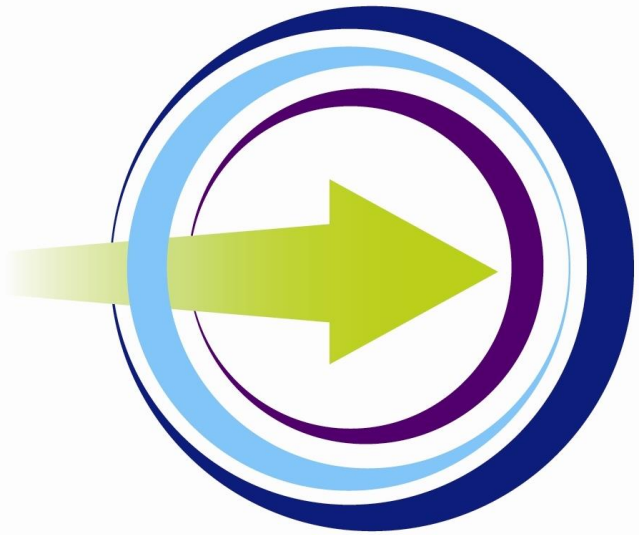
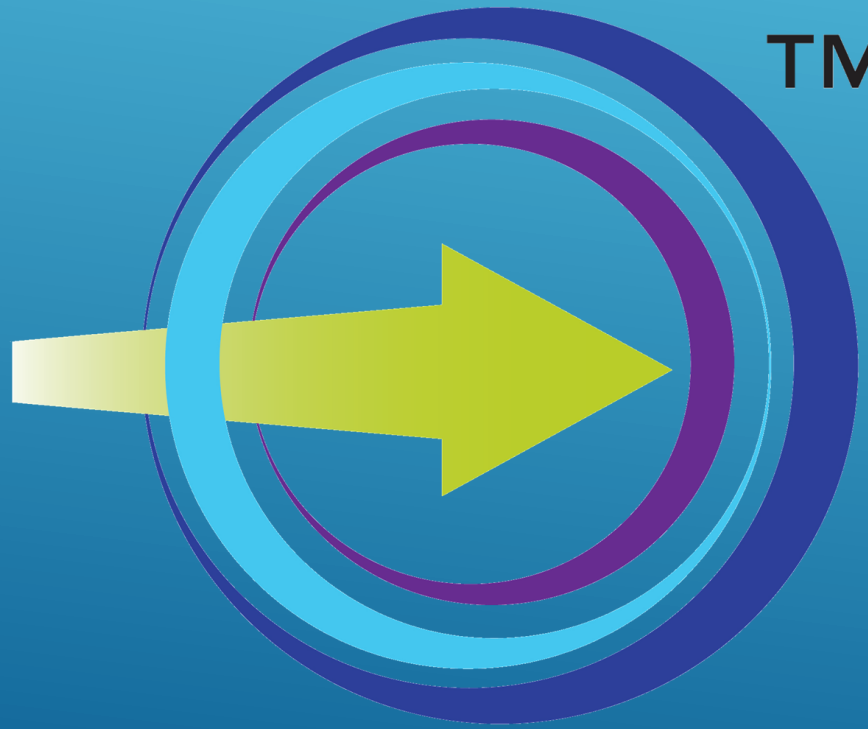


FoamShield™

particle capture technology

INTRODUCING THE PATENTED FOAMSHIELD™ PROCESS



™

FOAMSHIELD™

WHAT IS FOAMSHIELD™ ?

- A patented *technology* that captures particulate matter at the point of release
- Proven *process* that has historically been documented to show ZERO fiber release
- Branded line of foaming *products* that are specifically designed for projects and/or materials

FOAMSHIELD™
particle capture technology

FOAMSHIELD™ HISTORY

50+ years
- Contracting experience

1988
- Development of FiberStop™

1988-2003
- Exclusive use of FiberStop™ technology by BilMar Corporation

2003
- Development of foam technology

2007
- Patents established internationally

2010
- FoamShield™ brand launched

2010-current
- FoamShield™ technology used worldwide in multiple industries and applications

FoamShield™

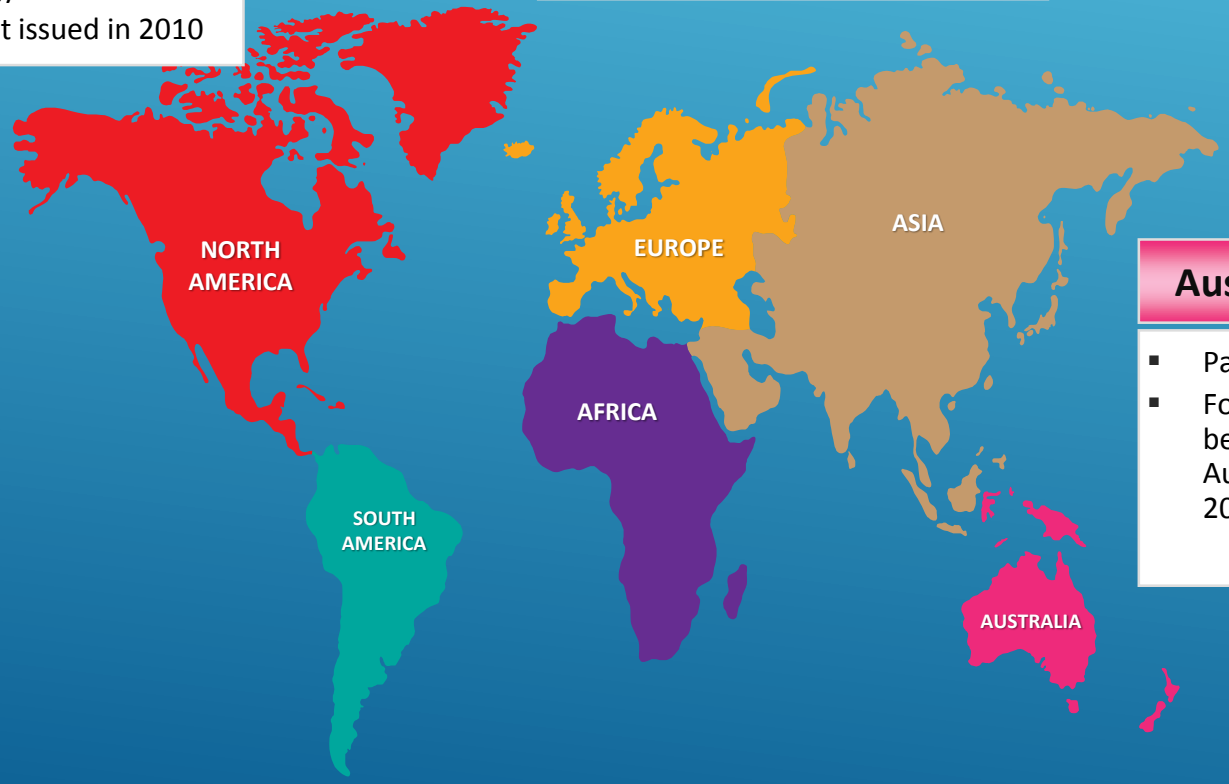
FOAMSHIELD™ AROUND THE WORLD

North America

- Patented FoamShield™ technology is used in multiple industries and applications throughout the United States
- Multiples patents held for the foam technology in the US
- Canadian patent issued in 2010

Europe

- FoamShield™ technology is used in multiple countries throughout Europe



Australia & New Zealand

- Patent established in 2007
- FoamShield™ technology has been used extensively in Australia and New Zealand since 2011.

FoamShield™

HOW DOES IT WORK?

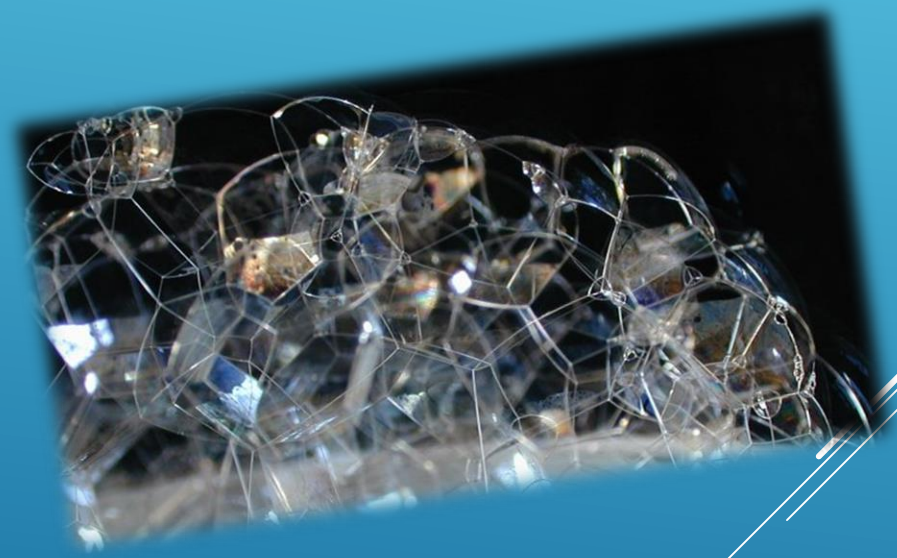
- Foam is created by injecting air into water.
- The addition of surfactants and polymers help to form strong, uniform, stable structures.

Water:
Basic material

Surfactant:
Wetting agent

Foaming Agent:
FoamShield™

Polymer:
Reinforcement material



FoamShield™

HOW DOES IT WORK?

As foam takes on the characteristics of a solid, it acts as a space filling structure, thus capturing particles and not letting them escape.
We call this a foam 'blanket'.

Figure 1

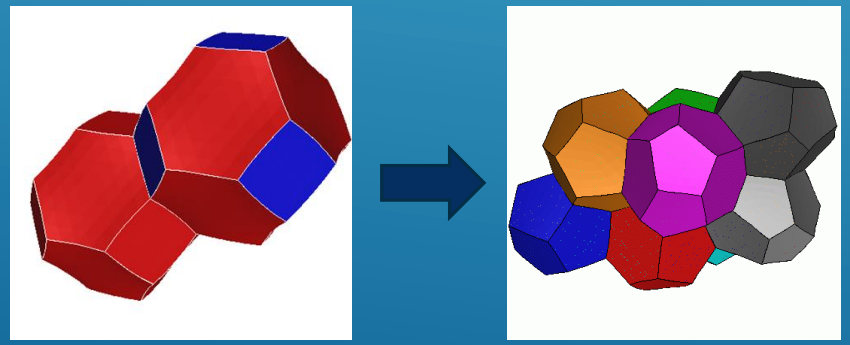


FIGURE 1. Space filling foam structures due to Kelvin and Weaire-Phelan.

FoamShield™

FOAMSHIELD™ 'BLANKET' OF FOAM

HOW DOES IT WORK?

In order to prevent particles from getting airborne, FoamShield™ foam is distributed across all surfaces of the material, ensuring that it is thoroughly and adequately wet.

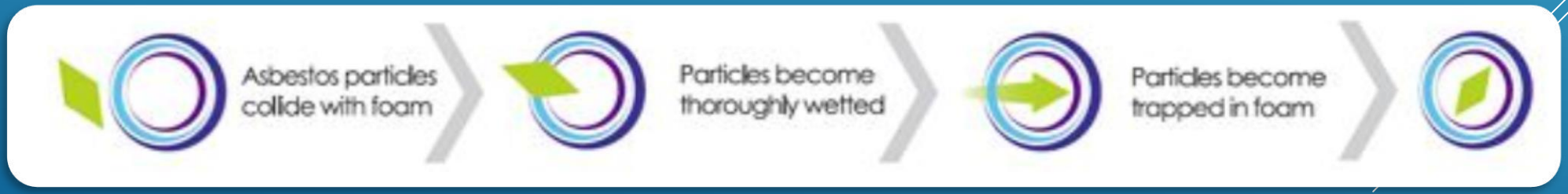
Any particles that collide with the foam bubbles will pierce the bubbles, therefore releasing the moisture held therein.

FoamShield™

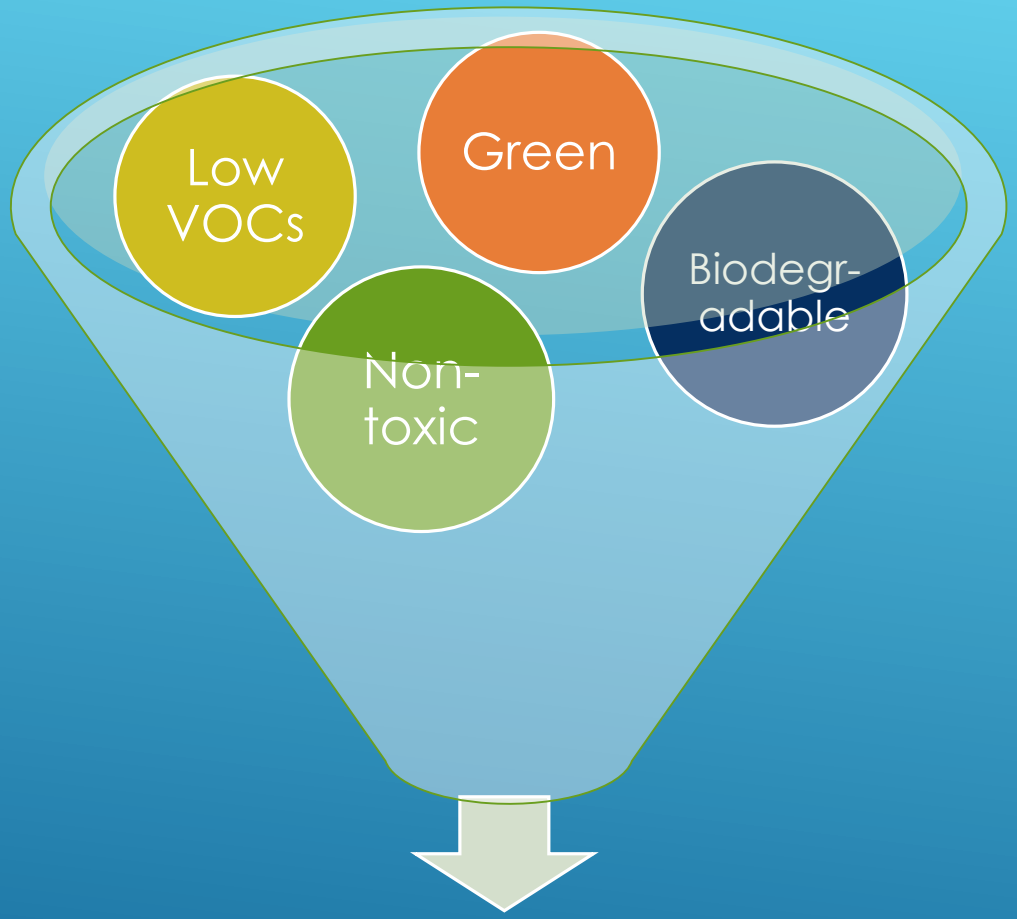
HOW DOES IT WORK?

The result is that the particle becomes thoroughly wetted and its increased weight causes it to fall back on to the main body of the material.

The wetted particles will then continue their entire journey without ever getting airborne.



FoamShield™



FoamShield™ Foam

FOAMSHIELD™ particle capture technology

Safety Data Sheet	FOAMSHIELD FS-DSy

SECTION 1: Identi

Product identifier

Product Name: FO
CAS: Mixture

Details of the su
Company name: SEY
Full address: 244 JOI
PENDE
Telephone number: (

Emergency telep
Chemical Informati
Emergency telepho

SECTION 2: Hazar

Classification of
2.1.1 According t
GHS Classificatio

Label elements:

According to Regu
Signal Word: Wa

Symbol:

SDS Version 1.0

Safety Data Sheet	FOAMSHIELD FS-DSy

7.2 Conditions for sav
Keep container tigh

SECTION 8: Exposure

8.1 Control parameter

Chemical Name	
Sodium Lauryl Ether Sulfate	
Ammonium Lauryl Ether Sulfate	
Dodecyl Benzene Sulfonic Acid	
Alkyl Polyglucoside	
Sodium hydroxide	

8.2 Exposure Cont

8.2.1 Appropri
control worker ex

8.2.2 Individua

General: Make s
distance from wo

Eye/face protec
or goggl
althougl

Skin protection

Respiratory pro

8.2.3 Environmental exp
environment.

SECTION 9: Physical a

9.1 Information on b

Physical state:
Colour:
Odour:
pH:

SDS Version 1.0

Safety Data Sheet	FOAMSHIELD FS-DSy

Melting point:	Not Applicable
Boiling point:	>100°C (>212°F)
Flash point:	>100°C
Evaporation rate:	Not available
Flammability:	Not available
Upper/lower flammability or explosive limits:	No available
Vapour pressure:	Not available
Vapour density:	Not available
Relative density:	Not available
Solubility (ies) in water (T = 20 °C):	Miscible in water
Partition coefficient: n-octanol/water:	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity:	300 cps – 1000 cps
Explosive properties:	Not available
Oxidising properties:	Not available

SECTION 10: Stability and reactivity

10.1 **Reactivity:** None known.

10.2 **Stability:** The product is stable.

10.3 **Possibility of hazardous reactions:** Under normal conditions, storage, and use, hazardous reactions will not occur.

10.4 **Conditions to avoid:** Incompatible materials.

10.5 **Materials to avoid:** Avoid contact with strong oxidizing agents.

10.6 **Hazardous decomposition products:** Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

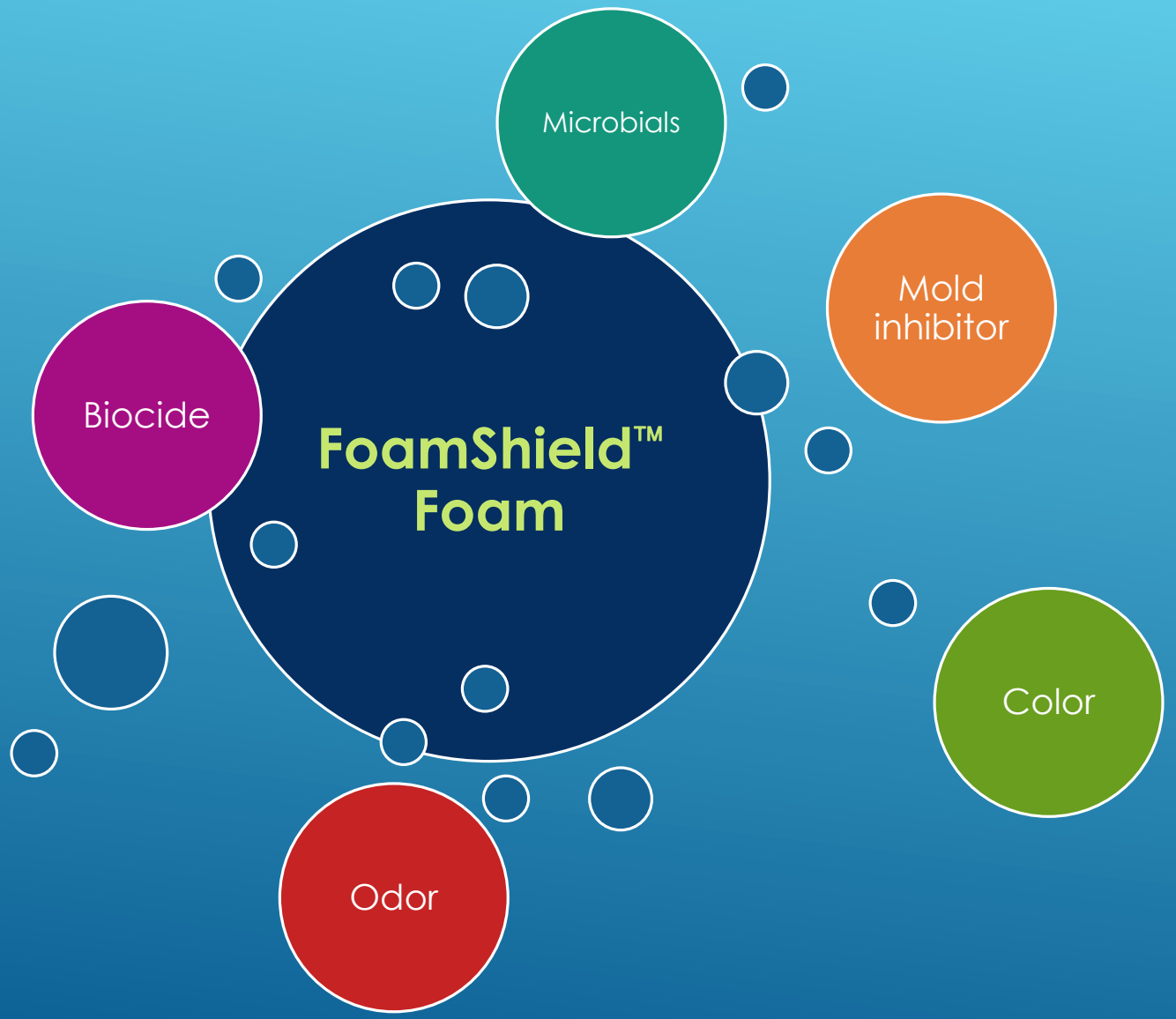
Route(s) of exposure: Skin contact, Eye contact, Inhalation, Ingestion.

Symptoms

Eye contact:	Adverse symptoms may include irritation, watering or redness.
Skin contact:	Redness, irritation
Inhalation:	No specific data
Ingestion:	No specific data

SDS Version 1.0 Page 5 of 10 June 2017

SPECIFICALLY DESIGNED PER PROJECT



BENEFITS OF FOAMSHIELD™

- Proven History
- Worker & Environmental Safety
- Significant Cost Savings
- Savings of Resources
- Pro-Active vs. Re-Active System
- Green Technology

FOAM IS A CARRYING AGENT AND CAN BE USED IN NUMEROUS APPLICATIONS

FoamShield™

FOAM IS A CARRYING AGENT AND CAN BE USED IN NUMEROUS APPLICATIONS

FoamShield™

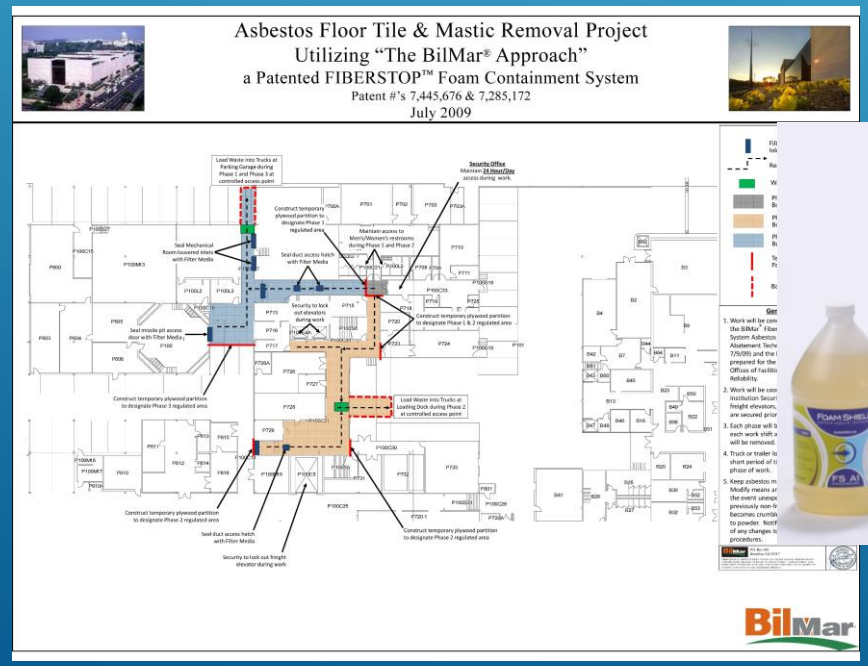
FOAMSHIELD™ FOAM CAPTURES AND CONTAINS ALL DIFFERENT TYPES OF PARTICULATE MATTER

FOAMSHIELD™ PROJECTS

Each FoamShield™ project is custom designed.

