

**Limited Inspection for Asbestos Containing Materials  
Greenville County Health Department Buildings  
200 University Ridge  
Greenville, S.C. 29601**

Prepared for:

*Mr. Perry Swearingen  
Greenville County  
301 University Ridge  
Greenville, S.C. 296601-3660*

*by*

**ENVIRONMENTAL TESTING & MANAGEMENT, INC.**

**Limited Inspection for Asbestos Containing Materials  
Greenville County Health Department Buildings  
200 University Ridge  
Greenville, S.C. 29601**



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**Limited Inspection for Asbestos Containing Materials  
Greenville County Health Department  
Original Building  
200 University Ridge  
Greenville, S.C. 29601**

Prepared for:

*Mr. Perry Swearingen  
Greenville County  
301 University Ridge  
Greenville, S.C. 29601-3660*

April 16, 2012

Prepared by:  
Environmental Testing and Management, Inc.

**Limited Inspection for Asbestos Containing Materials  
Greenville County Health Department - Original Building  
200 University Ridge  
Greenville, S.C. 29601**

**I. Introduction**

Environmental Testing and Management Inc., (ETM) was retained by Mr. Perry Swearingen of Greenville County to conduct a limited inspection for suspect asbestos containing materials in the Greenville County Health Department building, located at 200 University Ridge, Greenville, S.C. In particular, this inspection focused on those areas which could potentially be disturbed as a part of the fire system upgrades to the building. Further, the Health Department consists of three distinct areas, each built at a different time. This inspection was conducted in the original building by Andrew Schauder, CIH, of ETM on April 9, 2012. Twenty-five (25) bulk materials were collected and thirty-six (36) layers were analyzed for the presence of asbestos.

**II. Observations**

The inspection began in the basement hallway. Samples (1-3) were collected of the 2'x2' ceiling tiles present in this area. These samples returned negative for the presence of asbestos. Above these ceiling tiles, black mastic was observed on fiberglass pipe insulation. Samples (4-6) were collected of this mastic, and these samples returned positive for the presence of asbestos (5% chrysotile).

Proceeding to basement room 4-B-08, samples (7-9) were collected of the 2'x4' ceiling tiles present here. These tiles were also negative.

Proceeding to basement room B4, samples (10-12) were collected of the canvas wrap on piping (black mastic was noted on one of the samples collected). Samples (13-15) were also collected of the elbow mud. Both the canvas wrap and the elbow mud turned out to be negative for the presence of asbestos, but the black mastic is positive (5% chrysotile). Therefore, since the mastic was applied in no discernable pattern, disturbance of the wrap should be treated as disturbance of an asbestos material.

The investigation then moved to the first floor. In room HD175, samples (16-17) were collected of plaster (base coat and skim coat), while samples (18-20) were collected of the 2'x2' replacement ceiling tiles. All of these returned as negative for the presence of asbestos.

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The investigation then moved to the second floor. Samples (21-22) were collected of the plaster (base coat and skim coat) in room HD242. Samples (23-25) were collected of the sheetrock and joint compound in room HD243. Both the plaster and the sheetrock returned as negative for the presence of asbestos. However, the sheetrock mud returned as an asbestos-containing material (2% chrysotile).

### **III. Conclusions and Recommendations**

The results of this survey are summarized in Table I. This Table lists the following data:

1. Sample number
2. Sample location
3. Material sampled
4. The result of the analysis of the material sampled.

As noted above, this investigation found that three materials located in the original portion of the Health Department contain asbestos. The first of these is the black mastic associated with fiberglass pipe insulation located above the ceiling tiles in the basement hallway. All black mastic associated with this type of pipe insulation should now be assumed to be asbestos containing. The second positive material is the black mastic associated with the canvas wrap in basement room B4. Again, based upon this result, all canvas wrap in the original building should be assumed to be asbestos containing. Lastly, the sheetrock mud contains asbestos. Based upon these results, all sheetrock mud in the original building must now be considered to be asbestos containing unless and until further sampling is done to further define the extent of positive results.

Inspector: \_\_\_\_\_

*C. J. Schauder*

License: #1336 Expires: 09/21/12

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 Greenville County Health Department - Original Building  
 200 University Ridge  
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**TABLE I**

Sample No.	Location Sampled	Material	Result
01 - 03	Basement hallway	2'x2' ceiling tiles	ND*
04 - 06	Basement hallway	Black mastic on fiberglass pipe insulation	5% Chrysotile
07 - 09	Basement room: 4-B-08	2'x4' ceiling tiles	ND*
10 - 12	Basement room B4	Canvas wrap	ND*
10 - 12	Basement room B4	Black mastic under wrap	5% Chrysotile
13 - 15	Basement room B4	Elbow mud	ND*
16 - 17	1 <sup>st</sup> Floor: Room HD175	Plaster	ND*
18 - 20	1 <sup>st</sup> Floor: Room HD175	2'x2' replacement ceiling tiles	ND*
21 - 22	2 <sup>nd</sup> Floor: Room HD242	Plaster	ND*
23 - 25	2 <sup>nd</sup> Floor: Room HD243	Sheetrock	ND
23 - 25	2 <sup>nd</sup> Floor: Room HD243	Joint compound	2% Chrysotile

ND\*: none detected



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## ASBESTOS LABORATORY REPORT

Prepared for

**Environmental Testing & Management, Inc.**

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PROJECT: Greenville County - Health Department - Original Bldg.

