July 9, 2018

Prepared for:

ROBERT SALERNO
CALIFORNIA STATE UNIVERSITY LOS ANGELES
5151 STATE UNIVERSITY DRIVE
LOS ANGELES, CA 90032

Re:
Asbestos TEM Air Clearance
King Hall – Room 1071

INTRODUCTION

The California State University Los Angeles retained Terra Environmental Services, Inc. to perform final air clearance inspection at King Hall for the removal and cleanup of asbestos containing materials associated with the flooring renovation project at Room 1071. Using visual inspections and air sampling Terra Environmental can confirm that the work performed by Quality Environmental, Inc. on this project was done in compliance with all applicable local, state and federal regulations.

VISUAL INSPECTION

Mr. Ricardo Ayala, Cal-DOSH Certified Site Surveillance Technician (CSST 16-5785) and Ms. Elnara Tagieva, an AHERA Certified Asbestos Building Inspector performed the on-site environmental clearance inspection on July 6th ,2018 while Quality Environmental, Inc. performed the asbestos removal/cleanup work.

Terra Environmental made the following general observations.

- The ACM floor tile and mastic was removed under OSHA Class I method and SCAQMD Procedure 1 with attached 2 stage decontamination unit.
- The work area (Room 1071) was free of ACM dust and debris.
- All ACM floor tile and mastic (approximately 864 Sq. Ft.) was removed from Room 1071.
- The removed ACM was bagged out and no containers remain at the site.
- The abated substrates were sealed with post abatement encapsulant.
- Access to work area was restricted to students and CSU personnel.
- All equipment and materials used during the ACM removal were removed offsite by the abatement contractor.
- Terra Environmental did not monitor the ACM flooring materials removal/cleanup activities by Quality Environmental, Inc.

Sampling methodology, sampling procedures and Laboratory

TEM: The AHERA TEM method is the accepted state-of-the-art to determine background or clearance levels of asbestos. The analysis is used to quantify and identify asbestos structures through examination of their morphology crystal structures (through electron diffraction), and elemental composition (through energy dispersive X-ray analysis). The AHERA method will detect and report asbestos structures as small as 0.5 µm in length and 0.02 µm in diameter, well beyond the resolution of optical microscopy. The AHERA TEM clearance level for asbestos is 70 Structures per square millimeter.

Procedures: Clearance sampling for airborne asbestos is conducted after an abatement action and requires the use of sensitive sampling and analysis procedures. The TEM samples are collected on a 25 mm three-piece cassette with ca. 50 mm electrically conductive extension cowl, cellulose ester membrane filter, 0.45 µm pore size with a portable sampling pump calibrated between 0.5 to 16 liters per minute. Terra Environmental representative calibrated the sampling pump to 9.78 LPM at the beginning and end of the sampling procedure.

Laboratory: The TEM samples were transferred following proper chain of custody protocol to LA Testing, located at 520 Mission Street in South Pasadena, California, for analysis. LA Testing is an accredited laboratory for bulk asbestos analysis under the National Institute of Standards and Technology, National Voluntary Laboratory Accreditation Program (NVLAP Certification Number 200232-0). The samples were analyzed by Transmission Electron Microscopy (TEM) by AHERA 40CFR 763 Appendix A Subpart E Method.

LABORATORY RESULTS

Terra Environmental collected a total of thirteen (13) TEM air samples: 5 inside the work area, 5 outside and three blanks.

The sample analysis results revealed the following:

Sample No	Location	Results	AHERA Limits 70 S/mm^2
1071-1	Inside Work Area SE	<16.00 S/mm^2	PASS
1071-2	Inside Work Area S	<16.00 S/mm^2	PASS
1071-3	Inside Work Area SW	<16.00 S/mm^2	PASS
1071-4	Inside Work Area W	<16.00 S/mm^2	PASS
1071-5	Inside Work Area NW	<16.00 S/mm^2	PASS

Outside samples and blanks are analyzed when inside samples exceed 70 S/mm^2.

CONCLUSION

Based on the sample analysis and visual inspection, Terra concludes the asbestos abatement activities in King Hall – Room 1071 performed by Quality Environmental, Inc., were successful and the work area meets the EPA regulatory clearance of <70 S/mm^2.

