USC-Aiken
Ruth Patrick Science Center
HVAC and Electrical Replacement

Project No.: H29-9549

March 30, 2016

Addendum No. 1

1. See attached sign-in sheet from the pre-bid meeting that was held on March 23, 2016 at USC-Aiken.

2. See attached Hazmat Survey Report dated March 30, 2016.

3. Reference Drawing M-2.0: CONSTRUCTION PHASING – The Ruth Patrick Science Center hosts multiple events for groups of students year round. The building will remain operational throughout the construction process. Coordinate with the USC-Aiken facilities staff to limit the impact on events being held within the building. In an effort to limit the impact on visitors, the project demolition and construction will be done in a minimum of three separate phases. No more than two air handlers will be taken out of service at one time. One phase will be required to be operational prior to the next phase beginning. The boiler/hydronic demolition and construction can be done within any phase. See attached original building mechanical plan for reference.

4. Reference Specification Section 15181 – Hydronic Piping, par. 2.3.B.4, Manufacturers: Add Nexus Valve as an approved equal manufacturer.

5. Reference Specification Section 15189 – HVAC Water Treatment: Change all references to “Chilled Water” to “Hot-water Heating” within this specification section.

6. Reference Specification Section 15189 – HVAC Water Treatment par. 2.2 Chemical Treatment Test Equipment: Delete paragraph in its entirety thereby deleting the requirement to provide test kit and wall-mounted cabinet.

7. Reference Specification Section 15810 – Split-System Air Conditioners, par. 2.1.A, Manufacturers: Add Lennox as an approved equal manufacturer.

University of South Carolina

Pre Bid Sign In Sheet

Columbia, South Carolina

Project Name: USCA RUTH PATRICK SCIENCE CENTER HVAC & ELECTRICAL REPLACEMENT
Project Number: H27-9549
Pre Bid Date & Time: MARCH 23, 2016@10:00AM

SWMBE Contractor?	Name	Company Name	Address	Phone #	Email
S W M B E	Troy Green	USC	743 Greene St Columbia, SC	803-777 5256	green@fmci.sc.edu
S W M B E	Cliff Tilton	TempRite Mech	4810 Technology Dr. Suite 3 Aug.	706 922 9229	Cliff.temprite@hotmail.com
S W M B E	GARY MAROZAS	JRC SPECIALTY INC.	P.O BOX 5717 AIKEN SC 29804	803 507 8051	GMARO375@ATLANTICBB.NET
S W M B E	Michael Montgomery	MSI Construction	745 Greenwood Rd. W. Colz, SC 29169	803-210-9187	michaelmontgomery@msiconst.com
S W M B E	JOE McMillon	GOLD MECH	1559 BROAD St. Augusta, GA	706 7221559	WDOZIER@GOLDMECH.com
S W M B E	STEVE PETERSEN	ING CONSULTING	550 11th ST Augusta, GA 30901	(706) 774-1020	SPETERSEN@INGCONSULTINGINC.com
S W M B E	BRIAN ENTER	USC AIKEN	471 UNIVERSITY PARKway	803-641 3254	brianen@usca.edu
S W M B E					
S W M B E					

****By signing this sheet you agree to receive information electronically.*

ALTERNATIVE CONSTRUCTION & ENVIRONMENTAL SOLUTIONS, INC.
2247 Wrightsboro Road
Augusta, GA 30904

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

March 30, 2016

Client: University of South Carolina Aiken
471 University Parkway
Aiken, SC 29801
ATTN: Mr. Brian Enter

Project: Limited, Pre-Renovation Asbestos Inspection
HVAC Upgrade Project
Ruth Patrick Science Education Center
Campus of USC Aiken
Aiken, SC
Report Number: 1136-115-002

On March 14, 2016, a representative of Alternative Construction & Environmental Solutions, Inc. performed a limited, pre-renovation asbestos inspection of the above-mentioned building for the presence of asbestos-containing materials (ACM). An individual who holds accreditation as an AHERA Inspector and as a South Carolina DHEC Building Inspector conducted the survey.

Attached is a report of findings from the inspection. If you have any questions or need additional information, please feel free to give us a call.

ALTERNATIVE CONSTRUCTION & ENVIRONMENTAL SOLUTIONS, INC.

Cliff Hampton
Manager
Industrial Hygiene, Safety & Health Dept.

