



**ASBESTOS SURVEY REPORT**

**VA Medical Center  
Bedford, MA**

**PREPARED BY**

**MILL CITY ENVIRONMENTAL  
116 John Street  
Lowell, MA 01852  
978-654-6741**

Approved By:

A handwritten signature in black ink that reads "Julie T. Davies". The signature is written on a white background with a thin black border.

Julie T. Davies  
MA License # AI035432

ACM Sampling Report  
MCE-1672

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## **SCOPE:**

Mill City Environmental Corporation was retained by Veterans Construction Company to conduct an Investigative survey of building #78 located at VA Medical Center in Bedford, MA. The purpose of the survey was to identify and sample suspected asbestos containing materials (ACM) within interior building areas that are expected to be impacted by planned renovations. This report should be reviewed in conjunction with the lab data and chain of custody. Please be aware, addendums to this survey may be produced at a later date as areas become accessible for sampling as a result of demolition or restrictions lifted from non-accessible areas.

## **SUMMARY:**

Mill City Environmental performed an investigative survey of the 3<sup>rd</sup> floor area of building #78 at the VA Medical Center in Bedford, MA. On Monday, December, Julie Davies conducted the investigative survey. She is a licensed asbestos inspector (MA Asbestos Inspector #AI035432). A total of 20 samples were taken from building materials which were suspected of containing asbestos.

The 20 samples were submitted to Optimum Analytical in Salem, NH for ACM analysis. Many of the samples contained multiple layers of materials. These layers were separated and 27 unique samples were prepared for ACM analysis.

All samples were submitted utilizing industry standard chain-of-custody procedures. Samples were analyzed in accordance with the methodology described below.

Optimum is fully accredited for bulk sample analysis under the National Voluntary Laboratory Accreditation Program (NVLAP) Lab Id # 101433-0. All bulk samples were analyzed by Optimum for asbestos content using the EPA Polarized Light Microscopy (PLM) method with visual estimation of any resulting asbestos concentrations. The visual estimation technique was used to quantify all reported asbestos concentrations.

## **ACM SURVEY METHODOLOGIES & PROTOCOL:**

For the purposes and objectives of this survey, the following definitions are provided: suspect asbestos materials, presumed asbestos materials, homogenous applications of suspect materials, friable materials, inaccessible building areas, confirmed asbestos containing materials.

Suspect Materials: Installed building materials that either were pre-formed (i.e. manufactured off-site) or were prepared and installed on-site. For this survey, the following materials were considered non-suspect and were not assessed or sampled if observed:

- Plastic
- Glass
- Wood or Wood composite materials
- Brick, Granite, Marble or other stonework
- Paint (unless Textured)
- Clay or ceramic Tiles
- Rubber or Synthetic Foam
- Carpeting, Curtains, and other paper or natural fiber, fabric or synthetic goods.
- Pink or Yellow fiberglass pipe insulation.

Presumed Materials: Installed building materials that were observed but not accessible, or not observed but presumed to be present based upon the age and construction of the building.

Homogenous Applications or Areas: An area of surfacing material, thermal system insulation material or miscellaneous material that is uniform in color or texture (as defined in the U.S EPA regulation 40 CFR 763 – Asbestos Hazard Emergency Response Act. (AHERA)). Homogeneity is a determining factor in calculating the number of bulk samples collected for a particular material.

Friable Materials: Suspect materials that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure (i.e. sprayed fireproofing as opposed to a non-friable material such as vinyl floor tile) (as defined in AHERA regulation).

Inaccessible Building Areas: Building areas, systems, structural components, or surfaces which could not be observed because it was unsafe or impractical to demolish, disassemble, or remove systems or coverings, because a human being cannot physically enter or observe the area or component.

Confirmed Asbestos- Containing Materials: Are suspect materials where at least one (1) of the collected bulk samples contained an asbestos concentration of 1% or more. According to EPA / AHERA criteria, all bulk samples of a homogenous area of suspect ACM must be found to contain less than 1% asbestos to conclude that OSHA or EPA does not regulate material as ACM under the asbestos NESHAP regulation.

Survey Methodology:

This survey was conducted using the EPA Asbestos Hazard Emergency Response Act (AHERA) regulation as guidance. This included:

1. Performing a walk through and visual inspection of accessible building areas to locate, identify and quantify building materials suspected to contain asbestos that are anticipated to be impacted during demolition.
2. Following the visual inspection of the building, a list of suspect materials was developed and a sampling methodology established to ensure that all

suspect materials were tested and the proper number of samples were collected.

