

# **Hazardous Materials Survey Report**

**Of**

## **Administration Areas of Building 728 (Aircraft Maintenance Hanger Building) Marine Corps Air Station Beaufort, South Carolina**



**Prepared For:**

**Brian A. Coffman, AIA, LEED AP BD+C  
Project Manager/Architect  
BES, Inc.  
2712 Bull Street  
Beaufort, SC 29902**

**Prepared By:**

**KCI Associates of North Carolina, P.A.  
Landmark Center II, Suite 220  
4601 Six Forks Road  
Raleigh, NC 27609  
KCI Project: 10110414F**

August 18, 2011

## **Executive Summary**

KCI Technologies, Inc. (KCI) was retained by BES Inc. (Client) to conduct a Hazardous Materials Survey for the administration areas of building 728 located on the Marine Corps Air Station in Beaufort, South Carolina.

Based on a comprehensive review of the asbestos inspection reports and sample analysis results from KCI's investigation, the following materials have been determined to be asbestos-containing materials:

- Thirty six fire doors (assumed).

KCI conducted a Lead Based Paint (LBP) screening of representative areas throughout the structures. KCI has determined that none of the painted surfaces contain lead above  $1.0 \text{ mg/cm}^2$

## Table of Contents

|  |      |
|--|------|
| Executive Summary .....                              | ES-i |
| 1.0 Introduction.....                                | 1    |
| 2.0 Site Description.....                            | 1    |
| 3.0 HAZMAT Survey .....                              | 1    |
| 3.1 Asbestos Containing Materials (ACMs) Survey..... | 1    |
| 3.2 Lead Based Paint (LBP) Screening.....            | 4    |
| 4.0 Disclaimer .....                                 | 5    |

## List of Tables

|  |   |
|--|---|
| Table 3.1.1: Suspect Asbestos Bulk Sample Log..... | 2 |
| Table 3.1.2: Homogenous Materials Summary.....     | 2 |
| Table 3.2.1: Summary of XRF Results.....           | 4 |

## Appendices

|   |  |
|---|--|
| Appendix A: Floor Plan  |  |
| Appendix B: South Carolina License                            |  |
| Appendix C: Chain of Custody Forms, Asbestos Analysis Reports |  |

## **1.0 Introduction**

KCI Technologies, Inc. (KCI) was retained by BES Inc. (Client) to conduct a Hazardous Materials Survey for the administration areas of building 728 located on the Marine Corps Air Station (MCAS) in Beaufort, South Carolina.

The scope of work included: (1) review of existing reports; (2) visual observations of the building and property; (3) bulk sampling and analysis and quantification of suspect asbestos-containing materials; (4) analysis of selected painted surfaces for the presence of lead; (4) generation of this report documenting the findings.

## **2.0 Site Description**

The MCAS plans to renovate the administration areas of building 728. The building is a 24,141 square foot building constructed in 1964. It is a concrete block structure with flat roof, constructed on a concrete slab.

The floor plans of the interior spaces within the building is attached as Appendix A.

## **3.0 HAZMAT Survey**

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

KCI representative Kamau McAbee conducted the survey of the subject site on August 3<sup>rd</sup>, 2011. Mr. McAbee is a South Carolina Licensed asbestos building inspector (#BI-01050). A copy of Mr. McAbee's South Carolina License is included in Appendix B. The scope of work included a review of historical documentation, a visual evaluation of potential ACMs and the collection of bulk samples of these materials.

KCI extracted approximately thirty-four samples from previous investigations. The historical sample information was compared to site conditions and where appropriate KCI's building inspector collected additional samples.

KCI's building inspector collected nine (9) bulk samples of the suspect ACMs using a metal utility knife that was driven through the suspect material to the substrate in order to obtain a sample 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 Scientific Analytical Institute, Inc. (SAI), of Greensboro, North Carolina. SAI is accredited by the American Industrial Hygiene Association, AIHA #173190, and National Institute of Standards and Technology through the National Voluntary Laboratory Accreditation Program (NVLAP) for Bulk Asbestos Analysis, NVLAP # 200664. The chain-of-custody form and certificates of analysis are included in Appendix C.

Two (2) different types of analysis were used to analyze the bulk samples for the presence of asbestos: Polarized Light Microscopy (PLM) and Transmission Electron Microscopy (TEM).

The samples were analyzed for the presence of asbestos by Polarized Light Microscopy (PLM) method. 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 samples collected by KCI are listed in Table 3.1.1 below.

| <b>Table 3.1.1 - Suspect Asbestos Bulk Sample Log</b>   |                                      |                        |  |                            |                   |
|---|--------------------------------------|------------------------|--|----------------------------|-------------------|
| <b>Sample Number</b>  | <b>Material Description</b>          | <b>Sample Location</b> | <b>Final Result/<br/>Asbestos Type</b> | <b>Type /<br/>Category</b> | <b>Friability</b> |
| MCAS-728-50   | Ceramic Tile Grout                   | Rm. 112                | NAD                                    | Misc                       | Friable           |
| MCAS-728-51   | Floor Tile Mastic<br>under Marble FT | Rm. 216                | NAD                                    | Misc                       | Non Friable       |
| MCAS-728-52   | Door Caulking                        | Rm. 215                | NAD                                    | Misc                       | Non Friable       |
| MCAS-728-53   | Marble Floor Tile                    | Rm.223                 | NAD                                    | Misc                       | Non Friable       |
| MCAS-728-54   | Marble Floor Tile                    | Rm. 216                | NAD                                    | Misc                       | Non Friable       |
| MCAS-728-55   | Drywall Joint<br>Compound            | Rm. 216                | NAD                                    | Misc                       | Friable           |
| MCAS-728-56   | Carpet Mastic<br>(Green)             | Rm. 215                | NAD                                    | Misc                       | Non Friable       |
| MCAS-728-57   | Door Caulking                        | H-200                  | NAD                                    | Misc                       | Non Friable       |
| MCAS-728-58   | Ceramic Tile<br>Mastic               | Rm. 112                | NAD                                    | Misc                       | Friable           |
| <b>Note:</b><br>NAD – No asbestos detected<br>TSI – Thermal System Insulation                                      Surf – Surfacing                                      Misc – Miscellaneous |                                      |                        |  |                            |                   |