Steve Connor
Project Manager

Attachments

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY

A representative of Alternative Construction & Environmental Solutions, Inc. performed a limited, pre-renovation asbestos inspection of a building located on the campus of the University of South Carolina Aiken on March 14, 2016. The purpose of the inspection was to determine if asbestos-containing materials would be encountered during renovations to the area. Random samples of suspect materials were collected and analyzed for asbestos content.

It is ACES' understanding that the structure is scheduled for renovation. The asbestos inspection, therefore, was performed to comply with 29 CFR 1926.1101. During renovation, the identified friable ACM or non-friable ACM that might become friable during demolition must be abated prior to disturbance. A State of South Carolina licensed asbestos contractor using a licensed supervisor/foreman and properly trained workers in accordance with a project design prepared by an accredited project designer must perform asbestos abatement. In addition, an air monitoring professional should perform third-party air monitoring during abatement. It is important to note that Federal and State regulations require a 10-day notification prior to any renovation/demolition activities that may impact the condition of ACM in a building that affords public access or occupancy. SC DHEC also allows for Small Removals (>25SF but < 160SF, 260 LF, or 35 CF) a 4 working day notification prior to any renovation activity that would impact the condition of the ACM. For Minor Removals (> or = 25 SF) a 2 working day notification is required prior to any renovation activity that would impact the condition of the ACM.

These activities must be performed in accordance with current Federal and State of South Carolina guidelines.

2.0 OBJECTIVE

The objective of ACES' inspection was to identify and sample suspect asbestos-containing materials within the structure. This report was prepared for the exclusive use of the client for specific application to the subject project. No warranties, either expressed or implied, are made or intended. The material contained herein shall not, in whole or part, be disseminated or conveyed to any other party or be used or relied upon by any other party, in whole or part, without ACES' written consent.

3.0 SITE DESCRIPTION

This inspection was limited to those materials and areas specified by the client as pertaining to the HVAC Upgrade Project in the Ruth Patrick Science Education Building. These materials and areas were identified to the inspector, in person, by the client's

representatives, Mr. John Cumbee and Mr. Brian Enter. These materials included HVAC duct and pipe insulation. All pipes were found to be insulated with foam rubber or fiberglass. Areas expected to be affected by the renovation project include the 2nd Level Mechanical Room, an air handler suspended above the ceiling above the 1st Level Office and exterior compressor units.

4.0 INSPECTION PROTOCOL

Random samples of suspect asbestos materials were collected by an U.S. Environmental Protection Agency (USEPA) accredited asbestos inspector. Suspect materials were grouped into specific homogeneous areas using one of the following classifications: surfacing material, thermal system insulation, or miscellaneous materials. A surfacing material is sprayed, troweled-on, or otherwise applied to surfaces (i.e., fireproofing, ceiling texture). Thermal system insulation consists of material applied to pipes, fittings, boilers, breaching, tanks, ducts, or other structural components to prevent heat loss or gain. Miscellaneous materials consist of items such as flooring, ceiling tiles, roofing materials, and cement board. In the course of an inspection the inspector randomly collects samples that are assessed for friability, accessibility, condition, damage potential, and relation to the ventilation system.

The inspector, using a knife, chisel, or coring tool, collected bulk samples of suspect materials. Prior to sampling, when required, the suspect material was sprayed with a surfactant to reduce fiber release. Samples collected were assigned a unique sample ID number and placed in a sealed container. Samples were sent to McCall & Spero Environmental, Inc., a NVLAP accredited laboratory (101895-0) and analyzed for asbestos content by Polarized Light Microscopy (PLM) coupled with dispersion staining techniques, in accordance with USEPA Method 40 CFR, Chapter 1, Part 763, Subpart F, Appendix A. The percentage of asbestos, where applicable, was determined by microscopic visual estimation.

Regulatory agencies (USEPA and OSHA) have defined ACM as a material containing greater than one percent asbestos. In order to define a material as non-ACM, a minimum number of samples must be collected and analyzed dependent upon the type and quantity of the homogeneous material. Additionally, samples determined to have an asbestos content of less than 10 per cent through PLM visual estimation (including those materials with an asbestos content of less than one percent) may either be assumed ACM or verified for asbestos content by point count analysis. A point count analysis is a statistical method for quantifying the percentage of asbestos in a material by PLM. Point counting was not within the scope of work for this project.

