Project No. 01.GSAVA22.16



January 3, 2017

Mr. Jonathan Leong San Francisco Veteran Affairs Medical Center 4150 Clement Street San Francisco, CA 94116

Subject:Confirmation Asbestos Sampling ReportSan Francisco Veterans Affairs Medical CenterBuilding 1 – Dispensary and Conference Room4150 Clement StreetSan Francisco, CA 94116

Dear Mr. Leong:

EnviroApplications, Inc. (*EAI*) has prepared the following report presenting the results of confirmation asbestos sampling activities at the San Francisco Veterans Affairs Medical Center (SFVAMC), located at 4150 Clement Street, in the City of San Francisco, California (the Site). The objective of the project was to sample potential asbestos containing materials in the flooring of the Dispensary and Conference Room of Building 1. There are planned activities, which may disturb suspect asbestos containing materials (ACMs). Samples were collected using the methods presented in the Federal Asbestos Hazard Emergency Response Act (AHERA) regulations (40 CFR, Part 763) as a guideline. A brief discussion of the findings are presented herein.

SAMPLING ACTIVTIES

On December 22, 2016, as part of the sampling activities, 6 asbestos bulk material samples were collected from the flooring in Building 1. Three samples were collected of each flooring material in both the Dispensary Room and the Conference Room. All samples were submitted to Micro Analytical Laboratories, Inc. (MAL), of Emeryville, California. Samples containing multiple layers were separated by layer at the laboratory and analyzed as individual samples, in accordance with the analytical method. Potential ACM samples were analyzed using Polarized Light Microscopy (PLM) by U.S. Environmental Protection Agency (EPA) Method 600/R-93/116. All laboratory analyses were reported to have been conducted in accordance with methodology approved by the EPA. MAL is accredited under the National Institute of Standards and Technology's National Voluntary Laboratory Accreditation Program.

FINDINGS

According to the EPA and the Occupational Safety and Health Administration (OSHA), ACM is defined as material containing more than one percent (>1.0%) asbestos by volume. None of the material sampled was found to be ACM.

A further description of the material sample locations and laboratory results are provided in the enclosures. Material sample locations are described in the attached table and shown on the attached site sketch and photographs.

Mr. Jonathan Leong Project No. 01.GSAVA22.16 January 3, 2017 Page 2

Recommendations

No ACMs were identified. Should suspect materials be found during renovation/demolition that have not been previously sampled, it is recommended that a sample be collected and the material(s) remain undisturbed until the sample analytical results are obtained. Additionally, *EAI* recommends that during activities that could cause disturbance creating airborne dust, respiratory protection be used. In general, work should be conducted in accordance with federal, state and local regulations, including, but not limited to, the EPA National Emission Standard for Hazardous Air Pollutants (NESHAP), the Occupational Safety and Health Administration (OSHA) and the Bay Area Air Quality Management District (BAAQMD). A summary of asbestos regulations is attached herein.

If you have any questions or comments regarding the information enclosed herein, please contact the undersigned at your convenience.

Respectfully submitted,

EnviroApplications, Inc.

Amanda K. Santifer, C.A.C. Project Scientist CA Certified Asbestos Consultant ID#05-3888

Enclosures: Statement of Limitations Table 1 – Summary of Analytical Results Photographic Log Sample Locations Diagram Field Notes Summary of Current Regulations Laboratory Analytical Reports and Chain-of-Custody

STATEMENT OF LIMITATIONS

The conclusions and recommendations contained in this report/assessment are based upon professional opinions with regard to the subject matter. These opinions have been arrived at in accordance with currently accepted standards and practices applicable to this location and are subject to the following inherent limitations:

