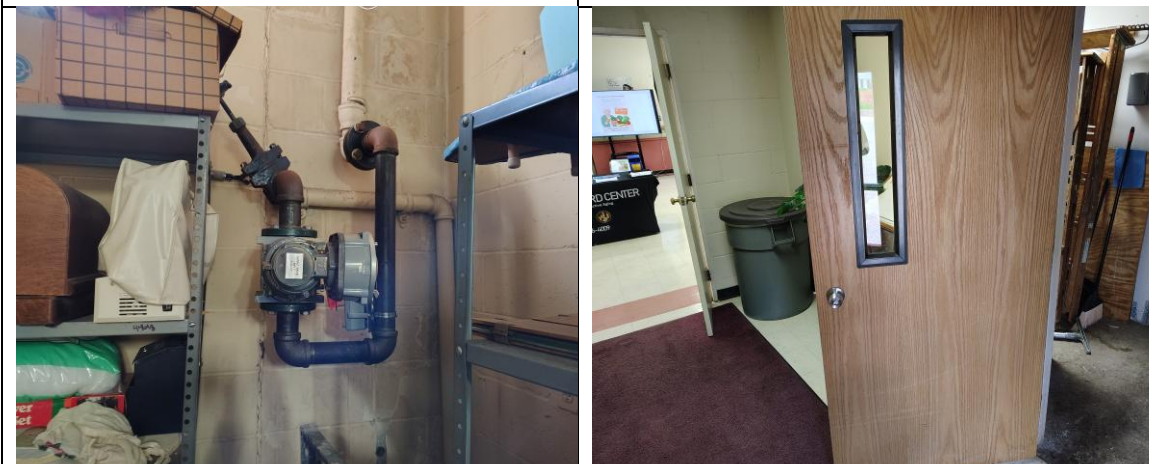
White Window Glazing
ACM – 2% Chrysotile

Black Expansion Joint
ACM – 5% Chrysotile



Joint Compound
ACM – 2% Chrysotile

Black Mastic Behind Black Covebase
ACM – 2% Chrysotile



Pipe Flange Gasket
Assumed ACM

Representative Fire Door
Assumed ACM

PHOTOGRAPH LOG
Harford Senior Center



Reading #191 - Exterior Pipe
Lead-Based Paint



Readings #52 & 53 - White Door and Door Frame
Lead-Based Paint



Reading #27 - White Door Frame
Lead Based Paint



Reading #195 - Yellow Parking Bollard
Lead-Based Paint



Reading #59 - White Pipe
Lead-Based Paint



Readings #84 & 85 - White Ceramic Tile
Lead in Glazing

PHOTOGRAPH LOG
Harford Senior Center



Reading #7 - Roof Pipe
Lead Pipe



Fluorescent Light Ballast
Assumed PCB-Containing Equipment



Rooftop Air-Condensing Unit
Assumed ODS-Containing Equipment



Representative Rooftop Air-Conditioning Unit
ODS- Containing Equipment



Representative Commercial Refrigerator
Assumed ODS-Containing Equipment



Household Refrigerator
Assumed ODS-Containing Equipment

PHOTOGRAPH LOG
Harford Senior Center



Compact Fluorescent Light Bulb
Universal Waste



Representative High-Intensity Discharge Bulb
Universal Waste



2' Fluorescent Light Tube
Universal Waste



Representative 4' Fluorescent Light Tube
Universal Waste



Representative Battery Inside Emergency Light Fixture
Universal Waste



Mercury-Containing Thermostats
Universal Waste

Appendix B

Certificates of AHERA Inspectors

AEROSOL MONITORING & ANALYSIS, INC.

This is to certify that
CALLIE PAFF

has met the attendance requirements and successfully completed
the course entitled

4-HOUR EPA ASBESTOS INSPECTOR REFRESHER

For Accreditation Under TSCA Title II

06/06/2025

Course Date

AIR06062025-04

Certification No.

06/06/2025

Exam Date

VAAIR06062025-04

VA Certification No.

06/06/2026

Expiration Date

DAVID TRUMAN

Principal Instructor

David Truman

E. Rush Barnett

Course Director

E. Rush Barnett

1331 Ashton Road

P.O.Box 646

Hanover, MD 21076

P: 410-684-3327

F: 410-684-3724

www.amatraining.com

AEROSOL MONITORING & ANALYSIS, INC.

This is to certify that

JONATHAN KUJAWA

*has met the attendance requirements and successfully completed
the course entitled*

4-HOUR EPA ASBESTOS INSPECTOR REFRESHER

For Accreditation Under TSCA Title II

08/15/2024

Course Date

08/15/2024

Exam Date

8/15/2025

Expiration Date

STEVE SIERACKI

Principal Instructor



VAIR08152024-07

Certification No.

VAVAIR08152024-07

Virginia Certification No.

E. Rush Barnett

Course Director



1331 Ashton Road

P.O.Box 646

Hanover, MD 21076

P: 410-684-3327

F: 410-684-3724

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Appendix C

Asbestos Laboratory Results/Chain-of-Custody

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NY ELAP LAB# 11993 for PCM, PLM, TEM & Lead



BATTA LABORATORIES, LLC
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Delaware Industrial Park, 6 Garfield Way
Newark, DE19713-5817
Tel. (302)737-3376 Fax (302) 737-5764

Web: <http://www.battaenv.com> E-mail: battaenv@battaenv.com



Dept. Code: PLM

Rev. #: 0
Batch#: N/A
COC#: N/A

CERTIFICATE OF PLM ANALYSIS

Page 1 of 18

Test Method: EPA/600/R-93/116 in conjunction with Batta SOP

Report Date: 05/16/25

Sampling Data

BLI Project #: L446705
Project Name: EA ENGINEERING- 16559-01-00 HARFORD SENIOR CENTER - BALTIMORE, MD

Date Sampled: 05/09/25
Sampled By: CLIENT
Date Analyzed: 05/15/25

Sample ID		Client-supplied Data		Analytical Data			Reported Results	
Lab Sample#	Client Sample#	Sample Description	Material Type	Friable?	Texture/ Gross Color	Non-asbestiform Components	Asbestiform Components	
1592192	HSC-EA-01A	Exterior Roof	Shingle	n/a	Soft Homogeneous	Black 3% Cellulose 97% Non-fibrous Material	No Asbestos Found	
1592193	HSC-EA-01A-LAYER1	Exterior Roof	Tar	n/a	Soft Homogeneous	Black 3% Cellulose 97% Non-fibrous Material	No Asbestos Found	
1592194	HSC-EA-01B	Exterior Roof	Shingle	n/a	Soft Homogeneous	Black 3% Cellulose 97% Non-fibrous Material	No Asbestos Found	
1592195	HSC-EA-01B-LAYER1	Exterior Roof	Tar	n/a	Soft Homogeneous	Black 3% Cellulose 97% Non-fibrous Material	No Asbestos Found	
1592196	HSC-EA-01C	Exterior Roof	Shingle	n/a	Soft Homogeneous	Black 3% Cellulose 97% Non-fibrous Material	No Asbestos Found	

Note 1 Due to limitations of the EPA PLM method, floor tiles may yield false negative (<1%) results by this method. As such, the EPA recommends further analysis by electron microscopy. Batta recommends the NY 198.4 over the Chatfield method.

Note 2 Unless otherwise specified, Tr=Trace and correlates to <0.25% (based on a 400-point EPA point count).

Note 3 Materials containing vermiculite are not good candidates for analysis using standard EPA 600 PLM protocol. Results may be low-biased due to inherent limitations caused by the material. The EPA recommends that vermiculite attic insulation (VAI) be prepped and analyzed using EPA 600/R-04/004, known as "The Cincinnati Method".

ANALYST: AH

REVIEWED BY: *ARL*
QA/QC Officer/Signatory

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*Organically-bound, nonfriable material may interfere with the accurate and reproducible quantification of asbestos. In these cases, the EPA recommends further analysis by a matrix-reduction method. Batta recommends the NY ELAP Item 198.6/198.4 over the Chatfield method. When point count techniques are utilized on organically-bound, nonfriable materials without the EPA-recommended matrix reduction steps, Batta Laboratories assumes no responsibility regarding the accuracy or precision associated with these results. In these cases, Batta employs a modified version of the EPA point count method.