Asbestos materials are assessed as friable or non-friable. Friable materials, when dry, can be crumbled, pulverized or reduced to powder by hand pressure and have a higher potential for a fiber release than non-friable materials. Non-friable materials are materials that are firmly bound by plastic, cement, etc., and cannot be reduced to powder by hand pressure. The USEPA recommends that floor tile materials with no detectable asbestos through PLM analysis be verified through Transmission Electron Microscopy (TEM) analysis.

SC DHEC Regulation Section V, D (2) In accordance with ASTM E2356, and any subsequent amendments and editions, negative results for non-friable organically bound materials such as flooring and roofing shall be verified with at least one TEM analysis.

5.0 RESULTS

Nine bulk samples were collected from the structure. Table 1A is a listing of homogeneous materials for the structure and Table 1B is a listing of analytical results for asbestos.

TABLE 1A
Ruth Patrick Science Education Center HVAC Upgrade Project
Campus of USC Aiken
Aiken, SC
Homogeneous Areas

HA	Sample Location	Material Description	Condition	Photo #	Category
1	2nd Level Mechanical Room 1st Level Air Handler	Brown HVAC Duct Mastic	G	TK-1	Misc.
2	2nd Level Mechanical Room	Gray HVAC Duct Mastic	G	TK-2	Misc.
3	2nd Level Mechanical Room	White HVAC Duct Mastic	G	TK-3	Misc.
LEGEND: G – Good F – Fair P - Poor **Misc.** - Miscellaneous **Surf.** – Surfacing **TSI** – Thermal System Insulation					

TABLE 1B
Ruth Patrick Science Education Center HVAC Upgrade Project
Campus of USC Aiken
Aiken, SC
Asbestos Analysis Results

Sample ID	# of Samples	Material Description	Asbestos Present	Type Asbestos	Est. Quantity	F/ NF
TK 1A-C	3	Brown HVAC Duct Mastic	No		20 lf	NF
TK 2A-C	3	Gray HVAC Duct Mastic	No		20 lf	NF
TK 3A-C	3	White HVAC Duct Mastic	No		10 lf	NF
LEGEND: F – Friable NF – Non-Friable						

6.0 CONCLUSIONS AND RECOMMENDATIONS

Inconclusive results would be results where the Polarized Light Microscopy analysis yielded a result of less than 1% asbestos. These materials would have to be treated as asbestos-containing material or analyzed by Transmission Electron Microscopy (TEM) to determine their final status.

SC DHEC Regulations require that a single sample of organic material which returns negative results by PLM analysis be analyzed by TEM as well. TEM analysis of samples TK-1-A, TK-2-A and TK-3-A confirmed the negative PLM result.

In summary, this limited survey found no friable or non-friable ACM in concentrations greater than 1% among the materials scheduled to be affected by the renovation.

During this inspection, materials suspected to contain asbestos may have been identified, but due to their location or current use, were not sampled. These non-sampled suspect materials include, but are not limited to, physically inaccessible materials, and materials that when sampled would degrade the operation of their parent system or contribute to asbestos contamination of a building system. Examples of the last category include gaskets and dampers in ventilation systems, and boiler seals. As requested by the client, this was a limited inspection and, as such, every material suspected to contain asbestos was not sampled. Asbestos-containing materials not identified in this survey may be present.

Although no asbestos-containing materials greater than 1% were identified, renovation must be performed in accordance with current Federal USEPA, OSHA and State of South Carolina DHEC guidelines.

This inspection was performed by Steve Connor, AHERA Inspector Certificate Number 152-ROC647-029 which is valid until February 12, 2017 and SC DHEC Building Inspector Certificate Number BI-00707, which is valid until February 11, 2017.

McCall and Spero
Environmental, Inc.
Specialists in Microanalysis

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

Date: March 23, 2016

Attention: Mark Hartz
ACES, Inc.

Subject: Analysis of bulk samples for asbestos mineral fibers by Polarized Light Microscopy (PLM) with Dispersion Staining (EPA/600/R-93/116)

RE: MSE-P3166ACES.1
USC Aiken / Ruth Patrick Science Education Center / HVAC Upgrade Project
USC Aiken, SC Project
ACES# 1136-115-009

Dear Mr. Hartz:

McCall & Spero Environmental, Inc. has completed the analyses of the bulk samples we received from your offices on March 16, 2016. These samples represent the bulk samples from the USC Aiken / Ruth Patrick Science Education Center / HVAC Upgrade Project USC Aiken, SC Project .

