

**Hazardous Materials  
Survey Report  
Of  
MCAS Building 1039  
(Applied Instrument Building)  
  
Marine Corps Air Station  
Beaufort, South Carolina**



**Prepared For:**

**BES, Inc.  
2712 Bull Street  
Beaufort, SC 29902**

Inspection Conducted and Report Prepared  
By:

*Tehsin Aurangabadwala*

Tehsin Aurangabadwala  
KCI Technologies, Inc.  
936 Ridgebrook Road  
Sparks, MD 21152  
KCI Project: 12159262.04

Inspection Date: 10/14/2015  
Report Issue Date: 12/07/2015

Asbestos Building Inspector License #BI-01129  
License Expiration Date: 12/30/2015  
Phone# 410-891-1726

## Executive Summary

KCI Technologies, Inc. (KCI) was retained by BES Inc. (Client) to conduct a pre-renovation survey for hazardous materials anticipated to be disturbed during renovation of the Applied Instrument Building 1039 located on the Marine Corps Air Station in Beaufort, South Carolina. The scope of renovation includes replacing roof, repair building exterior finish, repair interior walls and ceilings in the two story section of the facility and replacing exterior doors and windows.

### *Asbestos Containing Materials (ACM):*

Based on a comprehensive review of the previous asbestos inspection report and sample analysis results from KCI's investigation the following information was identified.

- The following fourteen homogeneous areas were identified as suspect ACM in previous inspection report by Small Business Group, Inc. dated November 2013:
  - ❖ H-1a/b: 12" gray floor tile and associated black mastic
  - ❖ H-2: Black cove mastic
  - ❖ H-3: Brown stair tread mastic
  - ❖ H-4: Gypsum board/joint compound
  - ❖ H-5: Ceiling tiles with grooves
  - ❖ H-6: Ceiling tiles with pits
  - ❖ H-7a/b: Gypsum board ceiling and Joint compound
  - ❖ H-8: White vent duct mastic
  - ❖ H-9: Roofing tar
  - ❖ H-10: Misc., Black flashing mastic is accessible, non-friable ACM, in good condition with a low potential for disturbance. (Approx. 450 linear feet)
  - ❖ H-11: White cove mastic
  - ❖ H-12: White exterior/interior window/door caulking
  - ❖ H-13: White roof caulk
  - ❖ H-14: Misc., Fire doors, is assumed non-friable ACM in good condition with a low potential for disturbance. (5 each)
- Thirteen previously identified homogenous materials (H-1, H-2, H-3, H-4, H-5, H-6, H-7a/b, H-8, H-9, H-11, H-12 and H-13) were found to be non-asbestos containing materials and are still located in the building.
- Previously identified homogenous materials H-10 – black flashing mastic was found to contain asbestos and H-14 – fire doors were assumed to contain asbestos: H-10 and H-14 are still located in the building.
- KCI collected additional samples of previously identified homogenous materials H-1a/b and H-4&7a/b to verify each layer/material separately for asbestos content. The analytical results confirmed that none of the sampled homogenous materials contain asbestos.
- The following two additional homogenous areas were identified during this inspection.
  - ❖ H-15: Brown insulation beneath fiberglass insulation below the roofing tar located throughout the roof.; miscellaneous material (Misc.) - three samples were collected for lab analysis
  - ❖ H-16: Shingles located around the vents located on the roofs; Misc. - three samples were collected for lab analysis.
- None of the two additional homogeneous areas sampled contained asbestos.

***Lead Based Paint:***

Based on screening of representative surfaces, throughout the interior and exterior of the building, KCI has determined that no interior and exterior painted surfaces contain lead-based paint, defined as  $\geq 0.7\text{mg}/\text{cm}^2$  by the South Carolina Department of Health and Environmental Control. However the OSHA Lead in Construction Standard (29 CFR 1926.62) defines lead based paint as a material containing any detectable amount of lead and the guidelines specified in the OSHA's standard must be followed prior to disturbing any materials or surfaces with lead.

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## **1.0 Introduction**

KCI Technologies, Inc. (KCI) was retained by BES Inc. (Client) to conduct a pre-renovation survey for hazardous materials anticipated to be disturbed during renovation of the Applied Instrument Building 1039 located on the Marine Corps Air Station (MCAS) in Beaufort, South Carolina.

The scope of work included: (1) review of existing reports; (2) conducting visual inspections of the proposed area for renovation; (3) collecting bulk samples for analysis and quantification of suspect asbestos-containing materials (ACM); (4) analyzing select surfaces for the presence of lead based paint; (4) and preparation of this report to document findings.

## **2.0 Site Description**

Building 1039 is a 5,562 square-foot building constructed in 1985. It is a concrete block structure with brick exterior and a built-up roof, constructed on a concrete slab. The MCAS plans to repair and improve Building 1039. The scope of renovation includes replacing roof, repair building exterior finish, repair interior walls and ceilings in the two story section of the facility and replacing exterior doors and windows.

The floor plan of the Building 1039 is included as Appendix A.

## **3.0 HAZMAT Survey**

### **3.1 Asbestos Containing Materials (ACMs) Survey**

The scope of work included: review of historical documents, visual inspection of area anticipated to be disturbed during renovation for suspect ACMs, assessment of quantity and physical condition of any suspect ACM, collection and submission of suspect ACM samples to a laboratory for analysis.

The ACM inspection was conducted by KCI representative, Ms. Tehsin Aurangabadwala on October 14, 2015. A copy of Ms. Aurangabadwala's South Carolina Department of Health and Environmental Control asbestos building inspector license (#BI-01129) is included in Appendix B.

Prior to conducting the Hazardous Building Material Survey at the subject site, KCI reviewed existing information concerning previous hazardous materials investigations. The reviewed information included:

- Asbestos Re-Inspection report by Small Business Group, Inc. dated November 2013
- Lead Based Paint Inspection report by Small Business Group, Inc. dated January 2012
- Lead Based Paint Inspection report by Small Business Group, Inc. dated October 2011
- Lead Based Paint Inspection report by Environmental Enterprise Group, Inc. dated October 2005

A significant amount of reliable data was extracted from these documents. The analysis results from previously analyzed asbestos samples were incorporated into the data of this report and are presented in Table 3.1.2 – Homogenous Materials Summary Table.

KCI's building inspector collected eighteen (18) bulk samples of suspect ACM using a hand tools to obtain samples containing all discrete layers. The samples were then placed in sealable plastic bags and assigned unique identifiers that were recorded on the bags and on the bulk survey sampling sheets. The suspect asbestos bulk samples collected by KCI's building inspector were submitted, along with a chain-of-custody form, to AMA Analytical Services Inc. located in Lanham Maryland. AMA is accredited by the American Industrial Hygiene Association (AIHA #100470) and National Institute of Standards and

Technology through the National Voluntary Laboratory Accreditation Program (NVLAP) for Bulk Asbestos Analysis (NVLAP #101143-0).

The samples were analyzed for the presence of asbestos by Polarized Light Microscopy (PLM) method and Transmission Electron Microscopy (TEM). PLM is an optical microscopic technique that distinguishes the different types of asbestos fibers by their shape and unique optical properties. The technique is based on the refraction of light from various crystalline asbestos structures and the observation of the corresponding color changes through the microscope. All PLM analysis was performed following the methodologies documented in the EPA method 600/R-93/116, July 1993, "Method for the Determination of Asbestos in Bulk Building Materials".

TEM analysis is a procedure where a beam of electrons is directed at the sample to be analyzed. The electrons are scattered by the surface irregularities of the sample and are subsequently collected over a narrow solid angle and focused by an objective lens onto a phosphorescent screen. TEM results in a high-resolution image and allows a greater degree of precision in identifying the presence or absence of asbestos fibers in a given sample substrate, as compared with PLM methods of analysis. TEM analysis was performed following the methodologies documented in the TEM New York ELAP Method 198.4.

A summary of suspect asbestos samples collected and submitted for analysis by KCI are listed in Table 3.1.1.

<b>Table 3.1.1 - Suspect Asbestos Bulk Sample Log</b>						
<b>Sample Number</b>	<b>Material Description</b>	<b>Sample Location</b>	<b>Analysis Type</b>	<b>Result/Asbestos Type</b>	<b>Type / Category</b>	<b>Friability</b>
1039-01	Drywall	Room 201	PLM	NAD	Misc.	Friable
1039-02	Joint Compound	Second floor Women's RR	PLM	NAD	Misc.	Friable
1039-03	Drywall	Room 107	PLM	NAD	Misc.	Friable
1039-04	Joint Compound	Room 107	PLM	NAD	Misc.	Friable
1039-05	Drywall	Room 111	PLM	NAD	Misc.	Friable
1039-06	Joint Compound	Room 111	PLM	NAD	Misc.	Friable
1039-07	Shingles	Roof R100	PLM	NAD	Misc.	Non Friable
1039-08	Shingles	Roof R100	PLM	NAD	Misc.	Non Friable
1039-09	Shingles	Roof R100	TEM	NAD	Misc.	Non Friable
1039-10	Insulation beneath Fiberglass - brown	Roof R100	PLM	NAD	Misc.	Friable
1039-11	Insulation beneath Fiberglass - brown	Roof R100	PLM	NAD	Misc.	Friable
1039-12	Insulation beneath Fiberglass - brown	Roof R100	PLM	NAD	Misc.	Friable
1039-13	12" Floor tile - grey	First Floor Stairwell	PLM	NAD	Misc.	Non Friable
1039-14	12" Floor tile - grey	First Floor Hallway	PLM	NAD	Misc.	Non Friable
1039-15	12" Floor tile - grey	Second Floor Stairwell	TEM	NAD	Misc.	Non Friable
1039-16	Mastic - black	Beneath 1039-13	PLM	NAD	Misc.	Non Friable
1039-17	Mastic - black	Beneath 1039-14	PLM	NAD	Misc.	Non Friable
1039-18	Mastic - black	Beneath 1039-15	TEM	NAD	Misc.	Non Friable
<b>Note:</b>						
NAD – No asbestos detected						
TSI – Thermal System Insulation		Surf – Surfacing		Misc. – Miscellaneous		

A summary of all suspect ACMs identified during KCI’s survey is provided in the Table 3.1.2. The asbestos certificates of analysis and relevant historical data are included in Appendix C and D respectively of this report.

Table 3.1.2. Homogenous Materials Summary Table								
Hom. Area	Material Description	Location	Sample Numbers	Sample Results	Quantity	ACM Category	ACM Friability	ACM Condition
H-1	12” Floor tile – grey and associated black mastic	Throughout the building	1039-1-01, 1039-1-02, 1039-1-03, 1039-10-001 A&B*	All NAD	3,000 SF	--	--	--
H-1a	12” Floor tile – grey		1039-13, 1039-14, 1039-15*	All NAD		--	--	--
H-1b	Black mastic beneath 12” grey floor tile		1039-16, 1039-17, 1039-18*	All NAD		--	--	--
H-2	Black cove mastic	Throughout the building	1039-2-01, 1039-2-02, 1039-2-03, 1039-10-002*	All NAD	400	--	--	--
H-3	Brown stair tread mastic	Stairs in the building	1039-3-01, 1039-3-02, 1039-3-03, 1039-10-003*	All NAD	20 SF	--	--	--
H-4a/b	Gypsum board/ Joint compound	Throughout the building	1039-4-01, 1039-4-02, 1039-4-03	All NAD	<1,500 SF	--	--	--
H-7a/b	Gypsum board ceiling/Joint compound		1039-7-01, 1039-7-02, 1039-7-03	All NAD		--	--	--
H-4/7a	Gypsum (drywall)		1039-01, 1039-03, 1039-05	All NAD		--	--	--
H-4/7b	Joint Compound		1039-02, 1039-04, 1039-06	All NAD		--	--	--
H-5	Ceiling tiles with grooves	Throughout the building	1039-5-01, 1039-5-02, 1039-5-03	All NAD	400 SF	--	--	--
H-6	Ceiling tiles with pits	Throughout the building	1039-6-01, 1039-6-02, 1039-6-03	All NAD	3,000 SF	--	--	--
H-8	White vent duct mastic	Throughout the building	1039-001, 1039-002, 1039-10-004*	All NAD	300 SF	--	--	--
H-9	Roofing tar	Roof	1039-003 & 004, 1039-016, 1039-017, 1039-10-005*	All NAD	5,500 SF	--	--	--
H-10	Black flashing mastic	Roof	1039-005 & 006, 1039-018, 1039-019, 1039-10-006	5% C, 14% C, PS, NAD	450 LF	Misc.	Non Friable	Good
H-11	White cove mastic	Throughout the building	1039-10-007*, 1039-10-008, 1039-10-009	All NAD	200 LF	--	--	--
H-12	White exterior/interior window/door caulking	Throughout the building	1039-10-010*, 1039-10-011, 1039-10-012	All NAD	500 LF	--	--	--
H-13	White roof seam caulk	Roof	1039-10-013*, 1039-10-014, 1039-10-015	All NAD	40 LF	--	--	--
H-14	Fire doors, assumed	Throughout the building		All NAD	5 EA	Misc.	Non Friable	Good

Table 3.1.2. Homogenous Materials Summary Table								
Homo. Area	Material Description	Location	Sample Numbers	Sample Results	Quantity	ACM Category	ACM Friability	ACM Condition
H-15	Brown Insulation	Roof – beneath fiberglass insulation located below roofing tar	1039-10, 1039-11, 1039-12	All NAD	--	--	--	--
H-16	Shingles	Roof – around vents	1039-07, 1039-08, 1039-09	All NAD	--	--	--	--
NOTES: * Samples were analyzed via TEM method of analysis. C- Chrysotile asbestos NAD - No asbestos detected; PS – Positive stop Shaded row indicates ACM present or material assumed to contain ACM.				SF-Square feet LF- Linear feet EA- Each				

The EPA defines an asbestos containing material as "any material containing greater than one percent asbestos as determined using the method specified in appendix A, subpart F, 40 CFR part 763, Section 1, PLM."

The following two homogenous materials were determined by laboratory analysis or assumed to contain greater than 1% asbestos.

- H-10: Misc., Black flashing mastic is accessible, non-friable ACM, in good condition with a low potential for disturbance. (Approx. 450 linear feet)
- H-14: Misc., Fire doors, is assumed non-friable ACM in good condition with a low potential for disturbance. (5 each). KCI identified 3 additional doors with a fire – rating label located in Rooms 111 and 108 and have assumed to be ACM.

Refer to Appendix E for photographs.

KCI recommends removing and disposing of all friable and non-friable ACMs that are anticipated to be affected by the proposed renovation/demolition activities in accordance with applicable Federal, State, and local regulations.

### 3.2 Lead Based Paint (LBP) Screening

KCI's Lead Inspector performed a LBP screening of the subject site in order to characterize painted surfaces for lead content.

Testing for lead content in paints was performed with Thermo Scientific Niton XLp (model #XLp 300, serial # 17603, Resourced in December 2015) x-ray fluorescence (XRF) Spectrum Analyzer. The Thermo Scientific Niton XLp detects lead by reading the fluorescence emanating from a painted surface when exposed to small amounts of radiation. XRF readings are in mg/cm<sup>2</sup>, a mass per area reading. LBP is defined as >1.0 mg/cm<sup>2</sup> by the U. S. Dept. of Housing and Urban Development (HUD) and ≥0.7mg/cm<sup>2</sup> by South Carolina Department of Health and Environmental Control (SCDHEC). These guidelines govern child occupied target housing and are only identified as guidance in this report. The Occupational Safety and Health Administration (OSHA) Lead in Construction Standard (29 CFR 1926.62) defines lead based paint as any detectable amount and guidelines must be followed for any activity which may bring a worker in contact with lead. Therefore a negative classification based on the EPA/HUD definition does not necessarily mean the component is lead free.

The LBP screening at the site included seventy-one (71) XRF readings, including twelve (12) calibration readings. Table 3.2.1 below summarizes the results of the LBP screening.

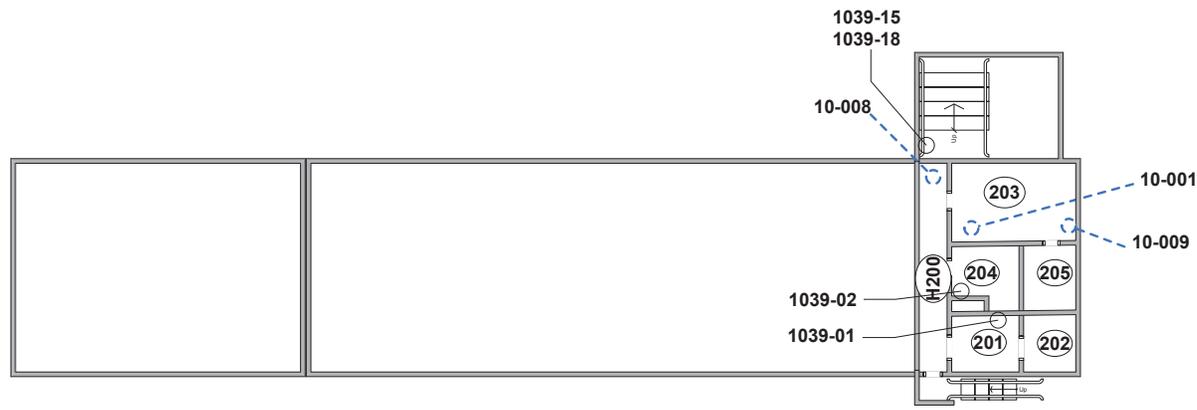
<b>Table 3.2.1: Summary of XRF Results</b>						
<b>Sample Number</b>	<b>Substrate</b>	<b>Component</b>	<b>Color</b>	<b>Location / Description</b>	<b>XRF Reading (mg/cm<sup>2</sup>)</b>	<b>LBP</b>
Cal-1	--	SRM - 2579	Red	Calibration Test	1.1	--
Cal-2	--	SRM - 2579	Red	Calibration Test	1.0	--
Cal-3	--	SRM - 2579	Red	Calibration Test	1.1	--
1	CMU	Wall	Off-White	Exterior	0	Negative
2	CMU	Wall	Off-White	Exterior	0	Negative
3	Metal	Door	Tan	Exterior	0	Negative
4	Metal	Door	Tan	Exterior	0	Negative
5	Metal	Door	Tan	Exterior	0	Negative
6	Metal	Stair Riser	Tan	Exterior	0.16	Negative
7	Metal	Stair Rail	Tan	Exterior	0.1	Negative
8	Metal	Stair Tread	Tan	Exterior	0.04	Negative
9	Metal	Window Sash	Tan	Exterior	0.23	Negative
10	Concrete	Window	Off-White	Exterior	0.01	Negative
11	Metal	Pipe	Off-White	Exterior	0	Negative
12	Metal	Downspout	Tan	Exterior	0	Negative
13	Metal	Gutter	Tan	Exterior	0	Negative
14	Metal	Door	Tan	Exterior	0	Negative
Cal-4	--	SRM - 2579	Red	Calibration Test	1.1	--
Cal-5	--	SRM - 2579	Red	Calibration Test	1.2	--
Cal-6	--	SRM - 2579	Red	Calibration Test	1.0	--
<b>Table Notes:</b> SRM – 2579: NIST Standard Reference Material						

Based on the results of the LBP screening of Building 1039, KCI has determined that none of the painted surfaces contain lead-based paint, defined as  $\geq 0.7\text{mg/cm}^2$  by the South Carolina Department of Health and Environmental Control. However small amounts of lead was detected in the painted surfaces that were tested. The OSHA Lead in Construction Standard defines lead based paint as any detectable amount and guidelines must be followed prior to disturbing these surfaces.

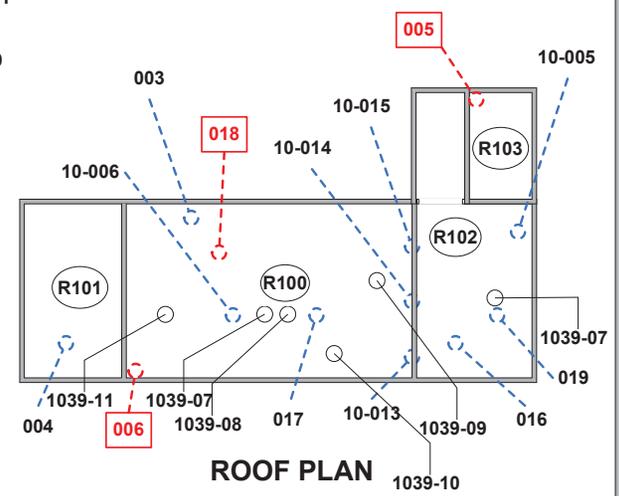
#### 4.0 Disclaimer

This report has been prepared by KCI Technologies, Inc. exclusively for our Client and their Authorized Representatives. The survey was performed for selected areas within the building. The findings and recommendations presented are based upon discussions with the Client of the present conditions, and may not necessarily indicate future conditions. KCI implies no warranty to the accuracy of information provided to them by the Client or outside agents and transmitted herein.