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EPA Lab ID #DE004



NVLAP
Lab Code: 101032-D

Dept. Code: PLM

Rev. #: 0
Batch#: N/A
COC#: N/A

CERTIFICATE OF PLM ANALYSIS

Page 6 of 18

Test Method: EPA/600/R-93/116 in conjunction with Batta SOP

Report Date: 05/16/25

Sampling Data

BLI Project #: L446705
Project Name: EA ENGINEERING- 16559-01-00 HARFORD SENIOR CENTER - BALTIMORE, MD
Date Sampled: 05/09/25
Sampled By: CLIENT
Date Analyzed: 05/15/25

Sample ID		Client-supplied Data		Analytical Data			Reported Results	
Lab Sample#	Client Sample#	Sample Description	Material Type	Friable?	Texture/ Gross Color	Non-asbestiform Components	Asbestiform Components	
1592217	HSC-EA-09B	Room 1 Ceiling by Vent	Insulation	n/a	Soft Homogeneous	Gray	30% Cellulose 20% Non-fibrous Material	50% Chrysotile Total Asbestos = 50%
1592218	HSC-EA-10A	Room 25 Duct	Glaze	n/a	Soft Homogeneous	Gray	5% Cellulose 95% Non-fibrous Material	No Asbestos Found
1592219	HSC-EA-10B	Room 25 Duct	Glaze	n/a	Soft Homogeneous	Gray	5% Cellulose 95% Non-fibrous Material	No Asbestos Found
1592220	HSC-EA-11A	Room 14 Under Red Carpet	Mastic	n/a	Soft Homogeneous	Tan	1% Cellulose 99% Non-fibrous Material	No Asbestos Found
1592221	HSC-EA-11B	Room 14 Under Red Carpet	Mastic	n/a	Soft Homogeneous	Tan	1% Cellulose 99% Non-fibrous Material	No Asbestos Found

Note 1 Due to limitations of the EPA PLM method, floor tiles may yield false negative (<1%) results by this method. As such, the EPA recommends further analysis by electron microscopy. Batta recommends the NY 198.4 over the Chatfield method.

Note 2 Unless otherwise specified, Tr=Trace and correlates to <0.25% (based on a 400-point EPA point count).

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ANALYST: AH

REVIEWED BY: APL

QA/QC Officer/Signatory

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NVLAP
Lab Code: 101032-D

Dept. Code: PLM

Rev. #: 0
Batch#: N/A
COC#: N/A

CERTIFICATE OF PLM ANALYSIS

Page 10 of 18

Test Method: EPA/600/R-93/116 in conjunction with Batta SOP

Report Date: 05/16/25

Sampling Data

BLI Project #: L446705
Project Name: EA ENGINEERING- 16559-01-00 HARFORD SENIOR CENTER - BALTIMORE, MD
Date Sampled: 05/09/25
Sampled By: CLIENT
Date Analyzed: 05/15/25

Sample ID		Client-supplied Data		Analytical Data			Reported Results	
Lab Sample#	Client Sample#	Sample Description	Material Type	Friable?	Texture/ Gross Color	Non-asbestiform Components	Asbestiform Components	
1592237	HSC-EA-18B	Room 20 Wall Behind Covebase	Mastic	n/a	Soft Homogeneous	Tan 1% Cellulose 99% Non-fibrous Material	No Asbestos Found	
1592238	HSC-EA-19A	Room 22 Ceiling	Ceiling Tile	n/a	Soft Homogeneous	Gray 30% Cellulose 70% Non-fibrous Material	No Asbestos Found	
1592239	HSC-EA-19B	Room 20 Ceiling	Ceiling Tile	n/a	Soft Homogeneous	Gray 30% Cellulose 70% Non-fibrous Material	No Asbestos Found	
1592240	HSC-EA-20A	Room 23 Ceiling	Ceiling Tile	n/a	Soft Homogeneous	Gray 30% Cellulose 70% Non-fibrous Material	No Asbestos Found	
1592241	HSC-EA-20B	Room 22 Ceiling	Ceiling Tile	n/a	Soft Homogeneous	Gray 30% Cellulose 70% Non-fibrous Material	No Asbestos Found	

Note 1 Due to limitations of the EPA PLM method, floor tiles may yield false negative (<1%) results by this method. As such, the EPA recommends further analysis by electron microscopy. Batta recommends the NY 198.4 over the Chatfield method.

Note 2 Unless otherwise specified, Tr=Trace and correlates to <0.25% (based on a 400-point EPA point count).

Note 3 Materials containing vermiculite are not good candidates for analysis using standard EPA 600 PLM protocol. Results may be low-biased due to inherent limitations caused by the material. The EPA recommends that vermiculite attic insulation (VAI) be prepped and analyzed using EPA 600/R-04/004, known as "The Cincinnati Method".

ANALYST: AH

REVIEWED BY: APL
QA/QC Officer/Signatory

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A Certified MBE Company

Delaware Industrial Park, 6 Garfield Way
Newark, DE19713-5817
Tel. (302)737-3376 Fax (302) 737-5764

Web: <http://www.battaenv.com> E-mail: battaenv@battaenv.com



EPA Lab ID #DE004

NVLAP
Lab Code: 101032-D

Dept. Code: PLM

Rev. #: 0
Batch#: N/A
COC#: N/A

CERTIFICATE OF PLM ANALYSIS

Page 13 of 18

Test Method: EPA/600/R-93/116 in conjunction with Batta SOP

Report Date: 05/16/25

Sampling Data

BLI Project #: L446705
Project Name: EA ENGINEERING- 16559-01-00 HARFORD SENIOR CENTER - BALTIMORE, MD

Date Sampled: 05/09/25
Sampled By: CLIENT
Date Analyzed: 05/15/25

Sample ID		Client-supplied Data		Analytical Data			Reported Results	
Lab Sample#	Client Sample#	Sample Description	Material Type	Friable?	Texture/ Gross Color	Non-asbestiform Components	Asbestiform Components	
1592252	HSC-EA-25B	Room 22 Floor	Floor Tile	n/a	Firm White Homogeneous	100% Non-fibrous Material	No Asbestos Found	
1592253	HSC-EA-25B-LAYER1	Room 22 Floor	Mastic	n/a	Soft Tan Homogeneous	100% Non-fibrous Material	No Asbestos Found	
1592254	HSC-EA-26A	Room 2 Floor	Floor Tile	n/a	Firm Red Homogeneous	100% Non-fibrous Material	No Asbestos Found	
1592255	HSC-EA-26A-LAYER1	Room 2 Floor	Mastic	n/a	Soft Tan Homogeneous	1% Cellulose 99% Non-fibrous Material	No Asbestos Found	
1592256	HSC-EA-26B	Room 2 Floor	Floor Tile	n/a	Firm Red Homogeneous	100% Non-fibrous Material	No Asbestos Found	

Note 1 Due to limitations of the EPA PLM method, floor tiles may yield false negative (<1%) results by this method. As such, the EPA recommends further analysis by electron microscopy. Batta recommends the NY 198.4 over the Chatfield method.

Note 2 Unless otherwise specified, Tr=Trace and correlates to <0.25% (based on a 400-point EPA point count).

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ANALYST: AH

REVIEWED BY: *APL*

QA/QC Officer/Signatory

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A Certified MBE Company

Delaware Industrial Park, 6 Garfield Way
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Tel. (302)737-3376 Fax (302) 737-5764

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EPA Lab ID #DE004



NVLAP
Lab Code: 101032-D

Dept. Code: PLM

Rev. #: 0
Batch#: N/A
COC#: N/A

CERTIFICATE OF PLM ANALYSIS

Page 14 of 18

Test Method: EPA/600/R-93/116 in conjunction with Batta SOP

Report Date: 05/16/25

Sampling Data

BLI Project #: L446705
Project Name: EA ENGINEERING- 16559-01-00 HARFORD SENIOR CENTER - BALTIMORE, MD

Date Sampled: 05/09/25

Sampled By: CLIENT

Date Analyzed: 05/15/25

Sample ID		Client-supplied Data			Analytical Data			Reported Results	
Lab Sample#	Client Sample#	Sample Description	Material Type	Friable?	Texture/	Gross Color	Non-asbestiform Components	Asbestiform Components	
1592257	HSC-EA-26B-LAYER1	Room 2 Floor	Mastic	n/a	Soft	Tan	1% Cellulose 99% Non-fibrous Material	No Asbestos Found	
					Homogeneous				
1592258	HSC-EA-27A	Room 3 Floor	Floor Tile	n/a	Firm	Tan	97% Non-fibrous Material	3% Chrysotile Total Asbestos = 3%	
					Homogeneous				
1592259	HSC-EA-27A-LAYER1	Room 3 Floor	Mastic	n/a	Soft	Black	1% Cellulose 99% Non-fibrous Material	No Asbestos Found	
					Homogeneous				
1592260	HSC-EA-27B	Room 2 Floor	Floor Tile	n/a	Firm	Tan	97% Non-fibrous Material	3% Chrysotile Total Asbestos = 3%	
					Homogeneous				
1592261	HSC-EA-27B-LAYER1	Room 2 Floor	Mastic	n/a	Soft	Black	1% Cellulose 99% Non-fibrous Material	No Asbestos Found	
					Homogeneous				

Note 1 Due to limitations of the EPA PLM method, floor tiles may yield false negative (<1%) results by this method. As such, the EPA recommends further analysis by electron microscopy. Batta recommends the NY 198.4 over the Chatfield method.