The PLM bulk analysis was performed according to the "Method of the Determination of Asbestos in Bulk Building Materials", R. L. Perkins and B. W. Harvey (EPA/600/R-93/116).

The results for the nine (9) 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,

Kevin R. Bean, B.A.
Laboratory Director

NVLAP®
NVLAP Lab Code 101895-0

SUMMARY OF PLM BULK ANALYSIS RESULTS

Project Name: USC Aiken / Ruth Patrick Science Education Center / HVAC Upgrade Project USC Aiken, SC
Project ACES# 1136-115-009
McCall & Spero Environmental Project No. MSE-P3166ACES.1

MSE # P3166ACES.1-	SAMPLE # DESCRIPTION	ASBESTOS TYPE & %	OTHER FIBROUS MATERIAL & %	% NON-FIBROUS MATERIAL	COLOR
001	TK-1A HVAC Duct Mastic	ND**	Cellulose / 3%	97%	Brown
002	TK-1B HVAC Duct Mastic	ND**	Cellulose / 3%	97%	Brown
003	TK-1C HVAC Duct Mastic	ND**	Cellulose / 3%	97%	Brown
004	TK-2A HVAC Duct Mastic	ND**	Cellulose / 3%	97%	Gray
005	TK-2B HVAC Duct Mastic	ND**	Cellulose / 3%	97%	Gray
006	TK-2C HVAC Duct Mastic	ND**	Cellulose / 3%	97%	Gray
007	TK-3A HVAC Duct Mastic	ND**	Cellulose / 3%	97%	White
008	TK-3B HVAC Duct Mastic	ND**	Cellulose / 3%	97%	White
009	TK-3C HVAC Duct Mastic	ND**	Cellulose / 3%	97%	White

SUMMARY OF PLM BULK ANALYSIS RESULTS

NOTES:

ND = None Detected	CH = Chrysotile	A = Amosite	AC = Actinolite
CR = Crocidolite	AN = Anthophyllite	TR = Tremolite	

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

Results apply only to items tested. Quantification is accurate to within ± 10%. 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: Kevin R. Bean, B.A.

ALTERNATIVE CONSTRUCTION & ENVIRONMENTAL SOLUTIONS, INC.

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

2247 Wrightsboro Road
Augusta, GA 30904
Fax: 706-262-3299

- [x] STANDARD
- [ ] 2-3 DAY
- [ ] 24 HOUR
- [ ] SAME DAY

SOUTH CAROLINA DHEC
ASBESTOS BULK CHAIN OF CUSTODY RECORD

CLIENT: USC Aiken PROJECT NUMBER: 1136-115-009

PROJECT, ADDRESS, CITY, STATE: Ruth Patrick Science Education Center HVAC System Upgrade Project, USC Aiken, Aiken, SC

RENOVATION [x] DEMOLITION [ ] LIMITED [x] FULL [ ]

DATE SAMPLED: 3-14-16 SAMPLED BY: S. CONNOR

LIST OF SAMPLES

LAB NO.	SAMPLE ID	SAMPLE LOCATION	SAMPLE DESCRIPTION	Photo	Est Qty.	F/ NF	Condition
	TK-1-A	2nd Level Mech Rm	Brown HVAC	TK-1	201f	NF	G
	TK-1-B	"	Duct Mastic	"	"	"	"
	TK-1-C	Suspended Air Handler 1st	"	"	"	"	"
	TK-2-A	2nd Level Mech. Room	Gray HVAC	TK-2	201f	NF	G
	TK-2-B	"	Duct Mastic	"	"	"	"
	TK-2-C	"		"	"	"	"
	TK-3-A	2nd Level Mech.	White HVAC	TK-3	101f	NF	G
	TK-3-B	Room	Duct Mastic	"	"	"	"
	TK-3-C	"	"	"	"	"	"

Condition: G-Good **D**-Damaged **SD**-Significantly Damaged

DETAILED DESCRIPTION OF PROPERTY/REMARKS:

Insp Hd to components affected by HVAC system upgrade Project. These incl. Air Handlers, compressors and some duct fittings. Outside compressor lines have metal-shielded foam rubber Suspended air handler above 1st Level Cnty in Office

Relinquished by: _____ Date: 3-15-16 Received by: _____ Date: 3/16/16

McCall and Spero
Environmental, Inc.
Specialists in Microanalysis

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

Date: March 29, 2016

Attention: Mark Hartz
ACES, Inc.