Based on the Scope of Work:

- a Work Plan is established
- Foam is either chosen from our current FoamShield™ product line or engineered specifically for the project
- a certified FoamShield™ foamer is selected



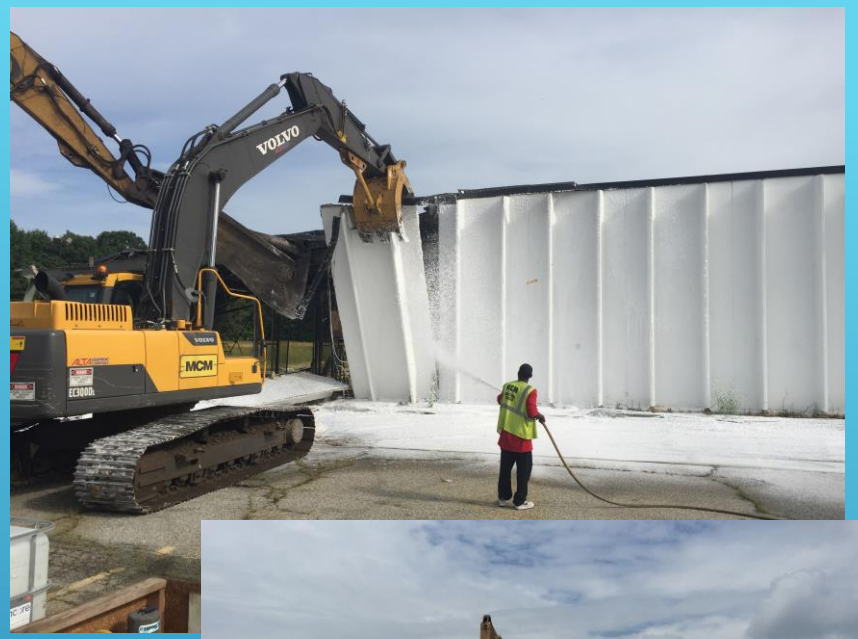
HIGHLIGHTED FOAMSHIELD™ PROJECTS

Concrete Panels

Floor Tile and Mastic

House Demolition

Concrete Panels



Job Overview:

- Precast concrete panels were covered in an asbestos containing stucco
- FoamShield™ was used to contain particulate matter
- Extensive air data sampling was performed including
  - Asbestos
  - Silica and respiratory dust
  - RCRA 8 metals
- ALL air sampling results showed no exposure above the PEL
  (air data reports in Supporting Documentation section)

FoamShield™

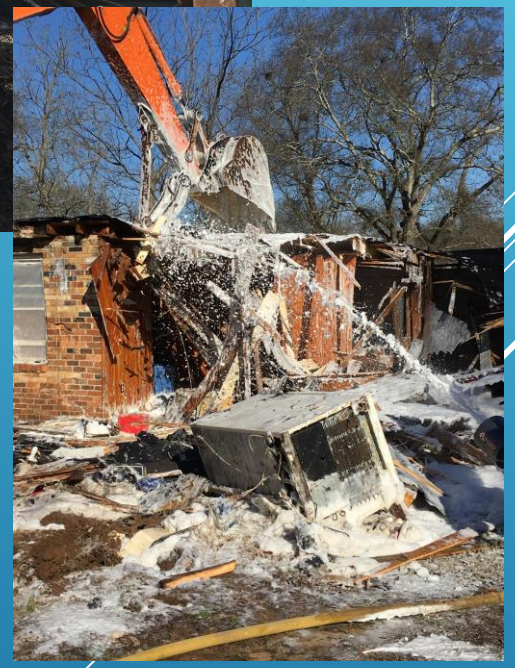
Floor Tile and Mastic

Job Overview:

- One of the first demonstrations of FoamShield™ before the Georgia EPD as well as members of US EPA
- Floor tile and mastic were removed in an occupied University library
- FoamShield™ was used as the control method to contain particulate matter
- Extensive asbestos air data sampling was performed
- ALL air sampling results showed no exposure above the PEL

FoamShield™

House Demolition



Job Overview:

- Demolition of abandoned single family dwelling owned by a local municipality. Dwelling contained asbestos building materials and these materials were left in place during demolition.
- FoamShield™ was used as the control method to contain particulate matter
- Elaborate TEM testing was performed to determine how many asbestos fibers were released during demolition
- Eight hour perimeter sampling using TEM analysis reveled only ONE asbestos fiber in the ambient air!

FoamShield™

SUPPORTING DOCUMENTATION OF THE FOAMSHIELD™ PROCESS

- Air Monitoring Results (multiple projects)
- U.S. EPA on FoamShield™
- Georgia Environmental Protection Division on FoamShield™
- Certification from Ph.D. in Environmental Engineering
- FoamShield™ prior project references

ALTERNATIVE CONSTRUCTION & ENVIRONMENTAL SOLUTIONS, INC.

2247 Wrightsboro Road
Augusta, GA 30904

Mailing Address: PO Box 3229, Augusta, GA 30914-3229
Telephone: 706-262-2000 • Facsimile: 706-262-3299 • www.aces-usa.com

May 9, 2005

Client: Bil-Mar Environmental, Inc.
PO Box 189
Brasleton, Georgia 30517
Attn: Mr. Bill Martin

Project: Georgia Tech – Library 1st Floor East Wing
Atlanta, Georgia
Asbestos Bulk Sampling
Report Number: 653-101-001

On May 5, 2005, a representative of Alternative Construction & Environmental Solutions, Inc. (ACES) was present at the above referenced project and collected twenty bulk samples to be analyzed by Polarized Light Microscopy for asbestos analysis. These samples were submitted to a NIST/NVLAP accredited laboratory for analysis. The following is a summary of the analysis results.

SUMMARY OF ANALYSIS RESULTS

Sample ID	Sample Location	Sample Description	Analysis Results
TL 1A-E	Ceiling	1 x 1 Ceiling Tiles	ND
TL 2A-C	Floor	9 x 9 Beige Floor Tile and Black Mastic	10% CH
TL 3A-C	Ceiling Ductwork & Upper Floor Decking	Fireproofing/Sprayed on Insulation (Dark Brownish Grey)	ND
TL 4A-C	Decking above Drop Ceiling	Sprayed on Insulation/Fireproofing (Light Grey)	ND
TL 5A-C	Walls	Drywall Joint Compound	3% CH
TL 6A-C	Walls	Drywall	3% CH

ND – None Detected
CH – Chrysotile

A copy of the laboratory analysis sheets is attached. This report relates only to the materials submitted and analyzed. This report shall not be reproduced, except in whole, and only with the written approval of Alternative Construction & Environmental Solutions, Inc.

ALTERNATIVE CONSTRUCTION & ENVIRONMENTAL SOLUTIONS, INC.

Dan D. Troutman
President

DDT/lfm

Attachments

ALTERNATIVE CONSTRUCTION & ENVIRONMENTAL SOLUTIONS, INC.

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May 9, 2005

Client: Bil-Mar Environmental, Inc.
PO Box 189
Brasleton, Georgia 30517
Attn: Mr. Bill Martin

Project: Georgia Tech – Library 1st Floor East Wing
Atlanta, Georgia
TEM Background Air Sampling
Report Number: 653-101-002

On May 5, 2005, a representative of Alternative Construction & Environmental Solutions, Inc. (ACES) was present at the above referenced building to obtain TEM background air samples. This report relates only to the materials tested and may not be accurate at a significantly later date. In addition, this report shall not be reproduced except in full and with the written consent of ACES. The following is a summary of that inspection with necessary documents referenced and attached.

1.0 SCOPE OF WORK

The scope of work included first obtaining five air samples to be analyzed by Transmission Electron Microscopy (TEM). The samples were to be obtained utilizing the AHERA protocol. The blanks were not analyzed due to the results obtained.

2.0 SUMMARY OF AIR SAMPLING AND TEM ANALYSIS

The following is a summary of samples taken and analysis performed for the air samples taken at the referenced project.

Sample ID	Location	Result	LOD
GT-1	Reading Area	<16.529	s/mm^2
GT-2	Circulation Department Door	<16.529	s/mm^2
GT-3	Reading Area	<16.529	s/mm^2
GT-4	Outside 2nd Level in Fountain	<16.529	s/mm^2
GT-5	Outside 1st Level at Loading Dock	<16.529	s/mm^2
	Average of all readings	16.529 s/mm^2	

3.0 CONCLUSION

Based on the above samples and subsequent analysis, the overall average of readings were below the required levels as established by the AHERA Regulation.

4.0 ATTACHMENTS

The following items are attached to and made a part of this report:

Attachment 1: TEM Analysis Results w/Chain of Custody

ALTERNATIVE CONSTRUCTION & ENVIRONMENTAL SOLUTIONS, INC.

Dan D. Troutman
President

DDT/lfm

Attachments

ALTERNATIVE CONSTRUCTION & ENVIRONMENTAL SOLUTIONS, INC.

2247 Wrightsboro Road
Augusta, GA 30904

Mailing Address: PO Box 3229, Augusta, GA 30914-3229
Telephone: 706-262-2000 • Facsimile: 706-262-3299 • www.aces-usa.com

July 8, 2005

Client: William R Martin
PO Box 189
Brasleton, Georgia 30517

Project: Georgia Tech – Library 1st Floor East Wing Annex
Atlanta, Georgia
Air Sampling during Floor Tile Removal utilizing the BilMar Method
Report Number: 653-101-003

On May 5 and 10 through 13, 2005, representatives of Alternative Construction & Environmental Solutions, Inc. (ACES) were present at the above referenced building to obtain Phase Contrast Microscopy (PCM) and Transmission Electron Microscopy (TEM) background, area, and personnel air samples during the removal of asbestos containing floor tile and mastic utilizing the BilMar Method. This report shall not be reproduced except in full and with the written consent of ACES. The following is a summary of the sampling and results with necessary documents referenced and attached.

1.0 SCOPE OF WORK

The scope of work included first obtaining five indoor and outdoor background air samples to be analyzed by TEM before the asbestos abatement project began. The samples were obtained and analyzed utilizing the U.S. EPA AHERA TEM protocol. The field blanks were not analyzed because no asbestos fibers were detected in the actual air samples.

Bulk samples were collected of all suspect asbestos containing materials in the area and analyzed using EPA specified Polarized Light Microscopy (PLM) Method. The laboratory that performed these analyses is accredited under the EPA required NIST/NVLAP Program.

The abatement of the asbestos containing floor tile and mastic was performed using the BilMar Method. It uses a fiber control compound to keep the floor tile wet during the entire removal process and then utilizes a mastic removal compound to keep the mastic wet during removal.

During the abatement project, air samples were collected on personnel, inside/outside abatement area, and inside/outside of the library. These samples were analyzed utilizing PCM and TEM analysis. PCM analysis counts all fibers equal to or longer than 5

micrometers and that have a length-to-width ratio (aspect ratio) of 3:1 or greater as asbestos. Some or many of the fibers counted by this method or not asbestos. The limit of detection was calculated based on actual volumes of air sampled and a fiber loading of 5 fibers per 100 fields as recommended in the method. TEM analysis can distinguish asbestos fibers from other types of fibers and can even detect the small thin fibers commonly found at abatement sites. Finally, clearance air sampling inside and outside of the abatement area was conducted and the samples analyzed using PCM analysis first and then TEM analysis.

The Field Technician that collected the samples has completed and holds a certificate from the NIOSH 582 course. The Laboratory that completed the TEM analysis is accredited by the National Institute of Standards and Technology (NIST).

Multiple representatives of Georgia Tech, Board of Regents of the University System of Georgia and Georgia EPD were invited to visit and observe the abatement and sampling. They did so at various dates and times.

2.0 SUMMARY OF BULK SAMPLING

The following bulk samples were taken on May 5, 2005 and delivered to Analytical Environmental Services, Inc. for analysis.

TABLE I
Bulk Samples/PLM Analysis
Before Abatement

Sample ID	Sample Location	Sample Description	PLM Analysis Results
TL 1A-E	Ceiling	1 x 1 Ceiling Tiles	ND
TL 2A-C	Floor	9 x 9 Beige Floor Tile	10% CH
		Black Mastic	3% CH
TL 3A-C	Ceiling Ductwork & Upper Floor Decking	Fireproofing/Sprayed on Insulation (Dark Brownish Grey)	ND
TL 4A-C	Decking above Drop Ceiling	Sprayed on Insulation/Fireproofing (Light Grey)	ND
TL 5A-C	Walls	Drywall Joint Compound	3% CH
TL 6A-C	Walls	Drywall	3% CH

ND – None Detected
CH – Chrysotile
Reference Criteria: All materials with asbestos content greater than 1% are defined as asbestos-containing materials

3.0 SUMMARY OF AIR SAMPLING AND PCM/TEM ANALYSIS

The following tables are a summary of the samples taken, the analysis performed, and the analytical results. The limits of detection for a specific sample and analytical technique are indicated by less than (<).

a. Area air samples were collected before and during the abatement of the asbestos containing floor tile and mastic.

(1) The following samples were collected prior to the start of the abatement of the asbestos containing floor tile and mastic.

TABLE II
Background Samples Collected May 5, 2005/TEM Analysis
Before Abatement

Sample ID	Location	Sample Duration	Sample Volume	Result	Unit
GT-1	Reading Area	126 min	1373.4 L	<16.529	s/mm^2
GT-2	Circulation Department Door	125 min	1375.0 L	<16.529	s/mm^2
GT-3	Reading Area	121 min	1318.9 L	<16.529	s/mm^2
GT-4	Outside 2nd Level in Fountain	120 min	1320.0 L	<16.529	s/mm^2
GT-5	Outside 1st Level at Loading Dock	127 min	1371.6 L	<16.529	s/mm^2

Reference: Criteria: Established background levels prior to beginning abatement.

(2) During the collection of the following samples approximately 100 gallons of the floor tile removal solution was used to abate approximately 11,000 ft^2 of asbestos containing floor tile. There was roadwork being performed on an asphalt street (Cherry Street) during the sampling listed in the above table. The asphalt work was being performed less than 20 feet from sample #12 and upwind of sample #11.

TABLE III
Area Samples Collected May 10, 2005/PCM Analysis
During Abatement

Sample ID	Location	Sample Duration	Sample Volume	Result	Unit
11	Downwind of Project	190 min	570 L	0.010	f/cc
12	Outside of sealed window	192 min	576 L	0.021	f/cc
13	Inside Main Library outside sealed door	192 min	576 L	<0.005	f/cc
14	Outside of Entry - Loadout	181 min	543 L	0.008	f/cc
15	Inside Basement Computer Room	142 min	426 L	<0.006	f/cc

16	Inside abatement area - North Side	186 min	558 L	<0.005	f/cc
17	Inside abatement area - South Side	186 min	558 L	<0.005	f/cc
18	Inside abatement area - East Side	186 min	558 L	<0.005	f/cc
19	Inside abatement area - West Side	186 min	558 L	<0.005	f/cc
20	Inside Room 105 Communications Closet	190 min	570 L	<0.005	f/cc

Reference Criteria: OSHA PEL of 0.1 f/cc for 8 hour time weighted average and OSHA EL of 1.0 f/cc for a 30 minute exposure

(3) Three of the above samples were also analyzed by TEM. Sample number 12 was chosen because of it's close proximity to the roadwork and samples 16 and 19 were chosen at random from inside the containment.

TABLE IV
Area Samples Collected May 10, 2005/TEM Analysis
During Abatement

Sample ID	Location	Sample Duration	Sample Volume	Result	Unit
12	Outside of sealed window	192 min	576 L	< 8.264	s/mm^2
16	Inside abatement area -North Side	186 min	558 L	< 8.264	s/mm^2
19	Inside abatement area - West Side	186 min	558 L	< 8.264	s/mm^2

Reference Criteria: EPA Clearance Criteria of <70 s/mm^2

(4) During the collection of the following samples approximately 25 to 30 gallons of the floor tile removal solution was used to abate approximately 400 ft^2 of asbestos containing floor tile. Approximately 200 gallons of mastic remover was then used to abate approximately 11,400 ft^2 of mastic. The road work continued to be performed on Cherry Street.

TABLE V
Area Samples Collected May 11, 2005/PCM Analysis
During Abatement

Sample ID	Location	Sample Duration	Sample Volume	Result	Unit
29	Inside abatement area - North Side	480 min	1440 L	<0.002	f/cc
30	Inside abatement area - South Side	480 min	1440 L	<0.002	f/cc

31	Inside abatement area - East Side	480 min	1200 L	<0.002	f/cc
32	Inside abatement area - West Side	480 min	1200 L	<0.002	f/cc
33	Downwind of Project	480 min	1440 L	0.003	f/cc
34	Outside of sealed window	480 min	1440 L	0.007	f/cc
35	Inside Main Library outside sealed door	480 min	1440 L	<0.002	f/cc
36	Outside of Entry - Loadout	480 min	1200 L	0.004	f/cc
37	Inside Basement Computer Room	480 min	1200 L	<0.002	f/cc
38	Inside Room 105 Communications Closet	480 min	1440 L	<0.002	f/cc
40	Inside abatement area - North Side	153 min	559 L	0.005	f/cc
41	Inside abatement area - South Side	153 min	559 L	<0.005	f/cc
42	Inside abatement area - East Side	153 min	559 L	<0.005	f/cc
43	Inside abatement area - West Side	153 min	559 L	<0.005	f/cc
44	Downwind of Project	208 min	618 L	<0.004	f/cc
45	Outside of sealed window	148 min	444 L	<0.006	f/cc
46	Inside Main Library outside sealed door	148 min	444 L	<0.006	f/cc
47	Outside of Entry - Loadout	151 min	453 L	<0.006	f/cc
48	Inside Room 105 Communications Closet	149 min	447 L	<0.006	f/cc

Reference Criteria: OSHA PEL of 0.1 f/cc for 8 hour time weighted average and OSHA EL of 1.0 f/cc for a 30 minute exposure

(5) The following samples were collected during the final clean-up and wipe-down of the area after all the asbestos containing floor tile and mastic had been removed. This is the activity in which we would expect the highest fiber concentrations. There are multiple reasons for this, including the use of wet rags that could dry during the cleaning process and the fact that the solvents have unbound many fibers from the initial matrix.

TABLE VI
Area Samples Collected May 12, 2005/TEM Analysis
During Final Clean-up

Sample ID	Location	Sample Duration	Sample Volume	Result	Unit
TEM 49	Inside abatement area - North Side	400 min	1200 L	<16.529	s/mm^2

TEM 50	Inside abatement area - South Side	400 min	1200 L	<16.529	s/mm^2
TEM 51	Inside abatement area - East Side	400 min	1200 L	<16.529	s/mm^2
TEM 52	Inside abatement area - West Side	400 min	1200 L	<16.529	s/mm^2
TEM 53	Inside Store Room outside sealed door	400 min	1200 L	<16.529	s/mm^2
TEM 54	Inside Main Library outside sealed door	400 min	1200 L	33.058	s/mm^2

Reference Criteria: OSHA PEL of 0.1 f/cc for 8 hour time weighted average and OSHA EL of 1.0 f/cc for a 30 minute exposure. EPA Clearance Criteria of <70 s/mm^2

b. Personnel air samples were collected during the abatement of the asbestos containing floor tile and mastic to meet the OSHA requirements found in 29 CFR 1910.1001 and 29 CFR 1926.1101.

(1) During the collection of the following samples approximately 100 gallons of the floor tile removal solution was used to abate approximately 11,000 ft^2 of asbestos containing floor tile.

TAVLE VII
Personnel Samples Collected May 10, 2005/PCM Analysis
During Abatement

Sample ID	Person	Sample Duration	Sample Volume	Result	Unit
3	Francisco Cuadra	195 min	390 L	<0.007	f/cc
4	Victor Vasquez	195 min	390 L	<0.007	f/cc
5	Eugenio	195 min	390 L	<0.007	f/cc
6	Augustine Hernaro	195 min	390 L	<0.007	f/cc
7	Tito	195 min	390 L	<0.007	f/cc
8	Noel Ruis (30 minute excursion)	30 min	60 L	<0.045	f/cc

Reference Criteria: OSHA PEL of 0.1 f/cc for 8 hour time weighted average and OSHA EL of 1.0 f/cc for a 30 minute exposure

(2) During the collection of the following samples approximately 25 to 30 gallons of the floor tile removal solution was used to abate approximately 400 ft^2 of asbestos containing floor tile. Approximately 200 gallons of mastic remover was then used to abate approximately 11,400 ft^2 of mastic.

TABLE VIII
Personnel Samples Collected May 11, 2005/PCM Analysis
During Abatement

Sample ID	Person	Sample Duration	Sample Volume	Result	Unit
21	Francisco Cuadra	480 min	960 L	<0.003	f/cc
22	Victor Vasquez	480 min	960 L	<0.003	f/cc
23	Eugenio	480 min	960 L	0.004	f/cc
24	Augustine Hernaro	480 min	960 L	* Unreadable	f/cc
25	Tito	480 min	960 L	<0.003	f/cc
26	Noel Ruis (30 minute excursion)	30 min	60 L	<0.045	f/cc

* During the collection of sample #24, the worker was carrying a bag of cellulose insulation into the work area over his shoulder. This bag had burst open while still on his shoulder and the cellulose insulation overloaded the cassette. This cellulose material was used during mastic removal for mastic absorption and collection.

c. Clearance air samples were collected and analyzed after the removal and clean-up of asbestos containing floor tile and mastic.

TABLE IX
Aggressive Clearance Samples Collected May 12, 2005/PCM Analysis
After Final Clean-up

Sample ID	Location	Sample Duration	Sample Volume	Result	Unit
58	Inside abatement area - North Side	120 min	1200 L	<0.002	f/cc
59	Inside abatement area - South Side	120 min	1200 L	<0.002	f/cc
60	Inside abatement area - East Side	120 min	1200 L	<0.002	f/cc
61	Inside abatement area - West Side	120 min	1200 L	<0.002	f/cc
62	Outside Room 105 Communications Closet	120 min	1200 L	<0.002	f/cc
63	Outside of sealed window	240 min	1200 L	<0.002	f/cc
64	Downwind of Project	240 min	1200 L	<0.002	f/cc
65	Hallway of Library - First Floor, Main	240 min	1200 L	<0.002	f/cc
66	Upwind of Project	240 min	1200 L	<0.002	f/cc

67	Entrance to work area (stairs)	240 min	1200 L	<0.002	f/cc

TABLE X
Aggressive Clearance Samples Collected May 13, 2005/TEM Analysis
After Final Clean-up

Sample ID	Location	Sample Duration	Sample Volume	Result	Unit
71	Downwind of Project	240 min	1200 L	<16.529	s/mm^2
72	Upwind of Project	240 min	1200 L	<16.529	s/mm^2
73	Outside of sealed window	240 min	1200 L	<16.529	s/mm^2
74	Center of Library 1st Floor	120 min	1200 L	<16.529	s/mm^2
75	Center of 2nd Floor by Hallway	120 min	1200 L	<16.529	s/mm^2
76	Inside abatement area - North Side	120 min	1200 L	<16.529	s/mm^2
77	Inside abatement area - South Side	120 min	1200 L	<16.529	s/mm^2
78	Inside abatement area - West Side	120 min	1200 L	<16.529	s/mm^2
79	Inside abatement area - East Side	120 min	1200 L	16.529	s/mm^2
80	Outside Room 105 Communications Closet	120 min	1200 L	<16.529	s/mm^2

All air samples for TEM analysis were hand delivered to Analytical Environmental Services, Inc. for analysis.

4.0 ATTACHMENTS

The following items are attached to and made a part of this report:

Attachment 1: PCM/TEM Analysis Results w/Chain of Custody
Attachment 2: Abatement & Sampling Location Plan

ALTERNATIVE CONSTRUCTION & ENVIRONMENTAL SOLUTIONS, INC.

Dan D. Troutman
President

DDT/CEH/lfm

ALTERNATIVE CONSTRUCTION & ENVIRONMENTAL SOLUTIONS, INC.

2247 Wrightsboro Road
Augusta, GA 30904

Mailing Address: PO Box 3229, Augusta, GA 30914-3229
Telephone: 706-262-2000 • Facsimile: 706-262-3299 • www.aces-usa.com

August 2, 2005

Client: Bil-Mar Environmental, Inc.
PO Box 189
Brasleton, Georgia 30517
Attn: Mr. Bill Martin

Project: Georgia Tech – Library 1st Floor East Wing
Atlanta, Georgia
Floor Tile Removal utilizing the BilMar Method
Report Number: 653-101-004

On May 5 and 10 through 13, 2005, representatives of Alternative Construction & Environmental Solutions, Inc. (ACES) were present at the above referenced building to obtain Phase Contrast Microscopy (PCM) and Transmission Electron Microscopy (TEM) background, area, and personnel air samples during the removal of asbestos containing floor tile and mastic utilizing the BilMar Method. This report shall not be reproduced except in full and with the written consent of ACES.