A summary of all suspect ACMs identified during KCI's survey for the structures at the subject site is provided in the Table 3.1.2 below. The analytical results from the previous investigations performed in 2010 is also summarized in Table 3.1.2.

| <b>Table 3.1.2. Homogenous Materials Summary Table</b> |   |   |                            |                 |
|--|---|---|----------------------------|-----------------|
| <b>Material Description</b>                            | <b>Location</b>                                   | <b>Sample Numbers</b>   | <b>Sample Results</b>      | <b>Quantity</b> |
| 12" Floor Tile (Tan Marble)                            | Floors throughout the building                    | MCAS-728-001A*,<br>MCAS-728-002A*,<br>MCAS-728-003A*,<br>MCAS-728-53, MCAS-<br>728-54 | NAD, NAD,<br>NAD, NAD, NAD |                 |
| Floor Tile Mastic (under tan marble)                   | Floors throughout the building                    | MCAS-728-001B*,<br>MCAS-728-002B*,<br>MCAS-728-003B*,<br>MCAS-728-51                  | <1% C, NAD,<br>NAD, NAD    |                 |
| Covebase Mastic  | Around perimeter of walls throughout the building | MCAS-728-007*,<br>MCAS-728-008*,<br>MCAS-728-009*                                     | <1% C, NAD,<br>NAD,        |                 |

| <b>Table 3.1.2. Homogenous Materials Summary Table</b> |  |   |                                  |                 |
|--|--|---|----------------------------------|-----------------|
| <b>Material Description</b>                            | <b>Location</b>  | <b>Sample Numbers</b>   | <b>Sample Results</b>            | <b>Quantity</b> |
| Carpet Mastic (green)                                  | Beneath carpet in undetermined areas                   | MCAS-728-004*,<br>MCAS-728-005*,<br>MCAS-728-006*,<br>MCAS-728-56                   | NAD, NAD,<br>NAD, NAD            |                 |
| Drywall/Sheetrock/Mud                                  | Walls throughout the building                          | MCAS-728-010*,<br>MCAS-728-011*,<br>MCAS-728-012*,<br>MCAS-728-013*,<br>MCAS-728-55 | NAD, NAD,<br>NAD, NAD, NAD       |                 |
| Ceiling Tiles (w/grooves and pinholes)                 | Ceiling throughout the building                        | MCAS-728-014*,<br>MCAS-728-015*,<br>MCAS-728-016*                                   | NAD, NAD, NAD                    |                 |
| Vent Duct Mastic (white)                               |  | MCAS-728-017*,<br>MCAS-728-018*,<br>MCAS-728-019*                                   | NAD, NAD, NAD                    |                 |
| Vent Duct Mastic (tan)                                 |  | MCAS-728-020*,<br>MCAS-728-021*,<br>MCAS-728-022*                                   | NAD, NAD, NAD                    |                 |
| 12" Floor Tile (Gray Marble)                           | Rm. 102  | MCAS-728-023A*,<br>MCAS-728-024A*,<br>MCAS-728-025A*,                               | NAD, NAD, NAD                    |                 |
| Floor Tile Mastic (beneath Gray Floor Tile)            | Rm. 102  | MCAS-728-023B*,<br>MCAS-728-024B*,<br>MCAS-728-025B*,                               | NAD, NAD, NAD                    |                 |
| Vent Duct Mastic (gray)                                |  | MCAS-728-026*,<br>MCAS-728-027*,<br>MCAS-728-028*                                   | NAD, NAD, NAD                    |                 |
| 12" Floor Tile (Tan)                                   | Rm. 102  | MCAS-728-029A*,<br>MCAS-728-030A*,<br>MCAS-728-031A*,                               | NAD, NAD, NAD                    |                 |
| Floor Tile Mastic (beneath Tan Floor Tile)             | Rm. 102  | MCAS-728-029B*,<br>MCAS-728-030B*,<br>MCAS-728-031B*                                | NAD, NAD, NAD                    |                 |
| Door Caulking  | Around the perimeter of interior and exterior doors    | MCAS-728-032*,<br>MCAS-728-033*,<br>MCAS-728-034*,<br>MCAS-728-52, MCAS-728-57      | NAD*, NAD*,<br>NAD*, NAD,<br>NAD |                 |
| Ceramic Tile Grout/Mastic                              | On floors and walls of janitor's closets and bathrooms | MCAS-728-50, MCAS-728-58  | NAD, NAD                         |                 |
| Fire Doors   | Inside the core of the corridor/hallway doors          | Not sampled   | Assumed                          | 36 EA           |
| Note :   |  | SF-Square feet  |                                  |                 |
| NAD – No asbestos detected                             |  | LF- Linear feet   |                                  |                 |
| *Sampled as part of previous investigations            |  | 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."

Based on the results of the asbestos analysis and historical documentation, none of the materials were determined to contain greater than 1% asbestos by PLM (or TEM) analysis, and are therefore considered ACM under the EPA's definition. Approximately 36 fire doors identified onsite. The fire doors were not sampled and are assumed to contain asbestos containing materials.

### 3.2 Lead Based Paint (LBP) Screening

KCI's Lead Inspector performed a LBP screening of the subject site in order to characterize interior and exterior painted surfaces for lead content. The following painted structures were surveyed for LBP: doors, door components, window components and walls.

The testing for lead content in paints was performed with Thermo Scientific Niton XLp (model # XLp 300) x-ray fluorescence (XRF) Spectrum Analyzer, an instrument that 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).