Respectfully submitted,

Israel Monsalvo, CAC, CDPH-I/A & PM
CA DOSH
CAC #04-3551

LIMITATIONS

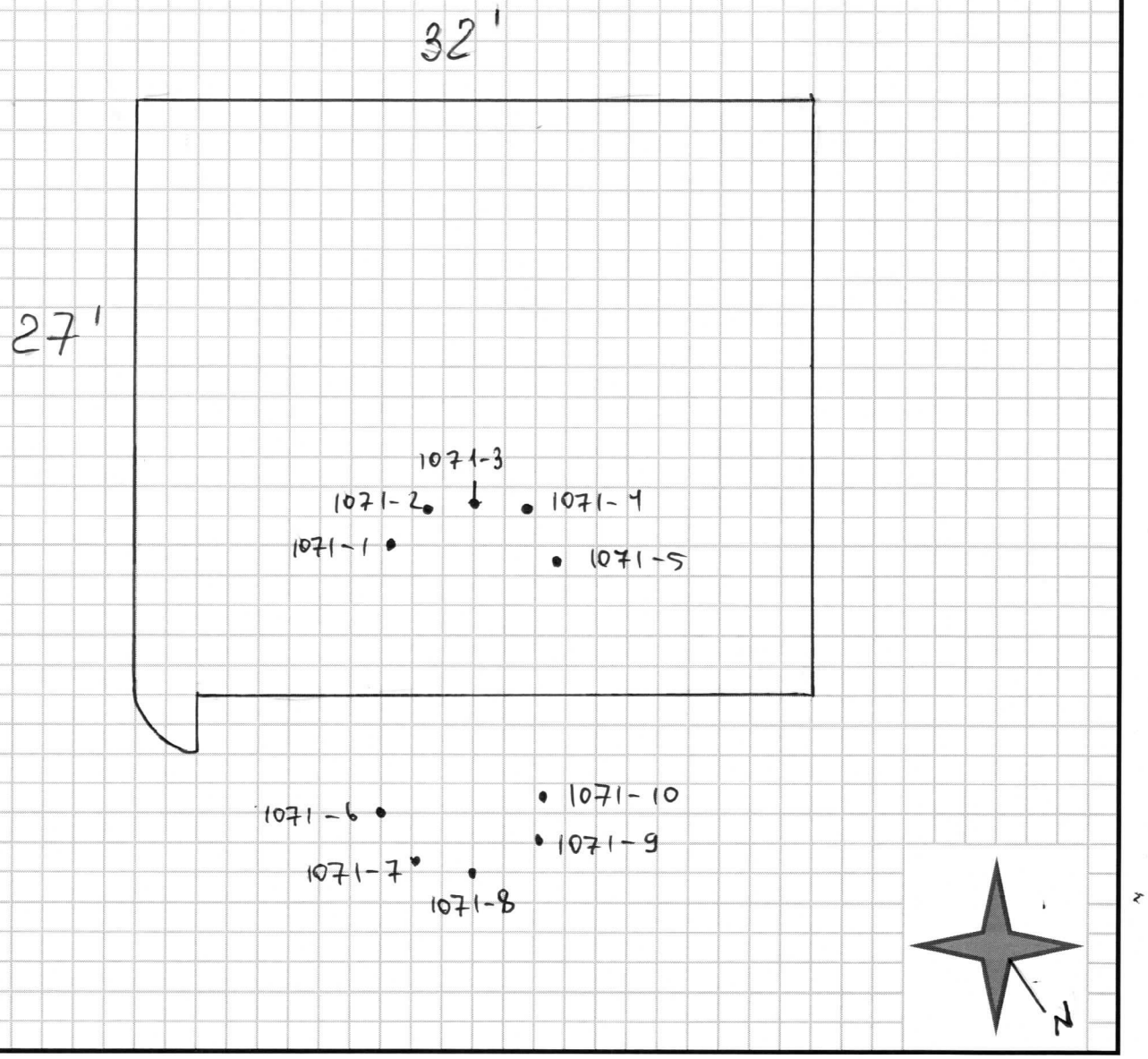
The field observations, measurements, and research reported herein are considered sufficient in detail and scope to form a reasonable basis for a site specific TEM air clearance of the subject property. The assessment, conclusions, and recommendations presented herein are based upon the subjective evaluation of limited data. They may not represent all conditions at the subject site as they reflect the information gathered from specific locations. Terra Environmental warrants the findings and conclusions contained herein have been promulgated in accordance with generally accepted industrial hygiene methodology and only for the site described in this report.

