SCI ENGINEERING, INC.
EARTH • SCIENCE • SOLUTIONS
GEOTECHNICAL
ENVIRONMENTAL
NATURAL RESOURCES
CULTURAL RESOURCES
CONSTRUCTION SERVICES

May 19, 2017

Ms. Virginia Wetterau
Hillcrest Redevelopment
19 Old Ranch Road
Laguna Niguel, California 92677

RE: Asbestos Survey Activities
Dean Lands - 109 South Rucker Avenue (South Tan Building)
Rolla, Missouri
SCI No. 2015-7023.26

Dear Ms. Wetterau:

INTRODUCTION

SCI Engineering, Inc. (SCI) is pleased to submit this report of the analytical test results for samples of suspect asbestos-containing materials (ACMs) collected during the survey performed on May 9, 2017. The purpose of this survey was to identify ACMs in accessible areas of the above-referenced located. This survey is intended to satisfy the requirements for the asbestos National Emission Standard for Hazardous Air Pollutant for demolition and renovation. It is not intended to be used for Occupational Safety and Health Administration (OSHA) compliance.

The on-site structure is considered the south tan building address as 109 South Rucker Avenue. The on-site structure is 4,600-square-foot commercial/warehouse building, which was constructed in the 1960s. The exterior was brick and concrete masonry unit (CMU) with metal windows and a metal roof. No HVAC system was observed. No thermal system insulation (TSI) was observed.

ASBESTOS SURVEY

Twenty-four samples were collected from the on-site structure. Of these 24 samples, 12 were analyzed using a positive stop procedure. These samples were analyzed by Polarized Light Microscopy (PLM). Of the 12 samples analyzed, 12 were found to contain asbestos. Analytical test results and chain-of-custody documentation are enclosed. The results of the analysis of all samples are summarized in Table 1.

Table 1 – Summary of Analytical Test Results

Sample Number	Material Location	Material Description	Approx. Qty.	Result	Category
109A-1a	Throughout	Grey with White Streaks 12" X 12 Floor Tile (on Concrete, Mixed with Other Floor Tile)	1,150 sf	5-10% Chrysotile in Mastic; None Detected in Tile	NCI
109A-1b				5-10% Chrysotile in Mastic; None Detected in Tile	
109A-1c				5-10% Chrysotile in Mastic; None Detected in Tile	

sf – square feet
NCI – Non-Friable Category I Material

Table 1 – Summary of Analytical Test Results (continued)

Sample Number	Material Location	Material Description	Approx. Qty.	Result	Category
109A-2a	Throughout	Grey with Grey Streaks 12" X 12 Floor Tile (on Concrete, Mixed with Other Floor Tile)	875 sf	5-10% Chrysotile in Tile and Mastic	NCI
109A-3a	Throughout	Tan 9" X 9" Floor Tile (on Concrete, Mixed with Other Floor Tile)	875 sf	10-15% Chrysotile in Tile; None Detected in Mastic	NCI
109A-4a	Throughout	Brown 9" X 9" Floor Tile (on Concrete, Mixed with Other Floor Tile)	100 sf	5-10% Chrysotile in Tile; None Detected in Mastic	NCI
109A-5a	Throughout	Black with White Specks 9" X 9" Floor Tile (on Concrete, Mixed with Other Floor Tile)	150 sf	5-10% Chrysotile in Tile and Mastic	NCI
109A-6a	Exterior	Window Caulk	4 Windows	5-10% Chrysotile	NCII
109A-7a	Exterior CMU Walls	Vermiculite Insulation (In CMU)	2,400 sf	<1% Tremolite	Non-ACM
109A-7b				<1% Tremolite	
109A-7c				<1% Tremolite	
109A-8a	Exterior	Door Caulk	3 Doors	5-10% Chrysotile	NCII

sf – square feet
NCI – Non-Friable Category I Material
NCII - Non-Friable Category II Material

DEMOLITION/RENOVATION

According to the Missouri Department of Natural Resources (MDNR), any friable or potentially friable ACM equal to or greater than 260 linear feet or 160 square feet is classified as a regulated ACM (RACM) and must be removed prior to demolition or renovation which would significantly damage the material.

The window/door caulk is a Category II non-friable material and according to the rule outlined above, is not, by definition, an RACM. It is the opinion of the MDNR that demolition activities will not render the material friable, and therefore, it is not required to be removed prior to demolition.

The floor tile and mastic (represented by samples 109A-1abc, 109A-2a, 109A-3a, 109A-4a and 109A-5a) on concrete are Category I non-friable materials and would not normally require removal. However, it is MDNR's opinion that demolition activities including ACM on a concrete floor slab such as breaking up the floor slab and tracking over ACM tile with heavy equipment will render them friable. Because the demolition activities will render the floor tile friable, it must be removed prior to demolition. If the concrete is not to be ground or used as fill, the ACM mastic can remain in place. In addition, concrete with attached ACM is not considered clean fill.