1.0 REQUIREMENTS

All asbestos removal projects fall under the Occupational Safety and Health Administration (OSHA) and Environmental Protection Agency (EPA) regulations. These agencies list specific requirements for air sampling results that must be met by asbestos abatement contractors to ensure the protection of their workers and individuals that work adjacent to or will reoccupy the area. OSHA requirements can be found in 29 CFR 1910.1001 and 29 CFR 1926.1101. EPA requirements can be found in 40 CFR Part 763 and 40 CFR Part 61 Subpart M.

2.0 MEETING THE REQUIREMENTS

Listed below are specific OSHA and/or EPA requirements and how effective the BilMar System was at meeting them during this removal.

a. Requirement - Wet methods. Insofar as practicable, asbestos shall be handled, mixed, applied, removed, cut, scored, or otherwise worked in a wet state

sufficient to prevent the emission of airborne fibers so as to expose employees to levels in excess of the TWA and/or excursion limit, ...

BilMar – The BilMar system is a wet method system that keeps the floor tile and mastic wet at all times during removal.

b. Requirement - Time-weighted average limit (TWA). The employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 fiber per cubic centimeter of air as an eight (8)-hour time-weighted average (TWA)...

BilMar – Personnel eight hour TWA air sampling accomplished during the removal of the floor tile during this project all showed results well below the 0.1 fiber per cubic centimeter (f/cc) standard.

c. Requirement - Excursion limit. The employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 1.0 fiber per cubic centimeter of air (1 f/cc) as averaged over a sampling period of thirty (30) minutes...

BilMar – Personnel excursion limit sampling accomplished during the removal of the floor tile during this project all showed results well below the 1.0 f/cc standard.

d. Requirement – Although there are no set clearance levels for most buildings, there is a clearance level established by 40 CFR Part 763 for schools.

BilMar – Clearance sampling accomplished after the removal of the floor tile during this project all showed results well below the 70 structures per square millimeter (s/mm^2) standard.

3.0 CONCLUSIONS

The BilMar Method used during the removal of the asbestos containing floor tile and mastic during this project met the requirements for worker protection shown in the air sampling results. The clearance TEM sampling, conducted at the end of the removal, showed the area being turned back over to the school for occupancy met the requirements for protection of the occupants.

ALTERNATIVE CONSTRUCTION & ENVIRONMENTAL SOLUTIONS, INC.

Dan D. Troutman
President

DDT/CEH/lfm

ALTERNATIVE CONSTRUCTION & ENVIRONMENTAL SOLUTIONS, INC.

2247 Wrightsboro Road
Augusta, GA 30904

Mailing Address: PO Box 3229, Augusta, GA 30914-3229
Telephone: 706-262-2000 • Facsimile: 706-262-3299 • www.aces-usa.com

August 2, 2005

Client: Bil-Mar Environmental, Inc.
PO Box 189
Brasleton, Georgia 30517
Attn: Mr. Bill Martin

Project: Georgia Tech – Library 1st Floor East Wing
Atlanta, Georgia
Floor Tile Removal utilizing the BilMar Method
Report Number: 653-101-005

On May 5 and 10 through 13, 2005, representatives of Alternative Construction & Environmental Solutions, Inc. (ACES) were present at the above referenced building to obtain Phase Contrast Microscopy (PCM) and Transmission Electron Microscopy (TEM) background, area, and personnel air samples during the removal of floor tile utilizing the BilMar Method. ACES was working jointly for BilMar Environmental and the Georgia Institute of Technology. This report shall not be reproduced except in full and with the written consent of ACES.

The BilMar Method is just one way of removing floor tile. The important result of the removal is the protection of workers and building occupants while completely removing the asbestos floor tile and mastic material.

The results of the air sampling conducted during the removal of the floor tile during this project were better or similar to results previously found and expected to be found by other removal methods of floor tile and mastic on projects similar in scope.

ALTERNATIVE CONSTRUCTION & ENVIRONMENTAL SOLUTIONS, INC.

Dan D. Troutman
President

DDT/CEH/lfm

Arc Environmental, Inc.

July 6, 2015

Dr. Steve Martin
MCM Management
39580 Woodward Avenue
Suite 200
Bloomfield Hills, MI 48304

RE: Asbestos Project Air Sampling
Period: (4-27-15 through 6-29-15)
Murry's (8210 Penn Randall Place, Upper Marlboro, MD)
Project No. 414-5

Dear Dr. Martin:

Arc Environmental (Arc) performed personal air and work area/perimeter sampling and analysis at the Site known as Sparrows Point from April 27 through June 29, 2015. Murry's is located at 8210 Penn Randall Place, Upper Marlboro, MD.

Arc Industrial Hygienists, Mr. Andy Bresko, Mr. Jim Lovell, and Mr. Ibe Okonkwo performed personal air and work area/perimeter sampling and analysis of the abatement activities. All samples were analyzed via Phase Contrast Microscopy (PCM) in accordance with the National Institute for Occupational Safety and Health (NIOSH) Method 7400. PCM analysis was performed by Mr. Andy Bresko, Mr. Jim Lovell, and Mr. Ibe Okonkwo who have completed the NIOSH 582 equivalency course. Abatement activities were completed by asbestos workers and supervisors who have met the requirements to be accredited under TSCA Title II and the State of Maryland. The asbestos abatement activities were conducted by Maryland Licensed Asbestos Abatement contractor MCM Management (MCM).

The Occupational Safety and Health Administration's (OSHA) Permissible Exposure Limit (PEL) is 0.1 f/cc of air as an 8 hour Time Weighted Average (TWA). Workers donning half mask air-purifying respirators have a protection factor increase of ten times assuming an employer sponsored respirator program exists, including training, fit testing, maintenance, and use requirements. All of the personal monitoring samples that were analyzed indicated results that were found to be below the PEL 0.1 f/cc while wearing a half mask air-purifying respirator, no further action is required. All asbestos perimeter work area/perimeter samples were less than the PEL 0.1 f/cc, no further action is required. All asbestos workers and supervisors employed by MCM on-site during this period maintained valid and current Training Certificates. Daily Asbestos Logs, Asbestos Monitoring Data Sheets, and Daily Sign In Logs are attached to this report.

Arc Environmental is pleased to have performed this air monitoring and analysis for MCM Management. If you have any questions please call us at (410) 659-9971.

Sincerely,

Arc Environmental,

Andrew Bresko

Project Manager

Attachments (sorted chronologically)

- Daily Asbestos Logs
- Asbestos Monitoring Data Sheets
- Daily Sign In Logs

Asbestos Project Daily Log

Date: April 22, 2015 **Contractor:** MCM Management

Client: MCM Management **Industrial Hygienist:** Andy Bresko

Project: Murry's

Time	Notes
0645	Arc has arrived on site to observe the work site and perform Asbestos background sampling.
0700	MCM is staging equipment and performing a pre- abatement and demolition walkthrough of the warehouse.
0806	Arc is setting up background samples at various abatement areas in the interior of the warehouse.
1439	Arc is retrieving background samples for PCM analysis at the office.
1530	Arc has left the site.

Asbestos Monitoring Data Sheet

Date: April 22, 2015
Client: MCM Management
Project: Murry's

Contractor: MCM Management
Industrial Hygienist: Andy Bresko

Sample ID	Sampling Location	Type	Flow rate L/Minute	Start Time	Stop Time	Total Minutes	Total Volume	Fibers/ Field	Results F/cc
042215-01	Compressor Room	BG	2.8	0806	1439	393	1100.4	2.5/100	<0.01
042215-02	Office Next to Lunch Room	BG	2.8	0810	1445	395	1106.0	0.5/100	<0.01
042215-03	Print Shop	BG	2.8	0813	1448	395	1106.0	4.5/100	<0.01
042215-04	Store	BG	2.8	0817	1451	394	1103.2	0/100	<0.01
042215-05	Freezer	BG	2.8	0822	1454	392	1097.6	3/100	<0.01
042215-FB1		FB						1/100	
042215-FB2		FB						0/100	

Key
EV: Environmental BG: Background WA: Work Area FC: Final Clearance PS: Personal FB: Field Blank

Comments:

Asbestos Monitoring Project Daily Log

Date: April 24, 2015

Client: MCM Management

Project: Murry's

Contractor: MCM Management

Industrial Hygienist: Jim Lovell

Time	Notes
0645	Arc has arrived onsite.
0730	Conducted a previsual of the Print Shop containment area. Gave the ok for MCM to start removal of the floor tile and mastic.
0748	Arc is setting up area monitoring pumps and personal monitoring pump with Antonio Boles at the containment.
0915	Checked on the progress of the work and the containment.
1015	Checked on the progress of the work and the containment.
1100	All of the floor tile has been removed and they are now bagging it out of the containment.
1145	MCM has started to remove the floor tile mastic.
1430	Arc has left the site.

Asbestos Monitoring Data Sheet

Date: April 24, 2015
Client: MCM Management
Project: Murry's
Contractor: MCM Management

Industrial Hygienist: Jim Lovell

Sample ID	Sampling Location	Sample Type	Flow rate L/Minute	Start Time	Stop Time	Total Minutes	Total Volume	Fibers/Field	Results F/cc
042415-P1	Antonio Boles	EX	2.5	0745	0815	30	75	4/100	0.02
042415-P2	Antonio Boles	PS	2.5	0815	1402	347	867.5	15/100	<0.01
042415-E1	Outside of Decon – Print Shop	EV	2.5	0745	1402	377	942.5	9/100	<0.01
042415-B1	Field Blank	FB						0	
0424155-B2	Field Blank	FB						0	

Key
EV: Environmental BG: Background WA: Work Area FC: Final Clearance PS: Personal FB: Field Blank EX: Excursion

COMMENTS:

Asbestos Daily Sign In Log

Date: April 24, 2015
Client: MCM Management
Project: Murry's

Contractor: MCM Management
Industrial Hygienist: Jim Lovell

Name	Title	Certifications
Antonio Boles	Supervisor	128030
William A. Howard	Supervisor	128031
John Smith	Supervisor	129623
Thomas Sutherland	Supervisor	128521
Larry Thomas	Supervisor	130119

Asbestos Monitoring Project Daily Log

Date: April 27, 2015

Client: MCM Management

Project: Murry's

Contractor: MCM Management

Industrial Hygienist: Jim Lovell

Time	Notes
0645	Arc has arrived onsite.
0710	Arc is setting up area monitoring pumps and personal monitoring pump with Antonio Boles at the containment. MCM is removing floor tile mastic in the print shop and the small offices.
0915	Checked on the progress of the work and the containment.
1010	MCM is bagging out waste.
1130	Checked on the progress of the work and the containment.
1200	MCM has gone to lunch.
1300	MCM is back from lunch
1417	Checked on the status of the removal and the containment.
1600	Conducted a final visual on the print shop and small offices.
1700	Off Site.

Asbestos Monitoring Data Sheet

Date: April 27, 2015
Client: MCM Management
Project: Murry's
Contractor: MCM Management

Industrial Hygienist: Jim Lovell

Sample ID	Sampling Location	Sample Type	Flow rate L/Minute	Start Time	Stop Time	Total Minutes	Total Volume	Fibers/Field	Results F/cc
042715-P1	Antonio Boles	PS	2.5	0710	1600	550	1375	21/100	<0.01
042715-E1	Outside of Decon - Offices	EV	2.5	0710	1600	550	1375	9/100	<0.01
042715-E2	Outside of Decon – Print Shop	EV	2.5	0710	1600	550	1375	4/100	<0.01
042715-B1	Field Blank	FB						0	
042715-B2	Field Blank	FB						0	

Key
EV: Environmental BG: Background WA: Work Area FC: Final Clearance PS: Personal FB: Field Blank EX: Excursion

COMMENTS:

Asbestos Daily Sign In Log

Date: April 27, 2015
Client: MCM Management
Project: Murry's

Contractor: MCM Management
Industrial Hygienist: Jim Lovell

Name	Title	Certifications
Antonio Boles	Supervisor	128030
William A. Howard	Supervisor	128031
John Smith	Supervisor	129623
Thomas Sutherland	Supervisor	128521
Larry Thomas	Supervisor	130119

Asbestos Monitoring Project Daily Log

Date: April 28, 2015

Client: MCM Management

Project: Murry's

Contractor: MCM Management

Industrial Hygienist: Jim Lovell

Time	Notes
0645	Arc has arrived onsite.
0705	Started finals in the small office on the left and the print shop.
0907	Pulled finals from the small office on the left and the print shop.
0915	Started finals in the small office on the right and the compressor room.
1117	Pulled the finals
1145	Informed MCM that all four areas have passed and they can tear down all containments.
1200	MCM is going to lunch.
1300	MCM is back from lunch
1400	Off Site

Asbestos Monitoring Data Sheet

Date: April 28, 2015
Client: MCM Management
Project: Murry's **Contractor:** MCM Management

Industrial Hygienist: Jim Lovell

Sample ID	Sampling Location	Sample Type	Flow rate L/Minute	Start Time	Stop Time	Total Minutes	Total Volume	Fibers/Field	Results F/cc
042815-FC1	Print Shop	FC	9.9	0705	0907	122	1208	3/100	<0.01
042815-FC2	Office on theLeft	FC	9.9	0705	0907	122	1208	0/100	<0.01
042815-FC3	Compressor Room	FC	9.9	0915	1117	122	1208	7/100	<0.01
042815-FC4	Offices on the Right	FC	9.9	0915	1117	122	1208	00/100	<0.01
042815-B1	Field Blank	FB						0	
042815-B2	Field Blank	FB						0	

Key
EV: Environmental BG: Background WA: Work Area FC: Final Clearance PS: Personal FB: Field Blank EX: Excursion

COMMENTS:

Asbestos Daily Sign In Log

Date: April 28, 2015
Client: MCM Management
Project: Murry's

Contractor: MCM Management
Industrial Hygienist: Jim Lovell

Name	Title	Certifications
Antonio Boles	Supervisor	128030
William A. Howard	Supervisor	128031
John Smith	Supervisor	129623
Thomas Sutherland	Supervisor	128521
Larry Thomas	Supervisor	130119

Asbestos Monitoring Project Daily Log

Date: 05/04/15

Client: MCM

Project: Murry's

Contractor: MCM

Industrial Hygienist: Andy Bresko

Time	Notes
0630	Arc arrives on site; MCM notifies Arc that the demolition permit was not obtained. MCM is waiting on Foam Shield instructor personnel to train workers in proper use and application of the equipment and foam shield.
1300	MCM notifies Arc that the Foam Shield instructor will not be on site for training today; training will be performed tomorrow when the instructor arrives on site.

Asbestos Monitoring Project Daily Log

Date: 05/06/15

Client: MCM

Project: Murry's

Contractor: MCM

Industrial Hygienist: Andy Bresko

Time	Notes
0630	Arc arrives on site.
0800	The Foam Shield instructor arrives on site and is prepping for the days training of use of the Foam Shield and equipment.
0900	The Foam Shield instructor begins the training.
1300	Training is complete for the day and the instructor will be observing hands on usage. Arc is leaving the site for the day.

Asbestos Monitoring Project Daily Log

Date: 05/12/15

Client: MCM

Project: Murry's

Contractor: MCM

Industrial Hygienist: Andy Bresko

Time	Notes
0615	Arc arrives on site prepping for day's air sampling.
0645	MCM is performing pre abatement/demo set up.
1045	Arc sets up air sampling pumps area/perimeter North and West of the abatement/demo and personals with heavy machinery operator Richard Lange and hose operator Bill Howard.
1200	MCM breaks for lunch.
1300	MCM returns to work activities.
1320	Arc sets up excursion sample with heavy machinery operator Ed Zillian.
1350	Arc retrieves excursion sample.
1445	Arc sets up excursion sample with ground worker Thomas Sutherland.
1515	Arc retrieves excursion sample and area/perimeter samples.
1544	Arc is retrieving personal samples.
1600	Arc is working on paperwork.
1630	Arc has left the site.

Asbestos Monitoring Data Sheet

Date: 05/12/15
Client: MCM
Project: Murry's **Contractor:** MCM

Industrial Hygienist: Andy Bresko

Sample ID	Sampling Location	Sample Type	Flow rate L/Minute	Start Time	Stop Time	Total Minutes	Total Volume	Fibers/ Field	Results F/cc
051215-01	Richard Lange Jr., Shear Operator	PS	2.5	1109	1544	275	687.5	9/100	<0.01
051215-02	Bill Howard, hose operator	PS	2.5	1109	1552	283	707.5	2.5/100	<0.01
051215-03	West of Abatement/Demo	WA	2.5	1046	1515	269	672.5	4.5/100	<0.01
051215-04	North of Abatement/Demo	WA	2.5	1058	1518	261	652.5	2.5/100	<0.01
051215-05	Edward Zillian Grapple Operator	EX	2.0	1320	1350	30	60	1.5/100	0.01
051215-06	Thomas Sutherland ground worker	EX	2.0	1445	1515	30	60	1.0/100	<0.01
051215-FB1	Field Blank	FB						0/100	
051215-FB2	Field Blank	FB						0/100	

Key
EV: Environmental BG: Background WA: Work Area FC: Final Clearance PS: Personal FB: Field Blank

COMMENTS: EX = Excursion, PS = 8 Hour TWA

Asbestos Daily Sign In Log

Date: 05/12/15
Client: MCM
Project: Murry's

Contractor: MCM
Industrial Hygienist: Andy Bresko

Name	Title	Certifications
Mike Smith	Supervisor	129623
Bill Howard	Worker	128031
Antonio Boles	Worker	128030
Thomas Sutherland	Worker	128521
Richard Lange	Worker	126801
Ed Zillian	Worker	129553
Mike Smith	Supervisor	129623

Asbestos Monitoring Project Daily Log

Date: 05/14/15

Client: MCM

Project: Murry's

Contractor: MCM

Industrial Hygienist: Andy Bresko

Time	Notes
0635	Arc arrives on site prepping for days sampling.
0654	Arc is setting up air sampling, personals with Ed Zillian and Antonio Boles and area samples South and West of demo/abatement.
1200	MCM is breaking for lunch.
1300	MCM returns to work activities.
1326	Arc sets up excursion samples with Operator Richard Lange and ground worker Thomas Sutherland.
1356	Arc is retrieving excursion samples.
1446	Arc is retrieving air samples for the day.
1530	Arc has left the site.

Asbestos Monitoring Data Sheet

Date: 05/14/15
Client: MCM
Project: Murry's **Contractor:** MCM

Industrial Hygienist: Andy Bresko

Sample ID	Sampling Location	Sample Type	Flow rate L/Minute	Start Time	Stop Time	Total Minutes	Total Volume	Fibers/ Field	Results F/cc
051415-01	Ed Zillian, loader operator	PS	2.5	0654	1446	472	1180	3.5/100	<0.01
051415-02	Antonio Boles, hose operator	PS	2.5	0657	1450	473	1182.5	6/100	<0.01
051415-03	Central West of Abatement/Demo	WA	2.5	0654	1455	481	1202.5	1/100	<0.01
051415-04	Southwest of Abatement/Demo	WA	2.5	0700	1455	475	1187.5	3.5/100	<0.01
051415-05	Thomas Sutherland ground worker	EX	2.0	1326	1356	30	60	0.5/100	<0.01
051415-06	Richard Lange, grapple operator	EX	2.0	1328	1358	30	60	0/100	<0.01
051415-FB1	Field Blank	FB						0/100	
051415-FB2	Field Blank	FB						0/100	

Key
EV: Environmental BG: Background WA: Work Area FC: Final Clearance PS: Personal FB: Field Blank

COMMENTS: EX = Excursion, PS = 8 Hour TWA

Asbestos Daily Sign In Log

Date: 05/14/15
Client: MCM
Project: Murry's

Contractor: MCM
Industrial Hygienist: Andy Bresko

Name	Title	Certifications
Mike Smith	Supervisor	129623
Bill Howard	Worker	128031
Antonio Boles	Worker	128030
Thomas Sutherland	Worker	128521
Richard Lange	Worker	126801
Ed Zillian	Worker	129553

Asbestos Monitoring Project Daily Log

Date: 05/15/15

Client: MCM

Project: Murry's

Contractor: MCM

Industrial Hygienist: Andy Bresko

Time	Notes
0630	Arc arrives on site is prepping for the days air sampling.
0656	Arc sets up air sampling pumps for the abatement/demo work areas and personal samples on Thomas Sutherland and Richard Lange.
0812	Arc is setting up excursion samples with operator Ed Zillian and ground worker Ed Zillian.
0842	Arc is retrieving excursion samples.
0911	Arc is retrieving personal and perimeter samples for the day. MCM is finished with abatement/demo and setting up the next work area. MCM will begin work activities on Monday.
0940	Arc is working on paperwork.
1130	Arc has left the site for the day to return to the office.

Asbestos Monitoring Data Sheet

Date: 05/15/15
Client: MCM
Project: Murry's **Contractor:** MCM

Industrial Hygienist: Andy Bresko

Sample ID	Sampling Location	Sample Type	Flow rate L/Minute	Start Time	Stop Time	Total Minutes	Total Volume	Fibers/ Field	Results F/cc
051215-01	Richard Lange, grapple operator	PS	2.5	0700	0909	129	322.5	1.5/100	<0.01
051215-02	Thomas Sutherland, hose operator	PS	2.5	0658	0911	133	322.5	4.5/100	<0.01
051215-03	Central South of Abatement/Demo	WA	2.5	0656	0920	144	360	4/100	<0.01
051215-04	South of Abatement/Demo	WA	2.5	0656	0921	145	362.5	1/100	<0.01
051215-05	Antonio Boles hose operator	EX	2.0	0814	0844	30	60	1/100	<0.01
051215-06	Ed Zillian, front loader operator	EX	2.0	0812	0842	30	60	2/100	0.01
051215-FB1	Field Blank	FB						0/100	
051215-FB2	Field Blank	FB						0.5/100	

Key
EV: Environmental BG: Background WA: Work Area FC: Final Clearance PS: Personal FB: Field Blank

COMMENTS: EX = Excursion, PS = 8 Hour TWA

Asbestos Daily Sign In Log

Date: 05/15/15
Client: MCM
Project: Murry's

Contractor: MCM
Industrial Hygienist: Andy Bresko

Name	Title	Certifications
Mike Smith	Supervisor	129623
Bill Howard	Worker	128031
Antonio Boles	Worker	128030
Thomas Sutherland	Worker	128521
Richard Lange	Worker	126801
Ed Zillian	Worker	129553

Asbestos Monitoring Project Daily Log

Date: 5-18-15

Client:

Project: Murry's Steak Shopping Center

Contractor: MCM Management

Industrial Hygienist: Nzeadibe Okonkwo

Time	Notes
0700	I, Nzeadibe Okonkwo of Arc Environmental
	Services on site at Murry steak shopping Center
	Forestville, MD- Meet with MCM Management
	field Manager- Steve. MCM
	Management begins to isolate and restrict the
	area with caution tape along perimeter area.
	As per scope of work, MCM Management crew
	will be taking down brick wall plaster using
	crane to bring it down.
0715	IH begins to re-calibrate (oo volume pumps at
	2.5 L/min.
0730	MCM Management is ready to start work. IH proceeds
	to select two workers engaged in different tasks
	to monitor them throughout shift, namely
	Thomas Sutherland - worker and Rick Lang Jr.
	operator.
08:00	IH begins to collect 30 mins excursion sample
	from Rick and Thomas respectively.
08:30	IH switched cassettes to continue monitoring
	Thomas and Rick through out the shift.
08:30	IH continues to collect environmental air samples
	outside the perimeter area too.
	Wall removal completed and crew proceeds for
11:30	Lunch break. All OSHA monitoring put on hold
	until after lunch break.
1300	Crew returns from lunch break to start demo
	work on shopping center building.
1330	IH continues to monitor and sample

Arc

Asbestos Monitoring Project Daily Log

Date: 5-18-15

Client:

Project: Marry's steak shopping Center.

Contractor: MCM Management

Industrial Hygienist: Nzendibe Okenkwo

Time	Notes
	perimeter area.
1545	MCM Management crew continues demo activities
	utilizing water spray to reduce airborne
	dust particles.
1630	Demo activities continue in the shopping
	Center building and segregating metal scraps
	aluminum and copper pipes from other materials
1700	shift ends.

