

December 3, 2024

Mr. Donald Beebe Project Manager, PDC Facilities Management Montana State University P.O. Box 170510 Bozeman, Montana 59717-0515

Delivered via email: <a href="mailto:donald.beebe@montana.edu">donald.beebe@montana.edu</a>

**SUBJECT:** Pre-Renovation Asbestos Inspection Report

Window and Attic Project

**Paisley Court** 

Buildings 101A, 101B, 102A, 102B, 103A, 103B, 104A, 104B, 105A, 105B, 106A, 106B, 107A, 107B, 108A, 108B, 109A, and 109B

Montana State University

Bozeman, Montana

Tetra Tech Project No. 117-001068-25005

Dear Mr. Beebe:

On November 7 and 8, 2024, Tetra Tech, Inc. (Tetra Tech) conducted a pre-renovation asbestos inspection at the above-referenced site. Based on correspondence with you before the commencement of the project, Tetra Tech was instructed to inspect for suspect asbestos-containing materials (ACM) associated with the windows and attic of the above referenced buildings for future renovation purposes. Details of our inspection are provided below.

### PRE-RENOVATION ASBESTOS INSPECTION

The pre-renovation asbestos inspection was conducted in accordance with the Administrative Rules of Montana (ARM) 17.74.354, using the currently recognized standard protocol developed under the National Emission Standards for Hazardous Air Pollutants (NESHAP) and the Asbestos Hazard Emergency Response Act (AHERA), as administered by the State of Montana Department of Environmental Quality (MDEQ).

Mr. Rylee Prinz of Tetra Tech, MDEQ Accredited Asbestos Inspectors, collected samples of suspect ACM. His MDEQ Inspector Accreditation is presented in **Attachment A**.

The bulk samples were shipped, along with the completed chain of custody (COC) documentation to Crisp Analytical of Carrollton, Texas for the analysis of asbestos fibers by polarized light microscopy (PLM) using U.S. Environmental Protection Agency (EPA) Methods described in 40 CFR Part 763 Appendix E Subpart E (Interim and EPA 600/R-93 / 116 (Improved). A copy of the laboratory analysis reports and COCs is contained in **Attachment B**.

A summary of the ACMs identified to contain 1% or less asbestos is provided in **Table 1**. Approximate sample collection locations are presented in **Figures 1 through 18**. Approximate ACM locations are presented in **Figures 19 through 28**.

Window and Attic Project Paisley Court Buildings 101A, 101B, 102A, 102B, 103A, 103B, 104A, 104B, 105A, 105B, 106A, 106B, 107A, 107B, 108A, 108B, 109A, and 109B Montana State University Bozeman, Montana

Table 1. Summary of Materials Containing 1% or Less Asbestos

HA Number	Material Description and Location	Percent Asbestos
Building 101A		
101A-M8.1A, B, C	White window caulking located on exterior windows with brick siding	Trace Chrysotile
Building 102A		
102A-M8.1A, B, C	White window caulking located on exterior windows with brick siding	0.25% Chrysotile
Building 102B		
102B-M8.1A, B, C	White window caulking located on exterior windows with brick siding	0.25% Chrysotile
Building 104B		
104B-M8.1A, B, C	White window caulking located on exterior windows with brick siding	0.5% Chrysotile
Building 105B		
105B-M8.1A, B, C	White window caulking located on exterior windows with brick siding	0.5% Chrysotile
Building 106A		
106A-M8.1A, B, C	White window caulking located on exterior windows with brick siding	0.25% Chrysotile
Building 106B		
106B-M8.1A, B, C	White window caulking located on exterior windows with brick siding	0.5% Chrysotile
Building 107A		
107A-M8.1A, B, C	White window caulking located on exterior windows with brick siding	0.5% Chrysotile
Building 108B		
108B-M8.1A, B, C	White window caulking located on exterior windows with brick siding	0.25% Chrysotile
Building 109B		
109B-M8.1A, B, C	White window caulking located on exterior windows with brick siding	0.25% Chrysotile

HA: Homogeneous Area Number

Based on the asbestos concentration associated with the analysis of the materials identified in Table 2, they are not regulated by the EPA or MDEQ. However, Occupational Safety and Health Administration (OSHA) regulations (29 CFR 1926.1001) state that if asbestos-containing material containing 1% or less asbestos is to be removed by construction personnel, the employer shall provide awareness training, written respirator protection program, respirators, and negative exposure assessment would apply for any disturbance activities associated with these materials. Accordingly, Tetra Tech recommends that individuals engaging in the disturbance or removal of these materials utilize "asbestos safe" work practices as specified within 29 CFR 1926.1101. As stipulated under 29 CFR 1926.1101, work practice requirements and prohibitions that must be observed regardless of the exposure levels and the percentage of asbestos in the installed construction materials include, but are not necessarily limited to:



Window and Attic Project Paisley Court Buildings 101A, 101B, 102A, 102B, 103A, 103B, 104A, 104B, 105A, 105B, 106A, 106B, 107A, 107B, 108A, 108B, 109A, and 109B Montana State University Bozeman, Montana

- 29 CFR 1926.1101(g)(1)(ii), which requires: wet methods, or wetting agents, to control employee
  exposures during asbestos handling, mixing, removal, cutting, application, and cleanup, except where
  employers demonstrate that the use of wet methods is infeasible due to, for example, the creation of
  electrical hazards, equipment malfunction, and, in roofing, except as provided in paragraph (g)(8)(ii)
  of this section;
- 29 CFR 1926.1101(g)(1)(iii), which requires: prompt clean-up and disposal of wastes and debris contaminated with asbestos in leak-tight containers except in roofing operations, where the procedures specified in paragraph (g)(8)(ii)3 of this section apply;
- 29 CFR 1926.1101(g)(3)(i), which prohibits: high-speed abrasive disc saws that are not equipped with point-of-cut ventilator or enclosures with HEPA-filtered exhaust air;
- 29 CFR 1926.1101(g)(3)(ii), which prohibits: compressed air used to remove asbestos, or materials
  containing asbestos, unless the compressed air is used in conjunction with an enclosed ventilation
  system designed to capture the dust cloud created by the compressed air; and
- 29 CFR 1926.1101(g)(3)(iv), which prohibits: employee rotation as a means of reducing employee exposure to asbestos.

A visual inspection should be conducted following the completion of asbestos removal.

The following suspect ACMs sampled from the site were found not to contain asbestos by laboratory analysis:

### **Building 101A**

- White wallboard system located throughout interior walls and ceilings (101A-M3.1A, B, C)
- 3-inch by 6-inch red brick and associated gray mortar located on exterior walls (101A-M13.1A, B, C)
- Gray blown-in insulation located throughout the attic (101A-M34.1A, B, C)

### **Building 101B**

- White wallboard system located throughout interior walls and ceilings (101B-M3.1A, B, C)
- White window caulking located on exterior windows (101B-M8.1A, B, C)
- 3-inch by 6-inch red brick and associated gray mortar located on exterior walls (101B-M13.1A, B, C)
- Black felt paper moisture barrier located on exterior walls (101B-M20.1A, B, C)
- Gray blown-in insulation located throughout the attic (101B-M34.1A, B, C)

### **Building 102A**

- White wallboard system located throughout interior wall and ceilings (102A-M3.1A, B, C)
- 3-inch by 6-inch red brick and associated gray mortar located on exterior walls (102A-M13.1A, B, C)
- Black felt paper moisture barrier located on exterior walls (102A-M20.1A, B, C)
- Gray blown-in insulation located throughout the attic (102A-M34.1A, B, C)

### **Building 102B**

- White wallboard system located throughout interior walls and ceilings (102B-M3.1A, B, C)
- 3-inch by 6-inch red brick and associated gray mortar located on exterior walls (102B-M13.1A, B, C)
- Black plastic moisture barrier located on exterior walls (102B-M20.1A, B, C)
- Gray blown-in insulation located throughout the attic (102B-M34.1A, B, C)



#### **Pre-Renovation Asbestos Inspection Report**

Window and Attic Project
Paisley Court
Buildings 101A, 101B, 102A, 102B, 103A,
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107A, 107B, 108A, 108B, 109A, and 109B
Montana State University
Bozeman, Montana

# **Building 103A**

- White wallboard system located throughout interior walls and ceilings (103A-M3.1A, B, C)
- White caulking located on exterior windows (103A-M8.1A, B, C)
- 3-inch by 6-inch red brick and associated gray mortar located on exterior walls (103A-M13.1A, B, C)
- Gray blown-in insulation located throughout the attic (103A-M34.1A, B, C)

## **Building 103B**

- White wallboard system located throughout interior walls and ceilings (103B-M3.1A, B, C)
- White caulking located on exterior windows (103B-M8.1A, B, C)
- 3-inch by 6-inch red brick and associated gray mortar located on exterior walls (103B-M13.1A, B, C)
- Green moisture barrier located on exterior walls (103B-M20.1A, B, C)
- Gray blown-in insulation located throughout the attic (103B-M34.1A, B, C)

### **Building 104A**

- White wallboard system located throughout interior walls and ceilings (104A-M3.1A, B, C)
- White caulking located on exterior windows (104A-M8.1A, B, C)
- 3-inch by 6-inch red brick and associated gray mortar located on exterior walls (104A-M13.1A, B, C)
- Green foam moisture barrier located on exterior walls (104A-M20.1A, B, C)
- Gray blown-in insulation located throughout the attic (104A-M34.1A, B, C)

### **Building 104B**

- White wallboard system located throughout interior walls and ceilings (104B-M3.1A, B, C)
- 3-inch by 6-inch red brick and associated gray mortar located on exterior walls (104B-M13.1A, B, C)
- Green foam moisture barrier and associated silver backing located on exterior walls (104B-M20.1A, B,
   C)
- Gray blown-in insulation located throughout the attic (104B-M34.1A, B, C)

### **Building 105A**

- White wallboard system located throughout interior walls and ceilings (105A-M3.1A, B, C)
- White caulking located on exterior windows (105A-M8.1A, B, C)
- 3-inch by 6-inch red brick and associated gray mortar located on exterior walls (105A-M13.1A, B, C)
- Gray blow-in insulation located throughout the attic (105A-M34.1A, B, C)

### **Building 105B**

- White wallboard system located throughout interior walls and ceilings (105B-M3.1A, B, C)
- 3-inch by 6-inch red brick and associated gray mortar located on exterior walls (105B-M13.1A, B, C)
- Gray blown-in insulation located throughout the attic (105B-M34.1A, B, C)

### **Building 106A**

- White wallboard system located throughout interior walls and ceilings (106A-M3.1A, B, C)
- 3-inch by 6-inch red brick and associated gray mortar located on exterior walls (106A-M13.1A, B, C)
- Gray blown-in insulation located throughout the attic (106A-M34.1A, B, C)



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107A, 107B, 108A, 108B, 109A, and 109B
Montana State University
Bozeman, Montana

# **Building 106B**

- White wallboard system located throughout interior walls and ceilings (106B-M3.1A, B, C)
- 3-inch by 6-inch red brick and associated gray mortar located on exterior walls (106B-M13.1A, B, C)
- Gray blown-in insulation located throughout the attic (106B-M34.1A, B, C)

### **Building 107A**

- White wallboard system located throughout interior walls and ceilings (107A-M3.1A, B, C)
- 3-inch by 6-inch red brick and associated gray mortar located on exterior walls (107A-M13.1A, B, C)
- Gray blown-in insulation located throughout the attic (107A-M34.1A, B, C)

### **Building 107B**

- White wallboard system located throughout interior walls and ceilings (107B-M3.1A, B, C)
- White caulking located on exterior windows (107B-M8.1A, B, C)
- 3-inch by 6-inch red brick and associated gray mortar located on exterior walls (107B-M13.1A, B, C)
- Gray blown-in insulation located throughout the attic (107B-M34.1A, B, C)

### **Building 108A**

- White wallboard system located throughout interior walls and ceilings (108A-M3.1A, B, C)
- White caulking located on exterior windows (108A-M8.1A, B, C)
- 3-inch by 6-inch red brick and associated gray mortar located on exterior walls (108A-M13.1A, B, C)
- Gray blown-in insulation located throughout the attic (108A-M34.1A, B, C)

#### **Building 108B**

- White wallboard system located throughout interior walls and ceilings (108B-M3.1A, B, C)
- 3-inch by 6-inch red brick and associated gray mortar located on exterior walls (108B-M13.1A, B, C)
- Gray blown-in insulation located throughout the attic (108B-M34.1A, B, C)

### **Building 109A**

- White wallboard system located throughout interior walls and ceilings (109A-M3.1A, B, C)
- White caulking located on exterior windows (109A-M8.1A, B, C)
- 3-inch by 6-inch red brick and associated gray mortar located on exterior walls (109A-M13.1A, B, C)
- Black felt paper moisture barrier located on exterior walls (109A-M20.1A, B, C)
- Gray blown-in insulation located throughout the attic (109A-M34.1A, B, C)

### **Building 109B**

- White wallboard system located throughout interior walls and ceilings (109B-M3.1A, B, C)
- 3-inch by 6-inch red brick and associated gray mortar located on exterior walls (109B-M13.1A, B, C)

5

- Black felt paper moisture barrier located on exterior walls (109B-M20.1A, B, C)
- Gray blown-in insulation located throughout the attic (109B-M34.1A, B, C)



#### **Pre-Renovation Asbestos Inspection Report**

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#### **LIMITATIONS**

Our opinions are intended exclusively for use by Montana State University. The scope of services performed by Tetra Tech may not be appropriate to satisfy the needs of other users, and any use or re-use of this document, or the findings presented herein is prohibited and at the sole risk of the user. No additions or deletions are permitted without the express written consent of Tetra Tech. Furthermore, the opinions presented herein are limited by the requested scope of services and the site conditions existing at the time of our investigation. Therefore, our opinions and recommendations may not apply to future site conditions which we have not had the opportunity to evaluate.

It has been a pleasure assisting you with this project. If you have any questions or need additional information, please contact me in our Tetra Tech Billings, Montana office at (406) 248-9161.

Respectfully submitted,

#### **TETRA TECH**

# Roger W. Herman, Jr.

Roger W. Herman, Jr. Asbestos, Lead & IH Services Manager

**Figures** 

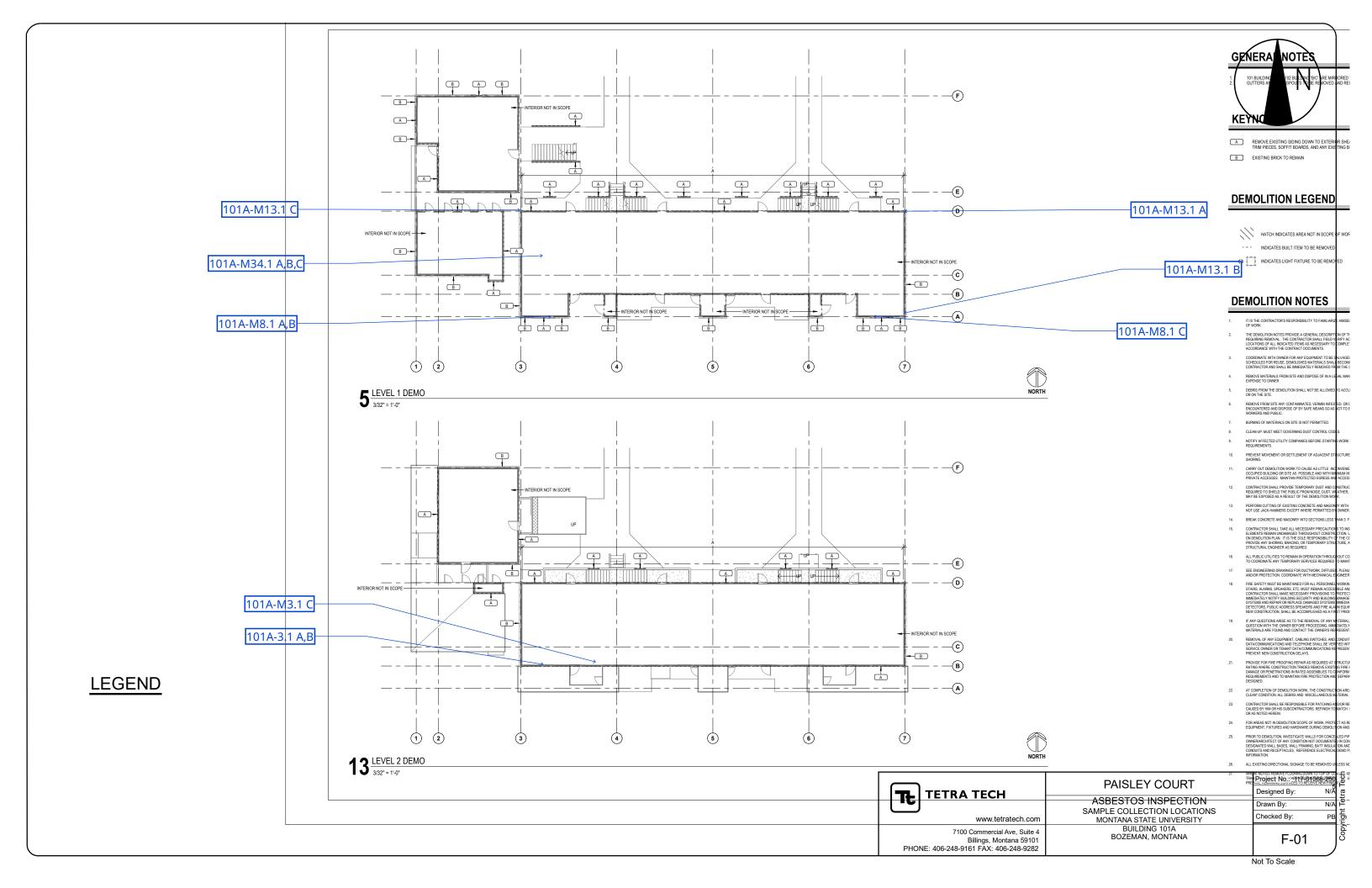
Attachment A – MDEQ Inspector Accreditation
Attachment B – Laboratory Analytical Reports and COCs

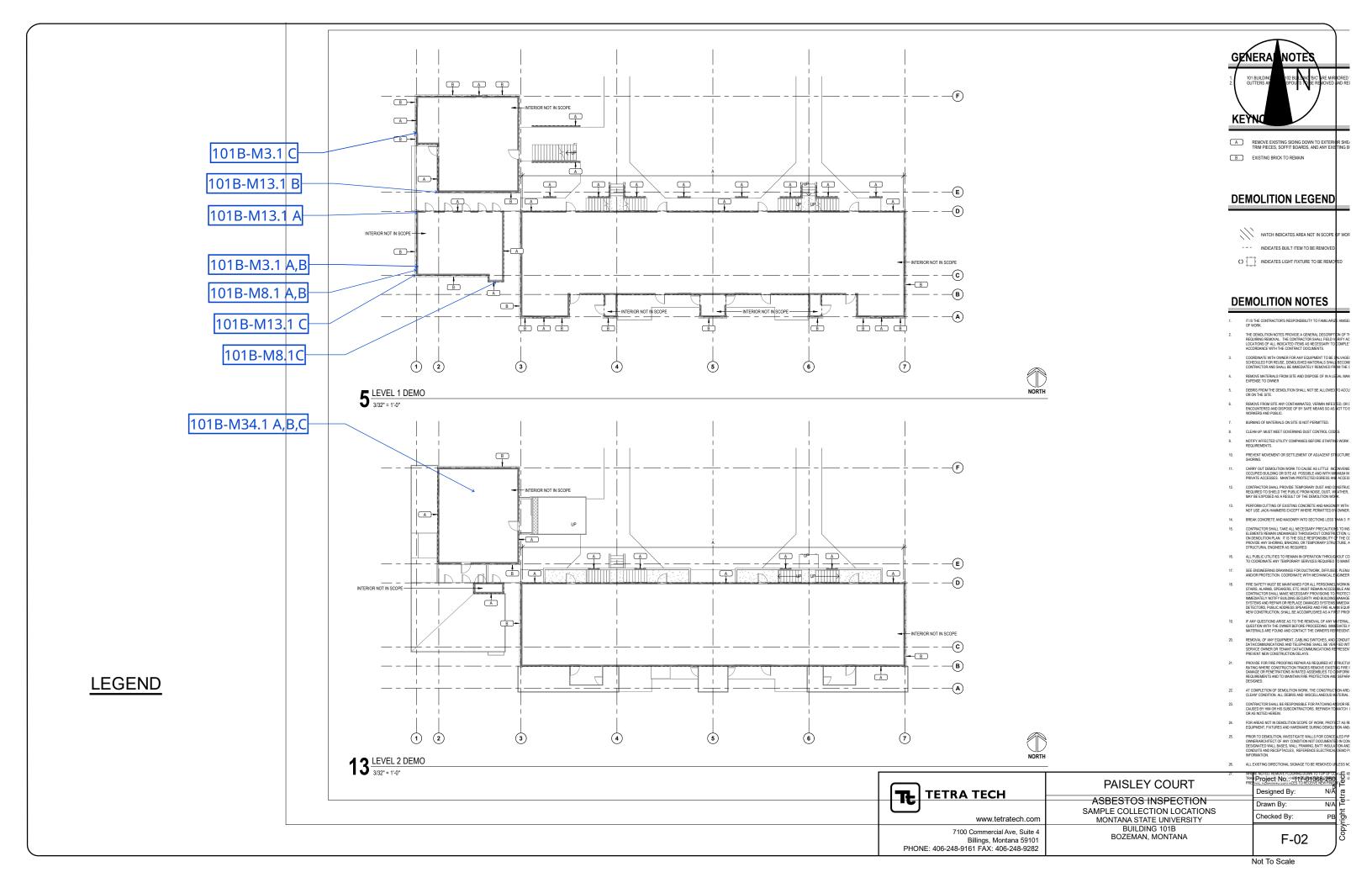
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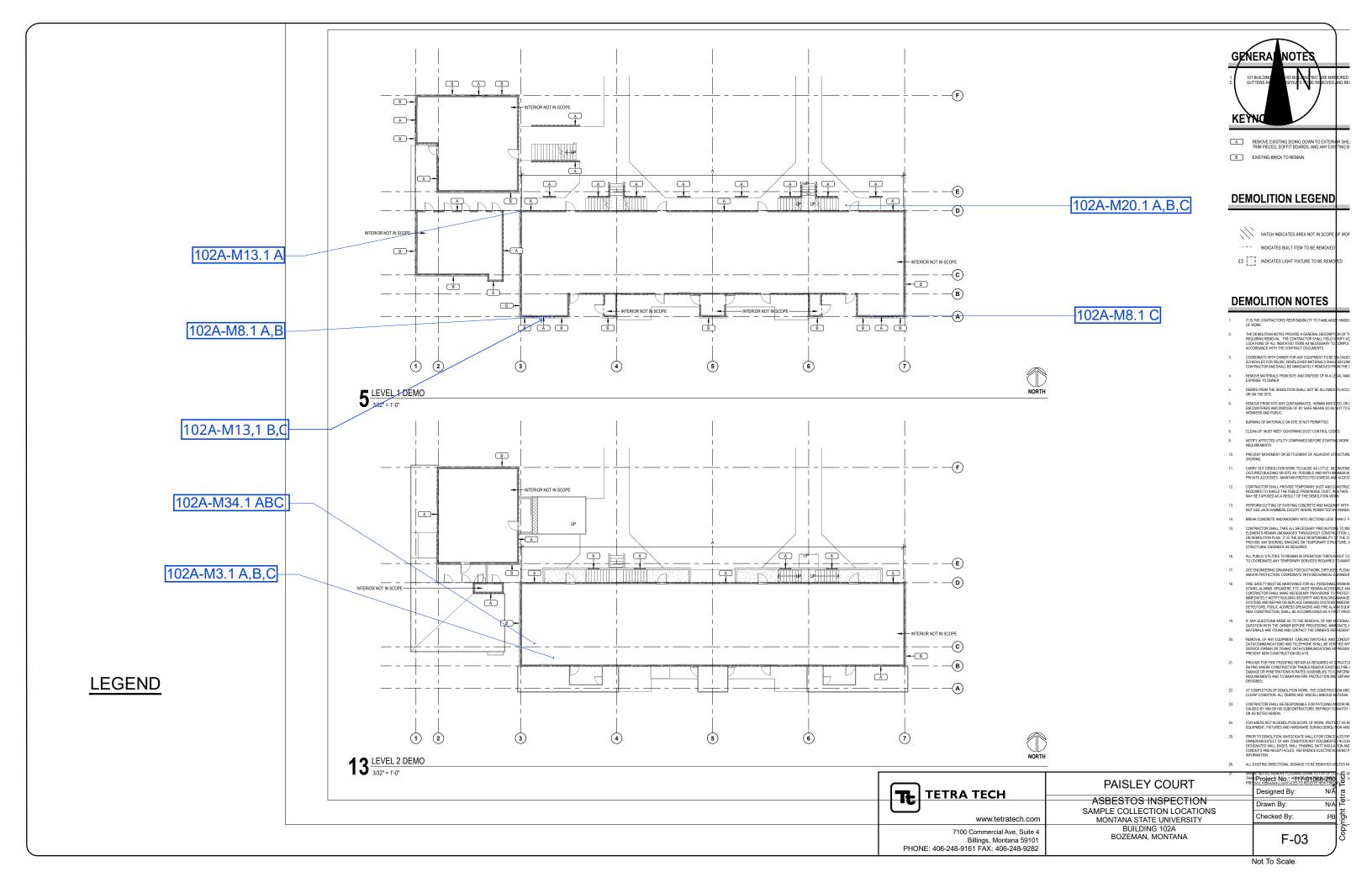
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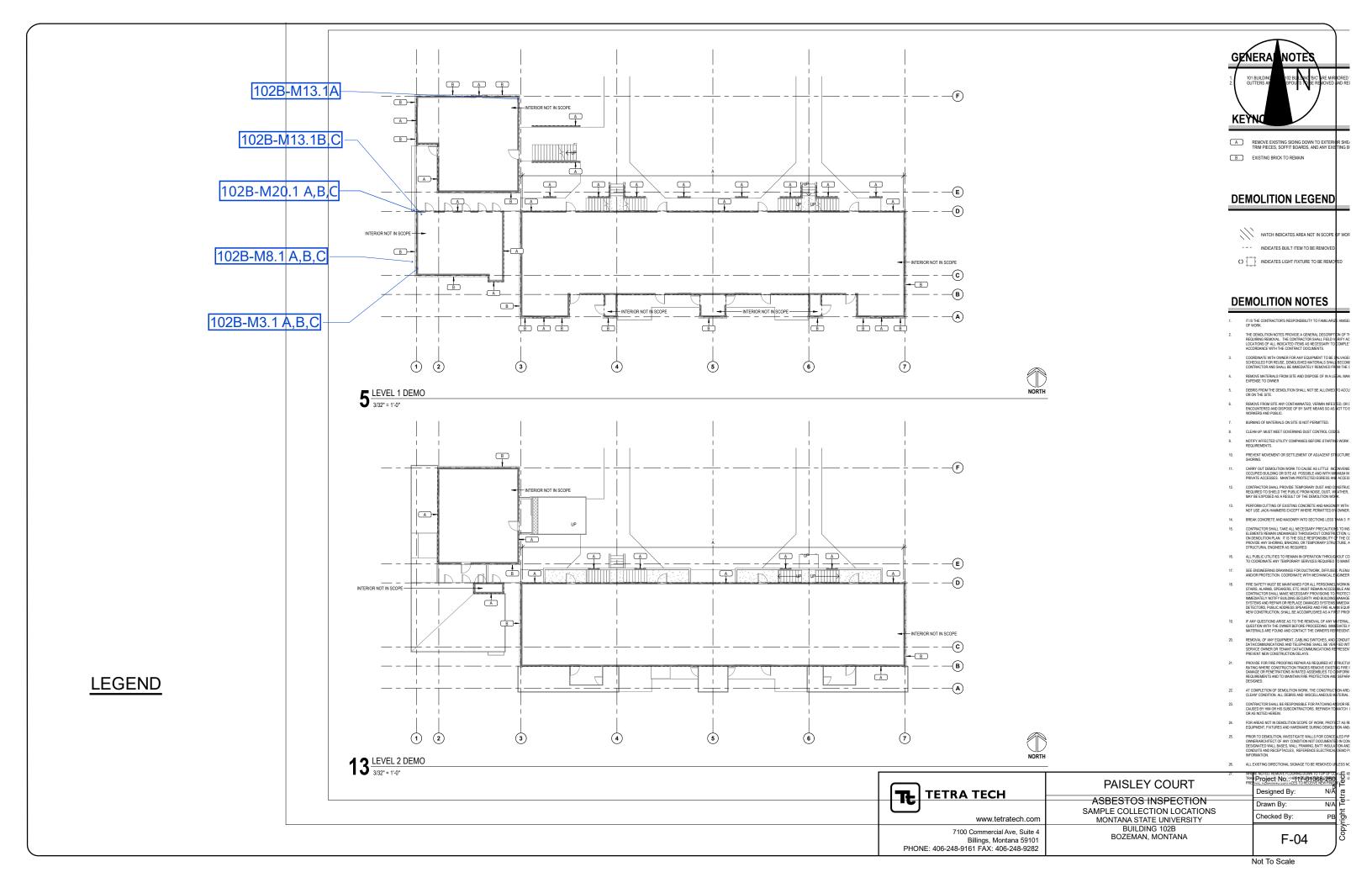