3. Representative samples of suspect building materials were collected and submitted for analysis.
4. Bulk Samples were analyzed using the EPA Polarized Light Microscopy (PLM) method with visual estimation of any resulting asbestos concentrations.
5. Laboratory analytical results were reviewed to ensure proper and consistent identification and characterization of all ACM.

#### Sampling Protocol:

The number of samples collected depended on the type of identified suspect material. According to the EPA/ AHERA regulation, materials may be classified as surfacing (i.e. applied to a surface), thermal (i.e. providing thermal insulation) or miscellaneous.

Specific suspected materials identified in the building included the following:

- Caulking
- Wall Board
- Floor tiles
- Mastic
- Adhesives

#### **FINDING:**

##### **ACM**

Of the 27 samples submitted to the Optimum for analysis, 3 came back positive for asbestos. The remainder of the samples showed no asbestos had been detected. Please see sample results in appendices and table below for details.

Additional materials known to be ACM are also noted in the table below.

**Sampling Details:**

Sample No.	Description	Result	Location	Quantity
1	Debris above ceiling	ND		
2	Ceiling Tile	ND		
3	Wall Board –above ceiling	ND		
4	Floor tile – orange <b>Mastic – black</b>	ND ACM	Rm303, Rm310A entry and locker Rm, & Rm310B	<b>396 ft<sup>2</sup> total</b> <i>(80 ft<sup>2</sup> covered in carpet Rm3030)</i>
5	Cove base –grey	ND		
6	Cove base – black	ND		
7	Pipe wrap	ND		
8	<b>Window caulking</b>	ACM	Throughout space	<b>18 LF per window</b> 18 windows
9	Glue on ceramic tile	ND		
10	Floor tile – white	ND		
11	Hard ceiling	ND		
12	<b>Wall board behind radiator</b>	ACM	Throughout space	<b>Approx. 20 ft<sup>2</sup> /radiator</b> 7 radiators
13	Debris above ceiling	ND		
14	Pipe insulation	ND		See note below on elbows
15	Joint compound – autoclaves	ND		
16	Ceiling above autoclaves	ND		
17	Wall tile glue	ND		
18	Mastic on ductwork	ND		
19	Cove base – brown	ND		
20	Debris above ceiling	ND		
NA	<b>Pipe elbows – 2” &amp; 4”</b>	Visual	Throughout ceilings	<b>87 - 2” elbows</b> <b>2 - 4” elbows</b>
NA	<b>Pipe elbows – 2”</b>	Visual	Under Autoclaves	<b>11 - 2” elbows</b>
<p>Asbestos wrapped piping connections (elbows and “T”s) were observed throughout the ceiling. This material was not sampled as visual inspection revealed that the material is classic ACM. The pipe insulation on the straight runs of pipe was sampled and confirmed to be non-ACM.</p>				
NA	<b>Red Linoleum</b>	ACM	Rm 337	<b>588 ft<sup>2</sup> total</b>

## **RECOMMENDATIONS:**

The ACM must be abated prior to any renovations being done that would disturb the materials.

## **ACM SURVEY LIMITATIONS:**

If locations not included in this survey are discovered during demolition or renovation and have suspect materials that weren't previously identified as being non-ACM, these materials should be analyzed prior to being impacted by demolition or renovation activities.