Arc

Asbestos Monitoring Data Sheet

Date: 5-18-15
Client: MCM Mgt.
Project: Murry's Shopping Center. **Contractor:** ACM
Industrial Hygienist: Alexandre Okonkwo

Sample ID	Sampling Location	Sample Type	Flow rate L/Minute	Start Time	Stop Time	Total Minutes	Total Volume	Fibers/ Field	Results F/cc
51815-1	Field Blank	Blk						NFO	0
-2	Field Blank	Blk						NFO	0
-3	Excision Sample	Ex	2.5	08:00	08:30	30	75	NFO	0
	~~Take~~ from Thomas								
	Sutherland - worker								
	spraying foam mist.								
-4	Rick Lang Jr. (operator)	Ex.	2.5	08:15	08:45	30	75	NFO	0
-5	Personal - Thomas S.	PS	2.5	08:30	16:30	360	900	8/100	0.004
	spraying foam mist								
-6	Personal - Rick Lang,	PS	2.5	08:45	16:30	360	900	11/100	0.006
	Operator								
-7	Outside Perimeter	WA	5.0	08:30	12:30	240	1200	3/100	<0.01
	line								
-8	Outside Perimeter line	WA	5.0	13:30	16:30	180	900	NFO	0

Key
EV: Environmental BG: Background WA: Work Area FC: Final Clearance PS: Personal FB: Field Blank

COMMENTS:

Asbestos Monitoring Project Daily Log

Date: 05/28/15

Client: MCM

Project: Murry's

Contractor: MCM

Industrial Hygienist: Andy Bresko

Time	Notes
0630	Arc arrives on site, prepping for day's air sampling. MCM is removing demolition debris.
0651	Arc is waiting on demolition debris to be removed for abatement activities to begin.
1200	MCM is still performing demolition and removing debris.
1300	MCM is still performing demolition and removing debris, MCM will not be performing abatement. Arc has left the site to return to the office.

Asbestos Monitoring Project Daily Log

Date: 05/29/15

Client: MCM

Project: Murry's

Contractor: MCM

Industrial Hygienist: Andy Bresko

Time	Notes
0630	Arc arrives on site, prepping for day's air sampling. MCM is removing demolition debris.
1030	The Shear has broken and demolition is on hold until the mechanic can arrive on site to perform repairs.
1230	MCM will replace the equipment and will be ready to resume activities on Wednesday June 3. Arc has left the site to return to the office.

Asbestos Monitoring Project Daily Log

Date: 06/03/15

Client: MCM

Project: Murry's

Contractor: MCM

Industrial Hygienist: Andy Bresko

Time	Notes
0630	Arc arrives on site, prepping for days sampling.
0700	MCM is prepping for abatement and demolition activities. MCM is waiting on gravel to build a ramp for the wider grapple for abatement activities.
0930	MCM is waiting on gravel to build a ramp for the wider grapple for abatement activities.
1300	Gravel is not being delivered for the day and will be brought to the site tomorrow, Arc leaves the site.

Asbestos Monitoring Project Daily Log

Date: 06/04/15

Client: MCM

Project: Murry's

Contractor: MCM

Industrial Hygienist: Andy Bresko

Time	Notes
0630	Arc arrives on site, prepping for days sampling.
0700	MCM is prepping for abatement and demolition activities. Trucks are bringing gravel and MCM is building a ramp for the grapple to reach the top of panels to pull to the ground.
0930	MCM is still building a ramp for the wider grapple for abatement activities.
1400	MCM is still building a ramp, MCM might try a test panel at the end of the day if the ramp is completed, Arc leaves the site.

Asbestos Monitoring Project Daily Log

Date: 06/05/15

Client: MCM

Project: Murry's

Contractor: MCM

Industrial Hygienist: Andy Bresko

Time	Notes
0630	Arc arrives on site, prepping for days monitoring.
0700	Arc sets up perimeter/work area samples and personal samples with operator Richard Lange and supervisor Steve Martin.
0730	Arc is working on paperwork.
1130	MCM breaks for lunch.
1230	MCM returns to work activities.
1252	Arc is setting up an excursion sample with ground worker Thomas Sutherland and operator Richard Lange.
1322	Arc is retrieving excursion samples.
1500	Arc is retrieving perimeter/work area and personal samples.
1540	Arc has left the site to return to the office.

Asbestos Monitoring Data Sheet

Date: 06/05/15
Client: MCM
Project: Murry's **Contractor:** MCM

Industrial Hygienist: Andy Bresko

Sample ID	Sampling Location	Sample Type	Flow rate L/Minute	Start Time	Stop Time	Total Minutes	Total Volume	Fibers/ Field	Results F/cc
060515-01	North of Abatement/Demo	EV	2.5	0700	1500	480	1200	1.5/100	<0.01
060515-02	Northwest of Abatement/Demo	EV	2.5	0700	1500	480	1200	2/100	<0.01
060515-03	Richard Lange Shear Operator	PS	2.5	0705	1510	485	1212.5	1/100	<0.01
060515-04	Steve Martin Supervisor	PS	2.5	0705	1510	485	1212.5	3.5/100	<0.01
060515-05	Thomas Sutherland Ground Worker	EX	2.0	1252	1322	30	60	0/100	<0.01
060515-06	Richard Lange Shear Operator	EX	2.0	1252	1322	30	60	0.5/100	<0.01
060515-FB1	Field Blank	FB						0/100	
060515-FB2	Field Blank	FB						0/100	

Key
EV: Environmental BG: Background WA: Work Area FC: Final Clearance PS: Personal FB: Field Blank

COMMENTS:

Asbestos Daily Sign In Log

Date: 06/05/15
Client: MCM
Project: Murry's

Contractor: MCM
Industrial Hygienist: Andy Bresko

Name	Title	Certifications
Steve Martin	Supervisor	
Mike Smith	Supervisor	129623
Bill Howard	Worker	128031
Antonio Boles	Worker	128030
Thomas Sutherland	Worker	128521
Richard Lange	Worker	126801
Ed Zillian	Worker	129553

Asbestos Monitoring Project Daily Log

Date: 06/08/15

Client: MCM

Project: Murry's

Contractor: MCM

Industrial Hygienist: Andy Bresko

Time	Notes
0630	Arc arrives on site, prepping for days sampling.
0700	MCM is prepping and performing pre-demolition/abatement activities.
0800	Arc is waiting for equipment to be repaired for abatement activities to proceed.
1400	Equipment is not running and abatement activities will not be performed today, Arc leaves the site.

Asbestos Monitoring Project Daily Log

Date: 06/10/15

Client: MCM

Project: Murry's

Contractor: MCM

Industrial Hygienist: Andy Bresko

Time	Notes
0645	Arc arrives on site, prepping for days monitoring.
0700	MCM is putting equipment together prepping for abatement/demo activities.
1320	Arc is setting up air sampling pumps for area/perimeter and personal sampling.
1445	Arc is setting up excursion samples with ground worker Bill Howard and grapple operator Richard Lange.
1515	Arc is retrieving samples.
1540	Arc has left the site to return to the office.

Asbestos Monitoring Data Sheet

Date: 06/10/15
Client: MCM
Project: Murry's **Contractor:** MCM

Industrial Hygienist: Andy Bresko

Sample ID	Sampling Location	Sample Type	Flow rate L/Minute	Start Time	Stop Time	Total Minutes	Total Volume	Fibers/ Field	Results F/cc
061015-01	Northwest of Abatement/Demo	EV	2.5	1320	1525	125	312.5	1/100	<0.01
061015-02	West of Abatement/Demo	EV	2.5	1320	1525	125	312.5	2/100	<0.01
061015-03	Richard Lange Shear Operator	PS	2.5	1320	1525	125	312.5	2/100	<0.01
061015-04	Thomas Sutherland Ground Worker	PS	2.5	1320	1525	125	312.5	0.5/100	<0.01
061015-05	Bill Howard Ground Worker	EX	2.0	1445	1515	30	60	0/100	<0.01
061015-06	Richard Lange Grapple Operator	EX	2.0	1445	1515	30	60	0/100	<0.01
061015-FB1	Field Blank	FB						0/100	
061015-FB2	Field Blank	FB						0/100	

Key
EV: Environmental BG: Background WA: Work Area FC: Final Clearance PS: Personal FB: Field Blank

COMMENTS:

Asbestos Daily Sign In Log

Date: 06/10/15
Client: MCM
Project: Murry's

Contractor: MCM
Industrial Hygienist: Andy Bresko

Name	Title	Certifications
Mike Smith	Supervisor	129623
Bill Howard	Worker	128031
Antonio Boles	Worker	128030
Thomas Sutherland	Worker	128521
Richard Lange	Worker	126801
Ed Zillian	Worker	129553

Asbestos Monitoring Project Daily Log

Date: 06/11/15

Client: MCM

Project: Murry's

Contractor: MCM

Industrial Hygienist: Andy Bresko

Time	Notes
0700	Arc arrives on site, prepping for days monitoring.
0714	Arc is setting up area/perimeter and personal samples with ground worker Bill Howard and grapple operator Richard Lange.
1210	Arc is setting up excursion samples with supervisor Mike Smith and grapple operator Richard Lange.
1240	Arc is retrieving excursion samples.
1410	Arc is retrieving samples.
1430	Arc has left the site to return to the office.

Asbestos Monitoring Data Sheet

Date: 06/11/15
Client: MCM
Project: Murry's **Contractor:** MCM

Industrial Hygienist: Andy Bresko

Sample ID	Sampling Location	Sample Type	Flow rate L/Minute	Start Time	Stop Time	Total Minutes	Total Volume	Fibers/ Field	Results F/cc
061115-01	Northwest of Abatement/Demo	EV	2.5	0714	1410	416	1040	6/100	<0.01
061115-02	North of Abatement/Demo	EV	2.5	0714	1410	416	1040	3/100	<0.01
061115-03	Richard Lange Grapple Operator	PS	2.5	0717	1415	418	1045	1.5/100	<0.01
061115-04	Bill Howard Ground Worker	PS	2.5	0717	1415	418	1045	4/100	<0.01
061115-05	Mike Smith Ground Worker	EX	2.0	1210	1240	30	60	1.5/100	0.02
061115-06	Richard Lange Grapple Operator	EX	2.0	1210	1240	30	60	0.5/100	<0.01
061115-FB1	Field Blank	FB						0.5/100	
061115-FB2	Field Blank	FB						0/100	

Key
EV: Environmental BG: Background WA: Work Area FC: Final Clearance PS: Personal FB: Field Blank

COMMENTS:

Asbestos Daily Sign In Log

Date: 06/11/15
Client: MCM
Project: Murry's

Contractor: MCM
Industrial Hygienist: Andy Bresko

Name	Title	Certifications
Mike Smith	Supervisor	129623
Bill Howard	Worker	128031
Antonio Boles	Worker	128030
Thomas Sutherland	Worker	128521
Richard Lange	Worker	126801
Ed Zillian	Worker	129553

Asbestos Monitoring Project Daily Log

Date: 06/12/15

Client: MCM

Project: Murry's

Contractor: MCM

Industrial Hygienist: Andy Bresko

Time	Notes
0630	Arc arrives on site, prepping for days monitoring. MCM is loading trucks w/ACM to the landfill.
0650	Arc is setting up area/perimeter and personal samples with ground worker Derrald Johnson and front loader operator Richard Lange.
1217	Arc is setting up excursion samples with ground worker Antonio Boles and front loader operator Richard Lange.
1247	Arc is retrieving excursion samples.
1431	Arc is retrieving samples.
1445	Arc has left the site to return to the office.

Asbestos Monitoring Data Sheet

Date: 06/12/15
Client: MCM
Project: Murry's **Contractor:** MCM

Industrial Hygienist: Andy Bresko

Sample ID	Sampling Location	Sample Type	Flow rate L/Minute	Start Time	Stop Time	Total Minutes	Total Volume	Fibers/ Field	Results F/cc
061215-01	Northwest of Abatement/Demo	EV	2.5	0650	1431	461	1152.5	1/100	<0.01
061215-02	North of Abatement/Demo	EV	2.5	0650	1431	461	1152.5	7.5/100	<0.01
061215-03	Darrald Johnson Ground Worker	PS	2.5	0650	1431	461	1152.5	2/100	<0.01
061215-04	Richard Lange Front Loader Operator	PS	2.5	0650	1431	461	1152.5	5/100	<0.01
061215-05	Antonio Boles Ground Worker	EX	2.0	1217	1247	30	60	0/100	<0.01
061215-06	Richard Lange Front Loader Operator	EX	2.0	1217	1247	30	60	0.5/100	<0.01
061215-FB1	Field Blank	FB						0/100	
061215-FB2	Field Blank	FB						0/100	

Key
EV: Environmental BG: Background WA: Work Area FC: Final Clearance PS: Personal FB: Field Blank

COMMENTS:

Asbestos Daily Sign In Log

Date: 06/12/15
Client: MCM
Project: Murry's

Contractor: MCM
Industrial Hygienist: Andy Bresko

Name	Title	Certifications
Mike Smith	Supervisor	129623
Darrald Johnson	Worker	128031
Antonio Boles	Worker	128030
Thomas Sutherland	Worker	128521
Richard Lange	Worker	126801

Asbestos Monitoring Project Daily Log

Date: 06/15/15

Client: MCM

Project: Murry's

Contractor: MCM

Industrial Hygienist: Andy Bresko

Time	Notes
0630	Arc arrives on site, prepping for days monitoring.
0651	Arc is setting up area/perimeter and personal samples with ground worker Bill Howard and front loader operator Richard Lange. MCM is performing demo and removal.
0730	Arc is working on paperwork.
1437	Arc is retrieving samples.
1455	Arc has left the site to return to the office.

Asbestos Monitoring Data Sheet

Date: 06/15/15
Client: MCM
Project: Murry's **Contractor:** MCM

Industrial Hygienist: Andy Bresko

Sample ID	Sampling Location	Sample Type	Flow rate L/Minute	Start Time	Stop Time	Total Minutes	Total Volume	Fibers/ Field	Results F/cc
061515-01	Northeast of Abatement/Demo	EV	2.5	0651	1437	466	1165	1/100	<0.01
061515-02	Northwest of Abatement/Demo	EV	2.5	0651	1437	466	1165	3.5/100	<0.01
061515-03	Mike Smith Ground Worker	PS	2.5	0653	1437	464	1160	6/100	<0.01
061515-04	Richard Lange Grapple Operator	PS	2.5	0653	1437	464	1160	7/100	<0.01
061515-FB1	Field Blank	FB						1/100	
061515-FB2	Field Blank	FB						0/100	

Key
EV: Environmental BG: Background WA: Work Area FC: Final Clearance PS: Personal FB: Field Blank

COMMENTS:

Asbestos Daily Sign In Log

Date: 06/15/15
Client: MCM
Project: Murry's

Contractor: MCM
Industrial Hygienist: Andy Bresko

Name	Title	Certifications
Mike Smith	Supervisor	129623
Bill Howard	Worker	128031
Antonio Boles	Worker	128030
Thomas Sutherland	Worker	128521
Richard Lange	Worker	126801

Asbestos Monitoring Project Daily Log

Date: 06/17/15

Client: MCM

Project: Murry's

Contractor: MCM

Industrial Hygienist: Andy Bresko

Time	Notes
0630	Arc arrives on site, prepping for days monitoring.
0648	Arc is setting up area/perimeter and personal samples with ground worker Thomas Sutherland and grapple operator Richard Lange. MCM is performing demo downsizing and ACM removal.
0730	Arc is working on paperwork.
1310	Arc is retrieving samples.
1335	Arc has left the site to return to the office.

Asbestos Monitoring Data Sheet

Date: 06/17/15
Client: MCM
Project: Murry's **Contractor:** MCM

Industrial Hygienist: Andy Bresko

Sample ID	Sampling Location	Sample Type	Flow rate L/Minute	Start Time	Stop Time	Total Minutes	Total Volume	Fibers/ Field	Results F/cc
061715-01	Northeast of Abatement/Demo	EV	2.5	0648	1310	382	955	1.5/100	<0.01
061715-02	East of Abatement/Demo	EV	2.5	0648	1310	382	955	5/100	<0.01
061715-03	Thomas Sutherland Ground Worker	PS	2.5	0651	1317	386	965	2/100	<0.01
061715-04	Richard Lange Grapple Operator	PS	2.5	0651	1330	399	997.5	1.5/100	<0.01
061715-FB1	Field Blank	FB						0/100	
061715-FB2	Field Blank	FB						0/100	

Key
EV: Environmental BG: Background WA: Work Area FC: Final Clearance PS: Personal FB: Field Blank

COMMENTS:

Asbestos Daily Sign In Log

Date: 06/17/15
Client: MCM
Project: Murry's

Contractor: MCM
Industrial Hygienist: Andy Bresko

Name	Title	Certifications
Mike Smith	Supervisor	129623
Bill Howard	Worker	128031
Antonio Boles	Worker	128030
Thomas Sutherland	Worker	128521
Richard Lange	Worker	126801

Asbestos Monitoring Project Daily Log

Date: 06/18/15

Client: MCM

Project: Murry's

Contractor: MCM

Industrial Hygienist: Andy Bresko

Time	Notes
0630	Arc arrives on site, prepping for days monitoring.
0702	Arc is setting up area/perimeter Northeast and East and personal samples with ground worker Antonio Boles and front loader operator Ed Zillian. MCM is performing demo downsizing and debris removal.
0800	Arc is working on paperwork.
1326	Arc is retrieving samples.
1345	Arc has left the site to return to the office.

Asbestos Monitoring Data Sheet

Date: 06/18/15
Client: MCM
Project: Murry's **Contractor:** MCM

Industrial Hygienist: Andy Bresko

Sample ID	Sampling Location	Sample Type	Flow rate L/Minute	Start Time	Stop Time	Total Minutes	Total Volume	Fibers/ Field	Results F/cc
061815-01	Northeast of Abatement/Demo	EV	2.5	0702	1326	384	960	0/100	<0.01
061815-02	East of Abatement/Demo	EV	2.5	0702	1326	384	960	2.5/100	<0.01
061815-03	Antonio Boles Ground Worker	PS	2.5	0702	1326	384	960	14/100	<0.01
061815-04	Ed Zillian Front Loader Operator	PS	2.5	0702	1326	384	960	3.5/100	<0.01
061815-FB1	Field Blank	FB						0/100	
061815-FB2	Field Blank	FB						0/100	

Key
EV: Environmental BG: Background WA: Work Area FC: Final Clearance PS: Personal FB: Field Blank

COMMENTS:

Asbestos Daily Sign In Log

Date: 6/18/15
Client: MCM
Project: Murry's

Contractor: MCM
Industrial Hygienist: Andy Bresko

Name	Title	Certifications
Mike Smith	Supervisor	129623
Bill Howard	Worker	128031
Antonio Boles	Worker	128030
Thomas Sutherland	Worker	128521
Richard Lange	Worker	126801
Ed Zillian	Worker	129553

Asbestos Monitoring Project Daily Log

Date: 06/19/15

Client: MCM

Project: Murry's

Contractor: MCM

Industrial Hygienist: Andy Bresko

Time	Notes
0630	Arc arrives on site, prepping for days monitoring. MCM is removing demo debris, prepping for wall abatement.
0844	Arc is setting up area/perimeter South and Southwest and personal samples with ground worker Antonio Boles and grapple operator Richard Lange.
0900	Arc is working on paperwork.
1415	Arc is retrieving samples.
1430	Arc has left the site to return to the office.

Asbestos Monitoring Data Sheet

Date: 06/19/15
Client: MCM
Project: Murry's **Contractor:** MCM

Industrial Hygienist: Andy Bresko

Sample ID	Sampling Location	Sample Type	Flow rate L/Minute	Start Time	Stop Time	Total Minutes	Total Volume	Fibers/ Field	Results F/cc
061915-01	Southwest of Abatement/Demo	EV	2.5	0844	1415	331	827.5	2/100	<0.01
061915-02	South of Abatement/Demo	EV	2.5	0844	1415	331	827.5	2/100	<0.01
061915-03	Antonio Boles Ground Worker	PS	2.5	0847	1415	328	820	3/100	<0.01
061915-04	Richard Lange Grapple Operator	PS	2.5	0847	1415	328	820	0.5/100	<0.01
061915-FB1	Field Blank	FB						0/100	
061915-FB2	Field Blank	FB						0/100	

Key
EV: Environmental BG: Background WA: Work Area FC: Final Clearance PS: Personal FB: Field Blank

COMMENTS:

Asbestos Daily Sign In Log

Date: 06/19/15
Client: MCM
Project: Murry's

Contractor: MCM
Industrial Hygienist: Andy Bresko

Name	Title	Certifications
Mike Smith	Supervisor	129623
Bill Howard	Worker	128031
Antonio Boles	Worker	128030
Thomas Sutherland	Worker	128521
Richard Lange	Worker	126801
Ed Zillian	Worker	129553

Asbestos Monitoring Project Daily Log

Date: 06/20/15

Client: MCM

Project: Murry's

Contractor: MCM

Industrial Hygienist: Andy Bresko

Time	Notes
0630	Arc arrives on site, prepping for days monitoring. MCM is removing demo debris and performing wall abatement.
0714	Arc is setting up area/perimeter South, Southeast, Southwest and personal samples with ground worker Bill Howard and grapple operator Richard Lange.
0847	Arc is working on paperwork.
1429	Arc is retrieving samples.
1445	Arc has left the site to return to the office.

Asbestos Monitoring Data Sheet

Date: 06/20/15
Client: MCM
Project: Murry's **Contractor:** MCM

Industrial Hygienist: Andy Bresko

Sample ID	Sampling Location	Sample Type	Flow rate L/Minute	Start Time	Stop Time	Total Minutes	Total Volume	Fibers/ Field	Results F/cc
062015-01	Southeast of Abatement/Demo	EV	2.5	0714	1429	435	1087.5	0/100	<0.01
062015-02	South of Abatement/Demo	EV	2.5	0714	1429	435	1087.5	1/100	<0.01
062015-03	Southwest of Abatement/Demo	EV	2.5	0714	1429	435	1087.5	2.5/100	<0.01
062015-04	Antonio Boles Ground Worker	PS	2.5	0734	1429	415	1037.5	1.5/100	<0.01
062015-05	Richard Lange Grapple Operator	PS	2.5	0734	1429	415	1037.5	0/100	<0.01
062015-FB1	Field Blank	FB						0/100	
062015-FB2	Field Blank	FB						0/100	

Key
EV: Environmental BG: Background WA: Work Area FC: Final Clearance PS: Personal FB: Field Blank

COMMENTS:

Asbestos Daily Sign In Log

Date: 06/20/15
Client: MCM
Project: Murry's

Contractor: MCM
Industrial Hygienist: Andy Bresko

Name	Title	Certifications
Mike Smith	Supervisor	129623
Bill Howard	Worker	128031
Antonio Boles	Worker	128030
Thomas Sutherland	Worker	128521
Richard Lange	Worker	126801
Ed Zillian	Worker	129553

Asbestos Monitoring Project Daily Log

Date: 06/22/15

Client: MCM

Project: Murry's

Contractor: MCM

Industrial Hygienist: Andy Bresko

Time	Notes
0645	Arc arrives on site, prepping for days monitoring. MCM is removing demo debris and ACM.
0736	Arc is setting up area/perimeter Southeast and Southwest and personal samples with ground worker Darrald Johnson and grapple operator Richard Lange.
0800	Arc is working on paperwork.
1433	Arc is retrieving samples.
1450	Arc has left the site to return to the office.

Asbestos Monitoring Data Sheet

Date: 06/22/15
Client: MCM
Project: Murry's **Contractor:** MCM

Industrial Hygienist: Andy Bresko

Sample ID	Sampling Location	Sample Type	Flow rate L/Minute	Start Time	Stop Time	Total Minutes	Total Volume	Fibers/ Field	Results F/cc
062215-01	Southwest of Abatement/Demo	EV	2.5	0736	1433	417	1042.5	0/100	<0.01
062215-02	Southeast of Abatement/Demo	EV	2.5	0736	1433	417	1042.5	1/100	<0.01
062215-03	Darrald Johnson Ground Worker	PS	2.5	0736	1437	421	1052.5	1.5/100	<0.01
062215-04	Richard Lange Grapple Operator	PS	2.5	0736	1437	421	1052.5	4.5/100	<0.01
062215-FB1	Field Blank	FB						0.5/100	
062215-FB2	Field Blank	FB						0.5/100	

Key
EV: Environmental BG: Background WA: Work Area FC: Final Clearance PS: Personal FB: Field Blank

COMMENTS:

Asbestos Daily Sign In Log

Date: 6/22/15
Client: MCM
Project: Murry's

Contractor: MCM
Industrial Hygienist: Andy Bresko

Name	Title	Certifications
Mike Smith	Supervisor	129623
Thomas Sutherland	Worker	128521
Bill Howard	Worker	128031
Darrald Johnson	Worker	128941
Ed Zillian	Worker	129553
Richard Lange	Worker	126801

Asbestos Monitoring Project Daily Log

Date: 06/23/15

Client: MCM

Project: Murry's

Contractor: MCM

Industrial Hygienist: Andy Bresko

Time	Notes
0645	Arc arrives on site, prepping for days monitoring. MCM is removing demo debris and ACM.
0658	Arc is setting up area/perimeter Southeast and Southwest and personal samples with ground worker Thomas Southerland and front loader operator Ed Zillian.
0725	Arc is working on paperwork.
1300	Arc is retrieving samples.
1320	Arc has left the site to return to the office.