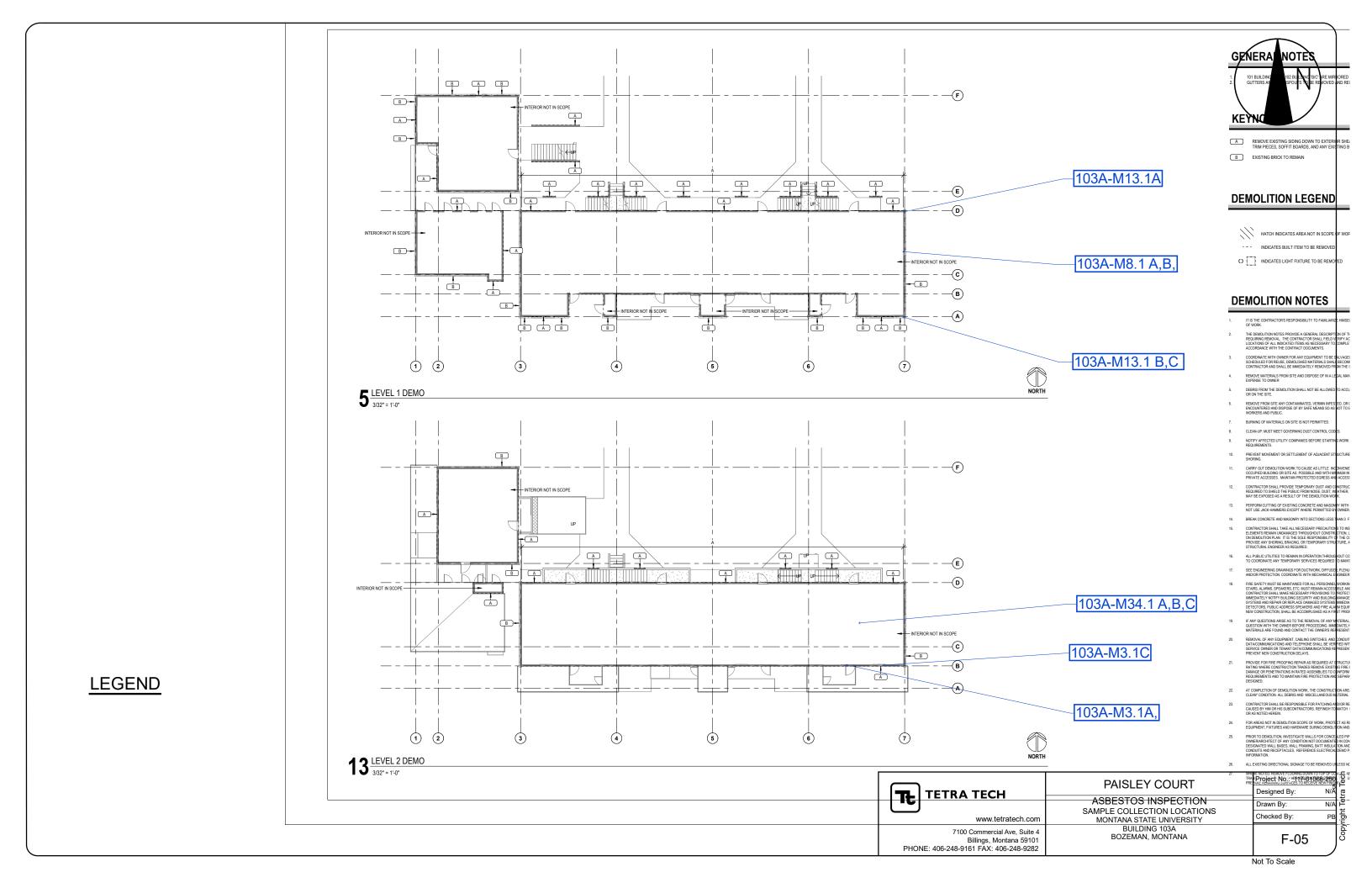
**FIGURES** 

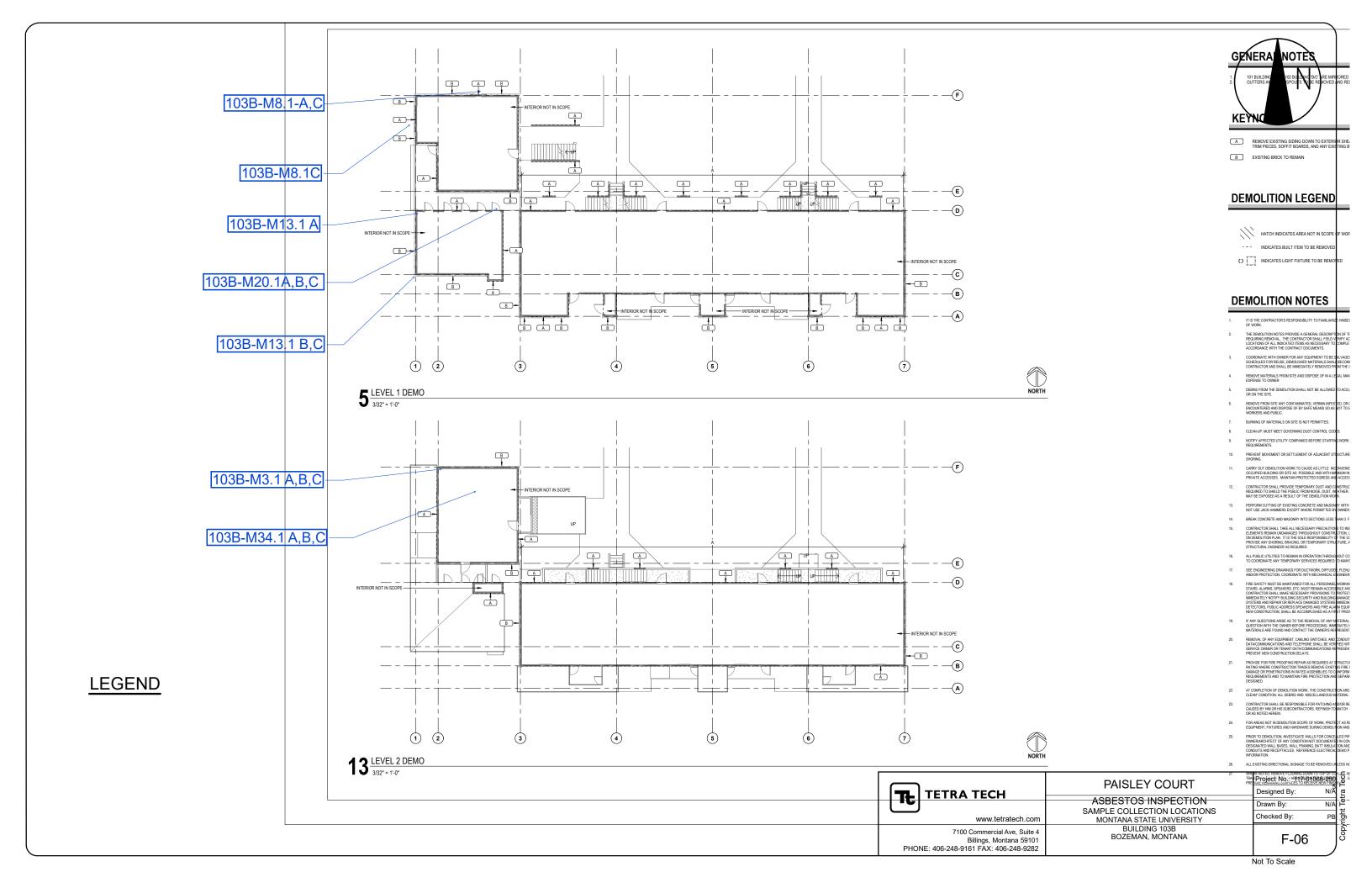


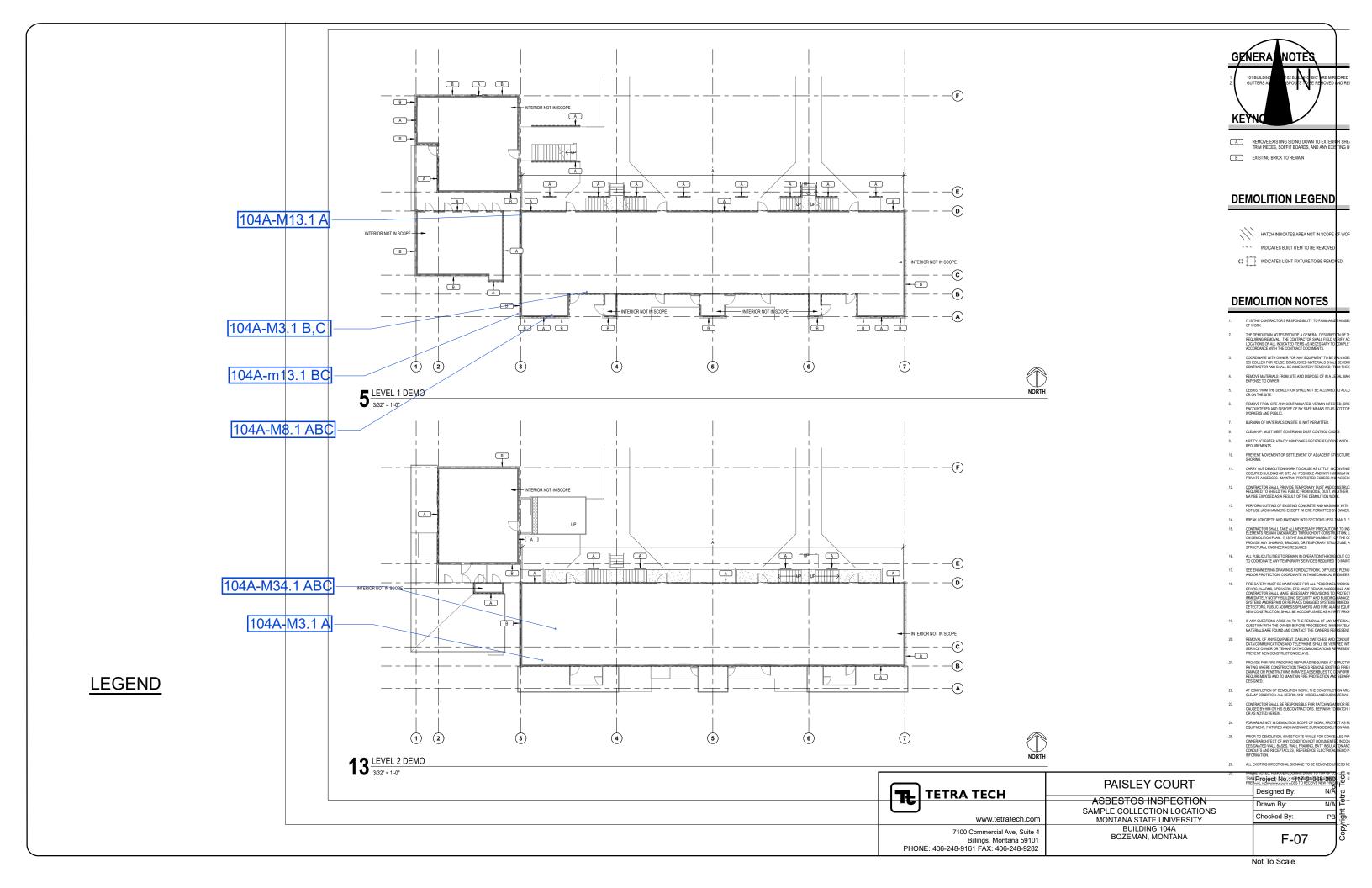


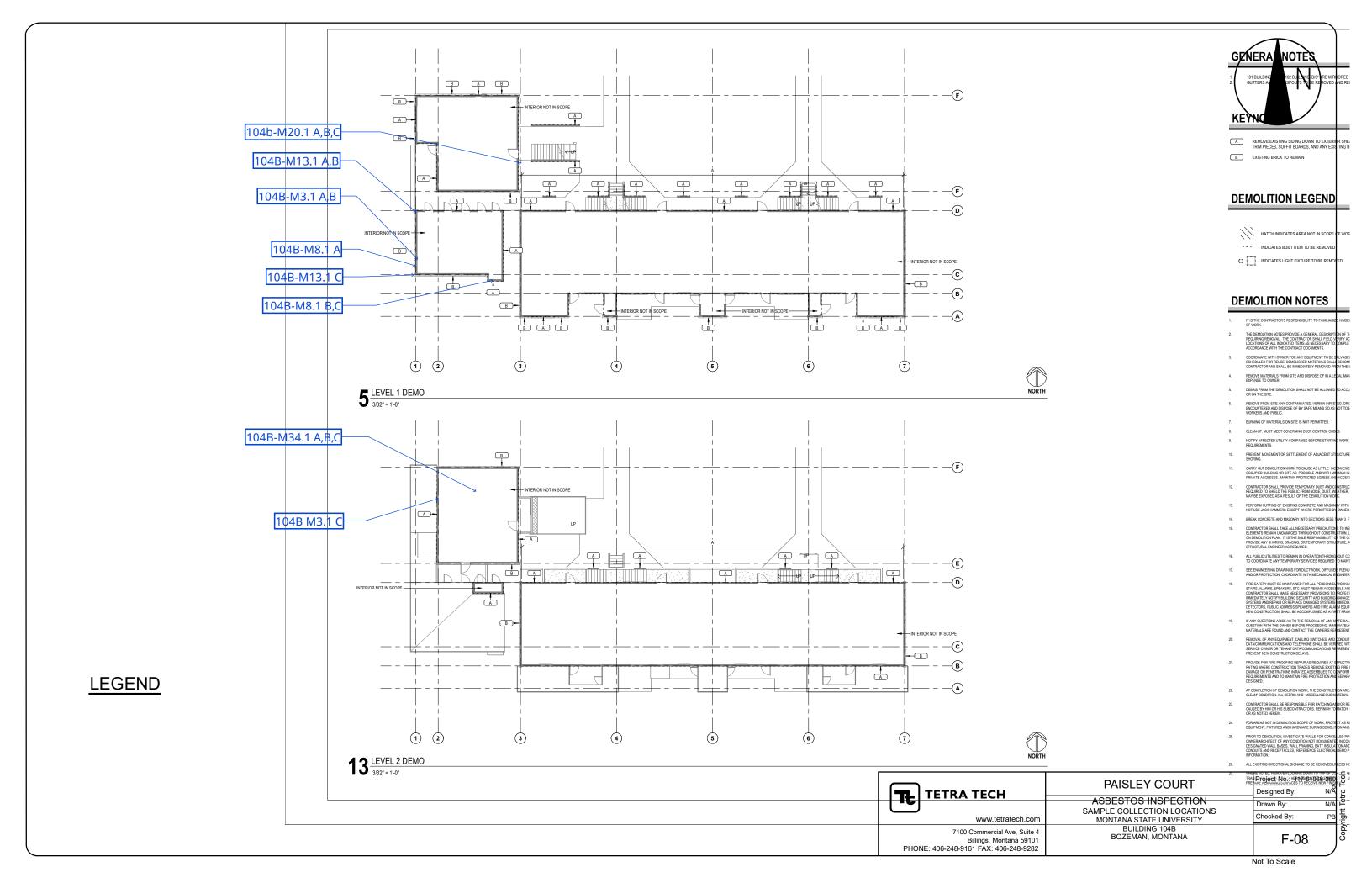


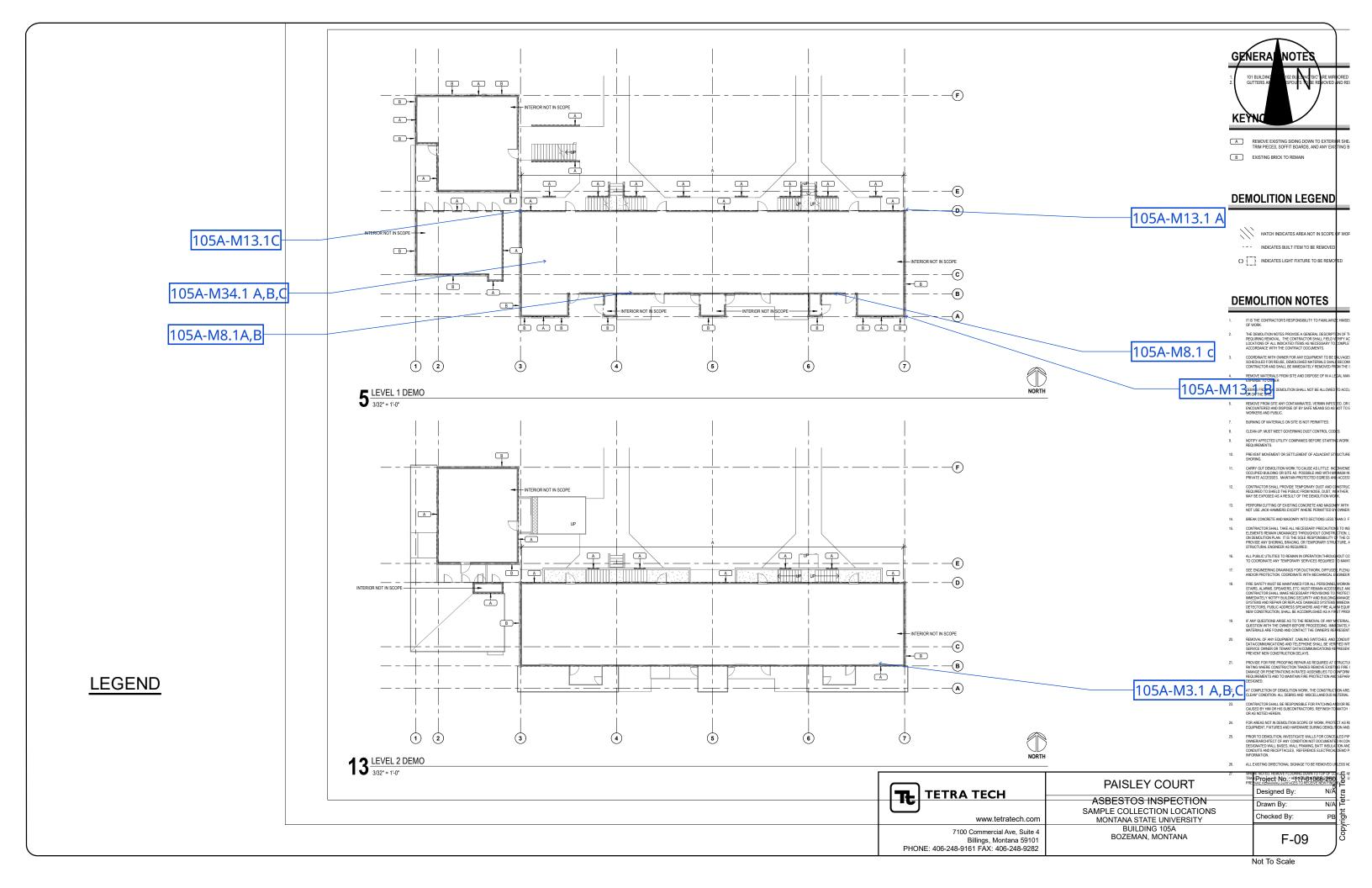


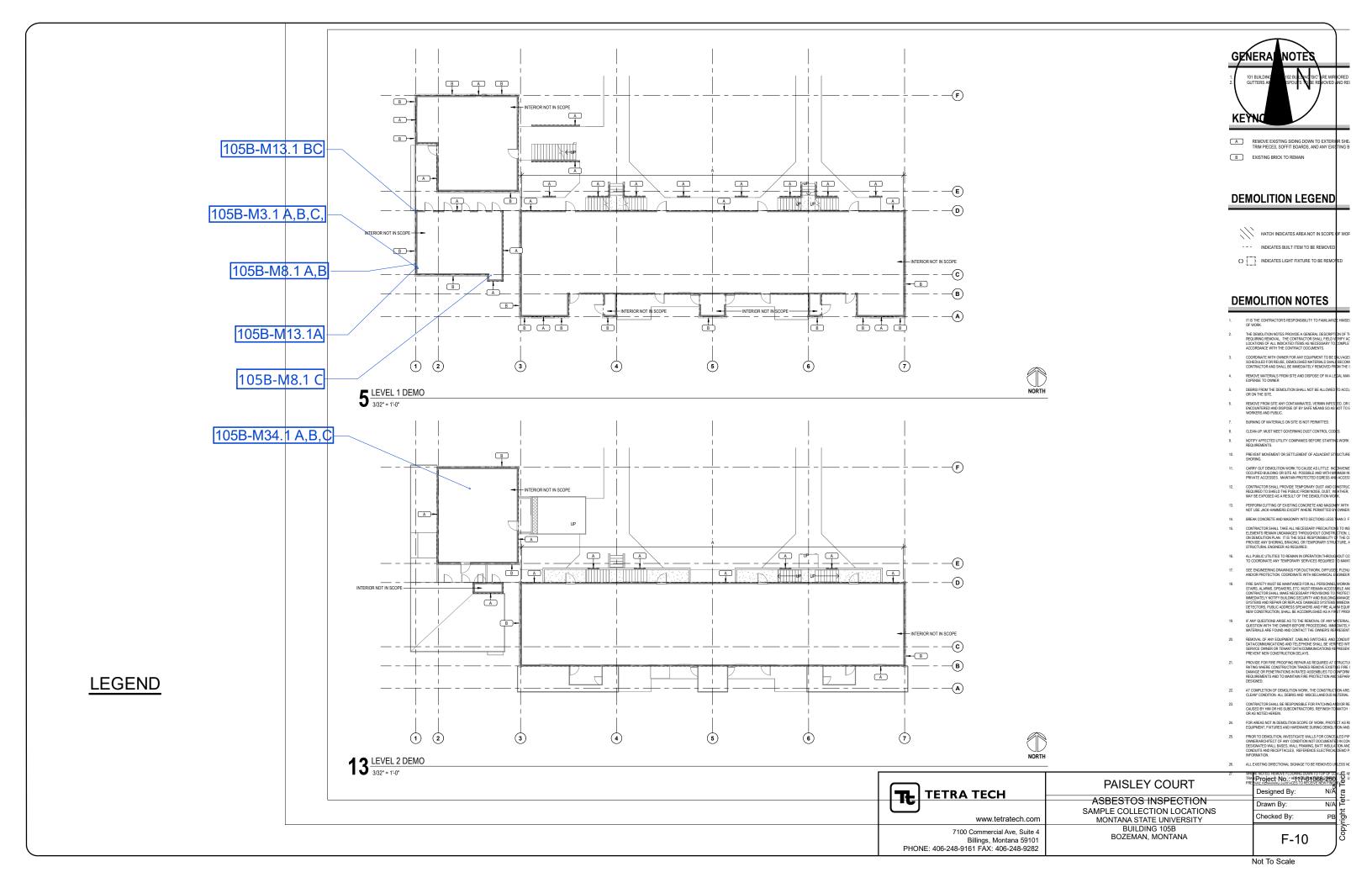


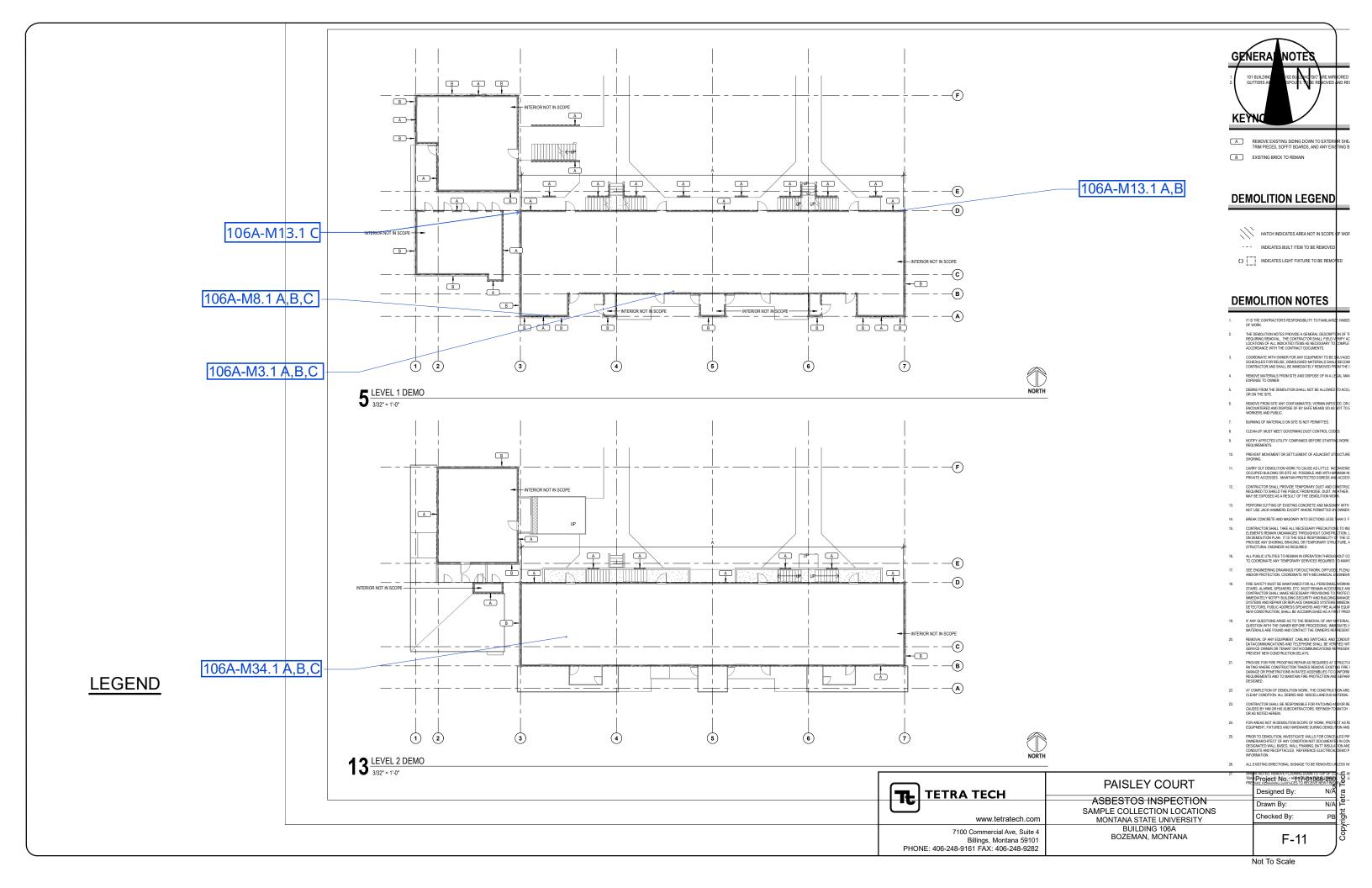


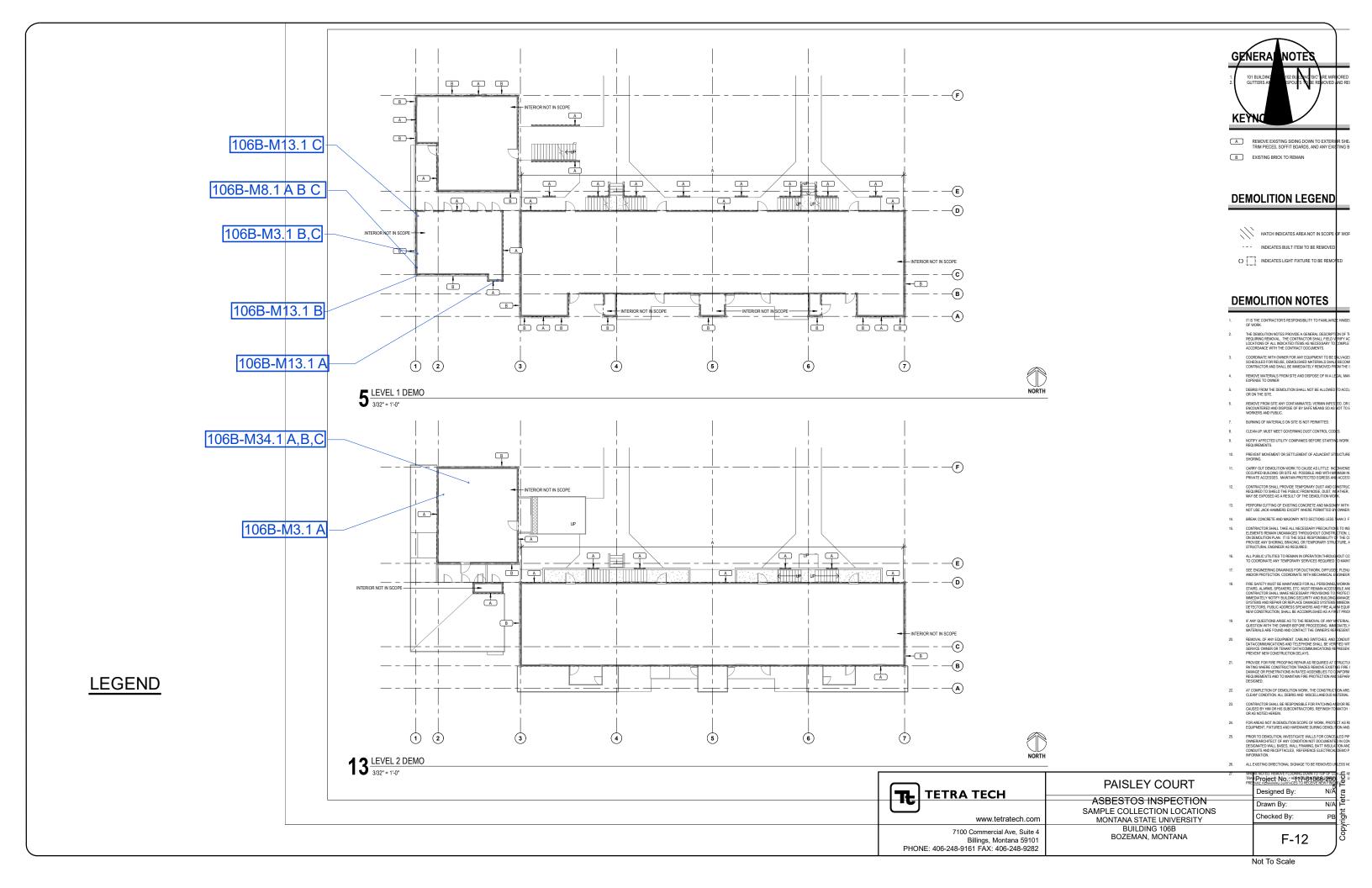


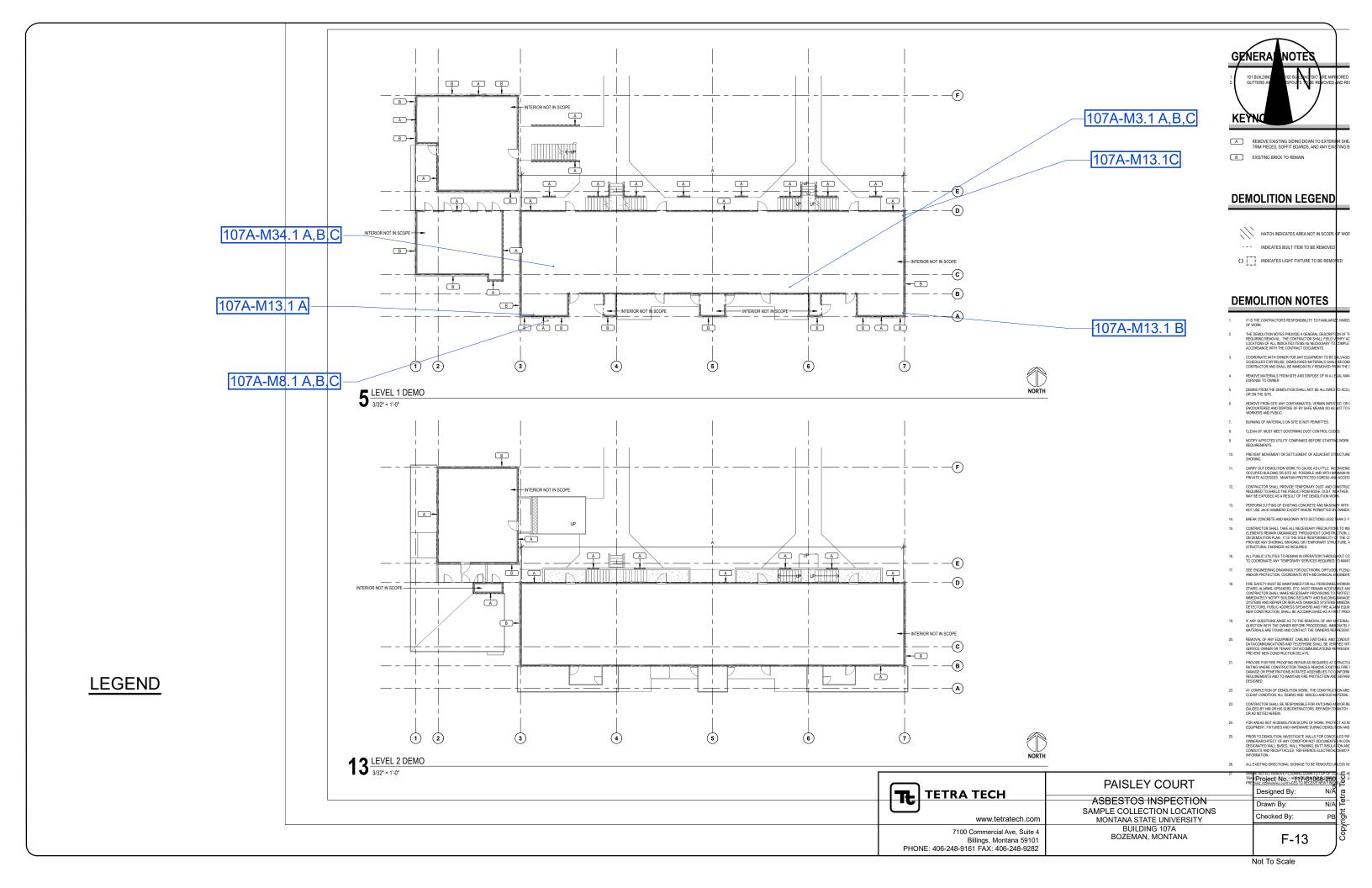


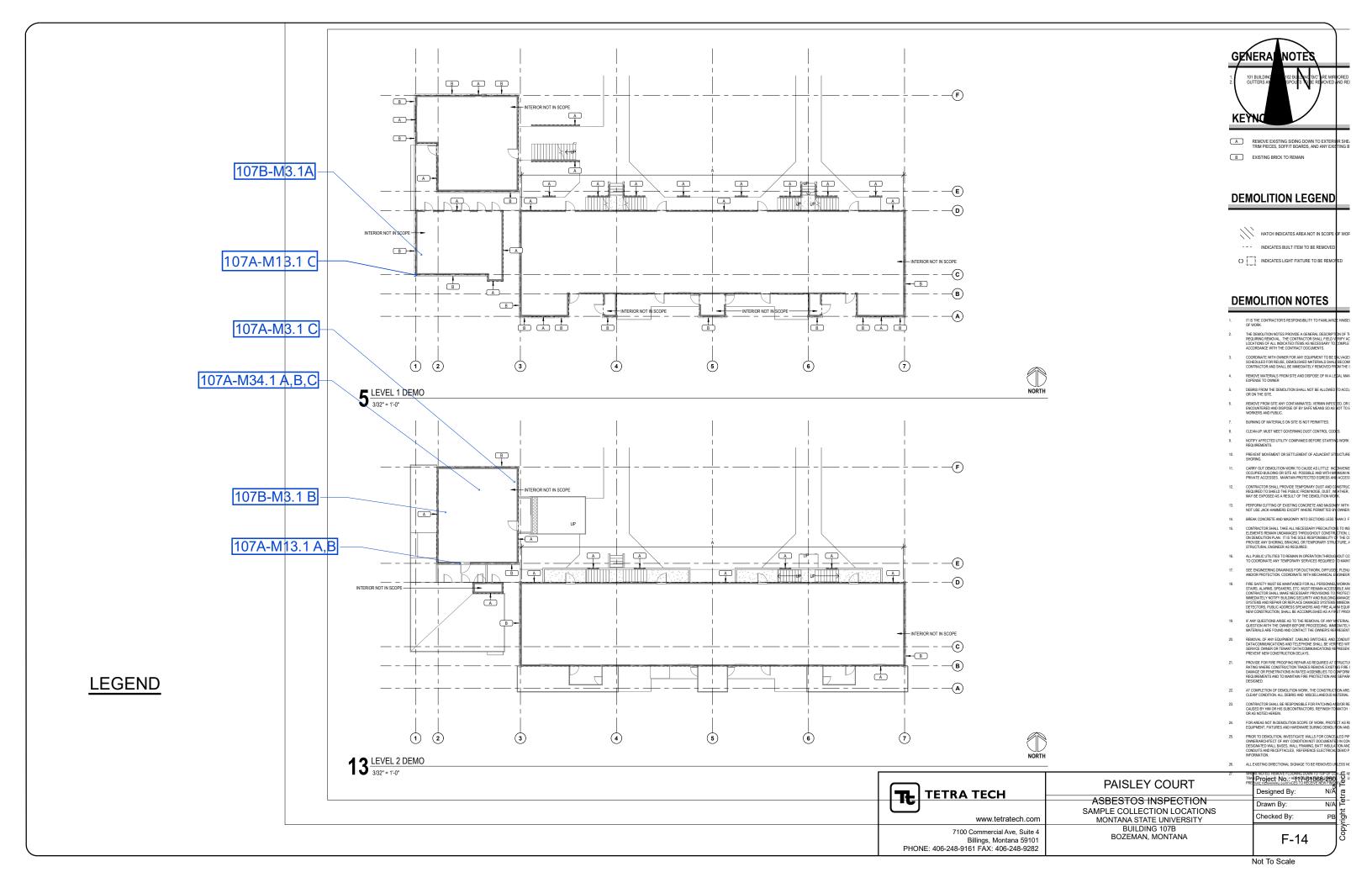


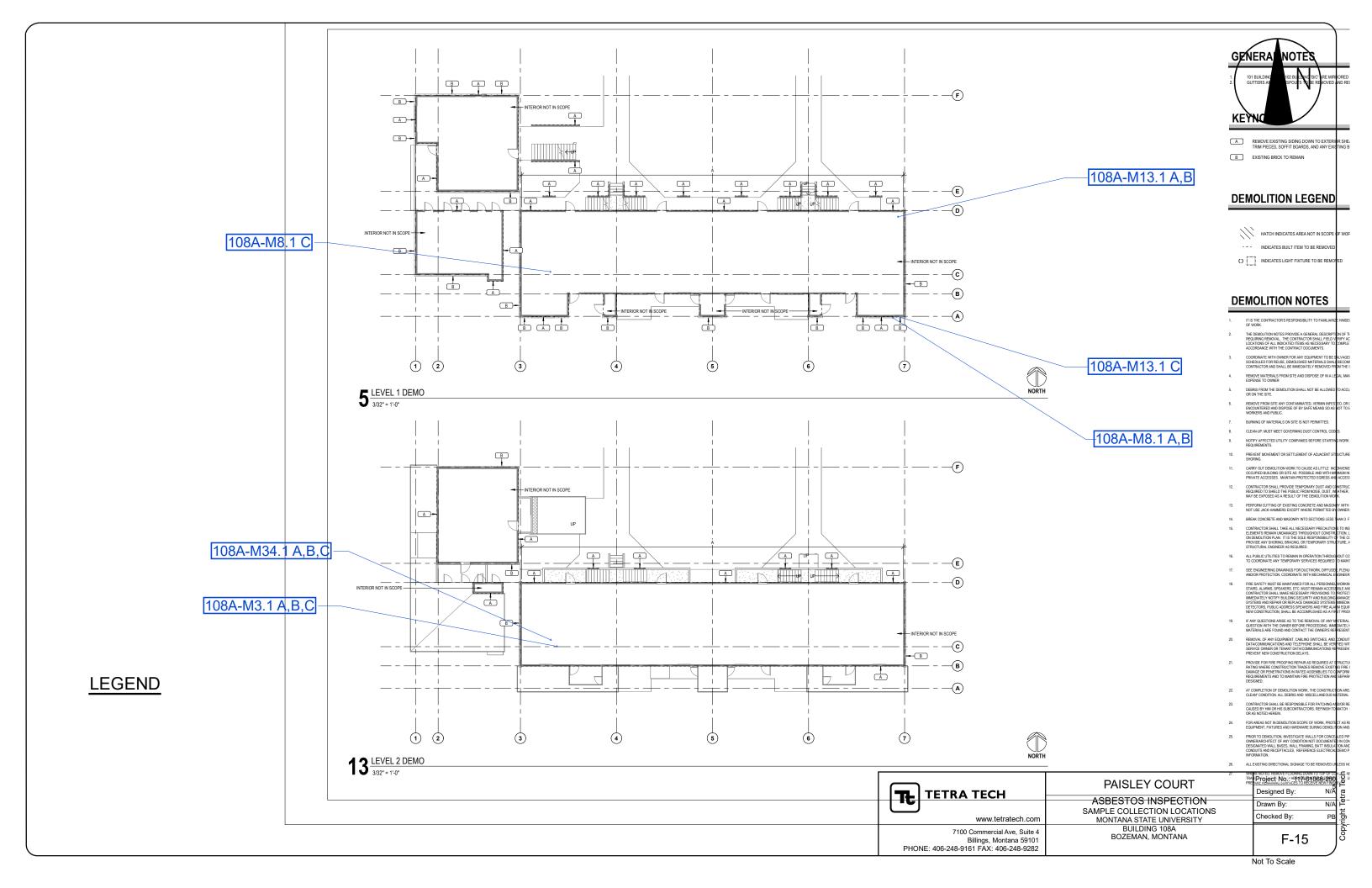


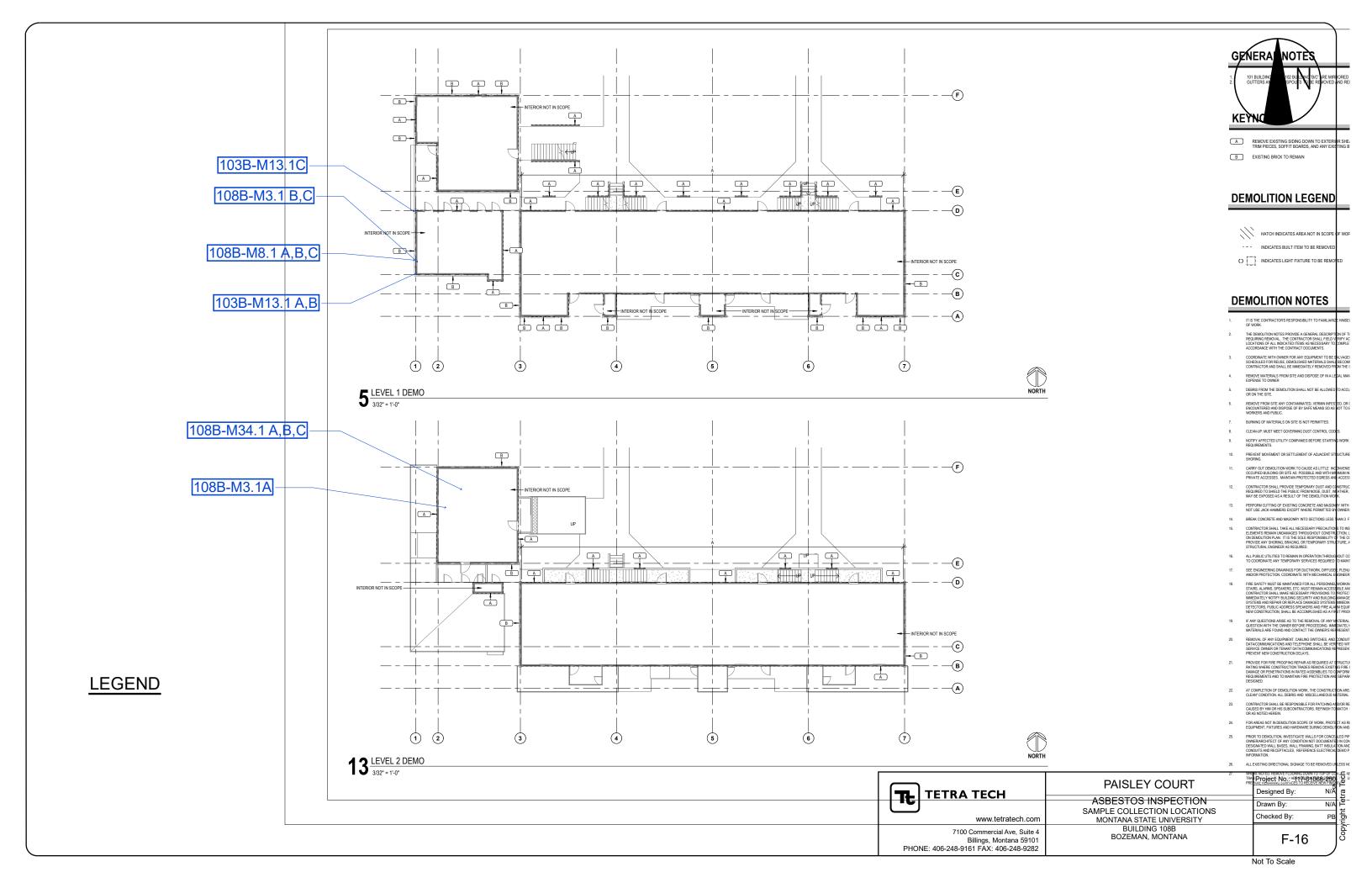


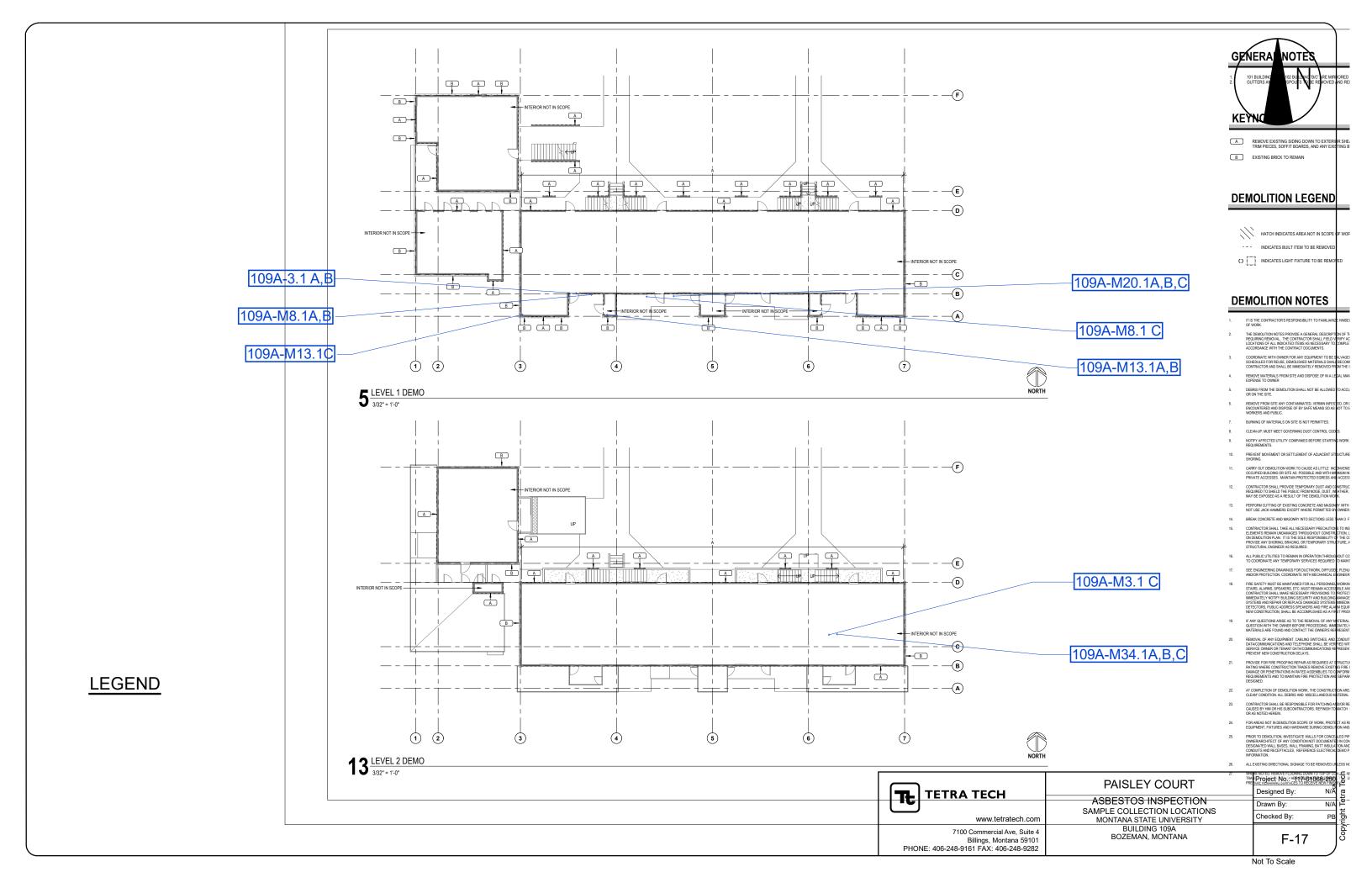


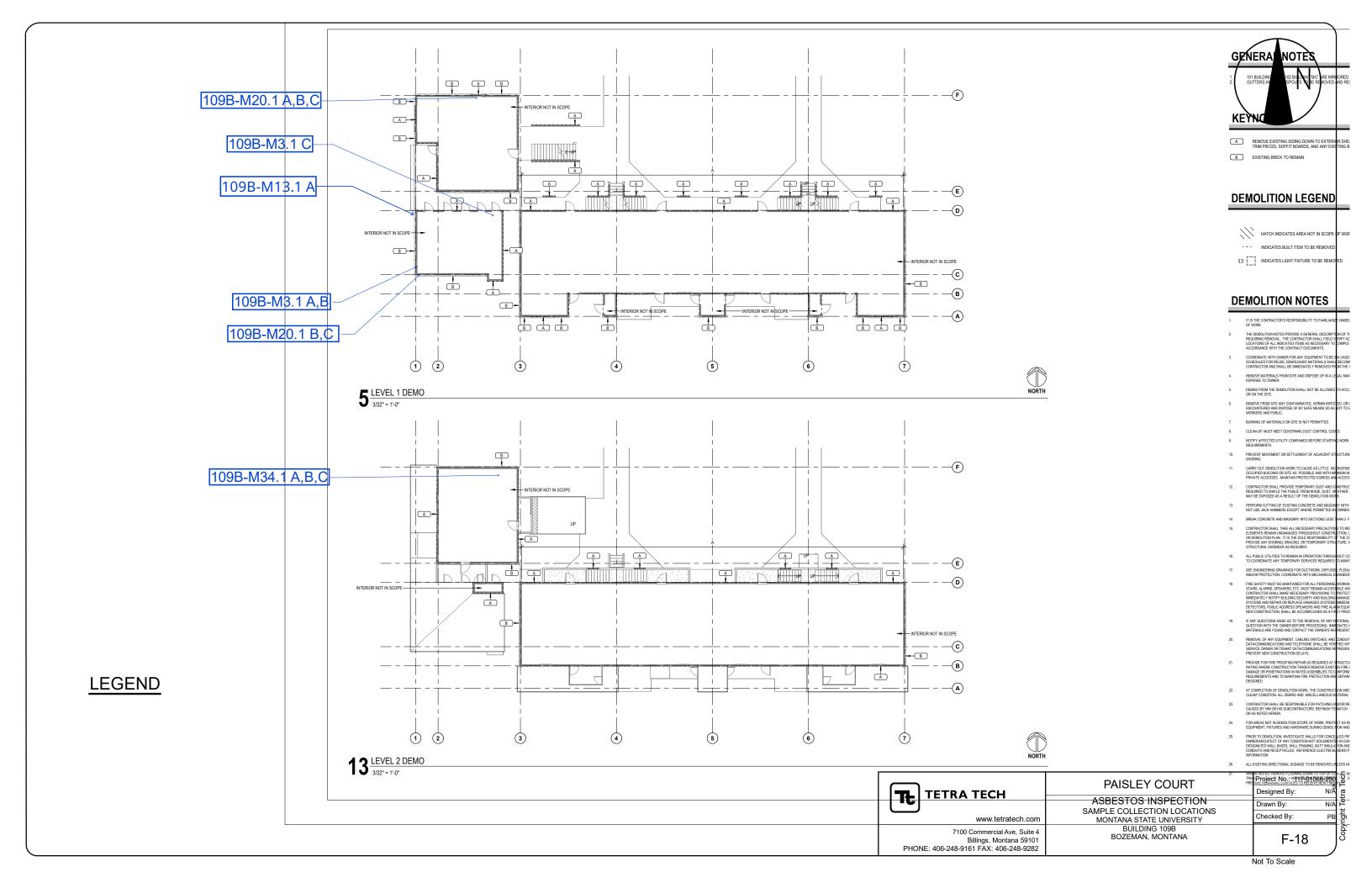


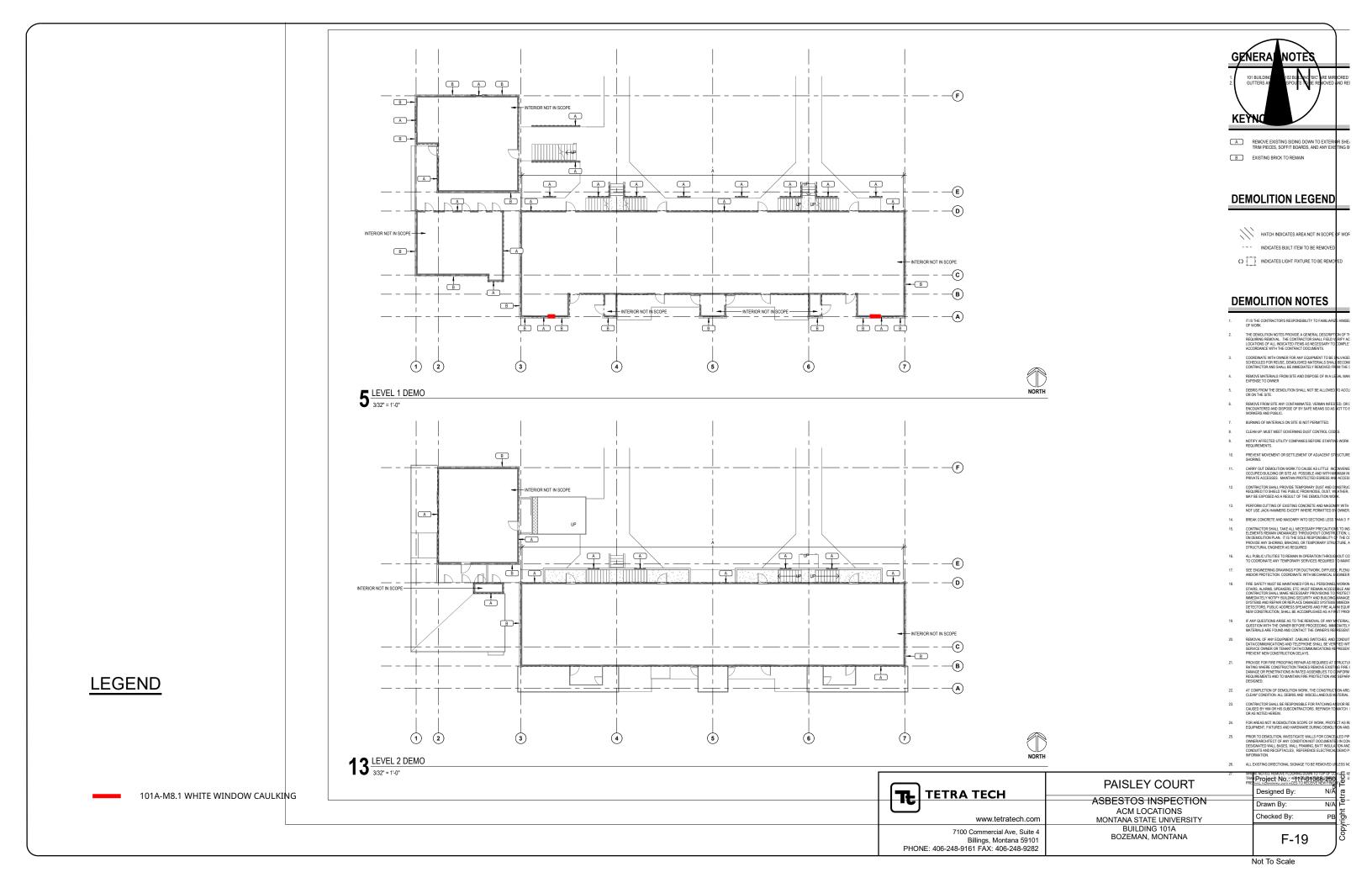


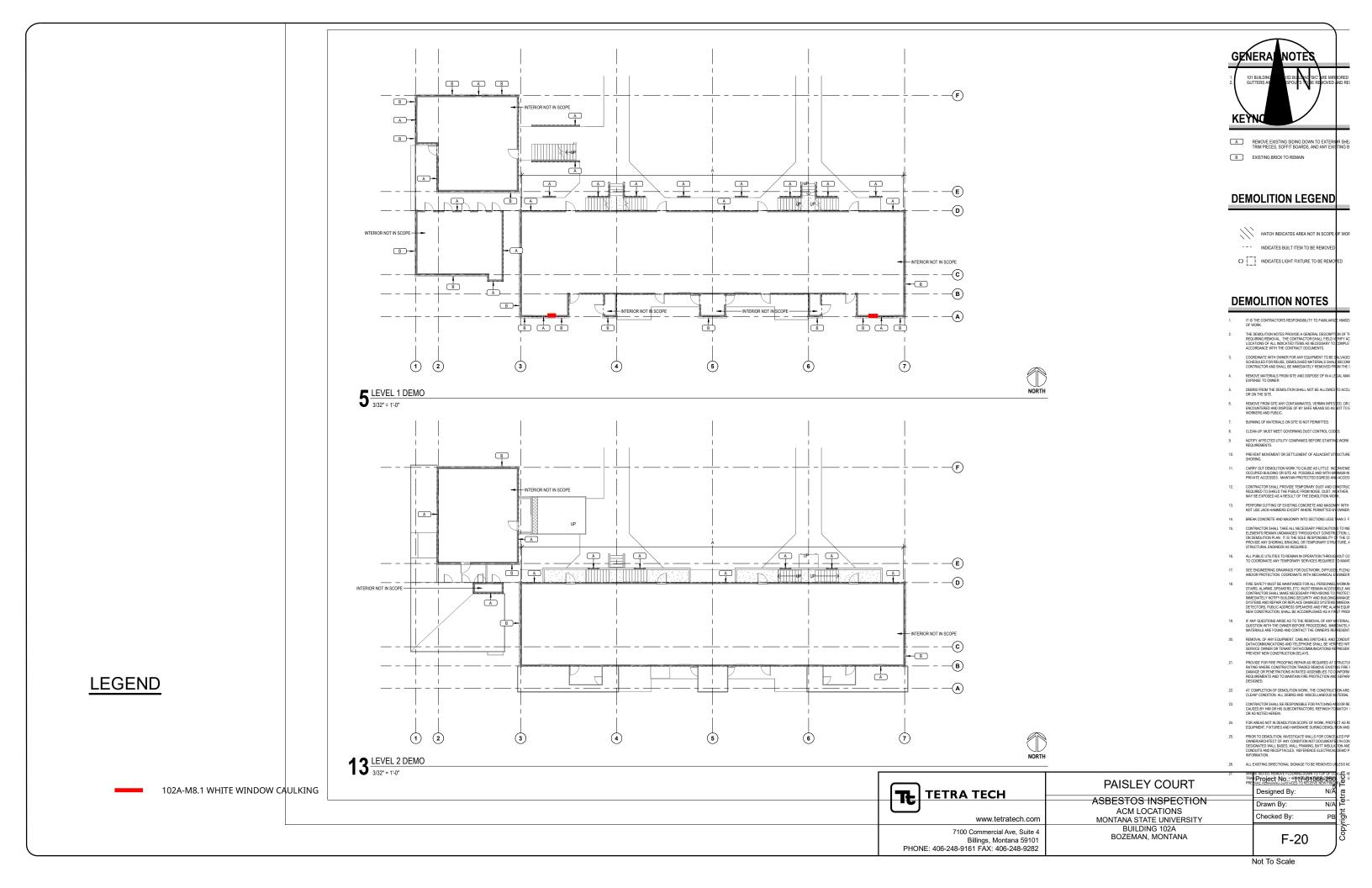


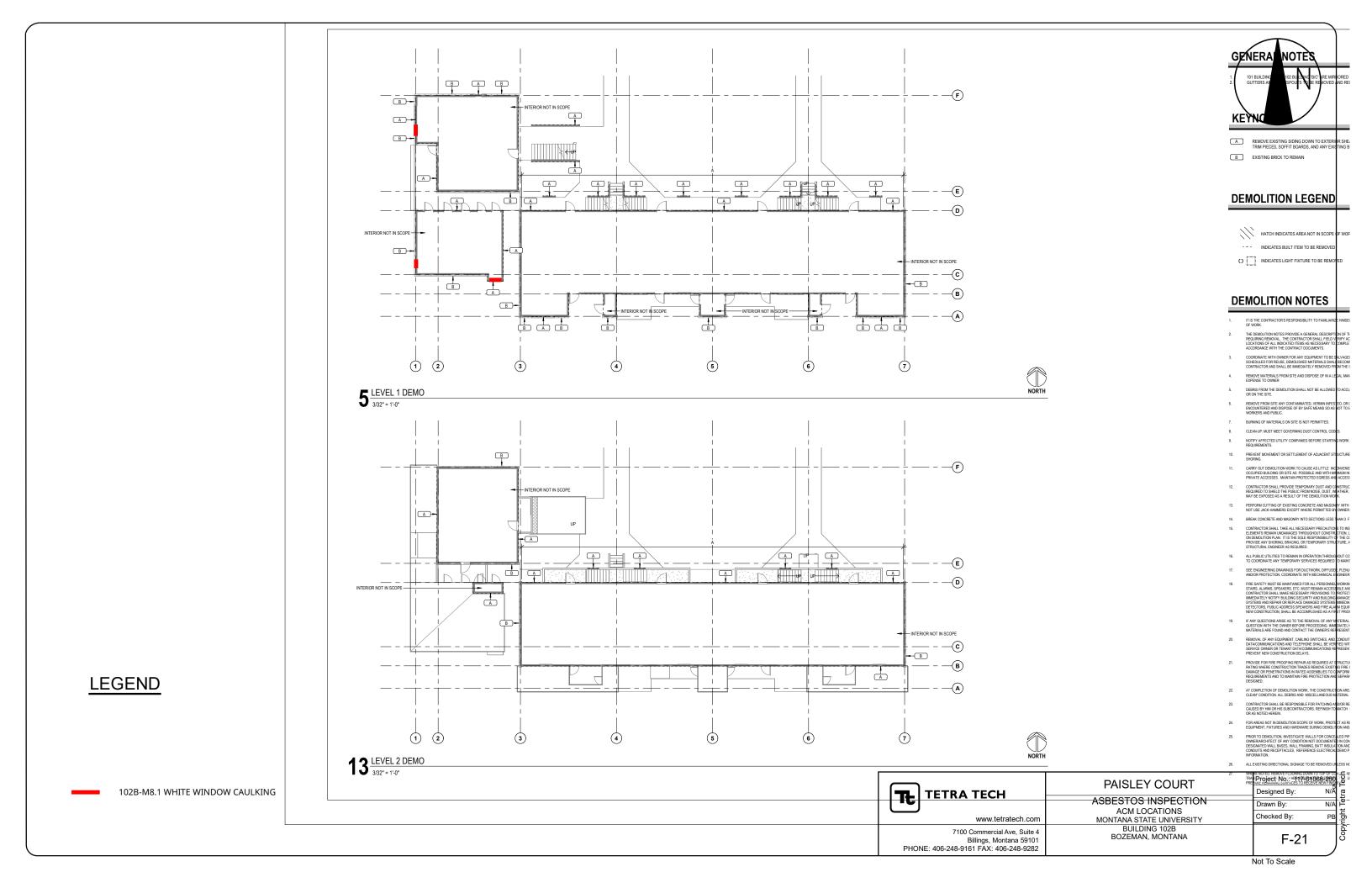


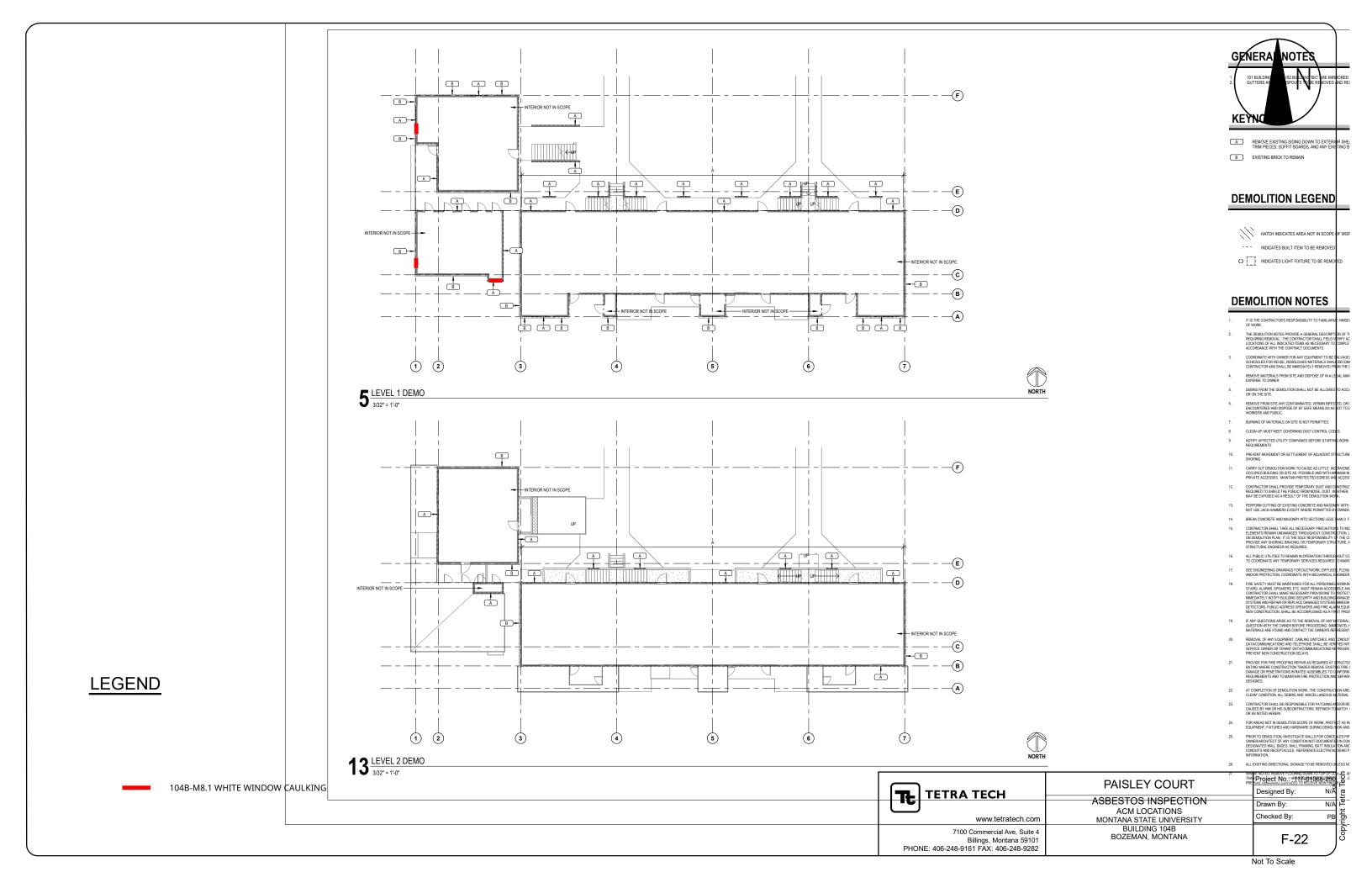


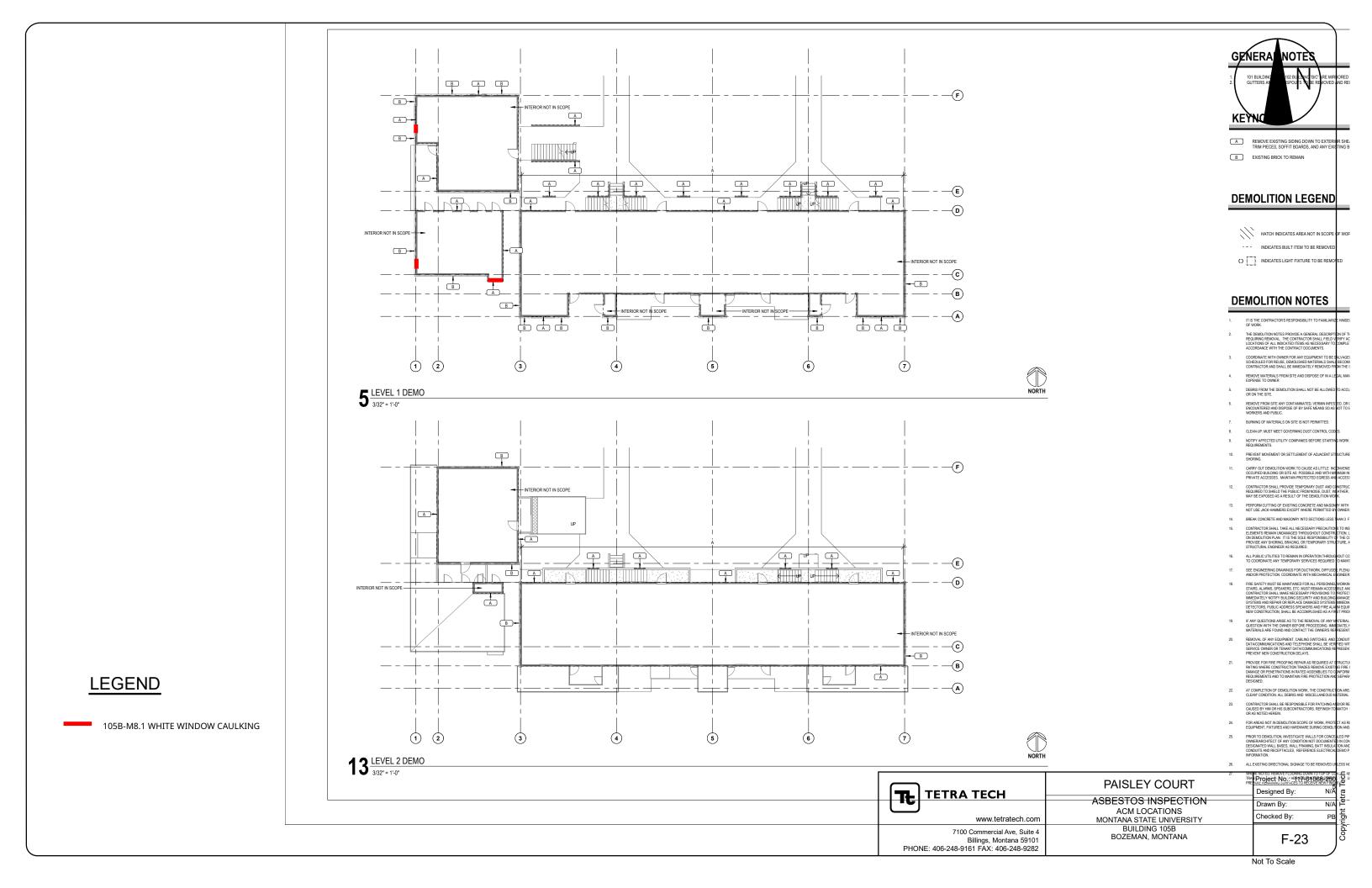


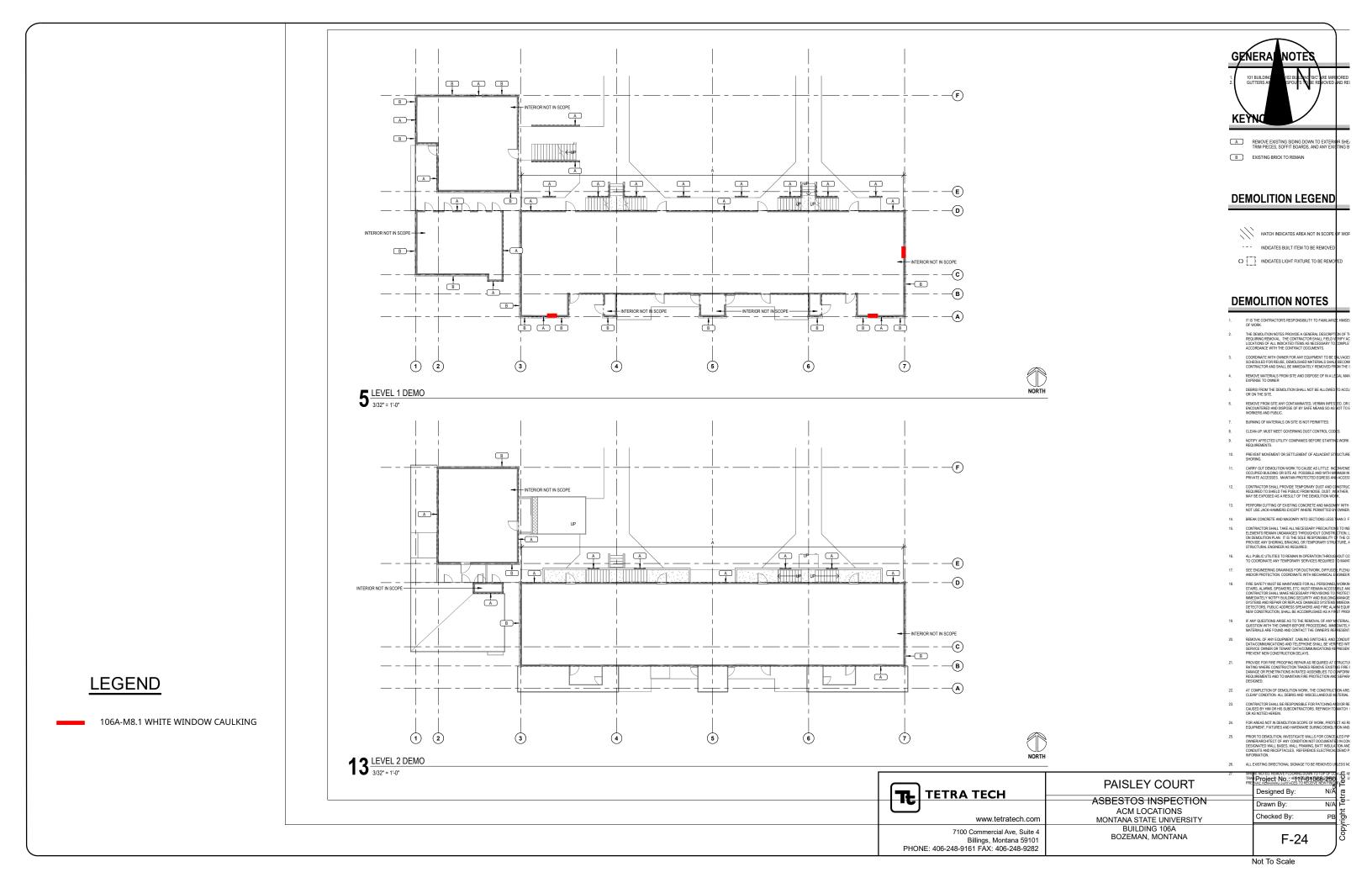


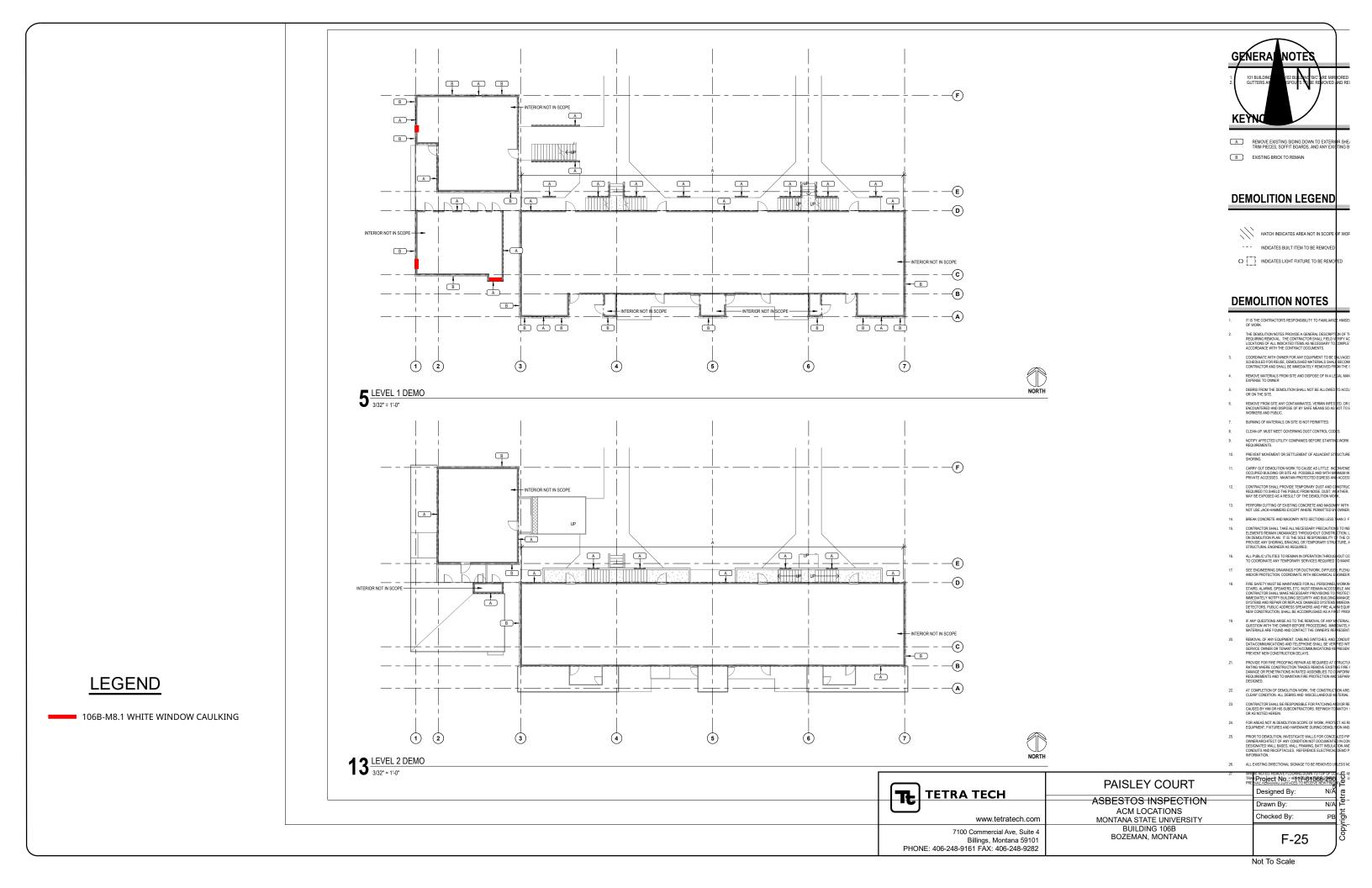


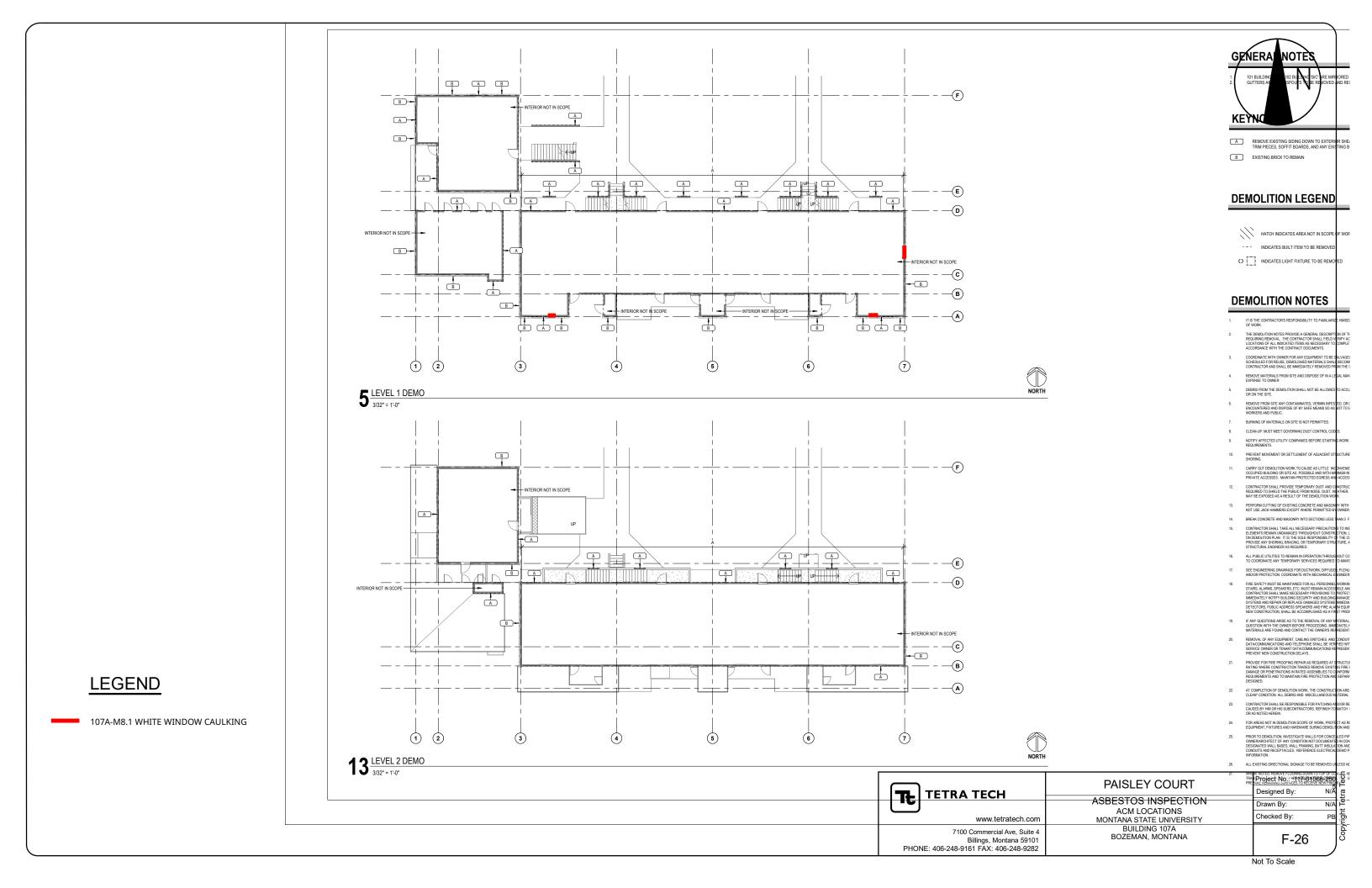


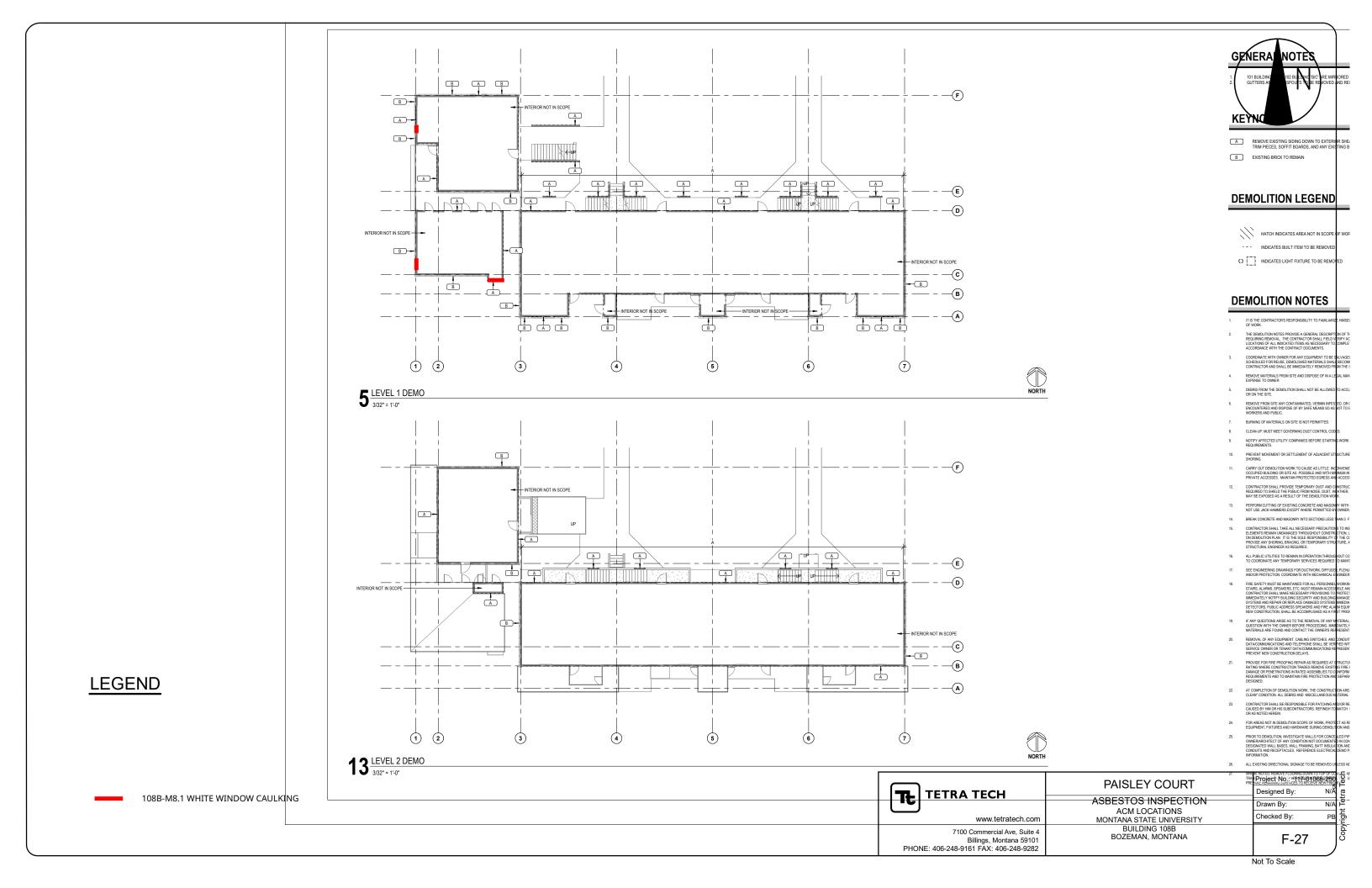


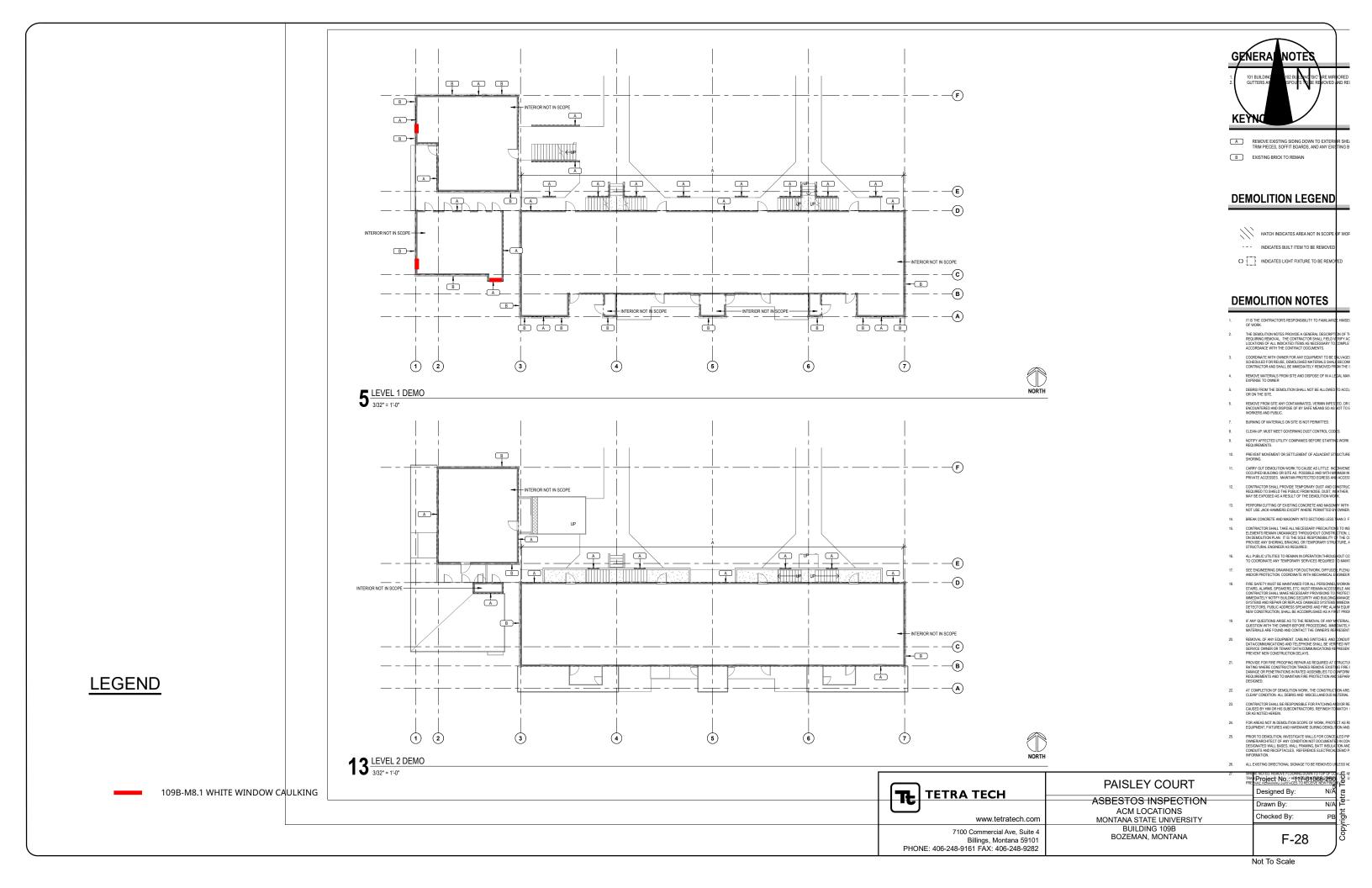












ATTACHMENT A Laboratory Analytical Reports and COCs

#### RYLEE S PRINZ

has met the requirements of Montana Administrative Rule 17.74.362 and/or 17.74.363 for accreditation in the following asbestos occupation(s) through the specified expiration date(s).

Asbestos Inspector
Project Contractor/Supervisor

08/23/2025 07/19/2025

MT DEQ Asbestos Control Program

YLEE S PRINZ 814 TWINS WAY #2 ILLINGS MT 59101

ATTACHMENT B MDEQ Inspector Accreditation

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798



CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Materials Characterization - Bulk Asbestos Analysis

**Laboratory Analysis Report - Polarized Light** 

Tetra Tech, Inc.

7100 Commercial Ave Suite 4 Billings, Montana 59101

Customer Project: 117-001068-25005, Paisley Court Reference #:

CAL24118826AS Date: 11/19/24

### **Analysis and Method**

Summary of polarized light microscopy (PLM / Stereomicroscopy bulk asbestos analysis) using the methods described in 40CFR Part 763 Appendix E to Subpart E (Interim and EPA 600 / R-93 / 116 (Improved). The sample is first viewed with the aid of a stereomicroscope. Numerous liquid slide preparations are created for analysis under the polarized microscope where identifications and quantifications are preformed. Calibrated liquid refractive oils are used as liquid mouting medium. These oils are used for identification (dispersion staining). A calibrated visual estimation is reported, should any asbestiform mineral be present. Other techniques such as acid washing are used in conjugation with refractive oils for detection of smaller quantities of asbestos. All asbestos percentages are based on calibrated visual estimation traceable to NIST standards for regulated asbestos. Traceability to measurement and calibration is achieved by using known amounts and types of asbestos from standards where analyst and laboratory accuracy are measured. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 0.50% (well above the laboratory definition of trace).

#### **Discussion**

Vermiculite containing samples may contain trace amounts of actinolite/tremolite. When not detected by PLM, these samples should be analyzed using TEM methods and / or water separation techniques. Suspected actinolite/vermiculite presence will be indicated through the sample comment section of this report.

Fibrous talc containing samples may contain a regulated asbestos fiber known as anthophyllite. Under certain conditions the same fiber may actually contain both talc and anthophyllite (a phenomenon called intergrowth). Again, TEM detection methods are recommended. CA Labs PLM report comments will denote suspected amounts of asbestiform anthophyllite with talc, where further analysis is recommended.

Some samples (floor tiles, surfacings, etc.) may contain fibers too small to be detectable by PLM analysis and should be analyzed by TEM bulk protocols.

A "trace asbestos" will be reported if the analyst observes far less than 1% asbestos. CA Labs defines "trace asbestos" as a few fibers detected by the analyst in several preparations and will indicate as such under these circumstances.