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ANALYST: AH

REVIEWED BY:

QA/QC Officer/Signatory

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EPA Lab ID #DE004



Dept. Code: PLM

Rev. #: 0
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CERTIFICATE OF PLM ANALYSIS

Page 16 of 18

Test Method: EPA/600/R-93/116 in conjunction with Batta SOP

Report Date: 05/16/25

Sampling Data

BLI Project #: L446705
Project Name: EA ENGINEERING- 16559-01-00 HARFORD SENIOR CENTER - BALTIMORE, MD

Date Sampled: 05/09/25
Sampled By: CLIENT
Date Analyzed: 05/15/25

Sample ID		Client-supplied Data			Analytical Data			Reported Results	
Lab Sample#	Client Sample#	Sample Description	Material Type	Friable?	Texture/	Gross Color	Non-asbestiform Components	Asbestiform Components	
1592267	HSC-EA-29A-LAYER1	Room 20 Floor	Mastic	n/a	Soft	White	1% Cellulose 99% Non-fibrous Material	No Asbestos Found	
					Homogeneous				
1592268	HSC-EA-29B	Room 20 Floor	Floor Tile	n/a	Firm	Gray	97% Non-fibrous Material	3% Chrysotile Total Asbestos = 3%	
					Homogeneous				
1592269	HSC-EA-29B-LAYER1	Room 20 Floor	Mastic	n/a	Soft	Black	1% Cellulose 99% Non-fibrous Material	No Asbestos Found	
					Homogeneous				
1592270	HSC-EA-30A	Exterior Door	Caulk	n/a	Soft	Gray	100% Non-fibrous Material	No Asbestos Found	
					Homogeneous				
1592271	HSC-EA-30B	Exterior Door	Caulk	n/a	Soft	Gray	100% Non-fibrous Material	No Asbestos Found	
					Homogeneous				

Note 1 Due to limitations of the EPA PLM method, floor tiles may yield false negative (<1%) results by this method. As such, the EPA recommends further analysis by electron microscopy. Batta recommends the NY 198.4 over the Chatfield method.

Note 2 Unless otherwise specified, Tr=Trace and correlates to <0.25% (based on a 400-point EPA point count).

Note 3 Materials containing vermiculite are not good candidates for analysis using standard EPA 600 PLM protocol. Results may be low-biased due to inherent limitations caused by the material. The EPA recommends that vermiculite attic insulation (VAI) be prepped and analyzed using EPA 600/R-04/004, known as "The Cincinnati Method".

ANALYST: AH

REVIEWED BY:

QA/QC Officer/Signatory

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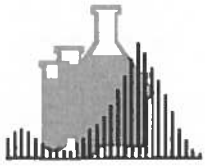
*This report does not constitute endorsement by NVLAP and/or any other US government agencies. PLM analyses do not fall under the purview of AIHA LAP.

*The test data pertain only to the items tested. No assumptions or conclusions should be made to materials or samples not analyzed. Furthermore, Batta Laboratories, LLC assumes no responsibility for the accuracy of results influenced by the use of improper collection techniques or equipment.

*Organically-bound, nonfriable material may interfere with the accurate and reproducible quantification of asbestos. In these cases, the EPA recommends further analysis by a matrix-reduction method. Batta recommends the NY ELAP Item 198.6/198.4 over the Chatfield method. When point count techniques are utilized on organically-bound, nonfriable materials without the EPA-recommended matrix reduction steps, Batta Laboratories assumes no responsibility regarding the accuracy or precision associated with these results. In these cases, Batta employs a modified version of the EPA point count method.

*WRTA refers to a group of fibrous Amphiboles typically associated with 'I' libv Amphibole. Within this classification are: winchite, richterite, tremolite, and actinolite.

Dedicated to a Cleaner Environment Since 1982



NY ELAP LAB# 11993 for PCM, PLM, TEM & Lead



BATTA LABORATORIES, LLC
A Certified MBE Company

Delaware Industrial Park, 6 Garfield Way
Newark, DE19713-5817
Tel. (302)737-3376 Fax (302) 737-5764

Web: <http://www.battaenv.com> E-mail: battaenv@battaenv.com



NVLAP
Lab Code: 101032-D

Dept. Code: PLM

Rev. #: 0
Batch#: N/A
COC#: N/A

CERTIFICATE OF PLM ANALYSIS

Page 18 of 18

Test Method: EPA/600/R-93/116 in conjunction with Batta SOP

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BLI Project #: L446705
Project Name: EA ENGINEERING- 16559-01-00 HARFORD SENIOR CENTER - BALTIMORE, MD

Date Sampled: 05/09/25
Sampled By: CLIENT
Date Analyzed: 05/15/25

Sample ID		Client-supplied Data		Analytical Data			Reported Results	
Lab Sample#	Client Sample#	Sample Description	Material Type	Friable?	Texture/ Gross Color	Non-asbestiform Components	Asbestiform Components	
1592278	HSC-EA-33B	Exterior Roof	Shingle	n/a	Soft Homogeneous	Black 1% Cellulose 99% Non-fibrous Material	No Asbestos Found	
1592279	HSC-EA-33B-LAYER1	Exterior Roof	Tar	n/a	Soft Homogeneous	Black 1% Cellulose 99% Non-fibrous Material	No Asbestos Found	
1592280	HSC-EA-34A	Room 26 Ceiling	Ceiling Tile	n/a	Fibrous Homogeneous	Brown 90% Cellulose 10% Non-fibrous Material	No Asbestos Found	
1592281	HSC-EA-34B	Room 26 Ceiling	Ceiling Tile	n/a	Fibrous Homogeneous	Brown 90% Cellulose 10% Non-fibrous Material	No Asbestos Found	

Note 1 Due to limitations of the EPA PLM method, floor tiles may yield false negative (<1%) results by this method. As such, the EPA recommends further analysis by electron microscopy. Batta recommends the NY 198.4 over the Chatfield method.

Note 2 Unless otherwise specified, Tr=Trace and correlates to <0.25% (based on a 400-point EPA point count).

Note 3 Materials containing vermiculite are not good candidates for analysis using standard EPA 600 PLM protocol. Results may be low-biased due to inherent limitations caused by the material. The EPA recommends that vermiculite attic insulation (VAI) be prepped and analyzed using EPA 600/R-04/004, known as "The Cincinnati Method".

ANALYST: AH

REVIEWED BY: APL

QA/QC Officer/Signatory

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*This report does not constitute endorsement by NVLAP and/or any other US government agencies. PLM analyses do not fall under the purview of AIHA LAP.

*The test data pertain only to the items tested. No assumptions or conclusions should be made to materials or samples not analyzed. Furthermore, Batta Laboratories, LLC assumes no responsibility for the accuracy of results influenced by the use of improper collection techniques or equipment.

*Organically-bound, nonfriable material may interfere with the accurate and reproducible quantification of asbestos. In these cases, the EPA recommends further analysis by a matrix-reduction method. Batta recommends the NY ELAP Item 198.6/198.4 over the Chatfield method. When point count techniques are utilized on organically-bound, nonfriable materials without the EPA-recommended matrix reduction steps, Batta Laboratories assumes no responsibility regarding the accuracy or precision associated with these results. In these cases, Batta employs a modified version of the EPA point count method.

*WRTA refers to a group of fibrous Amphiboles typically associated with 'Libby Amphibole'. Within this classification are: winchite, richterite, tremolite, and actinolite.