The LBP screening at the site included thirty-two (32) XRF readings, including six (6) calibration readings. Table 3.2.1 summarizes the results of the LBP screening.

| Table 3.2.1: Summary of XRF Results |           |                          |       |                        |                                   |     |
|-------------------------------------|-----------|--------------------------|-------|------------------------|-----------------------------------|-----|
| Sample Number                       | Substrate | Component                | Color | Location / Description | XRF Reading (mg/cm <sup>2</sup> ) | LBP |
| 1                                   |           |                          |       | Calibration Test       | 1.01                              |     |
| 2                                   |           |                          |       | Calibration Test       | 1.05                              |     |
| 3                                   |           |                          |       | Calibration Test       | 0.98                              |     |
| 4                                   | CMU       | Wall C                   | beige | Hallway - S-001        | 0.00                              | no  |
| 5                                   | Drywall   | Wall D                   | beige | Hallway - S-001        | 0.00                              | no  |
| 6                                   | Drywall   | Wall A                   | beige | Hallway - S-001        | 0.00                              | no  |
| 7                                   | Metal     | Door                     | tan   | Hallway - S-001        | 0.02                              | no  |
| 8                                   | Metal     | Door Frame               | tan   | Hallway - S-001        | 0.04                              | no  |
| 9                                   | Metal     | Stair Stringer           | blue  | Hallway - S-001        | 0.07                              | no  |
| 10                                  | Drywall   | Ceiling                  | beige | Hallway - S-001        | 0.00                              | no  |
| 11                                  | Wood      | Baseboard Wall C         | tan   | Hallway - H-100        | 0.00                              | no  |
| 12                                  | Metal     | Door                     | tan   | Rm. 106                | 0.04                              | no  |
| 13                                  | Metal     | Door Frame               | tan   | Rm 106                 | 0.00                              | no  |
| 14                                  | Metal     | Door                     | tan   | Rm 119                 | -0.02                             | no  |
| 15                                  | Metal     | Door Frame               | tan   | Rm 119                 | 0.00                              | no  |
| 16                                  | Metal     | Door                     | tan   | Rm 120                 | -0.01                             | no  |
| 17                                  | Metal     | Door Frame               | tan   | Rm 120                 | 0.03                              | no  |
| 18                                  | Wood      | Baseboard Wall C         | tan   | Hallway - H-100        | 0.00                              | no  |
| 19                                  | Drywall   | Stairwell Landing Wall C | beige | Stairwell - S-002      | 0.00                              | no  |
| 20                                  | Metal     | Handrail - Wall B        | tan   | Stairwell - S-002      | 0.04                              | no  |
| 21                                  | Ceramic   | Wall D                   | White | Rm 103                 | 0.00                              | no  |
| 22                                  | Drywall   | Wall D                   | beige | Hallway - S-002        | 0.00                              | no  |
| 23                                  | Drywall   | Wall A                   | beige | Hallway - S-002        | 0.00                              | no  |
| 24                                  | Metal     | Door                     | tan   | Rm 204                 | 0.01                              | no  |
| 25                                  | Metal     | Door Frame               | tan   | Rm 205                 | 0.07                              | no  |
| 26                                  | Metal     | Window Casing            | tan   | Rm. 215                | 0.03                              | no  |
| 27                                  | Metal     | Door Frame               | tan   | Rm 215                 | 0.01                              | no  |

| <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> |
| 28   | Metal            | Ext. Door D       | tan          | Exterior S-001                | 0.13                                   | no         |
| 29   | Metal            | Ext. Door Frame D | tan          | Exterior S-001                | 0.30                                   | no         |
| 30   |                  |                   |              | Calibration Test              | 1.00                                   |            |
| 31   |                  |                   |              | Calibration Test              | 1.07                                   |            |
| 32   |                  |                   |              | Calibration Test              | 1.1                                    |            |