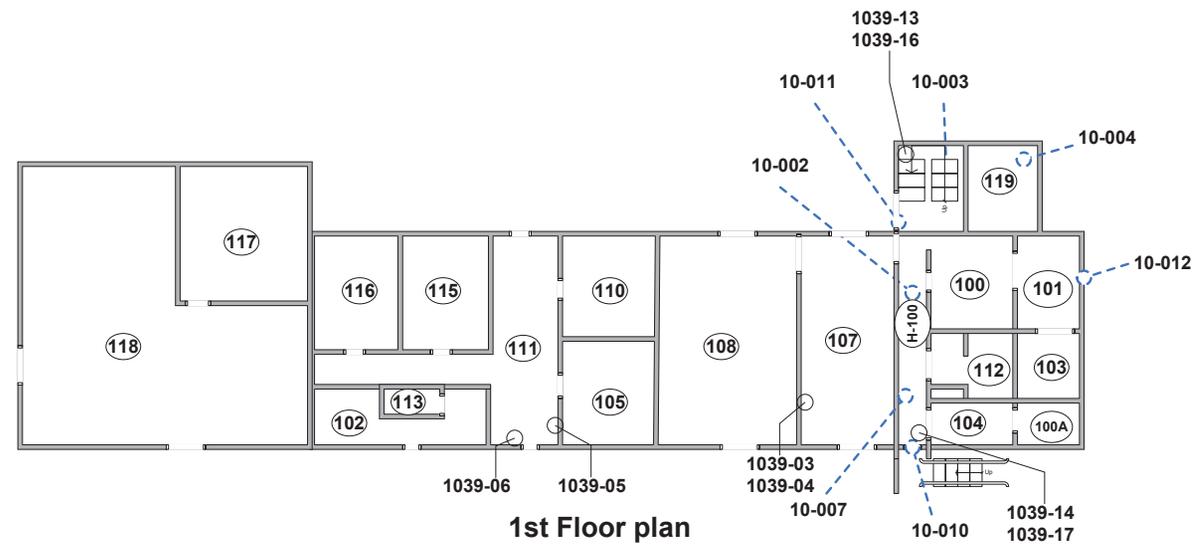
**APPENDIX A:  
FLOOR PLAN**



2<sup>nd</sup> Floor plan



ROOF PLAN

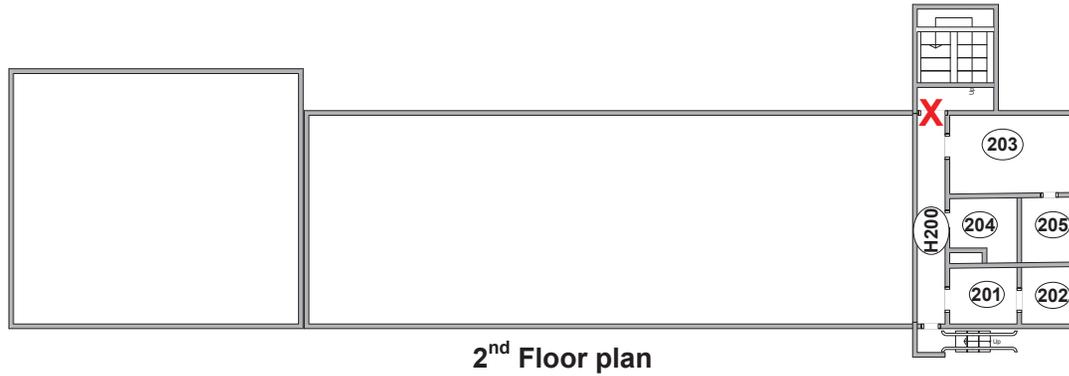


1st Floor plan

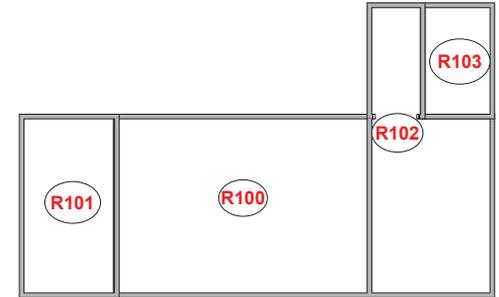
- XXX** - - Building Room Number
- XXX** - - Asbestos Sample Location & Number
- XXX** - - Sample Location Positive for Asbestos

KCI TECHNOLOGIES, INC.  
 936 RIDGEBROOK ROAD  
 SPARKS, MARYLAND 21152  
 KCI JOB# 12159262.04  
 DECEMBER 07, 2015

ASBESTOS CONTAINING MATERIALS SURVEY  
 ACM SAMPLE LOCATION DRAWING  
 MARINE CORPS AIR STATION - BUILDING 1039  
 BEAUFORT, SOUTH CAROLINA



2<sup>nd</sup> Floor plan

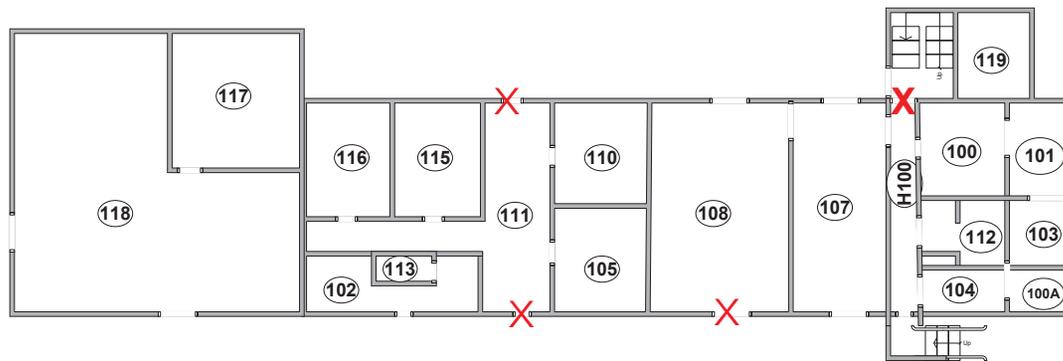


ROOF PLAN

**ASBESTOS CONTAINING MATERIAL**

H-10 – Roof flashing mastic around roof perimeter & penetrations  
Exact locations not shown on drawing (Approx 450 LF)

X H-14 – Fire doors (5 each) located in 1<sup>st</sup> & 2<sup>nd</sup> floor stairwells



1st Floor plan

XXX - - Building Room Number

KCI TECHNOLOGIES, INC.  
936 RIDGEBROOK ROAD  
SPARKS, MARYLAND 21152  
KCI JOB# 12159262.04  
DECEMBER 07, 2015

ASBESTOS CONTAINING MATERIALS SURVEY  
ACM LOCATION DRAWING  
MARINE CORPS AIR STATION - BUILDING 1039  
BEAUFORT, SOUTH CAROLINA

**APPENDIX B:**  
**SOUTH CAROLINA LICENSE**

**SCDHEC ISSUED**  
**Asbestos ID Card**

Tehsin Aurangabadwala

Expires



CONSULTBI

BI-01129 12/30/15

**APPENDIX C:  
CHAIN OF CUSTODY FORMS AND  
ASBESTOS ANALYSIS REPORTS**



<b>Client:</b>	KCI Technologies, Inc.	<b>Job Name:</b>	MCAS 1039	<b>Chain Of Custody:</b>	266435
<b>Address:</b>	Attn: Accounts Payable, 936 Ridgebrook Road Sparks, Maryland 21152	<b>Job Location:</b>	Not Provided	<b>Date Analyzed:</b>	10/21/2015
		<b>Job Number:</b>	12159262	<b>Person Submitting:</b>	Tehsin Aurangabadwala
		<b>P.O. Number:</b>	Not Provided		
<b>Attention:</b>	Tehsin Aurangabadwala				

### Summary of Polarized Light Microscopy

AMA Sample Number	Client Sample #	Total Asbestos	Chrysotile Percent	Amosite Percent	Crocidolite Percent	Other Asbestos Percent	Mineral Wool Percent	Fiberglass Percent	Organic Percent	Synthetic Percent	Other Percent	Particulate Percent	Sample Type	Sample Color	Homogeneity	Analyst ID	Comments
16008939	1039-01	NAD	--	--	--	--	--	--	TR	--	--	100	DW	Gray	Homogeneous	PC	
16008940	1039-03	NAD	--	--	--	--	--	TR	TR	--	--	100	DW	Off-White	Homogeneous	PC	
16008941	1039-05	NAD	--	--	--	--	--	TR	TR	--	--	100	DW	Off-White	Homogeneous	PC	
16008942	1039-10	NAD	--	--	--	--	--	--	60	--	--	40	IN	Brown	Homogeneous	PC	
16008943	1039-11	NAD	--	--	--	--	--	--	60	--	--	40	IN	Brown	Homogeneous	PC	
16008944	1039-12	NAD	--	--	--	--	--	--	60	--	--	40	IN	Brown	Homogeneous	PC	
16008945	1039-02	NAD	--	--	--	--	--	--	--	--	--	100	JC	White	Homogeneous	PC	
16008946	1039-04	NAD	--	--	--	--	--	--	--	--	--	100	JC	White	Homogeneous	PC	
16008947	1039-06	NAD	--	--	--	--	--	--	--	--	--	100	JC	White	Homogeneous	PC	
16008948	1039-07	NAD	--	--	--	--	--	5	--	--	--	95	Shingle	Black	Homogeneous	PC	
16008949	1039-08	NAD	--	--	--	--	--	5	--	--	--	95	Shingle	Black	Homogeneous	PC	
16008950	1039-09	NAD	--	--	--	--	--	5	TR	--	--	95	Shingle	Black	Homogeneous	PC	
16008951	1039-13	NAD	--	--	--	--	--	--	--	--	--	100	FT	Beige	Homogeneous	PC	
16008952	1039-14	NAD	--	--	--	--	--	--	--	--	--	100	FT	Beige	Homogeneous	PC	
16008953	1039-15	NAD	--	--	--	--	--	--	--	--	--	100	FT	Beige	Homogeneous	PC	

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. NVLAP accreditation applies only to polarized light microscopy of bulk samples and transmission electron microscopy of AHERA air samples. This report must not be used to claim, and does not imply product certification, approval, or endorsement by NY ELAP, AIHA, NVLAP, NIST, or any agency of the US Federal Government. All rights reserved. AMA Analytical Services, Inc.



<b>Client:</b>	KCI Technologies, Inc.	<b>Job Name:</b>	MCAS 1039	<b>Chain Of Custody:</b>	266435
<b>Address:</b>	Attn: Accounts Payable, 936 Ridgebrook Road	<b>Job Location:</b>	Not Provided	<b>Date Analyzed:</b>	10/21/2015
	Sparks, Maryland 21152	<b>Job Number:</b>	12159262	<b>Person Submitting:</b>	Tehsin Aurangabadwala
		<b>P.O. Number:</b>	Not Provided		
<b>Attention:</b>	Tehsin Aurangabadwala				

Page 2 of 2

### Summary of Polarized Light Microscopy

AMA Sample Number	Client Sample #	Total Asbestos	Chrysotile Percent	Amosite Percent	Crocidolite Percent	Other Asbestos Percent	Mineral Wool Percent	Fiberglass Percent	Organic Percent	Synthetic Percent	Other Percent	Particulate Percent	Sample Type	Sample Color	Homogeneity	Analyst ID	Comments
16008954	1039-16	NAD	--	--	--	--	TR	--	TR	--	--	100	MS	Black	Homogeneous	PC	
16008955	1039-17	NAD	--	--	--	--	TR	--	TR	--	--	100	MS	Black	Homogeneous	PC	
16008956	1039-18	NAD	--	--	--	--	TR	--	TR	--	--	100	MS	Black	Homogeneous	PC	

The following footnotes only apply to those samples which the total asbestos result is flagged with a note number.

- 1 TEM RECOMMENDATION - Please note, due to resolution limitations with optical microscopy and/or interference from matrix components of this sample, results which are reported via PLM as negative or trace (<1%) for asbestos may contain a significant quantity of asbestos. It is recommended that the additional analytical technique of TEM be used to check for asbestos fibers below the resolution limits of optical microscopy.
- 2 MATRIX REDUCTION RECOMMENDATION - Please note, due to interference from the matrix components of this sample, results which are reported via PLM as negative or trace (<1%) for asbestos may contain a significant quantity of asbestos which is obscured from view. It is recommended that the additional preparation technique of gravimetric reduction be performed on this sample to minimize the obscuring effects of matrix components, followed by reanalysis by PLM and/or TEM.

Analysis Method - EPA/600/R-93/116 dated July 1993

NAD = "No Asbestos Detected" TR = "Trace equals less than 1% of this component"

Uncertainty: For samples containing asbestos in range of 1-10% the CV is 0.43, 11-35% CV=0.55, >35 CV=0.23

All results are to be considered preliminary and subject to change unless signed by the Technical Director or Deputy.

Technical Director

Peerawut Chaikenee

Analyst(s)

Peerawut Chaikenee

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. NVLAP accreditation applies only to polarized light microscopy of bulk samples and transmission electron microscopy of AHERA air samples. This report must not be used to claim, and does not imply product certification, approval, or endorsement by NY ELAP, AIIA, NVLAP, NIST, or any agency of the US Federal Government. All rights reserved. AMA Analytical Services, Inc.

NVLAP (101143-0) Accredited Laboratory

4475 Forbes Blvd. · Lanham, MD, 20706 · (301) 459-2640 · Toll Free (800) 346-0961 · Fax (301) 459-2643



## CERTIFICATE OF ANALYSIS

<b>Client:</b>	KCI Technologies, Inc.	<b>Job Name:</b>	MCAS 1039	<b>Chain of Custody:</b>	266435
<b>Address:</b>	Attn: Accounts Payable, 936 Ridgebrook Road Sparks, Maryland 21152	<b>Job Location:</b>	Not Provided	<b>Date Analyzed:</b>	10/28/2015
<b>Attention:</b>	Tehsin Aurangabadwala	<b>Job Number:</b>	12159262	<b>Person Submitting:</b>	Tehsin Aurangabadwala
		<b>P.O. Number:</b>	Not Provided		

Page 1 of 1

### Summary of Asbestos Analysis of Non-Friable Organically Bound (NOB) Bulk Samples

AMA Sample Number	Client Sample #	Sample Type *	% Total Asbestos **	% Asbestos by PLM ***	% Asbestos by TEM ***	Type(s) of Asbestos	% Organics	% Acid Soluble	% Other	Material Type	Sample Color	Comments
16008950	1039-09	Whole	NAD	N/A	NAD		65.0%	17.2%	17.8%	Shingle	Black	
16008953	1039-15	Whole	NAD	N/A	NAD		15.4%	43.3%	41.3%	FT	Beige	
16008956	1039-18	Whole	NAD	N/A	NAD		80.6%	8.8%	10.6%	MS	Black	

\* Whole = Whole sample submitted and gravimetric reduction performed by AMA Analytical Services Residue = Gravimetric reduction of sample performed by client and residue only submitted for analysis.

\*\* NAD = "No Asbestos Detected" TR = "Trace equals less than 1% of this component"

\*\*\* PLM = Polarized Light Microscopy after gravimetric reduction (NY ELAP Method 198.6) TEM = Transmission Electron Microscopy after gravimetric reduction (NY ELAP Method 198.4)

All results are to be considered preliminary and subject to change unless signed by the Technical Director or Deputy.

Technical Director

Andreas Saldivar

Analyst(s)

Michael Greenberg

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. This report must not be used to claim, and does not imply product certification, approval, or endorsement by NY ELAP or any agency of the Federal Government. All rights reserved. AMA Analytical Services, Inc.





**KCI TECHNOLOGIES INC.**  
 936 Ridgebrook Road,  
 Sparks, MD 21152

**ASBESTOS BULK SAMPLE SHEET/ CHAIN OF CUSTODY**

**Contact: Tehsin Aurangabadwala**  
 Office Phone: 410-891-1726  
 Cell Phone: 740-274-1222  
 Email1: tehsin@kci.com  
 Email2:

**Samples Collected By:** Tehsin Aurangabadwala  
**Project Name:** MCAS 1039  
**Project #:** 12159262  
**Building Surveyed:** MCAS 1039

**Analysis Information for BULK Samples:**  
 PLM EPA 600/R-93/116  
 Apply Positive Stop (PS) as indicated  
 TAT: 5 -day

Sample No	Homo ID / Material Description	Sampling Location	Method	Comments
1039-01	Drywall	Rm 201	PLM	PS
1039-03	Drywall	Rm 107	PLM	
1039-05	Drywall	Rm 111	PLM	
1039-10	Insulation beneath Fiberglass - brown	Roof R100	PLM	PS
1039-11	Insulation beneath Fiberglass - brown	Roof R100	PLM	
1039-12	Insulation beneath Fiberglass - brown	Roof R100	PLM	
1039-02	Joint Compound	Womens Bathroom second floor	PLM	PS
1039-04	Joint Compound	Room 107	PLM	
1039-06	Joint Compound	Rm 111	PLM	
1039-07	Shingles	Roof R100	PLM	PS
1039-08	Shingles	Roof R100	PLM	
1039-09	Shingles	Roof R100	TEM	

1039-13 12" Floor Tile First Floor Stairwell. PLM } PS.  
 1039-14 ↓ First Floor Hallway PLM }  
 1039-15 ↓ Second Floor Stairwell TEM }  
 1039-16 Mastic -black beneath 1039-13 PLM } PS.  
 1039-17 ↓ beneath 1039-14 PLM }  
 1039-18 ↓ beneath 1039-15 TEM }

**APPENDIX D:**  
**HISTORICAL DOCUMENTATION**

# MARINE CORPS AIR STATION -BEAUFORT-



## **BUILDING 1039** (Applied Instrument Building)

# **2013** **ASBESTOS RE-INSPECTION** **REPORT**



Small Business Group, Inc.  
10179 Highway 78  
Ladson, SC 29456  
(843) 879-0403

# MARINE CORPS AIR STATION -BEAUFORT-



## **BUILDING 1039** (Applied Instrument Building)

Inspection conducted  
for:

### **Marine Corp Air Station – Beaufort**

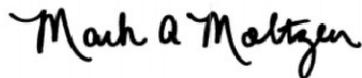
Project Point of Contact:

**Kevin Corcoran**

(ATSI Project Manager)

(843) 228-7961

Inspection conducted and report prepared  
by:



Mark A. Moltzen

**Small Business Group, Inc.**

10179 Hwy. 78, Ladson, SC 29456

Inspection Date: 9/9/13      Report Issue Date: 11/15/13

Asbestos Building Inspector License #: ASB-23353

License Expiration Date: 1/31/14      Phone #: (843) 879-0440

**MARINE CORP AIR STATION - BEAUFORT**  
**ASBESTOS RE-INSPECTION REPORT**

---

**BUILDING 1039: Applied Instrument Building**

**1. DESCRIPTION:**

Building 1039 is a 5,562 square-foot building constructed in 1985. It is a concrete block structure with brick exterior and a built-up roof, constructed on a concrete slab. This re-inspection was conducted in September 2013 utilizing South Carolina Department of Health and Environmental Control (SCDHEC) regulations. The following information was identified during the re-inspection for asbestos-containing materials (ACM) in the building.

**2. FINDINGS:**

- Two asbestos-containing homogeneous materials were identified on previous inspections (H-10 roof flashing mastic & H-14 assumed fire doors) and are still located in the building.
- No newly identified suspect materials were identified during this inspection.
- Two additional samples were obtained from H-9 (roof tar) and H-10 (roof flashing) to comply with SCDHEC regulations and the sample results confirmed previous results.
- See attached Asbestos Summary Table for ACM information and drawings for asbestos and sample locations.