The CMU insulation was analyzed and detected that the insulation was comprised of less than one percent asbestos. However, NESHAP defines an asbestos-containing material as any material containing greater than one percent asbestos. Therefore, the CMU insulation is not considered an asbestos-containing material and does not have to be removed prior to demolition if mechanical demolition is planned for the structure. It should be noted that OSHA still considers this material to be an ACM. Therefore, if manual renovation is planned, this material must be treated as an ACM.

The Occupational Safety & Health Administration also has regulations (29 CFR Parts 1910 et al, Occupational Exposure to Asbestos, August 10, 1994) regarding removal of asbestos-containing materials which must be followed.

REPORTING

Attached is Demolition and Renovation form which has been filled out to the extent possible by SCI. The remaining information must be completed by you.

This report, as well as the completed EPA Notification of Demolition and Renovation form, must be submitted to the MDNR as follows:

- MDNR, Air Pollution Control, PO Box 176, Jefferson City, MO, 65102, Mr. Todd Schneiders.

It should be noted that following submittal of the notification form, there is a ten day waiting period before demolition, renovation, or abatement activities can begin.

SCI's asbestos survey entailed visually assessing accessible areas only. If any other suspect asbestos materials are discovered during demolition or renovation, please contact SCI, and we will make arrangements for assessment of these materials. Areas behind walls, under subfloors and above fixed ceilings are considered non-accessible.

If this report is to be used for bidding purposes for asbestos abatement, SCI recommends the contractor visit the site to verify all conditions and quantities.

SCI appreciates the opportunity to be of service to you on this project, and we look forward to working with you in the future. Please contact us if you have any questions or comments regarding the information provided.

Respectfully,

SCI ENGINEERING, INC.

Brian L. Lieb
Missouri State Certified Asbestos Inspector
Certificate Number 7011071013MOII16703

Jessica B. Keeven, CHMM
Project Scientist

BLL/JBK/EPG/hmm/rah

Enclosure

2015 Project Files\2015-7023 Dean Lands-North and South Parcels\ES\26\109A S. Rucker (S. Tan Bldg.) - Asbestos Survey.doc

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

ASBESTOS NESHAP NOTIFICATION OF DEMOLITION AND RENOVATION

OPERATOR PROJECT NO.	POSTMARK	DATE RECEIVED	NOTIFICATION NUMBER

I. TYPE OF NOTIFICATION

☒ O – ORIGINAL ☐ C – CANCELLED ☐ R – REVISION, WRITE REVISION NUMBER _____

II. FACILITY INFORMATION (IDENTIFY OWNER, REMOVAL CONTRACTOR, AND OTHER OPERATOR)

OWNER NAME	ADDRESS		
CITY	COUNTY	STATE	ZIP CODE
CONTACT		TELEPHONE NUMBER	

ASBESTOS REMOVAL CONTRACTOR	ADDRESS		
CITY		STATE	ZIP CODE
CONTACT	TELEPHONE NUMBER	TITLE	

DEMOLITION CONTRACTOR	ADDRESS		
CITY		STATE	ZIP CODE
CONTACT	TELEPHONE NUMBER	TITLE	

III. TYPE OF OPERATION

☐ D - DEMO ☐ O – ORDERED DEMO ☐ R – RENOVATION ☐ E – EMERGENCY RENOVATION

IV. IS ASBESTOS PRESENT	LIST TYPE OF ASBESTOS MATERIAL(S) TO BE REMOVED
☒ YES ☐ NO	Floor Tile

V. FACILITY DESCRIPTION (INCLUDE BUILDING NAME, NUMBER AND FLOOR OR ROOM NUMBER)

BUILDING NAME

ADDRESS
109 South Rucker Avenue

CITY	COUNTY	STATE	ZIP CODE
Rolla	Phelps	MO	65401

SITE LOCATION
109 South Rucker Avenue (South Tan Building)

BUILDING SIZE	NUMBER OF FLOORS	AGE IN YEARS
4,600 sf	1	48+

PRESENT USE	PRIOR USE
Vacant	Commercial/Warehouse

VI. PROCEDURE, INCLUDING ANALYTICAL METHOD, IF APPROPRIATE, USED TO DETECT THE PRESENCE OF ASBESTOS MATERIAL. INCLUDE A COPY OF THE ASBESTOS INSPECTION.