Since allowable variation in quantification of samples close to 1% is high, <1% may be reported. Such results are ideal for point counting, and the technique is mandatory for friable samples (NESHAP, Nov. 1990 and clarification letter 8 May 1991) under 1% percent asbestos or "trace asbestos". In order to make all initial PLM reports issued from CA Labs NESHAP compliant, all <1% asbestos results (except floor tiles) will be point counted at no additional charge.

#### Qualifications

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses or hold a degree in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one these disciplines is preferred, but not required. Extensive in-house training programs are used to augment the educational background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235 AIHA LAP, LLC Laboratory #102929

> > Page 1 of 6

## Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

## CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Overview of Project Sample Material Containing Asbestos

Customer Project:			117-001068-25005, Paisley Co	ourt	CA Labs Project #: CAL24118826AS
Laboratory Sample ID	Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types
95922	M8.1A	M8.1A-1	Caulking/ white sealant with debris	<1% Chrysotile	white sealant with debris
95923	M8.1B	M8.1B-1	Caulking/ white sealant with debris	<1% Chrysotile	_
95924	M8.1C	M8.1C-1	Caulking/ white sealant with debris	<1% Chrysotile	

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

AIHA LAP, LLC Laboratory #102929

#### Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):

ca - carbonate gypsum - gypsum bi - binder or - organic ma - matrix mi - mica ve - vermiculite ot - other pe - perlite qu - quartz fg - fiberglass mw - mineral wool wo - wollastinite pa - palygorskite (clay)

ta - talc sy - synthetic ce - cellulose br - brucite ka - kaolin (clay)

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Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

406-248-9161

M3.1

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/7/2024

## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: **Customer Project:** CA Labs Project #: CAL24118826AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Phone #

Court

**Turnaround Time:** Date: 11/19/2024

5 Days Samples Rec'd: 11/12/24 10:30AM

Date Of Sampling:

Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent us percent type /

(Y/N)percent Wallboard System/ white 100% surfaced white compound 95919 M3.1A None Detected qu,bi,ca

M3.1 95919 A-2 white drywall with brown paper None Detected 20% ce 80% qu,gy n Wallboard System/ white M3.1 100%

95920 M3.1B surfaced white compound None Detected qu,bi,ca n

95920 white drywall with brown paper None Detected n 20% ce 80% qu,gy Wallboard System/ white 100%

95921 M3.1C surfaced white compound n None Detected qu,bi,ca

M3.1 95921 white drywall with brown paper None Detected C-2 20% ce 80% qu,gy

M8.1 Caulking/ white sealant with 100% 95922 M8.1A debris <1% Chrysotile qu,bi,ca

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica fg - fiberglass ce - cellulose gy - gypsum ve - vermiculite mw - mineral wool br - brucite bi - binder ot - other wo - wollastonite ka - kaolin (clav) pe - perlite ta - talc

or - organic pa - palygorskite (clay) Approved Signatories: ma - matrix qu - quartz sy - synthetic

Robert Olivarez Analyst

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

T. Re-Technical Manager

Senior Analyst Tanner Rasmussen Julio Robles

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

Crisp Analytical, L.L.C.

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406-248-9161

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/7/2024

## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: **Customer Project:** CA Labs Project #: CAL24118826AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Phone #

Court **Turnaround Time:** Date: 11/19/2024

5 Days Samples Rec'd: 11/12/24 10:30AM

Date Of Sampling:

Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous us estimate percent percent type / (Y/N)percent M8.1 Caulking/ white sealant with 100% 95923 M8.1B debris <1% Chrysotile qu,bi,ca Caulking/ white sealant with M8.1 100% 95924 M8.1C <1% Chrysotile n qu,bi,ca

M13.1 95925 M13.1A Brick and Mortar/ red bricking None Detected 100% qu,ot M13.1

95925 None Detected A-2 gray mortar 100% qu,ca

M13.1 Brick and Mortar/ red bricking 95926 M13.1B B-1 None Detected 100% qu,ot

M13.1 95926 None Detected B-2 gray mortar 100% qu,ca

M13.1 M13.1C Brick and Mortar/ red bricking None Detected

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

AIHA LAP, LLC Laboratory #102929 Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica fg - fiberglass ce - cellulose gy - gypsum ve - vermiculite mw - mineral wool br - brucite bi - binder ot - other wo - wollastonite ka - kaolin (clay) or - organic pe - perlite ta - talc

pa - palygorskite (clay) Approved Signatories: ma - matrix qu - quartz sy - synthetic

Robert Olivarez

Analyst

95927

- Fire Damage significant fiber damage reported percentages reflect unaltered fibers
   Fire Damage no significant fiber damages effecting fibrous percentages
- 3. Actinolite in association with Vermiculite
- 4. Layer not analyzed attached to previous positive layer and contamination is suspected
- 5. Not enough sample to analyze

.T. Re-Technical Manager

Tanner Rasmussen

Senior Analyst Julio Robles

100% qu,ot

- 6. Anthophyllite in association with Fibrous Talc
- 7. Contamination suspected from other building materials
- 8. Favorable scenario for water separation on vermiculite for possible analysis by another method
- 9. < 1% Result point counted positive
- 10. TEM analysis suggested

Crisp Analytical, L.L.C.

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CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** Attn: CA Labs Project #: CAL24118826AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court **Turnaround Time:** Date: 11/19/2024

5 Days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 11/7/2024 Date Of Sampling:

Fax# 406-248-9282 Purchase Order #:

Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type / (Y/N)percent

M13.1 95927 C-2 None Detected 100% qu,ca gray mortar M34.1 95928 M34.1A Insulation/ tan insulation None Detected 100% ce A-1 M34.1 95929 M34.1B Insulation/ tan insulation None Detected 100% ce

M34.1 95930 M34.1C Insulation/ tan insulation None Detected C-1 100% ce

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica fg - fiberglass ce - cellulose gy - gypsum ve - vermiculite mw - mineral wool br - brucite bi - binder ot - other wo - wollastonite ka - kaolin (clay) or - organic pe - perlite ta - talc

pa - palygorskite (clay) Approved Signatories: ma - matrix qu - quartz sy - synthetic

Robert Olivarez Analyst

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

Technical Manager

Senior Analyst Tanner Rasmussen Julio Robles

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

T. Re-

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

Crisp Analytical, L.L.C.

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## Polarized Light Asbestiform Materials Point Count

**Laboratory Analysis Report - Point Count** 

#### **Analysis and Method**

Point counting was performed on a polarized light microscope with a calibrated reticle according to the revised NESHAP method of November 20, 1990 (Federal Register, V.55, N.224, 11/20/90). Original asbestos content of bulk materials was determined using procedures outlined in the interim method (40 CFR part 763, Appendix E to subpart E) and AHERA method (EPA-600/R-93/116). Samples were prepared using HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion staining / becke line method.

#### **Qualifications**

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one of these disciplines is preferred, but not required. Extensive in-house training programs are used to augment education background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. This report is not covered by the scope of NVLAP accreditation. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

Court