**Confirmed/Assumed ACM Present.** The following asbestos-containing materials are located in the building:

- **H-10:** Misc., Black flashing mastic is accessible, non-friable ACM, in good condition with a low potential for disturbance. (Approx 418 linear feet)
- **H-14:** Misc., Fire doors, is assumed non-friable ACM in good condition with a low potential for disturbance. (2 each)

**ACM Materials Re-inspected.** See the attached MCAS ACM Re-inspection Forms for the asbestos-containing homogeneous materials that remain and were re-inspected in this building. (H-10 & H-15)

**Non-ACM Materials.** Homogeneous materials that were found to be non-asbestos containing materials IAW current regulations during this or previous inspections that are still located in the building are listed below:

- H-1 12" gray floor tile/mastic
- H-2 Black cove mastic
- H-3 Brown stair tread mastic
- H-4 Gypsum board/joint compound
- H-5 Ceiling tiles with grooves

# MARINE CORP AIR STATION - BEAUFORT

## ASBESTOS RE-INSPECTION REPORT

---

- H-6 Ceiling tiles with pits
- H-7 Gypsum board ceiling with joint compound
- H-8 White vent duct mastic
- H-9 Roofing tar
- H-11 White cove mastic
- H-12 White exterior/interior window/door caulking
- H-13 White roof caulk

### 3. OBSERVATIONS:

The room numbers were assigned by the inspector during the re-inspection and shown on the attached drawing. A thorough and diligent inspection was conducted of this structure but due to non-destructive sampling techniques and mandated random sampling protocol, some unidentified or inaccessible materials may still be present (pipe chases, wall voids, etc.). If previously unidentified suspect materials are found during renovation activities, samples must be taken to verify asbestos content prior to disturbance. All listed quantities are approximate and should be verified before removal.

### 4. RECOMMENDED ABATEMENT ACTIONS:

Recommended actions for the following homogeneous areas:

- **H-10:** Misc., Black flashing mastic: **O&M**
- **H-14:** Misc., Fire doors (Assumed): **O&M**

### 5. RECOMMENDATIONS FOR OPERATIONS & MAINTENANCE:

The ACM materials listed below should be maintained following the guidelines in the Marine Corp Air Station's Operations & Maintenance (O&M) Plan during regular maintenance and small-scale repair activities, until removed.

The below materials are confirmed/assumed non-friable ACM;

**H-10** (Black flashing mastic) is located around roof perimeter & penetrations.

**H-14:** (Fire doors)(Assumed) are 1<sup>st</sup> and 2<sup>nd</sup> floor stairwell entry doors

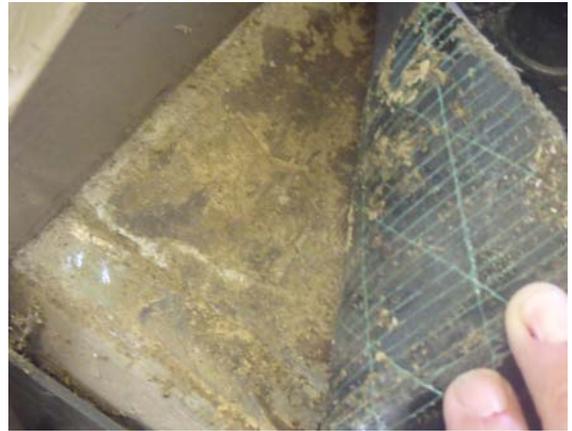
**MARINE CORP AIR STATION - BEAUFORT**  
**ASBESTOS RE-INSPECTION REPORT**

---

**6. HOMOGENEOUS AREAS PHOTOGRAPHS:**



**H-1** 12" gray floor tile/mastic (non-ACM)



**H-2** Black cove mastic (non-ACM)



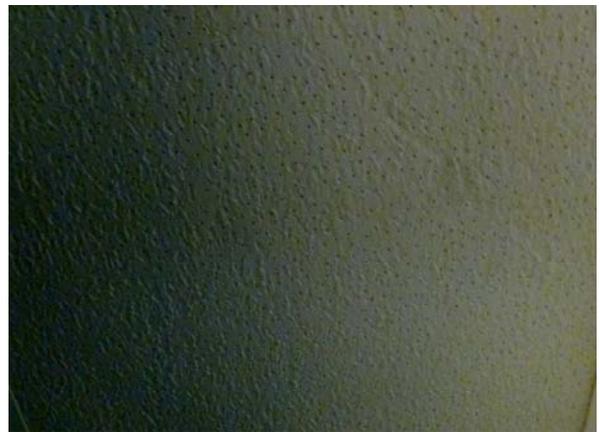
**H-3** Brown stair tread mastic (non-ACM)



**H-4** Gypsum board/joint compound (Non-ACM)



**H-5** Grooved ceiling tile (Non-ACM)



**H-6** Pitted ceiling tile (Non-ACM)

**MARINE CORP AIR STATION - BEAUFORT**  
**ASBESTOS RE-INSPECTION REPORT**

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**HOMOGENEOUS AREAS PHOTOGRAPHS (continued):**

	
<p><b>H-7</b> Gypsum board/joint compound (Non-ACM)</p>	<p><b>H-8</b> White vent duct mastic (Non-ACM)</p>
	
<p><b>H-9</b> Roofing tar (Non-ACM) <b>H-10</b> roofing flashing/sealer (ACM)</p>	<p><b>H-11</b> White cove mastic (Non-ACM)</p>
	
<p><b>H-12</b> White door/ window caulking (Non-ACM)</p>	<p><b>H-13</b> White roof caulking (Non-ACM)</p>

**MARINE CORP AIR STATION - BEAUFORT**  
**ASBESTOS RE-INSPECTION REPORT**

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**H-14** Fire door-Typical (**Assumed ACM**)

Intentionally

left

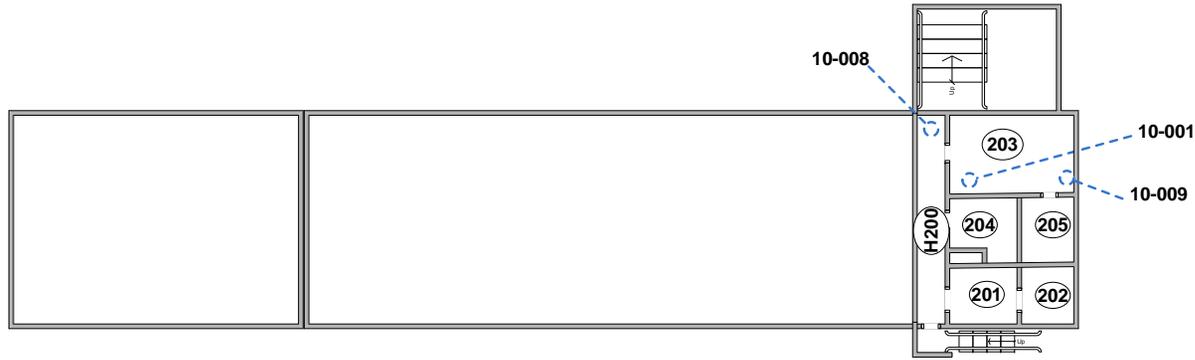
blank

## Table 1 Asbestos Summary Table

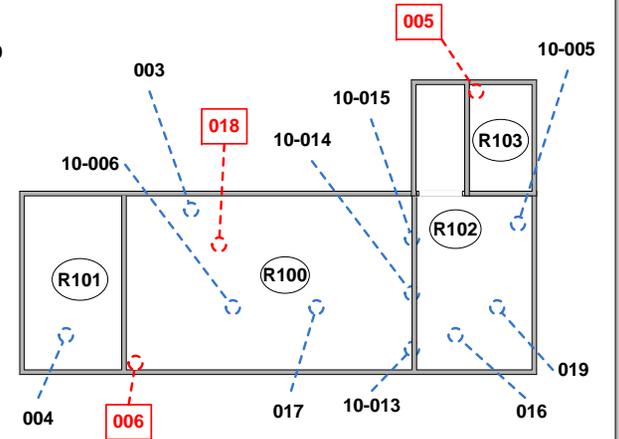
HA	Description	Approx. Quantity (SF / LF)	Sample Number	Lab Result	ACM Category	ACM Friability	ACM Condition
1	12" gray floor tile/ mastic	3000 SF	1039-1-01	NAD			
			1039-1-02	NAD			
			1039-1-03	NAD			
			1039-10-001 A&B	TEM - NAD			
2	Dark brown coving mastic	400 LF	1039-2-01	NAD			
			1039-2-02	NAD			
			1039-2-03	NAD			
			1039-10-002	TEM - NAD			
3	Stair tread mastic	10 SF	1039-3-01	NAD			
			1039-3-02	NAD			
			1039-3-03	NAD			
			1039-10-003	TEM - NAD			
4	Gypsum board/joint compound	<1000 SF	1039-4-01	NAD			
			1039-4-02	NAD			
			1039-4-03	NAD			
5	Grooved ceiling tile	400 SF	1039-5-01	NAD			
			1039-5-02	NAD			
			1039-5-03	NAD			
6	Pitted ceiling tile	3000 SF	1039-6-01	NAD			
			1039-6-02	NAD			
			1039-6-03	NAD			
7	Gypsum board/joint compound	<500 SF	1039-7-01	NAD			
			1039-7-02	NAD			
			1039-7-03	NAD			
8	White vent duct mastic	300 SF	1039-001	NAD			
			1039-002	NAD			
			1039-10-004	TEM - NAD			
9	Roofing tar	5500 SF	1039-003 & 004	NAD			
			1039-016	NAD			
			1039-017	NAD			
			1039-10-005	TEM - NAD			
10	Roof flashing mastic	418 LF	1039-005 & 006	5% Chrysotile	MISC	NF	Good
			1039-018	14% Chrysotile			
			1039-019	PSNA			
			1039-10-006	NAD			
11	White coving mastic	200 LF	1039-10-007	PLM/TEM - NAD			
			1039-10-008	NAD			
			1039-10-009	NAD			

## Table 1 Asbestos Summary Table

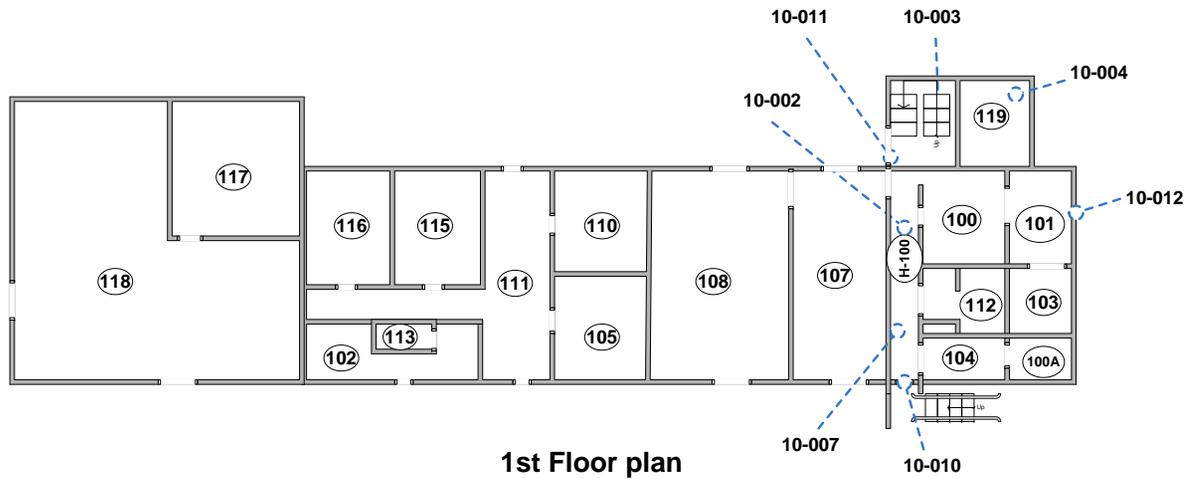
HA	Description	Approx. Quantity (SF / LF)	Sample Number	Lab Result	ACM Category	ACM Friability	ACM Condition
12	White window/door caulk	500 LF	1039-10-010	PLM/TEM - NAD			
			1039-10-011	NAD			
			1039-10-012	NAD			
13	White roof seam caulking	40 LF	1039-10-013	PLM/TEM - NAD			
			1039-10-014	NAD			
			1039-10-015	NAD			
14	Fire doors	2 Each	ASSUMED	N/A	MISC	NF	Good



2<sup>nd</sup> Floor plan



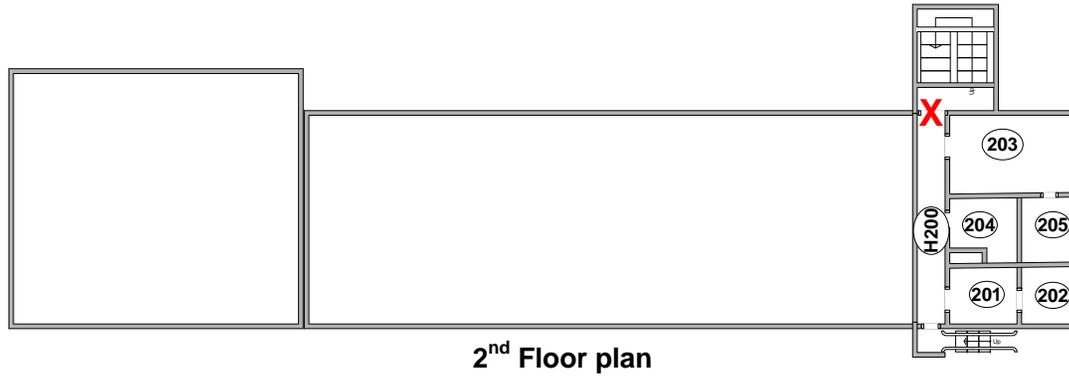
ROOF PLAN



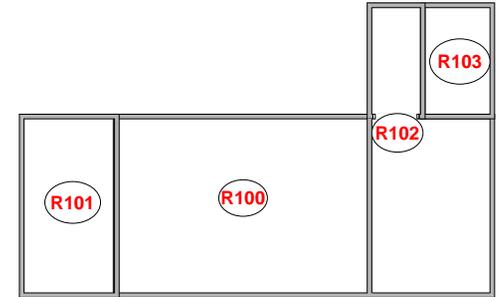
1st Floor plan

- (XXX)** - - Building Room Number
- XXX** - - Asbestos Sample Location & Number
- XXX** - - Sample Location Positive for Asbestos

	<b>SMALL BUSINESS GROUP, INC.</b>		
	<b>Asbestos Sample Locations – Building 1039</b>		
	<b>Marine Corps Air Station – Beaufort, SC</b>		
Date: 9/10/13	Scale: None	Sheet: 1 of 2	



2<sup>nd</sup> Floor plan

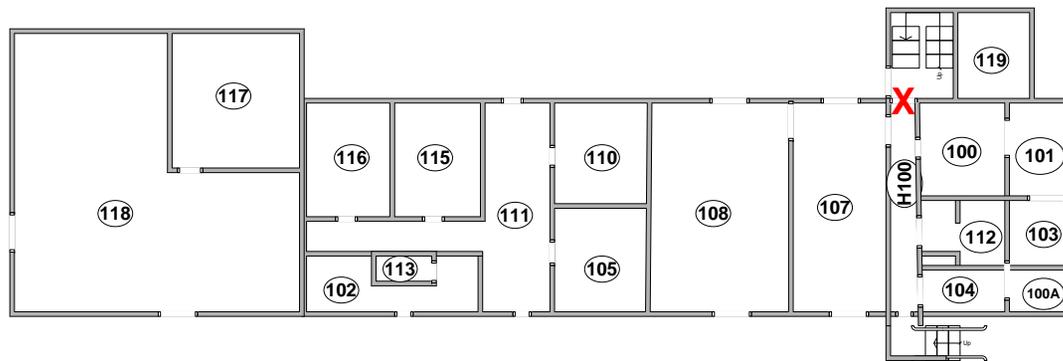


ROOF PLAN

**ASBESTOS CONTAINING MATERIAL**

H-10 – Roof flashing mastic around roof perimeter & penetrations  
Exact locations not shown on drawing (Approx 415 LF)

**X** H-14 – Fire doors (2 each) located in 1<sup>st</sup> & 2<sup>nd</sup> floor stairwells



1st Floor plan

XXX - - Building Room Number

	<b>SMALL BUSINESS GROUP, INC.</b>		
	Asbestos Material Locations – Building 1039		
	Marine Corps Air Station – Beaufort, SC		
	Date: 9/25/13	Scale: None	Sheet: 2 of 2

**Marine Corps Air Station-Beaufort  
Asbestos Containing Material (ACM) Re-inspection Form**

---

**MCAS Building #:** 1039

**Homogeneous Material #:** 10

**1. Asbestos Material Type:** (circle one):

a) Surfacing material: (describe) \_\_\_\_\_

b) Thermal System Insulation (TSI): (describe) \_\_\_\_\_

c) **Miscellaneous:** (describe) Black roof flashing mastic

**2. Abatement Status:** (circle one)

The material has been; a) removed\* b) repaired c) encapsulated d) enclosed e) **no action**

\* (If material is removed, skip to Paragraph 8, if applicable)

**3. Material Status:**

a) Current friability of ACM (circle one): Friable **Non-friable**

b) Degree of friability (circle one): Highly Moderately Low **N/A**

c) Current condition of material (circle one): **Good** Damaged Significantly Damaged

d). If material is damaged, what is approximate % of total damage \_\_\_\_\_

**4. Accessibility of the material:** (circle one):

a) Accessible & occupied b) Unexposed but easily accessible (ie, behind ceiling tiles)

c) Accessible & unoccupied d) **Inaccessible & not likely to expose** (ie. on roof/under floor tiles)

**5. Number of People Exposed:** (circle one)

a) **<10** b) 10 – 39 c) 40 – 99 d) >100

**6. Quantity:** 418 LF

**6a. NEESA Rating:** (if applicable) PD-3

**7. Recommended Action:** (circle one)

a) **O&M** b) Remove c) Repair

**8. Observations:**

\_\_\_\_\_  
Located around roof perimeter & penetrations  
\_\_\_\_\_  
\_\_\_\_\_

Signature: Mark A Maltzen  
(Licensed Asbestos Inspector)

Date: 9/9/13

**Marine Corps Air Station-Beaufort  
Asbestos Containing Material (ACM) Re-inspection Form**

---

**MCAS Building #:** 1039

**Homogeneous Material #:** 14

**1. Asbestos Material Type:** (circle one):

a) Surfacing material: (describe) \_\_\_\_\_

b) Thermal System Insulation (TSI): (describe) \_\_\_\_\_

c) **Miscellaneous:** (describe) Fire doors

**2. Abatement Status:** (circle one)

The material has been; a) removed\* b) repaired c) encapsulated d) enclosed e) **no action**

\* (If material is removed, skip to Paragraph 8, if applicable)

**3. Material Status:**

a) Current friability of ACM (circle one): Friable **Non-friable**

b) Degree of friability (circle one): Highly Moderately Low **N/A**

c) Current condition of material (circle one): **Good** Damaged Significantly Damaged

d). If material is damaged, what is approximate % of total damage \_\_\_\_\_

**4. Accessibility of the material:** (circle one):

a) Accessible & occupied b) Unexposed but easily accessible (ie, behind ceiling tiles)

c) Accessible & unoccupied d) **Inaccessible & not likely to expose** (ie. on roof/under floor tiles)

**5. Number of People Exposed:** (circle one)

a) **<10** b) 10 – 39 c) 40 – 99 d) >100

**6. Quantity:** 2 each

**6a. NEESA Rating:** (if applicable) PD-3

**7. Recommended Action:** (circle one)

a) **O&M** b) Remove c) Repair

**8. Observations:**

\_\_\_\_\_  
Located in stairwell 1<sup>st</sup> & 2<sup>nd</sup> floors  
\_\_\_\_\_  
\_\_\_\_\_

Signature: \_\_\_\_\_

*Mark A Maltzen*

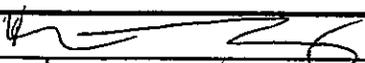
(Licensed Asbestos Inspector)

Date: 9/9/13

CAPE ENVIRONMENTAL MANAGEMENT INC  
 2302 Parklake Drive, Suite 200, Atlanta, GA 30345  
 770/908-7200 Fax 770/908-7219

21

**CHAIN OF CUSTODY FORM**

LABORATORY NAME: CAPE ENVIRONMENTAL MANAGEMENT			
CLIENT NAME: SOUTH DIV.		PROJECT MANAGER: HUGO RIOS	
CEMI JOB NAME: MCAS BEAUFORT		CEMI JOB NUMBER: 1501a.40	
ANALYSIS REQUESTED:	PLM <input checked="" type="checkbox"/>	PCM: <input type="checkbox"/>	OTHER:
TURNAROUND TIME	ROUTINE <input checked="" type="checkbox"/>	2-5 days	
REQUESTED:	RUSH <input type="checkbox"/>	24 hours;	Same day
SPECIAL INSTRUCTIONS:	ANALYZE UNTIL POSITIVE <input checked="" type="checkbox"/>		OTHER:
SAMPLE ID		SAMPLE ID	
1	MCB-1039-1-01	16	MCB-1039-6-01
2	1-02	17	6-02
3	1-03	18	6-03
4	2-01	19	7-01
5	2-02	20	7-02
6	2-03	21	7-03
	3-01	22	
8	3-02	23	
9	3-03	24	
10	4-01	25	
11	4-02	26	
12	4-03	27	
13	5-01	28	
14	5-02	29	
15	5-03	30	
RELINQUISHED BY: 		RECEIVED BY: 	
DATE: 28 MAR 97	TIME: 11:30	DATE: 3/28/97	TIME: 1130
RELINQUISHED BY:		RECEIVED BY:	
DATE:	TIME:	DATE:	TIME:
RELINQUISHED BY:		RECEIVED BY:	
DATE:	TIME:	DATE:	TIME:

**POLARIZED LIGHT MICROSCOPY (PLM)**  
**BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: NAVY SOUTH DIVISION LAB JOB NO: B7068-5  
PROJECT NAME: MCAS BEAUFORT /1501A.40 DATE RECEIVED: 3/28/97  
FIELD ID: MCB-1039-1-01 LAB ID: 705269  
LOCATION: - DATE ANALYZED: 4/4/97

**SAMPLE DESCRIPTION**

LAYERED:	NO	
APPEARANCE:	GREY HARD RESILIENT TO GRANULAR WITH BLACK MASTIC	

**RESULT OF ANALYSIS (BY VISUAL ESTIMATE) IN VOLUME PERCENTAGE**

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOLE		CELLULOSE	1	VERMICULITE/MICA		BITUMEN/TAR	1
AMOSITE		GLASS FIBERS		PERLITE		SAND/AGGR.	35
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE	
TREMOLITE		WOLLASTONITE		STYROFOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						BINDERS/PAINT	63

**COMMENTS:**

FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH COMPONENT IS ANALYZED AND REPORTED SEPARATELY.