CEI LAB CODE: A12-3014

DATE REPORTED: 04/11/12

TOTAL SAMPLES SUBMITTED: 25

# SAMPLES >1% ASBESTOS: 7

**TEL: 866-481-1412**

*[www.ceilabs.com](http://www.ceilabs.com)*



# Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Greenville County - Health Department - CEI LAB CODE: A12-3014  
Original Bldg.

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

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
1		A1275562	White, Tan	Ceiling Tile	None Detected
2		A1275563	White, Tan	Ceiling Tile	None Detected
3		A1275564	White, Tan	Ceiling Tile	None Detected
4		A1275565	Black	Mastic	<b>Chrysotile 5%</b>
5		A1275566	Black	Mastic	<b>Chrysotile 5%</b>
6		A1275567	Black	Mastic	<b>Chrysotile 5%</b>
7		A1275568	White, Tan	Ceiling Tile	None Detected
8		A1275569	White, Tan	Ceiling Tile	None Detected
9		A1275570	White, Tan	Ceiling Tile	None Detected
10	Layer 1	A1275571	White	Wrap	None Detected
	Layer 2	A1275571	Black	Mastic	<b>Chrysotile 5%</b>
	Layer 3	A1275571	Black	Wrap Backing	None Detected
11		A1275572	White, Black	Wrap	None Detected
12		A1275573	White	Wrap	None Detected
13		A1275574	Off-white	Mud	None Detected
14		A1275575	Off-white	Mud	None Detected
15		A1275576	Off-white	Mud	None Detected
16	Layer 1	A1275577	White	Plaster Skim Coat	None Detected
	Layer 2	A1275577	Grey	Plaster Base Coat	None Detected
17	Layer 1	A1275578	White	Plaster Skim Coat	None Detected
	Layer 2	A1275578	Grey	Plaster Base Coat	None Detected
18		A1275579	White, Tan	Ceiling Tile	None Detected
19		A1275580	White, Tan	Ceiling Tile	None Detected
20		A1275581	White, Tan	Ceiling Tile	None Detected
21	Layer 1	A1275582A	White	Plaster Skim Coat	None Detected
	Layer 2	A1275582A	Grey	Plaster Base Coat	None Detected
		A1275582B	Grey	Plaster	None Detected
22	Layer 1	A1275583A	White	Plaster Skim Coat	None Detected
	Layer 2	A1275583A	Grey	Plaster Base Coat	None Detected
		A1275583B	Grey	Plaster	None Detected
23	Layer 1	A1275584	White	Mud	<b>Chrysotile 2%</b>





# Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Greenville County - Health Department - CEI LAB CODE: A12-3014  
Original Bldg.

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

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
	Layer 2	A1275584	White, Brown	Sheetrock	None Detected
24	Layer 1	A1275585	White	Mud	<b>Chrysotile 2%</b>
	Layer 2	A1275585	White, Brown	Sheetrock	None Detected
25	Layer 1	A1275586	White	Mud	<b>Chrysotile 2%</b>
	Layer 2	A1275586	White, Brown	Sheetrock	None Detected



# ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

**Client:** Environmental Testing & Management, Inc.  
 P.O. Box 896  
 Mauldin, SC 29662

**CEI Lab Code:** A12-3014

**Date Received:** 04-10-12

**Date Reported:** 04-10-12

**Project:** Greenville County - Health Department - Original Bldg.

## ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
1 A1275562	Ceiling Tile	Heterogeneous	40%	Cellulose	5%	Paint	<b>None Detected</b>
		White, Tan	20%	Fiberglass	35%	Perlite	
		Fibrous Bound					
2 A1275563	Ceiling Tile	Heterogeneous	40%	Cellulose	5%	Paint	<b>None Detected</b>
		White, Tan	20%	Fiberglass	35%	Perlite	
		Fibrous Bound					
3 A1275564	Ceiling Tile	Heterogeneous	40%	Cellulose	5%	Paint	<b>None Detected</b>
		White, Tan	20%	Fiberglass	35%	Perlite	
		Fibrous Bound					
4 A1275565	Mastic	Heterogeneous			85%	Mastic	<b>5% Chrysotile</b>
		Black			10%	Silicate Mineral	
		Fibrous Bound					
5 A1275566	Mastic	Heterogeneous			85%	Mastic	<b>5% Chrysotile</b>
		Black			10%	Silicate Mineral	
		Fibrous Bound					
6 A1275567	Mastic	Heterogeneous			85%	Mastic	<b>5% Chrysotile</b>
		Black			10%	Silicate Mineral	
		Fibrous Bound					
7 A1275568	Ceiling Tile	Heterogeneous	40%	Cellulose	5%	Paint	<b>None Detected</b>
		White, Tan	20%	Fiberglass	35%	Perlite	
		Fibrous Bound					
8 A1275569	Ceiling Tile	Heterogeneous	40%	Cellulose	5%	Paint	<b>None Detected</b>
		White, Tan	20%	Fiberglass	35%	Perlite	
		Fibrous Bound					