Corporate Headquarters
6 Garfield Way
Newark, DE. 19713
Ph: (855) 86-BATTA
Email: BattaLaboratories@battaenv.com
Web: https://battaenv.com



CHAIN OF CUSTODY

NVLAP: 101032
AIHA LAP, LLC: 100448
NY ELAP: 11993
EPA Lab: DE004
MD Lab: 263



Page 1 of 1
BL Project #: **L446765**

Customer Billing Information:		Shipping Information		Turnaround Times (check one, refer to notes*)		Method of Payment	
Name: EA Engineering, Science, and Technology, Inc.		Picked up by BATTA		<input type="checkbox"/> 6 Hours / Rush (*Note 1)		<input type="checkbox"/> Cash	
Billing Address 1: 225 Shilling Circle, Suite 400		<input type="checkbox"/> Delivered by customer		<input type="checkbox"/> 24 Hours (*Note 2)		<input type="checkbox"/> Visa/MasterCard/Discover	
Billing Address 2: Hunt Valley, MD 21031		<input checked="" type="checkbox"/> Shipped by customer		<input type="checkbox"/> 48 Hours (*Note 3)		<input type="checkbox"/> Money Order	
Phone: 410-292-5203				<input type="checkbox"/> 72 Hours (*Note 4)		<input checked="" type="checkbox"/> Purchase Order # 19042	
Email: jkujawa@east.com, swaldron@east.com				<input type="checkbox"/> 5 Days (*Note 5)		<input type="checkbox"/> Check #	
Results To: Jonathan Kujava and Sherri Waldron				<input type="checkbox"/> 5-10 Days (*Note 6, Chem. Samples)		<input type="checkbox"/> Other	

*** Notes Regarding Turnaround Times (TATs)**
Specific TATs depend on the test requested. TATs may not be available for all types of analysis.
*Note 1: Client must make arrangements with lab to guarantee 6 Hour/RUSH TAT - Call 1 (855)-862-2882
*Note 2: Unless a specific time is requested, results are guaranteed by 5pm on the following business day.
*Note 3: Unless a specific time is requested, results are guaranteed by 5pm on the 2nd business day.
*Note 4: Unless a specific time is requested, results are guaranteed by 5pm on the 3rd business day.
*Note 5: Unless a specific time is requested, results are guaranteed by 5pm on the 5th business day.
*Note 6: Unless a specific time is requested, results are guaranteed by 5pm on the 10th business day.

Project Name: Harford Senior Center		Project Location: Baltimore, MD		Client Project Information		Project #: 16559-01-00		Sampled By: Jonathan Kujava	
				If solid waste, will results be used for disposal in NJ? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>					
				Were the samples collected in New York state? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>					

Lab Use Only	Field Sample ID#	Sample Location & Description	Sampling Date & Time	Sampling Info for Air /Surface Samples			Sample Type	Test Method	Laboratory Use Only	
				Start Time	Stop Time	Volume/Area			Flow Rate	Results
		See Attached Document								

Special Instructions From Client:		Laboratory Use Only	
Sample Relinquished By: X <i>[Signature]</i>	Date: 5/12/25	Time: 1:450	Field Samples Acceptable <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> On Ice
Sample Received By: <i>[Signature]</i>	Date: <i>[Signature]</i>	Time: 10:20	Sample #: <i>[Signature]</i>

For drinking water samples: for results to be valid, lab must receive samples on ice and within 48 hours of collection. For air samples collected by NIOSH 7400 and 7402: in accordance with these NIOSH methods, two field blanks. (or 10% of the number of field samples submitted, whichever is greater) must be submitted and be analyzed with field samples.
For solid waste samples: Before solid waste materials such as soil, ash, sludge, dredge spoils, etc. are disposed in New Jersey, they must undergo analysis following TCLP protocol. BATTA Labs is not responsible for waste disposal misrepresentations on this document. Document Control Item AM5

L446768

EA Asbestos Sample Data Sheet

Project Name: Project Location: Project Number:		Harford Senior Center Baltimore, MD 16559-01		Inspector(s): Project Manager: Date Sampled:	JK, ZW SW 5/9/2025
PLEASE ANALYZE ALL LAYERS OF EACH SAMPLE					
Sample Number or ID	Material Description (Use FT-Floor Tile, CT-Ceiling Tile, PF-Pipe Fitting)	Color	Sample Location (Floor, Room)	ACBM Type (TSI or S or M)	Multiple Layers
HSC-EA-01A	R-1	Black	Exterior - Roof	M	Yes
HSC-EA-01B	R-1	Black	Exterior - Roof	M	Yes
HSC-EA-01C	R-1	Black	Exterior - Roof	M	Yes
HSC-EA-02A	C-1	Gray	Exterior - Roof	M	No
HSC-EA-02B	C-1	Gray	Exterior - Roof	M	No
HSC-EA-03A	C-2	White	Exterior - Roof	M	No
HSC-EA-03B	C-2	White	Exterior - Roof	M	No
HSC-EA-04A	DW/JC	White	Room 9 - Wall	M	Yes
HSC-EA-04B	DW/JC	White	Room 16 - Wall	M	Yes
HSC-EA-04C	DW/JC	White	Room 18 - Wall	M	Yes
HSC-EA-05A	C-7	Gray	Exterior - Wall	M	No
HSC-EA-05B	C-7	Gray	Exterior - Wall	M	No
HSC-EA-06A	C-8	Black	Exterior - Wall	M	No
HSC-EA-06B	C-8	Black	Exterior - Wall	M	No
HSC-EA-07A	OM-2	White	Exterior - Window	M	No
PLEASE ANALYZE ALL LAYERS OF EACH SAMPLE					
Homogeneous area = Suspect Materials of one type and color		<p>Samples required for the following: TSI: 3 samples for each TSI material; 1 sample per area of patched insulation (<6 linear or squared feet); Sample in a manner sufficient per mechanical system not assumed to be ACBM where cement or plaster is used on fittings such as tees, elbows, or valves. Surfacing: 3 samples per area < 1,000 ft²; 5 samples per area > 1,000 ft²; 7 samples per area > 5,000 ft². Miscellaneous: Sample in a manner sufficient to determine (Note EBA's Standard Operating Procedure is to collect at least 2 samples per homogenous area).</p>			
<p>TSI = Thermal System Insulation S = Surface Material M = any other building material or structural component</p>					

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L446705

EA Asbestos Sample Data Sheet

Project Name: Project Location: Project Number:		Harford Senior Center Baltimore, MD 16559-01		Inspector(s): Project Manager: Date Sampled:	JK, ZW SW 5/9/2025
PLEASE ANALYZE ALL LAYERS OF EACH SAMPLE					
Sample Number or ID	Material Description (Use FT-Floor Tile, CT-Ceiling Tile, PF-Pipe Fitting)	Color	Sample Location (Floor, Room)	ACBM Type (TSI or S or M)	Multiple Layers
HSC-EA-07B	OM-2	White	Exterior - Window	M	No
HSC-EA-08A	C-3	Black	Room 1 - Wall	M	No
HSC-EA-08B	C-3	Black	Room 18 - Wall	M	No
HSC-EA-09A	OM-1	White	Room 1 - Ceiling by vent	M	No
HSC-EA-09B	OM-1	White	Room 1 - Ceiling by vent	M	No
HSC-EA-10A	M-1	Gray	Room 25 - Duct	M	No
HSC-EA-10B	M-1	Gray	Room 25 - Duct	M	No
HSC-EA-11A	M-2	Yellow	Room 14 - Under Red Carpet	M	No
HSC-EA-11B	M-2	Yellow	Room 14 - Under Red Carpet	M	No
HSC-EA-12A	M-3	Yellow	Room 26 - Under Gray Carpet	M	No
HSC-EA-12B	M-3	Yellow	Room 26 - Under Gray Carpet	M	No
HSC-EA-13A	FT-5	Light Gray	Room 10, Floor	M	Yes
HSC-EA-13B	FT-5	Light Gray	Room 11, Floor	M	Yes
HSC-EA-14A	DCT-1	White	Room 18 - Ceiling	M	No
HSC-EA-14B	DCT-1	White	Room 18 - Ceiling	M	No
PLEASE ANALYZE ALL LAYERS OF EACH SAMPLE					
Homogeneous area = Suspect Materials of one type and color		<p>Samples required for the following:</p> <p>TSI: 3 samples for each TSI material: 1 sample per area of patched insulation (<6 linear or squared feet); Sample in a manner sufficient per mechanical system not assumed to be ACBM where cement or plaster is used on fittings such as tees, elbows, or valves.</p> <p>Surface: 3 samples per area < 1,000 ft²; 5 samples per area > 1,000 ft²; 7 samples per area > 5,000 ft².</p> <p>Miscellaneous: Sample in a manner sufficient to determine (Note: EBA's Standard Operating Procedure is to collect at least 2 samples per homogeneous area).</p>			
<p>TSI = Thermal System Insulation S = Surface Material M = any other building material or structural component</p>					