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD EPA/600/R-93/116 OF JULY '93. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 4/4/97

MICROANALYST

M. Black  
MICHAEL BLACK

QUALITY CONTROL

Aleksey Reznik  
ALEKSEY REZNIK

**POLARIZED LIGHT MICROSCOPY (PLM)  
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: NAVY SOUTH DIVISION LAB JOB NO: B7068-5  
 PROJECT NAME: MCAS BEAUFORT /1501A.40 DATE RECEIVED: 3/28/97  
 FIELD ID: MCB-1039-1-02 LAB ID: 705270  
 LOCATION: - DATE ANALYZED: 4/4/97

**SAMPLE DESCRIPTION**

LAYERED:	NO
APPEARANCE:	GREY HARD RESILIENT TO GRANULAR WITH BLACK MASTIC

**RESULT OF ANALYSIS (BY VISUAL ESTIMATE) IN VOLUME PERCENTAGE**

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOLE		CELLULOSE	2	VERMICULITE/MICA		BITUMEN/TAR	2
AMOSITE		GLASS FIBERS		PERLITE		SAND/AGGR.	35
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE	
TREMOLITE		WOLLASTONITE		STYROFOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						BINDERS/PAINT	61

**COMMENTS:**

FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH COMPONENT IS ANALYZED AND REPORTED SEPARATELY.

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD EPA/600/R-93/116 OF JULY '93. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 4/4/97

MICROANALYST

QUALITY CONTROL

*M. Black*

MICHAEL BLACK

ALEKSEY REZNIK

**C A P E  
ENVIRONMENTAL  
MANAGEMENT  
I N C**

2302 PARKLAKE DRIVE, SUITE 200, ATLANTA, GA 30345

TEL: (770) 908-7200 FAX: (770) 908-7219

NVLAP  
LAB CODE -10211

**POLARIZED LIGHT MICROSCOPY (PLM)  
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: NAVY SOUTH DIVISION LAB JOB NO: B7068-5  
 PROJECT NAME: MCAS BEAUFORT /1501A.40 DATE RECEIVED: 3/28/97  
 FIELD ID: MCB-1039-1-03 LAB ID: 705271  
 LOCATION: - DATE ANALYZED: 4/4/97

**SAMPLE DESCRIPTION**

LAYERED:	NO
APPEARANCE:	GREY HARD RESILIENT TO GRANULAR WITH BLACK MASTIC

**RESULT OF ANALYSIS (BY VISUAL ESTIMATE) IN VOLUME PERCENTAGE**

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYBOTILE		CELLULOSE	1	VERMICULITE/MICA		BITUMEN/TAR	1
AMOSITE		GLASS FIBERS		PERLITE		SAND/AGGR.	35
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE	
TREMOLITE		WOLLASTONITE		STYROFOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						BINDERS/PAINT	63

**COMMENTS:**

FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH COMPONENT IS ANALYZED AND REPORTED SEPARATELY.

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD EPA/600/R-93/116 OF JULY '93. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 4/4/97

MICROANALYST

M. Black  
MICHAEL BLACK

QUALITY CONTROL

Aleksey Reznik  
ALEKSEY REZNIK

PLM IS NOT CONSISTENTLY RELIABLE IN DETECTING SMALL CONCENTRATION OF ASBESTOS IN FLOOR TILES AND SIMILAR NONFRIABLE MATERIALS. QUANTITATIVE TEM IS CURRENTLY THE ONLY METHOD THAT CAN BE USED TO GET THE CONCLUSIVE ASBESTOS CONTENT. THIS REPORT RELATES ONLY TO THE ITEMS TESTED. THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, AND NOT WITHOUT WRITTEN APPROVAL OF THE LABORATORY. THIS REPORT SHALL NOT BE USED TO CLAIM ENDORSEMENT BY NVLAP OR ANY AGENCY OF U.S. GOVERNMENT.

**POLARIZED LIGHT MICROSCOPY (PLM)**  
**BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: NAVY SOUTH DIVISION LAB JOB NO: B7068-5  
 PROJECT NAME: MCAS BEAUFORT /1501A.40 DATE RECEIVED: 3/28/97  
 FIELD ID: MCB-1039-2-01 LAB ID: 705272  
 LOCATION: - DATE ANALYZED: 4/4/97

**SAMPLE DESCRIPTION**

LAYERED: NO		
APPEARANCE:	DARK BROWN SEMI-HARD RESILIENT WITH GLUE	

**RESULT OF ANALYSIS (BY VISUAL ESTIMATE) IN VOLUME PERCENTAGE**

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYBOTILE		CELLULOSE		VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE		GLASS FIBERS		PERLITE		SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE	1
TREMOLITE		WOLLASTONITE		STYROFOAM		VINYL	95
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						BINDERS/PAINT	4

**COMMENTS:**

FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH COMPONENT IS ANALYZED AND REPORTED SEPARATELY.

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD EPA/600/R-93/116 OF JULY '93. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 4/4/97

MICROANALYST

M. Black  
 MICHAEL BLACK

QUALITY CONTROL

Aleksey Reznik  
 ALEKSEY REZNIK

PLM IS NOT CONSISTENTLY RELIABLE IN DETECTING SMALL CONCENTRATION OF ASBESTOS IN FLOOR TILES AND SIMILAR NONFRIABLE MATERIALS. QUANTITATIVE TEM IS CURRENTLY THE ONLY METHOD THAT CAN BE USED TO GET THE CONCLUSIVE ASBESTOS CONTENT. THIS REPORT RELATES ONLY TO THE ITEMS TESTED. THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, AND NOT WITHOUT WRITTEN APPROVAL OF THE LABORATORY. THIS REPORT SHALL NOT BE USED TO CLAIM ENDORSEMENT BY NVLAP OR ANY AGENCY OF U.S. GOVERNMENT.

**POLARIZED LIGHT MICROSCOPY (PLM)**  
**BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: NAVY SOUTH DIVISION LAB JOB NO: B7068-5  
 PROJECT NAME: MCAS BEAUFORT /1501A.40 DATE RECEIVED: 3/28/97  
 FIELD ID: MCB-1039-2-02 LAB ID: 705273  
 LOCATION: - DATE ANALYZED: 4/4/97

**SAMPLE DESCRIPTION**

LAYERED:	NO	
APPEARANCE:	DARK BROWN SEMI-HARD RESILIENT WITH GLUE	

**RESULT OF ANALYSIS (BY VISUAL ESTIMATE) IN VOLUME PERCENTAGE**

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYBOTILE		CELLULOSE		VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE		GLASS FIBERS		PERLITE		SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE	1
TREMOLITE		WOLLASTONITE		STYROFOAM		VINYL	95
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						BINDERS/PAINT	4

**COMMENTS:**

FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH COMPONENT IS ANALYZED AND REPORTED SEPARATELY.

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD EPA/600/R-93/116 OF JULY '93. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 4/4/97

MICROANALYST

QUALITY CONTROL

M. Black

MICHAEL BLACK

ALEKSEY REZNIK

**POLARIZED LIGHT MICROSCOPY (PLM)**  
**BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: NAVY SOUTH DIVISION LAB JOB NO: B7068-5  
 PROJECT NAME: MCAS BEAUFORT /1501A.40 DATE RECEIVED: 3/28/97  
 FIELD ID: MCB-1039-2-03 LAB ID: 705274  
 LOCATION: - DATE ANALYZED: 4/4/97

**SAMPLE DESCRIPTION**

LAYERED:	NO
APPEARANCE:	DARK BROWN SEMI-HARD RESILIENT WITH GLUE

**RESULT OF ANALYSIS (BY VISUAL ESTIMATE) IN VOLUME PERCENTAGE**

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYBOTILE		CELLULOSE		VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE		GLASS FIBERS		PERLITE		SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE	1
TREMOLITE		WOLLASTONITE		STYROFOAM		VINYL	95
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						BINDERS/PAINT	4

**COMMENTS:**

FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH COMPONENT IS ANALYZED AND REPORTED SEPARATELY.

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD EPA/600/R-93/116 OF JULY '93. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 4/4/97

MICROANALYST

QUALITY CONTROL

M. Black  
 MICHAEL BLACK

\_\_\_\_\_  
 ALEKSEY REZNIK

**C A P E  
ENVIRONMENTAL  
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I N C**

2302 PARKLAKE DRIVE, SUITE 200, ATLANTA, GA 30345

TEL: (770) 908-7200 FAX: (770) 908-7219

NVLAP  
LAB CODE -10211

**POLARIZED LIGHT MICROSCOPY (PLM)  
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: NAVY SOUTH DIVISION LAB JOB NO: B7068-5  
 PROJECT NAME: MCAS BEAUFORT /1501A.40 DATE RECEIVED: 3/28/97  
 FIELD ID: MCB-1039-3-01 LAB ID: 705275  
 LOCATION: - DATE ANALYZED: 4/4/97

**SAMPLE DESCRIPTION**

LAYERED: NO		
APPEARANCE:	BROWN SEMI-HARD RESILIENT TO FIBROUS WITH GLUE	

**RESULT OF ANALYSIS (BY VISUAL ESTIMATE) IN VOLUME PERCENTAGE**

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYBOTILE		CELLULOSE		VERMICULITE/MICA	3	BITUMEN/TAR	
AMOSITE		GLASS FIBERS		PERLITE		SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE	1
TREMOLITE		WOLLASTONITE	10	STYROFOAM		VINYL	80
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						BINDERS/PAINT	6

**COMMENTS:**

FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH COMPONENT IS ANALYZED AND REPORTED SEPARATELY.

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD EPA/600/R-93/116 OF JULY '93. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 4/4/97

MICROANALYST

M. Black  
MICHAEL BLACK

QUALITY CONTROL

A. Reznik  
ALEKSEY REZNIK

PLM IS NOT CONSISTENTLY RELIABLE IN DETECTING SMALL CONCENTRATION OF ASBESTOS IN FLOOR TILES AND SIMILAR NONFRIABLE MATERIALS. QUANTITATIVE TEM IS CURRENTLY THE ONLY METHOD THAT CAN BE USED TO GET THE CONCLUSIVE ASBESTOS CONTENT. THIS REPORT RELATES ONLY TO THE ITEMS TESTED. THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, AND NOT WITHOUT WRITTEN APPROVAL OF THE LABORATORY. THIS REPORT SHALL NOT BE USED TO CLAIM ENDORSEMENT BY NVLAP OR ANY AGENCY OF U.S. GOVERNMENT.

**POLARIZED LIGHT MICROSCOPY (PLM)  
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: NAVY SOUTH DIVISION LAB JOB NO: B7068-5  
PROJECT NAME: MCAS BEAUFORT /1501A.40 DATE RECEIVED: 3/28/97  
FIELD ID: MCB-1039-3-02 LAB ID: 705276  
LOCATION: - DATE ANALYZED: 4/4/97

**SAMPLE DESCRIPTION**

LAYERED: NO		
APPEARANCE:	BROWN SEMI-HARD RESILIENT TO FIBROUS WITH GLUE	

**RESULT OF ANALYSIS (BY VISUAL ESTIMATE) IN VOLUME PERCENTAGE**

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOLE		CELLULOSE		VERMICULITE/MICA	2	BITUMEN/TAR	
AMOSITE		GLASS FIBERS		PERLITE		SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE	2
TREMOLITE		WOLLASTONITE	15	STYROFOAM		VINYL	80
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						BINDERS/PAINT	1

**COMMENTS:**

FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH COMPONENT IS ANALYZED AND REPORTED SEPARATELY.

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD EPA/600/R-93/116 OF JULY '93. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 4/4/97

MICROANALYST

*M. Black*

MICHAEL BLACK

QUALITY CONTROL

ALEKSEY REZNIK

**POLARIZED LIGHT MICROSCOPY (PLM)**  
**BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: NAVY SOUTH DIVISION LAB JOB NO: B7068-5  
 PROJECT NAME: MCAS BEAUFORT /1501A.40 DATE RECEIVED: 3/28/97  
 FIELD ID: MCB-1039-3-03 LAB ID: 705277  
 LOCATION: - DATE ANALYZED: 4/4/97

**SAMPLE DESCRIPTION**

LAYERED:	NO
APPEARANCE:	BROWN SEMI-HARD RESILIENT TO FIBROUS WITH GLUE

**RESULT OF ANALYSIS (BY VISUAL ESTIMATE) IN VOLUME PERCENTAGE**

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOLE		CELLULOSE		VERMICULITE/MICA	2	BITUMEN/TAR	
AMOSITE		GLASS FIBERS		PERLITE		SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE	3
TREMOLITE		WOLLASTONITE	10	STYROFOAM		VINYL	80
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						BINDERS/PAINT	5

**COMMENTS:**

FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH COMPONENT IS ANALYZED AND REPORTED SEPARATELY.

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD EPA/600/R-93/116 OF JULY '93. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 4/4/97

MICROANALYST

*M. Black*

MICHAEL BLACK

QUALITY CONTROL

ALEKSEY REZNIK

**POLARIZED LIGHT MICROSCOPY (PLM)**  
**BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: NAVY SOUTH DIVISION LAB JOB NO: B7068-5  
 PROJECT NAME: MCAS BEAUFORT /1501A.40 DATE RECEIVED: 3/28/97  
 FIELD ID: MCB-1039-4-01 LAB ID: 705278  
 LOCATION: - DATE ANALYZED: 4/4/97

**SAMPLE DESCRIPTION**

LAYERED: YES	NO. OF LAYERS: * 3	LAYER NO: 1+2+3
APPEARANCE: 1. WHITE HARD SILTY WITH MICA AND PAINT; 2. GRAY SOFT FIBROUS; 3. LIGHT GRAY HARD SILTY WITH FIBERS		

**RESULT OF ANALYSIS (BY VISUAL ESTIMATE) IN VOLUME PERCENTAGE**

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSHOTILE		CELLULOSE	15	VERMICULITE/MICA	4	BITUMEN/TAR	
AMOSITE		GLASS FIBERS		PERLITE		SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE	
TREMOLITE		WOLLASTONITE		STYROFOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						BINDERS/PAINT	81

**COMMENTS:**

FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH COMPONENT IS ANALYZED AND REPORTED SEPARATELY.

\* NO OF LAYERS - INDICATES NUMBER OF SUBSAMPLES (UNLESS OTHERWISE STATED).

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD EPA/600/R-93/116 OF JULY '93. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 4/4/97

MICROANALYST

*M.B.*

MICHAEL BLACK

QUALITY CONTROL

*A. Reznik*

ALEKSEY REZNIK

**POLARIZED LIGHT MICROSCOPY (PLM)  
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: NAVY SOUTH DIVISION LAB JOB NO: B7068-5  
 PROJECT NAME: MCAS BEAUFORT /1501A.40 DATE RECEIVED: 3/28/97  
 FIELD ID: MCB-1039-4-02 LAB ID: 705279  
 LOCATION: - DATE ANALYZED: 4/4/97

**SAMPLE DESCRIPTION**

LAYERED: YES	NO. OF LAYERS: * 3	LAYER NO: 1+2+3
APPEARANCE: 1. WHITE HARD SILTY WITH MICA AND PAINT; 2. GRAY SOFT FIBROUS; 3. LIGHT GRAY HARD SILTY WITH FIBERS		

**RESULT OF ANALYSIS (BY VISUAL ESTIMATE) IN VOLUME PERCENTAGE**

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYCOTILE		CELLULOSE	15	VERMICULITE/MICA	1	BITUMEN/TAR	
AMOSITE		GLASS FIBERS		PERLITE		SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE	
TREMOLITE		WOLLASTONITE		STYROFOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						BINDERS/PAINT	84

**COMMENTS:**

FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH COMPONENT IS ANALYZED AND REPORTED SEPARATELY.

\* NO OF LAYERS - INDICATES NUMBER OF SUBSAMPLES (UNLESS OTHERWISE STATED).

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD EPA/600/R-93/116 OF JULY '93. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 4/4/97

MICROANALYST

QUALITY CONTROL

*M. Black*

MICHAEL BLACK

ALEKSEY REZNIK

**C A F E  
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2302 PARKLAKE DRIVE, SUITE 200, ATLANTA, GA 30345

TEL: (770) 908-7200 FAX: (770) 908-7219

NVLAP  
LAB CODE -10211

**POLARIZED LIGHT MICROSCOPY (PLM)  
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: NAVY SOUTH DIVISION LAB JOB NO: B7068-5  
PROJECT NAME: MCAS BEAUFORT /1501A.40 DATE RECEIVED: 3/28/97

FIELD ID: MCB-1039-4-03 LAB ID: 705280  
LOCATION: - DATE ANALYZED: 4/4/97

**SAMPLE DESCRIPTION**

LAYERED: YES	NO. OF LAYERS: * 3	LAYER NO: 1+2+3
APPEARANCE: 1. WHITE HARD SILTY WITH MICA AND PAINT; 2. GRAY SOFT FIBROUS; 3. LIGHT GRAY HARD SILTY WITH FIBERS		

**RESULT OF ANALYSIS (BY VISUAL ESTIMATE) IN VOLUME PERCENTAGE**

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOLE		CELLULOSE	20	VERMICULITE/MICA	2	BITUMEN/TAR	
AMOSITE		GLASS FIBERS		PERLITE		SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE	
TREMOLITE		WOLLASTONITE		STYROFOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						BINDERS/PAINT	78

**COMMENTS:**

FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH COMPONENT IS ANALYZED AND REPORTED SEPARATELY.

\* NO OF LAYERS - INDICATES NUMBER OF SUBSAMPLES (UNLESS OTHERWISE STATED).

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD EPA/600/R-93/116 OF JULY '93. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 4/4/97

MICROANALYST

QUALITY CONTROL

*M. Black*

MICHAEL BLACK

ALEKSEY REZNIK

PLM IS NOT CONSISTENTLY RELIABLE IN DETECTING SMALL CONCENTRATION OF ASBESTOS IN FLOOR TILES AND SIMILAR NONFRIABLE MATERIALS. QUANTITATIVE TEM IS CURRENTLY THE ONLY METHOD THAT CAN BE USED TO GET THE CONCLUSIVE ASBESTOS CONTENT. THIS REPORT RELATES ONLY TO THE ITEMS TESTED. THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, AND NOT WITHOUT WRITTEN APPROVAL OF THE LABORATORY. THIS REPORT SHALL NOT BE USED TO CLAIM ENDORSEMENT BY NVLAP OR ANY AGENCY OF U.S. GOVERNMENT.

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2302 PARKLAKE DRIVE, SUITE 200, ATLANTA, GA 30345  
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NVLAP  
LAB CODE -10211

**POLARIZED LIGHT MICROSCOPY (PLM)  
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: NAVY SOUTH DIVISION LAB JOB NO: B7068-5  
PROJECT NAME: MCAS BEAUFORT /1501A.40 DATE RECEIVED: 3/28/97  
FIELD ID: MCB-1039-5-01 LAB ID: 705281  
LOCATION: - DATE ANALYZED: 4/4/97

**SAMPLE DESCRIPTION**

LAYERED: NO		
APPEARANCE:	GRAY SOFT FIBROUS TO GRANULAR TO POWDERY WITH PAINT	

**RESULT OF ANALYSIS (BY VISUAL ESTIMATE) IN VOLUME PERCENTAGE**

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOLE		CELLULOSE	30	VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE		GLASS FIBERS	30	PERLITE	30	SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE	
TREMOLITE		WOLLASTONITE		STYROFOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						BINDERS/PAINT	10

**COMMENTS:**

FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH COMPONENT IS ANALYZED AND REPORTED SEPARATELY.