- The data and findings presented in this report are valid as of the dates when the investigations were performed. The passage of time, manifestation of latent conditions or occurrence of future events may require further exploration at the site, analysis of the data, and reevaluation of the findings, observations, and conclusions expressed in the report.
- The data reported and the findings, observations, and conclusions expressed in the report are limited by the Scope of Work.
- Unless otherwise stated in the report, because of the limitations stated above, the findings observations, and conclusions expressed by *EAI* in this report are not, and should not be, considered an opinion concerning the compliance of any past or present owner or operator of the site with any federal, state or local law or regulation.
- No warranty or guarantee, whether express or implied, is made with respect to the data or the reported findings, observations, and conclusions, all of which, however, accurately reflect site conditions in existence at the time of investigation.
- *EAI* reports present professional opinions and findings of a scientific and technical nature. While attempts were made to relate the data and findings to applicable environmental laws and regulations, the report shall not be construed to offer legal opinion as to the requirements of, nor compliance with, environmental laws, rules, regulations or policies of federal, state or local governmental agencies. Any use constitutes acceptance of the limits of *EAI's* liability. *EAI's* liability extends only to those parties contracted to complete this project and not to any other parties who may obtain the Report. Issues raised by the report should be reviewed by appropriate legal counsel.
- This report is based, in part, on unverified information supplied to *EAI* by third-party sources. While efforts have been made to substantiate this third-party information, *EAI* cannot guarantee its completeness or accuracy.

TABLE 1 SUMMARY OF ANALYTICAL RESULTS

San Francisco Veterans Affairs Medical Center 4150 Clement Street

San Francisco, CA 94116

SAMPLE #	SAMPLING LOCATION	MATERIAL DESCRIPTION	ANALYTICAL RESULTS	FRIABLE (Y/N)	CONDITION	HA#
1A 1B 1C	Building 1 - Dispensary Room	Yellow Carpet Adhesive with Black Mastic and Leveling Compound on Concrete	ND	Y	Good	1
2A 2B 2C	Building 1 - Conference Room	Yellow Carpet Adhesive with Black Mastic and Leveling Compound on Concrete	ND	Y	Good	2

Notes:

CH = Chrysotile Asbestos HA = Homogenous Area





Form 112-5-93

PROJECT: VAME/4/130 Clement Street / & J. 9494/ Page _____ JOB NO. <u>R1167/65</u> Date 12/22/6 Comp. By John AlexanderCHECKED BY: of Confebence Ruom 16 of Building / 02A N Enth Entry 02R 02 Sample Location Map

Form 112-5-93

SUMMARY OF CURRENT REGULATIONS

The following is a summary of current state and federal regulations which contain requirements related to the performance of building surveys for asbestos. These summaries are not intended to be all inclusive and do not contain every aspect of the regulations discussed. Regulations pertaining to the removal and disposal of ACMs are not included.

EPA NESHAP

Under the National Emission Standard for Hazardous Air Pollutants (NESHAP), 40 CFR Part 61, regulation, no visible emissions are allowed during building demolition or renovation activities which involve regulated asbestos-containing materials (RACMs). For this reason, all buildings must be surveyed for ACMs prior to demolition or renovation. The EPA and/or the local air quality management district which implements EPA actions must be notified prior to any building demolition even if no ACMs are present. RACM is defined as any material with an asbestos content of greater than one percent and is friable, or Category I non-friable ACM that has or will become friable, or Category II non-friable ACM that may become or will become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation.

According to NESHAP, ACM is material containing more than one percent asbestos as determined using the methods specified in Appendix A, Subpart E, 40 CFR Part 763, Section 1, PLM. The NESHAP classifies ACM as friable or non-friable. Friable ACM is ACM that contains more than one percent asbestos and when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.

Non-friable ACM also contains more than one percent asbestos and is further classified as either Category I ACM or Category II ACM. The materials are distinguished by their potential to release fibers when damaged. Category II ACMs are much more likely to release fibers when damaged. Category I ACM includes asbestos-containing gaskets, packings, resilient floor coverings and mastics, and asphalt roofing products. Asphalt roofing products are those products which contain asbestos and include built-up roofing, asphalt-containing single ply membrane systems, asphalt shingles, asphalt-containing underlayment felts, asphalt-containing roof coatings and mastics, and asphalt-containing base flashings. Category II ACM includes all other non-friable ACM; for example: asbestos cement shingles, asbestos cement tiles, and transite boards or panels.