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L446705

EA Asbestos Sample Data Sheet

Project Name: Project Location: Project Number:		Harford Senior Center Baltimore, MD 16559-01		Inspector(s): Project Manager: Date Sampled:	JK, ZW SW 5/9/2025
PLEASE ANALYZE ALL LAYERS OF EACH SAMPLE					
Sample Number or ID	Material Description (Use FT-Floor Tile, CT-Ceiling Tile, PF-Pipe Fitting)	Color	Sample Location (Floor, Room)	ACBM Type (TSI or S or M)	Multiple Layers
HSC-EA-15A	CB-1	Black	Room 14 - Wall behind covebase	M	No
HSC-EA-15B	CB-1	Black	Room 14 - Wall behind covebase	M	No
HSC-EA-16A	C-4	Gray	Room 13 - Door	M	No
HSC-EA-16B	C-4	Gray	Room 13 - Door	M	No
HSC-EA-17A	C-5	White	Room 2 - Door	M	No
HSC-EA-17B	C-5	White	Room 24 - Door	M	No
HSC-EA-18A	CB-2	Tan	Room 20 - Wall behind covebase	M	No
HSC-EA-18B	CB-2	Tan	Room 20 - Wall behind covebase	M	No
HSC-EA-19A	DCT-2	White	Room 22 - Ceiling	M	No
HSC-EA-19B	DCT-2	White	Room 20 - Ceiling	M	No
HSC-EA-20A	DCT-3	White	Room 23 - Ceiling	M	No
HSC-EA-20B	DCT-3	White	Room 22 - Ceiling	M	No
HSC-EA-21A	DCT-4	White	Room 2 - Ceiling	M	No
HSC-EA-21B	DCT-4	White	Room 24 - Ceiling	M	No
PLEASE ANALYZE ALL LAYERS OF EACH SAMPLE					
	Homogeneous area = Suspect Materials of one type and color		<p>Samples required for the following:</p> <p>TSI: 3 samples for each TSI material; 1 sample per area of patched insulation (<6 linear or squared feet); Sample in a manner sufficient per mechanical system not assumed to be ACBM where cement or plaster is used on fittings such as tees, elbows, or valves.</p> <p>Surfacing: 3 samples per area < 1,000 ft²; 5 samples per area > 1,000 ft²; 7 samples per area > 5,000 ft².</p> <p>Miscellaneous: Sample in a manner sufficient to determine (Note: EBA's Standard Operating Procedure is to collect at least 2 samples per homogeneous area).</p>	<p>TSI = Thermal System Insulation</p> <p>S = Surface Material</p> <p>M = any other building material or structural component</p>	

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L446705

EA Asbestos Sample Data Sheet

Project Name: Project Location: Project Number:		Harford Senior Center Baltimore, MD 16559-01		Inspector(s): Project Manager: Date Sampled:	JK, ZW SW 5/9/2025
PLEASE ANALYZE ALL LAYERS OF EACH SAMPLE					
Sample Number or ID	Material Description (Use FT-Floor Tile, CT-Ceiling Tile, PF-Pipe Fitting)	Color	Sample Location (Floor, Room)	ACBM Type (TSI or S or M)	Multiple Layers
HSC-EA-22A	DCT-5	White	Room 23 - Ceiling	M	No
HSC-EA-22B	DCT-5	White	Room 23 - Ceiling	M	No
HSC-EA-23A	DCT-6	White	Room 16 - Ceiling	M	No
HSC-EA-23B	DCT-6	White	Room 16 - Ceiling	M	No
HSC-EA-24A	C-6	White	Room 24 - Sink	M	No
HSC-EA-24B	C-6	White	Room 19 - Sink	M	No
HSC-EA-25A	FT-1	Off-White	Room 23 - Floor	M	Yes
HSC-EA-25B	FT-1	Off-White	Room 22 - Floor	M	Yes
HSC-EA-26A	FT-2	Pink	Room 2 - Floor	M	Yes
HSC-EA-26B	FT-2	Pink	Room 2 - Floor	M	Yes
HSC-EA-27A	FT-3	Gray	Room 3 - Floor	M	Yes
HSC-EA-27B	FT-3	Gray	Room 2 - Floor	M	Yes
HSC-EA-28A	FT-4	Gray	Room 20 - Floor	M	Yes
HSC-EA-28B	FT-4	Gray	Room 20 - Floor	M	Yes
PLEASE ANALYZE ALL LAYERS OF EACH SAMPLE					
Homogeneous area = Suspect Materials of one type and color		<p>Samples required for the following:</p> <p>TSI: 3 samples for each TSI material; 1 sample per area of patched insulation (<6 linear or squared feet); Sample in a manner sufficient per mechanical system not assumed to be ACBM where cement or plaster is used on fittings such as tees, elbows, or valves.</p> <p>Surfacing: 3 samples per area < 1,000 ft²; 5 samples per area > 1,000 ft²; 7 samples per area > 5,000 ft².</p> <p>Miscellaneous: Sample in a manner sufficient to determine (Note EBA's Standard Operating Procedure is to collect at least 2 samples per homogenous area).</p>			
		<p>TSI = Thermal System Insulation S = Surface Material M = any other building material or structural component</p>			

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EA Asbestos Sample Data Sheet

Project Name: Project Location: Project Number:		Harford Senior Center Baltimore, MD 16559-01		Inspector(s): Project Manager: Date Sampled:	JK, ZW SW 5/9/2025
PLEASE ANALYZE ALL LAYERS OF EACH SAMPLE					
Sample Number or ID	Material Description (Use FT-Floor Tile, CT-Ceiling Tile, PF-Pipe Fitting)	Color	Sample Location (Floor, Room)	ACBM Type (TSI or S or M)	Multiple Layers
HSC-EA-29A	FT-5	Light Gray	Room 20 - Floor	M	Yes
HSC-EA-29B	FT-5	Light Gray	Room 20 - Floor	M	Yes
HSC-EA-30A	C-9	White	Exterior - Door	M	No
HSC-EA-30B	C-9	White	Exterior - Door	M	No
HSC-EA-31A	DCT-7	White	Room 9 - Ceiling	M	No
HSC-EA-31B	DCT-7	White	Room 9 - Ceiling	M	No
HSC-EA-32A	DCT-8	White	Room 19 - Ceiling	M	No
HSC-EA-32B	DCT-8	White	Room 26 - Ceiling	M	No
HSC-EA-33A	R-2	Black	Exterior - Roof	M	Yes
HSC-EA-33B	R-2	Black	Exterior - Roof	M	Yes
HSC-EA-34A	DCT-10	White	Room 26 - Ceiling	M	No
HSC-EA-34B	DCT-10	White	Room 26 - Ceiling	M	No
PLEASE ANALYZE ALL LAYERS OF EACH SAMPLE					
Homogeneous area = Suspect Materials of one type and color		<p>Samples required for the following:</p> <p>TSI: 3 samples for each TSI material; 1 sample per area of patched insulation (<6 linear or squared feet); Sample in a manner sufficient per mechanical system not assumed to be ACBM where cement or plaster is used on fittings such as tees, elbows, or valves.</p> <p>Surfacing: 3 samples per area < 1,000 ft²; 5 samples per area > 1,000 ft²; 7 samples per area > 5,000 ft².</p> <p>Miscellaneous: Sample in a manner sufficient to determine (Note EBA's Standard Operating Procedure is to collect at least 2 samples per homogenous area).</p>			
		<p>TSI = Thermal System Insulation S = Surface Material M = any other building material or structural component</p>			

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Appendix D

Certificate of LBP Inspector

THIS IS TO CERTIFY THAT
Zachary James Wolodkin
HAS MET THE LEAD PAINT SERVICES
ACCREDITATION REQUIREMENTS FOR
Risk Assessor

START DATE: 05/21/2024

EXPIRY DATE: 05/21/2026

TRAINING PROVIDER: Aerosol Monitoring & Analysis, Inc.

COURSE DATE: 03/28/2024

ACCREDITATION # 103830 RA



A handwritten signature in black ink, appearing to be "Zachary James Wolodkin".

ADMINISTRATOR, LEAD PAINT ACCREDITATION
MARYLAND DEPARTMENT OF THE ENVIRONMENT

05/21/2024
APPROVED DATE

STATE OF MARYLAND

AEROSOL MONITORING & ANALYSIS, INC.