Asbestos Monitoring Data Sheet

Date: 06/23/15
Client: MCM
Project: Murry's **Contractor:** MCM

Industrial Hygienist: Andy Bresko

Sample ID	Sampling Location	Sample Type	Flow rate L/Minute	Start Time	Stop Time	Total Minutes	Total Volume	Fibers/ Field	Results F/cc
062315-01	Southwest of Abatement/Demo	EV	2.5	0658	1300	362	905	0/100	<0.01
062315-02	Southeast of Abatement/Demo	EV	2.5	0658	1300	362	905	0/100	<0.01
062315-03	Thomas Sutherland Ground Worker	PS	2.5	0703	1303	360	900	3/100	<0.01
062315-04	Ed Zillian Front Loader Operator	PS	2.5	0703	1303	360	900	2/100	<0.01
062315-FB1	Field Blank	FB						0/100	
062315-FB2	Field Blank	FB						0/100	

Key
EV: Environmental BG: Background WA: Work Area FC: Final Clearance PS: Personal FB: Field Blank

COMMENTS:

Asbestos Daily Sign In Log

Date: 6/23/15
Client: MCM
Project: Murry's

Contractor: MCM
Industrial Hygienist: Andy Bresko

Name	Title	Certifications
Mike Smith	Supervisor	129623
Thomas Sutherland	Worker	128521
Bill Howard	Worker	128031
Montez March	Worker	126546
Ed Zillian	Worker	129553
Richard Lange	Worker	126801

Asbestos Monitoring Project Daily Log

Date: 06/24/15

Client: MCM

Project: Murry's

Contractor: MCM

Industrial Hygienist: Andy Bresko

Time	Notes
0620	Arc arrives on site, prepping for days air sampling. MCM is removing demo debris and ACM.
0651	Arc is setting up area/perimeter Southeast and Southwest and personal samples with ground worker Montez March and grapple operator Richard Lange.
0725	Arc is working on paperwork.
1328	Arc is retrieving samples.
1350	Arc has left the site to return to the office.

Asbestos Monitoring Data Sheet

Date: 06/24/15
Client: MCM
Project: Murry's **Contractor:** MCM

Industrial Hygienist: Andy Bresko

Sample ID	Sampling Location	Sample Type	Flow rate L/Minute	Start Time	Stop Time	Total Minutes	Total Volume	Fibers/ Field	Results F/cc
062415-01	Southwest of Abatement/Demo	EV	2.5	0651	1328	397	992.5	1/100	<0.01
062415-02	Southeast of Abatement/Demo	EV	2.5	0651	1328	397	992.5	1/100	<0.01
062415-03	Montez March Ground Worker	PS	2.5	0658	1331	393	982.5	2/100	<0.01
062415-04	Richard Lange Grapple Operator	PS	2.5	0658	1331	393	982.5	1/100	<0.01
062415-FB1	Field Blank	FB						0/100	
062415-FB2	Field Blank	FB						0.5/100	

Key
EV: Environmental BG: Background WA: Work Area FC: Final Clearance PS: Personal FB: Field Blank

COMMENTS:

Asbestos Daily Sign In Log

Date: 6/24/15
Client: MCM
Project: Murry's

Contractor: MCM
Industrial Hygienist: Andy Bresko

Name	Title	Certifications
Mike Smith	Supervisor	129623
Antonio Boles	Worker	128030
Montez March	Worker	126546
Ed Zillian	Worker	129553
Richard Lange	Worker	126801

Asbestos Monitoring Project Daily Log

Date: 06/25/15

Client: MCM

Project: Murry's

Contractor: MCM

Industrial Hygienist: Andy Bresko

Time	Notes
0620	Arc arrives on site, prepping for days air sampling. MCM is removing demo debris and ACM.
0646	Arc is setting up area/perimeter Southeast and Southwest and personal samples with ground worker Montez March and front loader operator Ed Zillian.
0715	Arc is working on paperwork.
1333	Arc is retrieving samples.
1350	Arc has left the site to return to the office.

Asbestos Monitoring Data Sheet

Date: 06/25/15
Client: MCM
Project: Murry's **Contractor:** MCM

Industrial Hygienist: Andy Bresko

Sample ID	Sampling Location	Sample Type	Flow rate L/Minute	Start Time	Stop Time	Total Minutes	Total Volume	Fibers/ Field	Results F/cc
062515-01	Southwest of Abatement/Demo	EV	2.5	0646	1333	407	1017.5	1.5/100	<0.01
062515-02	Southeast of Abatement/Demo	EV	2.5	0646	1333	407	1017.5	0/100	<0.01
062515-03	Antonio Boles Ground Worker	PS	2.5	0651	1333	402	1005	5/100	<0.01
062515-04	Ed Zillian Front Loader Operator	PS	2.5	0651	1333	402	1005	0.5/100	<0.01
062515-FB1	Field Blank	FB						0/100	
062515-FB2	Field Blank	FB						0/100	

Key
EV: Environmental BG: Background WA: Work Area FC: Final Clearance PS: Personal FB: Field Blank

COMMENTS:

Asbestos Daily Sign In Log

Date: 6/25/15
Client: MCM
Project: Murry's

Contractor: MCM
Industrial Hygienist: Andy Bresko

Name	Title	Certifications
Mike Smith	Supervisor	129623
Antonio Boles	Worker	128030
Montez March	Worker	126546
Ed Zillian	Worker	129553
Richard Lange	Worker	126801

Asbestos Monitoring Project Daily Log

Date: 06/26/15

Client: MCM

Project: Murry's

Contractor: MCM

Industrial Hygienist: Andy Bresko

Time	Notes
0620	Arc arrives on site, prepping for days air sampling. MCM is removing demo debris and ACM.
0633	Arc is setting up area/perimeter Southeast and Southwest and personal samples with supervisor Mike Smith and front loader operator Ed Zillian.
0700	Arc is working on paperwork.
1300	Arc is retrieving samples.
1330	Arc has left the site to return to the office.

Asbestos Monitoring Data Sheet

Date: 06/26/15
Client: MCM
Project: Murry's **Contractor:** MCM

Industrial Hygienist: Andy Bresko

Sample ID	Sampling Location	Sample Type	Flow rate L/Minute	Start Time	Stop Time	Total Minutes	Total Volume	Fibers/ Field	Results F/cc
062615-01	Southwest of Abatement/Demo	EV	2.5	0633	1304	391	977.5	2.5/100	<0.01
062615-02	Southeast of Abatement/Demo	EV	2.5	0633	1304	391	977.5	2/100	<0.01
062615-03	Antonio Boles Ground Worker	PS	2.5	0633	1300	387	967.5	7.5/100	<0.01
062615-04	Ed Zillian Front Loader Operator	PS	2.5	0633	1300	387	967.5	3/100	<0.01
062615-FB1	Field Blank	FB						0/100	
062615-FB2	Field Blank	FB						0.5/100	

Key
EV: Environmental BG: Background WA: Work Area FC: Final Clearance PS: Personal FB: Field Blank

COMMENTS:

Asbestos Daily Sign In Log

Date: 6/26/15
Client: MCM
Project: Murry's

Contractor: MCM
Industrial Hygienist: Andy Bresko

Name	Title	Certifications
Mike Smith	Supervisor	129623
Antonio Boles	Worker	128030
Montez March	Worker	126546
Ed Zillian	Worker	129553
Richard Lange	Worker	126801

Asbestos Monitoring Project Daily Log

Date: 06/29/15

Client: MCM

Project: Murry's

Contractor: MCM

Industrial Hygienist: Andy Bresko

Time	Notes
0630	Arc arrives on site, prepping for days air sampling. MCM is removing demo debris and ACM.
0645	Arc is setting up area/perimeter Southeast and Southwest and personal samples with ground worker Antonio Boles and grapple operator Richard Lange.
0700	Arc is working on paperwork.
0900	Arc is retrieving samples.
0930	Arc has left the site to return to the office.

Asbestos Monitoring Data Sheet

Date: 06/29/15
Client: MCM
Project: Murry's **Contractor:** MCM

Industrial Hygienist: Andy Bresko

Sample ID	Sampling Location	Sample Type	Flow rate L/Minute	Start Time	Stop Time	Total Minutes	Total Volume	Fibers/ Field	Results F/cc
062915-01	Southwest of Abatement/Demo	EV	2.5	0645	0900	135	337.5	0/100	<0.01
062915-02	Southeast of Abatement/Demo	EV	2.5	0645	0900	135	337.5	0.5/100	<0.01
062915-03	Antonio Boles Ground Worker	PS	2.5	0645	0900	135	337.5	1/100	<0.01
062915-04	Richard Lange Grapple Operator	PS	2.5	0645	0900	135	337.5	0.5/100	<0.01
062915-FB1	Field Blank	FB						0/100	
062915-FB2	Field Blank	FB						0/100	

Key
EV: Environmental BG: Background WA: Work Area FC: Final Clearance PS: Personal FB: Field Blank

COMMENTS:

Asbestos Daily Sign In Log

Date: 6/29/15
Client: MCM
Project: Murry's

Contractor: MCM
Industrial Hygienist: Andy Bresko

Name	Title	Certifications
Mike Smith	Supervisor	129623
Antonio Boles	Worker	128030
Richard Lange	Worker	126801

July 6, 2015

Dr. Steve Martin
MCM Management
39580 Woodward Avenue
Suite 200
Bloomfield Hills, MI 48304

RE: Respirable Dust and Crystalline Silica Air Monitoring
Period: (April 30 through June 16, 2015)
Murry's (8210 Penn Randall Place, Upper Marlboro, Maryland)
Project No.: 414-5

Dear Dr. Martin:

Arc Environmental, Inc was retained by MCM Management to perform background and monthly Silica and Respirable Dust air monitoring during demolition activities at Murry's. Murry's is located at 8210 Penn Randall Place, Upper Marlboro, Maryland. The Industrial Hygienists Mr. Andrew Bresko and Mr. Jim Lovell conducted Silica and Respirable Dust sampling on the following dates: April 30, May 22, and June 16, 2015. Demolition was performed by MCM Management.

Environmental background and work area/perimeter samples were collected to monitor Silica and Respirable Dust concentrations in the areas immediately surrounding the demolition work area. The air samples were analyzed for the following particulates in air: Respirable Dust, Crystalline Silica - Quartz, Cristobalite, and Tridymite. The Respirable Dust and Crystalline Silica types and the respective Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL) is listed in Table 1.

Air samples were submitted to Scientific Analytical Institute for analysis of Respirable Dust and Silica - Alpha Quartz, Cristobalite and Tridymite content. All air samples were analyzed in accordance with The National Institute for Occupational Safety and Health (NIOSH) Method 0600 and Modified from NIOSH Method 7500 & OSHA ID 142. Results for environmental area samples are calculated as a concentration in Table 2.

Table 1 – Silica Exposure Limits

Analysis	OSHA PEL
Respirable Dust	5 mg/m^3
Silica - Quartz	$(mg/m^3) = \frac{10\ mg/m^3}{2 + \%\ respirable\ quartz}$
Silica – Critobalite and Tridymite	½ the Value calculated from the formula for Quartz.

Table 2 – Analytical Results for Air Samples				
Sample Date	**Sample Type/Sample Location**	**Sample Number**	**Analysis**	**Concentration (mg/m^3)**
April 30, 2015	Background/North of Murry's Warehouse	043015-1	Respirable Dust	<0.092
			Silica - Quartz	0.024
			Silica - Cristobalite	<0.018
			Silica - Tridymite	<0.018
April 30, 2015	Background/East of Murry's Warehouse	043015-2	Respirable Dust	<0.092
			Silica - Quartz	<0.018
			Silica - Cristobalite	<0.018
			Silica - Tridymite	<0.018
April 30, 2015	Background/West of Murry's Warehouse	043015-3	Respirable Dust	<0.092
			Silica - Quartz	<0.018
			Silica - Cristobalite	<0.018
			Silica - Tridymite	<0.018
April 30, 2015	Background/South of Murry's Warehouse	043015-4	Respirable Dust	<0.092
			Silica - Quartz	<0.018
			Silica - Cristobalite	<0.018
			Silica - Tridymite	<0.018
April 30, 2015	Field Blank	Field Blank	Respirable Dust	N/A
			Silica - Quartz	N/A
			Silica - Cristobalite	N/A
			Silica - Tridymite	N/A
May 22, 2015	Area/West of Murry's Warehouse	052215-1	Respirable Dust	<0.078
			Silica - Quartz	See Lab Results
			Silica - Cristobalite	<0.016
			Silica - Tridymite	<0.016
May 22, 2015	Area/North of Murry's Warehouse	052215-2	Respirable Dust	<0.078
			Silica - Quartz	0.021
			Silica - Cristobalite	<0.016
			Silica - Tridymite	<0.016
May 22, 2015	Area/East of Murry's Warehouse	052215-3	Respirable Dust	<0.072
			Silica - Quartz	<0.015
			Silica - Cristobalite	<0.015
			Silica - Tridymite	<0.015
May 22, 2015	Area/South of Murry's Warehouse	052215-4	Respirable Dust	<0.077
			Silica - Quartz	<0.015
			Silica - Cristobalite	<0.015
			Silica - Tridymite	<0.015
June 16, 2015	Area/North of Murry's Warehouse	061615-1	Respirable Dust	<0.065
			Silica - Quartz	<0.013
			Silica - Cristobalite	<0.013
			Silica - Tridymite	<0.013
June 16, 2015	Area/East of Murry's Warehouse	061615-2	Respirable Dust	<0.066
			Silica - Quartz	<0.013
			Silica - Cristobalite	<0.013
			Silica - Tridymite	<0.013

Table 2 – Analytical Results for Air Samples				
Sample Date	**Sample Type/Sample Location**	**Sample Number**	**Analysis**	**Calculated 8-Hour TWA (mg/m^3)**
June 16, 2015	Area/West of Murry's Warehouse	061615-3	Respirable Dust	<0.066
			Silica - Quartz	<0.013
			Silica - Cristobalite	<0.013
			Silica - Tridymite	<0.013
June 16, 2015	Area/South of Murry's Warehouse	061615-4	Respirable Dust	<0.066
			Silica - Quartz	<0.013
			Silica - Cristobalite	<0.013
			Silica - Tridymite	<0.013

Based on OSHA if persons are exposed to airborne levels above the OSHA Permissible Exposure Limits (PEL) of the above mentioned metals OSHA recommends that engineering controls, respirators, and appropriate levels of personal protective equipment (PPE) be donned to limit employee exposure.

All Respirable Dust and Crystalline Silica samples collected yielded concentrations below each respective OSHA PEL.

Arc Environmental is pleased to have performed this assessment for MCM Management, LLC. If you have any questions please call us at (410) 659-9971.

Sincerely,

Arc Environmental, Inc.

Andrew Bresko
Project Manager

Appendix A: Laboratory Certificates of Analysis

Analysis of Respirable Dust and Airborne Crystalline Silica

By X-Ray Diffraction (XRD)

NIOSH 0600 / Modified from NIOSH Method 7500 & OSHA ID-142

AIHA LAP, LLC ACCREDITED LABORATORY INDUSTRIAL HYGIENE ISO/IEC 17025:2005 www.aihaaccreditedlabs.org LAB #173190

Client: ARC Environmental
1311 Haubert Rd
Baltimore, MD 21230
Project: Murry's/415-5

Attn: Andy Bresko

Lab Order ID: 1512969
Date Received: 07/02/2015
Date Reported: 07/09/2015

Sample ID / *Lab Sample ID*	Description / *Lab Notes*	Air Volume (m^3)	Analyte	% Analyte	LOD (mg Analyte)	mg Analyte	CONCENTRATION mg/m^3
043015-1	North of Murry's Warehouse	0.542	Dust	N/A	0.05	<0.05	<0.092
			Alpha Quartz	100	0.01	0.013	0.024
1512969XDA_1			Cristobalite	None Detected	0.01	<0.01	<0.018
			Tridymite	None Detected	0.01	<0.01	<0.018
043015-2	East of Murry's Warehouse	0.542	Dust	N/A	0.05	<0.05	<0.092
			Alpha Quartz	None Detected	0.01	<0.01	<0.018
1512969XDA_2			Cristobalite	None Detected	0.01	<0.01	<0.018
			Tridymite	None Detected	0.01	<0.01	<0.018
043015-3	West of Murry's Warehouse	0.542	Dust	N/A	0.05	<0.05	<0.092
			Alpha Quartz	None Detected	0.01	<0.01	<0.018
1512969XDA_3			Cristobalite	None Detected	0.01	<0.01	<0.018
			Tridymite	None Detected	0.01	<0.01	<0.018

Ired Gulley
Analyst

Lab Director

Unless otherwise noted blank sample correction was not performed on analytical results. Scientific Analytical Institute participates in the AIHA IHPAT program. IHPAT Laboratory ID: 173190. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. Analytical uncertainty available upon request. Time-weighted average (TWA) calculations are based on customer supplied data and valid only for samples included in the specified TWA group

Analysis of Respirable Dust and Airborne Crystalline Silica

By X-Ray Diffraction (XRD)

NIOSH 0600 / Modified from NIOSH Method 7500 & OSHA ID-142

AIHA LAP, LLC ACCREDITED LABORATORY INDUSTRIAL HYGIENE ISO/IEC 17025:2005 www.aihaaccreditedlabs.org LAB #173190

Client: ARC Environmental
1311 Haubert Rd
Baltimore, MD 21230
Project: Murry's/415-5

Attn: Andy Bresko

Lab Order ID: 1512969
Date Received: 07/02/2015
Date Reported: 07/09/2015

Sample ID / *Lab Sample ID*	Description / *Lab Notes*	Air Volume (m^3)	Analyte	% Analyte	LOD (mg Analyte)	mg Analyte	CONCENTRATION mg/m^3
043015-4	South of Murry's Warehouse	0.542	Dust	N/A	0.05	<0.05	<0.092
			Alpha Quartz	None Detected	0.01	<0.01	<0.018
1512969XDA_4			Cristobalite	None Detected	0.01	<0.01	<0.018
			Tridymite	None Detected	0.01	<0.01	<0.018
Field Blank	Field Blank	0	Dust	N/A	0.05	<0.05	N/A
			Alpha Quartz	None Detected	0.01	<0.01	N/A
1512969XDA_5			Cristobalite	None Detected	0.01	<0.01	N/A
			Tridymite	None Detected	0.01	<0.01	N/A
052215-01	West of Murry's Warehouse	0.643	Dust	N/A	0.05	<0.05	<0.078
			Alpha Quartz	*	0.01	*	*
1512969XDA_6	**Alpha Quartz detected unable to quantify due to interferences*		Cristobalite	None Detected	0.01	<0.01	<0.016
			Tridymite	None Detected	0.01	<0.01	<0.016

Ired Gulley
Analyst

Lab Director

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Analysis of Respirable Dust and Airborne Crystalline Silica

By X-Ray Diffraction (XRD)

NIOSH 0600 / Modified from NIOSH Method 7500 & OSHA ID-142

AIHA LAP, LLC ACCREDITED LABORATORY INDUSTRIAL HYGIENE ISO/IEC 17025:2005 www.aihaaccreditedlabs.org LAB #173190

Client:	ARC Environmental 1311 Haubert Rd Baltimore, MD 21230	**Attn**:	Andy Bresko	**Lab Order ID:** **Date Received:** **Date Reported:**	1512969 07/02/2015 07/09/2015
Project:	Murry's/415-5			**Page:**	**3 of 5**

Sample ID *Lab Sample ID*	Description *Lab Notes*	Air Volume (m^3)	Analyte	% Analyte	LOD (mg Analyte)	mg Analyte	CONCENTRATION mg/m^3
052215-02	North of Murry's Warehouse	0.643	Dust	N/A	0.05	<0.05	<0.078
			Alpha Quartz	70	0.01	0.013	0.021
1512969XDA_7			Cristobalite	None Detected	0.01	<0.01	<0.016
			Tridymite	None Detected	0.01	<0.01	<0.016
052215-03	East of Murry's Warehouse	0.646	Dust	N/A	0.05	<0.05	<0.072
			Alpha Quartz	None Detected	0.01	<0.01	<0.015
1512969XDA_8			Cristobalite	None Detected	0.01	<0.01	<0.015
			Tridymite	None Detected	0.01	<0.01	<0.015
052215-04	South of Murry's Warehouse	0.648	Dust	N/A	0.05	<0.05	<0.077
			Alpha Quartz	None Detected	0.01	<0.01	<0.015
1512969XDA_9			Cristobalite	None Detected	0.01	<0.01	<0.015
			Tridymite	None Detected	0.01	<0.01	<0.015

Ired Gulley

Analyst

Lab Director

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Analysis of Respirable Dust and Airborne Crystalline Silica

By X-Ray Diffraction (XRD)

NIOSH 0600 / Modified from NIOSH Method 7500 & OSHA ID-142

AIHA LAP, LLC ACCREDITED LABORATORY INDUSTRIAL HYGIENE ISO/IEC 17025:2005 www.aihaaccreditedlabs.org LAB #173190

Client:	ARC Environmental 1311 Haubert Rd Baltimore, MD 21230	**Attn**:	Andy Bresko	**Lab Order ID:** **Date Received:** **Date Reported:**	1512969 07/02/2015 07/09/2015
Project:	Murry's/415-5			**Page:**	**4 of 5**

Sample ID *Lab Sample ID*	Description *Lab Notes*	Air Volume (m^3)	Analyte	% Analyte	LOD (mg Analyte)	mg Analyte	CONCENTRATION mg/m^3
061615-01	North of Murry's Warehouse	0.765	Dust	N/A	0.05	<0.05	<0.065
			Alpha Quartz	None Detected	0.01	<0.01	<0.013
1512969XDA_10			Cristobalite	None Detected	0.01	<0.01	<0.013
			Tridymite	None Detected	0.01	<0.01	<0.013
061615-02	East of Murry's Warehouse	0.763	Dust	N/A	0.05	<0.05	<0.066
			Alpha Quartz	None Detected	0.01	<0.01	<0.013
1512969XDA_11			Cristobalite	None Detected	0.01	<0.01	<0.013
			Tridymite	None Detected	0.01	<0.01	<0.013
061615-03	West of Murry's House	0.762	Dust	N/A	0.05	<0.05	<0.066
			Alpha Quartz	None Detected	0.01	<0.01	<0.013
1512969XDA_12			Cristobalite	None Detected	0.01	<0.01	<0.013
			Tridymite	None Detected	0.01	<0.01	<0.013

Ired Gulley

Analyst

Lab Director

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Analysis of Respirable Dust and Airborne Crystalline Silica

By X-Ray Diffraction (XRD)

NIOSH 0600 / Modified from NIOSH Method 7500 & OSHA ID-142

AIHA LAP, LLC ACCREDITED LABORATORY INDUSTRIAL HYGIENE ISO/IEC 17025:2005 www.aihaaccreditedlabs.org LAB #173190

Client:	ARC Environmental 1311 Haubert Rd Baltimore, MD 21230	**Attn**:	Andy Bresko	**Lab Order ID:** **Date Received:** **Date Reported:**	1512969 07/02/2015 07/09/2015
Project:	Murry's/415-5			**Page:**	**5 of 5**

Sample ID *Lab Sample ID*	Description *Lab Notes*	Air Volume (m^3)	Analyte	% Analyte	LOD (mg Analyte)	mg Analyte	CONCENTRATION mg/m^3
061615-04	South of Murry's Warehouse	0.766	Dust	N/A	0.05	<0.05	<0.066
			Alpha Quartz	None Detected	0.01	<0.01	<0.013
1512969XDA_13			Cristobalite	None Detected	0.01	<0.01	<0.013
			Tridymite	None Detected	0.01	<0.01	<0.013