Bay Area Air Quality Management District Regulation 11 (Hazardous Pollutants) Rule 2 (Asbestos Demolition, Renovation and Manufacturing)

In response to the NESHAP requirements, the Bay Area Air Quality Management District (BAAQMD) implemented Regulation 11, Rule 2 that pertains to demolition/renovation activities including the removal and associated disturbance of ACMs. These requirements for demolition and renovation activities include asbestos surveying, notification, ACM removal procedures, time schedules, ACM handling and cleanup procedures, storage, disposal, and landfill requirements for asbestos-containing waste materials. Rule 1403 is applicable to owners and operators of any demolition or renovation activity and associated disturbance of ACMs. Failure to comply with Rule 2 requirements could result in violations that carry daily penalties (penalties assessment is based upon the size of the project and severity of noncompliance).

AHERA

AHERA requires performance of asbestos surveys and the development of Asbestos Management Plans for all of the nation's primary and secondary schools. The general procedures mandated under AHERA are considered the industry standard and are used as guidelines for all surveys performed by *EAI*.

Occupational Safety and Health Administration (OSHA)

Per OSHA standard 1926.1101, ACMs are defined as any materials with an asbestos content greater than one percent (>1.0%) and are further classified as Class I, Class II Class III or Class IV ACM. The materials are distinguished by their potential to release fibers when damaged. OSHA prescribes specific engineering controls and work practices for each Class of ACM.

- Class I This Class refers to ACMs identified as Thermal System Insulation (TSI) or surfacing (sprayed-on or troweled-on) materials. These materials are generally considered friable.
- Class II This Class refers to ACMs identified that are not Thermal System Insulation (TSI) or surfacing materials. These materials are generally considered non-friable.
- Class III This Class refers to repair and maintenance operations of all identified ACMs.
- Class IV This Class refers to incidental contact with identified ACMs such as custodial staff.

Asbestos Removal and Building Demolition/Renovation

In accordance with the EPA's NESHAPs regulation and the BAAQMD, all facilities planned for renovation or demolition must be surveyed for ACMs prior to the planned renovation or demolition. Subsequent removal of identified ACMs is also required. Removal involves, to the greatest extent practical, the complete removal, disposal, and replacement, if necessary, of the asbestos-containing building material (ACBM). Removal usually also requires encapsulation of the remaining structure to lock down residual fibers which may exist. Removal of ACMs is required prior to renovation and/or demolition activities.

The EPA and the AQMD require removal of all ACMs prior to demolition or renovation. ACMs include friable ACMs, (Class I) which have or will become friable or that has been subjected to sanding, drilling, grinding, cutting, or abrading; and Class II ACMs that may become or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation.

Trace ACMs are asbestos materials with less than 1 percent, but greater that 0.1 percent asbestos. These ACMs require an abatement plan during demolition that is protective of worker health and safety. However, unlike an EPA ACM, trace ACMs do not necessitate special disposal requirements.

MICRO ANALYTICAL LABORATORIES, INC. BULK ASBESTOS ANALYSIS - POLARIZED LIGHT MICROSCOPY (PLM)

ASBESTOS INFORMATION



1023 Mike Benefield Terracon Consultants, Inc. 1466 66th Street Emeryville, CA 94608

PROJECT: JOB NO. R1167165 VAMC / 4130 CLEMENT STREET SAN FRANCISCO, CA **BUILDING 1**

QUANTITY (AREA %) / TYPES / LAYERS / DISTINCT SAMPLES

Micro Log In	227643
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Total Samples 6 Date Sampled 12/22/2016 Date Received 12/22/2016 12/23/2016 Date Analyzed