Customer Info: Attn: Customer Project: CA Labs Project #: Tetra Tech, Inc. CLabs Project #: CAL24118826AS

7100 Commercial Ave Suite 4
Billings, Montana 59101

Turnaround Time: Date: 11/19/24

5 Days

Subsample

Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161

Date Of Sampling: 11/07/24

Fax # 406-248-9282 Purchase Order #:

Laboratory Sample # Layer Analysts Physical Homo-geneous Point Counted % / Sample ID # Description of (Y/N) Asbestos Type

M8.1 **Caulking**/ white

95922 M8.1A A-1 sealant with debris n Trace Chrysotile

M8.1 **Caulking**/ white
95923 M8.1B B-1 sealant with debris n **Trace Chrysotile** 

M8.1 **Caulking**/ white

sealant with debris n Trace Chrysotile

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

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Approved Signatories:

Technical Manager
Tanner Rasmussen

Senior Analyst Julio Robles

Robert Olivarez Analyst

95924



7100 Commercial Avenue Suite 4 Billings, Montana 59101 Phone: 406.248.9161 Fax 406.248.9282

CONTACT INFORM COMPANY:	Tetra Tech, Inc.			Phone:	406.248.9161	C=174	118826
Primary Contact	Roger W. Herman,	Jr.		Phone / Email:			cell – 406.670.4844
Additional Contact				Phone / Email:			cell - (541) 863-2234
Sampler Name(s)	Rylee Prinz			Sampler Signature			(5.17) 555 2251
Date of Inspection		11/7/24		_		().	
PROJECT INFORM	ATION						
Client		MSU		<b>Project Name</b>	Paisley Court	)	
Project Location	Bozem	an, Montana		Project Number	117-001068-2	25005	
PLM INSTRUCTION	<u>IS</u>						
✓ PLM EPA 600/R-93/11€	5 PLM CARB 435 (roo	k/soil)	M CHATFIELD	TEM NOB 198.4 1	EM CARB 435 (rock/	soil)	
				☐ TEM NOB 198.4 ☐ 1	EM CARB 435 (rock/	soil)	
✓ PLM EPA 600/R-93/116	00 Points (All samples grea			☐ TEM NOB 198.4 ☐ 1	EM CARB 435 (rock/	soil)	
✓ PLM EPA 600/R-93/116 ✓ PLM Point Count, PC 4 ✓ Multi-Layered Sample	00 Points (All samples grea	ater than 0%, but	less than 2%)	TEM NOB 198.4	EM CARB 435 (rock/	soil)	
✓ PLM EPA 600/R-93/116 ✓ PLM Point Count, PC 4 ✓ Multi-Layered Sample ✓ Analyze and Rep	00 Points (All samples grea	er EPA 600	less than 2%)		EM CARB 435 (rock/	soil)	
✓ PLM EPA 600/R-93/116 ✓ PLM Point Count, PC 4 ✓ Multi-Layered Sample ✓ Analyze and Rep	00 Points (All samples greeness: Port All Separable Layers ports	er EPA 600	less than 2%)		EM CARB 435 (rock/	soil)	
✓ PLM EPA 600/R-93/116 ✓ PLM Point Count, PC 4 ✓ Multi-Layered Sample ✓ Analyze and Rep ✓ Analyze Until Positive	00 Points (All samples greeness: Port All Separable Layers ports	er EPA 600	less than 2%) Only Analyze s	epecifically noted layer	EM CARB 435 (rock/	soil)	
✓ PLM EPA 600/R-93/116 ✓ PLM Point Count, PC 4 ✓ Multi-Layered Sample ✓ Analyze and Rep ✓ Analyze Until Positive  TURNAROUND TIM  10 Day ✓ 5 Day	00 Points (All samples greenes:  Port All Separable Layers port Stop by Material Type as I	er EPA 600   Noted  ay 1 Day	less than 2%) Only Analyze s	repecifically noted layer  ay Rush Results by:			
✓ PLM EPA 600/R-93/116 ✓ PLM Point Count, PC 4 ✓ Multi-Layered Sample ✓ Analyze and Rep ✓ Analyze Until Positive	00 Points (All samples greates:  Port All Separable Layers posts Stop by Material Type as I  B 3 Day Dat	er EPA 600	less than 2%) Only Analyze s	sepecifically noted layer		soil) Date & Time	

NOV 1 2 2024 Andrew Sikes



7100 Commercial Avenue Suite 4 Billings, Montana 59101

Phone: 406.248.9161 Fax 406.248.9282

CACZ41/8826

**PROJECT INFORMATION** 

-BULK ASBESTOS-

**Project Name** 

**Paisley Court** 

**Project Identifier** 

101A

Project Number 117-001068-25005

Bulk Sample #	HA ID	Sample Material Description	Material Location	Notes
A B C	101A M 3.1	White Wall Board System with Assocaited white Paint	Throughout interior	
A B C	101A M 8.1	White Window Caulking	Around Exterior Windows	
A B C	101A M 13.1	3 inch by 6 inch Red Brick with Assocaited Grey Mortor	Throughout Exterior	
A B C	101A M 34.1	Grey Blown in Insulation	Throughout Attics	

10:30AM

NOV 1 2 2024

Andrew Sikes

## Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798



### CA Labs. L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Materials Characterization - Bulk Asbestos Analysis

**Laboratory Analysis Report - Polarized Light** 

Tetra Tech, Inc.

