

January 19, 2023

Subject: XPL277 Library Low Slope Roof Replacement – Asbestos and Lead Data Summary

The California State Polytechnic University, Humboldt (Humboldt) Facilities Management (FM) Planning, Construction & Design (PDC) division collected bulk samples of suspect Asbestos Containing Material (ACM) at the exterior roof of the Humboldt Library (Building 041) located on the Humboldt campus. Sampling was conducted on December 21, 2022, in association with the Library Low Slope Roof Replacement Project (the project). This memorandum summarizes the bulk sampling findings and provides conclusions based on these data.

Project Site

The project consists of three exterior roof sections collectively comprising with the Library low slope (flat) roof (project site). The three sections of the project site include:

1. Main roof
2. Penthouse roof located at the center-east portion of the building
3. Elevator shaft roof located at the northeast corner of the building

The flat roofs include an approximately 6" parapet throughout the perimeter, except where the main roof contacts exterior walls extending above the flat roof (e.g., penthouse, stairwell enclosure, and elevator shaft). The rolled roofing is secured at the parapets with metal flashing. The tops of the parapets are covered with metal cap flashing. Penetrations in the roofs are sealed with roofing mastic. Photographs of the project site are attached (Attachment A).

Survey Description

A total of eight (8) suspect ACM samples were collected throughout the project site, some samples consisting of multiple layers of unique materials. The suspect ACM sampling was conducted in general conformance with the United States Environmental Protection Agency (USEPA) National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations governing facility renovation. Sampling was conducted by Scott Harris, a FM PDC Cal/OSHA Certified Asbestos Consultant (11-4713) and California Department of Public Health Lead Inspector/Assessor (00004068).

A single (1) suspect ACM was identified at the project site as noted in Table 1 (page 2) and not sampled due to limited accessibility. Additionally, suspect lead material was identified at the project site and presumed to contain lead as noted in Table 2 (page 2).

Laboratory Data

The bulk samples were sent to SGS Forensic Laboratories, located in Hayward, California. Samples were analyzed for asbestos content via Polarized Light Microscopy (PLM) using USEPA Method 600/R-93-116. The PLM data are summarized in Table 1. The lead findings are summarized in Table 2. The relevant laboratory analytical reports are attached (Attachment B).

Asbestos Findings

Table 1 includes the sample location, material type, laboratory result, and applicable regulatory designations for each sampled suspect ACM. Samples reported to contain asbestos are identified in Table 1 by the asbestos content (percent asbestos) and highlighted using bold text. Individual materials comprising multi-layered samples are separated by a “+” sign. Suspect materials presumed to contain greater than one percent asbestos are noted in Table 1 as “Presume >1%.” Materials that were not reported by the laboratory to contain asbestos, i.e., non-detect (ND) materials, are listed as “ND”.

Table 1 – Asbestos Data Summary					
Sample Number	Location / Material	Laboratory Result	USEPA Category	Cal/OSHA Work Class	Waste Designation
LIB-ROOF-1	Library - Roof at CTR E / Rolled Comp Roofing (Black, Red Granular)	ND	NA	NA	NA
LIB-ROOF-2	Library - N Roof at NE / Rolled Comp Roofing (Black, Red Granular)	ND	NA	NA	NA
LIB-ROOF-3	Library - S Roof at SW / Rolled Comp Roofing (Black, Red Granular) + Concrete (Grey)	ND	NA	NA	NA
LIB-ROOF-4	Library - NE Upper Roof at SW / Rolled Comp Roofing (Black, Red Granular)	ND	NA	NA	NA
LIB-ROOF-5	Library - N Roof E Parapet at NE / Rolled Comp Roofing (Black, Red Granular)	ND	NA	NA	NA
LIB-ROOF-6	Library - Roof at SE Vent / Penetration Mastic (Black)	ND	NA	NA	NA
LIB-ROOF-7	Library - Roof at NE Vent / Penetration Mastic (Black)	ND	NA	NA	NA
LIB-ROOF-8	Library - NE Upper Roof Flashing at SW / Fastener Sealant (Dark Grey)	ND	NA	NA	NA
Not Sampled	Library Penthouse Interior / Cementitious Vent Flue (Grey)	Presume >1%	Presume Cat II	Presume Class II	Non-haz
Notes: <ul style="list-style-type: none"> • ACM = Asbestos Containing Material (greater than 1% asbestos) • Cat II = Category II nonfriable ACM (USEPA material designation) • NA = Not applicable • ND = Nondetect (i.e., no asbestos found above the laboratory detection limit) • Non-haz = Nonhazardous asbestos waste 					