Ired Gulley

Analyst

Lab Director

Unless otherwise noted blank sample correction was not performed on analytical results. Scientific Analytical Institute participates in the AIHA IHPAT program. IHPAT Laboratory ID: 173190. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. Analytical uncertainty available upon request. Time-weighted average (TWA) calculations are based on customer supplied data and valid only for samples included in the specified TWA group

Scientific Analytical Institute, Inc.
4604 Dundas Dr. Greensboro, NC 27407
Phone: 336.292.3888 Fax: 336.292.3313
www.sailab.com lab@sailab.com

Lab Use Only
Lab Order ID: 1512969
Client Code: _____

Company Contact Information

Company: *Arc Environmental*	Contact: Andy Bresko
Address: *1311 Haubert Street*	Phone ☐: 757-870-6121
Baltimore, MD 21230	Fax ☐:
	Email ☒: **abresko@arcenvironmental.com**

Billing/Invoice Information

SAME ☒
Company:
Contact:
Address:

Turn Around Times^

90 Min. ☐	48 Hours ☐
3 Hours ☐	72 Hours ☐
6 Hours ☐	96 Hours ☐
12 Hours ☐	120 Hours ☒
24 Hours ☐	144+ Hours ☐

^ *TATs not available for certain test*

PO Number:

Project Name/Number: Murry's/414-5

Industrial Hygiene Test Types

** Modified NIOSH 7500/OSHA ID 142*

Silica as Alpha Quartz (XSZ)* ☐ With Respirable Dust (XDZ) ☐	
Silica as Cristobalite (XSC)* ☐ With Respirable Dust (XDC) ☐	
Silica as Tridymite (XST)* ☐ With Respirable Dust (XDT) ☐	
Silica as Alpha Quartz, Cristobalite, Tridymite (XSA)* ☒ With Respirable Dust (XDA) ☒	
Silica Bulk (XSI)*	☐
Bulk Phase ID/Whole Rock (XUK)	☐
Total Dust NIOSH Method 0500 (GTD)	☐
Respirable Dust NIOSH Method 0600 (GRD)	☐
PCM NIOSH 7400-A Rules (PCM)	☐
B Rules (PCB) ☐ TWA (PTA) ☐	
TEM NIOSH 7402 (Asbestos) (TNI)	☐
Hexavalent Chromium (OSHA ID-215) (Note if from spray paint operations) (CIC)	☐
Metals-Air (NIOSH 7300/OSHA ID-125) (Specify Metals Under Comments) (IPA)	☐
Welding Profile -18 (NIOSH 7300/OSHA ID-125) (IPA or IPM)	☐
Soldering Metals-9 (OSHA ID-206) (IPA or IPM)	☐
Metal-Bulk (Modified OSHA ID-125G) (IPB)	☐
Hg Bulk (SW-846 7471B/ASTM D3624-85a)	☐
Hg Air (NIOSH 6009/OSHA ID-140)	☐
Other: **RCRA 8 - ICP**	☒

Sample ID #	Description/Location	Volume/Area	Comments
042315-01	North of Murry's Warehouse	962.5 Liters / 385 Minutes	2.5 lpm/RCRA 8/8 Hour TWA
042315-01	North of Murry's Warehouse	962.5 Liters / 385 Minutes	2.5 lpm/RCRA 8/8 Hour TWA
042315-02	East of Murry's Warehouse	970 Liters / 388 Minutes	2.5 lpm/RCRA 8/8 Hour TWA
042315-02	East of Murry's Warehouse	970 Liters / 388 Minutes	2.5 lpm/RCRA 8/8 Hour TWA
042315-03	West of Murry's Warehouse	975 Liters / 390 Minutes	2.5 lpm/RCRA 8/8 Hour TWA
042315-03	West of Murry's Warehouse	975 Liters / 390 Minutes	2.5 lpm/RCRA 8/8 Hour TWA
042315-04	South of Murry's Warehouse	990 Liters / 396 Minutes	2.5 lpm/RCRA 8/8 Hour TWA
042315-04	South of Murry's Warehouse	990 Liters / 396 Minutes	2.5 lpm/RCRA 8/8 Hour TWA
042315-05	Field Blank		RCRA 8/8-Hour TWA
042315-05	Field Blank		RCRA 8/8-Hour TWA

Accepted ☐
Rejected ☐

Total # of Samples 26

Relinquished by	Date/Time	Received by	Date/Time

1512969

Andy Bresko			

A-F-018 EXP: 5-2-2014

Scientific Analytical Institute, Inc.
4604 Dundas Dr. Greensboro, NC 27407
Phone: 336.292.3888 Fax: 336.292.3313
www.sailab.com lab@sailab.com

Lab Use Only
Lab Order ID: 1512969
Client Code: _____

Sample ID #	Description/Location	Volume/Area	Comments
043015-1	North of Murry's Warehouse	542 Liters / 319 Minutes	1.7 lpm/Silica/8-Hour TWA
043015-2	East of Murry's Warehouse	542 Liters / 319 Minutes	1.7 lpm/Silica/8-Hour TWA
043015-3	West of Murry's Warehouse	542 Liters / 319 Minutes	1.7 lpm/Silica/8-Hour TWA
043015-4	South of Murry's Warehouse	542 Liters / 319 Minutes	1.7 lpm/Silica/8-Hour TWA
Field Blank	Field Blank		Silica/8-Hour TWA
052015-01	North of Murry's Warehouse	1200 Liters / 480 minutes	2.5 lpm/RCRA 8/8 Hour TWA
052015-01	North of Murry's Warehouse	1200 Liters / 480 minutes	2.5 lpm/RCRA 8/8 Hour TWA
052015-02	South of Murry's Warehouse	1200 Liters / 480 minutes	2.5 lpm/RCRA 8/8 Hour TWA
052015-02	South of Murry's Warehouse	1200 Liters / 480 minutes	2.5 lpm/RCRA 8/8 Hour TWA
052015-03	West of Murry's Warehouse	1200 Liters / 480 minutes	2.5 lpm/RCRA 8/8 Hour TWA
052015-03	West of Murry's Warehouse	1200 Liters / 480 minutes	2.5 lpm/RCRA 8/8 Hour TWA
052115-04	East of Murry's Warehouse	1200 Liters / 480 minutes	2.5 lpm/RCRA 8/8 Hour TWA
052115-04	East of Murry's Warehouse	1200 Liters / 480 minutes	2.5 lpm/RCRA 8/8 Hour TWA
052215-01	West of Murry's Warehouse	642.6 liters / 378 minutes	1.7 lpm/Silica/8 Hour TWA
052215-02	North of Murry's Warehouse	642.6 liters / 378 minutes	1.7 lpm/Silica/8 Hour TWA
052215-03	East of Murry's Warehouse	646 liters / 380 minutes	1.7 lpm/Silica/8 Hour TWA
052215-04	South of Murry's Warehouse	647.7 liters / 381 minutes	1.7 lpm/Silica/8 Hour TWA
061615-01	North of Murry's Warehouse	1125 liters / 450 minutes	2.5 lpm/RCRA 8/8 Hour TWA
061615-01	North of Murry's Warehouse	1125 liters / 450 minutes	2.5 lpm/RCRA 8/8 Hour TWA
061615-02	East of Murry's Warehouse	1122.5 liters / 449 minutes	2.5 lpm/RCRA 8/8 Hour TWA
061615-02	East of Murry's Warehouse	1122.5 liters / 449 minutes	2.5 lpm/RCRA 8/8 Hour TWA
061615-03	West of Murry's Warehouse	1120 liters / 448 minutes	2.5 lpm/RCRA 8/8 Hour TWA
061615-03	West of Murry's Warehouse	1120 liters / 448 minutes	2.5 lpm/RCRA 8/8 Hour TWA
061615-04	South of Murry's Warehouse	1112.5 liters / 445 minutes	2.5 lpm/RCRA 8/8 Hour TWA
061615-04	South of Murry's Warehouse	1112.5 liters / 445 minutes	2.5 lpm/RCRA 8/8 Hour TWA

061615-01	North of Murry's Warehouse	765 liters / 450 minutes	1.7 lpm/Silica/8 Hour TWA
061615-02	East of Murry's Warehouse	763.3 liters / 449 minutes	1.7 lpm/Silica/8 Hour TWA
061615-03	West of Murry's Warehouse	761.6 liters / 448 minutes	1.7 lpm/Silica/8 Hour TWA
061615-04	South of Murry's Warehouse	756.5 liters / 445 minutes	1.7 lpm/Silica/8 Hour TWA

July 6, 2015

Dr. Steve Martin
MCM Management
39580 Woodward Avenue
Suite 200
Bloomfield Hills, MI 48304

RE: RCRA 8 Air Monitoring
Period: (April 23 through June 16, 2015)
Sparrows Point (8210 Penn Randall Place, Upper Marlboro, Maryland)
Project No.: 414-5

Dear Dr. Martin:

Arc Environmental, Inc was retained by MCM Management to perform monthly Resource Conservation and Recovery Act eight (RCRA 8) metals air monitoring during demolition activities at Murry's. Murry's is located at 8210 Penn Randall Place, Upper Marlboro, Maryland. The Industrial Hygienists' Mr. Jim Lovell, Mr. Andy Bresko, and Mr. Ibe Okonkwo conducted RCRA 8 Air sampling on the following dates: April 23, May 20 & 21, June 16, 2015. Demolition was performed by MCM Management.

Environmental background and work area/perimeter samples were collected to monitor RCRA 8 concentrations in the areas immediately surrounding the demolition area. The air samples were analyzed for the following metal particulates in air: Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, and Silver. The RCRA 8 metals and the respective Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL) is listed in Table 1.

Air samples were submitted to Scientific Analytical Institute for analysis of metals content. All air samples were analyzed in accordance with The National Institute for Occupational Safety and Health (NIOSH) Method 7300. Results for environmental area samples are calculated as a time weighted average in Table 2.

Table 1 – RCRA 8 Exposure Limits

Metal	OSHA PEL (8HR TWA)
Silver	10µg/m3
Arsenic	10µg/m3
Barium	500µg/m3
Cadmium	5µg/m3
Chromium	5µg/m3
Lead	50µg/m3
Selenium	200µg/m3
Mercury	100µg/m3

Table 2 – Analytical Results for Air Samples				
Sample Date	**Sample Type/Sample Location**	**Sample Number**	**Metal**	**Calculated 8-Hour TWA (ug/m^3)**
April 23, 2015	Background/North of Murry's Demolition	042315-1	Silver	<0.1
			Arsenic	<0.21
			Barium	<0.021
			Cadmium	<0.021
			Chromium	<0.063
			Lead	<0.1
			Selenium	<0.21
			Mercury	<0.008
April 23, 2015	Background/East of Murry's Demolition	042315-2	Silver	<0.11
			Arsenic	<0.21
			Barium	<0.021
			Cadmium	<0.021
			Chromium	<0.062
			Lead	<0.11
			Selenium	<0.21
			Mercury	<0.0081
April 23, 2015	Background/West of Murry's Demolition	042315-3	Silver	<0.11
			Arsenic	<0.21
			Barium	<0.021
			Cadmium	<0.021
			Chromium	<0.063
			Lead	<0.11
			Selenium	<0.21
			Mercury	<0.0081
April 23, 2015	Background/South of Murry's Demolition	042315-4	Silver	<0.11
			Arsenic	<0.21
			Barium	<0.021
			Cadmium	<0.021
			Chromium	<0.063
			Lead	<0.11
			Selenium	<0.21
			Mercury	<0.0083
April 23, 2015	Field Blank	Field Blank	Silver	-
			Arsenic	-
			Barium	-
			Cadmium	-
			Chromium	-
			Lead	-
			Selenium	-
			Mercury	-

Table 2 – Analytical Results for Air Samples				
Sample Date	**Sample Type/Sample Location**	**Sample Number**	**Metal**	**Calculated 8-Hour TWA (ug/m^3)**
May 20, 2015	Perimeter/North of Murry's Demolition	052015-1	Silver	<0.1
			Arsenic	<0.21
			Barium	0.036
			Cadmium	<0.021
			Chromium	0.04
			Lead	<0.1
			Selenium	<0.21
			Mercury	<0.0083
May 20, 2015	Perimeter/South of Murry's Demolition	052015-2	Silver	<0.1
			Arsenic	<0.21
			Barium	<0.021
			Cadmium	<0.021
			Chromium	0.35
			Lead	<0.1
			Selenium	<0.21
			Mercury	<0.0083
May 20, 2015	Perimeter/East of Murry's Demolition	052015-3	Silver	<0.1
			Arsenic	<0.21
			Barium	0.065
			Cadmium	<0.021
			Chromium	0.37
			Lead	<0.1
			Selenium	<0.21
			Mercury	<0.0083
May 21, 2015	Perimeter/West of Murry's Demolition	052115-4	Silver	<0.1
			Arsenic	<0.21
			Barium	<0.021
			Cadmium	<0.021
			Chromium	0.29
			Lead	<0.1
			Selenium	<0.21
			Mercury	<0.0083
June 16, 2015	Perimeter/North of Murry's Demolition	061615-1	Silver	<0.1
			Arsenic	<0.21
			Barium	<0.021
			Cadmium	<0.021
			Chromium	0.35
			Lead	<0.1
			Selenium	<0.21
			Mercury	<0.0083

Table 2 – Analytical Results for Air Samples				
Sample Date	**Sample Type/Sample Location**	**Sample Number**	**Metal**	**Calculated 8-Hour TWA (ug/m^3)**
June 16, 2015	Perimeter/East of Murry's Demolition	061615-2	Silver	<0.1
			Arsenic	<0.21
			Barium	0.021
			Cadmium	<0.021
			Chromium	0.24
			Lead	<0.1
			Selenium	<0.21
			Mercury	<0.0083
June 16, 2015	Perimeter/West of Murry's Demolition	061615-3	Silver	<0.1
			Arsenic	<0.21
			Barium	<0.021
			Cadmium	<0.021
			Chromium	0.35
			Lead	<0.1
			Selenium	<0.21
			Mercury	<0.0083
June 16, 2015	Perimeter/South of Murry's Demolition	061615-4	Silver	<0.1
			Arsenic	<0.2
			Barium	0.15
			Cadmium	<0.02
			Chromium	<0.062
			Lead	<0.1
			Selenium	<0.2
			Mercury	<0.0083

Based on OSHA if persons are exposed to airborne levels above the OSHA Permissible Exposure Limits (PEL) of the above mentioned metals OSHA recommends that engineering controls, respirators, and appropriate levels of personal protective equipment (PPE) be donned to limit employee exposure.

All of the RCRA 8 samples collected yielded concentrations below each respective OSHA PEL.

Arc Environmental is pleased to have performed this assessment for MCM Management, LLC. If you have any questions please call us at (410) 659-9971.

Sincerely,
Arc Environmental, Inc.

Andrew Bresko
Project Manager

Laboratory Certificates of Analysis

Airborne Metals Concentration by Inductively-Coupled Plasma Analysis (ICP)

NIOSH Method 7300

AIHA LAP, LLC ACCREDITED LABORATORY INDUSTRIAL HYGIENE ISO/IEC 17025:2005 www.aihaaccreditedlabs.org LAB #173190

Client:	ARC Environmental 1311 Haubert Rd Baltimore, MD 21230	**Attn:**	Andy Bresko	**Lab Order ID:** **Date Received:** **Date Reported:**	1512973 07/02/2015 07/09/2015
Project:	Murry's/414-5			**Page:**	**1 of 7**

Sample ID *Lab Sample ID*	Description Lab Notes	Flow Rate (L/min)	Sample Time (min)	Volume (L)	Element	Reporting Limit (µg)	Total Per Filter (µg)	Conc. (µg/m^3)	8 Hour TWA (µg/m^3)
042315-01	North of Murry's Warehouse	2.5	385	962.5	Ag	0.13	<0.13	<0.13	<0.1
					As	0.25	<0.25	<0.26	<0.21
					Ba	0.025	<0.025	<0.026	<0.021
					Cd	0.025	<0.025	<0.026	<0.021
					Cr	0.075	<0.075	<0.078	<0.063
1512973IPA_1					Pb	0.13	<0.13	<0.13	<0.1
					Se	0.25	<0.25	<0.26	<0.21
042315-02	East of Murry's Warehouse	2.5	388	970	Ag	0.13	<0.13	<0.13	<0.11
					As	0.25	<0.25	<0.26	<0.21
					Ba	0.025	<0.025	<0.026	<0.021
					Cd	0.025	<0.025	<0.026	<0.021
					Cr	0.075	<0.075	<0.077	<0.062
1512973IPA_2					Pb	0.13	<0.13	<0.13	<0.11
					Se	0.25	<0.25	<0.26	<0.21

Melissa Sharps

Analyst

Lab Director

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Airborne Metals Concentration by Inductively-Coupled Plasma Analysis (ICP)

NIOSH Method 7300

AIHA LAP, LLC ACCREDITED LABORATORY INDUSTRIAL HYGIENE ISO/IEC 17025:2005 www.aihaaccreditedlabs.org LAB #173190

Client:	ARC Environmental 1311 Haubert Rd Baltimore, MD 21230	**Attn:**	Andy Bresko	**Lab Order ID:** **Date Received:** **Date Reported:**	1512973 07/02/2015 07/09/2015
Project:	Murry's/414-5			**Page:**	**2 of 7**

Sample ID / *Lab Sample ID*	Description / Lab Notes	Flow Rate (L/min)	Sample Time (min)	Volume (L)	Element	Reporting Limit (µg)	Total Per Filter (µg)	Conc. (µg/m^3)	8 Hour TWA (µg/m^3)
042315-03	West of Murry's Warehouse	2.5	390	975	Ag	0.13	<0.13	<0.13	<0.11
					As	0.25	<0.25	<0.26	<0.21
					Ba	0.025	<0.025	<0.026	<0.021
					Cd	0.025	<0.025	<0.026	<0.021
					Cr	0.075	<0.075	<0.077	<0.063
1512973IPA_3					Pb	0.13	<0.13	<0.13	<0.11
					Se	0.25	<0.25	<0.26	<0.21
042315-04	South of Murry's Warehouse	2.5	396	990	Ag	0.13	<0.13	<0.13	<0.11
					As	0.25	<0.25	<0.25	<0.21
					Ba	0.025	<0.025	<0.025	<0.021
					Cd	0.025	<0.025	<0.025	<0.021
					Cr	0.075	<0.075	<0.076	<0.063
1512973IPA_4					Pb	0.13	<0.13	<0.13	<0.11
					Se	0.25	<0.25	<0.25	<0.21

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Airborne Metals Concentration by Inductively-Coupled Plasma Analysis (ICP)

NIOSH Method 7300

AIHA LAP, LLC ACCREDITED LABORATORY INDUSTRIAL HYGIENE ISO/IEC 17025:2005 www.aihaaccreditedlabs.org LAB #173190

Client:	ARC Environmental 1311 Haubert Rd Baltimore, MD 21230	**Attn:**	Andy Bresko	**Lab Order ID:** **Date Received:** **Date Reported:**	1512973 07/02/2015 07/09/2015
Project:	Murry's/414-5			**Page:**	**3 of 7**

Sample ID / *Lab Sample ID*	Description / Lab Notes	Flow Rate (L/min)	Sample Time (min)	Volume (L)	Element	Reporting Limit (µg)	Total Per Filter (µg)	Conc. (µg/m^3)	8 Hour TWA (µg/m^3)
042315-05	Field Blank	-	-	-	Ag	0.13	<0.13	-	-
					As	0.25	<0.25	-	-
					Ba	0.025	<0.025	-	-
					Cd	0.025	<0.025	-	-
					Cr	0.075	<0.075	-	-
1512973IPA_5					Pb	0.13	<0.13	-	-
					Se	0.25	<0.25	-	-
052015-01	North of Murry's Warehouse	2.5	480	1200	Ag	0.13	<0.13	<0.1	<0.1
					As	0.25	<0.25	<0.21	<0.21
					Ba	0.025	0.044	0.036	0.036
					Cd	0.025	<0.025	<0.021	<0.021
					Cr	0.075	0.49	0.4	0.4
1512973IPA_6					Pb	0.13	<0.13	<0.1	<0.1
					Se	0.25	<0.25	<0.21	<0.21

Melissa Sharps

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Scientific Analytical Institute, Inc. 4604 Dundas Dr. Greensboro, NC 27407 (336) 292-3888

Airborne Metals Concentration by Inductively-Coupled Plasma Analysis (ICP)

NIOSH Method 7300

AIHA LAP, LLC ACCREDITED LABORATORY INDUSTRIAL HYGIENE ISO/IEC 17025:2005 www.aihaaccreditedlabs.org LAB #173190

Client:	ARC Environmental 1311 Haubert Rd Baltimore, MD 21230	**Attn:**	Andy Bresko	**Lab Order ID:** **Date Received:** **Date Reported:**	1512973 07/02/2015 07/09/2015
Project:	Murry's/414-5			**Page:**	**4 of 7**

Sample ID / *Lab Sample ID*	Description / Lab Notes	Flow Rate (L/min)	Sample Time (min)	Volume (L)	Element	Reporting Limit (µg)	Total Per Filter (µg)	Conc. (µg/m^3)	8 Hour TWA (µg/m^3)
052015-02	South of Murry's Warehouse	2.5	480	1200	Ag	0.13	<0.13	<0.1	<0.1
					As	0.25	<0.25	<0.21	<0.21
					Ba	0.025	<0.025	<0.021	<0.021
					Cd	0.025	<0.025	<0.021	<0.021
					Cr	0.075	0.42	0.35	0.35
1512973IPA_7					Pb	0.13	<0.13	<0.1	<0.1
					Se	0.25	<0.25	<0.21	<0.21
052015-03	West of Murry's Warehouse	2.5	480	1200	Ag	0.13	<0.13	<0.1	<0.1
					As	0.25	<0.25	<0.21	<0.21
					Ba	0.025	0.078	0.065	0.065
					Cd	0.025	<0.025	<0.021	<0.021
					Cr	0.075	0.45	0.37	0.37
1512973IPA_8					Pb	0.13	<0.13	<0.1	<0.1
					Se	0.25	<0.25	<0.21	<0.21

Melissa Sharps

Analyst

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Airborne Metals Concentration by Inductively-Coupled Plasma Analysis (ICP)

NIOSH Method 7300

AIHA LAP, LLC ACCREDITED LABORATORY INDUSTRIAL HYGIENE ISO/IEC 17025:2005 www.aihaaccreditedlabs.org LAB #173190

Client:	ARC Environmental 1311 Haubert Rd Baltimore, MD 21230	**Attn:**	Andy Bresko	**Lab Order ID:** **Date Received:** **Date Reported:**	1512973 07/02/2015 07/09/2015
Project:	Murry's/414-5			**Page:**	**5 of 7**

Sample ID / *Lab Sample ID*	Description / Lab Notes	Flow Rate (L/min)	Sample Time (min)	Volume (L)	Element	Reporting Limit (µg)	Total Per Filter (µg)	Conc. (µg/m^3)	8 Hour TWA (µg/m^3)
052115-04	East of Murry's Warehouse	2.5	480	1200	Ag	0.13	<0.13	<0.1	<0.1
					As	0.25	<0.25	<0.21	<0.21
					Ba	0.025	<0.025	<0.021	<0.021
					Cd	0.025	<0.025	<0.021	<0.021
					Cr	0.075	0.35	0.29	0.29
1512973IPA_9					Pb	0.13	<0.13	<0.1	<0.1
					Se	0.25	<0.25	<0.21	<0.21
061615-01	North of Murry's Warehouse	2.5	450	1125	Ag	0.13	<0.13	<0.11	<0.1
					As	0.25	<0.25	<0.22	<0.21
					Ba	0.025	<0.025	<0.022	<0.021
					Cd	0.025	<0.025	<0.022	<0.021
					Cr	0.075	0.26	0.23	0.22
1512973IPA_10					Pb	0.13	<0.13	<0.11	<0.1
					Se	0.25	<0.25	<0.22	<0.21

Melissa Sharps

Analyst

Lab Director

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Scientific Analytical Institute, Inc. 4604 Dundas Dr. Greensboro, NC 27407 (336) 292-3888

Airborne Metals Concentration by Inductively-Coupled Plasma Analysis (ICP)

NIOSH Method 7300

AIHA LAP, LLC ACCREDITED LABORATORY INDUSTRIAL HYGIENE ISO/IEC 17025:2005 www.aihaaccreditedlabs.org LAB #173190

Client:	ARC Environmental 1311 Haubert Rd Baltimore, MD 21230	**Attn:**	Andy Bresko	**Lab Order ID:** **Date Received:** **Date Reported:**	1512973 07/02/2015 07/09/2015
Project:	Murry's/414-5			**Page:**	**6 of 7**

Sample ID *Lab Sample ID*	Description Lab Notes	Flow Rate (L/min)	Sample Time (min)	Volume (L)	Element	Reporting Limit (µg)	Total Per Filter (µg)	Conc. (µg/m^3)	8 Hour TWA (µg/m^3)
061615-02	East of Murry's Warehouse	2.5	449	1122.5	Ag	0.13	<0.13	<0.11	<0.1
					As	0.25	<0.25	<0.22	<0.21
					Ba	0.025	0.026	0.023	0.021
					Cd	0.025	<0.025	<0.022	<0.021
					Cr	0.075	0.29	0.26	0.24
1512973IPA_11					Pb	0.13	<0.13	<0.11	<0.1
					Se	0.25	<0.25	<0.22	<0.21
061615-03	West of Murry's Warehouse	2.5	448	1120	Ag	0.13	<0.13	<0.11	<0.1
					As	0.25	<0.25	<0.22	<0.21
					Ba	0.025	<0.025	<0.022	<0.021
					Cd	0.025	<0.025	<0.022	<0.021
					Cr	0.075	<0.075	<0.067	<0.063
1512973IPA_12					Pb	0.13	<0.13	<0.11	<0.1
					Se	0.25	<0.25	<0.22	<0.21

Melissa Sharps

Analyst

Lab Director

This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. This report may not be used by the client to claim product endorsement by AIHA or any other agency of the U.S. government. Scientific Analytical Institute participates in the AIHA IHPAT program. IHPAT Laboratory ID: 173190. Unless otherwise noted blank sample correction was not performed on analytical results. Reporting limits stated above.