7100 Commercial Ave Suite 4 Billings, Montana 59101 Customer Project: 117-001068-25005, Paisley Court

Reference #: CAL24118833AG Date: 11/19/24

### **Analysis and Method**

Summary of polarized light microscopy (PLM / Stereomicroscopy bulk asbestos analysis) using the methods described in 40CFR Part 763 Appendix E to Subpart E (Interim and EPA 600 / R-93 / 116 (Improved). The sample is first viewed with the aid of a stereomicroscope. Numerous liquid slide preparations are created for analysis under the polarized microscope where identifications and quantifications are preformed. Calibrated liquid refractive oils are used as liquid mouting medium. These oils are used for identification (dispersion staining). A calibrated visual estimation is reported, should any asbestiform mineral be present. Other techniques such as acid washing are used in conjugation with refractive oils for detection of smaller quantities of asbestos. All asbestos percentages are based on calibrated visual estimation traceable to NIST standards for regulated asbestos. Traceability to measurement and calibration is achieved by using known amounts and types of asbestos from standards where analyst and laboratory accuracy are measured. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 0.50% (well above the laboratory definition of trace).

#### Discussion

Vermiculite containing samples may contain trace amounts of actinolite/tremolite. When not detected by PLM, these samples should be analyzed using TEM methods and / or water separation techniques. Suspected actinolite/vermiculite presence will be indicated through the sample comment section of this report.

Fibrous talc containing samples may contain a regulated asbestos fiber known as anthophyllite. Under certain conditions the same fiber may actually contain both talc and anthophyllite (a phenomenon called intergrowth). Again, TEM detection methods are recommended. CA Labs PLM report comments will denote suspected amounts of asbestiform anthophyllite with talc, where further analysis is recommended.

Some samples (floor tiles, surfacings, etc.) may contain fibers too small to be detectable by PLM analysis and should be analyzed by TEM bulk protocols.

A "trace asbestos" will be reported if the analyst observes far less than 1% asbestos. CA Labs defines "trace asbestos" as a few fibers detected by the analyst in several preparations and will indicate as such under these circumstances.

Since allowable variation in quantification of samples close to 1% is high, <1% may be reported. Such results are ideal for point counting, and the technique is mandatory for friable samples (NESHAP, Nov. 1990 and clarification letter 8 May 1991) under 1% percent asbestos or "trace asbestos". In order to make all initial PLM reports issued from CA Labs NESHAP compliant, all <1% asbestos results (except floor tiles) will be point counted at no additional charge.

#### Qualifications

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses or hold a degree in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one these disciplines is preferred, but not required. Extensive in-house training programs are used to augment the educational background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235
AIHA LAP, LLC Laboratory #102929

Page 1 of 5

Crisp Analytical, L.L.C.

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## CA Labs, L.L.C.

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## Overview of Project Sample Material Containing Asbestos

Customer	Project:		117-001068-25005, Paisley Co	urt	CA Labs Project #: CAL24118833AG
Laboratory Sample ID	Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types

No Asbestos Detected.

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

AIHA LAP, LLC Laboratory #102929

#### Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):

ca - carbonate gypsum - gypsum bi - binder or - organic ma - matrix mi - mica ve - vermiculite

ot - other

pe - perlite qu - quartz fg - fiberglass mw - mineral wool wo - wollastinite ta - talc sy - synthetic ce - cellulose

br - brucite ka - kaolin (clay) pa - palygorskite (clay)

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406-248-9161

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/7/2024

## Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118833AG Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Phone #

Court

**Turnaround Time:** Date: 11/19/2024

5 days Samples Rec'd: 11/12/24 10:30AM

Date Of Sampling:

Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type /

(Y/N)percent Wallboard System w/ Paint/ 101B off-white surfaced white 100% M3.1A-M3.1A 96018 compound None Detected qu,bi,ca M3.1Awhite drywall with brown paper 96018 None Detected 20% ce 80% qu,gy 2 101B M3 1B- Wallboard System w/ Paint/ 96019 M3.1B white compound None Detected 100% qu,ca M3.1B-96019 white drywall with brown paper None Detected 20% ce 80% au.av Wallboard System w/ Paint/ M3.1C- off-white surfaced white 101B 100% 96020 M3.1C compound None Detected qu,bi,ca M3.1C-96020 white drywall with brown paper None Detected 20% ce 80% qu,gy

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

sy - synthetic

ca - carbonate mi - mica fg - fiberglass gy - gypsum ve - vermiculite mw - mineral wool bi - binder ot - other wo - wollastonite or - organic pe - perlite ta - talc

qu - quartz

M8.1A- Window Caulking/ tan

ma - matrix

surfaced white sealant

ce - cellulose br - brucite ka - kaolin (clay)

pa - palygorskite (clay) Approved Signatories:

Josh Strange Analyst

96021

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

10

- 3. Actinolite in association with Vermiculite

101B

M8.1A

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

Technical Manager Tanner Rasmussen

Senior Analyst Julio Robles

100%

qu,gy,bi

6. Anthophyllite in association with Fibrous Talc

(T. Rea

7. Contamination suspected from other building materials

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

10. TEM analysis suggested

None Detected

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

406-248-9161

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/7/2024

percent

## Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118833AG Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Phone #

Court

**Turnaround Time:** Date: 11/19/2024

5 days Samples Rec'd: 11/12/24 10:30AM

Date Of Sampling:

Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type /

(Y/N)

M8.1B- Window Caulking/ tan 101B 100% surfaced white sealant 96022 M8.1B 10 None Detected qu,gy,bi M8.1C- Window Caulking/ tan 101B 100% surfaced white sealant 96023 M8.1C 10 None Detected n qu,gy,bi 101B M13.1 3x6 Brick and Mortar/ red 96024 M13.1A bricking None Detected 100% qu,ot M13.1 96024 None Detected A-2 gray mortar 100% gu.ca

M13.1 3x6 Brick and Mortar/ red 101B 96025 M13.1B bricking None Detected 100% qu,ot

M13.1 96025 None Detected B-2 gray mortar 100% qu,ca

M13.1 3x6 Brick and Mortar/ red 101B M13.1C bricking None Detected 96026 Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

ma - matrix

100% qu,ot

#### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica gy - gypsum ve - vermiculite bi - binder ot - other or - organic pe - perlite

qu - quartz

fg - fiberglass ce - cellulose mw - mineral wool br - brucite wo - wollastonite ta - talc sy - synthetic

ka - kaolin (clay) pa - palygorskite (clay)

Approved Signatories:

Josh Strange

- Fire Damage significant fiber damage reported percentages reflect unaltered fibers
   Fire Damage no significant fiber damages effecting fibrous percentages
- 3. Actinolite in association with Vermiculite
- 4. Layer not analyzed attached to previous positive layer and contamination is suspected
- 5. Not enough sample to analyze

Technical Manager

Senior Analyst Julio Robles

Tanner Rasmussen 6. Anthophyllite in association with Fibrous Talc

C.T. Rem

- 7. Contamination suspected from other building materials
- 8. Favorable scenario for water separation on vermiculite for possible analysis by another method
- 9. < 1% Result point counted positive
- 10. TEM analysis suggested

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118833AG Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court

**Turnaround Time:** Date: 11/19/2024

5 days Samples Rec'd: 11/12/24 10:30AM 11/7/2024

Phone # 406-248-9161 Date Of Sampling: Fax# 406-248-9282 Purchase Order #:

Laboratory Analysts Physical Description of Asbestos type / Non-Sample # Com Layer Homo-Non-asbestos Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type / (Y/N)percent

96026		M13.1 C-2	gray mortar	У	None Detected		100% qu,ca
	101B		Calt Mainture Parrier/ block				
96027	M20.1A	M20.1 A-1	Felt Moisture Barrier/ black covering with debris	n	None Detected		100% qu,gy,ma
	101B		Felt Moisture Barrier/ black				100%
96028	M20.1B	M20.1 B-1	covering with debris	n	None Detected		qu,gy,ma
00000	101B	M20.1	Felt Moisture Barrier/ black	_	Nama Datastad		100%
96029	M20.1C	C-1	covering with debris	n	None Detected		qu,gy,ma
96030	101B M34.1A	M34.1 A-1	<b>Blown In Insulation</b> / brown insulation	у	None Detected	100% ce	
	101B	M34.1	Blown In Insulation/ brown				
96031	M34.1B	B-1	insulation	У	None Detected	100% ce	
96032	101B M34.1C	M34.1 C-1	Blown In Insulation/ brown insulation	у	None Detected	100% ce	

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica gy - gypsum ve - vermiculite bi - binder ot - other or - organic pe - perlite ma - matrix qu - quartz

fg - fiberglass ce - cellulose mw - mineral wool br - brucite wo - wollastonite ka - kaolin (clay) ta - talc sy - synthetic

pa - palygorskite (clay) Approved Signatories:

Josh Strange Analyst

- Fire Damage significant fiber damage reported percentages reflect unaltered fibers
   Fire Damage no significant fiber damages effecting fibrous percentages
- 3. Actinolite in association with Vermiculite
- 4. Layer not analyzed attached to previous positive layer and contamination is suspected
- 5. Not enough sample to analyze

C.T. Re-Technical Manager

Senior Analyst Tanner Rasmussen Julio Robles

- 6. Anthophyllite in association with Fibrous Talc
- 7. Contamination suspected from other building materials
- 8. Favorable scenario for water separation on vermiculite for possible analysis by another method
- 9. < 1% Result point counted positive
- 10. TEM analysis suggested



7100 Commercial Avenue Suite 4 Billings, Montana 59101 Phone: 406.248.9161 Fax 406.248.9282

<b>CONTACT INFORM</b>	ATION				0	111-
COMPANY:	Tetra Tech, Inc.		Phone:	406.248.9161	(A)1/1/8	833
<b>Primary Contact</b>	Roger W. Herman, Jr.		Phone / Email:	roger.herman@te	tratech.com cell –	406.670.4844
<b>Additional Contact</b>	Rylee Prinz		Phone / Email:	RYLEE.PRINZ@te	etratech.com cell -	(541) 863-2234
Sampler Name(s)	Rylee Prinz		Sampler Signature	(S Williams		
Date of Inspection:	11/7/24					
PROJECT INFORM	ATION					
Cilent	MSU		Project Name	Paisley Court		
<b>Project Location</b>	Bozeman, Mon	itana	Project Number	117-001068-25005	5	
✓ PLM EPA 600/R-93/116 ✓ PLM Point Count, PC 40	PLM CARB 435 (rock/soil)  O Points (All samples greater than 0	TEM CHATFIELD  0%, but less than 2%)	☐ TEM NOB 198.4 ☐ T	EM CARB 435 (rock/soil)		
✓ Multi-Layered Sample ✓ Analyze and Rep	s: ort All Separable Layers per EPA 600	Only Analyze se	epecifically noted layer			
✓ Analyze Until Positive	Stop by Material Type as Noted					
TURNAROUND TIM  ☐ 10 Day  ✓ 5 Day		1 Day Same Da	ay Rush Results by:			
Relinquished	By Date & Tin	ne VIA	Received	By D	ate & Time	
Myla Frinz	11/8/24 09:	:27 FEDEX				

10:30AM

NOV 1 2 2024 Andrew Sikes



7100 Commercial Avenue Suite 4 Billings, Montana 59101

Phone: 406.248.9161 Fax 406.248.9282

Cal 21/1/8833

# CHAIN OF CUSTODY -BULK ASBESTOS-

**PROJECT INFORMATION** 

**Project Name** 

**Project Identifier** 

Paisley Court

101B

**Project Number** 117-001068-25005

Bulk Sample #	HA ID	Sample Material Description	Material Location	Notes
A B	101B M 3.1	White Wall Board System with Assocaited White Paint	Throughout interior	
A B C	101B M 8.1	White Window Caulking	Around Exterior Windows	
A B C	101B M 13.1	3 inch by 6 inch Red Brick with Assocaited Grey Mortor	Through <mark>ou</mark> t Exterior	
A B C	101B M 20.1	Black Felt Moisture Barrier	Throughout Exterior	
A B C	101B M 34.1	Grey Blown in Insulation	Throughout Attics	

10:30AW

NOV 1 2 2024
Andrew Sikes

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798



CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Materials Characterization - Bulk Asbestos Analysis

**Laboratory Analysis Report - Polarized Light** 

Tetra Tech, Inc.

7100 Commercial Ave Suite 4 Billings, Montana 59101 Customer Project: 117-001068-25005, Paisley Court

Reference #: CAL24118830AG Date: 11/19/24

#### **Analysis and Method**

Summary of polarized light microscopy (PLM / Stereomicroscopy bulk asbestos analysis) using the methods described in 40CFR Part 763 Appendix E to Subpart E (Interim and EPA 600 / R-93 / 116 (Improved). The sample is first viewed with the aid of a stereomicroscope. Numerous liquid slide preparations are created for analysis under the polarized microscope where identifications and quantifications are preformed. Calibrated liquid refractive oils are used as liquid mouting medium. These oils are used for identification (dispersion staining). A calibrated visual estimation is reported, should any asbestiform mineral be present. Other techniques such as acid washing are used in conjugation with refractive oils for detection of smaller quantities of asbestos. All asbestos percentages are based on calibrated visual estimation traceable to NIST standards for regulated asbestos. Traceability to measurement and calibration is achieved by using known amounts and types of asbestos from standards where analyst and laboratory accuracy are measured. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 0.50% (well above the laboratory definition of trace).

#### Discussion

Vermiculite containing samples may contain trace amounts of actinolite/tremolite. When not detected by PLM, these samples should be analyzed using TEM methods and / or water separation techniques. Suspected actinolite/vermiculite presence will be indicated through the sample comment section of this report.

Fibrous talc containing samples may contain a regulated asbestos fiber known as anthophyllite. Under certain conditions the same fiber may actually contain both talc and anthophyllite (a phenomenon called intergrowth). Again, TEM detection methods are recommended. CA Labs PLM report comments will denote suspected amounts of asbestiform anthophyllite with talc, where further analysis is recommended.

Some samples (floor tiles, surfacings, etc.) may contain fibers too small to be detectable by PLM analysis and should be analyzed by TEM bulk protocols.

A "trace asbestos" will be reported if the analyst observes far less than 1% asbestos. CA Labs defines "trace asbestos" as a few fibers detected by the analyst in several preparations and will indicate as such under these circumstances.

Since allowable variation in quantification of samples close to 1% is high, <1% may be reported. Such results are ideal for point counting, and the technique is mandatory for friable samples (NESHAP, Nov. 1990 and clarification letter 8 May 1991) under 1% percent asbestos or "trace asbestos". In order to make all initial PLM reports issued from CA Labs NESHAP compliant, all <1% asbestos results (except floor tiles) will be point counted at no additional charge.

#### Qualifications

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses or hold a degree in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one these disciplines is preferred, but not required. Extensive in-house training programs are used to augment the educational background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235
AIHA LAP, LLC Laboratory #102929

Page 1 of 6

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

## CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Overview of Project Sample Material Containing Asbestos

Customer Project:			117-001068-25005, Paisley Co	ourt	CA Labs Project #: CAL24118830AG
Laboratory Sample ID	Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types
95979	102A M8.1A	M8.1A-1	Caulking/ off-white sealant with debris	<1% Chrysotile	off-white sealant with debris —
95980	102A M8.1B	M8.1B-1	Caulking/ off-white sealant with debris	<1% Chrysotile	_
95981	102A M8.1C	M8.1C-1	Caulking/ off-white sealant with debris	<1% Chrysotile	_

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

AIHA LAP, LLC Laboratory #102929

## Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):

ca - carbonate gypsum - gypsum bi - binder or - organic ma - matrix mi - mica ve - vermiculite

ot - other

pe - perlite qu - quartz fg - fiberglass mw - mineral wool wo - wollastinite ta - talc sy - synthetic

ce - cellulose

br - brucite ka - kaolin (clay) pa - palygorskite (clay)

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Crisp Analytical, L.L.C.

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12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/7/2024

100%

qu,bi,ca

100% qu,bi

## Polarized Light Asbestiform Materials Characterization

Court

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118830AG Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

102A

M3.1A

95976

**Turnaround Time:** Date: 11/19/2024

None Detected

5 days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 Date Of Sampling:

Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type /

M3.1A- Wallboard System w/ Paint/

white surfaced white compound

Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type / (Y/N)percent

M3.1Awhite drywall with brown paper 95976 n None Detected 20% ce 80% qu,gy 2 102A M3 1B- Wallboard System w/ Paint/ 100% 95977 M3.1B white surfaced white compound None Detected qu,bi,ca n

M3.1B-95977 white drywall with brown paper None Detected 2 n 20% ce 80% au.av

M3.1C- Wallboard System w/ Paint/ 102A 100% 95978 M3.1C white surfaced white compound n None Detected qu,bi,ca

M3.1C-95978 white drywall with brown paper None Detected 2 20% ce 80% qu,gy

M8.1A- Caulking/ off-white sealant 102A

95979 M8.1A with debris <1% Chrysotile Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

> AIHA LAP, LLC Laboratory #102929 Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method. ca - carbonate mi - mica fg - fiberglass ce - cellulose gy - gypsum ve - vermiculite mw - mineral wool br - brucite

bi - binder ot - other wo - wollastonite ka - kaolin (clay) or - organic pe - perlite ta - talc pa - palygorskite (clay)

Approved Signatories: ma - matrix qu - quartz sy - synthetic C.T. Rea

Jose Matute Analyst

a Metet

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

Technical Manager

Senior Analyst Tanner Rasmussen Julio Robles

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/7/2024

100% qu,bi

100% qu,ot

## Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118830AG Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

102A

M8.1B

95980

Court

<1% Chrysotile

**Turnaround Time:** Date: 11/19/2024

5 days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 Date Of Sampling: 406-248-9282

M8.1B- Caulking/ off-white sealant

with debris

Fax# Purchase Order #: Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos ment Subsample geneo calibrated visual fiber type /

Non-Sample ID fibrous estimate percent percent us type / (Y/N)percent

M8.1C- Caulking/ off-white sealant 102A 95981 M8.1C with debris <1% Chrysotile 100% qu,bi n 102A M13.1 3x6 Brick and Mortar/ red 95982 M13.1A bricking None Detected 100% qu,ot

M13.1 95982 None Detected A-2 gray mortar 100% gu.ca

M13.1 3x6 Brick and Mortar/ red 102A 95983 M13.1B bricking None Detected 100% qu,ot

M13.1 95983 None Detected B-2 gray mortar 100% qu,ca

M13.1 3x6 Brick and Mortar/ red 102A 95984 M13.1C bricking None Detected Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

> AIHA LAP, LLC Laboratory #102929 Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica fg - fiberglass ce - cellulose gy - gypsum ve - vermiculite mw - mineral wool br - brucite bi - binder ot - other wo - wollastonite ka - kaolin (clay) or - organic ta - talc

pe - perlite pa - palygorskite (clay) Approved Signatories: ma - matrix qu - quartz sy - synthetic

for Matet Jose Matute Analyst

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

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5. Not enough sample to analyze

Technical Manager

Senior Analyst Tanner Rasmussen Julio Robles

6. Anthophyllite in association with Fibrous Talc

C.T. Rem

7. Contamination suspected from other building materials

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/7/2024

## Polarized Light Asbestiform Materials Characterization

Court

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118830AG Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

**Turnaround Time:** Date: 11/19/2024

5 days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 Date Of Sampling: Fax# 406-248-9282 Purchase Order #:

Laboratory Analysts Physical Description of Asbestos type / Non-Sample # Com Layer Homo-Non-asbestos Sample ID ment geneo calibrated visual fiber type / fibrous estimate percent percent type / us (Y/N)percent

95984		M13.1 C-2	gray mortar	у	None Detected		100% qu,ca
	102A	M20.1	Tar Paper Underlayment/				
95985	M20.1A	A-1	black felt	У	None Detected	20% ce	80% qu,bi
05000	102A	M20.1	Tar Paper Underlayment/				
95986	M20.1B	B-1	black felt	У	None Detected	20% ce	80% qu,bi
	1004		To Bono Who do do do so who				
05007	102A	M20.1	Tar Paper Underlayment/		Nama Data ata d	000/	000/
95987	M20.1C	C-1	black felt	У	None Detected	20% ce	80% qu,bi
	102A		Blown In Insulation/ gray				
95988	M34.1A	M34.1 A-1	insulation	V	None Detected	100% ce	
33300	IVIO+.TA	A-1	Insulation	у	None Detected	100 /8 CE	
	102A	M34.1	Blown In Insulation/ gray				
95989	M34.1B	B-1	insulation	У	None Detected	100% ce	
	102A	M34.1	Blown In Insulation/ gray				
95990	M34.1C	C-1	insulation	У	None Detected	100% ce	

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica fg - fiberglass gy - gypsum ve - vermiculite mw - mineral wool bi - binder ot - other wo - wollastonite

ka - kaolin (clay) pe - perlite ta - talc

or - organic pa - palygorskite (clay) Approved Signatories: ma - matrix qu - quartz sy - synthetic

for Matet Jose Matute

Analyst

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

C.T. Rea Technical Manager

Senior Analyst Tanner Rasmussen Julio Robles

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

ce - cellulose

br - brucite

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798 CA Labs, L.L.C.

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## Polarized Light Asbestiform Materials Point Count Laboratory Analysis Report - Point Count

#### **Analysis and Method**

Point counting was performed on a polarized light microscope with a calibrated reticle according to the revised NESHAP method of November 20, 1990 (Federal Register, V.55, N.224, 11/20/90). Original asbestos content of bulk materials was determined using procedures outlined in the interim method (40 CFR part 763, Appendix E to subpart E) and AHERA method (EPA-600/R-93/116). Samples were prepared using HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion staining / becke line method.

#### **Qualifications**

Phone #

Sample ID

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one of these disciplines is preferred, but not required. Extensive in-house training programs are used to augment education background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. This report is not covered by the scope of NVLAP accreditation. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

Customer Info: Attn: Customer Project: CA Labs Project #: Tetra Tech, Inc. Customer Project: CAL24118830AG

(Y/N)

7100 Commercial Ave Suite 4 Billings, Montana 59101

Turnaround Time: Date: 11/19/24

5 days

Court

Samples Rec'd: 11/12/24 10:30AM

5 days

Asbestos Type

Date Of Sampling: 11/07/24

Purchase Order #:

Fax # 406-248-9282

Laboratory Sample # Layer Analysts Physical Homo-geneous Point Counted % /

Description of

Subsample

406-248-9161

		Cubbampio		
	102A	<sub>M8.1A-</sub> <b>Caulking</b> / off-white		
95979	M8.1A	1 sealant with debris	n	0.25% Chrysotile
	102A	<sub>M8.1B-</sub> Caulking/ off-white		
95980	M8.1B	sealant with debris	n	Trace Chrysotile
	102A	<sub>M8.1C-</sub> Caulking/ off-white		
95981	M8.1C	1 sealant with debris	n	0.25% Chrysotile

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

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Approved Signatories:

Technical Manager
Tanner Rasmussen

Senior Analyst Julio Robles

Jose Matute

Metal

ose Matute Analyst



7100 Commercial Avenue Suite 4 Billings, Montana 59101 Phone: 406.248.9161 Fax 406.248.9282

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<b>Primary Contact</b>	Roger W. Herman, Jr.	Phone / Email:	roger.herman@tetratech.com cell - 406.670.4844
Additional Contact	Rylee Prinz	Phone / Email:	RYLEE.PRINZ@tetratech.com cell - (541) 863-2234
Sampler Name(s)	Rylee Prinz	Sampler Signatu	ire(s Auton
Date of Inspection:	11/7/24		
PROJECT INFORM	ATION		
Client	MSU	Project Name	Paisley Court
Project Location	Bozeman, Montana	Project Number	117-001068-25005
PLM INSTRUCTION	<u>s</u>		
✓ PLM EPA 600/R-93/116	PLM CARB 435 (rock/soil)	CHATFIELD TEM NOB 198.4	TEM CARB 435 (rock/soil)
✓ PLM Point Count, PC 4	00 Points (All samples greater than 0%, but	less than 2%)	
✓ Multi-Layered Sample	s:		
✓ Analyze and Rep	ort All Separable Layers per EPA 600	Only Analyze sepecifically noted layer	
✓ Analyze Until Positive	Stop by Material Type as Noted		
TURNAROUND TIM	<u>E</u>		
☐ 10 Day	☐ 3 Day ☐ 2 Day ☐ 1 Day	Same Day Rush Results b	y:
Relinquished	By Date & Time	VIA Receive	ed By Date & Time
Kyles Frinz	11/9/24 09:32	FEDEX	
			TOTO AND

NOV 1 2 2024 Andrew Sikes



7100 Commercial Avenue Suite 4
Billings, Montana 59101
Phone: 406.248.9161 Fax 406.248.9282

CXC24118830

# CHAIN OF CUSTODY -BULK ASBESTOS-

**PROJECT INFORMATION** 

Project Name Paisley Court

Project Identifier 102A

Project Number 117-001068-25005

Bulk Sample HA ID		Sample Material Description	Material Location	Notes
A B C	102A M 3.1	White Wall Board System with assocaited White Paint	Throughout Interior	
Α	102A M 8.1	White Caulking	Around Exterior Windows	
Α	102A M 13.1	3 inch by 6 inch Red Brick with Assocaited Grey Mortor	Throughout Exterior	
A B C	102A M 20.1	Black Tar Paper Underlayment	Throughout Exterior	
A B C	102A M 34.1	Grey Blown In Insulation	Throughout Attic	

10:30AM

Andrew Sikes

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798



CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Materials Characterization - Bulk Asbestos Analysis

**Laboratory Analysis Report - Polarized Light** 

Tetra Tech, Inc.

7100 Commercial Ave Suite 4 Billings, Montana 59101 Customer Project: 117-001068-25005, Paisley Court
Reference #: CAL24118828AS Date: 11/19/24

### **Analysis and Method**

Summary of polarized light microscopy (PLM / Stereomicroscopy bulk asbestos analysis) using the methods described in 40CFR Part 763 Appendix E to Subpart E (Interim and EPA 600 / R-93 / 116 (Improved). The sample is first viewed with the aid of a stereomicroscope. Numerous liquid slide preparations are created for analysis under the polarized microscope where identifications and quantifications are preformed. Calibrated liquid refractive oils are used as liquid mouting medium. These oils are used for identification (dispersion staining). A calibrated visual estimation is reported, should any asbestiform mineral be present. Other techniques such as acid washing are used in conjugation with refractive oils for detection of smaller quantities of asbestos. All asbestos percentages are based on calibrated visual estimation traceable to NIST standards for regulated asbestos. Traceability to measurement and calibration is achieved by using known amounts and types of asbestos from standards where analyst and laboratory accuracy are measured. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 0.50% (well above the laboratory definition of trace).

#### **Discussion**

Vermiculite containing samples may contain trace amounts of actinolite/tremolite. When not detected by PLM, these samples should be analyzed using TEM methods and / or water separation techniques. Suspected actinolite/vermiculite presence will be indicated through the sample comment section of this report.

Fibrous talc containing samples may contain a regulated asbestos fiber known as anthophyllite. Under certain conditions the same fiber may actually contain both talc and anthophyllite (a phenomenon called intergrowth). Again, TEM detection methods are recommended. CA Labs PLM report comments will denote suspected amounts of asbestiform anthophyllite with talc, where further analysis is recommended.

Some samples (floor tiles, surfacings, etc.) may contain fibers too small to be detectable by PLM analysis and should be analyzed by TEM bulk protocols.