SAMPLE IDENTIFICATION

Client #:	01A		3 % CELLULOSE
Micro #: 2	27643-01 Analyst: MK AF		
HM #01 - WITH BL COMPOU DISPENS	YELLOW CARPET ADHESIVE ACK MASTIC AND LEVELING IND ON CONCRETE BUILDING 1 ARY ROOM 12TH FLOOR AT ENTRY	LEVELING COMPOUND: ND	NFM: BINDER, OTHER, MISCELLANEOUS.
Client #:	01B		1 % CELLULOSE
Micro #: 2	227643-02 Analyst: MK	CARPET ADHESIVE: ND	
HM #01 - WITH BL COMPOU BUILDING 12TH FL(YELLOW CARPET ADHESIVE ACK MASTIC AND LEVELING IND ON CONCRETE G 1 DISPENSARY ROOM ODR AT BREAK ROOM ENTRY	LEVELING COMPOUND AND BLACK MASTIC ARE INSUFFICIENT FOR ANALYSIS.	NFM: BINDER, OTHER, MISCELLANEOUS.
Client #:	01C		3 % CELLULOSE
Micro #: 2 HM #01 - WITH BL COMPOL	227643-03 Analyst: MK YELLOW CARPET ADHESIVE ACK MASTIC AND LEVELING IND ON CONCRETE	CARPET ADHESIVE: ND LEVELING COMPOUND: ND CONCRETE: ND	2 % SYNTHETIC FIBERS NFM: BINDER, OTHER, MISCELLANEOUS.
BUILDIN 12TH FL	G 1 DISPENSARY ROOM DOR AT BREAK ROOM ENTRY	NO BLACK MASTIC IN SAMPLE.	
Client #:	02A		3 % CELLULOSE
Micro #: 2	227643-04 Analyst: MK		
HM #02 - WITH BL COMPOU BUILDIN 16 FLOO	YELLOW CARPET ADHESIVE LACK MASTIC AND LEVELING JND ON CONCRETE G 1 CONFERENCE ROOM R AT EAST ENTRANCE	LEVELING COMPOUND: ND CONCRETE: ND	NFM: CARBONATE, BINDER.
Client #:	028		3 % CELLULOSE
Micro #: 2 HM #02 - WITH BL COMPOU BUILDIN 16 FLOO	227643-05 Analyst: MK YELLOW CARPET ADHESIVE ACK MASTIC AND LEVELING JND ON CONCRETE G 1 CONFERENCE ROOM BR AT WEST ENTRANCE	CARPET ADHESIVE: ND MASTIC (BLACK): ND LEVELING COMPOUND: ND	NFM: CARBONATE, BINDER.

12/23/2016 Technical Supervisor: Date Reported Gamini Ranatunga, Ph.D. tari

NVLAP Lab Code 101872-0. CA ELAP Certification #1037. Analyses use Polarized Light Microscopy (PLM), Micro Analytical SOP PLM-101. Basic techniques follow the EPA Interim Method for Bulk Insulation Samples (1982), and EPA-600/R93-116 (1993). The 1993 method covers all types of bulk materials and is based on the 1982 Method, with improved analytical techniques for layered samples as required for NESHAP compliance. Asbestos is quantified by calibrated visual estimation. Detection limit is material dependent. Detection of asbestos traces (much less than 1%) may not be reliable or reproducible by PLM. Weight % cannot be conclusively established by PLM, and should be confirmed by PLM. Asbestos with diameter below ~1 µm may not be detected by PLM. Asbestos may be indistinguishable by PLM from some similar, non-regulated amphiboles (e.g. the "Libby Amphiboles" richterite and winchite), and should be confirmed by TEM. The lower quantitation limit (reporting limit) of PLM estimation is 1%. The Cal-OSHA definition of asbestos-containing construction material is 0.1% asbestos; however, reliable determination of asbestos materials (fibrous and non-fibrous) are listed. This analysis shall not be construed as conclusive for the presence of any non-asbestos material. Common interferences include, but are not limited to: cellulose, fibrous glass, other man-made vitreous fibers, synthetic fibers, elongate araptized separately when feasible; if asbestos is detected, percentages are reported for individual layers. Interfayer contamination is possible among any layers in a sample. The note limits of norticales are applicable only to wallboard / point compound systems; compositing is based on customers' descriptions of material softer than one distinct layer or not asbestos induced with elergenceuts and unchables and unchables as a specent analyzed separately. Layers within a sample are analyzed separately when feasible; if asbestos is detected, percentages are reported for individual layers. Interfayer contamination is possible am

DOMINANT OTHER MATERIALS

MICRO ANALYTICAL LABORATORIES, INC. BULK ASBESTOS ANALYSIS - POLARIZED LIGHT MICROSCOPY (PLM)

