



**ENVIRONMENTAL TESTING & SVC. CO.**

Report No: ACM-112-05-01-13-22

May 1, 2013

Client: City of Palm Coast  
c/o Guardian Community Resource Management, Inc.  
930 Marcum Rd., Suite 3  
Lakeland, FL 33809

Attn: Antonio Jenkins

Project: Limited Asbestos Survey for Renovation  
Kristine Durance  
8 Carr Lane  
Palm Coast, FL

According to your instructions *PbO<sub>3</sub>* Environmental Testing & Service Co., Inc. has completed a ASBESTOS SURVEY at the subject property (Project). The following pages of this report contain the results of this Inspection. This limited asbestos inspection report presents data that describes the location of asbestos-containing material (ACM) identified in the subject property. This report is to be used as a program-planning tool for the proposed demolition, renovation, and construction and/or maintenance activities scheduled at this facility. This survey was conducted on site by EPA/AHERA trained professional inspector(s).

This report is intended for the exclusive use of our client. The findings are relevant to the conditions observed during the physical process of performing the Inspection. These findings should not be treated as absolute nor should they be relied upon to represent conditions at significantly later dates.

*PbO<sub>3</sub>* Environmental Testing & Service Co., Inc.

A handwritten signature in black ink, appearing to be 'Dm' or similar initials.

Dave Mederer  
Inspector/Management Planner

Asbestos License # ZA 0000205

*Unofficial without seal*  
Peter Swarr, PE #44159FL  
LAC #63

## 1.1 INTRODUCTION

*PbO<sub>3</sub>* was contracted by the City of Palm Coast to conduct an Asbestos Survey of the suspect asbestos containing materials found in the dwelling known as 8 Carr Lane, Florida.

- 1) Identify suspect asbestos-containing materials that would be disturbed during select renovations to this structure.

## 1.2 INSPECTION AND SAMPLING PROCEDURE

*PbO<sub>3</sub>* inspection and sample collection procedures are based on the Environmental Protection Agency (EPA) protocols.

An initial facility walk through is conducted to familiarize the inspector with the facility layout. The facility is then divided into functional spaces and suspect homogeneous materials are selected for bulk sampling. Samples are collected and placed into separate, sealed plastic bags. Each sample is individually numbered and sample information is entered onto a Field Data Sheet. Sample tools are decontaminated after sample collection. The samples are delivered to an accredited laboratory for analysis, accompanied by a completed Chain of Custody Form.

Suspect materials are divided into three categories: surfacing materials (such as plaster and surface coatings), thermal system insulation (TSI) (such as mudded TSI fittings, duct insulation, and pipe insulation), and miscellaneous material (such as floor tile, drywall, and mastic). Asbestos-containing materials (ACM) are classified according to:

<b>Friability</b>	* Friable
	* Non-friable

Friable materials are materials that, when dry, can be crushed, pulverized, or reduced to powder by hand pressure. Prior to sampling, these materials are wetted with amended water to minimize potential for incidental exposure or accidental fiber release. At the inspector's discretion, personal protective equipment (PPE) is used as an added precaution.

Bulk samples are collected using EPA guidelines for the type of suspect material sampled. Where practical, minimal damage will occur to facility structures or finishes. A particular suspect material may be found in several different locations within a facility. The EPA does not require that these materials be sampled in each location, provided the materials are of the same type, age, appearance, have the same date of installation, and are sampled in accordance with EPA requirements to provide statistically reliable data that can be extrapolated onto all remaining non-sampled areas.

Accredited inspectors determine the number of samples of each material to be collected, depending on the material's category and the amount of material present.

### 1.3 METHODS OF LABORATORY ANALYSIS

Samples are analyzed in accordance with AHERA requirements using the following reference methods:

- EPA Interim Method for the Detection of Asbestos in Bulk Insulation Samples (EPA 600/M4-82020, December 1982).
- McCrone Research Institute's The Asbestos Particle Atlas.

All bulk samples are analyzed using PLM visual area estimate (VAE). Friable materials containing asbestos estimated at less than ten percent by PLM-VAE may be reanalyzed by PLM point counting. Additional treatment and tests may be used as required to accurately define composition (i.e., ashing, extractions, and TEM). All bulk sample laboratory reports are verified through an established quality assurance (QA) procedure.

### 1.4 QUALITY CONTROL PROCEDURES

Laboratories accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) analyze all samples. These laboratories participate in the NVLAP, as well as the American Industrial Hygiene Association (AIHA) Bulk Asbestos Sample Quality Assurance Program.  $PbO_3$  verifies all sample data for accuracy by cross-referencing Field Data Sheets, Chain of Custody Forms, and field notes.