A "trace asbestos" will be reported if the analyst observes far less than 1% asbestos. CA Labs defines "trace asbestos" as a few fibers detected by the analyst in several preparations and will indicate as such under these circumstances.

Since allowable variation in quantification of samples close to 1% is high, <1% may be reported. Such results are ideal for point counting, and the technique is mandatory for friable samples (NESHAP, Nov. 1990 and clarification letter 8 May 1991) under 1% percent asbestos or "trace asbestos". In order to make all initial PLM reports issued from CA Labs NESHAP compliant, all <1% asbestos results (except floor tiles) will be point counted at no additional charge.

#### Qualifications

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses or hold a degree in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one these disciplines is preferred, but not required. Extensive in-house training programs are used to augment the educational background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235
AIHA LAP, LLC Laboratory #102929

Page 1 of 6

## Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

## CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Overview of Project Sample Material Containing Asbestos

Customer Project:		117-001068-25005, Paisley Co	ourt	CA Labs Project #: CAL24118828AS			
Laboratory Sample ID	Sample #	Layer #	Analysts Physical Description of Asbestos type / Calibrated visual estimate percent		List of Affected Building Material Types		
	102B-				white sealant		
95949	M8.1A	M8.1A-1	Caulking/ white sealant	<1% Chrysotile	<del>_</del>		
	102B-						
95950	M8.1B	M8.1B-1	Caulking/ white sealant	<1% Chrysotile	_		
	102B-						
95951	M8.1C	M8.1C-1	Caulking/ white sealant	<1% Chrysotile			

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

AIHA LAP, LLC Laboratory #102929

#### Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):

ca - carbonate gypsum - gypsum bi - binder or - organic ma - matrix mi - mica ve - vermiculite ot - other pe - perlite qu - quartz fg - fiberglass mw - mineral wool wo - wollastinite ta - talc sy - synthetic ce - cellulose

br - brucite ka - kaolin (clay) pa - palygorskite (clay)

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CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118828AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court **Turnaround Time:** 

Date: 11/19/2024 5 Days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 11/7/2024 Date Of Sampling:

Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of Non-Sample # Com Layer Homo-Asbestos type / Non-asbestos Sample ID ment geneo calibrated visual fiber type / fibrous

				us (Y/N)	estimate percent	percent	type / percent
	102B-	M3.1	Wallboard System/ tan				100%
95946	M3.1A	A-1	surfaced white compound	n	None Detected		qu,bi,ca
		M3.1					
95946		A-2	white drywall with brown paper	n	None Detected	20% ce	80% qu,gy
	102B-	M3.1	Wallboard System/ tan				100%
95947	M3.1B	B-1	surfaced white compound	n	None Detected		qu,bi,ca
		140.4					
95947		M3.1 B-2	white drywall with brown paper	n	None Detected	20% ce	80% qu,gy
	402D	140.4	Wallboard Cuatom/ ton				4000/
05040	102B-	M3.1	Wallboard System/ tan		Nama Datastad		100%
95948	M3.1C	C-1	surfaced white compound	n	None Detected		qu,bi,ca
		M3.1					
95948		C-2	white drywall with brown paper	n	None Detected	20% ce	80% qu,gy
	102B-	M8.1					100%
95949	M8.1A	IVIO. I A-1	Caulking/ white sealant	V	<1% Chrvsotile		au.av.bi
JUJTJ	IVIO. I 🗥	A-1	Guarrila, wille scalard	V	~ i /0 OIII y 30UIC		qu,qy,pi

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica fg - fiberglass gy - gypsum ve - vermiculite mw - mineral wool bi - binder ot - other wo - wollastonite or - organic

ka - kaolin (clay) pe - perlite ta - talc pa - palygorskite (clay) ma - matrix qu - quartz sy - synthetic

Josh Strange

Analyst

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

TRe Technical Manager

ce - cellulose

br - brucite

Senior Analyst Tanner Rasmussen Julio Robles

Approved Signatories:

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: **Customer Project:** CA Labs Project #: CAL24118828AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court

**Turnaround Time:** Date: 11/19/2024

5 Days Samples Rec'd: 11/12/24 10:30AM Phone # 406-248-9161 11/7/2024 Date Of Sampling: Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type / (Y/N)percent 102B-100% M8.1 95950 M8.1B B-1 Caulking/ white sealant <1% Chrysotile qu,gy,bi 102B-M8.1 100% 95951 M8.1C C-1 Caulking/ white sealant <1% Chrysotile qu,gy,bi 102B-M13.1 95952 M13.1A Brick and Mortar/ red bricking None Detected 100% qu,ot M13.1 95952 None Detected A-2 gray mortar 100% qu,ca 102B-M13.1 95953 M13.1B B-1 Brick and Mortar/ red bricking None Detected 100% qu,ot M13.1 95953 None Detected B-2 gray mortar 100% qu,ca 102B-M13.1

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate gy - gypsum bi - binder or - organic

ma - matrix

mi - mica ve - vermiculite ot - other

pe - perlite

qu - quartz

Brick and Mortar/ red bricking

fg - fiberglass mw - mineral wool wo - wollastonite ta - talc

sy - synthetic

ce - cellulose br - brucite ka - kaolin (clav) pa - palygorskite (clay)

Approved Signatories:

Josh Strange

95954

- Fire Damage significant fiber damage reported percentages reflect unaltered fibers
   Fire Damage no significant fiber damages effecting fibrous percentages

M13.1C

- 3. Actinolite in association with Vermiculite
- 4. Layer not analyzed attached to previous positive layer and contamination is suspected
- 5. Not enough sample to analyze

Technical Manager

Tanner Rasmussen

Senior Analyst Julio Robles

100% qu,ot

- 6. Anthophyllite in association with Fibrous Talc
- 7. Contamination suspected from other building materials

.T. Re-

- 8. Favorable scenario for water separation on vermiculite for possible analysis by another method
- 9. < 1% Result point counted positive
- 10. TEM analysis suggested

None Detected

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: **Customer Project:** CA Labs Project #: CAL24118828AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court

**Turnaround Time:** Date: 11/19/2024

5 Days

Samples Rec'd: 11/12/24 10:30AM 11/7/2024

Phone # 406-248-9161 Fax# 406-248-9282

Purchase Order #: Homo-Asbestos type / Non-asbestos

None Detected

Non-

Laboratory Analysts Physical Description of Sample # Com Layer Sample ID ment Subsample

geneo us (Y/N)

calibrated visual fiber type / percent estimate percent

Date Of Sampling:

fibrous type / percent

100% qu,ma

M13.1 95954 C-2 gray mortar

102B-

None Detected 100% qu,ca

95955 M20.1A covering 102B-M20.1 Plastic Underlayment/ black 95956 M20.1B covering

None Detected 100% qu,ma

102B-M20.1 Plastic Underlayment/ black 95957 M20.1C covering C-1

None Detected 100% qu,ma

100% ce

102B-M34.1 95958 M34.1A A-1

Insulation/ brown insulation None Detected 100% ce

102B-M34.1 95959 M34.1B B-1

Insulation/ brown insulation None Detected 100% ce

102B-M34.1 95960 M34.1C

C-1 Insulation/ brown insulation Dallas NVLAP Lab Code 200349-0 TEM/PLM

qu - quartz

None Detected

TDSHS 30-0235 AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

bi - binder

or - organic

ma - matrix

M20.1 Plastic Underlayment/ black

ca - carbonate mi - mica gy - gypsum

fg - fiberglass ve - vermiculite mw - mineral wool ot - other wo - wollastonite pe - perlite ta - talc

sy - synthetic

ce - cellulose br - brucite ka - kaolin (clav)

T. Re-

pa - palygorskite (clay)

Approved Signatories:

Josh Strange Analyst

- Fire Damage significant fiber damage reported percentages reflect unaltered fibers
   Fire Damage no significant fiber damages effecting fibrous percentages
- 3. Actinolite in association with Vermiculite
- 4. Layer not analyzed attached to previous positive layer and contamination is suspected
- 5. Not enough sample to analyze

Technical Manager Senior Analyst Tanner Rasmussen Julio Robles

- 6. Anthophyllite in association with Fibrous Talc
- 7. Contamination suspected from other building materials
- 8. Favorable scenario for water separation on vermiculite for possible analysis by another method
- 9. < 1% Result point counted positive
- 10. TEM analysis suggested

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CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Polarized Light Asbestiform Materials Point Count

**Laboratory Analysis Report - Point Count** 

#### **Analysis and Method**

Point counting was performed on a polarized light microscope with a calibrated reticle according to the revised NESHAP method of November 20, 1990 (Federal Register, V.55, N.224, 11/20/90). Original asbestos content of bulk materials was determined using procedures outlined in the interim method (40 CFR part 763, Appendix E to subpart E) and AHERA method (EPA-600/R-93/116). Samples were prepared using HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion staining / becke line method.

## Qualifications

Phone #

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**Customer Info:** Attn: **Customer Project:** CA Labs Project #: Tetra Tech. Inc. CAL24118828AS 117-001068-25005. Paislev

7100 Commercial Ave Suite 4 Billings, Montana 59101

**Turnaround Time:** 11/19/24 Date:

5 Days

Court

Samples Rec'd: 11/12/24 10:30AM

11/07/24

Date Of Sampling: Fax# 406-248-9282

Purchase Order #:

Laboratory Sample # Layer Analysts Physical Homo-geneous Point Counted % / Sample ID Description of (Y/N)Asbestos Type Subsample

406-248-9161

95949	102B- M8.1A	M8.1 A-1	Caulking/ white sealant	у	0.25% Chrysotile
95950	102B- M8.1B	M8.1 B-1	Caulking/ white sealant	y	0.25% Chrysotile
95951	102B- M8.1C	M8.1 C-1	Caulking/ white sealant	V	0.25% Chrysotile

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

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Approved Signatories:

**Technical Manager** Tanner Rasmussen

Senior Analyst Julio Robles

Josh Strange Analyst



7100 Commercial Avenue Suite 4 Billings, Montana 59101 Phone: 406.248.9161 Fax 406.248.9282

<b>CONTACT INFORM</b>	ATION					
COMPANY:	Tetra Tech, Inc.		Phone:	406.248.9161	GC741	18878
Primary Contact	Roger W. Herman, Jr.		Phone / Email:	roger.herman@te	tratech.com cell -	406.670.4844
Additional Contact	Rylee Prinz		Phone / Email:	RYLEE.PRINZ@te		
Sampler Name(s)	Rylee Prinz		Sampler Signature		Y .	
Date of Inspection:	11/7/24					
PROJECT INFORM	ATION					
Client	MSU		Project Name	Paisley Court	-	
Project Location	Bozeman, Montar	na	Project Number	117-001068-25005	5 (	
PLM INSTRUCTION	<u>s</u>					
✓ PLM EPA 600/R-93/116	PLM CARB 435 (rock/soil)	TEM CHATFIELD	☐ TEM NOB 198.4 ☐ T	EM CARB 435 (rock/soil)		
PLM Point Count, PC 40	00 Points (All samples greater than 0%, I	but less than 2%)				
✓ Multi-Layered Samples	:					
✓ Analyze and Repo	ort All Separable Layers per EPA 600	Only Analyze	sepecifically noted layer			
✓ Analyze Until Positive S	Stop by Material Type as Noted					
TURNAROUND TIM	<b>E</b>					
☐ 10 Day ✓ 5 Day	☐ 3 Day ☐ 2 Day ☐ 1 D	ay 🗌 Same D	Pay Rush Results by:			
Relinquished	By Date & Time	VIA	Received	By Da	ite & Time	
Rylee Prinz	11/9/24 09:36	FEDEX	. 1333/100	-, Da	ite & Tille	
7						

10:30AM

Andrew Sikes



7100 Commercial Avenue Suite 4 Billings, Montana 59101

Phone: 406.248.9161 Fax 406.248.9282

CAL241/8828

## **CHAIN OF CUSTODY** -BULK ASBESTOS-

**PROJECT INFORMATION** 

**Project Name** 

**Paisley Court** 

**Project Number** 117-001068-25005

#	HA ID	Sample Material Description	Material Location	Notes
A B C	102B M 3.1	White Wall Board System with Assocaited White Paint	Throughout Interior	
A B C	102B M 8.1	White Caulking	Around Exterior Windows	
A B C	102B M 13.1	3 inch by 6 inch Red Brick and Assocaited Grey Mortor	Throughout Exterior	•
A B C	102B M 20.1	Black Plastic Underlayment	Throughout Exterior	
Α	102B M 34.1	Grey Blown In Insulation	Throughout Attic	

10:30AM

NOV 1 2 2024 Andrew Sikes

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798



CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Materials Characterization - Bulk Asbestos Analysis

**Laboratory Analysis Report - Polarized Light** 

Tetra Tech, Inc.

7100 Commercial Ave Suite 4 Billings, Montana 59101

Customer Project: 117-001068-25005, Paisley Court Reference #:

CAL24118837AS Date: 11/19/24

### **Analysis and Method**

Summary of polarized light microscopy (PLM / Stereomicroscopy bulk asbestos analysis) using the methods described in 40CFR Part 763 Appendix E to Subpart E (Interim and EPA 600 / R-93 / 116 (Improved). The sample is first viewed with the aid of a stereomicroscope. Numerous liquid slide preparations are created for analysis under the polarized microscope where identifications and quantifications are preformed. Calibrated liquid refractive oils are used as liquid mouting medium. These oils are used for identification (dispersion staining). A calibrated visual estimation is reported, should any asbestiform mineral be present. Other techniques such as acid washing are used in conjugation with refractive oils for detection of smaller quantities of asbestos. All asbestos percentages are based on calibrated visual estimation traceable to NIST standards for regulated asbestos. Traceability to measurement and calibration is achieved by using known amounts and types of asbestos from standards where analyst and laboratory accuracy are measured. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 0.50% (well above the laboratory definition of trace).

#### **Discussion**

Vermiculite containing samples may contain trace amounts of actinolite/tremolite. When not detected by PLM, these samples should be analyzed using TEM methods and / or water separation techniques. Suspected actinolite/vermiculite presence will be indicated through the sample comment section of this report.

Fibrous talc containing samples may contain a regulated asbestos fiber known as anthophyllite. Under certain conditions the same fiber may actually contain both talc and anthophyllite (a phenomenon called intergrowth). Again, TEM detection methods are recommended. CA Labs PLM report comments will denote suspected amounts of asbestiform anthophyllite with talc, where further analysis is recommended.

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> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235 AIHA LAP, LLC Laboratory #102929

## Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

### CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Overview of Project Sample Material Containing Asbestos

Customer Project:			117-001068-25005, Paisley Cou	ırt	CA Labs Project #: CAL24118837AS		
Laboratory Sample ID	Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types		

No Asbestos Detected.

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

AIHA LAP, LLC Laboratory #102929

## Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):

ca - carbonate gypsum - gypsum bi - binder or - organic ma - matrix mi - mica ve - vermiculite

ot - other

pe - perlite qu - quartz fg - fiberglass mw - mineral wool wo - wollastinite ta - talc pa - palygorskite (clay)

sy - synthetic ce - cellulose br - brucite ka - kaolin (clay)

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CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/7/2024

## Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118837AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court

**Turnaround Time:** Date: 11/19/2024

5 Days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 Date Of Sampling: Fax# 406-248-9282 Purchase Order #:

Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment geneo calibrated visual fiber type / fibrous

				us (Y/N)	estimate percent	percent	type / percent
		M3.1	Wallboard System/ tan				100%
96069	M3.1A	A-1	surfaced white compound	n	None Detected		qu,bi,ca
		M3.1					
96069		A-2	white drywall	У	None Detected		100% qu,gy
		M3.1	Wallboard System/ tan				100%
96070	M3.1B	B-1	surfaced white compound	n	None Detected		qu,bi,ca
		M3.1					
96070		B-2	white drywall with brown paper	n	None Detected	20% ce	80% qu,gy
		M3.1	Wallboard System/ tan				100%
96071	M3.1C	C-1	surfaced white compound	n	None Detected		qu,bi,ca
		M3.1					
96071		C-2	white drywall with brown paper	n	None Detected	20% ce	80% qu,gy
		M8.1					100%
96072	M8.1A	A-1	Caulking/ white sealant	У	None Detected		qu,gy,bi

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

## AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica gy - gypsum ve - vermiculite bi - binder ot - other or - organic pe - perlite ma - matrix qu - quartz

fg - fiberglass ce - cellulose mw - mineral wool br - brucite wo - wollastonite ka - kaolin (clay) ta - talc pa - palygorskite (clay) sy - synthetic

Approved Signatories:

Josh Strange Analyst

- Fire Damage significant fiber damage reported percentages reflect unaltered fibers
   Fire Damage no significant fiber damages effecting fibrous percentages
- 3. Actinolite in association with Vermiculite
- 4. Layer not analyzed attached to previous positive layer and contamination is suspected
- 5. Not enough sample to analyze

Technical Manager

Senior Analyst Tanner Rasmussen Julio Robles

6. Anthophyllite in association with Fibrous Talc

T. Rea

- 7. Contamination suspected from other building materials
- 8. Favorable scenario for water separation on vermiculite for possible analysis by another method
- 9. < 1% Result point counted positive
- 10. TEM analysis suggested

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/7/2024

# Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118837AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court

**Turnaround Time:** Date: 11/19/2024

5 Days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 Date Of Sampling:

Fax# 406-248-9282 Purchase Order #:

Laboratory Analysts Physical Description of Asbestos type / Sample # Com Layer Homo-Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type / (Y/N)percent

		M8.1				100%
96073	M8.1B	B-1	Caulking/ white sealant	У	None Detected	qu,gy,bi
		140.4				4000/
00074	110.10	M8.1	• ***			100%
96074	M8.1C	C-1	Caulking/ white sealant	У	None Detected	qu,gy,bi
		M13.1				
96075	M13.1A	A-1	Brick and Mortar/ red bricking	V	None Detected	100% qu,ot
30073	WITO.TA	A-1	Brick and Mortan rea bricking	У	None Detected	100 % qu,ot
		M13.1				
96075		A-2	gray mortar	У	None Detected	100% qu,ca
						·
		M13.1				
96076	M13.1B	B-1	Brick and Mortar/ red bricking	У	None Detected	100% qu,ot
		M13.1				
96076		B-2	gray mortar	V	None Detected	100% qu,ca

96077 M13.1C Brick and Mortar/ red bricking None Detected Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

M13.1

### AIHA LAP, LLC Laboratory #102929

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qu - quartz

ca - carbonate mi - mica gy - gypsum ve - vermiculite bi - binder ot - other or - organic pe - perlite

ma - matrix

fg - fiberglass mw - mineral wool wo - wollastonite ta - talc sy - synthetic

ce - cellulose br - brucite ka - kaolin (clay) pa - palygorskite (clay)

Approved Signatories:

100% qu,ot

Josh Strange Analyst

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   Fire Damage no significant fiber damages effecting fibrous percentages
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- 5. Not enough sample to analyze

Technical Manager Senior Analyst Tanner Rasmussen Julio Robles

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- 7. Contamination suspected from other building materials

T. Re-

- 8. Favorable scenario for water separation on vermiculite for possible analysis by another method
- 9. < 1% Result point counted positive
- 10. TEM analysis suggested

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

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12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** Attn: CA Labs Project #: CAL24118837AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

M34.1C

Court

None Detected

Date: 11/19/2024

11/7/2024

**Turnaround Time:** 5 Days

Samples Rec'd: 11/12/24 10:30AM

100% ce

Phone # 406-248-9161 Date Of Sampling: Fax# 406-248-9282 Purchase Order #:

**Insulation**/ brown insulation

C-1

Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type / (Y/N)percent

M13.1 96077 C-2 None Detected 100% qu,ca gray mortar M34.1 96078 M34.1A Insulation/ brown insulation None Detected 100% ce A-1 M34.1 96079 M34.1B **Insulation**/ brown insulation None Detected 100% ce M34.1

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

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ca - carbonate gy - gypsum bi - binder or - organic

ma - matrix

ve - vermiculite ot - other pe - perlite qu - quartz

mi - mica

fg - fiberglass mw - mineral wool wo - wollastonite ta - talc

sy - synthetic

br - brucite ka - kaolin (clay) pa - palygorskite (clay)

ce - cellulose

Approved Signatories:

Josh Strange Analyst

96080

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Technical Manager

Senior Analyst Tanner Rasmussen Julio Robles

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T. Re-

- 8. Favorable scenario for water separation on vermiculite for possible analysis by another method
- 9. < 1% Result point counted positive
- 10. TEM analysis suggested



CONTACT INFORM	ATION			V-
COMPANY:	Tetra Tech, Inc.	Phone:	406.248.9161	CAC24/18837
Primary Contact	Roger W. Herman, Jr.	Phone / Email:	roger.herman@	otetratech.com cell – 406.670.4844
Additional Contact	Rylee Prinz	Phone / Email:	RYLEE.PRINZ(	@tetratech.com cell - (541) 863-2234
	Rylee Prinz	Sampler Signature	e(s Rugar	
Date of Inspection:	11/7/24			
PROJECT INFORMA	ATION			1
Client	MSU	Project Name	Paisley Court	
Project Location	Bozeman, Montana	Project Number	117-001068-25	005
✓ PLM EPA 600/R-93/116	PLM CARB 435 (rock/soil) TEM CH	IATFIELD TEM NOB 198.4	ΓΕΜ CARB 435 (rock/soi	D
PLM Point Count, PC 40	0 Points (All samples greater than 0%, but less		TEM CARB 435 (rock/soi	0
✓ PLM Point Count, PC 40 ✓ Multi-Layered Samples	0 Points (All samples greater than 0%, but less	than 2%)	TEM CARB 435 (rock/soi	D
✓ PLM Point Count, PC 40 ✓ Multi-Layered Samples	0 Points (All samples greater than 0%, but less		TEM CARB 435 (rock/soi	0
✓ PLM Point Count, PC 40 ✓ Multi-Layered Samples ✓ Analyze and Repo	0 Points (All samples greater than 0%, but less	than 2%)	TEM CARB 435 (rock/soi	D
✓ PLM Point Count, PC 40 ✓ Multi-Layered Samples ✓ Analyze and Repo	0 Points (All samples greater than 0%, but less  ort All Separable Layers per EPA 600 Only Stop by Material Type as Noted	than 2%)	TEM CARB 435 (rock/soi	
PLM Point Count, PC 40  Multi-Layered Samples  Analyze and Repo  Analyze Until Positive S	0 Points (All samples greater than 0%, but less  ort All Separable Layers per EPA 600  Only Stop by Material Type as Noted  3 Day  2 Day  1 Day	than 2%) y Analyze sepecifically noted layer		Date & Time

10:30AM



CALZ (1/18837

# **CHAIN OF CUSTODY** -BULK ASBESTOS-

**PROJECT INFORMATION** 

**Project Name** 

**Paisley Court** 

Project Number 117-001068-25005

Bulk Sample #	HA ID	Sample Material Description	Material Location	Notes
A B C	103A M 3.1	White Wall Board System with assocaited White Paint	Throughout Interior	
A B C	103A M 8.1	White Caulking	Around Exterior Windows	
A B C	103A M 13.1	3 icnh by 6 inch Red Brick and Assocaited Grey Mortor	Throughout Exterior	
A B C	103A M 34.1	Grey Blown In Insulation	Throughout Attic	

10:30AM

Crisp Analytical, L.L.C.

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CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Materials Characterization - Bulk Asbestos Analysis

**Laboratory Analysis Report - Polarized Light** 

Tetra Tech, Inc.

7100 Commercial Ave Suite 4 Billings, Montana 59101 Customer Project: 117-001068-25005, Paisley Court
Reference #: CAL24118827AS Date: 11/19/24

#### **Analysis and Method**

Summary of polarized light microscopy (PLM / Stereomicroscopy bulk asbestos analysis) using the methods described in 40CFR Part 763 Appendix E to Subpart E (Interim and EPA 600 / R-93 / 116 (Improved). The sample is first viewed with the aid of a stereomicroscope. Numerous liquid slide preparations are created for analysis under the polarized microscope where identifications and quantifications are preformed. Calibrated liquid refractive oils are used as liquid mouting medium. These oils are used for identification (dispersion staining). A calibrated visual estimation is reported, should any asbestiform mineral be present. Other techniques such as acid washing are used in conjugation with refractive oils for detection of smaller quantities of asbestos. All asbestos percentages are based on calibrated visual estimation traceable to NIST standards for regulated asbestos. Traceability to measurement and calibration is achieved by using known amounts and types of asbestos from standards where analyst and laboratory accuracy are measured. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 0.50% (well above the laboratory definition of trace).

#### **Discussion**

Vermiculite containing samples may contain trace amounts of actinolite/tremolite. When not detected by PLM, these samples should be analyzed using TEM methods and / or water separation techniques. Suspected actinolite/vermiculite presence will be indicated through the sample comment section of this report.

Fibrous talc containing samples may contain a regulated asbestos fiber known as anthophyllite. Under certain conditions the same fiber may actually contain both talc and anthophyllite (a phenomenon called intergrowth). Again, TEM detection methods are recommended. CA Labs PLM report comments will denote suspected amounts of asbestiform anthophyllite with talc, where further analysis is recommended.

Some samples (floor tiles, surfacings, etc.) may contain fibers too small to be detectable by PLM analysis and should be analyzed by TEM bulk protocols.

A "trace asbestos" will be reported if the analyst observes far less than 1% asbestos. CA Labs defines "trace asbestos" as a few fibers detected by the analyst in several preparations and will indicate as such under these circumstances.

Since allowable variation in quantification of samples close to 1% is high, <1% may be reported. Such results are ideal for point counting, and the technique is mandatory for friable samples (NESHAP, Nov. 1990 and clarification letter 8 May 1991) under 1% percent asbestos or "trace asbestos". In order to make all initial PLM reports issued from CA Labs NESHAP compliant, all <1% asbestos results (except floor tiles) will be point counted at no additional charge.

#### Qualifications

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses or hold a degree in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one these disciplines is preferred, but not required. Extensive in-house training programs are used to augment the educational background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235
AIHA LAP, LLC Laboratory #102929

## Crisp Analytical, L.L.C.

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### CA Labs, L.L.C.

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# Overview of Project Sample Material Containing Asbestos

Customer	Customer Project:		117-001068-25005, Paisley Co	urt	CA Labs Project #: CAL24118827AS
Laboratory Sample ID	Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types

No Asbestos Detected.

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

AIHA LAP, LLC Laboratory #102929

### Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):

ca - carbonate gypsum - gypsum bi - binder or - organic ma - matrix mi - mica ve - vermiculite

ot - other

pe - perlite qu - quartz fg - fiberglass mw - mineral wool wo - wollastinite pa - palygorskite (clay)

ta - talc sy - synthetic ce - cellulose br - brucite ka - kaolin (clay)

This report relates to the items tested as received. This report is not to be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST, AIHA LAP, LLC, or any other agency of the federal government. This report may not be reproduced except in full without written permission from CA Labs. These results are submitted pursuant to CA Labs' current terms and sale, condition of sale, including the company's standard warranty and limitations of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, CA Labs will store the samples for a period of ninety (90) days before discarding. A shipping or handling fee may be assessed for the return of any samples.