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By: POLARIZING LIGHT MICROSCOPY

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**CEI Lab Code:** A12-3014

**Date Received:** 04-10-12

**Date Reported:** 04-10-12

**Project:** Greenville County - Health Department - Original Bldg.

## ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS			ASBESTOS %	
			Fibrous		Non-Fibrous		
9 A1275570	Ceiling Tile	Heterogeneous	40%	Cellulose	5%	None Detected	
		White, Tan Fibrous Bound	20%	Fiberglass	35%		
10 Layer 1 A1275571	Wrap	Homogeneous	80%	Cellulose	20%	None Detected	
		White Fibrous Bound					
		Layer 2 A1275571	Mastic	Heterogeneous			95%
		Black Fibrous Bound					
Layer 3 A1275571	Wrap Backing	Heterogeneous	75%	Cellulose	15%	None Detected	
		Black Fibrous Bound			10%		Tar Metal Foil
		11 A1275572	Wrap	Heterogeneous	75%		Cellulose
White, Black Fibrous Bound			5%	Tar Metal Foil			
				10%	Binder		
12 A1275573	Wrap	Homogeneous	80%	Cellulose	20%	None Detected	
		White Fibrous Bound					
13 A1275574	Mud	Heterogeneous	35%	Fiberglass	65%	None Detected	
		Off-white Fibrous Loosely Bound					
14 A1275575	Mud	Heterogeneous	35%	Fiberglass	65%	None Detected	
		Off-white Fibrous Loosely Bound					



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**Date Received:** 04-10-12

**Date Reported:** 04-10-12

**Project:** Greenville County - Health Department - Original Bldg.

## ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS			ASBESTOS %	
			Fibrous		Non-Fibrous		
15 A1275576	Mud	Heterogeneous Off-white Fibrous Loosely Bound	35%	Fiberglass	65%	Binder	None Detected
16 Layer 1 A1275577	Plaster Skim Coat	Homogeneous White Non-fibrous Bound			65%	Binder	None Detected
					35%	Calc Carb	
Layer 2 A1275577	Plaster Base Coat	Homogeneous Grey Non-fibrous Bound			65%	Binder	None Detected
					35%	Silicate Mineral	
17 Layer 1 A1275578	Plaster Skim Coat	Homogeneous White Non-fibrous Bound			65%	Binder	None Detected
					35%	Calc Carb	
Layer 2 A1275578	Plaster Base Coat	Homogeneous Grey Non-fibrous Bound			65%	Binder	None Detected
					35%	Silicate Mineral	
18 A1275579	Ceiling Tile	Heterogeneous White, Tan Fibrous Bound	40%	Cellulose	5%	Paint	None Detected
			20%	Fiberglass	35%	Perlite	
19 A1275580	Ceiling Tile	Heterogeneous White, Tan Fibrous Bound	40%	Cellulose	5%	Paint	None Detected
			20%	Fiberglass	35%	Perlite	
20 A1275581	Ceiling Tile	Heterogeneous White, Tan Fibrous Bound	40%	Cellulose	5%	Paint	None Detected
			20%	Fiberglass	35%	Perlite	



# ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

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**CEI Lab Code:** A12-3014

**Date Received:** 04-10-12

**Date Reported:** 04-10-12

**Project:** Greenville County - Health Department - Original Bldg.

## ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
<b>21</b>		Homogeneous	65%	Binder	<b>None Detected</b>
Layer 1	Plaster Skim Coat	White	35%	Calc Carb	
A1275582A		Non-fibrous Bound			
-----					
Layer 2	Plaster Base Coat	Homogeneous	65%	Binder	<b>None Detected</b>
A1275582A		Grey	35%	Silicate Mineral	
		Non-fibrous Bound			
A1275582B	Plaster	Homogeneous	40%	Binder	<b>None Detected</b>
		Grey	55%	Silicate Mineral	
		Non-fibrous	5%	Paint	
		Bound			
<b>22</b>		Homogeneous	65%	Binder	<b>None Detected</b>
Layer 1	Plaster Skim Coat	White	35%	Calc Carb	
A1275583A		Non-fibrous Bound			
-----					
Layer 2	Plaster Base Coat	Homogeneous	65%	Binder	<b>None Detected</b>
A1275583A		Grey	35%	Silicate Mineral	
		Non-fibrous Bound			
A1275583B	Plaster	Homogeneous	40%	Binder	<b>None Detected</b>
		Grey	55%	Silicate Mineral	
		Non-fibrous	5%	Paint	
		Bound			
<b>23</b>		Heterogeneous	28%	Binder	<b>2% Chrysotile</b>
Layer 1	Mud	White	65%	Calc Carb	
A1275584		Fibrous	5%	Mastic	
		Bound			
-----					
Layer 2	Sheetrock	Heterogeneous	10%	Cellulose	<b>None Detected</b>
A1275584		White, Brown	<1%	Fiberglass	
		Fibrous			
		Bound			



# ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

**Client:** Environmental Testing & Management, Inc.  
 P.O. Box 896  
 Mauldin, SC 29662

**CEI Lab Code:** A12-3014

**Date Received:** 04-10-12

**Date Reported:** 04-10-12

**Project:** Greenville County - Health Department - Original Bldg.

## ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
24 Layer 1 A1275585	Mud	Heterogeneous	28%	Binder	<b>2% Chrysotile</b>
		White Fibrous Bound	65%	Calc Carb 5% Mastic	
Layer 2 A1275585	Sheetrock	Heterogeneous	10% Cellulose	90% Gypsum	<b>None Detected</b>
		White, Brown Fibrous Bound	<1% Fiberglass		
25 Layer 1 A1275586	Mud	Heterogeneous	28%	Binder	<b>2% Chrysotile</b>
		White Fibrous Bound	65%	Calc Carb 5% Mastic	
Layer 2 A1275586	Sheetrock	Heterogeneous	10% Cellulose	90% Gypsum	<b>None Detected</b>
		White, Brown Fibrous Bound	<1% Fiberglass		



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

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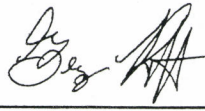
**METHOD:**    EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

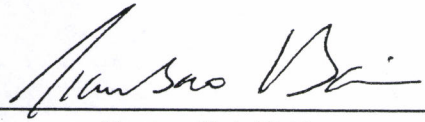
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The detection limit for the method is <1% by visual estimation and 0.25% by 400 point counts or 0.1% by 1,000 point counts.

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

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**ANALYST:**   
                  Greg Ruff

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



**Limited Inspection for Asbestos Containing Materials  
Greenville County Health Department  
4 Story Tower  
200 University Ridge  
Greenville, S.C. 29601**

Prepared for:

*Mr. Perry Swearingen  
Greenville County  
301 University Ridge  
Greenville, S.C. 29601-3660*

April 16, 2012

Prepared by:  
Environmental Testing and Management, Inc.



**Limited Inspection for Asbestos Containing Materials  
Greenville County Health Department - 4 Story Tower  
200 University Ridge  
Greenville, S.C. 29601**

**I. Introduction**

Environmental Testing and Management Inc., (ETM) was retained by Mr. Perry Swearingen of Greenville County to conduct a limited inspection for suspect asbestos containing materials in the Greenville County Health Department building, located at 200 University Ridge, Greenville, S.C. In particular, this inspection focused on those areas which could potentially be disturbed as a part of the fire system upgrades to the building. Further, the Health Department consists of three distinct areas, each built at a different time. This inspection was conducted in the 4 story tower by Andrew Schauder, CIH, of ETM on April 9, 2012. Twenty-three (23) bulk materials were collected and (31) layers were analyzed for the presence of asbestos.

**II. Observations**

The inspection began in the basement hallway. Samples (1-3) were collected of the ceiling tiles present in this area. These samples returned negative for the presence of asbestos. Above these ceiling tiles, spray-applied fireproofing was observed. Samples (4-5) were collected of this material, and these samples returned negative as well.

Also above these ceiling tiles, samples (6-7) were collected of the sheetrock and joint compound. The sheetrock returned as negative for the presence of asbestos, but the joint compound is positive (2% chrysotile).

Proceeding to the first floor, samples (8-9) were collected of the spray-applied fireproofing found in electrical room 4-104. These samples were found to be negative.

The investigation then moved to the second floor. In electrical room HD292, samples (10-11) were collected of the spray-applied fireproofing, while samples (12-13) were collected of the sheetrock and joint compound. All of these returned as negative for the presence of asbestos.

Due to space constraints, samples were not collected on the third floor. On the fourth floor, samples (14-15) were collected of the spray-applied fireproofing in electrical room HD392 while samples (16-17) were collected of the sheetrock and joint compound. Both the spray-applied fireproofing and the sheetrock returned as negative for the presence of asbestos. However, the joint compound is positive (2% chrysotile).

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200 University Ridge  
Greenville, S.C. 29601  
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The investigation then moved to the penthouse. Three samples (18-20) were collected of the canvas wrap (no mastic was observed). These returned as negative for the presence of asbestos.

From a line marked "hot water supply" sample (21) was pulled of the elbow mud while sample (22) was pulled of the valve body mud. Both were positive for asbestos (65% chrysotile). A sample (23) of elbow mud was pulled from a line marked "chill water supply." This sample returned as negative for the presence of asbestos.

### III. Conclusions and Recommendations

The results of this survey are summarized in Table I. This Table lists the following data:

1. Sample number
2. Sample location
3. Material sampled
4. The result of the analysis of the material sampled.

As noted above, this investigation found that two materials located in the 4 story tower portion of the Health Department contain asbestos. The first of these is the joint compound located in the basement hallway above ceiling tiles and in 4<sup>th</sup> floor electrical room. While joint compound on the 2<sup>nd</sup> floor was found to be negative, further sampling would need to be done to further define any areas not tested as negative. In the absence of sampling, all other joint compound must be considered to be asbestos containing.