Scientific Analytical Institute, Inc. 4604 Dundas Dr. Greensboro, NC 27407 (336) 292-3888

Airborne Metals Concentration by Inductively-Coupled Plasma Analysis (ICP)

NIOSH Method 7300

AIHA LAP, LLC ACCREDITED LABORATORY INDUSTRIAL HYGIENE ISO/IEC 17025:2005 www.aihaaccreditedlabs.org LAB #173190

Client:	ARC Environmental 1311 Haubert Rd Baltimore, MD 21230	**Attn:**	Andy Bresko	**Lab Order ID:** **Date Received:** **Date Reported:**	1512973 07/02/2015 07/09/2015
Project:	Murry's/414-5			**Page:**	**7 of 7**

Sample ID *Lab Sample ID*	Description Lab Notes	Flow Rate (L/min)	Sample Time (min)	Volume (L)	Element	Reporting Limit (µg)	Total Per Filter (µg)	Conc. (µg/m^3)	8 Hour TWA (µg/m^3)
061615-04	South of Murry's Warehouse	2.5	445	1112.5	Ag	0.13	<0.13	<0.11	<0.1
					As	0.25	<0.25	<0.22	<0.2
					Ba	0.025	0.18	0.16	0.15
					Cd	0.025	<0.025	<0.022	<0.02
					Cr	0.075	<0.075	<0.067	<0.062
1512973IPA_13					Pb	0.13	<0.13	<0.11	<0.1
					Se	0.25	<0.25	<0.22	<0.2

Melissa Sharps

Analyst

Lab Director

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Scientific Analytical Institute, Inc. 4604 Dundas Dr. Greensboro, NC 27407 (336) 292-3888

1512973

Scientific Analytical Institute, Inc.
4604 Dundas Dr. Greensboro, NC 27407
Phone: 336.292.3888 Fax: 336.292.3313
www.sailab.com lab@sailab.com

Lab Use Only
Lab Order ID: ~~1512974~~
Client Code: _____

Company Contact Information

Company: *Arc Environmental*	Contact: Andy Bresko
Address: *1311 Haubert Street*	Phone ☐: 757-870-6121
Baltimore, MD 21230	Fax ☐:
	Email ☒: abresko@arcenvironmental.com

Billing/Invoice Information

SAME ☒
Company:
Contact:
Address:

Turn Around Times^

90 Min. ☐	48 Hours ☐
3 Hours ☐	72 Hours ☐
6 Hours ☐	96 Hours ☐
12 Hours ☐	120 Hours ☒
24 Hours ☐	144+ Hours ☐

^ *TATs not available for certain test*

PO Number:

Project Name/Number: Murry's/414-5

Industrial Hygiene Test Types

** Modified NIOSH 7500/OSHA ID 142*

Silica as Alpha Quartz (XSZ)*	☐
With Respirable Dust (XDZ)	☐
Silica as Cristobalite (XSC)*	☐
With Respirable Dust (XDC)	☐
Silica as Tridymite (XST)*	☐
With Respirable Dust (XDT)	☐
Silica as Alpha Quartz, Cristobalite, Tridymite (XSA)*	☒
With Respirable Dust (XDA)	☒
Silica Bulk (XSI)*	☐
Bulk Phase ID/Whole Rock (XUK)	☐
Total Dust NIOSH Method 0500 (GTD)	☐
Respirable Dust NIOSH Method 0600 (GRD)	☐
PCM NIOSH 7400-A Rules (PCM)	☐
B Rules (PCB) ☐ TWA (PTA) ☐	
TEM NIOSH 7402 (Asbestos) (TNI)	☐
Hexavalent Chromium (OSHA ID-215) (Note if from spray paint operations) (CIC)	☐
Metals-Air (NIOSH 7300/OSHA ID-125) (Specify Metals Under Comments) (IPA)	☐
Welding Profile -18 (NIOSH 7300/OSHA ID-125) (IPA or IPM)	☐
Soldering Metals-9 (OSHA ID-206) (IPA or IPM)	☐
Metal-Bulk (Modified OSHA ID-125G) (IPB)	☐
Hg Bulk (SW-846 7471B/ASTM D3624-85a)	☐
Hg Air (NIOSH 6009/OSHA ID-140)	☐
Other: **RCRA 8 - ICP**	☒

Sample ID #	Description/Location	Volume/Area	Comments
042315-01	North of Murry's Warehouse	962.5 Liters / 385 Minutes	2.5 lpm/RCRA 8/8 Hour TWA
042315-01	North of Murry's Warehouse	962.5 Liters / 385 Minutes	2.5 lpm/RCRA 8/8 Hour TWA
042315-02	East of Murry's Warehouse	970 Liters / 388 Minutes	2.5 lpm/RCRA 8/8 Hour TWA
042315-02	East of Murry's Warehouse	970 Liters / 388 Minutes	2.5 lpm/RCRA 8/8 Hour TWA
042315-03	West of Murry's Warehouse	975 Liters / 390 Minutes	2.5 lpm/RCRA 8/8 Hour TWA
042315-03	West of Murry's Warehouse	975 Liters / 390 Minutes	2.5 lpm/RCRA 8/8 Hour TWA
042315-04	South of Murry's Warehouse	990 Liters / 396 Minutes	2.5 lpm/RCRA 8/8 Hour TWA
042315-04	South of Murry's Warehouse	990 Liters / 396 Minutes	2.5 lpm/RCRA 8/8 Hour TWA
042315-05	Field Blank		RCRA 8/8-Hour TWA
042315-05	Field Blank		RCRA 8/8-Hour TWA

Accepted ☐
Rejected ☐

Total # of Samples 26

Relinquished by	Date/Time	Received by	Date/Time

~~1512164~~

Andy Bresko			

A-F-018 EXP: 5-2-2014

1512973

Scientific Analytical Institute, Inc.
4604 Dundas Dr. Greensboro, NC 27407
Phone: 336.292.3888 Fax: 336.292.3313
www.sailab.com lab@sailab.com

Lab Use Only
Lab Order ID: ~~1512964~~
Client Code: _____

Sample ID #	Description/Location	Volume/Area	Comments
043015-1	North of Murry's Warehouse	542 Liters / 319 Minutes	1.7 lpm/Silica/8-Hour TWA
043015-2	East of Murry's Warehouse	542 Liters / 319 Minutes	1.7 lpm/Silica/8-Hour TWA
043015-3	West of Murry's Warehouse	542 Liters / 319 Minutes	1.7 lpm/Silica/8-Hour TWA
043015-4	South of Murry's Warehouse	542 Liters / 319 Minutes	1.7 lpm/Silica/8-Hour TWA
Field Blank	Field Blank		Silica/8-Hour TWA
052015-01	North of Murry's Warehouse	1200 Liters / 480 minutes	2.5 lpm/RCRA 8/8 Hour TWA
052015-01	North of Murry's Warehouse	1200 Liters / 480 minutes	2.5 lpm/RCRA 8/8 Hour TWA
052015-02	South of Murry's Warehouse	1200 Liters / 480 minutes	2.5 lpm/RCRA 8/8 Hour TWA
052015-02	South of Murry's Warehouse	1200 Liters / 480 minutes	2.5 lpm/RCRA 8/8 Hour TWA
052015-03	West of Murry's Warehouse	1200 Liters / 480 minutes	2.5 lpm/RCRA 8/8 Hour TWA
052015-03	West of Murry's Warehouse	1200 Liters / 480 minutes	2.5 lpm/RCRA 8/8 Hour TWA
052115-04	East of Murry's Warehouse	1200 Liters / 480 minutes	2.5 lpm/RCRA 8/8 Hour TWA
052115-04	East of Murry's Warehouse	1200 Liters / 480 minutes	2.5 lpm/RCRA 8/8 Hour TWA
052215-01	West of Murry's Warehouse	642.6 liters / 378 minutes	1.7 lpm/Silica/8 Hour TWA
052215-02	North of Murry's Warehouse	642.6 liters / 378 minutes	1.7 lpm/Silica/8 Hour TWA
052215-03	East of Murry's Warehouse	646 liters / 380 minutes	1.7 lpm/Silica/8 Hour TWA
052215-04	South of Murry's Warehouse	647.7 liters / 381 minutes	1.7 lpm/Silica/8 Hour TWA
061615-01	North of Murry's Warehouse	1125 liters / 450 minutes	2.5 lpm/RCRA 8/8 Hour TWA
061615-01	North of Murry's Warehouse	1125 liters / 450 minutes	2.5 lpm/RCRA 8/8 Hour TWA
061615-02	East of Murry's Warehouse	1122.5 liters / 449 minutes	2.5 lpm/RCRA 8/8 Hour TWA
061615-02	East of Murry's Warehouse	1122.5 liters / 449 minutes	2.5 lpm/RCRA 8/8 Hour TWA
061615-03	West of Murry's Warehouse	1120 liters / 448 minutes	2.5 lpm/RCRA 8/8 Hour TWA
061615-03	West of Murry's Warehouse	1120 liters / 448 minutes	2.5 lpm/RCRA 8/8 Hour TWA
061615-04	South of Murry's Warehouse	1112.5 liters / 445 minutes	2.5 lpm/RCRA 8/8 Hour TWA
061615-04	South of Murry's Warehouse	1112.5 liters / 445 minutes	2.5 lpm/RCRA 8/8 Hour TWA

ALTERNATIVE CONSTRUCTION & ENVIRONMENTAL SOLUTIONS, INC.

2247 Wrightsboro Road
Augusta, GA 30904

Mailing Address: PO Box 3229, Augusta, GA 30914-3229
Telephone: 706-262-2000 • Facsimile: 706-262-3299 • www.aces-usa.com

April 16, 2015

Client: Hartwell City Hall
456 East Howell Street
Hartwell, Georgia 30643
ATTN: Mr. David Aldrich, City Manager

Project: TEM Area Air Sampling
501 Rome Street
Hartwell, Georgia
Report Number: 1759-101-001

On March 31, 2015, representatives of Alternative Construction & Environmental Solutions, Inc. (ACES) were present at the above referenced project location to obtain TEM area air samples from random locations around the demolition area. This report relates only to the materials tested and may not be accurate at a significantly later date. In addition, this report shall not be reproduced except in full and with the written consent of ACES. The following is a summary of that inspection with necessary documents referenced and attached.

1.0 SCOPE OF WORK

The scope of work included obtaining twelve air samples to be analyzed by Transmission Electron Microscopy (TEM). The samples were obtained in a circle around the demolition site. The blanks were not analyzed due to the results obtained. A visual inspection was not performed to determine if any asbestos containing debris was present in the work area. Finally, a written report documenting the findings was to be prepared.

2.0 SUMMARY OF AIR SAMPLING AND TEM ANALYSIS

The following is a summary of samples taken and analysis performed for the air samples taken at the referenced project. All pump locations are taken and mapped as facing the structure.

Sample ID	Sample Location	Result	LOD
AB 01	Left Middle	BDL	10.6 s/mm^2
AB 02	Lower Left	BDL	10.6 s/mm^2
AB 03	Back Left	10.6 s/mm^2	10.6 s/mm^2
AB 04	Back Middle	BDL	10.6 s/mm^2
AB 05	Back Right	BDL	10.6 s/mm^2
AB 06	Lower Right	BDL	10.6 s/mm^2
AB 07	Middle Right	BDL	10.6 s/mm^2
AB 08	Upper Right	BDL	10.6 s/mm^2
AB 09	Middle Front	BDL	10.6 s/mm^2
AB 10	Front Left	BDL	10.6 s/mm^2
AB 11	Front Left Corner	BDL	10.6 s/mm^2
AB 12	Upper Left	BDL	10.6 s/mm^2
	Average of all readings	10.6 s/mm^2	

BDL – Below Detectable Limit

3.0 CONCLUSION

Based on the above samples and subsequent analysis, the overall average of readings were below the required clearance levels as established by the AHERA Regulation had this been an AHERA project. No visual evidence of asbestos containing debris was present in the work area.

4.0 ATTACHMENTS

The following items are attached to and made a part of this report:

Attachment 1: TEM Analysis Results w/Chain of Custody

ALTERNATIVE CONSTRUCTION & ENVIRONMENTAL SOLUTIONS, INC.

Cliff Hampton
Manager
Industrial Hygiene, Safety & Health Division

Attachments

McCall and Spero
Environmental, Inc.
Specialists in Microanalysis

1831 Williamson Court • Suite 100 • Louisville, KY 40223
Phone (502) 244-7135 • (800) 841-0180 • FAX (502) 244-7136
E-mail: customerservice@mselabs.com • Website: www.mselabs.com

Date: April 9, 2015

Attention: Mark Hartz
ACES, Inc.

Subject: Analysis of air samples for asbestos mineral fibers by Transmission Electron Microscopy (TEM)

RE: MSE-425ACESA
Hartwell City Hall / 501 Rome St. Hartwell, GA Project
ACES#1759-101

Dear Mr. Hartz:

McCall and Spero Environmental, Inc. has completed the analyses of the air samples we received from your office on April 3, 2015. These samples represent the TEM samples for the Hartwell City Hall / 501 Rome St. Hartwell, GA Project - ACES#1759-101.

The TEM counting procedures described for the asbestos-containing materials in schools under the Asbestos Hazard Emergency Response Act (AHERA) were used during the analyses. Specifically, structures were counted in two categories: 0.5 to 5.0 micrometers in length and greater than 5 micrometers in length, which were added together for a total asbestos structure count.

The results for the ten (12) samples are summarized in Tables I & II. TEM sample analysis printouts are also attached.

Thank you for consulting McCall and Spero Environmental, Inc. Should you have any questions concerning these results, please contact our office.

Sincerely,

S. Dewayne Lear

S. Dewayne Lear, B.S.
TEM Laboratory Director

NVLAP®
NVLAP Lab Code 101895-0

SUMMARY OF AHERA TEM RESULTS

TABLE I

Inside Samples

Project Name: Hartwell City Hall / 501 Rome St. Hartwell, GA Project - ACES#1759-101

McCall and Spero Project No: MSE-425ACESA

MSE Lab ID	Client ID	# of Asb. Struc.	Asb. Type	Sample Vol. (1)	Calculated Analytical Sensitivity (s/cc)	Conc. (s/cc)	Conc. (s/mm²)
I01	AB01	NSD	NA	852	0.0048	BDL (0.0048)*	BDL (10.6)*
I02	AB02	NSD	NA	848	0.0048	BDL (0.0048)*	BDL (10.6)*
I03	AB03	1	CH	842	0.0049	0.0049	10.6
I04	AB04	NSD	NA	834	0.0049	BDL (0.0049)*	BDL (10.6)*
I05	AB05	NSD	NA	830	0.0049	BDL (0.0049)*	BDL (10.6)*
I06	AB06	NSD	NA	824	0.0050	BDL (0.0050)*	BDL (10.6)*
I07	AB07	NSD	NA	818	0.0050	BDL (0.0050)*	BDL (10.6)*
I08	AB08	NSD	NA	802	0.0051	BDL (0.0051)*	BDL (10.6)*
I09	AB09	NSD	NA	794	0.0052	BDL (0.0052)*	BDL (10.6)*
I10	AB10	NSD	NA	786	0.0052	BDL (0.0052)*	BDL (10.6)*

Filter Type: MCE
Filter diameter: 25mm
Effective filter Area: 385mm²
Pore Size: 0.45um

Mean Grid Square Area: 0.00940mm²
Grid Openings Analyzed Per Sample: 10
Area Analyzed Per Sample: 0.0940mm²
Non-Asbestos Debris: Non-Fibrous Debris

Notes:
F=Fiber B=Bundle C=Cluster M=Matrix NSD=No Structures Detected
NA = Not Applicable BDL = Below Detectable Limit CH = Chrysotile A = Amosite
SAED=Selected Area Electron Diffraction EDS-Energy Dispersive Spectrometry
s/mm² - asbestos structures per square millimeter
s/cc = asbestos structures per cubic centimeter
* Single fiber detection limits are used when no structures are detected.

Results apply only to the items listed.
The analysis was performed according to the TEM Method (40CFR part 763).
This laboratory is in compliance with the specified method.
Analytical results may not be used by any party to claim product endorsement by NVLAP or any agency of the U.S. Government.

TEM Laboratory Director: S. Dugan Lea Date: 4/9/15

SUMMARY OF AHERA TEM RESULTS

TABLE II

Inside Samples

Project Name: Hartwell City Hall / 501 Rome St. Hartwell, GA Project - ACES#1759-101

McCall and Spero Project No: MSE-425ACESA

MSE Lab ID	Client ID	# of Asb. Struc.	Asb. Type	Sample Vol. (1)	Calculated Analytical Sensitivity (s/cc)	Conc. (s/cc)	Conc. (s/mm²)
I11	AB11	NSD	NA	782	0.0052	BDL (0.0052)*	BDL (10.6)*
I12	AB12	NSD	NA	768	0.0053	BDL (0.0053)*	BDL (10.6)*

Filter Type: MCE
Filter diameter: 25mm
Effective filter Area: 385mm²
Pore Size: 0.45um

Mean Grid Square Area: 0.00940mm²
Grid Openings Analyzed Per Sample: 10
Area Analyzed Per Sample: 0.0940mm²
Non-Asbestos Debris: Non-Fibrous Debris

Notes:
F=Fiber B=Bundle C=Cluster M=Matrix NSD=No Structures Detected
NA = Not Applicable BDL = Below Detectable Limit CH = Chrysotile A = Amosite
SAED=Selected Area Electron Diffraction EDS-Energy Dispersive Spectrometry
s/mm² - asbestos structures per square millimeter
s/cc = asbestos structures per cubic centimeter
* Single fiber detection limits are used when no structures are detected.

Results apply only to the items listed.
The analysis was performed according to the TEM Method (40CFR part 763).
This laboratory is in compliance with the specified method.
Analytical results may not be used by any party to claim product endorsement by NVLAP or any agency of the U.S. Government.

TEM Laboratory Director: S. Dyne Lear Date: 4/9/15

ALTERNATIVE CONSTRUCTION & ENVIRONMENTAL SOLUTIONS, INC.

PO Box 3229, Augusta, Georgia 30914
Phone: 706-262-2000

2247 Wrightsboro Road, Augusta, Georgia 30904
Fax 706-262-3299

CHAIN OF CUSTODY – AIR SAMPLE LOG

CLIENT: Hartwell City Hall **PROJECT NAME:** _____ **PROJECT NO.:** 1759-101

PROJECT LOCATION: 501 Rome Street, Hartwell, GA **CONTRACTOR:** _____ **DATE:** 3/31

DATE	SAMPLE ID	SAMPLE TYPE	SAMPLE LOCATION	TIME START	TIME END	TOTAL TIME	FLOW RATE BEG	FLOW RATE END	FLOW RATE AVG	TOTAL VOLUME	F/CC	LOD
3/31	AB#1	O	Left middle (Facing house)	8:35	3:41	426	2.0	2.0	2.0	852		
3/31	AB#2	O	Lower left (Facing house)	8:39	3:43	424	2.0	2.0	2.0	848		
3/31	AB#3	O	Back left (Facing house)	8:43	3:44	421	2.0	2.0	2.0	842		
3/31	AB#4	O	Back middle (Facing house)	8:48	3:45	417	2.0	2.0	2.0	834		
3/31	AB#5	O	Back Right (Facing house)	8:52	3:47	415	2.0	2.0	2.0	830		
3/31	AB#6	O	Lower Right (Facing house)	8:56	3:48	412	2.0	2.0	2.0	824		
3/31	AB#7	O	Middle Right (Facing house)	9:00	3:49	409	2.0	2.0	2.0	818		
3/31	AB#8	O	Upper Right (Facing house)	9:04	3:51	401	2.0	2.0	2.0	802		
3/31	AB#9	O	Middle Front (Facing house)	9:15	3:52	397	2.0	2.0	2.0	794		
3/31	AB#10	O	Front left (Facing house)	9:20	3:53	393	2.0	2.0	2.0	786		
3/31	AB#11	O	Front Left Corner (Facing house)	9:23	3:54	391	2.0	2.0	2.0	782		

DESCRIPTION OF WORK Demolition of entire home utilizing foam

Standard Turn

SAMPLE TYPES

INSIDE	(I)
OUTSIDE	(O)
PERSONNEL	(P)
SURVEY	(S)
FINAL	(F)
BACKGROUND	(B)

FOR PERSONEL SAMPLES RECORD NAME & SSN

SIGNATURE (NAME, TIME & DATE)

1. RELINQUISHED BY _____

RECEIVED BY _____ 1030 4/2/15

2. RELINQUISHED BY _____

RECEIVED BY _____

ALTERNATIVE CONSTRUCTION & ENVIRONMENTAL SOLUTIONS, INC.

PO Box 3229, Augusta, Georgia 30914
Phone: 706-262-2000

2247 Wrightsboro Road, Augusta, Georgia 30904
Fax 706-262-3299

CHAIN OF CUSTODY – AIR SAMPLE LOG

2 of 2

CLIENT: Hartwell City Hall PROJECT NAME: PROJECT NO.: 1759-101

PROJECT LOCATION: 501 Rome Street, Hartwell, GA CONTRACTOR: DATE: 3/31

DATE	SAMPLE ID	SAMPLE TYPE	SAMPLE LOCATION	TIME START	TIME END	TOTAL TIME	FLOW RATE BEG	FLOW RATE END	FLOW RATE AVG	TOTAL VOLUME	F/CC	LOD
3/31	AB12	O	Upper left (facing house	9:31 ~~2.0~~	3:55	384	2.0	2.0	2.0 ~~2.00~~	768		
3/31	AB13		Blank	—	—	—	—	—	—	—		
3/31	AB14		Blank	—	—	—	—	—	—	—		

DESCRIPTION OF WORK Demolition of entire home using foam

Standard Turn

SIGNATURE (NAME, TIME & DATE)

1. RELINQUISHED BY
RECEIVED BY 1050 4/2/18

2. RELINQUISHED BY
RECEIVED BY

SAMPLE TYPES

INSIDE	(I)
OUTSIDE	(O)
PERSONNEL	(P)
SURVEY	(S)
FINAL	(F)
BACKGROUND	(B)

FOR PERSONEL SAMPLES RECORD NAME & SSN

ATLANTA
Corporate Headquarters
3945 Lakefield Court
Suwanee, GA 30024
(770) 866-3200 FAX (770) 866-3259

Erin Hutto-Garmon
Professional Environmental Management
P.O. Box 1661
Loganville, GA 30052

MAS Project # M56442

Samples were received on 1/1/2013
Referencing your Job Name: Georgia Tech Howey Physics Lecture Halls 1 & 2
Job. Number:
PO. Number:

Enclosed are the results for the samples listed below:

Sample #	Location	Volume	Sample #	Location	Volume
001	LH1C-01	1247 Liters			
002	LH1C-02	1247 Liters			
003	LH1C-03	1257 Liters			
004	LH2C-04	1267 Liters			
005	LH2C-05	1267 Liters			
006	LH2C-06	1277 Liters			

Sincerely

Michael D. Mount, CIH, OHST
TEM Asbestos Dept.