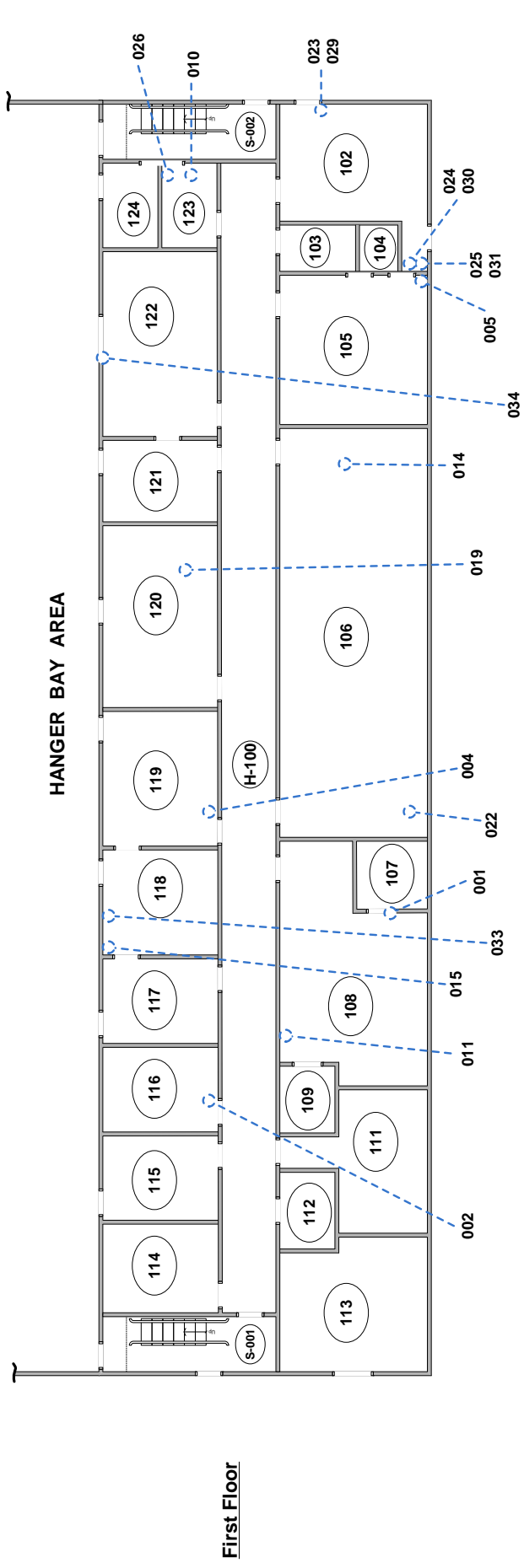
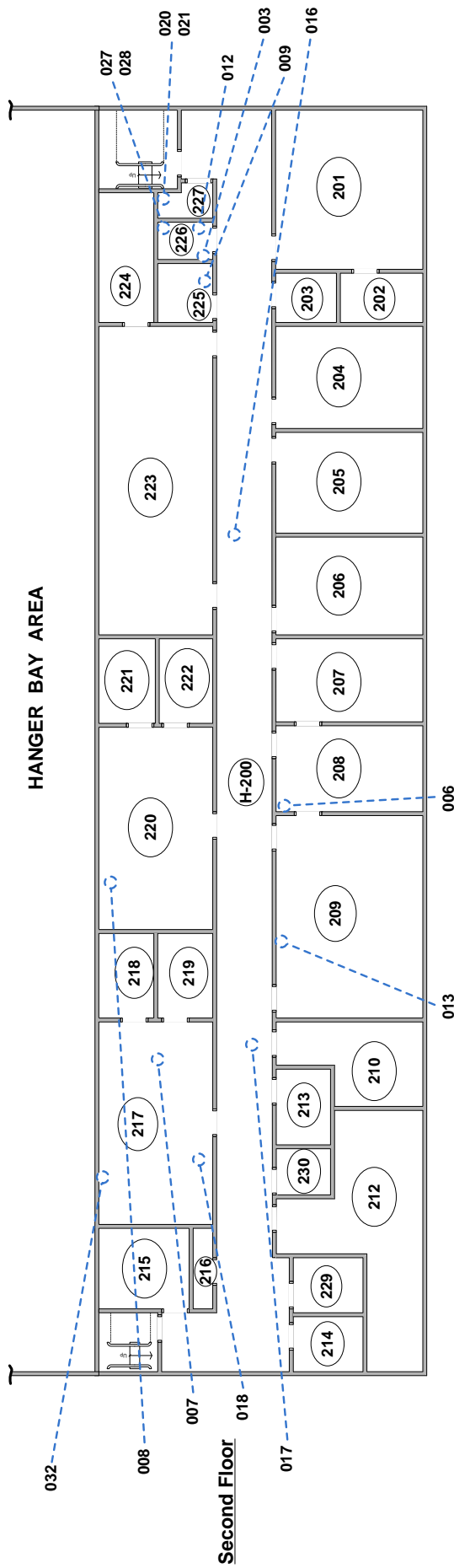
Based on the results of the LBP screening, KCI there are no surfaces on the interior of the Administration Areas that contain lead above 1.0 mg/cm<sup>2</sup>.

#### **4.0 Disclaimer**

This report has been prepared by KCI Technologies, Inc. exclusively for our Client and their Authorized Representatives. 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 them by the Client or outside agents and transmitted herein.



# Appendix A - Floor Plan



**SMALL BUSINESS GROUP, INC.**  
 Asbestos Sample Location - Building 728 Admin Areas  
 Marine Corps Air Station - Beaufort, SC  
 Date: 5/25/10  
 Scale: None  
 Page 1 of 1

**SBG EFG**  
 CONSTRUCTION & ENVIRONMENTAL SERVICES

**NOTE**  
 No Asbestos Containing Materials above the 1% limit were detected in the building

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

## Appendix B - South Carolina License

---

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

---

Kamau Mcabee

CONSULTBI

Expires  
BI-01050 12/27/11



## Appendix C - Chain of Custody Forms and Asbestos



**Bulk Asbestos Analysis**  
**by Transmission Electron Microscopy**  
Semi-Quantitative  
Chatfield SOP 1988-02 Rev. 1

**Client:** KCI Technologies  
936 Ridgebrook Road  
Sparks, MD 21152

**Attn:** Kamau McAbee

**Lab Order ID:** 1111251

**Analysis ID:** 1111251\_TBS

**Date Received:** 8/12/2011

**Date Reported:** 8/12/2011

**Project:** MCAS-728 Hanger

| Sample ID     | Description                   | Organic<br>(Wt. %) | Acid Sol.<br>(Wt. %) | Asbestos<br>(Wt. %) | LCL-UCL<br>(Wt. %) |
|---------------|-------------------------------|--------------------|----------------------|---------------------|--------------------|
| Lab Sample ID | Lab Notes                     |                    |                      |                     |                    |
| MCAS-728-51   | FT mastic under marble/216    | 76%                | -%                   | None Detected       |                    |
| 1111251TBS_1  |                               |                    |                      |                     |                    |
| MCAS-728-53   | Marble floor tile/rm 223      | 17%                | 58%                  | None Detected       |                    |
| 1111251TBS_2  |                               |                    |                      |                     |                    |
| MCAS-728-54   | Marble floor tile/rm 216      | 17%                | 65%                  | None Detected       |                    |
| 1111251TBS_3  |                               |                    |                      |                     |                    |
| MCAS-728-56   | Carpet mastic (green)/ rm 215 | 62%                | -%                   | None Detected       |                    |
| 1111251TBS_4  |                               |                    |                      |                     |                    |

Matt Thomas (4)

\_\_\_\_\_  
Analyst

\_\_\_\_\_  
Approved Signatory



**SCIENTIFIC ANALYTICAL INSTITUTE**  
 302-L Pomona Dr. Greensboro, NC 27407  
 Phone: 336.292.3888 Fax: 336.292.3313  
 www.sailab.com lab@sailab.com

Lab Use Only  
 Lab Order ID: 111/251  
 Client Code:

**Company Contact Information**

Company: KCI Technologies Inc.  
 Address: 936 Ridgebrook Rd.  
 Sparks MD 21152  
 Contact: \_\_\_\_\_  
 Phone: 410-316-0818  
 Fax: \_\_\_\_\_  
 Email:  Kamau.McAbee@kci.com