Lead Findings

The lead findings are summarized in Table 2 (below). Table 2 lists the sample location, material type, reported or presumed lead content, and associated regulatory designation.

Table 2 – Lead Data Summary			
Sample Number	Location / Material	Laboratory Result	Regulatory Designation
NA	Vent Penetrations Throughout / Malleable Lead Cladding on Vertical Vents	Presume >0.5%	Presume LBP

Sample Number	Location / Material	Laboratory Result	Regulatory Designation
Notes: <ul style="list-style-type: none">LBP = Lead Based Paint (greater than 5,000 parts per million or 0.5% lead by weight)			

Conclusions for Asbestos

One (1) material was presumed to contain asbestos (cementitious vent flue) as noted in Table 1. This flue is classified as a Category II nonfriable ACM based on the material's physical characteristics. None (0) of the sampled materials analyzed via PLM were reported to contain asbestos (see Attachment B).

Nonfriable ACM is classified as nonhazardous asbestos waste, so long as the material is not rendered friable. Asbestos materials that may be disturbed by the project shall be removed by a licensed abatement contractor prior to other site work.

Any suspect ACM not identified in this memorandum that is discovered during site work should be presumed to contain asbestos until sampled and proven otherwise. If suspect ACM is identified at the project site for which there is no existing data, then work in that area shall stop, the material wetted, and access to the area restricted until the suspect ACM can be appropriately sampled and characterized.

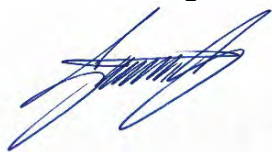
Conclusions for Lead

A single (1) material (vent cladding) is presumed to contain lead (see Photograph 4, Attachment A). As noted in Table 2, lead is presumed to be present at the project site, therefore construction work must comply with applicable Cal/OSHA and CDPH regulations governing lead. Coatings and other suspect lead materials at the project site shall be presumed to contain lead, unless sampled and proven otherwise.

The demolition waste stream shall be representatively sampled to determine the total and soluble concentration of lead in the waste. Transportation and disposal requirements shall be determined based on the waste characterization data.

Please contact FM PDC with any questions regarding the information contained in this memorandum.

Thank you,
Facilities Management - Planning, Design & Construction



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Attachments:

1. Attachment A – Site Photographs
2. Attachment B – Laboratory Data



Photograph 1 – Library roof (view looking SW)



Photograph 2 – Library roof (view looking S)



Photograph 3 – Library roof (view looking N)



Photograph 4 – Library roof vent (typical) - Metal cladding is presumed to be lead



Photograph 5 – Library roof parapet (typical)



Photograph 6 – Library roof parapet cap flashing seam and fasteners (typical)

Bulk Asbestos Analysis

(EPA Method 40CFR, Part 763, Appendix E to Subpart E and EPA 600/R-93-116, Visual Area Estimation)
NVLAP Lab Code: 101459-0

Humboldt State University
Scott Harris
1 Harpst Street
Plan Operations
Arcata, CA 95521

Client ID: 2087
Report Number: B342396
Date Received: 01/04/23
Date Analyzed: 01/05/23
Date Printed: 01/05/23
First Reported: 01/05/23

Job ID/Site: PO# 1127193;XPL277 - Libray (041) - Exterior-Roof

SGSFL Job ID: 2087
Total Samples Submitted: 8
Total Samples Analyzed: 8

Date(s) Collected: 12/21/2022

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
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LIB-ROOF-1

12632105

Layer: Black Tar							ND
Layer: Black Felt							ND
Layer: Black Tar							ND
Layer: Black Felt							ND
Layer: Stones							ND
Layer: Black Tar							ND
Layer: Black Felt							ND
Layer: Stones							ND

Total Composite Values of Non-Asbestos Fibrous Components:
Cellulose (10 %) Fibrous Glass (5 %) Synthetic (50 %)
Comment: Bulk complex sample.