Enc:

[1] **The samples were prepared and analyzed using counting rules in general accordance with NIST NVLAP and AHERA regulations as published in the Federal Register, October 30, 1987, EPA 40 CFR Part 763. The analytical method used has been outlined in MAS SOP #MT-007, AHERA ASBESTOS ANALYSIS PROCEDURE USING TEM.**

[1] **This report relates only to items tested as received, and may not be used to claim endorsement by NVLAP or any other U.S. government agency. This report may not be reproduced except in full with the approval of Materials Analytical Services, Inc. (MAS). MAS assumes that samples were collected by qualified personnel using proper procedures. MAS does not assume any responsibility for analyses reported as structures/cm3 on samples collected by non-laboratory personnel.**

NVLAP Lab Code 101235-0

MAS
3945 Lakefield Court
Suwanee, GA 30024
Phone (770) 866-3200 FAX (770) 886-3295

M56442

Date In: 1/1/2013
Prepped: 1/1/2013
Analyzed: 1/1/2013
Analysis type: AHERA Style
Sample type: Air

Professional Environmental Management
Georgia Tech Howey Physics Lecture Halls 1 & 2

MAS #	Location	Volume	Sample Comments	Detection Limit	TOTALS Structures	\cc	\mm2	Analyzed
001	LH1C-01	1247 Liters	lecture hall 1 bottom level of room	0.00467	0	< 0.0047	< 15.1	Yes
002	LH1C-02	1247 Liters	lecture hall 1 center area of room	0.00467	0	< 0.0047	< 15.1	Yes
003	LH1C-03	1257 Liters	lecture hall 1 top level of room	0.00463	0	< 0.0046	< 15.1	Yes
004	LH2C-04	1267 Liters	lecture hall 2 bottom level of room	0.00459	0	< 0.0046	< 15.1	Yes
005	LH2C-05	1267 Liters	lecture hall 2 center are of room	0.00459	0	< 0.0046	< 15.1	Yes
006	LH2C-06	1277 Liters	lecture hall 2 top level of room	0.00456	0	< 0.0046	< 15.1	Yes

*** If the total of structures detected is 0, then the total structures per cc and mm2 will be shown as less than the detection limits.**

MAS TEM ANALYSIS M56442-001

CLIENT NAME:	**Professional Environmental Management**	**CLIENT SAMPLE ID:**	**LH1C-01**

Sample Area/ Volume:	**1247 Liters**	**Date Analyzed:**	1/1/2013	
Filter Type:	MCE 25mm	**Analyst:**	Mike Mount	
Pore size:	0.45	**Signature**		
Effective Filter Area:	385	**Scope Number:**	3	
Sample type:	Air	**Accelerating Voltage:**	100	KV
Analysis type:	AHERA Style	**Indicated Mag:**	25	KX
		Screen Mag:	20	KX
		Grid box Number:	8107	

Grid Acceptance	Yes
Loading Estimate:	5 %
>50% grid openings covered by replica section:	Yes
>50% grid intact:	Yes
<50% filter undissolved:	Yes
<50% overlap or folded replicates	Yes

Grid Opening Acceptance	
≥20 grids w/o overlap or folded replica	Yes
<5% holes:	Yes
<5% opaque area:	Yes

Number of grids:	**2**	**#1:** **105**	**#3:** **105**
Number of openings:	**6**	**#2:** **105**	**#4:** **105**

Average Grid Size:	**0.011025**
Total Area Analyzed:	**0.066**

Str < 5:	**0**
Str ≥ 5:	**0**
Total str:	**0**

Str ≥ 5.0:	**0.0000**	**/cc**
	0.0	**/mm2**
Str < 5.0:	**0.0000**	**/cc**
	0.0	**/mm2**

Analytical Sensitivity (str/cc): 0.0047

Total mm2: 0.0 **Total cc: 0.0000**

Str#:	SquareID:	Type:	Structure:	0.5 to < 5.0 um	≥ 5.0 um	Morph:	SAED:	EDS:	Photo:	Sketch:
	A4-D4		**NSD**					☐	☐	☐
	D7		**NSD**					☐	☐	☐
	G7		**NSD**					☐	☐	☐
	A5-D4		**NSD**					☐	☐	☐
	D7		**NSD**					☐	☐	☐
	G7		**NSD**					☐	☐	☐

MAS TEM ANALYSIS M56442-002

CLIENT NAME:	**Professional Environmental Management**	**CLIENT SAMPLE ID:**	**LH1C-02**

Sample Area/ Volume:	**1247 Liters**	**Date Analyzed:**	1/1/2013	
Filter Type:	MCE 25mm	**Analyst:**	Mike Mount	
Pore size:	0.45	**Signature**		
Effective Filter Area:	385	**Scope Number:**	3	
Sample type:	Air	**Accelerating Voltage:**	100	KV
Analysis type:	AHERA Style	**Indicated Mag:**	25	KX
		Screen Mag:	20	KX
		Grid box Number:	8107	

Grid Acceptance	Yes
Loading Estimate:	0 %
>50% grid openings covered by replica section:	Yes
>50% grid intact:	Yes
<50% filter undissolved:	Yes
<50% overlap or folded replicates	Yes

Grid Opening Acceptance	
≥20 grids w/o overlap or folded replica	Yes
<5% holes:	Yes
<5% opaque area:	Yes

Number of grids:	**2**	**#1:**	**105**	**#3:**	**105**
Number of openings:	**6**	**#2:**	**105**	**#4:**	**105**

Average Grid Size:	**0.011025**
Total Area Analyzed:	**0.066**

Str < 5:	**0**	**Str ≥ 5.0:**	**0.0000**	/cc
Str ≥ 5:	**0**		**0.0**	/mm2
Total str:	**0**	**Str < 5.0:**	**0.0000**	/cc
			0.0	/mm2

Analytical Sensitivity (str/cc): 0.0047

Total mm2: 0.0 **Total cc: 0.0000**

Str#:	SquareID:	Type:	Structure:	0.5 to < 5.0 um	≥ 5.0 um	Morph:	SAED:	EDS:	Photo:	Sketch:
	B3-C3		**NSD**					☐	☐	☐
	H3		**NSD**					☐	☐	☐
	H8		**NSD**					☐	☐	☐
	B4-C3		**NSD**					☐	☐	☐
	D7		**NSD**					☐	☐	☐
	H8		**NSD**					☐	☐	☐

MAS TEM ANALYSIS M56442-003

CLIENT NAME:	**Professional Environmental Management**	**CLIENT SAMPLE ID:**	**LH1C-03**

Sample Area/ Volume:	**1257 Liters**	**Date Analyzed:**	1/1/2013	
Filter Type:	MCE 25mm	**Analyst:**	Mike Mount	
Pore size:	0.45	**Signature**		
Effective Filter Area:	385	**Scope Number:**	3	
Sample type:	Air	**Accelerating Voltage:**	100	KV
Analysis type:	AHERA Style	**Indicated Mag:**	25	KX
		Screen Mag:	20	KX
		Grid box Number:	8107	

Number of grids:	**2**	**#1:**	**105**	**#3:**	**105**
Number of openings:	**6**	**#2:**	**105**	**#4:**	**105**

Grid Acceptance	Yes
Loading Estimate:	2 %
>50% grid openings covered by replica section:	Yes
>50% grid intact:	Yes
<50% filter undissolved:	Yes
<50% overlap or folded replicates	Yes

Grid Opening Acceptance	
≥20 grids w/o overlap or folded replica	Yes
<5% holes:	Yes
<5% opaque area:	Yes

Average Grid Size:	**0.011025**		
Total Area Analyzed:	**0.066**		
Str < 5:	**0**	**Str ≥ 5.0:**	**0.0000** /cc
			0.0 /mm2
Str ≥ 5:	**0**	**Str < 5.0:**	**0.0000** /cc
			0.0 /mm2
Total str:	**0**		

Analytical Sensitivity (str/cc): 0.0046

Total mm2: 0.0 **Total cc: 0.0000**

Str#:	SquareID:	Type:	Structure:	0.5 to < 5.0 um	≥ 5.0 um	Morph:	SAED:	EDS:	Photo:	Sketch:
	C3-D7		**NSD**					☐	☐	☐
	H8		**NSD**					☐	☐	☐
	H3		**NSD**					☐	☐	☐
	C4-C3		**NSD**					☐	☐	☐
	G7		**NSD**					☐	☐	☐
	H8		**NSD**					☐	☐	☐

MAS TEM ANALYSIS M56442-004

CLIENT NAME:	**Professional Environmental Management**	**CLIENT SAMPLE ID:**	**LH2C-04**

Sample Area/ Volume:	**1267 Liters**	**Date Analyzed:**	1/1/2013	
Filter Type:	MCE 25mm	**Analyst:**	Mike Mount	
Pore size:	0.45	**Signature**		
Effective Filter Area:	385	**Scope Number:**	3	
Sample type:	Air	**Accelerating Voltage:**	100	KV
Analysis type:	AHERA Style	**Indicated Mag:**	25	KX
		Screen Mag:	20	KX
		Grid box Number:	8107	

Grid Acceptance	Yes
Loading Estimate:	2 %
>50% grid openings covered by replica section:	Yes
>50% grid intact:	Yes
<50% filter undissolved:	Yes
<50% overlap or folded replicates	Yes

Grid Opening Acceptance	
≥20 grids w/o overlap or folded replica	Yes
<5% holes:	Yes
<5% opaque area:	Yes

Number of grids:	**2**	**#1:** **105**	**#3:** **105**
Number of openings:	**6**	**#2:** **105**	**#4:** **105**

Average Grid Size:	**0.011025**
Total Area Analyzed:	**0.066**

Str < 5:	**0**
Str ≥ 5:	**0**
Total str:	**0**

Str ≥ 5.0:	**0.0000**	/cc
	0.0	/mm2
Str < 5.0:	**0.0000**	/cc
	0.0	/mm2

Analytical Sensitivity (str/cc): 0.0046

Total mm2: 0.0 **Total cc: 0.0000**

Str#:	SquareID:	Type:	Structure:	0.5 to < 5.0 um	≥ 5.0 um	Morph:	SAED:	EDS:	Photo:	Sketch:
	D3-C3		**NSD**					☐	☐	☐
	C8		**NSD**					☐	☐	☐
	H8		**NSD**					☐	☐	☐
	D4-C3		**NSD**					☐	☐	☐
	E8		**NSD**					☐	☐	☐
	H3		**NSD**					☐	☐	☐

MAS TEM ANALYSIS M56442-005

CLIENT NAME:	**Professional Environmental Management**	**CLIENT SAMPLE ID:**	**LH2C-05**

Sample Area/ Volume:	**1267 Liters**	**Date Analyzed:**	1/1/2013	
Filter Type:	MCE 25mm	**Analyst:**	Mike Mount	
Pore size:	0.45	**Signature**		
Effective Filter Area:	385	**Scope Number:**	3	
Sample type:	Air	**Accelerating Voltage:**	100	KV
Analysis type:	AHERA Style	**Indicated Mag:**	25	KX
		Screen Mag:	20	KX
		Grid box Number:	8107	

Grid Acceptance	Yes
Loading Estimate:	2 %
>50% grid openings covered by replica section:	Yes
>50% grid intact:	Yes
<50% filter undissolved:	Yes
<50% overlap or folded replicates	Yes

Grid Opening Acceptance	
≥20 grids w/o overlap or folded replica	Yes
<5% holes:	Yes
<5% opaque area:	Yes

Number of grids:	**2**	**#1:** **105**	**#3:** **105**
Number of openings:	**6**	**#2:** **105**	**#4:** **105**

Average Grid Size:	**0.011025**
Total Area Analyzed:	**0.066**

Str < 5:	**0**
Str ≥ 5:	**0**
Total str:	**0**

Str ≥ 5.0:	**0.0000**	/cc
	0.0	/mm2
Str < 5.0:	**0.0000**	/cc
	0.0	/mm2

Analytical Sensitivity (str/cc): 0.0046

Total mm2: 0.0 **Total cc: 0.0000**

Str#:	SquareID:	Type:	Structure:	0.5 to < 5.0 um	≥ 5.0 um	Morph:	SAED:	EDS:	Photo:	Sketch:
	E3-C3		**NSD**					☐	☐	☐
	H3		**NSD**					☐	☐	☐
	H8		**NSD**					☐	☐	☐
	E4-D4		**NSD**					☐	☐	☐
	D7		**NSD**					☐	☐	☐
	H8		**NSD**					☐	☐	☐

MAS TEM ANALYSIS M56442-006

CLIENT NAME:	**Professional Environmental Management**	**CLIENT SAMPLE ID:**	**LH2C-06**

Sample Area/ Volume:	**1277 Liters**	**Date Analyzed:**	1/1/2013	
Filter Type:	MCE 25mm	**Analyst:**	Mike Mount	
Pore size:	0.45	**Signature**		
Effective Filter Area:	385	**Scope Number:**	3	
Sample type:	Air	**Accelerating Voltage:**	100	KV
Analysis type:	AHERA Style	**Indicated Mag:**	25	KX
		Screen Mag:	20	KX
		Grid box Number:	8107	

Number of grids:	**2**	**#1:**	**105**	**#3:**	**105**
Number of openings:	**6**	**#2:**	**105**	**#4:**	**105**

Grid Acceptance	Yes
Loading Estimate:	2 %
>50% grid openings covered by replica section:	Yes
>50% grid intact:	Yes
<50% filter undissolved:	Yes
<50% overlap or folded replicates	Yes

Grid Opening Acceptance	
≥20 grids w/o overlap or folded replica	Yes
<5% holes:	Yes
<5% opaque area:	Yes

Average Grid Size:	**0.011025**		
Total Area Analyzed:	**0.066**		
Str < 5:	**0**	**Str ≥ 5.0:**	**0.0000** /cc
			0.0 /mm2
Str ≥ 5:	**0**	**Str < 5.0:**	**0.0000** /cc
Total str:	**0**		**0.0** /mm2

Analytical Sensitivity (str/cc): 0.0046

Total mm2: 0.0 **Total cc: 0.0000**

Str#:	SquareID:	Type:	Structure:	0.5 to < 5.0 um	≥ 5.0 um	Morph:	SAED:	EDS:	Photo:	Sketch:
	B1-B5		**NSD**					☐	☐	☐
	B9		**NSD**					☐	☐	☐
	H4		**NSD**					☐	☐	☐
	A1-D4		**NSD**					☐	☐	☐
	D7		**NSD**					☐	☐	☐
	G7		**NSD**					☐	☐	☐

M56442

Professional Environmental Management, Inc.

PO Box 1661 • Loganville, GA 30052
Telephone 678/687-4630
egarmon@pem-env.com

Transmittal Sheet for Air Sample Analysis

Client Name: GA Tech
Project Name: Howey Physics Lecture Halls 1 & 2
Project No.:
Sampling Date: 1-1-2013
Collected By: Ricky Garmon

Chain of Custody Report

Sample ID	Sample Description (i.e. Location, Name, etc.)	Pump Number	Time (min) Start	Stop	Total	FLOW RATE Start	End	Avg	Volume	Asbestos PCM	Asbestos TEM	Lead Air
LH1C-01	Clearance Sample - Lecture Hall 1 Bottom Level of Room	008	1019	1225	126	9.9	9.9	9.9	1247		X	
LH1C-02	Clearance Sample - Lecture Hall 1 Center Area of Room	003	1019	1225	126	9.9	9.9	9.9	1247		X	
LH1C-03	Clearance Sample - Lecture Hall 1 Top Level of Room	006	1019	1226	127	9.9	9.9	9.9	1257		X	
LH2C-04	Clearance Sample - Lecture Hall 2 Bottom Level of Room	007	1020	1228	128	9.9	9.9	9.9	1267		X	
LH2C-05	Clearance Sample - Lecture Hall 2 Center Area of Room	009	1020	1228	128	9.9	9.9	9.9	1267		X	
LH2C-06	Clearance Sample - Lecture Hall 2 Top Level of Room	010	1020	1229	129	9.9	9.9	9.9	1277		X	
Field Blank 1 Field Blank 2											X X	

Turnaround Time: Normal: [ ] Rush: [X]

Comments:

Rotometers: RHV-01

Relinquished by:	Ricky Garmon	Date/Time	1-1-13/1320
Received by:		Date/Time	1/1/13
Relinquished by:		Date/Time	
Received by:		Date/Time	

Delivered Directly to Lab: [X] Shipped: [ ]
Method of Shipment:
Lab Recipient:
Date:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAY 16 2012

Mr. William T. Cavness
Director
The Asbestos Institute
20033 North 19th Avenue
Phoenix, Arizona 85027

ASSISTANT ADMINISTRATOR
FOR ENFORCEMENT AND
COMPLIANCE ASSURANCE

Dear Mr. Cavness:

I am responding to your January 27, 2012, letter to the United States Environmental Protection Agency (EPA) Administrator Lisa P. Jackson. The Asbestos Institute has requested clarification from the EPA on the use of foam to meet the "adequately wet" standard as stated in the asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 Code of Federal Regulations (CFR) Part 61, Subpart M.

The asbestos NESHAP defines "adequately wet" at Section 61.141, to mean:

> . . . sufficiently mix or penetrate with liquid to prevent the release of particulates. If visible emissions are observed coming from asbestos-containing material, then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wet.

Foam is a substance that is formed by trapping pockets of gas in a liquid or solid. As long as the foam is applied as a liquid and sufficiently mixes with or penetrates the asbestos-containing material and prevents visible emissions, the use of such foam is acceptable in meeting the adequately wet requirement. This response is limited to your question regarding foam as a wetting agent, and does not address or otherwise suggest agreement with other statements made in your letter.

In addition to the "adequately wet" standard, the Asbestos NESHAP includes other asbestos emission control requirements (also known as "work practice standards") during the demolition or renovation operation. See 40 CFR Section 61.145(c)(1) – (10). It is the responsibility of the owner/operator to comply with all the work practice standards of the asbestos NESHAP relating to the demolition or renovation operation including the "adequately wet" standard. With regard to the "adequately wet" standard, the owner/operator must ensure that the foam and its application prevent visible emissions during the demolition or renovation operation. Except for the "structurally unsound and in danger of imminent collapse" provision, the asbestos NESHAP requires the owner or operator to remove all regulated asbestos-containing material (RACM) from a facility being demolished or renovated before any activity begins that would break up, dislodge, or similarly disturb the material, or preclude access to the material for subsequent removal. See 40 CFR Section 61.145(a)(3) and Section 61.145(c)(1).

Thank you for your request for clarification. If you require further information, please contact me or Everett Bishop in the EPA Office of Compliance at (202) 564-7032 or bishop.everett@epa.gov.

Sincerely,

Cynthia Giles

Cynthia Giles
Assistant Administrator

cc: The Honorable Tim Ryan, United States House of Representatives

-----Original Message-----
From: William Spain [mailto:Wm_Spain@dnr.state.ga.us]
Sent: Thursday, April 28, 2011 10:27 AM
To: Stan Murray
Cc: Marcus Mincey; Mindy Crean
Subject: Wet Methods For ACM Removal

This email is to acknowledge we have observed and accepted a foam method of wet ACM removal being performed by Bilmar for notified projects in Georgia.
We have observed it being used for transite, wallboard, joint compound, and other materials.
Because the foam is substantially more than 90 % water and contains a surfactant, we considered it to be an enhanced method of amended water wetting when used as observed. Third party air sample results have demonstrated it can be effectively used to minimize airborne fibers.
This email is not intended to be an endorsement or approval of the method because we do not have that authority. However, we have observed and accepted its use as a wet method on multiple projects.

William H. Spain
Team Leader
Lead-Based Paint and Asbestos Program
Georgia EPD
Phone 404-363-7026
Fax 404-362-2607

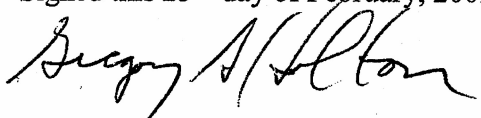
Holton Environmental Associates, Inc.
187 Chuniloti Way
Loudon, Tennessee 37774

CERTIFICATION

I am a graduate of the United States Military Academy where I obtained a B.S. degree in Applied Science and Engineering. I also hold M.S. and Ph.D. degrees in Environmental Engineering from the University of North Carolina. I have testified in state and federal courts numerous times as an expert in air monitoring, air dispersion modeling, and source characterization. I have over 33 years of experience managing environmental projects and have authored over 60 technical publications. Included in my experience are many projects involving asbestos characterization, abatement, and air monitoring. In 1996, I was awarded Qualified Environmental Professional (QEP) certification by the Institute of Professional Environmental Practice. In accordance with CPL 02-02-063 (Revised), my education and experience qualify me to certify alternative control methods as described in CFR 1926.1101(g)(6)(ii).

I have reviewed technical specifications (attached) for asbestos-containing floor tile and mastic abatement using the FiberStop™ Foam Containment System and independently acquired air monitoring data for three projects that used the FiberStop™ Foam Containment System. In addition, I have personally supervised four projects where asbestos-containing floor tile and mastic were removed using the FiberStop™ Foam Containment System. Based on this review and personal supervision, I certify that the FiberStop™ Foam Containment System, if practiced in accordance with its specification, is a viable alternative control method that meets all OSHA requirements to control asbestos fiber releases during asbestos- containing floor tile and mastic abatement. Further, it has been my experience that the FiberStop™ Foam Containment System is a very cost effective and safe way to remove floor tile and mastic that contains asbestos. In all air monitoring samples that I have reviewed and/or collected, no sample ever exceeded the OSHA workplace standard of 0.1 f/cc. In fact most samples did not contain any detectable levels of asbestos fibers. All laboratory-certified detection levels were at least 50 times more stringent than the standard.

Signed this 23 rd day of February, 2009.



Gregory A. Holton, Ph.D.

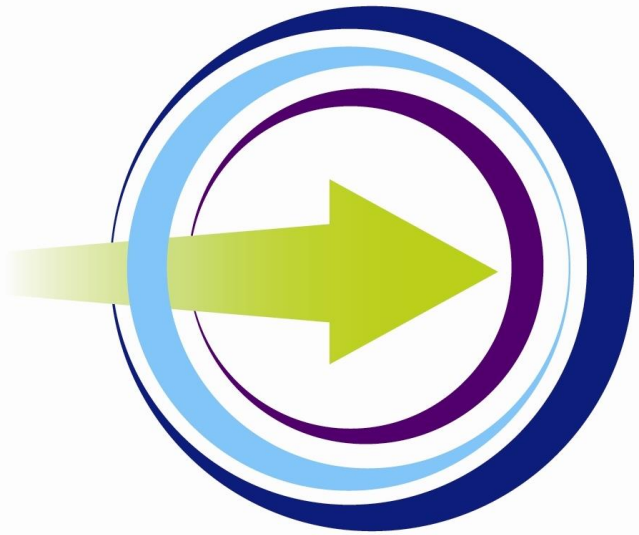
Telephone: 865 458-2051 Facsimile: 865 408-0388

Universities and School Systems	City of Atlanta Schools
	Bibb County Schools
	Catoosa County Schools
	Clarke County Schools
	Georgia College
	Georgia State University
	Georgia Institute of Technology
	University of Georgia

Municipalities	City of Atlanta
	Rome Housing Authority
	City of Commerce
	City of Dalton
	City of Dublin
	City of Jefferson
	City of Toccoa

Government	Fort Benning
	Dobbins AFB
	Internal Revenue Service
	Elmendorf AFB
	Naval base Hawaii
	Nellis AFB

Private Industries	Coca-Cola Company
	Lockheed Martin
	CORO Realty – multiple housing complexes
	Delta Airlines
	Lake Lanier Islands – Pine Isle
	Wrigley's Industries
	John Mansville Plant
	Proctor Gamble



FoamShield™

particle capture technology