**Asbestos Test Types**

|                            |    |                                     |
|----------------------------|----|-------------------------------------|
| PLM EPA 600 R-93-116       | 54 | <input checked="" type="checkbox"/> |
| Positive ion               |    | <input type="checkbox"/>            |
| PLM Point Count            |    | <input type="checkbox"/>            |
| PCM NIOSH 7100             |    | <input type="checkbox"/>            |
| TEM AHERA                  |    | <input type="checkbox"/>            |
| TEM Level II               |    | <input type="checkbox"/>            |
| TEM NIOSH 7402             |    | <input type="checkbox"/>            |
| TEM Bulk Qualitative       |    | <input type="checkbox"/>            |
| TEM Bulk Charfield         | 4  | <input checked="" type="checkbox"/> |
| TEM Bulk Quantitative      |    | <input type="checkbox"/>            |
| TEM Wipe ASTM D6480-99     |    | <input type="checkbox"/>            |
| TEM Microvac ASTM D5755-02 |    | <input type="checkbox"/>            |
| TEM Water EPA 109.2        |    | <input type="checkbox"/>            |
| Other:                     |    | <input type="checkbox"/>            |

**Billing/Invoice Information**

Company: Same  
 Contact: Kamau McAbee  
 Address: Same

**Turn Around Times**

|          |                                     |           |                          |
|----------|-------------------------------------|-----------|--------------------------|
| 90 Min.  | <input type="checkbox"/>            | 18 Hours  | <input type="checkbox"/> |
| 3 Hours  | <input type="checkbox"/>            | 72 Hours  | <input type="checkbox"/> |
| 6 Hours  | <input type="checkbox"/>            | 96 Hours  | <input type="checkbox"/> |
| 12 Hours | <input type="checkbox"/>            | 120 Hours | <input type="checkbox"/> |
| 24 Hours | <input checked="" type="checkbox"/> | 144 Hours | <input type="checkbox"/> |

PLM + TEM simultaneous per client

PO Number:

Project Name/Number: MCAS-728 Hangar

| Sample ID # | Description/Location            | Volume/Area | Comments |
|-------------|---------------------------------|-------------|----------|
| MCAS-728-50 | Ceramic Tile Grout / 112        |             | PLM      |
| MCAS-728-51 | FT Mastie under Marble / 216    |             | TEM      |
| MCAS-728-52 | Door Caulking / Rm. 215         |             | PLM      |
| MCAS-728-53 | Marble Floor Tile / Rm. 223     |             | TEM      |
| MCAS-728-54 | Marble " " / Rm. 216            |             | TEM      |
| MCAS-728-55 | Joint Compound / Rm. 216        |             | PLM      |
| MCAS-728-56 | Carpet Mastie (Green) / Rm. 215 |             | TEM      |
| MCAS-728-57 | Door Caulking / H-206           |             | PLM      |
| MCAS-728-58 | Ceramic Tile Mastie / 112       |             | PLM      |

Total # of Samples

|                 |           |                    |           |
|-----------------|-----------|--------------------|-----------|
| Relinquished by | Date/Time | Received by        | Date/Time |
| Kamau McAbee    | 8/10/11   | [Signature] (Chad) | 8/12/11   |

Accepted   
 Rejected



# Bulk Asbestos Analysis

By Polarized Light Microscopy  
EPA Method: 600/R-93/116 and 600/M4-82-020



**Customer:** KCI Technologies  
936 Ridgebrook Road  
Sparks, MD 21152

**Attn:** Kamau McAbee

**Lab Order ID:** 1111249

**Analysis ID:** 1111249PLM

**Date Received:** 8/12/2011

**Project:** MCAS-728 Hanger

**Date Reported:** 8/12/2011

| Sample ID     | Description             | Asbestos      | Fibrous Components | Non-Fibrous Components | Attributes                                  |
|---------------|-------------------------|---------------|--------------------|------------------------|---|
| Lab Sample ID | Lab Notes               |               |                    |                        | Treatment                                   |
| MCAS-728-50   | Ceramic tile grout/112  | None Detected | 2% Cellulose       | 98% Other              | White<br>Non Fibrous<br>Homogeneous         |
| 1111249PLM_1  |                         |               |                    |                        | Crushed                                     |
| MCAS-728-52   | Door caulking/rm 215    | None Detected |                    | 100% Other             | White<br>Non Fibrous<br>Homogeneous         |
| 1111249PLM_2  |                         |               |                    |                        | Dissolved                                   |
| MCAS-728-55   | Joint compound/rm 216   | None Detected |                    | 100% Other             | White<br>Non Fibrous<br>Homogeneous         |
| 1111249PLM_3  |                         |               |                    |                        | Crushed                                     |
| MCAS-728-57   | Door caulking/H-206     | None Detected |                    | 100% Other             | White<br>Non Fibrous<br>Homogeneous         |
| 1111249PLM_4  |                         |               |                    |                        | Dissolved                                   |
| MCAS-728-58   | Ceramic tile mastic/112 | None Detected | 2% Cellulose       | 98% Other              | Gray, White<br>Non Fibrous<br>Heterogeneous |
| 1111249PLM_5  |                         |               |                    |                        | Crushed                                     |

Disclaimer: Due to the nature of the EPA 600 method, asbestos may not be detected in samples containing low levels of asbestos. We strongly recommend that analysis of floor tiles, vermiculite, and/or heterogeneous soil samples be conducted by TEM for confirmation of "None Detected" by PLM. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. government. Estimated MDL is 0.1%.