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD EPA/600/R-93/116 OF JULY '93. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 4/4/97

MICROANALYST

M. Black

MICHAEL BLACK

QUALITY CONTROL

A. Reznik

ALEKSEY REZNIK

PLM IS NOT CONSISTENTLY RELIABLE IN DETECTING SMALL CONCENTRATION OF ASBESTOS IN FLOOR TILES AND SIMILAR NONFRIABLE MATERIALS. QUANTITATIVE TEM IS CURRENTLY THE ONLY METHOD THAT CAN BE USED TO GET THE CONCLUSIVE ASBESTOS CONTENT. THIS REPORT RELATES ONLY TO THE ITEMS TESTED. THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, AND NOT WITHOUT WRITTEN APPROVAL OF THE LABORATORY. THIS REPORT SHALL NOT BE USED TO CLAIM ENDORSEMENT BY NVLAP OR ANY AGENCY OF U.S. GOVERNMENT.

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I N C**

2302 PARKLAKE DRIVE, SUITE 200, ATLANTA, GA 30345  
TEL: (770) 908-7200 FAX: (770) 908-7219

NVLAP  
LAB CODE -10211

**POLARIZED LIGHT MICROSCOPY (PLM)  
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: NAVY SOUTH DIVISION LAB JOB NO: B7068-5  
PROJECT NAME: MCAS BEAUFORT /1501A.40 DATE RECEIVED: 3/28/97  
FIELD ID: MCB-1039-5-02 LAB ID: 705282  
LOCATION: - DATE ANALYZED: 4/4/97

**SAMPLE DESCRIPTION**

LAYERED: NO		
APPEARANCE:	GRAY SOFT FIBROUS TO GRANULAR TO POWDERY WITH PAINT	

**RESULT OF ANALYSIS (BY VISUAL ESTIMATE) IN VOLUME PERCENTAGE**

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOLE		CELLULOSE	30	VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE		GLASS FIBERS	30	PERLITE	30	SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE	
TREMOLITE		WOLLASTONITE		STYROFOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						BINDERS/PAINT	10

**COMMENTS:**

FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH COMPONENT IS ANALYZED AND REPORTED SEPARATELY.

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD EPA/600/R-93/116 OF JULY '93. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 4/4/97

MICROANALYST

*M. Black*

MICHAEL BLACK

QUALITY CONTROL

ALEKSEY REZNIK

PLM IS NOT CONSISTENTLY RELIABLE IN DETECTING SMALL CONCENTRATION OF ASBESTOS IN FLOOR TILES AND SIMILAR NONFRIABLE MATERIALS. QUANTITATIVE TEM IS CURRENTLY THE ONLY METHOD THAT CAN BE USED TO GET THE CONCLUSIVE ASBESTOS CONTENT. THIS REPORT RELATES ONLY TO THE ITEMS TESTED. THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, AND NOT WITHOUT WRITTEN APPROVAL OF THE LABORATORY. THIS REPORT SHALL NOT BE USED TO CLAIM ENDORSEMENT BY NVLAP OR ANY AGENCY OF U.S. GOVERNMENT.

**POLARIZED LIGHT MICROSCOPY (PLM)  
 BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: NAVY SOUTH DIVISION LAB JOB NO: B7068-5  
 PROJECT NAME: MCAS BEAUFORT /1501A.40 DATE RECEIVED: 3/28/97  
 FIELD ID: MCB-1039-5-03 LAB ID: 705283  
 LOCATION: - DATE ANALYZED: 4/4/97

**SAMPLE DESCRIPTION**

LAYERED: NO	
APPEARANCE: GRAY SOFT FIBROUS TO GRANULAR TO POWDERY WITH PAINT	

**RESULT OF ANALYSIS (BY VISUAL ESTIMATE) IN VOLUME PERCENTAGE**

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYBOTILE		CELLULOSE	30	VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE		GLASS FIBERS	30	PERLITE	30	SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE	
TREMOLITE		WOLLASTONITE		STYROFOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						BINDERS/PAINT	10

**COMMENTS:**

FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH COMPONENT IS ANALYZED AND REPORTED SEPARATELY.

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD EPA/600/R-93/116 OF JULY '93. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 4/4/97

MICROANALYST

QUALITY CONTROL

M. Black  
 MICHAEL BLACK

\_\_\_\_\_  
 ALEKSEY REZNIK

PLM IS NOT CONSISTENTLY RELIABLE IN DETECTING SMALL CONCENTRATION OF ASBESTOS IN FLOOR TILES AND SIMILAR NONFRIABLE MATERIALS. QUANTITATIVE TEM IS CURRENTLY THE ONLY METHOD THAT CAN BE USED TO GET THE CONCLUSIVE ASBESTOS CONTENT. THIS REPORT RELATES ONLY TO THE ITEMS TESTED. THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, AND NOT WITHOUT WRITTEN APPROVAL OF THE LABORATORY. THIS REPORT SHALL NOT BE USED TO CLAIM ENDORSEMENT BY NVLAP OR ANY AGENCY OF U.S. GOVERNMENT.

**POLARIZED LIGHT MICROSCOPY (PLM)**  
**BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: NAVY SOUTH DIVISION LAB JOB NO: B7068-5  
PROJECT NAME: MCAS BEAUFORT /1501A.40 DATE RECEIVED: 3/28/97

FIELD ID: MCB-1039-6-01 LAB ID: 705284  
LOCATION: - DATE ANALYZED: 4/4/97

**SAMPLE DESCRIPTION**

LAYERED: NO		
APPEARANCE:	GRAY SOFT FIBROUS TO GRANULAR TO POWDERY WITH PAINT	

**RESULT OF ANALYSIS (BY VISUAL ESTIMATE) IN VOLUME PERCENTAGE**

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOLE		CELLULOSE	30	VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE		GLASS FIBERS	30	PERLITE	30	SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE	
TREMOLITE		WOLLASTONITE		STYROFOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						BINDERS/PAINT	10

**COMMENTS:**

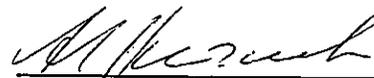
FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH COMPONENT IS ANALYZED AND REPORTED SEPARATELY.

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD EPA/600/R-93/116 OF JULY '93. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 4/4/97

MICROANALYST

  
MICHAEL BLACK

QUALITY CONTROL

  
ALEKSEY REZNIK

**POLARIZED LIGHT MICROSCOPY (PLM)**  
**BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: NAVY SOUTH DIVISION LAB JOB NO: B7068-5  
 PROJECT NAME: MCAS BEAUFORT /1501A.40 DATE RECEIVED: 3/28/97  
 FIELD ID: MCB-1039-6-02 LAB ID: 705285  
 LOCATION: - DATE ANALYZED: 4/4/97

**SAMPLE DESCRIPTION**

LAYERED: NO		
APPEARANCE:	GRAY SOFT FIBROUS TO GRANULAR TO POWDERY WITH PAINT	

**RESULT OF ANALYSIS (BY VISUAL ESTIMATE) IN VOLUME PERCENTAGE**

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSOTILE		CELLULOSE	30	VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE		GLASS FIBERS	30	PERLITE	30	SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE	
TREMOLITE		WOLLASTONITE		STYROFOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						BINDERS/PAINT	10

**COMMENTS:**

FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH COMPONENT IS ANALYZED AND REPORTED SEPARATELY.

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD EPA/600/R-93/116 OF JULY '93. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 4/4/97

MICROANALYST

M. Black  
 MICHAEL BLACK

QUALITY CONTROL

ALEKSEY REZNIK  
 ALEKSEY REZNIK

**POLARIZED LIGHT MICROSCOPY (PLM)  
 BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: NAVY SOUTH DIVISION LAB JOB NO: B7068-5  
 PROJECT NAME: MCAS BEAUFORT /1501A.40 DATE RECEIVED: 3/28/97  
 FIELD ID: MCB-1039-6-03 LAB ID: 705286  
 LOCATION: - DATE ANALYZED: 4/4/97

**SAMPLE DESCRIPTION**

LAYERED: NO		
APPEARANCE:	GRAY SOFT FIBROUS TO GRANULAR TO POWDERY WITH PAINT	

**RESULT OF ANALYSIS (BY VISUAL ESTIMATE) IN VOLUME PERCENTAGE**

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOTILE		CELLULOSE	30	VERMICULITE/MICA		BITUMEN/TAR	
AMOSITE		GLASS FIBERS	30	PERLITE	30	SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE	
TREMOLITE		WOLLASTONITE		STYROFOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						BINDERS/PAINT	10

**COMMENTS:**

FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH COMPONENT IS ANALYZED AND REPORTED SEPARATELY.

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD EPA/600/R-93/116 OF JULY '93. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 4/4/97

MICROANALYST

*M. Black*

MICHAEL BLACK

QUALITY CONTROL

ALEKSEY REZNIK

**C A P E  
ENVIRONMENTAL  
MANAGEMENT  
I N C**

2302 PARKLAKE DRIVE, SUITE 200, ATLANTA, GA 30345

TEL: (770) 908-7200 FAX: (770) 908-7219

NVLAP  
LAB CODE -10211

**POLARIZED LIGHT MICROSCOPY (PLM)  
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: NAVY SOUTH DIVISION LAB JOB NO: B7068-5  
 PROJECT NAME: MCAS BEAUFORT /1501A.40 DATE RECEIVED: 3/28/97  
 FIELD ID: MCB-1039-7-01 LAB ID: 705287  
 LOCATION: - DATE ANALYZED: 4/4/97

**SAMPLE DESCRIPTION**

LAYERED: YES	NO. OF LAYERS: * 3	LAYER NO: 1+2+3
APPEARANCE: 1. WHITE HARD SILTY WITH MICA AND PAINT; 2. GRAY SOFT FIBROUS; 3. LIGHT GRAY HARD SILTY WITH FIBERS		

**RESULT OF ANALYSIS (BY VISUAL ESTIMATE) IN VOLUME PERCENTAGE**

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOLE		CELLULOSE	20	VERMICULITE/MICA	2	BITUMEN/TAR	
AMOSITE		GLASS FIBERS		PERLITE		SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE	
TREMOLITE		WOLLASTONITE		STYROFOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						BINDERS/PAINT	78

**COMMENTS:**

FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH COMPONENT IS ANALYZED AND REPORTED SEPARATELY.

\* NO OF LAYERS - INDICATES NUMBER OF SUBSAMPLES (UNLESS OTHERWISE STATED).

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD EPA/600/R-93/116 OF JULY '93. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 4/4/97

MICROANALYST

*M. Black*

MICHAEL BLACK

QUALITY CONTROL

*A. Reznik*

ALEKSEY REZNIK

PLM IS NOT CONSISTENTLY RELIABLE IN DETECTING SMALL CONCENTRATION OF ASBESTOS IN FLOOR TILES AND SIMILAR NONFRIABLE MATERIALS. QUANTITATIVE TEM IS CURRENTLY THE ONLY METHOD THAT CAN BE USED TO GET THE CONCLUSIVE ASBESTOS CONTENT. THIS REPORT RELATES ONLY TO THE ITEMS TESTED. THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, AND NOT WITHOUT WRITTEN APPROVAL OF THE LABORATORY. THIS REPORT SHALL NOT BE USED TO CLAIM ENDORSEMENT BY NVLAP OR ANY AGENCY OF U.S. GOVERNMENT.

**POLARIZED LIGHT MICROSCOPY (PLM)  
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: NAVY SOUTH DIVISION LAB JOB NO: B7068-5  
 PROJECT NAME: MCAS BEAUFORT /1501A.40 DATE RECEIVED: 3/28/97  
 FIELD ID: MCB-1039-7-02 LAB ID: 705288  
 LOCATION: - DATE ANALYZED: 4/4/97

**SAMPLE DESCRIPTION**

LAYERED: YES	NO. OF LAYERS: * 3	LAYER NO: 1+2+3
APPEARANCE: 1. WHITE HARD SILTY WITH MICA AND PAINT; 2. GRAY SOFT FIBROUS; 3. LIGHT GRAY HARD SILTY WITH FIBERS		

**RESULT OF ANALYSIS (BY VISUAL ESTIMATE) IN VOLUME PERCENTAGE**

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOLE		CELLULOSE	15	VERMICULITE/MICA	2	BITUMEN/TAR	
AMOSITE		GLASS FIBERS		PERLITE		SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE	
TREMOLITE		WOLLASTONITE		STYROFOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						BINDERS/PAINT	83

**COMMENTS:**

FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH COMPONENT IS ANALYZED AND REPORTED SEPARATELY.

\* NO OF LAYERS - INDICATES NUMBER OF SUBSAMPLES (UNLESS OTHERWISE STATED).

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD EPA/600/R-93/116 OF JULY '93. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 4/4/97

MICROANALYST

*M. Black*

MICHAEL BLACK

QUALITY CONTROL

\_\_\_\_\_  
ALEKSEY REZNIK

**POLARIZED LIGHT MICROSCOPY (PLM)  
 BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: NAVY SOUTH DIVISION LAB JOB NO: B7068-5  
 PROJECT NAME: MCAS BEAUFORT /1501A.40 DATE RECEIVED: 3/28/97  
 FIELD ID: MCB-1039-7-03 LAB ID: 705289  
 LOCATION: - DATE ANALYZED: 4/4/97

**SAMPLE DESCRIPTION**

LAYERED: YES	NO. OF LAYERS: * 3	LAYER NO: 1+2+3
APPEARANCE: 1. WHITE HARD SILTY WITH MICA AND PAINT; 2. GRAY SOFT FIBROUS; 3. LIGHT GRAY HARD SILTY WITH FIBERS		

**RESULT OF ANALYSIS (BY VISUAL ESTIMATE) IN VOLUME PERCENTAGE**

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOTILE		CELLULOSE	10	VERMICULITE/MICA	2	BITUMEN/TAR	
AMOSITE		GLASS FIBERS		PERLITE		SAND/AGGR.	
CROCIDOLITE		SYNTHETICS		EXPANDED GLASS		GLUE	
TREMOLITE		WOLLASTONITE		STYROFOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						BINDERS/PAINT	88

**COMMENTS:**

FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH COMPONENT IS ANALYZED AND REPORTED SEPARATELY.

\* NO OF LAYERS - INDICATES NUMBER OF SUBSAMPLES (UNLESS OTHERWISE STATED).

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD EPA/600/R-93/116 OF JULY '93. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 4/4/97

MICROANALYST

M. Black  
 MICHAEL BLACK

QUALITY CONTROL

ALEKSEY REZNIK  
 ALEKSEY REZNIK

# **ENVIRONMENTAL HAZARDS SERVICES, L.L.C.**

7469 WHITE PINE ROAD - RICHMOND, VA 23237

804-275-4788 FAX 804-275-4907

## **BULK ASBESTOS SAMPLE ANALYSIS SUMMARY**

**CLIENT:** Environmental Enterprise Group, Inc. **DATE OF RECEIPT:** 14 OCT 2005  
1345 Barracks Road **DATE OF ANALYSIS:** 14 OCT 2005  
North Charleston, SC 29405 **DATE OF REPORT:** 15 OCT 2005

**CLIENT NUMBER:** 42-4515 B  
**EHS PROJECT #:** 2005-10-1737  
**PROJECT:** MCAS Beaufort; Building #1039

<b>EHS SAMPLE #</b>	<b>CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION</b>	<b>% ASBESTOS</b>	<b>OTHER MATERIALS</b>
1	White Vinyl; Brown Fib.; Silver Foil-Like	NAD	2% Cellulose 98% Non-Fibrous
2	White Vinyl; Brown Fib.; Silver Foil-like	NAD	2% Cellulose 98% Non-Fibrous
3	Black Tar-Like	NAD	100% Non-Fibrous
4	Black Tar-Like	NAD	100% Non-Fibrous
5	Black Tar-Like; Silver Paint-Like	5% Chrysotile 5% Total Asbestos	10% Cellulose 85% Non-Fibrous
6	Black Tar-Like; Silver Paint-Like	5% Chrysotile 5% Total Asbestos	5% Cellulose 90% Non-Fibrous

**QC SAMPLE:** M2-1999-2  
**QC BLANK:** SRM 1866 Fiberglass  
**REPORTING LIMIT:** 1% Asbestos  
**METHOD:** Polarized Light Microscopy, EPA Method 600/R-93/116 \*  
**ANALYST:** Melissa Boggs Steiniger

**Reviewed By Authorized Signatory:**



*Michael A. Mueller, MPH, Laboratory Director  
Howard Varner, General Manager  
Irma Faszewski, Quality Assurance Coordinator  
Feng Jiang, MS, Technical Director*

# ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

**CLIENT NUMBER:** 42-4515 B  
**EHS PROJECT #:** 2005-10-1737  
**PROJECT:** MCAS Beaufort; Building #1039

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of Environmental Hazards Services, L.L.C. California Certification #2319 NY ELAP #11714. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), for enhanced detection capabilities) for materials regulated by the EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

\* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

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**LEGEND** NAD = no asbestos detected  
SCF = suspected ceramic fibers

---

plm1.dot/07MAR2005/REV1/pd

-- END OF REPORT --

EHS 2005-10-1737

# ASBESTOS CHAIN OF CUSTODY FORM



FACILITY: MCAS Beaufort BUILDING #: 1039

INSPECTOR'S NAME(S): Lee C. Glidden DATE: 10/12/05

(PRINT)

TOTAL NUMBER OF SAMPLES RELINQUISHED: 6

Sample #s:

1039-001 thru 1039-006

Relinquished by / Date:

L.C. Glidden 10/12/05

Received by / Date:

[Signature] 10-14-05 116

## ANALYSIS REQUIRED

- Bulk ID by PLM
- Asbestos Wipe
- Fiber Count (PCM)
- TEM Chatfield (Bulk)
- TEM Air
- Other (specify) \_\_\_\_\_

### Additional Information / Comments

EEG Inc Control No. 354

EEG Inc Job No. 06003

(843) 412-2057 Cell

Notify of Results: Lee C. Glidden

Phone (843) 202-8045

E-Mail glidden@eeginc.net

SAMPLE CONDITION  
acceptable ✓  
inacceptable

EEG, INC  
1345 BARRACKS ROAD  
NORTH CHARLESTON, SC 29405-2106  
(843) 202-8000  
FAX (843) 202-8001

# ASBESTOS SAMPLE LOG

FACILITY MCAS Beaufort

BUILDING #: 1039

INSPECTORS NAMES: Lee C. Glidden

DATE: 10/12/2005

(PRINT)

INSPECTOR SIGNATURE / LICENSE #: *Lee C. Glidden* SC 22891

SAMPLE NUMBER	HOMO #	SAMPLE LOCATION (Room #, Floor #, Etc.)	SAMPLE DESCRIPTION
1039-001	H-8	Room 107 - vent duct	Vent duct mastic - white
1039-002	H-8	Room 107 vent duct	Vent duct mastic - white
1039-003	H-9	Roof	Roofing tar - black
1039-004	H-9	Roof	Roofing tar - black
1039-005	H-10	Roof	Roof flashing mastic - black
1039-006	H-10	Roof	Roof flashing mastic - black



# 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@mse-labs.com](mailto:customerservice@mse-labs.com) • Website: [www.mse-labs.com](http://www.mse-labs.com)

Date: July 13, 2010

Attention: Howard Varner  
Environmental Hazards Services, LLC

Subject: Analysis of bulk samples for asbestos mineral fibers by Transmission Electron Microscopy

RE: MSE-7120EHSB.3  
MCAS Bldg. 1039 Project  
EHS#10-07-01619

Dear Mr. Varner:

McCall & Spero Environmental, Inc. has completed the analyses of the bulk samples we received from your offices on July 12, 2010. These samples represent the bulk samples from the MCAS Bldg. 1039 Project.

The TEM bulk analysis was performed according to the New York State ELAP Method # 198.4, "Transmission Electron Microscope Method for Identifying and Quantifying Asbestos in Non-Friable Organically Bound Bulk Samples".

The results for the seven (7) samples are summarized in the following report. Please note that for samples consisting of two or more distinct components, each component is analyzed and reported individually (EPA 40 CFR Part 61 [FRL-4821-71]).