### 1.5 DETERMINATION OF ACM CLASSIFICATION

The positive identification of asbestos in a material or product can only be made through laboratory analysis. Visual inspection or common knowledge is not a positive test. The asbestos content of a suspect material is determined by collecting a bulk sample and having it analyzed by PLM. The PLM technique determines the specific type of asbestos present in the bulk sample and VAE provides an estimate of the percentage of asbestos.

The EPA National Emission Standards for Hazardous Air Pollutants (NESHAP) - National Emission Standard for Asbestos (40 CFR Part 61, subpart M) defines a non-friable asbestos-containing material as any material with an asbestos content greater than one percent as determined by PLM analysis. A friable material estimated to contain less than ten percent asbestos as determined by PLM-VAE must be analyzed by PLM point counting and determined to contain less than one-percent asbestos in order to be considered a non-regulated ACM.

A clarification memorandum issued by the EPA regarding the NESHAP regulation included the following statement:

The parties legally responsible for a building (owner or operator) may take a conservative approach to being regulated by the NESHAP. The responsible party - may choose to act as though the building material is an asbestos-containing material (greater than 1%) at any level of asbestos content (even less than 1% asbestos). Thus, if the analyst detects asbestos in the sample and estimates the amount to be less than 1% by visual estimation, the parties legally responsible (owner or operator) of the building may elect to assume the amount to be greater than 1% and treat the material as regulated asbestos containing material or require verification of the amount by point counting.

## 1.6 INSPECTION LIMITS

**PbO<sub>3</sub>** has performed the Client requested tasks in a thorough and professional manner consistent with commonly accepted standard industry practices, using state of the art practices and best available known technology, as of the date of the assessment. **PbO<sub>3</sub>** cannot guarantee and does not warrant that this Asbestos Survey has identified all adverse environmental factors and/or conditions affecting the subject properties on the date of the Assessment. **PbO<sub>3</sub>** cannot and will not warrant that this Asbestos Survey that was requested by the client will satisfy the dictates of, or provide a legal defense in connection with, any environmental laws or regulations. It is the responsibility of the client to know and abide by all applicable laws, regulations, and standards. The results reported and conclusions reached by **PbO<sub>3</sub>** are solely for the benefit of the client. The results and opinions in this report, based solely upon the conditions found on the property as of the date of the Assessment, will be valid only as of the date of the Assessment. Please note that the test results relate only to those homogeneous materials tested. If conditions, or materials, other than those addressed in this report are encountered during the planned demolition activities, PbO<sub>3</sub> should be contacted to assess the potential impact of these materials or conditions relative to the findings or recommendations included herein. The survey was performed by observing suspect materials throughout the residence where accessible. We must emphasize that it is not possible to look within every location of a building. The visual survey documents only general locations of suspect materials but does not determine exact boundaries. Concealed locations of asbestos may exist at the subject property, and the levels may vary from those stated in this report. There may be variations in the composition of materials which appear similar. Materials may be hidden from view and not accessible. Hypothetical examples include floor tile hidden under carpeting, and not detected by our typical examination of the area under the carpet at a corner(s) or existing hole(s), an abandoned length of insulated pipe hidden within a finished wall, an asbestos-cement sewer vent pipe in the wall behind a toilet, asbestos paper/felt between hardwood flooring and the sub-floor or old vinyl floor tile covered over with plywood and newer flooring materials. No attempt was made to disassemble equipment or demolish structural elements and finishes as this is beyond the scope of our authorized services. Visual observations were made only at convenient locations, due to these limitations, wall voids, flooring under carpet, building cavities and mechanical equipment, and other areas may contain unreported asbestos-containing materials. Suspect materials not previously identified in this report may be encountered during any demolition activity. These materials should be assumed asbestos containing material until sample collection and subsequent analysis prove otherwise.

All fire doors should be assumed asbestos containing material since disassembly of locks and/or other work to access the door insulation is not possible. We generally assume that roofing material contains asbestos, as asbestos roofing material is very common unless noted as sampled. Location and sampling of underground items, such as asbestos-cement pipes, would have been outside of the scope of the survey. Cloth jacketed electrical wiring if present, should be assumed asbestos containing material. Electrical wiring is typically not sampled unless the electrical system has been verified by our client as de-energized.