1023 Mike Benefield Terracon Consultants, Inc. 1466 66th Street Emeryville, CA 94608

PROJECT: JOB NO. R1167165 VAMC / 4130 CLEMENT STREET SAN FRANCISCO, CA **BUILDING 1**

Total Samples 6

Micro Log In

227643

Date Sampled 12/22/2016 Date Received 12/22/2016 12/23/2016 Date Analyzed

ASBESTOS INFORMATION

QUANTITY (AREA %) / TYPES / LAYERS / DISTINCT SAMPLES

SAMPLE IDENTIFICATION Client #: 02C 3 % CELLULOSE CARPET ADHESIVE: ND Micro #: 227643-06 Analyst: MK MASTIC (BLACK): ND HM #02 - YELLOW CARPET ADHESIVE WITH BLACK MASTIC AND LEVELING COMPOUND ON CONCRETE BUILDING 1 CONFRENENCE ROOM 16 FLOOR AT WEST ENTRANCE NFM: CARBONATE, BINDER NO LEVELING COMPOUND IN SAMPLE.

12/23/2016 h Technical Supervisor: Gamini Ranatunga, Ph.D. Date Reported TO:

NVLAP Lab Code 101872-0. CA ELAP Certification #1037. Analyses use Polarized Light Microscopy (PLM), Micro Analytical SOP PLM-101. Basic techniques follow the EPA Interim Method for Bulk Insulation Samples (1982), and EPA-600/R93-116 (1993). The 1993 method covers all types of bulk materials and is based on the 1982 Method, with improved analytical techniques for layered samples as required for NESHAP compliance. Asbestos is quantified by calibrated visual estimation. Detection limit is material dependent. Detection for the standard of NESHAP compliance. Asbestos is quantified by calibrated visual estimation. Detection limit is material dependent. Detection for the standard of NESHAP compliance. Asbestos is quantified by calibrated visual estimation. Detection limit is material dependent. Detection for absestos races (much less than 1%) may not be reliable or reproducible by PLM. Weight % cannot be conclusively established by PLM, and should be confirmed by TEM. Asbestos with diameter below ~1 µm may not be determination of asbestos percent and vision prevent detection of small asbestos fibers, and hinder determination of some optical properties. Tremolite-asbestos or actinolite- asbestos percent at this level cannot be done by PLM estimation; PLM Point Counting or TEM weight percent analysis are recommended. Only dominant non-asbestos materials (fibrous and non-fibrous) are listed. This analysis shall not be construed as conclusive for the presence of any non-asbestos material. Common interferences include, but are not limited to: cellulose, fibrous glass, other man-made vitreous fibers, elongate fragments of calcium sulfate, taic, wollastonite, animal hair, and other miscellaneous elongate particles. Sample heterogeneity is indicated by listing more than asbestos in detected percentages are reported for individual layers. Interfayer contamination is possible among any layers in a sample: are analyzed separately. Layers within a sample are analyzed separately when feasible; if asbestos is detected, percentages

DOMINANT OTHER MATERIALS

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	Terraron	anne an an airge an 1994 an 1994 an	ACM BULK SAMPLE DATA SHEET
1466 66 th Street F	meryville CA 94608 Tel: (510) 547-7771	Fax: (510) 547-1983	
_PM – S. Steiner	PM – K. Schroeter	PM – K. Pilgrim kmpilgrim@terracon.com	PLM Analysis (Analyze all samples) Stop Analysis at First Positive
_PM – M. Bryant	PM – T. Kattchee	PM – B. Gils	Point Count Analysis (400-point)
PM- M. Benefield	PM D. Ufferfilge	regisionenacon.com	
msbenefield@terrac	<u>on.com</u> <u>dufferfilge@terracon.com</u>	loment street/C	
roject Name/Addro	65 Sampled By:	John Alexander	Sampling Date: 12/22/6
· Sample(s) Sent To	: <u>MAL</u> other:		T: TRush 24Hirs 18Hirs 3-5 Days
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	Rulding Dispensery	Rucin 12 Clas	at Proof Room Entry VVV
HM# @D	Material Description Yell	and Adhenica w	L RIGH Man A Qty
Sample ID	Sample Location	Material Loca	ations and Leveling Compound on Concre
02A	Building Conference Ro	10m 16 Floo	r at East Entrance 520 pare fort
02B	Building 1 Conference K	Room 16 Flui	at West Entrance
Ozc	Building 1 Conference 1	Ruom 16 Floor	at West Entrince VVV
НМ# _	Material Description		Qty
Sample ID	Sample Location	Material Loc	ations
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