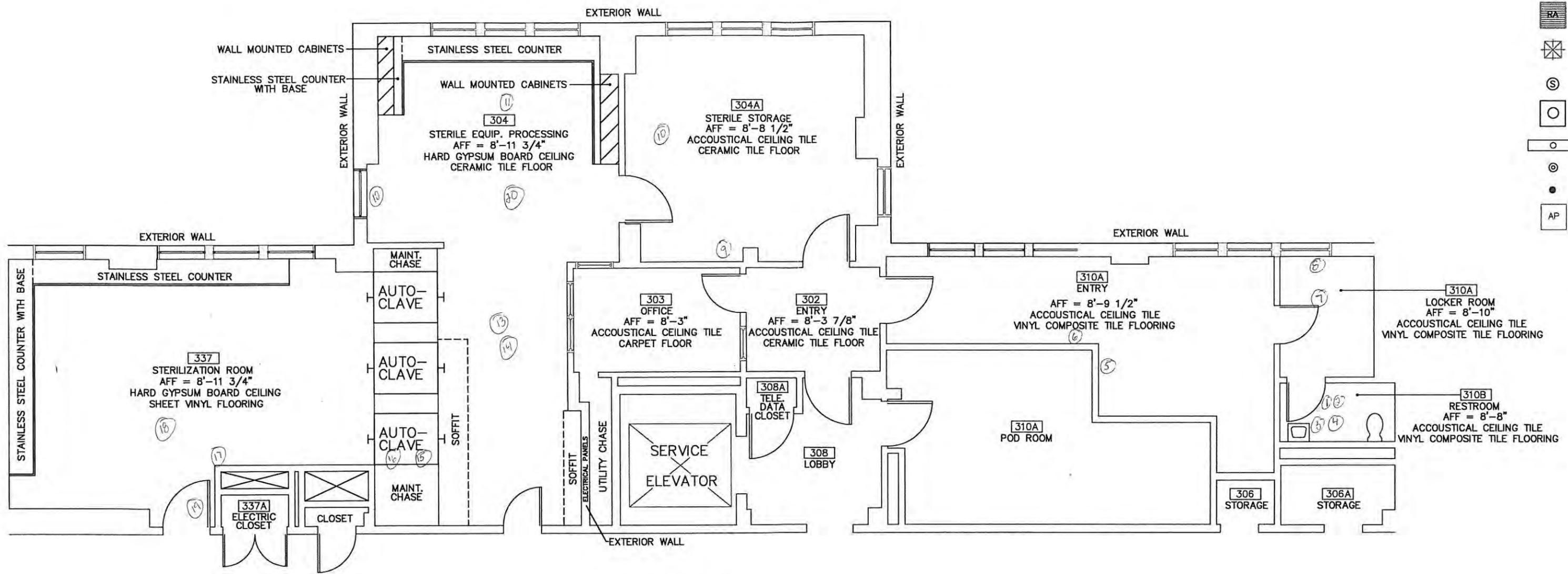
## **Photos**

Photos





## **Map of Sample Locations**



CORRIDOR

SAMPLE LOCATIONS #

## **Sample Results & Chain of Custody Forms**



# OPTIMUM

Analytical and Consulting, LLC

85 Stiles Road, Suite 201, Salem, NH 03079 Phone: (603)-458-5247

Julie Davies  
Mill City Environmental  
116 John Street\_  
Lowell MA 01852

Project #: MCE-1672  
Laboratory Batch #: 1308038  
Date Samples Received: 12/10/2013  
Date Samples Analyzed: 12/11/2013  
Date of Final Report: 12/11/2013

**SAMPLE IDENTIFICATION:**

Twenty (20) Bulk samples from Building 78 3rd Floor, Bedford, VA; submitted by: Julie Davies

These bulk samples were delivered to Optimum Analytical Consulting, LLC for asbestos content determination.

**ANALYTICAL METHOD:**

Analytical procedures were performed in accordance with the U.S. Environmental Protection Agency (EPA) Recommended Method for the Determination of Asbestos in Bulk Samples by Polarized Light Microscopy and Dispersion Staining (PLM/DS)(EPA-600/M4-82-020, EPA-600/ R-93-116) and the New York Department of Health Environmental Laboratory Approval Program (NYDOH-ELAP 198.1) with the exception of resinously bound materials (please refer to the comments at the end of this report). This report relates only to those samples actually analyzed, and may not be indicative of other similar appearing materials existing at this, or other sites.

Quantification of asbestos content was determined by Calibrated Visual Estimation.

The EPA requires that friable samples with analytical results of 10% or less asbestos, by visual estimation, be treated as asbestos-containing material unless these quantities are verified using the point counting method. The point counting method is a systematic technique for estimating concentration, also using PLM. The point counting method, however, does not increase the analyst's ability to detect fibers. If you would like any of your friable samples with an asbestos content of less than 10% to be point counted, please contact our office. Point counting is not required for those samples in which no asbestos is detected during analysis by PLM.

In any given material, fibers with a small diameter (<0.25mm) may not be detected by the PLM method. Floor tile and other resinously bound material may yield a false negative if the asbestos fibers are too small to be resolved using PLM. Additional analytical methods may be required. Optimum recommends using Transmission Electron Microscopy (TEM) for a more definitive analysis.

New York state regulations require that all friable samples in which asbestos is detected be point counted (using the NYDOH-ELAP stratified point counting method). New York state regulations also require TEM confirmation of NOB (Non Organically Bound) samples found to have No Asbestos Detected by PLM. These regulations apply only to samples taken within the State of New York.

Optimum Analytical and Consulting, LLC will retain all samples for a minimum of three months. Further analysis or return of samples must be requested within this three month period to guarantee their availability.

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Use of the NVLAP and AIHA Logo in no way constitutes or implies product certification, approval, or endorsement by the National Institute of Standards and Technology or the American Industrial Hygiene Association.