*Quantities shown in this survey are estimates, actual quantities may vary. Field verification is the responsibility of the contractor. Contractors are responsible for their own verification of quantities prior to bid submittal.*

## **1.7 STATEMENT OF INACCESSIBILITY & ASSUMPTION**

There are certain spaces within a building that can't be accessed during the course of a normal survey without demolition activities. Those areas would include, but are not limited to:

- All Roof mounted structures and roofing materials are presumed Asbestos unless noted as sampled.
- Material above hard ceilings and behind walls or under primary floor.
- Tunnels, which are enclosed, inaccessible or unsafe (confined Space)
- Boiler Breeching and ducts that are enclosed with steel or other impenetrable surfaces.
- Inaccessible interior boiler insulation or gasket material.
- Floor tile and other vinyl flooring are presumed non-friable asbestos containing material unless noted in this report unless noted as sampled.
- Material located at heights not accessible by ladders.
- Areas that cannot be accessed due to possible asbestos exposure issues to building occupants.
- Underground pipelines.
- Electrical systems.
- Areas that cannot be accessed due to security or key accessed issues.

Suspect materials not previously identified in this report may be encountered during any renovation and/or maintenance activities. These materials should be assumed asbestos containing material until sample collection and subsequent analysis prove otherwise.

### 1.8 INSPECTION DATE AND INSPECTOR INFORMATION:

PbO<sub>3</sub> employee Dave Mederer inspected the building on April 18, 2013.

### 2.0 FACILITY CONSTRUCTION INFORMATION:

The structure is a residential dwelling.

### 2.1 FACILITY MAINTENANCE AND/OR RENOVATION HISTORY

Unknown

### 2.2 SUSPECT MATERIAL SUMMARY

- Drywall
- Joint compound
- Thin Set
- Black Floor Mastic
- Attic Insulation
- Exterior Stucco
- Window Caulk
- Roofing Material

### 2.3 RESULTS

There was a total of twenty-four (24) samples were taken. Based upon our visual observations, bulk sampling of suspect materials and subsequent microscopic analysis, we have determined that **asbestos minerals were detected in the samples analyzed.**

Sample No(s).	Location	Asbestos Component	Asbestos Qty	Friable	Amount
8-2	Bedroom Ceiling	<b>Popcorn Ceiling</b>	3% Chrysolite	YES	Thru out dwelling
8-2A	Hall	<b>Popcorn Ceiling</b>	2% Chrysolite	YES	Thru out dwelling
8-2B	Living Room	<b>Popcorn Ceiling</b>	3% Chrysolite	YES	Thru out dwelling
8-4	Bedroom 1-under Carpet	<b>Floor Mastic*</b>	5% Chrysolite	NO	110 SF
8-4A	Bedroom 2-under Carpet	<b>Floor Mastic*</b>	5% Chrysolite	NO	100 SF
8-4B	Bedroom 1-under Carpet	<b>Floor Mastic*</b>	5% Chrysolite	NO	

\*Black Mastic may be under all existing floor coverings

## 2.4 SUMMARY AND CONCLUSIONS

*PbO<sub>3</sub>* was contracted by the City of Palm Coast to conduct an Asbestos Survey of the suspect asbestos containing materials found in the dwelling known as 8 Carr Lane, Florida.

The goal of the sampling and visual assessment is to identify suspect asbestos-containing materials that would be disturbed during select renovations to this structure.

1. Regulated Friable Asbestos Containing Material was detected in the Popcorn Ceilings.
2. Non-Friable Asbestos Containing Materials were detected in the Black Floor Mastic under the carpeting in the bedrooms.

## 2.5 RECOMMENDATIONS

Suspect materials not previously identified in this report may be encountered during any renovation and/or maintenance activities. These materials should be assumed asbestos containing material until sample collection and subsequent analysis prove otherwise.

That this survey be used to identify asbestos containing material and components prior to any planned renovation.

Reanalyze the samples of the popcorn ceiling by the EPA Point Count Method. Point counting is a more accurate but more costly method of analyzing friable materials for asbestos content. Point counting is a method originally created to facilitate the quantification of mineral assemblages in petrographic cross sections. It has been adapted to the determination factor of asbestos percentages in bulk samples. The EPA and NESHAP recommend that a point counting procedure be utilized for confirmation of asbestos percentage in friable materials that are visually estimated by PLM methodology to contain less than 10% asbestos. The 400 Point Count Procedure referenced in EPA 600/M4-82-020 (1987) and EPA 600/R-93/116 (1993) is commonly employed. Without the material being point counted or if point counting determined that material contains greater than one percent asbestos, it would be deemed an asbestos containing material and would need to be removed by a Florida licensed asbestos contractor prior to disturbance.