The second material found to be asbestos containing is the elbow and valve body mud on the hot water supply line sampled in the penthouse. Mud on all hot lines in this area, based upon these results, must be considered to be asbestos containing unless and until further sampling is done to define the extent of positive material. Additional sampling would need to be done of chiller lines in order to definitively treat them as non-asbestos entities.

Inspector:  License: #1336 Expires: 09/21/12

*Limited Inspection for Asbestos Containing Materials  
 Greenville County Health Department - 4 Story Tower  
 200 University Ridge  
 Greenville, S.C. 29601  
 Page Three*

**TABLE I**

<b>Sample No.</b>	<b>Location Sampled</b>	<b>Material</b>	<b>Result</b>
01 - 03	Basement hallway	Ceiling tiles	ND*
04 - 05	Basement hallway	Spray-applied fireproofing	ND*
06 - 07	Basement hallway	Sheetrock	ND*
06 - 07	Basement hallway	Joint compound	2% Chrysotile
08 - 09	1 <sup>st</sup> Floor: electrical room 4-104	Spray-applied fireproofing	ND*
10 - 11	2 <sup>nd</sup> Floor: electrical room HD292	Spray-applied fireproofing	ND*
12 - 13	2 <sup>nd</sup> Floor: electrical room HD292	Sheetrock & joint compound	ND*
14 - 15	4 <sup>th</sup> Floor: electrical Room HD392	Spray-applied fireproofing	ND*
16 - 17	4 <sup>th</sup> Floor: electrical room HD392	Sheetrock	ND*
16 - 17	4 <sup>th</sup> Floor: electrical room HD392	Joint compound	2% Chrysotile
18 - 20	Penthouse	Canvas wrap	ND*
21	Penthouse: Hot water supply	Elbow mud	65% Chrysotile
22	Penthouse: Hot water supply	Valve body mud	65% Chrysotile
23	Penthouse: Chill water supply	Elbow mud	ND*

ND\*: none detected



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## ASBESTOS LABORATORY REPORT

Prepared for

**Environmental Testing & Management, Inc.**

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**PROJECT:** Greenville County - Health Department - 4 Story  
Tower

**CEI LAB CODE:** A12-3015

**DATE REPORTED:** 04/11/12

**TOTAL SAMPLES SUBMITTED:** 23

**# SAMPLES >1% ASBESTOS:** 6

**TEL: 866-481-1412**

*www.ceilabs.com*



# Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Greenville County - Health Department - 4 CEI LAB CODE: A12-3015  
 Story Tower

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

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
1		A1275587	White,Grey	Ceiling Tile	None Detected
2		A1275588	White,Grey	Ceiling Tile	None Detected
3		A1275589	White,Grey	Ceiling Tile	None Detected
4		A1275590	Brown	Spray Applied Fireproofing	None Detected
5		A1275591	Brown	Spray Applied Fireproofing	None Detected
6	Layer 1	A1275592	White	Joint Compound	<b>Chrysotile 2%</b>
	Layer 2	A1275592	Off-white	Sheetrock	None Detected
7	Layer 1	A1275593	White	Joint Compound	<b>Chrysotile 2%</b>
	Layer 2	A1275593	Off-white	Sheetrock	None Detected
8		A1275594	Brown	Spray Applied Fireproofing	None Detected
9		A1275595	Brown	Spray Applied Fireproofing	None Detected
10		A1275596	Brown	Spray Applied Fireproofing	None Detected
11		A1275597	Brown	Spray Applied Fireproofing	None Detected
12	Layer 1	A1275598	White	Joint Compound	None Detected
	Layer 2	A1275598	Off-white	Sheetrock	None Detected
13	Layer 1	A1275599	White	Joint Compound	None Detected
	Layer 2	A1275599	Off-white	Sheetrock	None Detected
14		A1275600	Brown	Spray Applied Fireproofing	None Detected
15		A1275601	Brown	Spray Applied Fireproofing	None Detected
16	Layer 1	A1275602	White	Joint Compound	<b>Chrysotile 2%</b>
	Layer 2	A1275602	Off-white	Sheetrock	None Detected
17	Layer 1	A1275603	White	Joint Compound	<b>Chrysotile 2%</b>
	Layer 2	A1275603	Off-white	Sheetrock	None Detected
18		A1275604	Off-white,Brown	Canvas Wrap	None Detected
19		A1275605	Off-white,Silver	Canvas Wrap	None Detected
20		A1275606	Off-white,Silver	Canvas Wrap	None Detected
21	Layer 1	A1275607	Grey	Elbow Mud	<b>Chrysotile 65%</b>
	Layer 2	A1275607	Grey	Elbow Mud	None Detected
22	Layer 1	A1275608	Grey	Valve Body Mud	<b>Chrysotile 65%</b>
	Layer 2	A1275608	Grey	Valve Body Mud	None Detected
23		A1275609	Grey	Elbow Mud	None Detected



# ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

**Client:** Environmental Testing & Management, Inc.  
 P.O. Box 896  
 Mauldin, SC 29662

**CEI Lab Code:** A12-3015  
**Date Received:** 04-10-12  
**Date Reported:** 04-10-12

**Project:** Greenville County - Health Department - 4 Story Tower

## ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
1 A1275587	Ceiling Tile	Homogeneous	30%	Fiberglass	20%	Perlite	<b>None Detected</b>
		White,Grey	30%	Cellulose	15%	Binder	
		Fibrous			5%	Paint	
		Loosely Bound					
2 A1275588	Ceiling Tile	Homogeneous	30%	Fiberglass	20%	Perlite	<b>None Detected</b>
		White,Grey	30%	Cellulose	15%	Binder	
		Fibrous			5%	Paint	
		Loosely Bound					
3 A1275589	Ceiling Tile	Homogeneous	30%	Fiberglass	20%	Perlite	<b>None Detected</b>
		White,Grey	30%	Cellulose	15%	Binder	
		Fibrous			5%	Paint	
		Loosely Bound					
4 A1275590	Spray Applied Fireproofing	Homogeneous	10%	Fiberglass	35%	Mica	<b>None Detected</b>
		Brown	5%	Cellulose	50%	Binder	
		Fibrous					
		Loosely Bound					
5 A1275591	Spray Applied Fireproofing	Homogeneous	10%	Fiberglass	35%	Mica	<b>None Detected</b>
		Brown	10%	Cellulose	45%	Binder	
		Fibrous					
		Loosely Bound					
6 Layer 1 A1275592	Joint Compound	Homogeneous			80%	Calc Carb	<b>2% Chrysotile</b>
		White			18%	Silicate Mineral	
		Non-fibrous					
		Loosely Bound					
Layer 2 A1275592	Sheetrock	Heterogeneous	15%	Cellulose	75%	Gypsum	<b>None Detected</b>
		Off-white	<1%	Fiberglass	10%	Silicate Mineral	
		Fibrous					
		Loosely Bound					
7 Layer 1 A1275593	Joint Compound	Homogeneous			80%	Calc Carb	<b>2% Chrysotile</b>
		White			18%	Silicate Mineral	
		Non-fibrous					
		Loosely Bound					



# ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

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 P.O. Box 896  
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**Date Received:** 04-10-12

**Date Reported:** 04-10-12

**Project:** Greenville County - Health Department - 4 Story Tower

## ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS			ASBESTOS %	
			Fibrous	Non-Fibrous			
Layer 2 A1275593	Sheetrock	Heterogeneous Off-white Fibrous Loosely Bound	15% <1%	Cellulose Fiberglass	75% 10%	Gypsum Silicate Mineral	<b>None Detected</b>
<b>8</b> A1275594	Spray Applied Fireproofing	Homogeneous Brown Fibrous Loosely Bound	10% 10%	Fiberglass Cellulose	35% 45%	Mica Binder	<b>None Detected</b>
<b>9</b> A1275595	Spray Applied Fireproofing	Homogeneous Brown Fibrous Loosely Bound	10% 10%	Fiberglass Cellulose	35% 45%	Mica Binder	<b>None Detected</b>
<b>10</b> A1275596	Spray Applied Fireproofing	Homogeneous Brown Fibrous Loosely Bound	10% 10%	Fiberglass Cellulose	35% 45%	Mica Binder	<b>None Detected</b>
<b>11</b> A1275597	Spray Applied Fireproofing	Homogeneous Brown Fibrous Loosely Bound	10% 10%	Fiberglass Cellulose	35% 45%	Mica Binder	<b>None Detected</b>
<b>12</b> Layer 1 A1275598	Joint Compound	Homogeneous White Non-fibrous Loosely Bound			80% 20%	Calc Carb Silicate Mineral	<b>None Detected</b>
Layer 2 A1275598	Sheetrock	Heterogeneous Off-white Fibrous Loosely Bound	15% <1%	Cellulose Fiberglass	75% 10%	Gypsum Silicate Mineral	<b>None Detected</b>
<b>13</b> Layer 1 A1275599	Joint Compound	Homogeneous White Non-fibrous Loosely Bound			80% 20%	Calc Carb Silicate Mineral	<b>None Detected</b>



# ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

**Client:** Environmental Testing & Management, Inc.  
 P.O. Box 896  
 Mauldin, SC 29662

**CEI Lab Code:** A12-3015

**Date Received:** 04-10-12

**Date Reported:** 04-10-12

**Project:** Greenville County - Health Department - 4 Story Tower

## ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS			ASBESTOS %	
			Fibrous	Non-Fibrous			
Layer 2 A1275599	Sheetrock	Heterogeneous Off-white Fibrous Loosely Bound	15% <1%	Cellulose Fiberglass	75% 10%	Gypsum Silicate Mineral	<b>None Detected</b>
<b>14</b> A1275600	Spray Applied Fireproofing	Homogeneous Brown Fibrous Loosely Bound	10% 10%	Fiberglass Cellulose	35% 45%	Mica Binder	<b>None Detected</b>
<b>15</b> A1275601	Spray Applied Fireproofing	Homogeneous Brown Fibrous Loosely Bound	10% 10%	Fiberglass Cellulose	35% 45%	Mica Binder	<b>None Detected</b>
<b>16</b> Layer 1 A1275602	Joint Compound	Homogeneous White Non-fibrous Loosely Bound			80% 18%	Calc Carb Silicate Mineral	<b>2% Chrysotile</b>
Layer 2 A1275602	Sheetrock	Heterogeneous Off-white Fibrous Loosely Bound	15% <1%	Cellulose Fiberglass	75% 10%	Gypsum Silicate Mineral	<b>None Detected</b>
<b>17</b> Layer 1 A1275603	Joint Compound	Homogeneous White Non-fibrous Loosely Bound			80% 18%	Calc Carb Silicate Mineral	<b>2% Chrysotile</b>
Layer 2 A1275603	Sheetrock	Heterogeneous Off-white Fibrous Loosely Bound	15% <1%	Cellulose Fiberglass	75% 10%	Gypsum Silicate Mineral	<b>None Detected</b>
<b>18</b> A1275604	Canvas Wrap	Heterogeneous Off-white, Brown Fibrous Bound	40%	Cellulose	40% 20%	Mastic Calc Carb	<b>None Detected</b>





# ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

**Client:** Environmental Testing & Management, Inc.  
P.O. Box 896  
Mauldin, SC 29662

**CEI Lab Code:** A12-3015

**Date Received:** 04-10-12

**Date Reported:** 04-10-12

**Project:** Greenville County - Health Department - 4 Story Tower

## ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS			ASBESTOS %	
			Fibrous	Non-Fibrous			
19 A1275605	Canvas Wrap	Heterogeneous	35%	Cellulose	40%	Mastic	<b>None Detected</b>
		Off-white, Silver	5%	Fiberglass	15%	Calc Carb	
		Fibrous			5%	Metal Foil	
		Bound					
20 A1275606	Canvas Wrap	Heterogeneous	35%	Cellulose	40%	Mastic	<b>None Detected</b>
		Off-white, Silver	5%	Fiberglass	15%	Calc Carb	
		Fibrous			5%	Metal Foil	
		Bound					
21 Layer 1 A1275607	Elbow Mud	Homogeneous	10%	Cellulose	25%	Calc Carb	<b>65% Chrysotile</b>
		Grey					
		Fibrous					
		Loosely Bound					
Layer 2 A1275607	Elbow Mud	Homogeneous	10%	Cellulose	20%	Silicate Mineral	<b>None Detected</b>
		Grey	20%	Fiberglass	50%	Binder	
		Fibrous					
		Loosely Bound					
22 Layer 1 A1275608	Valve Body Mud	Homogeneous	10%	Cellulose	25%	Calc Carb	<b>65% Chrysotile</b>
		Grey					
		Fibrous					
		Loosely Bound					
Layer 2 A1275608	Valve Body Mud	Homogeneous	10%	Cellulose	20%	Silicate Mineral	<b>None Detected</b>
		Grey	20%	Fiberglass	50%	Binder	
		Fibrous					
		Loosely Bound					
23 A1275609	Elbow Mud	Homogeneous	10%	Cellulose	20%	Silicate Mineral	<b>None Detected</b>
		Grey	20%	Fiberglass	50%	Binder	
		Fibrous					
		Loosely Bound					



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

---

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

---

The detection limit for the method is <1% by visual estimation and 0.25% by 400 point counts or 0.1% by 1,000 point counts.

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

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**ANALYST:** *Susannah Small*  
Susannah Small

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



**Limited Inspection for Asbestos Containing Materials  
Greenville County Health Department  
Original Building Addition  
200 University Ridge  
Greenville, S.C. 29601**

Prepared for:

*Mr. Perry Swearingen  
Greenville County  
301 University Ridge  
Greenville, S.C. 29601-3660*

April 16, 2012

Prepared by:

Environmental Testing and Management, Inc.

P.O. Box 896  
Mauldin, South Carolina 29662  
Phone (864) 213-4408 Fax (864) 213-4409

**Limited Inspection for Asbestos Containing Materials  
Greenville County Health Department - Original Building Addition  
200 University Ridge  
Greenville, S.C. 29601**

**I. Introduction**

Environmental Testing and Management Inc., (ETM) was retained by Mr. Perry Swearingen of Greenville County to conduct a limited inspection for suspect asbestos containing materials in the Greenville County Health Department building, located at 200 University Ridge, Greenville, S.C. In particular, this inspection focused on those areas which could potentially be disturbed as a part of the fire system upgrades to the building. Further, the Health Department consists of three distinct areas, each built at a different time. This inspection was conducted in the original building addition by Andrew Schauder, CIH, of ETM on April 9, 2012. Six (6) bulk materials were collected and (8) layers were analyzed for the presence of asbestos.

**II. Observations**

The inspection began in the first floor men's room. Samples (1-3) were collected of the ceiling tiles present in this area. These samples returned negative for the presence of asbestos. Above these ceiling tiles, fiberglass with paper wrap was noted as the pipe insulation running above these ceiling tiles (therefore, no suspect insulation material was present here).

Samples (4-6) were collected of the sheetrock and joint compound. These samples also returned as negative for the presence of asbestos.