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

RE: MSE-3236ACESB.1
USC Aiken / Ruth Patrick Science Education Center / HVAC System Upgrade Project, USC Aiken, Aiken, SC Project
ACES# 1136-115-009

Dear Mr . Hartz:

McCall & Spero Environmental, Inc. has completed the analyses of the bulk samples we received from your offices on March 23, 2016. These samples represent the bulk samples from the USC Aiken / Ruth Patrick Science Education Center / HVAC System Upgrade Project, USC Aiken, Aiken, SC 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 one (1) sample 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

Project Name: USC Aiken / Ruth Patrick Science Education Center / HVAC System Upgrade Project, USC Aiken, Aiken, SC Project ACES# 1136-115-009
McCall & Spero Environmental Project No. MSE-3236ACESB.1

CLIENT SAMPLE # DESCRIPTION	ASBESTOS TYPES & %	TOTAL ASBESTOS %	NON-FIBROUS MATRIX %	OTHER FIBROUS MATERIAL TYPES & %	COLOR
TK-1-A HVAC Duct Mastic	No Asbestos Detected	NAD	100%	ND	Brown

NOTES:
NAD = No Asbestos Detected
AC = Actinolite
TR = Tremolite
ND = None Detected CH = Chrysotile A = Amosite
CR = Crocidolite AN = Anthophyllite
< 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: S. Dewayne Lear, B.S. S. Dewayne Lear

McCall & Spero Environmental, Inc.

ALTERNATIVE CONSTRUCTION & ENVIRONMENTAL SOLUTIONS, INC.

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

2247 Wrightsboro Road
Augusta, GA 30904
Fax: 706-262-3299

- [x] STANDARD
- [ ] 2-3 DAY
- [ ] 24 HOUR
- [ ] SAME DAY

SOUTH CAROLINA DHEC
ASBESTOS BULK CHAIN OF CUSTODY RECORD

CLIENT: USC Aiken PROJECT NUMBER: 1136-115-009

PROJECT, ADDRESS, CITY, STATE: Ruth Patrick Science Education Center HVAC System Upgrade Project, USC Aiken, Aiken, SC

RENOVATION [x] DEMOLITION [ ] LIMITED [x] FULL [ ]

DATE SAMPLED: 3-14-16 SAMPLED BY: S. CONNOR

LIST OF SAMPLES

LAB NO.	SAMPLE ID	SAMPLE LOCATION	SAMPLE DESCRIPTION	Photo	Est Qty.	F/ NF	Condition
	TK-1-A	2nd Level Mech Rm	Brown HVAC	TK-1	2015	NF	G
	TK-1-B	"	Duct Mastic	"	"	"	"
	TK-1-C	Suspended Air Handler 1st	"	"	"	"	"
	TK-2-A	2nd Level Mech. Room	Grey HVAC	TK-2	2015	NF	G
	TK-2-B	"	Duct Mastic	"	"	"	"
	TK-2-C	"		"	"	"	"
	TK-3-A	2nd Level Mech.	White HVAC	TK-3	1015	NF	G
	TK-3-B	Room	Duct Mastic	"	"	"	"
	TK-3-C	"	"	"	"	"	"

Condition: G-Good D-Damaged SD-Significantly Damaged

DETAILED DESCRIPTION OF PROPERTY/REMARKS:
Insp Ud to components affected by HVAC system upgrade Project. These incl. Air Handlers, compressors and some duct Hdlins. Outside compressor lines have metal-shielded foam rubber Suspended air handler above 1st Level Cnty in Office

Relinquished by: _____ Date: 3-15-16 Received by: _____ Date: 3/16/16

McCall and Spero
Environmental, Inc.
Specialists in Microanalysis

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

Date: March 30, 2016

Attention: Mark Hartz
ACES, Inc.