Attachments:
Laboratory results and COC
Laboratory Certification
Consultant Certification

Terra Environmental

Poject # 71361
Date: 7/6/18
Type of Work: AC

Customer: CalState - LA
Project Name: Asbestos Clearance - King Hall, Room 1071
Project Adress: 5151 State University Dr., Los Angeles, CA 90032,



12631 Imperial Hwy Suite A225 Santa Fe Springs, CA 90670
Tel 562/868-3777 - Fax 562/868-3778 www.terraeng.com

LA Testing

520 Mission Street South Pasadena, CA 91030

Tel/Fax: (323) 254-9960 /

http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order: 321815288
Customer ID: 32TESV78
Customer PO:
Project ID:

Attention: Lab results
Terra Environmental Services
12631 Imperial Hwy
Suite A225
Santa Fe Springs, CA 90670

Phone: (562) 868-3777
Fax:
Received Date: 07/06/2018 10:50 AM
Analysis Date: 07/06/2018
Collected Date: 07/06/2018

Project: #71361- King Hall, Room 1071 | 5151 State University Dr, LA, CA 90032

Test Report: Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Appendix A to Subpart E

Sample	Location	Volume (Liters)	Area Analyzed (mm^2)	Non Asb	Asbestos Type(s)	#Structures ≥0.5μ < 5μ	#Structures ≥5μ	Analytical Sensitivity (S/cc)	Asbestos Concentration (S/mm^2)	Asbestos Concentration (S/cc)
1071-1	Inside work area SE	1244.60	0.0645	0	None Detected	0	0	0.0048	<16.00	<0.0048
321815288-0001										
1071-2	Inside work area S	1264.20	0.0645	0	None Detected	0	0	0.0047	<16.00	<0.0047
321815288-0002										
1071-3	Inside work area SW	1264.20	0.0645	0	None Detected	0	0	0.0047	<16.00	<0.0047
321815288-0003										
1071-4	Inside work area W	1244.60	0.0645	0	None Detected	0	0	0.0048	<16.00	<0.0048
321815288-0004										
1071-5	Inside work area NW	1254.40	0.0645	0	None Detected	0	0	0.0048	<16.00	<0.0048
321815288-0005										

Analyst(s)

Feng Liang (5)

Jerry Drapala Ph.D, Laboratory Manager
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. Results reported in both structures/cm3 and structures/mm2 are dependent on the volume of air sampled and measured by non-laboratory personnel are not the responsibility of EMSL and are not covered by the laboratory's NVLAP accreditation . Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request.

Samples analyzed by LA Testing South Pasadena, CA NVLAP Lab Code 200232-0

Initial report from: 07/06/2018 15:06 PM

OrderID: 321815288

#321815288

Client: CalState - LA

Project: #71361 - Ring Hall, Room 1071

Address: 5151 State University Dr, LA, CA 90032

TERRA ENVIRONMENTAL

Date: 7/6/18

*Analyze IWA only

ASBESTOS AIR MONITORING

TAT: 6 Hrs

SAMPLE ID NUMBER	SAMPLE TYPE	SAMPLE LOCATION	INITIAL FLOW RATE / FINAL FLOW RATE (LIT/MIN)	TIME ON / TIME OFF	TOTAL MINUTES (MIN)	TOTAL VOLUME (LIT)	LABORATORY RESULTS
1071-1	Clearance	Inside Work Area S.E.	9.8 / 9.8	0811 / 1018	127	1244.6	
1071-2		S.	9.8 / 9.8	0812 / 1021	129	1264.2	
1071-3		S.W.	9.8 / 9.8	0814 / 1023	129	1264.2	
1071-4		W.	9.8 / 9.8	0817 / 1024	127	1244.6	
1071-5		N.W.	9.8 / 9.8	0818 / 1026	128	1254.4	
1071-6		Outside Work Area S.E.	9.8 / 9.8	0825 / 1032	127	1244.6	
1071-7		E.	9.8 / 9.8	0825 / 1032	127	1244.6	
1071-8		N.E.	9.8 / 9.8	0825 / 1032	127	1244.6	
1071-9		N.	9.8 / 9.8	0825 / 1032	127	1244.6	
1071-10		N.W.	9.8 / 9.8	0825 / 1032	127	1244.6	
1071-11	Blank	FIELD			.30 sec		
1071-12		FIELD			.30 sec		
1071-13		LAB					