This is to certify that
ZACHARY WOLODKIN

25 PRIMROSE CT
PARKVILLE, MD 21234

has met the attendance requirements and successfully completed
the course entitled

2-DAY LEAD RISK ASSESSOR

This Training Meets the Certification Requirements for DC, MD & VA

03/28/2024 to 03/29/2024
Course Date

03/29/2024
Exam Date

DAVID TRUMAN
Principal Instructor



3/29/2026
MD Expiration Date

3/29/2027
VA Expiration Date

3/29/2026
DC Expiration Date

E. Rush Barnett
Course Director



103961
Certification No.

VA103961
VA Certification No.

103961
DC Certification No.

DC Lead Training Provider Accreditation No. DC21-001-RA-I



1331 Ashton Road

P.O.Box 646

Hanover, MD 21076

P: 410-684-3327

F: 410-684-3724

www.amatraining.com

Appendix E

XRF Performance Characteristic Sheet

Performance Characteristic Sheet

EFFECTIVE DATE: September 24, 2004

EDITION NO.: 1

MANUFACTURER AND MODEL:

Make: Niton LLC

Tested Model: XLp 300

Source: ^{109}Cd

Note: This PCS is also applicable to the equivalent model variations indicated below, for the Lead-in-Paint K+L variable reading time mode, in the XLi and XLp series:

XLi 300A, XLi 301A, XLi 302A and XLi 303A.

XLp 300A, XLp 301A, XLp 302A and XLp 303A.

XLi 700A, XLi 701A, XLi 702A and XLi 703A.

XLp 700A, XLp 701A, XLp 702A, and XLp 703A.

Note: The XLi and XLp versions refer to the shape of the handle part of the instrument. The differences in the model numbers reflect other modes available, in addition to Lead-in-Paint modes. The manufacturer states that specifications for these instruments are identical for the source, detector, and detector electronics relative to the Lead-in-Paint mode.

FIELD OPERATION GUIDANCE

OPERATING PARAMETERS:

Lead-in-Paint K+L variable reading time mode.

XRF CALIBRATION CHECK LIMITS:

0.8 to 1.2 mg/cm² (inclusive)

The calibration of the XRF instrument should be checked using the paint film nearest 1.0 mg/cm² in the NIST Standard Reference Material (SRM) used (e.g., for NIST SRM 2579, use the 1.02 mg/cm² film).

If readings are outside the acceptable calibration check range, follow the manufacturer's instructions to bring the instruments into control before XRF testing proceeds.

SUBSTRATE CORRECTION:

For XRF results using Lead-in-Paint K+L variable reading time mode, substrate correction is not needed for:

Brick, Concrete, Drywall, Metal, Plaster, and Wood

INCONCLUSIVE RANGE OR THRESHOLD:

K+L MODE READING DESCRIPTION	SUBSTRATE	THRESHOLD (mg/cm ²)
Results not corrected for substrate bias on any substrate	Brick	1.0
	Concrete	1.0
	Drywall	1.0
	Metal	1.0
	Plaster	1.0
	Wood	1.0

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* ("HUD Guidelines"). Performance parameters shown on this sheet are calculated from the EPA/HUD evaluation using archived building components. Testing was conducted in August 2004 on 133 testing combinations. The instruments that were used to perform the testing had new sources; one instrument's was installed in November 2003 with 40 mCi initial strength, and the other's was installed June 2004 with 40 mCi initial strength.

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.

SUBSTRATE CORRECTION VALUE COMPUTATION:

Substrate correction is not needed for brick, concrete, drywall, metal, plaster or wood when using Lead-in-Paint K+L variable reading time mode, the normal operating mode for these instruments. If substrate correction is desired, refer to Chapter 7 of the HUD Guidelines for guidance on correcting XRF results for substrate bias.

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. Use the K+L variable time mode readings.

Conduct XRF retesting 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. Do not correct the original or retest results for substrate bias. In single-family housing a result is defined as the average of three readings. In multifamily housing, a result is 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 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 results.

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

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:

For the Lead-in-Paint K+L variable reading time mode, the instrument continues to read until it is moved away from the testing surface, terminated by the user, or the instrument software indicates the reading is complete. The following table provides testing time information for this testing mode. The times have been adjusted for source decay, normalized to the initial source strengths as noted above. Source strength and type of substrate will affect actual testing times. At the time of testing, the instruments had source strengths of 26.6 and 36.6 mCi.

Testing Times Using K+L Reading Mode (Seconds)						
Substrate	All Data			Median for laboratory-measured lead levels (mg/cm ²)		
	25 th Percentile	Median	75 th Percentile	Pb < 0.25	0.25 ≤ Pb < 1.0	1.0 ≤ Pb
Wood Drywall	4	11	19	11	15	11
Metal	4	12	18	9	12	14
Brick Concrete Plaster	8	16	22	15	18	16

CLASSIFICATION RESULTS:

XRF results are classified as positive if they are greater than or equal to the threshold, and negative if they are less than the threshold.

DOCUMENTATION:

A document titled *Methodology for XRF Performance Characteristic Sheets* provides an explanation of the statistical methodology used to construct the data in the sheets, and provides empirical results from using the recommended inconclusive ranges or thresholds for specific XRF instruments. For a copy of this document call the National Lead Information Center Clearinghouse at 1-800-424-LEAD.

This XRF Performance Characteristic Sheet was developed by the Midwest Research Institute (MRI) and QuanTech, Inc., under a contract between MRI and the XRF manufacturer. HUD has determined that the information provided here is acceptable when used as guidance in conjunction with Chapter 7, Lead-Based Paint Inspection, of HUD's *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*.