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

RE: MSE-3296ACESB
USC Aiken / Ruth Patrick Science Education Center / HVAC System Upgrade Project, USC Aiken, Aiken, SC Project
ACES# 1136-115-009

Dear Mr . Hartz:

McCall & Spero Environmental, Inc. has completed the analyses of the bulk samples we received from your offices on March 29, 2016. These samples represent the bulk samples from the USC Aiken / Ruth Patrick Science Education Center / HVAC System Upgrade Project, USC Aiken, Aiken, SC 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 two (2) 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

Project Name: USC Aiken / Ruth Patrick Science Education Center / HVAC System Upgrade Project, USC Aiken, Aiken, SC Project ACES# 1136-115-009
McCall & Spero Environmental Project No. MSE-3296ACESB

CLIENT SAMPLE # DESCRIPTION	ASBESTOS TYPES & %	TOTAL ASBESTOS %	NON-FIBROUS MATRIX %	OTHER FIBROUS MATERIAL TYPES & %	COLOR
TK-2-A Duct Mastic	No Asbestos Detected	NAD	100%	ND	Gray
TK-3-A Duct Mastic	No Asbestos Detected	NAD	100%	ND	White

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: S. Dewayne Lear, B.S. S. Dewayne Lear

McCall & Spero Environmental, Inc.

ALTERNATIVE CONSTRUCTION & ENVIRONMENTAL SOLUTIONS, INC.
PO Box 3229
Augusta, GA 30914
Phone: 706-262-2000
2247 Wrightsboro Road
Augusta, GA 30904
Fax: 706-262-3299

- [x] STANDARD
- [ ] 2-3 DAY
- [ ] 24 HOUR
- [ ] SAME DAY

SOUTH CAROLINA DHEC
ASBESTOS BULK CHAIN OF CUSTODY RECORD

CLIENT: USC Aiken PROJECT NUMBER: 1136-115-009

PROJECT, ADDRESS, CITY, STATE: Ruth Patrick Science Education Center HVAC System Upgrade Project, USC Aiken, Aiken, SC

RENOVATION [x] DEMOLITION [ ] LIMITED [x] FULL [ ]

DATE SAMPLED: 3-14-16 SAMPLED BY: S. CONNOR

LIST OF SAMPLES

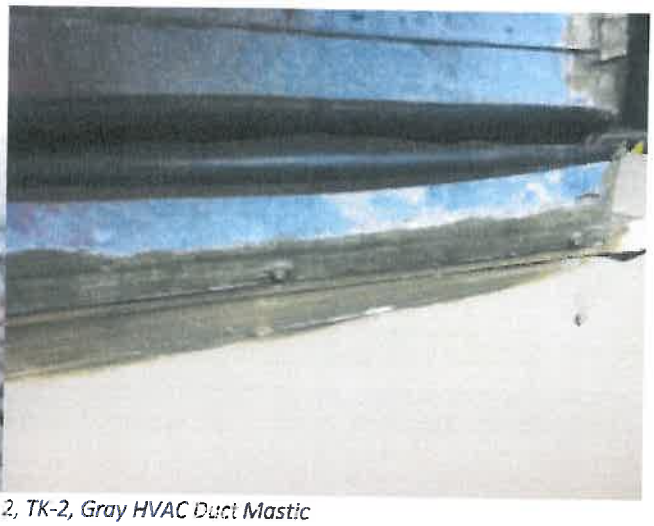
LAB NO.	SAMPLE ID	SAMPLE LOCATION	SAMPLE DESCRIPTION	Photo	Est Qty.	F/ NF	Condition
	TK-1-A	2ND Level Mech Rm	Brown HVAC	TK-1	201F	NF	G
	TK-1-B	"	Duct Mastic	"	"	"	"
	TK-1-C	Suspended Air Handler 1ST	"	"	"	"	"
	TK-2-A	2nd Level Mech. Room	Grey HVAC	TK-2	201F	NF	G
	TK-2-B	"	Duct Mastic	"	"	"	"
	TK-2-C	"		"	"	"	"
	TK-3-A	2ND Level Mech.	White HVAC	TK-3	101F	NF	G
	TK-3-B	Room	Duct Mastic	"	"	"	"
	TK-3-C	"	"	"	"	"	"

Condition: G-Good D-Damaged SD-Significantly Damaged

DETAILED DESCRIPTION OF PROPERTY/REMARKS:
Insp Hd to components affected by HVAC system upgrade Project. These incl. Air Handlers, compressors and some duct liners. Outside compressor lines have metal-shielded foam rubber Suspended air handler above 1st Level Grid in OFFice

Relinquished by: _____ Date: 3-15-16 Received by: _____ Date: 3/16/16

1, TK-1, Brown HVAC Duct Mastic



2, TK-2, Gray HVAC Duct Mastic

3, White HVAC Duct Mastic