LIB-ROOF-2

12632106

Layer: Black Tar							ND
Layer: Black Felt							ND
Layer: Black Tar							ND
Layer: Black Felt							ND
Layer: Stones							ND
Layer: Black Tar							ND
Layer: Black Felt							ND
Layer: Stones							ND

Total Composite Values of Non-Asbestos Fibrous Components:
Cellulose (10 %) Fibrous Glass (5 %) Synthetic (50 %)
Comment: Bulk complex sample.

LIB-ROOF-3

12632107

Layer: Black Tar							ND
Layer: Black Felt							ND
Layer: Black Tar							ND
Layer: Black Felt							ND
Layer: Stones							ND

Total Composite Values of Non-Asbestos Fibrous Components:
Cellulose (10 %) Fibrous Glass (5 %) Synthetic (50 %)
Comment: Bulk complex sample.

Client Name: Humboldt State University

Report Number: B342396

Date Printed: 01/05/23

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
LIB-ROOF-4	12632108						
Layer: Black Tar			ND				
Layer: Black Felt			ND				
Layer: Black Tar			ND				
Layer: Black Felt			ND				
Layer: Stones			ND				
Total Composite Values of Non-Asbestos Fibrous Components:							
Cellulose (10 %) Fibrous Glass (5 %) Synthetic (50 %)							
Comment: Bulk complex sample.							
LIB-ROOF-5	12632109						
Layer: Stones			ND				
Layer: Black Tar			ND				
Layer: Black Felt			ND				
Total Composite Values of Non-Asbestos Fibrous Components:							
Cellulose (10 %) Fibrous Glass (5 %) Synthetic (50 %)							
LIB-ROOF-6	12632110						
Layer: Black Non-Fibrous Material			ND				
Layer: Stones			ND				
Total Composite Values of Non-Asbestos Fibrous Components:							
Cellulose (Trace)							
LIB-ROOF-7	12632111						
Layer: Black Non-Fibrous Material			ND				
Layer: Stones			ND				
Total Composite Values of Non-Asbestos Fibrous Components:							
Cellulose (Trace)							
LIB-ROOF-8	12632112						
Layer: Grey Non-Fibrous Material			ND				
Total Composite Values of Non-Asbestos Fibrous Components:							
Cellulose (Trace)							



Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

Analytical results and reports are generated by SGS Forensic Laboratories (SGSFL) at the request of and for the exclusive use of the person or entity (client) named on such report. Results, reports or copies of same will not be released by SGSFL to any third party without prior written request from client. This report applies only to the sample(s) tested. Supporting laboratory documentation is available upon request. This report must not be reproduced except in full, unless approved by SGSFL. The client is solely responsible for the use and interpretation of test results and reports requested from SGSFL. SGSFL is not able to assess the degree of hazard resulting from materials analyzed. SGS Forensic Laboratories reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified. All samples were received in acceptable condition unless otherwise noted.