### Disturbances to the Friable Asbestos Popcorn Ceiling:

- Shall be performed by a Florida Licensed Asbestos Abatement Contractor
- U.S. Occupational Safety and Health Administration (OSHA) regulations apply to the disturbance of material; containing any percentage of asbestos fibers as outlined in 29 CFR 1926.1101- OSHA's Asbestos Standard for the Construction Industry. The contractor will need to comply with the specific training, duties and responsibilities outlined in this CFR.
- OSHA 29 CFR 1910.1001. OSHA 29 CFR 1910.1001 requires the communication of information concerning asbestos hazards. Employees engaged in work activities with installed ACM may be exposed to asbestos fibers. The owner or operator should take the necessary steps to reduce the potential for disturbance.

### Disturbances to Non-Friable Asbestos Floor Mastic

- Option 1

Abate all Non-Regulated Asbestos Containing Material prior to any renovation that may impact the Black Floor Mastic. Abatement should be performed by a Florida Licensed Asbestos Abatement Contractor.

29 CFR 1926.1101- OSHA's Asbestos Standard for the Construction Industry does apply if the abatement option is chosen.

OSHA 29 CFR 1910.1001 requires the communication of information concerning asbestos hazards. Employees engaged in work activities with installed ACM may be exposed to asbestos fibers. The owner or operator should take the necessary steps to reduce the potential for disturbance.

- Option 2

Non-Friable Asbestos Containing Material was detected in the Black Floor Mastic. The EPA NESHAP (40 CFR Part 61, Appendix A to Subpart M) classifies this material as a Category I, non-friable ACM. Removal is not required by NESHAP provided the renovation activities do not subject this material to cutting, sanding, grinding, abrading, or otherwise rendering them friable during renovation.

29 CFR 1926.1101- OSHA's Asbestos Standard for the Construction Industry does apply to the demolition/renovation of all dwellings identified with asbestos containing material. The demolition contractor will need to comply with the specific **training, duties** and **responsibilities** outlined in this CFR.



OSHA 29 CFR 1910.1001 requires the communication of information concerning asbestos hazards. Employees engaged in work activities with installed ACM may be exposed to asbestos fibers. The owner or operator should take the necessary steps to reduce the potential for disturbance.

### General Recommendations

The EPA's National Emission Standard for Hazardous Air Pollutants (NESHAP) regulations and the Florida Department of Environmental Protection (DEP) Asbestos program regulate the removal and disposal of asbestos-containing building materials. The Florida Department of Environmental Protection (DEP) administers an asbestos removal program under Chapter 62-257, Florida Administrative Code. The Asbestos NESHAP has been adopted by reference in section 62-204.800, Florida Administrative Code. The program's intent is to minimize the release of asbestos fibers during activities involving the processing, handling, and disposal of asbestos-containing material.

The regulations of these agencies require the removal of friable asbestos-containing materials prior to extensive renovation or demolition projects, and the removal of non-friable asbestos-containing materials that may be rendered friable in the course of renovation or demolition projects. Only a Florida licensed asbestos contractor using properly trained, certified, and licensed asbestos workers can perform asbestos removal projects in Florida. Air monitoring during and after abatement activities is also recommended to document the fiber levels inside and outside the abatement work area.

The asbestos NESHAP requires that an asbestos trained person be on site i.e. 40 CFR 61.145 (c) (8) states in part "no RACM shall be stripped, removed, or otherwise handled or disturbed at a facility regulated by this section unless at least one on-site representative, such as a foreman or management level person or other authorized person, trained in the provisions of this regulation and the means of complying with them is present."

DEP recommends that this "trained person" be on site when non-friable ACM is present so that developing problems can be caught early and corrected without delay. In addition, the regulations require the owner of the building and/or the operator to notify the applicable DEP District Office or Local Pollution Control Agency before any demolition, or before renovations of buildings that contain a certain threshold amount of asbestos or asbestos containing materials.

Florida requires the submission of a 10-Day Notification for all renovations and demolitions of facilities with at least 260 linear feet of regulated asbestos-containing materials (RACM), 160 square feet of regulated asbestos containing materials on other facility components, or at least one cubic meter (35 cubic feet) off facility components. Asbestos waste requires disposal at an approved solid waste disposal facility.

Limited Asbestos Survey for Renovation  
Kristine Durance  
8 Carr Lane  
Palm Coast, FL

Local agencies may also have specific requirements for demolition/renovation projects involving asbestos-containing building materials.

OSHA 29 CFR 1910.1001 requires the communication of information concerning asbestos hazards. Employees engaged in work activities with installed ACM may be exposed to asbestos fibers. The owner or operator should take the necessary steps to reduce the potential for disturbance.

29 CFR 1926.1101- OSHA's Asbestos Standard for the Construction Industry does apply to the abatement, renovation and/or demolition of all buildings identified with asbestos containing material. The contractor will need to comply with the specific training, duties and responsibilities outlined in this CFR.