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

Sincerely,

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

**SUMMARY OF TEM BULK ANALYSIS RESULTS**

Page 1

Project Name: MCAS Bldg. 1039 Project EHS#10-07-01619  
 McCall & Spero Environmental Project No. MSE-7120EHSB.3

CLIENT SAMPLE # DESCRIPTION	ASBESTOS TYPES & %	TOTAL ASBESTOS %	NON- FIBROUS MATRIX %	OTHER FIBROUS MATERIAL TYPES & %	COLOR
MCAS-1039-10-001 (A) Floor Tile	No Asbestos Detected	ND	100%	ND	Gray
MCAS-1039-10-001 (B) Mastic	No Asbestos Detected	ND	100%	ND	Black
MCAS-1039-10-002 Coving Mastic	No Asbestos Detected	ND	100%	ND	Brown
MCAS-1039-10-003 Mastic	No Asbestos Detected	ND	100%	ND	Brown / Black
MCAS-1039-10-004 Duct Mastic	No Asbestos Detected	ND	100%	ND	Gray
MCAS-1039-10-005 Roofing Tar	No Asbestos Detected	ND	100%	ND	Black
MCAS-1039-10-006 Roof Flashing	No Asbestos Detected	ND	100%	ND	Black

**NOTES:**

NAD = No Asbestos Detected

AC = Actinolite

TR = Tremolite

ND = None Detected CH = Chrysotile A = Amosite

CR = Crocidolite

AN = Anthophyllite

&lt; 1% = Less Than One Percent

&gt; 1% = Greater Than One Percent

For samples consisting of separate components, each component is analyzed and reported separately.

TEM bulk analysis was performed according to the New York State ELAP Method # 198.4, "Transmission Electron Microscope Method for Identifying and Quantifying Asbestos in Non-Friable Organically Bound Bulk Samples".

McCall & Spero Environmental, Inc.

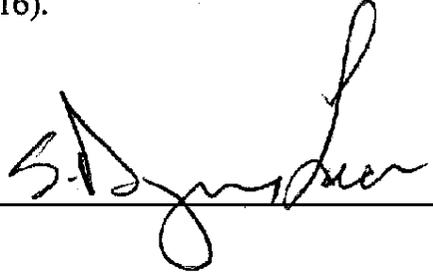
**SUMMARY OF TEM BULK ANALYSIS RESULTS**

Page 2

Results apply only to items tested. Results from this report must not be reproduced, except in full, with the approval of McCall & Spero Environmental, Inc. This report must not be used to claim product endorsement by NVLAP or any agency of the U.S. Government.

\*\* EPA recommends that bulk materials found negative for asbestos or less than one percent asbestos by polarized light microscopy that fall into one of five dominantly nonfriable categories be reanalyzed by an additional method, such as transmission electron microscopy. (EPA Notice of Advisory, FR Vol. 59, No. 146 & Test Method EPA 600/ R-93/ 116).

Analyst: S. Dewayne Lear, B.S.

A handwritten signature in black ink, appearing to read "S. Dewayne Lear", is written over a horizontal line.

71200EHS133



**Environmental Hazards Services, LLC**  
 7469 Whitepine Road  
 Richmond, Virginia 23237  
 804-275-4788 Fax 804-275-4907

10-07-01619



Due Date:  
 07/13/2010  
 (Tuesday)

**TEM FORM**

**Project Information:**

EHS Client # 424515 SBG, INC. Date: 7/7/10  
 Project: MCAS BLDG 1039 TAT: STD

California Chatfield: YES NO  
 Analysis Requested: CHATFIELD DAILY

Sample #	Sample Type	Sample Location and /or Comments	Volume (liters)
MCAS 1039-10-001	GRAY FLOOR TILE / MASTIC	Room 203	
MCAS 1039-10-002	BROWN COVING MASTIC	Hall W-100	
MCAS 1039-10-003	BROWN SCHEDULED MASTIC	STAIRWELL (1st Floor)	
MCAS 1039-10-004	WHITE VENT DUCT MASTIC	Room 119	
MCAS 1039-10-005	Roofing TAR	Roof R-102	
MCAS 1039-10-006	Roof FURNISHING	Roof R-100	

Date/Time	Released By	Date /Time	Received By:
7/7/10 1500	MC Mestyan	7-12-10 11:30 a.m.	Blondi J...
		7-12-10	J. Ch...



Environmental Hazards Services, L.L.C.  
 7469 Whitepine Rd  
 Richmond, VA 23237  
 Telephone: 800.347.4010

## Asbestos Bulk Analysis Report

Report Number: 10-07-01495

Client: SBG Inc.  
 10179 Highway 78  
 Ladson, SC 29456-370

Received Date: 07/12/2010  
 Analyzed Date: 07/14/2010  
 Reported Date: 07/15/2010

Project/Test Address: Marine Corps Air Station; Beaufort; Bldg 1039

Client Number:  
 42-4515

# Laboratory Results

Fax Number:  
 843-879-0401 E3

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
10-07-01495-001	MCAS-1039-10-007		Tan Adhes.	NAD	100% Non-Fibrous
10-07-01495-002	MCAS-1039-10-008		Tan Adhes.	NAD	100% Non-Fibrous
10-07-01495-003	MCAS-1039-10-009		Tan Adhes.	NAD	100% Non-Fibrous
10-07-01495-004	MCAS-1039-10-010		White Adhes.	NAD	100% Non-Fibrous
10-07-01495-005	MCAS-1039-10-011		White Adhes.	NAD	100% Non-Fibrous

# Environmental Hazards Services, L.L.C

Client Number: 42-4515

Report Number: 10-07-01495

Project/Test Address: Marine Corps Air Station; Beaufort; Bldg  
1039

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
10-07-01495-006	MCAS-1039-10-012		White Adhes.	NAD	100% Non-Fibrous
10-07-01495-007	MCAS-1039-10-013		Tan Adhes.	NAD	100% Non-Fibrous
10-07-01495-008	MCAS-1039-10-014		Tan Adhes.	NAD	1% Cellulose 99% Non-Fibrous
10-07-01495-009	MCAS-1039-10-015		Tan Adhes.	NAD	100% Non-Fibrous

# Environmental Hazards Services, L.L.C

Client Number: 42-4515

Report Number: 10-07-01495

Project/Test Address: Marine Corps Air Station; Beaufort; Bldg  
1039

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Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
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---

QC Sample: 5-M1-1991-1

QC Blank: SRM 1866 Fiberglass

Reporting Limit: 1% Asbestos

Method: EPA Method 600/R-93/116

Analyst: Christian H. Schiable

Reviewed By Authorized Signatory:



*Howard Varner*  
General Manager

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

\* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

---

LEGEND: NAD = no asbestos detected

---

# ASBESTOS CHAIN OF CUSTODY FORM



9PLM

FACILITY: Marine Corps Air Station - Beaufort BLDG #: 1039

INSPECTOR'S NAME(S): Mark Moltzen DATE: 7/2/10  
(PRINT)

TOTAL NUMBER OF SAMPLES RELINQUISHED: 9

<u>Sample Numbers:</u>	<u>Relinquished by / Date:</u>	<u>Received by / Date:</u>
<u>MCAS-1039-007 thru 015</u>	<u>Ma Moltzen 7/7/10</u>	<u>Thur 7/12/10</u>

<b>ANALYSIS REQUIRED</b>	
<input checked="" type="checkbox"/> Bulk ID by PLM	<input type="checkbox"/> TEM Chatfield (Bulk)
<input type="checkbox"/> Asbestos Wipe	<input type="checkbox"/> TEM Air
<input type="checkbox"/> Fiber Count (PCM)	<input type="checkbox"/> Other (specify) _____

**Additional Information / Comments**

Stop analysis on first positive reading per homogeneous material

10-07-01495



Due Date:  
07/15/2010  
(Thursday)

**Notification of Results**

Name: Mark Moltzen Phone: (843) 412-2086 E-Mail: moltzen@sbg-eeg.com

SBG Job #: 1029

**SBG, INC**  
10179 Hwy 78  
Ladson, SC 29456  
(843) 879-0400  
**FAX (843) 879-0401**

# ASBESTOS SAMPLE LOG



FACILITY: Marine Corps Air Station-Beaufort BLDG #: 1039

INSPECTOR NAME(S): Mark Moltzen (SC-23353) DATE: 7/2/10  
(PRINT)

INSPECTOR SIGNATURE(S): *Mark A Moltzen*  
(SIGNATURE)

SAMPLE NUMBER	HOMO #	SAMPLE LOCATION (Room #, Floor #, Etc.)	SAMPLE DESCRIPTION
MCAS-1039-10-007	11	Hall H-100	White coving mastic
MCAS-1039-10-008	11	Hall H-200	White coving mastic
MCAS-1039-10-009	11	Room 209	White coving mastic
MCAS-1039-10-010	12	Hall H-100 door	White caulking
MCAS-1039-10-011	12	Door by stairwell	White caulking
MCAS-1039-10-012	12	Exterior window	White caulking
MCAS-1039-10-013	13	Seam between Roofs R-100 & R-102	White roof caulking
MCAS-1039-10-014	13	Seam between Roofs R-100 & R-102	White roof caulking
MCAS-1039-10-015	13	Seam between Roofs R-100 & R-102	White roof caulking

**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) 244-7136E-mail: [customerservice@mse-labs.com](mailto:customerservice@mse-labs.com) • Website: [www.mse-labs.com](http://www.mse-labs.com)

Date: July 19, 2010

Attention: Howard Varner  
Environmental Hazards Services, LLC

Subject: Analysis of bulk samples for asbestos mineral fibers by Transmission Electron Microscopy

RE: MSE-7160EHSB.3  
Marine Corps Air Station-Beaufort; Bldg. # 1039 Project  
EHS#10-07-02105

Dear Mr. Varner:

McCall & Spero Environmental, Inc. has completed the analyses of the bulk samples we received from your offices on July 16, 2010. These samples represent the bulk samples from the Marine Corps Air Station-Beaufort; Bldg. # 1039 Project.

The TEM bulk analysis was performed according to the New York State ELAP Method # 198.4, "Transmission Electron Microscope Method for Identifying and Quantifying Asbestos in Non-Friable Organically Bound Bulk Samples".

The results for the three (3) samples are summarized in the following report. Please note that for samples consisting of two or more distinct components, each component is analyzed and reported individually (EPA 40 CFR Part 61 [FRL-4821-71]).

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

Sincerely,

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

**SUMMARY OF TEM BULK ANALYSIS RESULTS**

Page 1

Project Name: Marine Corps Air Station-Beaufort; Bldg. # 1039 Project EHS#10-07-02105  
 McCall & Spero Environmental Project No. MSE-7160EHSB.3

CLIENT SAMPLE # DESCRIPTION	ASBESTOS TYPES & %	TOTAL ASBESTOS %	NON- FIBROUS MATRIX %	OTHER FIBROUS MATERIAL TYPES & %	COLOR
MCAS-1039-10- 007 Coving Mastic	No Asbestos Detected	NAD	100%	ND	Gray
MCAS-1039-10- 010 Caulking	No Asbestos Detected	NAD	100%	ND	Gray
MCAS-1039-10- 013 Roof Caulking	No Asbestos Detected	NAD	100%	ND	Gray

## NOTES:

NAD = No Asbestos Detected

AC = Actinolite

TR = Tremolite

ND = None Detected CH = Chrysotile A = Amosite

CR = Crocidolite

AN = Anthophyllite

&lt; 1% = Less Than One Percent

&gt; 1% = Greater Than One Percent

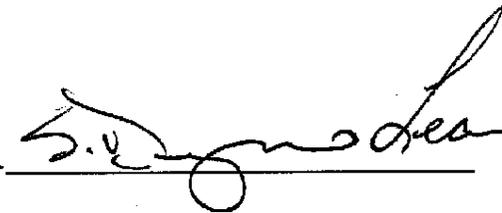
For samples consisting of separate components, each component is analyzed and reported separately.

TEM bulk analysis was performed according to the New York State ELAP Method # 198.4, "Transmission Electron Microscope Method for Identifying and Quantifying Asbestos in Non-Friable Organically Bound Bulk Samples".

Results apply only to items tested. Results from this report must not be reproduced, except in full, with the approval of McCall & Spero Environmental, Inc. This report must not be used to claim product endorsement by NVLAP or any agency of the U.S. Government.

\*\* EPA recommends that bulk materials found negative for asbestos or less than one percent asbestos by polarized light microscopy that fall into one of five dominantly nonfriable categories be reanalyzed by an additional method, such as transmission electron microscopy. (EPA Notice of Advisory, FR Vol. 59, No. 146 & Test Method EPA 600/ R-93/ 116).

Analyst: S. Dewayne Lear, B.S.



McCall & Spero Environmental, Inc.





Environmental Hazards Services, L.L.C.  
 7469 Whitepine Rd  
 Richmond, VA 23237  
 Telephone: 800.347.4010

## Asbestos Bulk Analysis Report

Report Number: 13-09-01900

Client: SBG Inc.  
 10179 Highway 78  
 Ladson, SC 29456-370

Received Date: 09/16/2013  
 Analyzed Date: 09/18/2013  
 Reported Date: 09/18/2013

Project/Test Address: Marine Corps Air Station- Beaufort; Bldg.# 1039

Client Number:  
 42-4515

Fax Number:  
 843-879-0401

# Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
13-09-01900-001	MCAS-1039-016		Black Brittle Tar-Like; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
13-09-01900-002	MCAS-1039-017		Black Brittle Tar-Like; Homogeneous	NAD	1% Cellulose 99% Non-Fibrous
13-09-01900-003	MCAS-1039-018		Black Tar-Like; Silver Paint-Like; Inhomogeneous	5% Chrysotile	5% Cellulose 90% Non-Fibrous
				Total Asbestos: 5%	
Chrysotile present throughout sample					
13-09-01900-004	MCAS-1039-019			Did Not Analyze (Positive Stop)	

# Environmental Hazards Services, L.L.C

Client Number: 42-4515

Report Number: 13-09-01900

Project/Test Address: Marine Corps Air Station- Beaufort; Bldg.#  
1039

---

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
-------------------	----------------------	------------	-----------------------	----------	-----------------

---

QC Sample: 5-M1-1991-1

QC Blank: SRM 1866 Fiberglass

Reporting Limit: 1% Asbestos

Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020

Analyst: Kathy Sizemore Fletcher

Reviewed By Authorized Signatory:



Howard Varner  
General Manager

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

\* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

---

LEGEND: NAD = no asbestos detected

---

41001  
**ASBESTOS  
CHAIN OF CUSTODY FORM**



**FACILITY:** Marine Corps Air Station – Beaufort **BLDG #:** 1039

**INSPECTOR'S NAME(S):** Mark Moltzen **DATE:** 9/9/13  
(PRINT)

**TOTAL NUMBER OF SAMPLES RELINQUISHED:** 4

**Sample Numbers:** MCAS-1039-016 thru 019  
**Relinquished by / Date:** Mark Moltzen 9/11/13

13-09-01900  
  
Due Date:  
09/19/2013  
(Thursday)  
AE

**ANALYSIS REQUIRED**

<input checked="" type="checkbox"/> Bulk ID by PLM	<input type="checkbox"/> TEM Chatfield (Bulk)
<input type="checkbox"/> Asbestos Wipe	<input type="checkbox"/> TEM Air
<input type="checkbox"/> Fiber Count (PCM)	<input type="checkbox"/> Other (specify) _____

**Additional Information / Comments**

Stop analysis on first positive reading per homogeneous material  
\* NO TEMs Required \*

**Notification of Results**

**Name:** Mark Moltzen **Phone:** (843) 412-2086 **E-Mail:** moltzen@sbg-eeg.com

**SBG Job #:** 1338

**SBG, INC**  
10179 Hwy 78  
Ladson, SC 29456  
(843) 879-0400  
**FAX (843) 879-0401**

Rec'd: M. Ottlaw  
9/16/13





# ASBESTOS BULK ANALYSIS

By: TRANSMISSION ELECTRON MICROSCOPY

**Client:** Environmental Hazards Services, L.L.C.  
7469 Whitepine Road  
Richmond, VA 23237

**CEI Lab Code:** T13-1568  
**Date Received:** 09-20-13  
**Date Analyzed:** 09-23-13  
**Date Reported:** 09-23-13

**Project:** Marine Corps Air Station- Beaufort; Bldg.# 1039; EHS# 13-09-01900

## TEM BULK CHATFIELD

Client ID Lab ID	Material Description	Sample Weight (g)	Organic Material %	Acid Soluble Material %	Acid Insoluble Material %	Asbestos %
MCAS-1039 -018 T15078	Tar	0.2046	55.4	16.6	28	14% Chrysotile

This report may not be reproduced, except in full, without written approval by CEI LABS. CEI LABS makes no warranty representation regarding the accuracy of client submitted information in preparing and presenting analytical results.

**ANALYST:** Kamila Reichert  
Kamila Reichert

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



**SCDHEC**

**ASBESTOS**

**INSPECTOR**

**LICENSES**

South Carolina  
**DHEC**  
Department of Health and Environmental Control

**BUREAU OF AIR QUALITY**  
ASBESTOS ABATEMENT LICENSE

No. 22019

This Certifies that

*Scott Bryant*

*Cape Env. Management, Inc.*

has satisfactorily completed the training required by South Carolina Regulation No. 61-86.1 and the EPA Model Accreditation Plan, 40 CFR 763 Subpart E Appendix C, for the category of

*Consultant/Building Inspector*

The holder of this license shall comply with all the requirements of said Regulation.

This license is not transferable to any other licensee or company  
and shall expire one year from 10/03/96.

10/30/96

ORIGINAL



John E. Hursey, Director  
Program Development & Support Division  
Bureau of Air Quality  
South Carolina Department of  
Health & Environmental Control

South Carolina  
**DHEC**  
Department of Health and Environmental Control

**BUREAU OF AIR QUALITY**  
ASBESTOS ABATEMENT LICENSE

No. 21710

This Certifies that

*Brian Byrdsong*

*Cape Environmental Mgmt, Inc.*

has satisfactorily completed the training required by South Carolina Regulation No. 61-86.1 and the EPA Model Accreditation Plan, 40 CFR 763 Subpart E Appendix C, for the category of

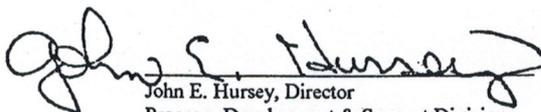
*Consultant/Building Inspector*

The holder of this license shall comply with all the requirements of said Regulation.

This license is not transferable to any other licensee or company  
and shall expire one year from 10/03/96.

10/17/96

ORIGINAL



John E. Hursey, Director  
Program Development & Support Division  
Bureau of Air Quality  
South Carolina Department of  
Health & Environmental Control

South Carolina  
**DHEC**  
Department of Health and Environmental Control

**BUREAU OF AIR QUALITY**  
ASBESTOS ABATEMENT LICENSE

No. 21697

This Certifies that

*David Piech*

*Cape Environmental Mgmt, Inc.*

has satisfactorily completed the training required by South Carolina Regulation No. 61-86.1 and the EPA Model Accreditation Plan, 40 CFR 763 Subpart E Appendix C, for the category of

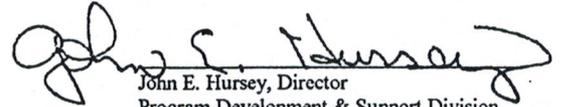
*Consultant/Building Inspector*

The holder of this license shall comply with all the requirements of said Regulation.

This license is not transferable to any other licensee or company  
and shall expire one year from 10/03/96.

10/17/96

ORIGINAL



John E. Hursey, Director  
Program Development & Support Division  
Bureau of Air Quality  
South Carolina Department of  
Health & Environmental Control

South Carolina  
**DHEC**  
Department of Health and Environmental Control

**BUREAU OF AIR QUALITY**  
ASBESTOS ABATEMENT LICENSE

No. 22004

This Certifies that

*Kevin Bailey*

*Cape Environmental Mgmt., Inc.*

has satisfactorily completed the training required by South Carolina Regulation No. 61-86.1 and the EPA Model Accreditation Plan, 40 CFR 763 Subpart E Appendix C, for the category of

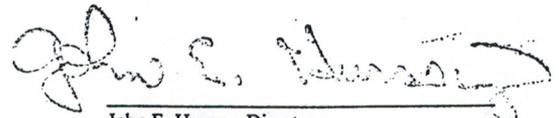
*Consultant/Building Inspector*

The holder of this license shall comply with all the requirements of said Regulation.

This license is not transferable to any other licensee or company  
and shall expire one year from 02/28/96.