This report is considered preliminary until signed by the Laboratory Director and Supervisor.

If you have any questions regarding this report, please do not hesitate to contact us.

Jamie L. Noel  
Laboratory Director

Kristina Scaviola  
Laboratory Supervisor

NVLAP Lab ID#: 101433-0



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## BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-600/M4-82-020, EPA-600/ R-93-116) NVLAP Lab Code: 101433-0

**CLIENT:** Mill City Environmental  
**ADDRESS:** 116 John Street\_  
**CITY / STATE / ZIP:** Lowell MA 01852  
**CONTACT:** Julie Davies  
**DESCRIPTION:** PLM Analysis  
**LOCATION:** Building 78 3rd Floor, Bedford, VA

**ORDER #:** 1308038  
**PROJECT #:** MCE-1672  
**DATE COLLECTED:** 12/09/2013  
**COLLECTED BY:** Julie Davies  
**DATE RECEIVED:** 12/10/2013  
**ANALYSIS DATE:** 12/11/2013  
**REPORT DATE:** 12/11/2013  
**ANALYST:** Kristina Scaviola

### REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
1308038-001 1	Debris Gray	LAYER 1 100%	None Detected	Cellulose Fiber 3% Non-Fibrous Material 97%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1308038-002 2	Ceiling Tile Beige	LAYER 1 100%	None Detected	Cellulose Fiber 30% Fibrous Glass 35% Mineral Wool 5% Non-Fibrous Material 30%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1308038-003 3	Wall LAYER 1 Rough Coat, Gray LAYER 2 Skim Coat, White	LAYER 1 100% LAYER 2 100%	None Detected None Detected	Cellulose Fiber 3% Non-Fibrous Material 97% Cellulose Fiber 2% Non-Fibrous Material 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1308038-004 4	Floor Tile LAYER 1 Orange LAYER 2 Mastic, Black	LAYER 1 100% LAYER 2 100%	None Detected Chrysotile 2%	Cellulose Fiber 1% Non-Fibrous Material 99% Cellulose Fiber 2% Non-Fibrous Material 96%
<b>Total % Asbestos:</b>			2.0%	<b>Total % Non-Asbestos:</b> 98.0%
1308038-005 5	Cove Base - Gray LAYER 1 Gray LAYER 2 Mastic, Brown	LAYER 1 100% LAYER 2 100%	None Detected None Detected	Cellulose Fiber 1% Non-Fibrous Material 99% Cellulose Fiber 3% Non-Fibrous Material 97%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1308038-006 6	Cove Base - Black LAYER 1 Gray LAYER 2 Mastic, Tan	LAYER 1 100% LAYER 2 100%	None Detected None Detected	Cellulose Fiber 1% Non-Fibrous Material 99% Cellulose Fiber 3% Non-Fibrous Material 97%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%



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Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
1308038-007 7	Pipe Wrap Yellow/White	LAYER 1 100%	None Detected		Cellulose Fiber Fibrous Glass Non-Fibrous Material	10% 80% 10%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1308038-008 8	Window Caulk Brown	LAYER 1 100%	Chrysotile	2%	Cellulose Fiber Non-Fibrous Material	3% 95%
<b>Total % Asbestos:</b>			2.0%		<b>Total % Non-Asbestos:</b> 98.0%	
1308038-009 9	Glue On Wall Tile Tan	LAYER 1 100%	None Detected		Cellulose Fiber Non-Fibrous Material	2% 98%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1308038-010 10	Floor Tile White LAYER 1 White LAYER 2 Mastic, Tan	LAYER 1 100% LAYER 2 100%	None Detected None Detected		Cellulose Fiber Non-Fibrous Material Cellulose Fiber Non-Fibrous Material	2% 98% 3% 97%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1308038-011 11	Hard Ceiling Gray	LAYER 1 100%	None Detected		Cellulose Fiber Non-Fibrous Material	2% 98%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	
1308038-012 12	Wall Behind Radiator Gray	LAYER 1 100%	Chrysotile	35%	Cellulose Fiber Non-Fibrous Material	5% 60%
<b>Total % Asbestos:</b>			35.0%		<b>Total % Non-Asbestos:</b> 65.0%	
1308038-013 13	Debris Gray	LAYER 1 100%	None Detected		Cellulose Fiber Non-Fibrous Material	2% 98%
<b>Total % Asbestos:</b>			No Asbestos Detected		<b>Total % Non-Asbestos:</b> 100.0%	