Bart Huber (5)

Analyst

Nathaniel Durham, MS or Approved Signatory





**SCIENTIFIC ANALYTICAL INSTITUTE**  
 302-L Pomona Dr. Greensboro, NC 27407  
 Phone: 336.292.3888 Fax: 336.292.3313  
 www.sailab.com lab@sailab.com

Lab Use Only  
 Lab Order ID: \_\_\_\_\_  
 Client Code: \_\_\_\_\_

**Company Contact Information**

Company: *KCI Technologies Inc.*  
 Address: *936 Ridgebrook Rd.  
 Sparks MD 21152*  
 Contact: \_\_\_\_\_  
 Phone : *410-316-0818*  
 Fax : \_\_\_\_\_  
 Email : *Kamau.mccabre@kci.com*

**Asbestos Test Types**

PLM EPA 600 R-93 116 *54*   
 Positive sig   
 PLM Point Count   
 PCM NIOSH 7400   
 TEM AHERA   
 TEM Level II   
 TEM NIOSH 7402   
 TEM Bulk Qualitative   
 TEM Bulk, Chatfield *4*   
 TEM Bulk Quantitative   
 TEM Wipe ASTM D6180-99   
 TEM Microvac ASTM D5755-02   
 TEM Water EPA 100.2   
 Other:

**Billing/Invoice Information**

Company: *Same*  
 Contact: *Kamau McCabe*  
 Address: *DIME*

**Turn Around Times**

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

PO Number: \_\_\_\_\_

Project Name/Number: *MCAS-728 Hanger*

*PLM + TEM simultaneous per client*

| Sample ID #        | Description/Location                   | Volume/Area | Comments   |
|--------------------|--|-------------|------------|
| <i>MCAS-728-50</i> | <i>Ceramic Tile Grout / 112</i>        |             | <i>PLM</i> |
| <i>MCAS-728-51</i> | <i>FT Mastie under Marble / 216</i>    |             | <i>TEM</i> |
| <i>MCAS-728-52</i> | <i>Door Caulking / Rm. 215</i>         |             | <i>PLM</i> |
| <i>MCAS-728-53</i> | <i>Marble Floor Tile / Rm. 223</i>     |             | <i>TEM</i> |
| <i>MCAS-728-54</i> | <i>Marble " " / Rm. 216</i>            |             | <i>TEM</i> |
| <i>MCAS-728-55</i> | <i>Joint Compound / Rm. 216</i>        |             | <i>PLM</i> |
| <i>MCAS-728-56</i> | <i>Carpet Mastie (green) / Rm. 215</i> |             | <i>TEM</i> |
| <i>MCAS-728-57</i> | <i>Door Caulking / H-206</i>           |             | <i>PLM</i> |
| <i>MCAS-728-58</i> | <i>Ceramic Tile Mastie / 112</i>       |             | <i>PLM</i> |

Total # of Samples \_\_\_\_\_

|  |                             |   |                             |
|--|-----------------------------|---|-----------------------------|
| Relinquished by<br><i>Kamau McCabe</i> | Date/Time<br><i>8/10/11</i> | Received by<br><i>[Signature]</i> (CHS) | Date/Time<br><i>8/12/11</i> |
|--|-----------------------------|---|-----------------------------|

Accepted   
 Rejected



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

## Asbestos Bulk Analysis Report

**Report Number:** 09-07-01678

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

**Received Date:** 07/31/2009  
**Analyzed Date:** 07/31/2009  
**Reported Date:** 08/03/2009

**Project/Test Address:** Marine Corps Air Station-Beaufort; Bldg #728

**Client Number:**  
 42-4515

**Fax Number:**  
 843-879-0401 E

# Laboratory Results

| Lab Sample Number | Client Sample Number | Layer Type | Lab Gross Description | Asbestos | Other Materials  |
|-------------------|----------------------|------------|-----------------------|----------|------------------|
| 09-07-01678-001A  | MCAS-728-001         | Tile       | Tan Vinyl             | NAD      | 100% Non-Fibrous |
| 09-07-01678-001B  | MCAS-728-001         | Mastic     | Black Adhes.          | NAD      | 100% Non-Fibrous |
| 09-07-01678-002A  | MCAS-728-002         | Tile       | Tan Vinyl             | NAD      | 100% Non-Fibrous |
| 09-07-01678-002B  | MCAS-728-002         | Mastic     | Black Adhes.          | NAD      | 100% Non-Fibrous |
| 09-07-01678-003A  | MCAS-728-003         | Tile       | Tan Vinyl             | NAD      | 100% Non-Fibrous |
| 09-07-01678-003B  | MCAS-728-003         | Mastic     | Black Adhes.          | NAD      | 100% Non-Fibrous |

## Environmental Hazards Services, L.L.C

**Client Number:** 42-4515

**Report Number:** 09-07-01678

**Project/Test Address:** Marine Corps Air Station-Beaufort; Bldg #728

| Lab Sample Number | Client Sample Number | Layer Type | Lab Gross Description    | Asbestos | Other Materials                                      |
|-------------------|----------------------|------------|--------------------------|----------|--|
| 09-07-01678-004   | MCAS-728-004         |            | Tan Adhes.               | NAD      | 100% Non-Fibrous                                     |
| 09-07-01678-005   | MCAS-728-005         |            | Tan Adhes.               | NAD      | 100% Non-Fibrous                                     |
| 09-07-01678-006   | MCAS-728-006         |            | Tan Adhes.               | NAD      | 100% Non-Fibrous                                     |
| 09-07-01678-007   | MCAS-728-007         |            | Green Adhes.             | NAD      | 100% Non-Fibrous                                     |
| 09-07-01678-008   | MCAS-728-008         |            | Green Adhes.             | NAD      | 100% Non-Fibrous                                     |
| 09-07-01678-009   | MCAS-728-009         |            | Green Adhes.             | NAD      | 100% Non-Fibrous                                     |
| 09-07-01678-010   | MCAS-728-010         |            | White Chalky; Brown Fib. | NAD      | 20% Cellulose<br>2% Fibrous Glass<br>78% Non-Fibrous |
| 09-07-01678-011   | MCAS-728-011         |            | White Chalky; Brown Fib. | NAD      | 20% Cellulose<br>2% Fibrous Glass<br>78% Non-Fibrous |
| 09-07-01678-012   | MCAS-728-012         |            | White Chalky; Brown Fib. | NAD      | 20% Cellulose<br>2% Fibrous Glass<br>78% Non-Fibrous |