10/17/96

ORIGINAL



John E. Hursey, Director  
Program Development & Support Division  
Bureau of Air Quality  
South Carolina Department of  
Health & Environmental Control



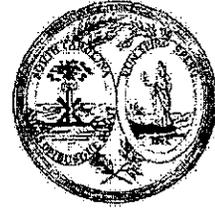
ASBESTOS ABATEMENT LICENSE

No. ASB-22891

This certifies that

*LEE C GLIDDEN*

002-BI-7960



doing business as *ENVIRONMENTAL ENTERPRISE GROUP INC*

has satisfactorily completed the training required by South Carolina Regulation No. 61-86.1 and the EPA Model Accreditation Plan, 40 CFR 763 Subpart F Appendix C, for the category of

*Consultant / Building Inspector (AHERA Certified)*

The holder of this license shall comply with all the requirements of said Regulation.

This License, License Number, or any Representation thereof, is not transferable to any other licensee or company. Use of this License is only authorized for the licensee and Company whose name appears hereon and shall expire one year from *June 30, 2005*

July 06, 2005

*Richard D. Sharpe*

Richard D. Sharpe, Director  
Air Compliance Management Division  
Bureau of Air Quality  
South Carolina Department of Health & Environmental Control

July-06, 2005 02:50 PM

**ORIGINAL**

CR-001126

# Greenville Technical College

Buck Mickel Center, 216 S. Pleasantburg Drive, Greenville, South Carolina 29606 (864) 250-8800

**MARK A. MOLTZEN**

**10179 HWY 78 , Ladson, SC 29456**  
3070

*has completed the requisite training for asbestos accreditation under TSCA Title II and has met the requirements of and passed the examination for an EPA approved*

## **Asbestos Inspector Refresher Training Course**

Greenville, SC

092 - ROC647 - 044

**Certificate Number**

April 19, 2010

**Course Date(s)**

April 19, 2010

**Examination Date**



*W.T. Chinnners*

**W.T. Chinnners, Principal Instructor**

*Joy N. Finch*  
**Joy N. Finch, Training Manager**

April 19, 2011

**Expiration Date**

### **SCDHEC ISSUED Asbestos ID Card**

Mark A Moltzen



Expires

CONSULTBI	ASB-23353 04/19/11
CONSULTMP	ASB-22885 04/19/11
CONSULTPD	ASB-22888 05/29/10
SUPERAHERA	SA-00030 01/08/11

**SCDHEC ISSUED**  
**Asbestos ID Card**

Mark A Moltzen



CONSULTBI  
SUPERAMERA  
CONSULTPD  
CONSULTMP

Expires

ASB-23353 01/31/14  
SA-00030 01/30/14  
ASB-22888 05/09/13  
ASB-22885 01/31/14

# MARINE CORPS AIR STATION -BEAUFORT-



## **BUILDING 1039** (Applied Instrument Building)

# LEAD-BASED PAINT INSPECTION REPORT



Small Business Group, Inc.  
10179 Highway 78  
Ladson, SC 29456  
(843) 879-0403

January 2012

# MARINE CORPS AIR STATION -BEAUFORT-



## **BUILDING 1039** (Applied Instrument Building)

Lead-based Paint Inspection conducted  
for:

**Marine Corp Air Station – Beaufort**  
**Public Works Department**

Project Point of Contact:

**Alroy Headden**

(Public Works Maintenance Control)

(843) 228-7426

Inspection conducted and report prepared  
by:

Curtis R. Brown

Inspection Date: 01/04/2012

Lead-based Paint Inspector License #: SC-I-18953-1

License Expiration Date: 10/7/12 Phone #: (843) 879-0440

## **Building 1039**

(Applied Instrument Building)

A Lead-based paint inspector from the Small Business Group, Inc. (SBG) analyzed the interior painted surfaces of Building 1039 utilizing a Niton Model XLp 300a X-ray Fluorescence (XRF) analyzer (serial # 25335) to determine the lead content of the various surfaces. The inspection was performed 01/04/2012 using modified guidelines of the U.S. Department of Housing and Urban Development (HUD) Guidelines.

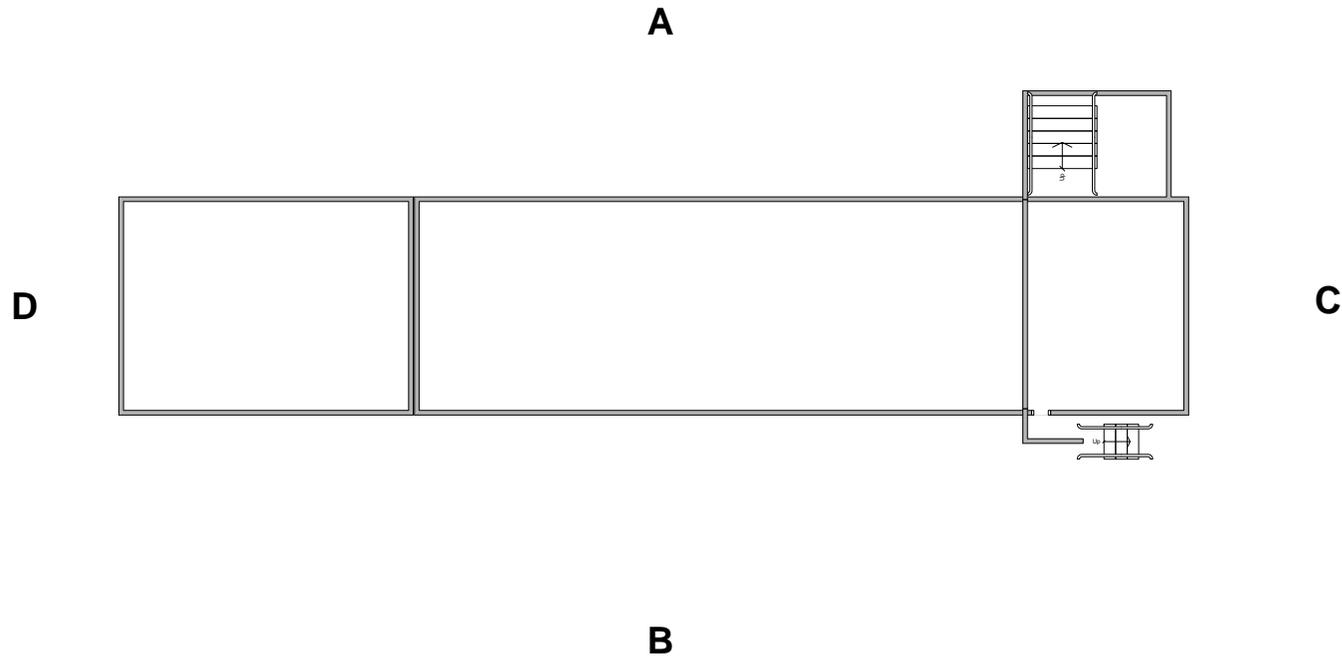
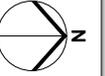
U.S. Environmental Protection Agency (EPA) and HUD guidelines specify a positive determination of lead in paint when the lead content is equal to or greater than 1.0 milligram of lead per square centimeter ( $\text{mg}/\text{cm}^2$ ) using an XRF analyzer. However, due to the scheduled renovation of this building, any coated surfaces meeting or exceeding the South Carolina Department of Health and Environmental Control (SCDHEC) disposal limit of  $0.7 \text{ mg}/\text{cm}^2$  by XRF testing, were considered to be lead-based paint. Lead-based paint, as defined by SCDHEC, on building components, requires waste disposal in a Class 2 or Class 3 landfill. See the latest waste disposal regulations for further guidance. The Occupational Safety and Health Administration (OSHA), Lead in Construction Standard (29CFR 1926.62), defines lead-based paint as any detectable amount and guidelines must be followed for any activity which may bring a worker in contact with lead. The XRF results are included in this report as Appendix A, XRF Field Data Results.

The four sides of the building are lettered for identification purposes starting with the letter A. The A side of the structure is the main entry or front side of the building. Starting on the A side, the remaining sides are lettered consecutively (B, C, D) going clockwise around the building. (See Appendix B for building floor plan)

Nine readings and calibration checks were taken using the XRF analyzer. Small amounts of lead paint were detected on several surfaces but no lead, above regulated levels, was detected on any of the tested surfaces.)

# XRF FIELD DATA RESULTS

Shot No	Type	Component	Substrate	Side	Condition	Color	Room	Results	Depth Index	Action Level	PbC	PbC Error	PbL	PbL Error	PbK	PbK Error
1	CAL							Negative	1.15	1	0.9	0.1	0.9	0.1	0.9	0.4
2	CAL							Negative	1.08	1	0.9	0.1	0.9	0.1	0.7	0.5
3	CAL							Negative	1	1	0.9	0.02	0	0.02	0.6	0.7
4	PAINT	WALL	CONCRETE	A	INTACT	BEIGE	EXTERIOR	Negative	1	1	0	0.02	0	0.02	0.4	1.2
5	PAINT	WALL	CONCRETE	C	INTACT	BEIGE	EXTERIOR	Negative	1.4	1	0	0.02	0	0.02	0.5	1.2
6	PAINT	WALL	CONCRETE	C	INTACT	BEIGE	EXTERIOR	Negative	2.73	1	0.01	0.02	0.01	0.02	0.8	0.7
7	CAL							Negative	1	1	0.7	0.3	0.7	0.3	1.1	1.3
8	CAL							Negative	1.17	1	0.9	0.1	0.9	0.1	1	0.4
9	CAL							Negative	1.15	1	0.9	0.1	0.9	0.1	0.8	0.3



XXX - - Building Room Number

**NOTE**  
Letters indicates side of building/room  
referenced in report

 CONSTRUCTION & ENVIRONMENTAL SERVICES	<b>SMALL BUSINESS GROUP, INC.</b>
	<b>Lead-based Paint Inspection – Building 1039</b>
	<b>Marine Corps Air Station – Beaufort, SC</b>
	<b>APPENDIX B</b>
Date: 01/04/2012	Scale: None

# United States Environmental Protection Agency

This is to certify that

Curtis R. Brown

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.226 as a:

Inspector

In the Jurisdiction of:

South Carolina

This certification is valid from the date of issuance and expires October 7, 2012

SC-I-18953-1

Certification #

OCT 23 2009

Issued On



Jeanne M. Gettle, Chief

Pesticides and Toxic Substances Branch

A handwritten signature in blue ink, appearing to read "Jeanne M. Gettle".

# MARINE CORPS AIR STATION -BEAUFORT-



## **BUILDING 1039** (Applied Instrument Building)

# LEAD-BASED PAINT INSPECTION REPORT



Small Business Group, Inc.  
10179 Highway 78  
Ladson, SC 29456  
(843) 879-0403

October 2011

# MARINE CORPS AIR STATION -BEAUFORT-



## **BUILDING 1039** (Applied Instrument Building)

Lead-based Paint Inspection conducted  
for:

**Marine Corp Air Station – Beaufort  
Public Works Department**

Project Point of Contact:

**Alroy Headden**

(Public Works Maintenance Control)

(843) 228-7426

Inspection conducted and report prepared  
by:

Curtis R. Brown

Inspection Date: 10/19/11

Lead-based Paint Inspector License #: SC-I-18953-1

License Expiration Date: 10/7/12 Phone #: (843) 879-0440

## **Building 1039**

(Applied Instrument Building)

A Lead-based paint inspector from the Small Business Group, Inc. (SBG) analyzed the interior painted surfaces of Building 1039 utilizing a Niton Model XLp 300a X-ray Fluorescence (XRF) analyzer (serial # 25335) to determine the lead content of the various surfaces. The inspection was performed 10/19/11 using modified guidelines of the U.S. Department of Housing and Urban Development (HUD) Guidelines.

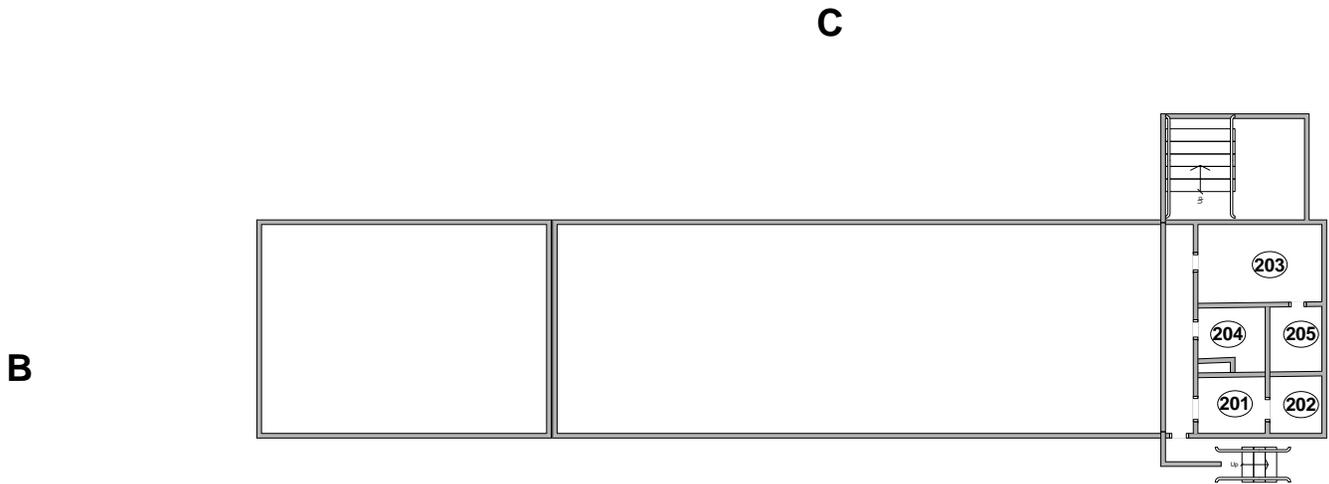
U.S. Environmental Protection Agency (EPA) and HUD guidelines specify a positive determination of lead in paint when the lead content is equal to or greater than 1.0 milligram of lead per square centimeter ( $\text{mg}/\text{cm}^2$ ) using an XRF analyzer. However, due to the scheduled renovation of this building, any coated surfaces meeting or exceeding the South Carolina Department of Health and Environmental Control (SCDHEC) disposal limit of  $0.7 \text{ mg}/\text{cm}^2$  by XRF testing, were considered to be lead-based paint. Lead-based paint, as defined by SCDHEC, on building components, requires waste disposal in a Class 2 or Class 3 landfill. See the latest waste disposal regulations for further guidance. The Occupational Safety and Health Administration (OSHA), Lead in Construction Standard (29CFR 1926.62), defines lead-based paint as any detectable amount and guidelines must be followed for any activity which may bring a worker in contact with lead. The XRF results are included in this report as Appendix A, XRF Field Data Results.

The four sides of the building are lettered for identification purposes starting with the letter A. The A side of the structure is the main entry or front side of the building. Starting on the A side, the remaining sides are lettered consecutively (B, C, D) going clockwise around the building. (See Appendix B for building floor plan)

Thirteen readings and calibration checks were taken using the XRF analyzer. Small amounts of lead paint were detected on several surfaces but no lead, above regulated levels, was detected on any of the tested surfaces.)

# XRF FIELD DATA RESULTS

Shot No	Type	Component	Substrate	Side	Condition	Color	Room	Results	Depth Index	Action Level	PbC	PbC Error	PbL	PbL Error	PbK	PbK Error
1	PAINT	CAL						Negative	1.11	1	0.9	0.1	0.9	0.1	0.3	0.43
2	PAINT	CAL						Negative	1.11	1	0.9	0.1	0.9	0.1	0.2	0.49
3	PAINT	CAL						Negative	1.12	1	0.9	0.1	0.9	0.1	0.6	0.5
4	PAINT	SHOWER 1	DRYWALL	A	INTACT	WHITE	204	Negative	1	1	0	0.02	0	0.02	0.22	1.27
5	PAINT	SHOWER 1	DRYWALL	B	INTACT	WHITE	204	Negative	1	1	0	0.02	0	0.02	-0.44	1.28
6	PAINT	SHOWER 1	METAL	C	INTACT	WHITE	204	Negative	1	1	0	0.02	0	0.02	-0.07	1.9
7	PAINT	SHOWER 2	METAL	A	INTACT	WHITE	204	Negative	1	1	0	0.02	0	0.02	0.3	1.85
8	PAINT	SHOWER 2	METAL	B	INTACT	WHITE	204	Negative	1	1	0	0.02	0	0.02	-0.03	1.88
9	PAINT	SHOWER 2	METAL	C	INTACT	WHITE	204	Negative	1	1	0	0.02	0	0.02	0.3	1.81
10	PAINT	SHOWER 2	METAL	C	INTACT	WHITE	204	Negative	1	1	0	0.02	0	0.02	-0.2	1.79
11	PAINT	CAL						Negative	1	1	0.7	0.3	0.7	0.3	0.7	1.5
12	PAINT	CAL						Negative	1.04	1	0.8	0.2	0.8	0.2	0.5	1
13	PAINT	CAL						Negative	1.15	1	0.9	0.1	0.9	0.1	0.7	0.4



2<sup>nd</sup> Floor plan

**NOTE**  
Letters indicates side of building/room  
referenced in report

XXX -- Building Room Number  
XXX -- Asbestos Sample Location & Number

	<b>SMALL BUSINESS GROUP, INC.</b>		
	<b>Lead-based Paint Inspection – Building 1039</b>		
	<b>Marine Corps Air Station – Beaufort, SC</b>		
	Date: 10/19/11	<b>APPENDIX B</b>	Scale: None

# United States Environmental Protection Agency

This is to certify that

Curtis R. Brown

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.226 as a:

Inspector

In the Jurisdiction of:

South Carolina

This certification is valid from the date of issuance and expires October 7, 2012

SC-I-18953-1

Certification #

OCT 23 2009

Issued On



Jeanne M. Gettle, Chief

Pesticides and Toxic Substances Branch

A handwritten signature in blue ink, appearing to read "Jeanne M. Gettle".

**UNITED STATES MARINE CORPS AIR STATION  
BEAUFORT, SOUTH CAROLINA**



**LEAD BASED PAINT SURVEY  
BUILDING 1039**



**Produced By:**  
**Environmental Enterprise Group, Inc.**  
**10179 Highway 78**  
**Ladson, SC 29456-3702**

#### **DISCLAIMER**

This document is provided for informational purposes only. The information contained in this document and these references represents the current view of Environmental Enterprise Group, Inc. on the issues discussed as of the date of publication.

Information provided in this document is provided 'as is' without warranty of any kind, either express or implied, including but not limited to the implied warranties of merchantability, fitness for a particular purpose and freedom from infringement. The user assumes the entire risk as to the accuracy and the use of this document.

This survey is of readily accessible areas of the building and is limited to visual observations and XRF analysis of apparent conditions/components tested and existing at the time of the survey only. Latent and concealed defects and deficiencies are excluded from the survey; equipment items and systems were not dismantled. EEG assumes no responsibility or obligation to update these findings.

Maintenance and other items may be discussed, but they are not a part of this survey. The report is not a compliance survey or certification for past or present governmental codes or regulation of any kind, unless specifically stated for that purpose. The survey and report only address the presence of or danger from the potentially harmful substance of lead in paint. The survey and report do not address the presence of or danger from other potentially harmful substances and environmental hazards including but not limited to radon, asbestos, urea formaldehyde, toxic or flammable chemicals, and water and airborne hazards. Also excluded are surveys of and report on wells, septic systems, security systems, central vacuum systems, sprinkler systems, fire and safety equipment and the presence of rodents, termites, and other insects.

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A Lead In Paint X-Ray Fluorescence Field Data Sheets  
B Facility Floor Plans

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**ACRONYM LIST**

CFR	Code of Federal Regulations
CLR	Color
CND	Condition
DI	Depth Index
EEG	Environmental Enterprise Group
EPA	U. S. Environmental Protection Agency
FEAT	Feature
HUD	U. S. Department of Housing and Urban Development
LBP	Lead-Based Paint
mg/cm <sup>2</sup>	milligrams of lead per square centimeter
PPM	Parts Per Million
RES	Result
SSEC	Source Seconds
STRC	Structure
SUB	Substrate
µg/ft <sup>2</sup>	micrograms of lead per square foot
µg/g	micrograms of lead per gram
XRF	X-Ray Fluorescence

---

## **EXECUTIVE SUMMARY**

The United States Marine Corps Air Station, retained the Environmental Enterprise Group, Inc (EEG) to perform a modified lead-based paint (LBP) survey of building 1039 on the MCAS in Beaufort, South Carolina.