Appendix F

XRF Lead Data Sheet

XRF Lead Data Table
Harford Senior Center

READING NO.	COMPONENT	SUBSTRATE	SIDE	CONDITION	COLOR	SITE	INSPECTOR	FLOOR	ROOM	RESULTS	Pb mg/cm ²
2	CALIBRATE									POSITIVE	1.2
3	CALIBRATE									POSITIVE	1.1
5	CALIBRATE									POSITIVE	1.2
6	BEAM	METAL	C	POOR	TAN	HARFORD SENIOR CENTER	ZW	Roof	UPPER	NEGATIVE	0.0
7	VENT PIPE	METAL	NA	POOR	NP	HARFORD SENIOR CENTER	ZW	Roof	UPPER	POSITIVE	59.5
8	DUCT	METAL	NA	POOR	SILVER	HARFORD SENIOR CENTER	ZW	Roof	UPPER	NEGATIVE	0.0
9	ROOF HATCH	METAL	NA	POOR	RED	HARFORD SENIOR CENTER	ZW	Roof	UPPER	NEGATIVE	0.0
10	SUPPORT BEAM	METAL	A	POOR	BROWN	HARFORD SENIOR CENTER	ZW	Roof	UPPER	NEGATIVE	0.0
11	SUPPORT BEAM	METAL	A	POOR	BROWN	HARFORD SENIOR CENTER	ZW	Roof	UPPER	NEGATIVE	0.0
12	PARAPET WALL CAP	METAL	A	POOR	NP	HARFORD SENIOR CENTER	ZW	Roof	UPPER	NEGATIVE	0.0
13	ROOF DRAIN	METAL	C	POOR	NP	HARFORD SENIOR CENTER	ZW	Roof	LOWER	NEGATIVE	0.0
14	PARAPET WALL CAP	METAL	C	POOR	BROWN	HARFORD SENIOR CENTER	ZW	Roof	LOWER	NEGATIVE	0.0
15	CONDUIT	METAL	B	POOR	BROWN	HARFORD SENIOR CENTER	ZW	Roof	LOWER	NEGATIVE	0.0
16	ANTENNA POLE	METAL	B	FAIR	YELLOW	HARFORD SENIOR CENTER	ZW	Roof	LOWER	NEGATIVE	0.0
17	HVAC PIPE	METAL	D	POOR	WHITE	HARFORD SENIOR CENTER	ZW	Roof	UPPER	NEGATIVE	0.0
18	WALL	DRYWALL	B	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	1	NEGATIVE	0.0
19	DOOR	WOOD	B	FAIR	NP	HARFORD SENIOR CENTER	ZW	FIRST	1	NEGATIVE	0.0
20	PANEL	WOOD	C	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	1	NEGATIVE	0.0
21	WALL	CINDER BLOCK	A	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	1	NEGATIVE	0.0
22	WALL	CINDER BLOCK	A	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	1	NEGATIVE	0.0
23	WALL	CINDER BLOCK	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	13	NEGATIVE	0.0
24	WALL	DRYWALL	B	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	13	NEGATIVE	0.0
25	WALL	DRYWALL	D	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	13	NEGATIVE	0.0
26	DOOR	WOOD	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	13	NEGATIVE	0.0
27	DOORFRAME	WOOD	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	13	POSITIVE	2.0
28	DOORFRAME	WOOD	B	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	13	NEGATIVE	0.0
29	DOORFRAME	METAL	C	FAIR	RED	HARFORD SENIOR CENTER	ZW	FIRST	13	NEGATIVE	0.0
30	DOOR	METAL	C	FAIR	RED	HARFORD SENIOR CENTER	ZW	FIRST	13	NEGATIVE	0.0
31	DOORFRAME	WOOD	D	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	13	NEGATIVE	0.0
32	DOORFRAME	WOOD	D	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	13	NEGATIVE	0.0
33	DOORFRAME	WOOD	D	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	13	NEGATIVE	0.0
34	WALL	CINDERBLOCK	C	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	18	NEGATIVE	0.0
35	DOORFRAME	WOOD	D	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	18	NEGATIVE	0.0
36	WALL	DRYWALL	D	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	18	NEGATIVE	0.0
37	WALL	CINDERBLOCK	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	18	NEGATIVE	0.0
38	WALL	DRYWALL	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	2	NEGATIVE	0.0
39	WALL	DRYWALL	A	FAIR	PINK	HARFORD SENIOR CENTER	ZW	FIRST	2	NEGATIVE	0.0
40	WALL	DRYWALL	C	FAIR	PINK	HARFORD SENIOR CENTER	ZW	FIRST	2	NEGATIVE	0.0
41	WALL	DRYWALL	C	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	2	NEGATIVE	0.0
42	CHAIR RAIL	WOOD	C	FAIR	PINK	HARFORD SENIOR CENTER	ZW	FIRST	2	NEGATIVE	0.0
43	DOOR	METAL	D	FAIR	RED	HARFORD SENIOR CENTER	ZW	FIRST	2	NEGATIVE	0.1
44	DOORFRAME	METAL	D	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	2	NEGATIVE	0.0
45	DOORFRAME	WOOD	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	2	NEGATIVE	0.0
46	DOOR	WOOD	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	2	NEGATIVE	0.0
47	DOORFRAME	WOOD	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	2	NEGATIVE	0.0
48	DOOR	WOOD	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	2	NEGATIVE	0.0
49	WINDOWFRAME	WOOD	B	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	2	NEGATIVE	0.0
50	WINDOWSILL	WOOD	B	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	2	NEGATIVE	0.0
51	DOORFRAME	WOOD	B	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	2	NEGATIVE	0.0
52	DOORFRAME	WOOD	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	22	POSITIVE	0.9
53	DOOR	WOOD	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	22	POSITIVE	0.8
54	WALL	CINDERBLOCK	C	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	23	NEGATIVE	0.0
55	WALL	DRYWALL	D	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	23	NEGATIVE	0.0
56	DOOR	WOOD	B	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	23	NEGATIVE	0.0
57	DOORFRAME	WOOD	B	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	23	NEGATIVE	0.0
58	WALL	DRYWALL	B	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	23	NEGATIVE	0.0
59	PIPE	METAL	D	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	23	POSITIVE	4.7
60	PIPE	METAL	B	FAIR	BLACK	HARFORD SENIOR CENTER	ZW	FIRST	23	NEGATIVE	0.0
61	WALL	CINDERBLOCK	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	25	NEGATIVE	0.0
62	WALL	DRYWALL	C	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	25	NEGATIVE	0.0
63	DOOR	WOOD	C	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	25	NEGATIVE	0.0
64	DOORFRAME	WOOD	C	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	25	NEGATIVE	0.0
65	DOORFRAME	WOOD	C	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	3	NEGATIVE	0.0
66	WALL	CINDERBLOCK	D	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	3	NEGATIVE	0.0
67	WALL	CINDERBLOCK	D	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	3	NEGATIVE	0.0

XRF Lead Data Table
Harford Senior Center

READING NO.	COMPONENT	SUBSTRATE	SIDE	CONDITION	COLOR	SITE	INSPECTOR	FLOOR	ROOM	RESULTS	Pb mg/cm ²
68	PIPE	METAL	D	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	3	NEGATIVE	0.2
69	PIPE	METAL	D	FAIR	BLACK	HARFORD SENIOR CENTER	ZW	FIRST	3	NEGATIVE	0.0
70	PANEL	WOOD	A	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	3	NEGATIVE	0.1
71	PANEL	WOOD	A	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	3	NEGATIVE	0.0
72	WALL	DRYWALL	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	9	NEGATIVE	0.0
73	BASEBOARD	WOOD	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	9	NEGATIVE	0.0
74	DOORFRAME	WOOD	C	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	9	NEGATIVE	0.0
75	PEGBOARD	WOOD	D	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	9	NEGATIVE	0.0
76	WALL	DRYWALL	A	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	24	NEGATIVE	0.1
77	WALL	CERAMIC TILE	A	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	24	NEGATIVE	0.1
78	FLOOR	CERAMIC TILE	NA	FAIR	GRAY	HARFORD SENIOR CENTER	ZW	FIRST	24	NEGATIVE	0.0
79	WALL	CERAMIC TILE	C	FAIR	GREEN	HARFORD SENIOR CENTER	ZW	FIRST	24	NEGATIVE	0.0
80	DOORFRAME	WOOD	C	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	24	NEGATIVE	0.0
81	STALL	PLASTIC	NA	FAIR	BLUE	HARFORD SENIOR CENTER	ZW	FIRST	24	NEGATIVE	0.0
82	STALL	PLASTIC	NA	FAIR	GRAY	HARFORD SENIOR CENTER	ZW	FIRST	24	NEGATIVE	0.0
83	WALL	DRYWALL	A	FAIR	TAN	HARFORD SENIOR CENTER	ZW	FIRST	19	NEGATIVE	0.0
84	WALL	CERAMIC TILE	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	19	POSITIVE	3.9
85	WALL	CERAMIC TILE	B	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	19	POSITIVE	3.4
86	FLOOR	CERAMIC TILE	NA	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	19	NEGATIVE	0.0
87	FLOOR	CERAMIC TILE	NA	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	19	NEGATIVE	0.0
88	DOORFRAME	WOOD	D	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	19	NEGATIVE	0.0
89	DOORFRAME	WOOD	B	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	14	NEGATIVE	0.0
90	WALL	DRYWALL	A	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	14	NEGATIVE	0.0
91	CEILING	DRYWALL	na	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	14	NEGATIVE	0.0
92	CEILING BEAM	METAL	na	FAIR	RED	HARFORD SENIOR CENTER	ZW	SECOND	27	NEGATIVE	0.1
93	CEILING BEAM	METAL	na	FAIR	RED	HARFORD SENIOR CENTER	ZW	SECOND	27	NEGATIVE	0.1
94	WALL	DRYWALL	B	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	SECOND	27	NEGATIVE	0.0
95	WALL	BRICK	C	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	SECOND	27	NEGATIVE	0.0
96	WALL	CINDERBLOCK	C	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	SECOND	27	NEGATIVE	0.0
97	HANDRAIL	WOOD	NA	FAIR	NP	HARFORD SENIOR CENTER	ZW	SECOND	27	NEGATIVE	0.0
98	CONDUIT	METAL	C	FAIR	YELLOW	HARFORD SENIOR CENTER	ZW	SECOND	27	NEGATIVE	0.0
99	DOORFRAME	WOOD	B	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	15	NEGATIVE	0.0
100	WALL	WOODPANEL	D	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	15	NEGATIVE	0.0
101	SHELF	WOOD	NA	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	15	NEGATIVE	0.0
102	SHELF SUPPORT	METAL	NA	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	15	NEGATIVE	0.0
103	WALL	DRYWALL	B	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	16	NEGATIVE	0.0
104	WINDOW	WOOD	D	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	16	NEGATIVE	0.0
105	DOORFRAME	WOOD	D	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	16	NEGATIVE	0.0
106	TRANSOM BOARD	WOOD	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	16	NEGATIVE	0.0
107	WALL	DRYWALL	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	10	NEGATIVE	0.0
108	DOORFRAME	DRYWALL	B	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	10	NEGATIVE	0.0
109	CORNERGUARD	WOOD	B	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	10	NEGATIVE	0.0
110	BASEBOARD	WOOD	D	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	10	NEGATIVE	0.1
111	DOORFRAME	WOOD	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	10	NEGATIVE	0.0
112	WINDOW	WOOD	A	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	10	NEGATIVE	0.0
113	WALL	DRYWALL	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	11	NEGATIVE	0.0
114	WALL	DRYWALL	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	11	NEGATIVE	0.0
115	DOORFRAME	WOOD	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	11	NEGATIVE	0.0
116	BASEBOARD	WOOD	D	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	11	NEGATIVE	0.0
117	WINDOW	WOOD	C	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	11	NEGATIVE	0.0
118	DOORFRAME	WOOD	B	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	11	NEGATIVE	0.0
119	CORNERGUARD	WOOD	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	2	NEGATIVE	0.0
120	CEILING	DRYWALL	na	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	16	NEGATIVE	0.0
121	CROWN MOLDING	WOOD	na	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	16	NEGATIVE	0.0
122	CORNERGUARD	WOOD	A	FAIR	PINK	HARFORD SENIOR CENTER	ZW	FIRST	2	NEGATIVE	0.0
123	CALIBRATE					HARFORD SENIOR CENTER	ZW			POSITIVE	1.2
125	CALIBRATE					HARFORD SENIOR CENTER	ZW			POSITIVE	1.1
132	CALIBRATE					HARFORD SENIOR CENTER	ZW			POSITIVE	1.2
133	CALIBRATE					HARFORD SENIOR CENTER	ZW			POSITIVE	1.0
134	DOORFRAME	WOOD	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	20	NEGATIVE	0.0
135	DOORFRAME	WOOD	D	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	20	NEGATIVE	0.0
136	DOORFRAME	WOOD	D	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	26	NEGATIVE	0.0
137	WALL	DRYWALL	B	FAIR	YELLOW	HARFORD SENIOR CENTER	ZW	FIRST	26	NEGATIVE	0.0
138	WALL	WOODPANEL	C	FAIR	YELLOW	HARFORD SENIOR CENTER	ZW	FIRST	26	NEGATIVE	0.0
139	WINDOW	METAL	A	FAIR	SILVER	HARFORD SENIOR CENTER	ZW	FIRST	26	NEGATIVE	0.0