RELINQUISHED BY Elvira Tagseva
DATE 7/6/18
TIME 1046

RECEIVED BY T. L. (WI)
DATE 7/6-18
TIME 10:50 am

ANALYSED BY
DATE
TIME

Asbestos TEM AHERA 40 CFR, Part 763

AIHA Laboratory Accreditation Programs, LLC
SCOPE OF ACCREDITATION

LA Testing
520 Mission Street, South Pasadena, CA 91030

Laboratory ID: **102814**
Issue Date: 04/30/2018

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

The EPA recognizes the AIHA-LAP, LLC ELLAP program as meeting the requirements of the National Lead Laboratory Accreditation Program (NLLAP) established under Title X of the Residential Lead-Based Paint Hazard Reduction Act of 1992 and includes paint, soil and dust wipe analysis. Air and composited wipes analyses are not included as part of the NLLAP.

Environmental Lead Laboratory Accreditation Program (ELLAP)

Initial Accreditation Date: 11/01/2003

Field of Testing (FoT)	Technology sub-type/ Detector	Method	Method Description (*for internal methods only*)
Paint		EPA SW-846 3050B	
		EPA SW-846 7000B	
Soil		EPA SW-846 3050B	
		EPA SW-846 7000B	
Settled Dust by Wipe		EPA SW-846 3050B	
		EPA SW-846 7000B	
Airborne Dust		NIOSH 7082	

A complete listing of currently accredited Environmental Lead laboratories is available on the AIHA-LAP, LLC website at: http://www.aihaaccreditedlabs.org

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 200232-0

LA Testing

South Pasadena, CA

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2017-07-01 through 2018-06-30

Effective Dates

For the National Voluntary Laboratory Accreditation Program

NVLAP® National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

LA Testing
520 Mission Street
South Pasadena, CA 91030
Mr. Jerry Drapala Ph.D.
Phone: (323) 254-9960 Fax: (323) 254-9982
Email: jdrapala@latesting.com
http://www.latesting.com

ASBESTOS FIBER ANALYSIS **NVLAP LAB CODE 200232-0**

Bulk Asbestos Analysis

Code	*Description*
18/A01	EPA -- Appendix E to Subpart E of Part 763 -- Interim Method of the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

Code	*Description*
18/A02	U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.

For the National Voluntary Laboratory Accreditation Program

TERRA Environmental


State of California
Division of Occupational Safety and Health
Certified Site Surveillance Technician

Ricardo Ayala
Name

Certification No. 16-5785

Expires on 11/16/18

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.


State of California Department of Public Health

Lead-Related Construction Certificate

Certificate Type

Expiration Date

Supervisor 08/08/2018

Sampling Technician 08/08/2018

Ricardo Ayala

ID #: 27455

Ricardo Ayala
CSST #16-5786
DPH Lead Supervisor / ST # 27455

12631 Imperial Hwy. Suite A225 Santa Fe Springs, CA90670
www.terraeng.com

TERRA ENVIRONMENTAL

State of California
Division of Occupational Safety and Health
Certified Asbestos Consultant



Israel Monsalvo
Name

Certification No. 04-3551

Expires on 05/20/19

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.

State of California Department of Public Health

Lead-Related Construction Certificate



Certificate Type	Expiration Date
Inspector/Assessor	09/01/2018
Project Monitor	09/01/2018

17622

Israel Monsalvo ID #: 9699

Israel Monsalvo, CAC, CDPH-I/A & PM
Cal/OSHA-Certified Asbestos Consultant #04-3551
California Department of Public Health-Certified I/A, PM # 9699

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