Inspection with analysis by Polarized Light Microscopy (PLM)

VII. APPROXIMATE AMOUNT OF ASBESTOS, INCLUDING: **1. REGULATED ACM (RACM)** **2. CATEGORY I ACM** **3. CATEGORY II ACM**	**RACM TO BE REMOVED**	**NONFRIABLE ASBESTOS MATERIAL TO BE REMOVED**		**NONFRIABLE ASBESTOS MATERIAL NOT TO BE REMOVED**	
		CAT I	**CAT II**	**CAT I**	**CAT II**
PIPES (LINEAR FEET)					76 lf
SURFACE AREA (SQUARE FEET)		3,150			
VOL. RACM OFF FACILITY COMPONENT (CUBIC FEET)					

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VIII. SCHEDULED DATES DEMO/RENOVATION (MM/DD/YY) START: COMPLETE:		
IX. SCHEDULED DATES ASBESTOS REMOVAL (MM/DD/YY) START: COMPLETE:	WEEKDAYS WORK HOURS	WEEKEND WORK HOURS
X. DESCRIPTION OF PLANNED DEMOLITION OR RENOVATION WORK, AND METHOD(S) TO BE USED		
XI. DESCRIPTION OF WORK PRACTICES AND ENGINEERING CONTROLS TO BE USED TO PREVENT EMISSIONS OF ASBESTOS AT THE DEMOLITION AND RENOVATION SITE.		

XII. WASTE TRANSPORTER

ADDRESS		
CITY	STATE	ZIP CODE
CONTACT PERSON	TELEPHONE NUMBER	

XIII. WASTE DISPOSAL SITE

NAME		
LOCATION		
CITY	STATE	ZIP CODE
TELEPHONE NUMBER		

XIV. IF DEMOLITION ORDERED BY A GOVERNMENT AGENCY, PLEASE IDENTIFY THE AGENCY BELOW

NAME	TITLE
AUTHORITY	
DATE OF ORDER (MM/DD/YY) INCLUDE A COPY OF THE ORDER.	DATE ORDERED TO BEGIN (MM/DD/YY)

XV. FOR EMERGENCY RENOVATIONS

A. DATE AND HOUR OF EMERGENCY (MM/DD/YY)
B. DESCRIPTION OF THE SUDDEN, UNEXPECTED EVENT
C. EXPLANATION OF HOW THE EVENT CAUSED UNSAFE CONDITIONS OR WOULD CAUSE EQUIPMENT DAMAGE OR AN UNREASONABLE FINANCIAL BURDEN
XVI. DESCRIPTION OF PROCEDURES TO BE FOLLOWED IN THE EVENT THAT UNEXPECTED ASBESTOS IS FOUND OR PREVIOUSLY NONFRIABLE ASBESTOS MATERIAL BECOMES CRUMBLED, PULVERIZED, OR REDUCED TO POWDER. Stop work and contact a licensed inspector.
XVII. I certify that an individual trained in the provisions of this regulation (40 CFR Part 61, Subpart M) will be on-site during the demolition or renovation and evidence that the required training has been accomplished by this person will be available for inspection during normal business hours (required 1 year after promulgation).

SIGNATURE OF OWNER/OPERATOR	DATE
XVIII. I Certify that the above information is correct.	
SIGNATURE OF OWNER/OPERATOR	DATE

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PRECISION ANALYSIS, INC.

BULK SAMPLE ANALYSIS

Client: SCI Engineering, Inc. - St. Charles
Project No.: 2015-7023.26
Project Name: Dean Lands - North and South Parcels

Date Received: 05-11-17
Date Reported: 05-12-17

Technique: Polarized Light Microscopy with Dispersion Staining
In accordance with EPA/600/R-93/116 Test Method

Lab No.	Sample No.	Asbestos Detected & Percentage *	Fibrous Material	Non-Fibrous Material
313777	109A-1a	None Detected		Binders, Vinyl, Aggregate
		5-10% Chrysotile in Mastic		Black Tar Binders
313778	109A-1b	None Detected		Binders, Vinyl, Aggregate
		5-10% Chrysotile in Mastic		Black Tar Binders
313779	109A-1c	None Detected		Binders, Vinyl, Aggregate
		5-10% Chrysotile in Mastic		Black Tar Binders
313780	109A-2a	5-10% Chrysotile	Antigorite	Binders, Vinyl, Aggregate
		5-10% Chrysotile in Mastic		Black Tar Binders
313781	109A-3a	10-15% Chrysotile	Antigorite	Binders, Vinyl, Aggregate
		None Detected in Mastic		Black Tar Binders
313782	109A-4a	5-10% Chrysotile	Antigorite	Binders, Vinyl, Aggregate
		None Detected in Mastic		Black Tar Binders

* The upper detection limit is 100 percent.
The lower detection limit is less than 1 percent.

22 ORVIETO COURT FLORISSANT, MISSOURI 63031 TEL./FAX (314) 838-5052

PRECISION ANALYSIS, INC.