**III. Conclusions and Recommendations**

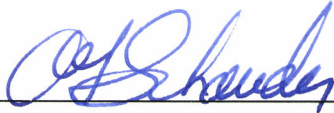
The results of this survey are summarized in Table I. This Table lists the following data:

1. Sample number
2. Sample location
3. Material sampled
4. The result of the analysis of the material sampled.

*Limited Inspection for Asbestos Containing Materials  
Greenville County Health Department - Original Building Addition  
200 University Ridge  
Greenville, S.C. 29601  
Page Two*

This investigation found that the materials most likely to be disturbed as a part of the fire system upgrade project, the ceiling tiles and the sheetrock and joint compound, are non-asbestos containing materials in the addition portion of the Health Department's original building.

Inspector: \_\_\_\_\_



License: #1336 Expires: 09/21/12

*Limited Inspection for Asbestos Containing Materials  
Greenville County Health Department - Original Building Addition  
200 University Ridge  
Greenville, S.C. 29601  
Page Three*

**TABLE I**

<b>Sample No.</b>	<b>Location Sampled</b>	<b>Material</b>	<b>Result</b>
01 - 03	Men's room	Ceiling tiles	ND*
04 - 06	Men's room	Sheetrock & joint compound	ND*

ND\*: none detected



---

## ASBESTOS LABORATORY REPORT

Prepared for

**Environmental Testing & Management, Inc.**

---

**PROJECT:** Greenville County - Health Department - Original  
Bldg. Add.

**CEI LAB CODE:** A12-3013

**DATE REPORTED:** 04/11/12

**TOTAL SAMPLES SUBMITTED:** 6

**# SAMPLES >1% ASBESTOS:**

**TEL: 866-481-1412**

*[www.ceilabs.com](http://www.ceilabs.com)*



# Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Greenville County - Health Department - CEI LAB CODE: A12-3013  
Original Bldg. Add.

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

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
1		A1275556	White,Brown	Ceiling Tile	None Detected
2		A1275557	White,Brown	Ceiling Tile	None Detected
3		A1275558	White,Brown	Ceiling Tile	None Detected
4		A1275559	Off-white	Sheetrock	None Detected
5	Layer 1	A1275560	White	Joint Compound	None Detected
	Layer 2	A1275560	Off-white	Sheetrock	None Detected
6	Layer 1	A1275561	White	Joint Compound	None Detected
	Layer 2	A1275561	Off-white	Sheetrock	None Detected





# ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

**Client:** Environmental Testing & Management, Inc.  
 P.O. Box 896  
 Mauldin, SC 29662

**CEI Lab Code:** A12-3013

**Date Received:** 04-10-12

**Date Reported:** 04-10-12

**Project:** Greenville County - Health Department - Original Bldg. Add.

## ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS			ASBESTOS %
			Fibrous		Non-Fibrous	
1 A1275556	Ceiling Tile	Homogeneous	45%	Fiberglass	25%	None Detected
		White, Brown	10%	Cellulose	15%	
		Fibrous			5%	
		Loosely Bound			Paint	
2 A1275557	Ceiling Tile	Homogeneous	45%	Fiberglass	25%	None Detected
		White, Brown	10%	Cellulose	15%	
		Fibrous			5%	
		Loosely Bound			Paint	
3 A1275558	Ceiling Tile	Homogeneous	45%	Fiberglass	25%	None Detected
		White, Brown	10%	Cellulose	15%	
		Fibrous			5%	
		Loosely Bound			Paint	
4 A1275559	Sheetrock	Homogeneous	<1%	Fiberglass	85%	None Detected
		Off-white	5%	Cellulose	10%	
		Fibrous				
		Loosely Bound			Silicate Mineral	
Lab Notes: No joint compound observed in sample bag.						
5 Layer 1 A1275560	Joint Compound	Homogeneous			85%	None Detected
		White			15%	
		Non-fibrous				
		Loosely Bound			Silicate Mineral	
Layer 2 A1275560	Sheetrock	Homogeneous	<1%	Fiberglass	75%	None Detected
		Off-white	15%	Cellulose	10%	
		Fibrous				
		Loosely Bound			Silicate Mineral	
6 Layer 1 A1275561	Joint Compound	Homogeneous			85%	None Detected
		White			15%	
		Non-fibrous				
		Loosely Bound			Silicate Mineral	



# ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

**Client:** Environmental Testing & Management, Inc.  
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Mauldin, SC 29662

**CEI Lab Code:** A12-3013

**Date Received:** 04-10-12

**Date Reported:** 04-10-12

**Project:** Greenville County - Health Department - Original Bldg. Add.

## ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
Layer 2	Sheetrock	Homogeneous	<1%	Fiberglass	75%	Gypsum	<b>None Detected</b>
A1275561		Off-white	15%	Cellulose	10%	Silicate Mineral	
		Fibrous					
		Loosely Bound					



---

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

---

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

---

The detection limit for the method is <1% by visual estimation and 0.25% by 400 point counts or 0.1% by 1,000 point counts.

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

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**ANALYST:** *Susannah Small*  
Susannah Small

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