XRF Lead Data Table
Harford Senior Center

READING NO.	COMPONENT	SUBSTRATE	SIDE	CONDITION	COLOR	SITE	INSPECTOR	FLOOR	ROOM	RESULTS	Pb mg/cm ²
140	WALL	WOODPANEL	B	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	21	NEGATIVE	0.0
141	WALL	DRYWALL	D	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	21	NEGATIVE	0.0
142	CROWN MOLDING	WOOD	D	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	21	NEGATIVE	0.1
143	CORNER GUARD	WOOD	D	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	21	NEGATIVE	0.0
144	DOOR	WOOD	B	FAIR	TAN	HARFORD SENIOR CENTER	ZW	FIRST	12	NEGATIVE	0.0
145	DOORFRAME	WOOD	B	FAIR	TAN	HARFORD SENIOR CENTER	ZW	FIRST	12	NEGATIVE	0.0
146	WALL	DRYWALL	C	FAIR	TAN	HARFORD SENIOR CENTER	ZW	FIRST	12	NEGATIVE	0.0
147	BASEBOARD	WOOD	D	FAIR	TAN	HARFORD SENIOR CENTER	ZW	FIRST	12	NEGATIVE	0.0
148	WINDOW SILL	WOOD	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	12	NEGATIVE	0.0
149	WINDOW SILL	WOOD	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	12	NEGATIVE	0.0
150	WINDOW APRON	WOOD	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	12	NEGATIVE	0.0
151	WALL	DRYWALL	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	17	NEGATIVE	0.0
152	SHELF	WOOD	NA	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	17	NEGATIVE	0.0
153	SHELF SUPPORT	WOOD	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	17	NEGATIVE	0.0
154	CEILING	WOOD	NA	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	17	NEGATIVE	0.0
155	WALL	WOODPANEL	A	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	4	NEGATIVE	0.0
156	BASEBOARD	WOODPANEL	D	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	4	NEGATIVE	0.1
157	CORNERGUARD	WOOD	D	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	4	NEGATIVE	0.0
158	DOORFRAME	WOOD	B	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	4	NEGATIVE	0.0
159	WINDOWFRAME	WOOD	D	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	4	NEGATIVE	0.0
160	WINDOWCASE	WOOD	D	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	4	NEGATIVE	0.0
161	WINDOW	METAL	D	FAIR	GRAY	HARFORD SENIOR CENTER	ZW	FIRST	4	NEGATIVE	0.0
162	WINDOW	METAL	D	FAIR	GRAY	HARFORD SENIOR CENTER	ZW	FIRST	4	NEGATIVE	0.0
163	WINDOWSILL	METAL	D	FAIR	GRAY	HARFORD SENIOR CENTER	ZW	FIRST	4	NEGATIVE	0.0
164	WALL	WOODPANEL	D	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	5	NEGATIVE	0.0
165	DOORFRAME	WOOD	B	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	5	NEGATIVE	0.0
166	WALL	WOODPANEL	A	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	6	NEGATIVE	0.0
167	BASEBOARD	WOOD	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	6	NEGATIVE	0.0
168	DOORFRAME	WOOD	B	FAIR	YELLOW	HARFORD SENIOR CENTER	ZW	FIRST	6	NEGATIVE	0.0
169	WALL	DRYWALL	D	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	FIRST	6	NEGATIVE	0.0
170	BASEBOARD	WOOD	B	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	7	NEGATIVE	0.0
171	DOORFRAME	WOOD	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	7	NEGATIVE	0.0
172	WALL	DRYWALL	B	FAIR	TAN	HARFORD SENIOR CENTER	ZW	FIRST	8	NEGATIVE	0.0
173	BASEBOARD	WOOD	B	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	8	NEGATIVE	0.0
174	DOORFRAME	WOOD	B	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	8	NEGATIVE	0.0
175	WINDOWSILL	WOOD	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	FIRST	8	NEGATIVE	0.0
176	DOOR LINTEL	WOOD	A	POOR	WHITE	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.0
177	AWNING BRACKET	METAL	A	POOR	WHITE	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.0
178	HANDRAIL	METAL	A	POOR	BLACK	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.0
179	SIGNPOST	WOOD	A	POOR	WHITE	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.0
180	WALL	BRICK	A	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.0
181	FLAGPOLE	METAL	A	FAIR	WHITE	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.0
182	GUTTER	METAL	B	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.2
183	GUTTER BRACKET	METAL	B	FAIR	BEIGE	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.0
184	PIPE	METAL	B	POOR	BEIGE	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.0
185	WALL	CINDERBLOCK	B	POOR	BEIGE	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.0
186	WALL	CINDERBLOCK	B	POOR	BEIGE	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.0
187	WALL	CINDERBLOCK	C	POOR	BEIGE	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.0
188	WALL	CINDERBLOCK	C	POOR	GRAY	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.0
189	GUTTER	METAL	C	POOR	BEIGE	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.1
190	PIPE	METAL	C	POOR	BEIGE	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.0
191	PIPE	METAL	C	POOR	BEIGE	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	POSITIVE	7.3
192	DOOR	METAL	C	POOR	RED	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.0
193	DOORFRAME	METAL	C	FAIR	RED	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.0
194	PIPE	METAL	C	FAIR	YELLOW	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.0
195	BOLLARD	METAL	C	POOR	YELLOW	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	POSITIVE	0.8
196	PARKING LINES	ASPHALT	C	POOR	WHITE	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.0
197	WINDOW CAGE	METAL	D	POOR	WHITE	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.1
198	WINDOW SILL	BRICK	D	POOR	WHITE	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.0
199	WINDOW SILL	BRICK	D	POOR	WHITE	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.0
200	WALL	CINDERBLOCK	D	POOR	BEIGE	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.0
201	WALL	CINDERBLOCK	D	POOR	TAN	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.0
202	DOOR	METAL	D	POOR	RED	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.0
203	DOORFRAME	METAL	D	POOR	RED	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.0
204	PIPE	METAL	D	POOR	BEIGE	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.2

XRF Lead Data Table
Harford Senior Center

READING NO.	COMPONENT	SUBSTRATE	SIDE	CONDITION	COLOR	SITE	INSPECTOR	FLOOR	ROOM	RESULTS	Pb mg/cm ²
205	GUTTER	METAL	D	POOR	BEIGE	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.0
206	WALL	CINDERBLOCK	D	POOR	BEIGE	HARFORD SENIOR CENTER	ZW	EXTERIOR	EXTERIOR	NEGATIVE	0.0
207	CALIBRATE					HARFORD SENIOR CENTER	ZW			POSITIVE	1.0
208	CALIBRATE					HARFORD SENIOR CENTER	ZW			POSITIVE	1.1
209	CALIBRATE					HARFORD SENIOR CENTER	ZW			POSITIVE	0.9