BULK SAMPLE ANALYSIS

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Project No.: 2015-7023.26
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Date Received: 05-11-17
Date Reported: 05-12-17

Technique: Polarized Light Microscopy with Dispersion Staining
In accordance with EPA/600/R-93/116 Test Method

Lab No.	Sample No.	Asbestos Detected & Percentage *	Fibrous Material	Non-Fibrous Material
313783	109A-5a	5-10% Chrysotile	Antigorite	Binders, Vinyl, Aggregate
		5-10% Chrysotile in Mastic		Black Tar Binders
313784	109A-6a	5-10% Chrysotile		Binders, Paint
313785	109A-7a	< 1% Tremolite		Binders, Mica
313786	109A-7b	< 1% Tremolite		Binders, Mica
313787	109A-7c	< 1% Tremolite		Binders, Mica
313788	109A-8a	5-10% Chrysotile		Binders, Paint

* The upper detection limit is 100 percent.
The lower detection limit is less than 1 percent.

Paul Spell
Laboratory Director

AIHA Bulk Asbestos Proficiency Analytical Testing Program ID # 101228
In Association with RTI Center for Measurements and Quality Assurance

The USEPA (United States Environmental Protection Agency) has not determined the health effects of Actinolite or Tremolite presence in Zonolite. The EPA recommends that any presence of asbestos in Zonolite insulation should be treated as an Asbestos Containing Material. Some fibers in the Zonolite insulation material may be processed to less than one micron in length. Because these fibers are not detected by PLM, PLM analysis may yield a false negative result. We recommend qualitative analysis of Zonolite by Transmission Electron Microscopy (TEM).

PLM is not recommended for analysis of vinyl floor tile. Vinyl floor tile often contains milled asbestos with fiber lengths of 1 micrometer or less. Because these fibers are not detected by PLM, PLM analysis may yield a false negative result. We recommend qualitative analysis of vinyl floor tile by Transmission Electron Microscopy (TEM).

Precision Analysis assumes no responsibility for financial or health consequences for action or lack of action taken by our clients or their agents as a result of these analytical reports. Since Precision Analysis was not involved in the collection of these samples, we cannot attest to the proper collection of said samples and therefore are neither responsible nor liable for the accuracy, validity or completeness of the sample collection.

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BULK ASBESTOS CHAIN OF CUSTODY

130 Point West Boulevard
St. Charles, Missouri 63301
636-949-8200 Fax 636-949-8269
www.sciengineering.com

Company :	SCI Engineering, Inc.	Please Provide Results Via:	☐ Fax ■ Email ☐ Mail
Street:	130 Point West Boulevard	To: Brian Lieb	
City/State/Zip:	St. Charles, Missouri 63301	Telephone #: 314-956-8240	Fax #: 636-949-8269
Project Name:	Dean Lands - North and South Parcels	Email: blieb@sciengineering.com	
Project Number:	2015-7023.26		

Turnaround Time (TAT) Options - Please Check One

☐ 3 Hour	☐ 6 Hour	☐ 24 Hour	☐ 48 Hour	☐ 72 Hour	☐ 96 Hour	■ Other 5-day

PLM Bulk Analysis	*TEM Bulk Analysis*
■ PLM-EPA 600	☐ TEM EPA NOB - EPA 600/R-93/116 Section 2.5.5.1
☐ PLM-EPA 600 NOB	☐ Chatfield Protocol (semi-quantitative)
☐ PLM-Point Count	

■ Check Box for Stop Positive

Comments: 109A South Rucker Ave., south tan building, lab-on-grade

Samplers Name: Brian Lieb | Samplers Signature: [signature] | Date Sampled: 5/9/17

Building Use/Description/Features: commercial/warehouse | Age: early 60's | Size: 4,600 sf

Windows: metal | Siding: brick/CMU | Roof: metal | Attic: N/A | HVAC: N/A

Sample #	Material Location	Material Description	Approx. Quantity	Condition	Comments
109A - 1ABC	Throughout	grey w/ white streaks 12x12 f.t.	1,150 sf	good	on conc, mixed with other f.t.
109A - 2ABC	Throughout	grey w/ grey streaks 12x12 f.t.	875 sf	good	on conc, mixed with other f.t.
109A - 3ABC	Throughout	tan 9x9 f.t.	875 sf	good	on conc, mixed with other f.t.
109A - 4ABC	Throughout	brown 9x9 f.t.	100 sf	good	on conc, mixed with other f.t.
109A - 5ABC	Throughout	black w/ white specks 9x9 f.t.	150 sf	good	on conc, mixed with other f.t.
109A - 6ABC	EXT	window caulk	4 windows	good	--
109A - 7ABC	EXT - CMU Walls	Vermiculite Ins.	2,400 sf	good	in CMU
109A - 8ABC	EXT	Door Caulk	3 doors	good	--

Relinquished: [signature]	Date: 5/11/17	Time: 9:49 am
Received: [signature]	Date: MAY 11 2017	Time: 4:45 pm

RECEIVED

BY:

1 of 1