## Environmental Hazards Services, L.L.C

**Client Number:** 42-4515

**Report Number:** 09-07-01678

**Project/Test Address:** Marine Corps Air Station-Beaufort; Bldg #728

| Lab Sample Number | Client Sample Number | Layer Type | Lab Gross Description                       | Asbestos | Other Materials                                       |
|-------------------|----------------------|------------|---|----------|---|
| 09-07-01678-013   | MCAS-728-013         |            | White Chalky; Brown Fib.                    | NAD      | 20% Cellulose<br>2% Fibrous Glass<br>78% Non-Fibrous  |
| 09-07-01678-014   | MCAS-728-014         |            | Gray Fib.; White Paint-Like                 | NAD      | 60% Cellulose<br>10% Fibrous Glass<br>30% Non-Fibrous |
| 09-07-01678-015   | MCAS-728-015         |            | Gray Fib.; White Paint-Like                 | NAD      | 60% Cellulose<br>10% Fibrous Glass<br>30% Non-Fibrous |
| 09-07-01678-016   | MCAS-728-016         |            | Gray Fib.; White Paint-Like                 | NAD      | 60% Cellulose<br>10% Fibrous Glass<br>30% Non-Fibrous |
| 09-07-01678-017   | MCAS-728-017         |            | White Vinyl; Tan Adhes.;<br>Silver Metallic | NAD      | 15% Fibrous Glass<br>85% Non-Fibrous                  |
| 09-07-01678-018   | MCAS-728-018         |            | White Vinyl; Tan Adhes.;<br>Silver Metallic | NAD      | 15% Fibrous Glass<br>85% Non-Fibrous                  |
| 09-07-01678-019   | MCAS-728-019         |            | White Vinyl; Tan Adhes.;<br>Silver Metallic | NAD      | 15% Fibrous Glass<br>85% Non-Fibrous                  |
| 09-07-01678-020   | MCAS-728-020         |            | Gray Putty                                  | NAD      | 100% Non-Fibrous                                      |

## Environmental Hazards Services, L.L.C

**Client Number:** 42-4515

**Report Number:** 09-07-01678

**Project/Test Address:** Marine Corps Air Station-Beaufort; Bldg #728

| Lab Sample Number | Client Sample Number | Layer Type | Lab Gross Description   | Asbestos | Other Materials                 |
|-------------------|----------------------|------------|-------------------------|----------|---------------------------------|
| 09-07-01678-021   | MCAS-728-021         |            | Gray Putty              | NAD      | 100% Non-Fibrous                |
| 09-07-01678-022   | MCAS-728-022         |            | Gray Putty              | NAD      | 100% Non-Fibrous                |
| 09-07-01678-023A  | MCAS-728-023         | Tile       | Gray Vinyl              | NAD      | 100% Non-Fibrous                |
| 09-07-01678-023B  | MCAS-728-023         | Mastic     | Black Tar-Like; Rubbery | NAD      | 100% Non-Fibrous                |
| 09-07-01678-024A  | MCAS-728-024         | Tile       | Gray Vinyl              | NAD      | 100% Non-Fibrous                |
| 09-07-01678-024B  | MCAS-728-024         | Mastic     | Black Tar-Like; Rubbery | NAD      | 100% Non-Fibrous                |
| 09-07-01678-025A  | MCAS-728-025         | Tile       | Gray Vinyl              | NAD      | 100% Non-Fibrous                |
| 09-07-01678-025B  | MCAS-728-025         | Mastic     | Black Tar-Like; Rubbery | NAD      | 100% Non-Fibrous                |
| 09-07-01678-026   | MCAS-728-026         |            | Gray Rubbery            | NAD      | 2% Cellulose<br>98% Non-Fibrous |

## Environmental Hazards Services, L.L.C

**Client Number:** 42-4515  
**Project/Test Address:** Marine Corps Air Station-Beaufont; Bldg #728

**Report Number:** 09-07-01678

| Lab Sample Number | Client Sample Number | Layer Type | Lab Gross Description | Asbestos | Other Materials                 |
|-------------------|----------------------|------------|-----------------------|----------|---------------------------------|
| 09-07-01678-027   | MCAS-728-027         |            | Gray Rubbery          | NAD      | 2% Cellulose<br>98% Non-Fibrous |
| 09-07-01678-028   | MCAS-728-028         |            | Gray Rubbery          | NAD      | 2% Cellulose<br>98% Non-Fibrous |
| 09-07-01678-029A  | MCAS-728-029         | Tile       | Gray Vinyl            | NAD      | 100% Non-Fibrous                |
| 09-07-01678-029B  | MCAS-728-029         | Mastic     | Black Tar-Like        | NAD      | 100% Non-Fibrous                |
| 09-07-01678-030A  | MCAS-728-030         | Tile       | Gray Vinyl            | NAD      | 100% Non-Fibrous                |
| 09-07-01678-030B  | MCAS-728-030         | Mastic     | Black Tar-Like        | NAD      | 100% Non-Fibrous                |
| 09-07-01678-031A  | MCAS-728-031         | Tile       | Gray Vinyl            | NAD      | 100% Non-Fibrous                |
| 09-07-01678-031B  | MCAS-728-031         | Mastic     | Black Tar-Like        | NAD      | 100% Non-Fibrous                |