A lead inspector from EEG performed the survey using a Niton Model XL700 X-ray Fluorescence (XRF) analyzer (serial # 869) to measure the lead content of various painted surfaces throughout the building. The inspection was performed using modified guidelines of the U.S. Department of Housing and Urban Development (HUD) Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing, June 1995 and 1997. The inspector visually examined the building and grouped similar components together for survey purposes. The inspector then selected a small number of the grouped components for survey to obtain a representative characteristic analysis of similar components throughout the building. The selected component surfaces that tested positive for lead are shown in Appendix A of this report. Dust and soil samples were not collected.

U.S. Environmental Protection Agency (EPA) and HUD guidelines specify a positive determination of lead in paint when the lead content is equal to or greater than 1.0 milligram of lead per square centimeter ( $\text{mg}/\text{cm}^2$ ) using an XRF analyzer. These guidelines govern child occupied target housing and are only identified as guidance in this report. Therefore a negative classification does not necessarily mean the component is lead free. The Occupational Safety and Health Administration (OSHA) Lead in Construction Standard (29 CFR 1926.62) defines lead based paint as any detectable amount and guidelines must be followed for any activity which may bring a worker in contact with lead.

Forty-four LBP readings and calibration checks were taken using the XRF analyzer. There were no components found to contain significant amounts of lead over HUD standards. However other readings did show the presence of marginal amounts of lead. The results are included as Appendix A, XRF Field Data Results.

## **1.0 INTRODUCTION**

The United States Marine Corps Air Station, retained the Environmental Enterprise Group, Inc (EEG) to perform a modified lead-based paint (LBP) survey of building 1039 on the Marine Corps Air Station in Beaufort, South Carolina. The building is a 5,572 square foot two story concrete block building consisting of 12 rooms. It was constructed in 1985.

## **2.0 LEAD-BASED PAINT TESTING PROCEDURES**

The facility was inventoried and room equivalents identified. Each room equivalent was further classified into components. The component substrate was then identified. All of these elements make up a testing combination. The following paragraphs describe the wall, room, and component description and designation:

### **Definition of Room Equivalent:**

A room equivalent is an identifiable part of a building, such as a room, an exterior side, or an exterior area. Hallways, stairways, and exterior areas, such as loading docks, parking lots, and each side of a building, are all examples of room equivalents.

### **Delineation of Room Equivalent:**

Each room equivalent is made up of *components*. Components may be located inside or outside a building. For example, components in a room are the ceiling, floor, walls, a door and its casing, the window sash, and window casings. The *substrate* is the material underneath the paint. Many substrates exist, however, the industry standards recommend classifying substrates into one of six substrate types: brick, concrete, drywall, metal, plaster, and wood. These substrate types are intended to include a broad range of materials. If the true substrate is not one of the six types, the substrate that most closely matches the true substrate is selected. For substrates on top of substrates, such as plaster on concrete, the substrate directly beneath the painted surface is used. The room equivalent, component, and substrate characterize a *testing combination*. In some cases,

visible color of paint may also be used to further define unique testing combinations. The *test location* is a specific area on a testing combination where the XRF instrument tests for LBP.

#### Exterior Structure Designations:

The exterior sides of the building are lettered, starting with the letter A. The A side of the building is the main entry side of the building. Starting on the A side, the remaining sides are lettered consecutively (B, C, D) going clockwise around the building (assuming the building is being viewed from above).

#### Interior Designations, Room Names, Room Sides, and Component Identification:

Unique rooms (such as halls) in the facility are named on the inspection report. If there is more than one of a certain type of named room, they are numbered. (For example, if there are three halls, they are labeled "Hall 1," "Hall 2," etc.). Other rooms, which cannot be uniquely named because the use may change, are numbered. Certain building components that are adjacent to each other and not likely to have a different painting history are grouped together in a single testing combination. Every room in the building has each of its sides lettered in accordance with the building's exterior lettering.

#### Depth Index

The Depth Index (DI) is an indication of the amount of non-lead paint covering the lead detected by the XRF. A DI less than 1.5 indicates lead near the surface layer of paint; between 1.5 and 4 indicates moderately covered lead; and greater than 4 indicates deeply buried lead.

#### Sampling Strategies:

The sampling strategy adheres to the EPA Performance Characteristic Sheet for the particular XRF instrument used, as well as the manufacturer's modifications and recommendations. The XRF used for detection of LBP in this building was the NITON XL700 Spectrum Analyzer Lead Detector, manufactured by NITON Corporation, 74 Loomis Street, Bedford, Massachusetts 01730-0368. According to the HUD Final Guidelines, an XRF reading of 1.0 mg/cm<sup>2</sup> or above is considered positive for the presence of LBP. Below 1.0 mg/cm<sup>2</sup> is considered negative. These guidelines

govern child occupied target housing and are only identified as guidance in this report. Therefore a negative classification does not necessarily mean the component is lead free.

Evaluation of the Quality of Inspection:

Evaluation methods include direct observation of the XRF testing, calibration checks prior to testing, periodically throughout the day, at the end of the day, and repeat testing of painted surfaces. Repeat testing entails randomly selecting and testing (in a different spot) a number of testing combinations from previously tested areas. Usually, the XRF instrument used in the original inspection is used for retesting. The repeat results are compared with the previous results of the same testing combinations. Results should not differ from the original readings by more than the Retest Tolerance Limit, as specified in the XRF Performance Characteristic Sheet.

If the difference is less than the Retest Tolerance Limit, the inspection has passed the retest. If the difference of the overall averages equals or exceeds the Retest Tolerance Limit, the procedure should be repeated with new testing combinations. If the difference of the overall averages is equal to or greater than the Retest Tolerance Limit a second time, then the inspection is considered deficient and should be re-accomplished.

**3.0 IDENTIFICATION OF LEAD-BASED PAINT**

Summary of Lead-Based Paint Identified in Facility:

A total 31 XRF samples and calibrations were taken throughout the building. The overall hazard condition of paint in the building was fair. There were no components found to contain significant amounts of lead over HUD standards. However other readings did show the presence of marginal amounts of lead. EPA and HUD guidelines specify a positive determination of lead in paint when the lead content is equal to or greater than 1.0 mg/cm<sup>2</sup> using the XRF analyzer, however, the OSHA Lead in Construction Standard (29 CFR 1926.62) defines lead based paint as any detectable amount and guidelines must be followed prior to disturbing these surfaces. Appendix A contains the room-by-room results of the paint sampling conducted in the facility. Appendix B shows the floor plans.

## **Appendix A**

### XRF Results

**Building 1039 MCAS Beaufort, SC**  
**Lead Based Paint Inspection XRF Results October 5 2005**

No	Flr	Side	Room	Source	Sub	Feat	DI	Result*	Pbl	Pbl Error	Pbk	Pbk Error	Pbc	Pbc Error	
1			Shutter Cal 1					0	...	NA		NA		NA	
2							1	POS	1.02	0.14	0.96	0.59	1.02	0.14	
3							1	POS	0.99	0.1	0.53	0.59	0.99	0.1	
4	1	A	Room 1	Wall	Concrte		1.7	NEG	0	0.02	-0.35	0.93	0	0.02	
5	1	D	Room 1	Wall	Concrte		1	NEG	0	0.01	0.33	0.94	0	0.01	
6	1	D	Room 1	Door	wood	Door	1.7	NEG	0.01	0.03	0.11	1.21	0.01	0.03	
7	1	D	Room 1	Door	wood	Casing	10	NEG	0.14	0.75	-0.94	0.93	0.14	0.75	
8	1	B	Room 1	Door	wood	Door	1	NEG	0	0.08	-0.07	1.69	0	0.08	
9	1	B	Room 1	Door	wood	Casing	1.9	NEG	0.01	0.2	-0.53	1.9	0.01	0.2	
10	1	C	Room 2	Door	wood	Door	1	NEG	0	0.12	-0.11	1.63	0	0.12	
11	1	C	Room 2	Wall	Concrte		2.4	NEG	0.01	0.1	0.07	0.78	0.01	0.1	
12	1	C	Room 2	Ceiling	plaster		1	NEG	0	0.07	0	0.97	0	0.07	
13	1	C	Room 3	Wall	Concrte		1	NEG	0	0.05	-0.71	0.82	-0.71	0.82	
14	1	D	Room 3	Window	metal	Casing	1.6	INCOM	0.17	0.42	-0.34	2.98	0.17	0.42	
15	1	D	Room 3	Window	metal	Casing	1	NEG	0.11	0.1	0.35	1.24	0.11	0.1	
16	1	C	Room 3	Door	wood	Door	1	NEG	0.01	0.02	0.46	1.24	0.01	0.02	
17	1	A	Room 3	Door	wood	Door	1	NEG	0	0.05	0.76	1.65	0	0.05	
18	1	A	Room 4	Wall	Concrte		1	NEG	0	0.09	-1.22	1.06	0	0.09	
19	1	A	Room 6	Wall	Concrte		1	NEG	0	0.01	-0.77	0.91	0	0.01	
20	1	A	Room 6	Door	wood	Door	5.9	NEG	0.05	0.18	0.2	1.27	0.05	0.18	
21	1	C	Room 6	Door	wood	Door	1	NEG	0	0.02	0.24	1.56	0	0.02	
22	1	C	Room 6	Wall	Concrte		1	NEG	0	0.01	0.04	1.18	0	0.01	
23	1	B	Room 6	Door	wood	Door	1	NEG	0	0.02	-0.76	1.39	0	0.02	
24	1	A	Room 7	Door	wood	Door	8.9	NEG	0.05	0.11	-0.03	0.75	-0.03	0.75	
25	1	C	Room 7	Door	wood	Door	5.8	NEG	0.13	0.39	-0.49	1.66	0.13	0.39	
26	1	C	Room 8	Door	wood	Door	1.7	NEG	0.03	0.31	0.63	1.16	0.03	0.31	
27	1	C	Room 8	Wall	Concrte		10	NEG	0.05	0.15	-0.12	0.79	-0.12	0.79	
28	1	A	Room 8	Wall	Concrte		1	NEG	0	0.01	-1.08	0.94	0	0.01	
29	2	A	Room 9	Wall	Concrte		10	NEG	0.06	0.14	-0.47	0.87	-0.47	0.87	
30	2	B	Room 9	Door	wood	Door	1	NEG	0	0.13	-0.04	1.8	0	0.13	
31	2	B	Room 10	Door	wood	Door	1	NEG	0	0.05	-0.51	1.78	0	0.05	
32	2	B	Room 10	Wall	Concrte		1	NEG	0	0.08	0.03	0.74	0	0.08	
33	2	B	Hall 1	Wall	Concrte		1	NEG	0	0.01	-1.7	1.26	0	0.01	
34	2	B	Hall 1	Door	wood	Door	3.3	NEG	0.03	0.1	0.08	1.77	0.03	0.1	

\* Additional information in executive summary

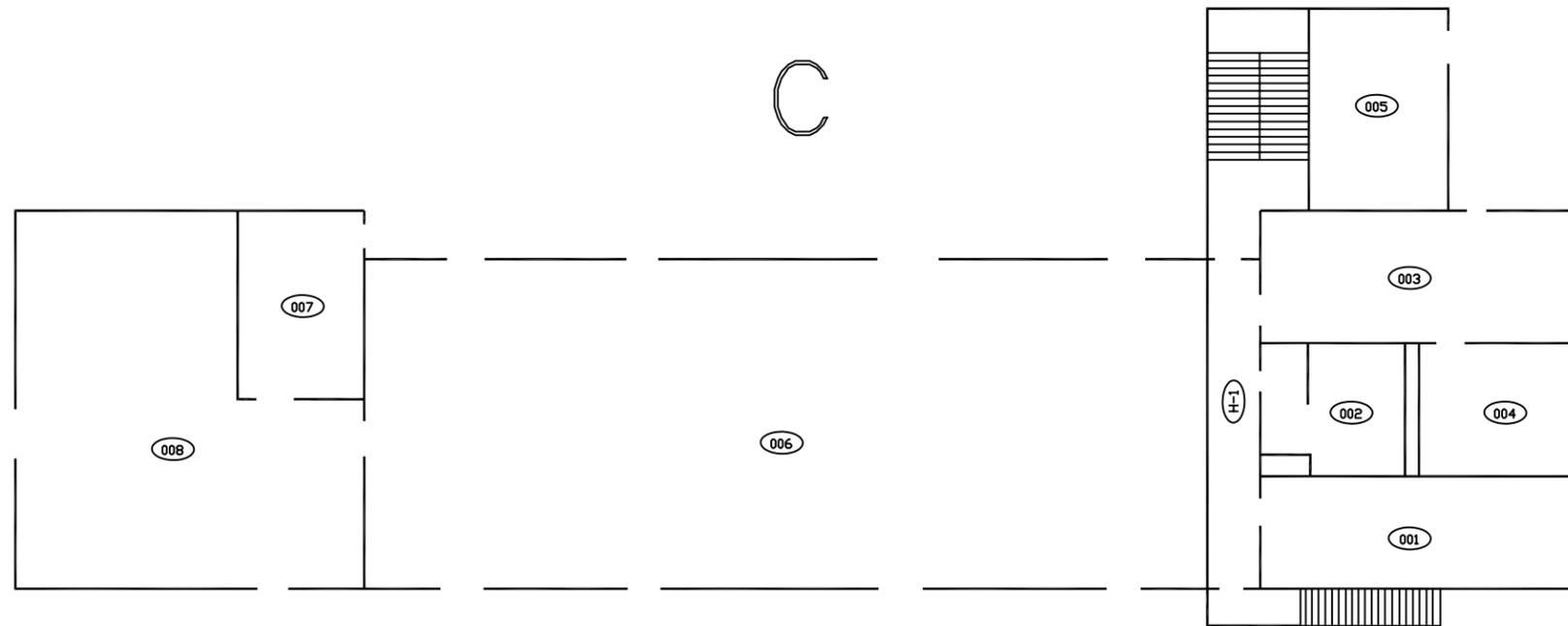
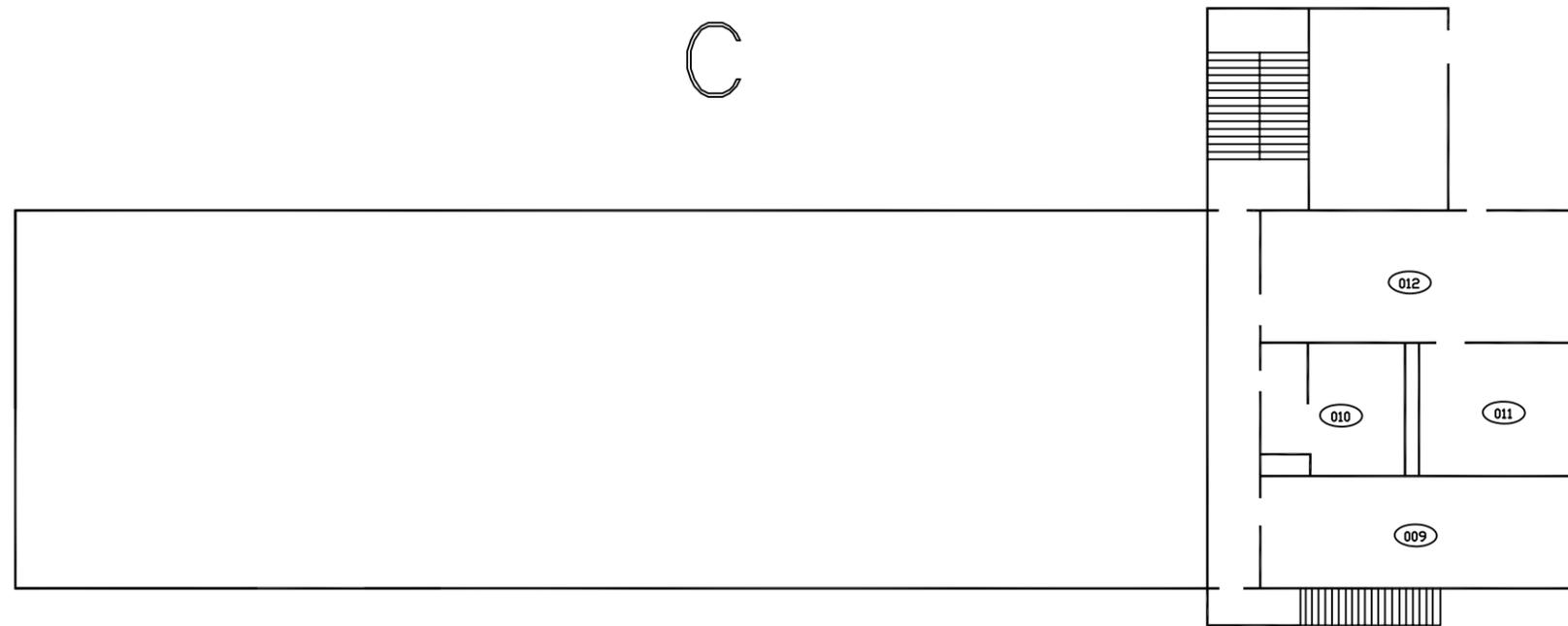
**Building 1039 MCAS Beaufort, SC  
Lead Based Paint Inspection XRF Results October 5 2005**

No	Flr	Side	Room	Source	Sub	Feat	DI	Result*	Pbl	Pbl Error	Pbk	Pbk Error	Pbc	Pbc Error
35	2	B	Hall 1	Door	wood	Door	3.9	NEG	0.08	0.37	-0.05	1.93	0.08	0.37
36	1	A	Outside 1	House	Concrte	Wall	1	NEG	0	0.01	-0.85	1.22	0	0.01
37	1	A	Outside 1	Door	wood	Door	1	NEG	0	0.01	0.89	1.72	0	0.01
38	1	A	Outside 1	Door	wood	Door	6.1	NEG	0.08	0.22	-0.98	1.63	0.08	0.22
39	1	D	Outside 1	Door	wood	Door	2.3	NEG	0.02	0.06	0.7	1.69	0.02	0.06
40	1	C	Outside 1	Wall	Concrte		1	NEG	0	0.01	0.77	0.81	0	0.01
41	1	C	Outside 1	Wall	Concrte		1	NEG	0	0.01	-0.68	1.59	0	0.01
42	1	C	Outside 1	Wall	Concrte		5.1	NEG	0.02	0.05	-0.08	0.84	-0.08	0.84
126			Cal				1	POS	1.06	0.13	0.4	0.57	1.06	0.13
127			Cal				1.1	POS	1.1	0.14	0.57	0.58	1.1	0.14

\* Additional information in executive summary

## **Appendix B**

Site Plan



**LEGEND**

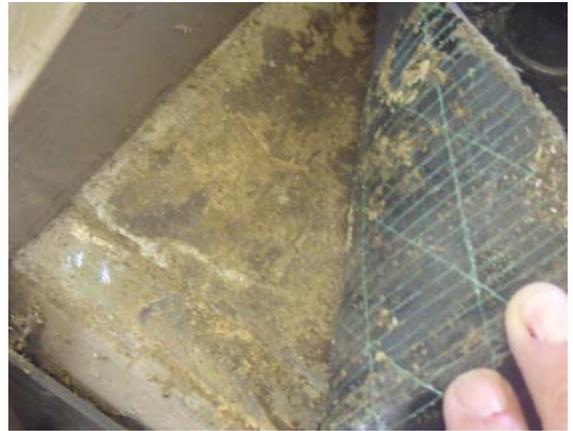
(XXX) — Indicates unique room number assigned by inspector

ENVIRONMENTAL ENTERPRISE GROUP, INC. 10179 HWY 78 LADSON, SOUTH CAROLINA 29456			
SAMPLE LOCATIONS BUILDING 1039 MCAS BEAUFORT, SOUTH CAROLINA			
DATE 10-17-05	PREPARED BY: R. KELLY	DRAWN BY L. DIASIO	REV -
SCALE NONE	DWG NUMBER MCAS_1039_10-05	SHEET 1 OF 1	

**APPENDIX E:  
FIELD PHOTOGRAPHS**



**H-1** 12" gray floor tile/mastic (non-ACM)



**H-2** Black cove mastic (non-ACM)



**H-3** Brown stair tread mastic (non-ACM)



**H-4** Gypsum board/joint compound (Non-ACM)



**H-5** Grooved ceiling tile (Non-ACM)



**H-6** Pitted ceiling tile (Non-ACM)



**H-7** Gypsum board/joint compound (Non-ACM)



**H-8** White vent duct mastic (Non-ACM)



**H-9** Roofing tar (Non-ACM)  
**H-10** roofing flashing/sealer (ACM)



**H-11** White cove mastic (Non-ACM)



**H-12** White door/ window caulking (Non-ACM)



**H-13** White roof caulking (Non-ACM)



**H-14** Fire door-Typical (**Assumed  
ACM**)

Intentionally

left

blank



H-15: Brown Insulation beneath roofing tar (Non ACM)



H-16: Shingle (Non ACM)