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Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
1308038-014 14	Pipe Insulation Yellow	LAYER 1 100%	None Detected	Cellulose Fiber 5% Fibrous Glass 65% Non-Fibrous Material 30%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1308038-015 15	Joint Compound White	LAYER 1 100%	None Detected	Cellulose Fiber 2% Non-Fibrous Material 98%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1308038-016 16	Ceiling White	LAYER 1 100%	None Detected	Cellulose Fiber 10% Non-Fibrous Material 90%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1308038-017 17	Tile & Glue LAYER 1 Ceramic Tile, White LAYER 2 Mastic, Tan	LAYER 1 100% LAYER 2 100%	None Detected None Detected	Cellulose Fiber 1% Non-Fibrous Material 99% Cellulose Fiber 3% Non-Fibrous Material 97%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1308038-018 18	Black Mastic Black	LAYER 1 100%	None Detected	Cellulose Fiber 5% Fibrous Glass 35% Non-Fibrous Material 60%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1308038-019 19	Cove Base Brown LAYER 1 Beige LAYER 2 Mastic, Tan	LAYER 1 100% LAYER 2 100%	None Detected None Detected	Cellulose Fiber 2% Non-Fibrous Material 98% Cellulose Fiber 3% Non-Fibrous Material 97%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%
1308038-020 20	Debris Gray	LAYER 1 100%	None Detected	Cellulose Fiber 3% Non-Fibrous Material 97%
<b>Total % Asbestos:</b>			No Asbestos Detected	<b>Total % Non-Asbestos:</b> 100.0%



# OPTIMUM

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## BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

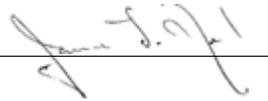
PLM (EPA-600/M4-82-020, EPA-600/ R-93-116) NVLAP Lab Code: 101433-0

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**ANALYST:** Kristina Scaviola

### REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
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Approved Signatory: 

Approved Signatory: 





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1308038

35 Stiles Road, Suite 201  
 Salem, NH 03079  
 603-458-5247

### OPTIMUM ANALYTICAL AND CONSULTING, LLC

#### Chain of Custody

Analysis and TAT:	4-6 Hour	24 Hour	48 Hour	Standard (3-5 day)	Standard (6-10 Day)	Comments (please indicate other test specific information here)
LM						
CM				✓		
Gold	Not Available					
Lead	Not Available					
EM (air or bulk)	Not Available					
Sampler:	Julie T. Davies				Location Samples Collected:	Bed 78 3rd Floor
Project Manager:	J. Davies				Email:	
Project Information:	MCE-1672 Bedford VA				Positive Stop Analysis	yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
					Phone Number:	
					Company Name and Address:	MCE 116 John St Lowell, MA 01852

Sample Number	Description and location	Time and Temperature at collection
1	Debris	8:45 65°
2	Ceiling tile	
3	Wall	
4	Floor tile	
5	Grease base - grey	
6	Grease base - black	
7	Pipe wrap	
8	Window panel	
9	Glue on wall tile	
10	Floor tile white	
11	Hard ceiling	
12	Wall behind radiator	
13	Debris	
14	Pipe insulation	
15	Joint Compound	

EPA Requires that layered samples be separated. Please indicate if a sample is to be analyzed as a composite. NY State requires positive friable samples to be point counted. Negative samples require additional TEM analysis to be confirmed Negative.

Collected by: Julie T. Davies Date: 12/9/13 Time: 1:30

Received by: [Signature] Date: 12-11-13 Time: [Blank]



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### OPTIMUM ANALYTICAL AND CONSULTING, LLC

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1308038

#### Chain of Custody

Analysis and TAT:	4-6 Hour	24 Hour	48 Hour	Standard (3-5 day)	Standard (6-10 Day)	Comments (please indicate other test specific information here)
PLM						
PCM						
Gold	Not Available					
Lead	Not Available					
EM (air or bulk)	Not Available					
Sampler:	Location Samples Collected:					
Project Manager:	Email:			Positive Stop Analysis: <input type="checkbox"/> yes <input type="checkbox"/> No		
Project Information:				Phone Number:		
MCE-1672 Pg 2				Company Name and Address: MCE		
Sample Number	Description and location					Time and Temperature at collection:
16	Ceiling					
17	Tile & glue					
18	Black mastic					
19	Cove base - brown					
20	Debris					
						12:00 65°F

EPA Requires that layered samples be separated; Please indicate if a sample is to be analyzed as a composite. NY State requires positive friable samples to be point counted. Negative samples require additional TEM analysis to be confirmed Negative.

Collected by Julie Davies Date 12/9/13 Time 1:50

Received by [Signature] Date 12-11-13 Time