# Environmental Hazards Services, L.L.C

Client Number: 42-4515

Report Number: 09-07-01678

Project/Test Address: Marine Corps Air Station-Beaufort; Bldg #728

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

QC Sample: 53-M12004-3,59-NY35-2079

QC Blank: SRM 1866 Fiberglass

Reporting Limit: 1% Asbestos

Method: EPA Method 600/R-93/116

Analyst: Araceli Enzler, Sami Hosn



Reviewed By Authorized Signatory: \_\_\_\_\_

Kathy Sizemore  
Asbestos Supervisor

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

**SUMMARY OF TEM BULK ANALYSIS RESULTS**

Page 1

Project Name: Marine Corp. Air Station Bld. 728 Project EHS#09-08-00086  
 McCall & Spero Environmental Project No. MSE-849EHSB

| CLIENT<br>SAMPLE #<br>DESCRIPTION | ASBESTOS<br>TYPES & %                                 | TOTAL<br>ASBESTOS % | NON-<br>FIBROUS<br>MATRIX % | OTHER<br>FIBROUS<br>MATERIAL<br>TYPES & % | COLOR |
|-----------------------------------|---|---------------------|-----------------------------|---|-------|
| MCAS-728-001<br>(A)<br>Tile       | No Asbestos Detected                                  | NAD                 | 100%                        | ND  | Gray  |
| MCAS-728-001<br>(B)<br>Mastic     | Trace Chrysotile Asbestos<br>Detected at Less than 1% | <1%                 | 99%                         | AlSi Fibers /<br>1%                       | Black |
| MCAS-728-004<br>Miscellaneous     | No Asbestos Detected                                  | NAD                 | 100%                        | ND  | Cream |
| MCAS-728-007<br>Miscellaneous     | Trace Chrysotile Asbestos<br>Detected at Less than 1% | <1%                 | 100%                        | ND  | Green |
| MCAS-728-017<br>Miscellaneous     | No Asbestos Detected                                  | NAD                 | 100%                        | Trace AlSi<br>Fibers                      | Gray  |
| MCAS-728-020<br>Miscellaneous     | No Asbestos Detected                                  | NAD                 | 100%                        | ND  | Tan   |
| MCAS-728-023<br>(A)<br>Tile       | No Asbestos Detected                                  | NAD                 | 100%                        | ND  | Gray  |
| MCAS-728-023<br>(B)<br>Mastic     | No Asbestos Detected                                  | NAD                 | 100%                        | ND  | Black |
| MCAS-728-026<br>Miscellaneous     | No Asbestos Detected                                  | NAD                 | 100%                        | ND  | Gray  |
| MCAS-728-029<br>(A)<br>Tile       | No Asbestos Detected                                  | NAD                 | 100%                        | ND  | Gray  |
| MCAS-728-029<br>(B)<br>Mastic     | No Asbestos Detected                                  | NAD                 | 100%                        | ND  | Black |



**SUMMARY OF TEM BULK ANALYSIS RESULTS**

Page 2

## NOTES:

NAD = No Asbestos Detected

ND = None Detected CH = Chrysotile A = Amosite

AC = Actinolite

CR = Crocidolite

AN = Anthophyllite

TR = Tremolite

&lt; 1% = Less Than One Percent

&gt; 1% = Greater Than One Percent

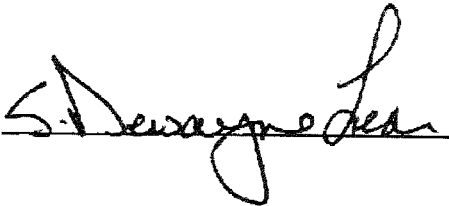
For samples consisting of separate components, each component is analyzed and reported separately.

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.





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

## Asbestos Bulk Analysis Report

Report Number: 10-05-04229

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

Received Date: 05/28/2010  
 Analyzed Date: 06/01/2010  
 Reported Date: 06/02/2010

Project/Test Address: Marine Corps Air Station-Beaufort; Bldg# 728

Client Number:  
 42-4515

Fax Number:  
 843-879-0401 E

# Laboratory Results

| Lab Sample Number | Client Sample Number | Layer Type | Lab Gross Description | Asbestos | Other Materials  |
|-------------------|----------------------|------------|-----------------------|----------|------------------|
| 10-05-04229-001   | MCAS-728-032         |            | White Rubbery         | NAD      | 100% Non-Fibrous |
| 10-05-04229-002   | MCAS-728-033         |            | White Rubbery         | NAD      | 100% Non-Fibrous |
| 10-05-04229-003   | MCAS-728-034         |            | White Rubbery         | NAD      | 100% Non-Fibrous |

# Environmental Hazards Services, L.L.C

Client Number: 42-4515  
Project/Test Address: Marine Corps Air Station-Beaufort; Bldg#  
728

Report Number: 10-05-04229

---

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

---

QC Sample: 51-M12006-1  
QC Blank: SRM 1866 Fiberglass  
Reporting Limit: 1% Asbestos  
Method: EPA Method 600/R-93/116  
Analyst: Sami Hosn

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

---

**SUMMARY OF TEM BULK ANALYSIS RESULTS**

Page 1

Project Name: MCAS Beaufort; Bldg 728 Project EHS#10-06-00237  
 McCall & Spero Environmental Project No. MSE-620EHSB

| CLIENT SAMPLE # DESCRIPTION   | ASBESTOS TYPES & %   | TOTAL ASBESTOS % | NON-FIBROUS MATRIX % | OTHER FIBROUS MATERIAL TYPES & % | COLOR |
|-------------------------------|----------------------|------------------|----------------------|----------------------------------|-------|
| MCAS-728-032<br>Miscellaneous | No Asbestos Detected | NAD              | 100%                 | ND                               | Gray  |

NOTES:

NAD = No Asbestos Detected      ND = None Detected    CH = Chrysotile      A = Amosite  
 AC = Actinolite                      CR = Crocidolite              AN = Anthophyllite  
 TR = Tremolite                      < 1% = Less Than One Percent      >1% = Greater Than One Percent

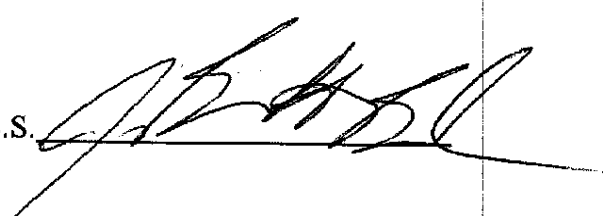
For samples consisting of separate components, each component is analyzed and reported separately.

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: J. Scott Board, B.S.



McCall & Spero Environmental, Inc.