Analysis Request Form (COC)

Client Name & Address: Cal Poly Humboldt (Humboldt State University) Facilities Management - Planning, Design & Construction 1 Harpst Street, Arcata, CA 95521-8299		Client No.: 2087	PO / Job#: PO1127193 / XPL277	Date: 12/22/2022
Contact: Scott Harris		Phone: (707) 826-3646	Turn Around Time: Same Day / 1Day 2Day / 3Day / 4Day / 5Day	
E-mail: ssh11@humboldt.edu; jrb20@humboldt.edu		<input type="checkbox"/> PCM: <input type="checkbox"/> NIOSH 7400A / <input type="checkbox"/> NIOSH 7400B <input type="checkbox"/> Rotometer <input checked="" type="checkbox"/> PLM: <input checked="" type="checkbox"/> Standard / <input type="checkbox"/> Point Count 400 - 1000 / <input type="checkbox"/> CARB 435		
Site Name: Library (041)		<input type="checkbox"/> TEM Air: <input type="checkbox"/> AHERA / <input type="checkbox"/> Yamate2 / <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> TEM Bulk: <input type="checkbox"/> Quantitative / <input type="checkbox"/> Qualitative / <input type="checkbox"/> Chatfield <input type="checkbox"/> TEM Water: <input type="checkbox"/> Potable / <input type="checkbox"/> Non-Potable / <input type="checkbox"/> Weight % <input type="checkbox"/> TEM Dust: <input type="checkbox"/> D5755 (microvac) / <input type="checkbox"/> D6480 (wipe)		
Site Location: Exterior - Roof		<input type="checkbox"/> IAQ Particle Identification (PLM LAB) <input type="checkbox"/> PLM Opaques/Soot <input type="checkbox"/> Particle Identification (TEM LAB) <input type="checkbox"/> Special Project <input type="checkbox"/> Metals Analysis Matrix: Method: Analytes:		

Comments: Project Numer: XPL277, CF 600817 HM604 D0037 XPL277 Silica in Air w/Gravimetry Quartz Only

Sample ID	Date / Time	Sample Location / Description	FOR AIR SAMPLES ONLY				Sample Area / Air Volume
			Type	Time On/Off	Avg LPM	Total Time	
LIB-ROOF-1	12/21/22	Library - Roof at CTR E / Rolled Comp Roofing (Black, Red Granular)	A P C	NA	NA	NA	NA
LIB-ROOF-2	12/21/22	Library - N Roof at NE / Rolled Comp Roofing (Black, Red Granular)	A P C				
LIB-ROOF-3	12/21/22	Library - S Roof at SW / Rolled Comp Roofing (Black, Red Granular) + Concrete (Grey)	A P C				
LIB-ROOF-4	12/21/22	Library - NE Upper Roof at SW / Rolled Comp Roofing (Black, Red Granular)	A P C				
LIB-ROOF-5	12/21/22	Library - N Roof E Parapet at NE / Rolled Comp Roofing (Black, Red Granular)	A P C				
LIB-ROOF-6	12/21/22	Library - Roof at SE Vent / Penetration Mastic (Black)	A P C				
LIB-ROOF-7	12/21/22	Library - Roof at NE Vent / Penetration Mastic (Black)	A P C				
LIB-ROOF-8	12/21/22	Library - NE Upper Roof Flashing at SW / Fastener Sealant (Dark Grey)	A P C				
			A P C				
			A P C				

Sampled By: SH	Date/Time: As above	Shipped Via: <input type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> US Mail <input type="checkbox"/> Courier <input type="checkbox"/> Drop Off <input type="checkbox"/> Other:	
Relinquished By: Scott Harris	Relinquished By:	Relinquished By:	
Date / Time: 12/22/2022 1500 01/03/2023	Date / Time:	Date / Time:	
Received By:	Received By:	Received By:	
Date / Time: JAN 04 2023 9490	Date / Time:	Date / Time:	
Condition Acceptable? <input type="checkbox"/> Yes <input type="checkbox"/> No	Condition Acceptable? <input type="checkbox"/> Yes <input type="checkbox"/> No	Condition Acceptable? <input type="checkbox"/> Yes <input type="checkbox"/> No	

SGS Forensic Laboratories may subcontract client samples to other SGSFL locations to meet client requests.
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 Las Vegas Office: 6765 S. Eastern Avenue, Suite 3, Las Vegas, NV 89119 • Phone: 702/784-0040
 Chicago Office: 3020 Woodcreek Drive, Suite C, Downers Grove, IL 60515 • Phone: 341/465-2464