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406-248-9161

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11/7/2024

# Polarized Light Asbestiform Materials Characterization

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7100 Commercial Ave Suite 4 Billings, Montana 59101

Phone #

Court

**Turnaround Time:** Date: 11/19/2024

5 Days Samples Rec'd: 11/12/24 10:30AM

Date Of Sampling:

Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-

Sample ID		ment	#	Subsample	geneo us (Y/N)	calibrated visual estimate percent	fiber type / percent	fibrous type / percent
	103B-		M3.1	Wallboard System/ white				100%
95931	M3.1A		A-1	surfaced white compound	n	None Detected		qu,bi,ca
			M3.1					
95931			A-2	white drywall with brown paper	n	None Detected	21% ce	79% qu,gy
	103B-		M3.1	Wallboard System/ white				100%
95932	M3.1B		B-1	surfaced white compound	n	None Detected		qu,bi,ca
			M3.1					
95932			B-2	white drywall with brown paper	n	None Detected	20% ce	80% qu,gy
95933	103B- M3.1C		M3.1 C-1	Wallboard System/ white surfaced white compound	n	None Detected		100% qu,bi,ca
-	1110.10			carracea winte compound		Tione Detected		qu,bi,ou
95933			M3.1 C-2	white drywall with brown paper	n	None Detected	21% ce	79% qu,gy
95934	103B- M8.1A	10	M8.1 A-1	Caulking/ off-white sealant with debris	n	None Detected		100% qu,bi,ca
						TD0//0 00 0005		7

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

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ca - carbonate mi - mica gy - gypsum ve - vermiculite bi - binder ot - other or - organic pe - perlite

qu - quartz

ma - matrix

fg - fiberglass ce - cellulose mw - mineral wool br - brucite wo - wollastonite ka - kaolin (clay) ta - talc pa - palygorskite (clay) sy - synthetic

Approved Signatories:

Robert Olivarez

Analyst

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

**Technical Manager** 

TRe

Senior Analyst Tanner Rasmussen Julio Robles

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8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

Crisp Analytical, L.L.C.

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406-248-9161

M13.1

gray mortar

CA Labs, L.L.C.

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11/7/2024

percent

100% qu,ca

# Polarized Light Asbestiform Materials Characterization

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Phone #

Court

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Date Of Sampling:

Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type /

(Y/N)

103B-Caulking/ off-white sealant 100% with debris 95935 M8.1B 10 None Detected qu,bi,ca 103B-Caulking/ off-white sealant M8.1 100% 95936 M8.1C 10 with debris None Detected n qu,bi,ca 103B-M20.1 Moisture Barrier/ green foam 100% 95937 M20.1A with covering None Detected qu,ma,ot 103B-M20.1 Moisture Barrier/ green foam 100% 95938 M20.1B with covering None Detected qu,ma,ot 103B-M20.1 Moisture Barrier/ green foam 100% 95939 M20.1C with covering None Detected qu,ma,ot 103B-M13.1 95940 M13.1A Brick and Mortar/ red bricking None Detected A-1 100% qu,ot

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

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Approved Signatories:

Robert Olivarez Analyst

95940

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T. Re-

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None Detected

Crisp Analytical, L.L.C.

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406-248-9161

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11/7/2024

percent

# Polarized Light Asbestiform Materials Characterization

Court

(Y/N)

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7100 Commercial Ave Suite 4 Billings, Montana 59101

Phone #

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Date Of Sampling:

Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous percent us estimate percent type /

103B-M13.1 95941 M13.1B B-1 Brick and Mortar/ red bricking None Detected 100% qu,ot

M13.1 95941 None Detected 100% qu,ca B-2 gray mortar

103B-M13.1 95942 M13.1C Brick and Mortar/ red bricking None Detected 100% qu,ot

M13.1 95942 None Detected C-2 gray mortar 100% qu,ca

103B-M34.1 95943 M34.1A A-1 Insulation/ tan insulation None Detected 100% ce

103B-M34.1 95944 M34.1B Insulation/ tan insulation None Detected B-1 100% ce

103B-M34.1 95945 M34.1C C-1 Insulation/ tan insulation None Detected 100% ce

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

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Robert Olivarez

Analyst

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T. Re-Technical Manager

Senior Analyst Tanner Rasmussen Julio Robles

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COMPANY:	Tetra Tech, Inc.			Phone:	406.248.9161	A	74/194	76
Primary Contact	Roger W. Herman	n, Jr.		Phone / Email:	roger.herman@	tetratech con	n coll - 406 6	70 1811-12-24
<b>Additional Contact</b>				Phone / Email:	RYLEE.PRINZ@			
Sampler Name(s)	Rylee Prinz			Sampler Signature		9.00.00011.0011	11 0011 - (041) 0	505-2254
Date of Inspection:		11/7/24		_				<del></del>
PROJECT INFORMA	ATION							
Cilent		MSU		<b>Project Name</b>	Paiskey Court			
Project Location		Bozeman		<b>Project Number</b>	117-001068-2500	5		
PEM Point Count, PC 40	PLM CARB 435 (i		M CHATFIELD	TEM NOB 198.4	TEM CARB 435 (rock/soil	)		
	00 Points (All samples g			TEM NOB 198.4 T	TEM CARB 435 (rock/soil	)		
✓ Multi-Layered Samples	00 Points (All samples g	reater than 0%, but	less than 2%)	TEM NOB 198.4	TEM CARB 435 (rock/soil	)		
✓ Multi-Layered Samples	00 Points (All samples g s: ort All Separable Layers	reater than 0%, but	less than 2%)		TEM CARB 435 (rock/soil			
✓ Multi-Layered Samples ✓ Analyze and Repo	00 Points (All samples g s: ort All Separable Layers Stop by Material Type a	reater than 0%, but	less than 2%)		TEM CARB 435 (rock/soil			
✓ Multi-Layered Samples ✓ Analyze and Repo ✓ Analyze Until Positive S	00 Points (All samples g s: ort All Separable Layers Stop by Material Type a	reater than 0%, but	less than 2%) Only Analyze s	epecifically noted layer	TEM CARB 435 (rock/soil			
✓ Multi-Layered Samples ✓ Analyze and Repo ✓ Analyze Until Positive S	00 Points (All samples g s: ort All Separable Layers Stop by Material Type a	reater than 0%, but sper EPA 600	less than 2%) Only Analyze s	epecifically noted layer	TEM CARB 435 (rock/soil			
✓ Multi-Layered Samples ✓ Analyze and Repo ✓ Analyze Until Positive S	00 Points (All samples g s:  ort All Separable Layers Stop by Material Type a  B 3 Day 2	reater than 0%, but sper EPA 600	less than 2%) Only Analyze s	epecifically noted layer		Date & Time		
✓ Multi-Layered Samples ✓ Analyze and Repo ✓ Analyze Until Positive S  FURNAROUND TIMI  10 Day ✓ 5 Day	DO Points (All samples gosts:  Stort All Separable Layers  Stop by Material Type a  B 3 Day 2	per EPA 600 as Noted	e less than 2%)  Only Analyze s  Same D	epecifically noted layer  ay Rush Results by:				

10:30AM

NOV 1 2 2024

Andrew Sikes



CAC24/18827

CHAIN OF CUSTODY
-BULK ASBESTOS-

**PROJECT INFORMATION** 

**Project Name** 

Paiskey Court

Project Identifier 103B

Project Number 117-001068-25005

Bulk Sample #	HA ID	Sample Material Description	Material Location	Notes	
Α					
В	103B M 3.1	White Wall Board system and Assocaited white Paint	Throughout Interior		
С		, , , , , , , , , , , , , , , , , , , ,	Throughout Interior		
Α			A		
В	103B M 8.1	White Caulking	Around Exterior Windows		
С			Around Exterior Windows		
Α					
В	103B M 20.1	Green Moisture Barrier	Throughout Exterior		
С			Throughout Exterior		
Α		0:-1-1-0:-1-5-1-5-1-			
В	103B M 13.1	3 inch by 6 inch Red Brick and Assocaited Grey	Throughout Exterior		
C		Mortor	Throughout Exterior		
Α					
В	103B M 34.1	Grey blown in insulation	Throughout Interior		
С		2.5) 2.5 III III diddidioii	Throughout Interior		

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798



CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Materials Characterization - Bulk Asbestos Analysis

**Laboratory Analysis Report - Polarized Light** 

Tetra Tech, Inc.

7100 Commercial Ave Suite 4 Billings, Montana 59101 Customer Project: 117-001068-25005, Paisley Court

Reference #: CAL24118829AS Date: 11/19/24

#### **Analysis and Method**

Summary of polarized light microscopy (PLM / Stereomicroscopy bulk asbestos analysis) using the methods described in 40CFR Part 763 Appendix E to Subpart E (Interim and EPA 600 / R-93 / 116 (Improved). The sample is first viewed with the aid of a stereomicroscope. Numerous liquid slide preparations are created for analysis under the polarized microscope where identifications and quantifications are preformed. Calibrated liquid refractive oils are used as liquid mouting medium. These oils are used for identification (dispersion staining). A calibrated visual estimation is reported, should any asbestiform mineral be present. Other techniques such as acid washing are used in conjugation with refractive oils for detection of smaller quantities of asbestos. All asbestos percentages are based on calibrated visual estimation traceable to NIST standards for regulated asbestos. Traceability to measurement and calibration is achieved by using known amounts and types of asbestos from standards where analyst and laboratory accuracy are measured. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 0.50% (well above the laboratory definition of trace).

#### **Discussion**

Vermiculite containing samples may contain trace amounts of actinolite/tremolite. When not detected by PLM, these samples should be analyzed using TEM methods and / or water separation techniques. Suspected actinolite/vermiculite presence will be indicated through the sample comment section of this report.

Fibrous talc containing samples may contain a regulated asbestos fiber known as anthophyllite. Under certain conditions the same fiber may actually contain both talc and anthophyllite (a phenomenon called intergrowth). Again, TEM detection methods are recommended. CA Labs PLM report comments will denote suspected amounts of asbestiform anthophyllite with talc, where further analysis is recommended.

Some samples (floor tiles, surfacings, etc.) may contain fibers too small to be detectable by PLM analysis and should be analyzed by TEM bulk protocols.

A "trace asbestos" will be reported if the analyst observes far less than 1% asbestos. CA Labs defines "trace asbestos" as a few fibers detected by the analyst in several preparations and will indicate as such under these circumstances.

Since allowable variation in quantification of samples close to 1% is high, <1% may be reported. Such results are ideal for point counting, and the technique is mandatory for friable samples (NESHAP, Nov. 1990 and clarification letter 8 May 1991) under 1% percent asbestos or "trace asbestos". In order to make all initial PLM reports issued from CA Labs NESHAP compliant, all <1% asbestos results (except floor tiles) will be point counted at no additional charge.

#### Qualifications

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses or hold a degree in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one these disciplines is preferred, but not required. Extensive in-house training programs are used to augment the educational background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235
AIHA LAP, LLC Laboratory #102929

## Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

### CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Overview of Project Sample Material Containing Asbestos

Customer	Project:		117-001068-25005, Paisley Co	urt	CA Labs Project #: CAL24118829AS
Laboratory Sample ID	Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types

No Asbestos Detected.

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

AIHA LAP, LLC Laboratory #102929

#### Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):

ca - carbonate gypsum - gypsum bi - binder or - organic ma - matrix mi - mica ve - vermiculite

ot - other

pe - perlite qu - quartz fg - fiberglass mw - mineral wool wo - wollastinite ta - talc sy - synthetic ce - cellulose

br - brucite ka - kaolin (clay) pa - palygorskite (clay)

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CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: **Customer Project:** CA Labs Project #: CAL24118829AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court

**Turnaround Time:** Date: 11/19/2024

5 Days Samples Rec'd: 11/12/24 10:30AM Phone # 406-248-9161 11/7/2024 Date Of Sampling: Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent us percent type / (Y/N)percent 104A-Wallboard System/ white 100% surfaced white compound 95961 M3.1A None Detected qu,bi,ca M3.1 95961 A-2 white drywall with brown paper None Detected 20% ce 80% qu,gy n 104A-Wallboard System/ white M3.1 100% 95962 M3.1B surfaced white compound None Detected qu,bi,ca n M3.1 95962 white drywall with brown paper None Detected 80% qu,gy n 20% ce 104A-Wallboard System/ white 100% 95963 M3.1C surfaced white compound n None Detected qu,bi,ca M3.1 95963 white drywall with brown paper None Detected C-2 20% ce 80% qu,gy 104A-M8.1 95964 M8.1A 10 Caulking/ off-white sealant None Detected 100% qu,bi

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate gy - gypsum bi - binder or - organic

ma - matrix

mi - mica ve - vermiculite ot - other

pe - perlite

qu - quartz

fg - fiberglass mw - mineral wool wo - wollastonite ta - talc

sy - synthetic

ce - cellulose br - brucite ka - kaolin (clav) pa - palygorskite (clay)

Approved Signatories:

a Metet Jose Matute

Analyst

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

Technical Manager

Tanner Rasmussen

Senior Analyst Julio Robles

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

TRen

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

M8.1

B-1

M13.1

10

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

100% qu,bi

# Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: **Customer Project:** CA Labs Project #: CAL24118829AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

104A-

M8.1B

95965

**Turnaround Time:** Date: 11/19/2024

None Detected

5 Days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 11/7/2024 Date Of Sampling: Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of

Court

Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous us estimate percent percent type / (Y/N)percent

Caulking/ off-white sealant

104A-M8.1 95966 M8.1C 10 C-1 Caulking/ off-white sealant None Detected 100% qu,bi 104A-M13.1

95967 M13.1A Brick and Mortar/ red bricking None Detected 100% qu,ot

95967 None Detected A-2 gray mortar 100% qu,ca

104A-M13.1 95968 M13.1B B-1 Brick and Mortar/ red bricking None Detected 100% qu,ot

M13.1 95968 None Detected B-2 gray mortar 100% qu,ca

104A-M13.1 95969 M13.1C Brick and Mortar/ red bricking None Detected 100% qu,ot

Dallas NVLAP Lab Code 200349-0 TEM/PLM

AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica fg - fiberglass ce - cellulose gy - gypsum ve - vermiculite mw - mineral wool br - brucite bi - binder ot - other wo - wollastonite ka - kaolin (clav)

or - organic pe - perlite ta - talc pa - palygorskite (clay) Approved Signatories: ma - matrix qu - quartz sy - synthetic

a Metet Jose Matute

Analyst

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

T. Re-

Technical Manager Senior Analyst Tanner Rasmussen Julio Robles

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

10. TEM analysis suggested

TDSHS 30-0235

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/7/2024

# Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: **Customer Project:** CA Labs Project #: CAL24118829AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court

**Turnaround Time:** Date: 11/19/2024 5 Days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 Date Of Sampling:

Fax# 406-248-9282 Purchase Order #:

Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous us estimate percent percent type / (Y/N)percent

M13.1 95969 C-2 None Detected 100% qu,ca gray mortar 104A-M20.1 Moister Barrier/ green foam insulation with foil 95970 M20.1A None Detected 100% ot n 104A-M20.1 Moister Barrier/ green foam 95971 M20.1B insulation with foil None Detected 100% ot n 104A-M20.1 Moister Barrier/ green foam 95972 M20.1C insulation with foil None Detected n 100% ot 104A-M34.1 Insulation/ gray insulation 95973 M34.1A A-1 None Detected 100% ce 104A-M34.1 95974 M34.1B Insulation/ gray insulation None Detected B-1 100% ce 104A-M34.1 95975 M34.1C C-1 Insulation/ gray insulation None Detected 100% ce

> TDSHS 30-0235 Dallas NVLAP Lab Code 200349-0 TEM/PLM

### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate gy - gypsum bi - binder or - organic

ma - matrix

mi - mica ve - vermiculite ot - other pe - perlite

qu - quartz

fg - fiberglass mw - mineral wool wo - wollastonite ta - talc

sy - synthetic

ce - cellulose br - brucite ka - kaolin (clav) pa - palygorskite (clay)

Approved Signatories:

Jose Matute Analyst

- Fire Damage significant fiber damage reported percentages reflect unaltered fibers
   Fire Damage no significant fiber damages effecting fibrous percentages
- 3. Actinolite in association with Vermiculite
- 4. Layer not analyzed attached to previous positive layer and contamination is suspected
- 5. Not enough sample to analyze

Technical Manager

Tanner Rasmussen

Senior Analyst Julio Robles

- 6. Anthophyllite in association with Fibrous Talc
- 7. Contamination suspected from other building materials

T. Re-

- 8. Favorable scenario for water separation on vermiculite for possible analysis by another method
- 9. < 1% Result point counted positive
- 10. TEM analysis suggested



CONTACT INFORM	ATION				C . 24110	179	
COMPANY:	Tetra Tech, Inc.		_Phone:	406.248.9161			
Primary Contact	Roger W. Herman, Jr.		Phone / Email: roger.herman@tetratech.com cell - 406.670.4844  Phone / Email: RYLEE.PRINZ@tetratech.com cell - (541) 863-2234  Sampler Signature(s				
Additional Contact	Rylee Prinz						
Sampler Name(s)	Rylee Prinz						
Date of Inspection:	11/7/24		_				
PROJECT INFORM	ATION						
Client	MSU		Project Name	Paisley Court			
Project Location	Bozeman, Mo	ontana	Project Number	117-001068-25	005		
PLM INSTRUCTION	<u>IS</u>						
✓ PLM EPA 600/R-93/116	PLM CARB 435 (rock/soil)	TEM CHATFIELD	☐ TEM NOB 198.4 ☐ 7	TEM CARB 435 (rock/soi	il)		
PLM Point Count, PC 4	00 Points (All samples greater than	0%, but less than 2%)					
✓ Multi-Layered Sample	s:						
✓ Analyze and Rep	ort All Separable Layers per EPA 6	00 Only Analyze	sepecifically noted layer				
✓ Analyze Until Positive	Stop by Material Type as Noted						
TURNAROUND TIM	<u>E</u>						
☐ 10 Day	3 Day 2 Day	1 Day Same D	Day Rush Results by:				
Relinquished	By Date & T	ime VIA	Received	Ву	Date & Time		
Rylu Prinz	11/9/24 1	0:00 FEDEX					
1						10:30AM	



1 CA241118829

# CHAIN OF CUSTODY -BULK ASBESTOS-

**PROJECT INFORMATION** 

104A

**Project Name** 

**Project Identifier** 

Paisley Court

**Project Number** 117-001068-25005

HA ID Sample Material Description		Material Location	Notes
104A M 3.1	White Wall Board System and Assocaited white paint	Throughout Interior	
104A M 8.1	White Caulking	Around Exterior Windows	
104A M 13.1	3 inch by 6 inch Red Brick and Asssocaited Grey Mortor	Throughout Exterior	
104A M 20.1	Green Foam Moisture Barrier With Assocaited Silver Backing	Throughout Exterior	
104A M 34.1	Grey blown in insulation	Throughout Attic	
	104A M 3.1 104A M 8.1 104A M 13.1 104A M 20.1	104A M 3.1 White Wall Board System and Assocaited white paint  104A M 8.1 White Caulking  104A M 13.1 3 inch by 6 inch Red Brick and Assocaited Grey Mortor  104A M 20.1 Green Foam Moisture Barrier With Assocaited Silver Backing	104A M 3.1 White Wall Board System and Assocaited white paint Throughout Interior  104A M 8.1 White Caulking Around Exterior Windows  104A M 13.1 3 inch by 6 inch Red Brick and Assocaited Grey Mortor Throughout Exterior  104A M 20.1 Green Foam Moisture Barrier With Assocaited Silver Backing

Crisp Analytical, L.L.C.

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CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Materials Characterization - Bulk Asbestos Analysis

**Laboratory Analysis Report - Polarized Light** 

Tetra Tech, Inc.

7100 Commercial Ave Suite 4 Billings, Montana 59101 Customer Project: 117-001068-25005, Paisley Court

Reference #: CAL24118831AG Date: 11/19/24

#### **Analysis and Method**

Summary of polarized light microscopy (PLM / Stereomicroscopy bulk asbestos analysis) using the methods described in 40CFR Part 763 Appendix E to Subpart E (Interim and EPA 600 / R-93 / 116 (Improved). The sample is first viewed with the aid of a stereomicroscope. Numerous liquid slide preparations are created for analysis under the polarized microscope where identifications and quantifications are preformed. Calibrated liquid refractive oils are used as liquid mouting medium. These oils are used for identification (dispersion staining). A calibrated visual estimation is reported, should any asbestiform mineral be present. Other techniques such as acid washing are used in conjugation with refractive oils for detection of smaller quantities of asbestos. All asbestos percentages are based on calibrated visual estimation traceable to NIST standards for regulated asbestos. Traceability to measurement and calibration is achieved by using known amounts and types of asbestos from standards where analyst and laboratory accuracy are measured. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 0.50% (well above the laboratory definition of trace).

#### Discussion

Vermiculite containing samples may contain trace amounts of actinolite/tremolite. When not detected by PLM, these samples should be analyzed using TEM methods and / or water separation techniques. Suspected actinolite/vermiculite presence will be indicated through the sample comment section of this report.

Fibrous talc containing samples may contain a regulated asbestos fiber known as anthophyllite. Under certain conditions the same fiber may actually contain both talc and anthophyllite (a phenomenon called intergrowth). Again, TEM detection methods are recommended. CA Labs PLM report comments will denote suspected amounts of asbestiform anthophyllite with talc, where further analysis is recommended.

Some samples (floor tiles, surfacings, etc.) may contain fibers too small to be detectable by PLM analysis and should be analyzed by TEM bulk protocols.

A "trace asbestos" will be reported if the analyst observes far less than 1% asbestos. CA Labs defines "trace asbestos" as a few fibers detected by the analyst in several preparations and will indicate as such under these circumstances.

Since allowable variation in quantification of samples close to 1% is high, <1% may be reported. Such results are ideal for point counting, and the technique is mandatory for friable samples (NESHAP, Nov. 1990 and clarification letter 8 May 1991) under 1% percent asbestos or "trace asbestos". In order to make all initial PLM reports issued from CA Labs NESHAP compliant, all <1% asbestos results (except floor tiles) will be point counted at no additional charge.

#### Qualifications

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses or hold a degree in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one these disciplines is preferred, but not required. Extensive in-house training programs are used to augment the educational background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235
AIHA LAP, LLC Laboratory #102929

## Crisp Analytical, L.L.C.

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## CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Overview of Project Sample Material Containing Asbestos

Customer	<b>Sustomer Project:</b> 117-001068-25005, Paisley Court		CA Labs Project #: CAL24118831AG		
Laboratory Sample ID	Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types
95994	104B M8.1A	M8.1A-1	Ext. Caulking/ off-white sealant with debris	<1% Chrysotile	off-white sealant with debris

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

AIHA LAP, LLC Laboratory #102929

#### Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):

ca - carbonate gypsum - gypsum bi - binder or - organic ma - matrix mi - mica ve - vermiculite

ot - other

pe - perlite qu - quartz fg - fiberglass mw - mineral wool wo - wollastinite pa - palygorskite (clay)

ta - talc sy - synthetic ce - cellulose br - brucite ka - kaolin (clay)

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CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

100%

qu,bi,ca

# Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118831AG Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

104B

M3.1A

95991

Court

None Detected

**Turnaround Time:** Date: 11/19/2024

5 days Samples Rec'd: 11/12/24 10:30AM Phone # 406-248-9161 11/7/2024 Date Of Sampling:

Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of

M3.1A- Wallboard System w/ Paint/

white surfaced white compound

Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous percent us estimate percent type / (Y/N)percent

M3.1A-95991 white compound (beneath tape) None Detected 100% qu,ca 2

M3.1A 95991 white drywall with brown paper None Detected 78% qu,gy .3 22% ce M3.1B- Wallboard System w/ Paint/ 104B 100%

95992 M3.1B white surfaced white compound None Detected n qu.bi.ca M3.1B-

95992 white compound (beneath tape) None Detected 100% qu,ca

M3.1C- Wallboard System w/ Paint/ 104B 100% 95993 M3.1C white surfaced white compound None Detected qu,bi,ca

M3.1C-95993 white drywall with brown paper None Detected 20% ce 80% qu,gy

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235 AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica fg - fiberglass ce - cellulose gy - gypsum ve - vermiculite mw - mineral wool br - brucite bi - binder ot - other wo - wollastonite ka - kaolin (clay)

or - organic pe - perlite ta - talc pa - palygorskite (clay) ma - matrix qu - quartz sy - synthetic

for Matet Jose Matute

Analyst

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

(TRe-

Technical Manager Tanner Rasmussen

Senior Analyst Julio Robles

Approved Signatories:

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

Crisp Analytical, L.L.C.

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CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/7/2024

100% qu,bi

100% qu,ot

100% qu,ca

# Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118831AG Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

104B

M8.1A

M13.1B

95994

95998

95998

Court

<1% Chrysotile

None Detected

None Detected

**Turnaround Time:** Date: 11/19/2024

5 days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 Date Of Sampling:

Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos

M8.1A- Ext. Caulking/ off-white

bricking

gray mortar

sealant with debris

Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type / (Y/N)percent

M8.1B- Ext. Caulking/ off-white 104B 95995 M8.1B 10 sealant with debris None Detected 100% qu,bi n 104B M8.1C- Ext. Caulking/ off-white 95996 M8.1C 10 sealant with debris None Detected n 100% qu,bi M13.1 3x6 Brick and Mortar/ red 104B 95997 M13.1A bricking None Detected A-1 100% qu.ot M13.1 95997 A-2 gray mortar None Detected 100% qu,ca M13.1 3x6 Brick and Mortar/ red 104B

M13.1

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica fg - fiberglass gy - gypsum ve - vermiculite mw - mineral wool

br - brucite bi - binder ot - other wo - wollastonite ka - kaolin (clay) or - organic pe - perlite ta - talc pa - palygorskite (clay)

Approved Signatories: ma - matrix qu - quartz sy - synthetic

for Matet Jose Matute Analyst

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

C.T. Rem Technical Manager

ce - cellulose

Senior Analyst Tanner Rasmussen Julio Robles

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

M13.1

C-2

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/7/2024

100% qu,ca

# Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118831AG Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court

None Detected

**Turnaround Time:** Date: 11/19/2024

5 days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 Date Of Sampling: Fax# 406-248-9282 Purchase Order #:

Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous percent us estimate percent type / (Y/N)percent

M13.1 3x6 Brick and Mortar/ red 104R 95999 M13.1C bricking None Detected 100% qu,ot

Foam Moisture Barrier w/ 104B M20.1 Backing/ green foam 96000 M20.1A insulation with foil None Detected 100% ot n Foam Moisture Barrier w/ 104B Backing/ green foam M20.1

96001 M20.1B insulation with foil None Detected n 100% ot Foam Moisture Barrier w/ 104B Backing/ green foam

M20.1 96002 M20.1C insulation with foil n None Detected 100% ot

104B Blown In Insulation/ gray M34.1 96003 M34.1A insulation None Detected 100% ce

M34.1 Blown In Insulation/ gray 104B 96004 M34.1B insulation None Detected 100% ce Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

> AIHA LAP, LLC Laboratory #102929 Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method. ca - carbonate mi - mica fg - fiberglass ce - cellulose gy - gypsum ve - vermiculite mw - mineral wool br - brucite

bi - binder ot - other wo - wollastonite ka - kaolin (clay) or - organic pe - perlite ta - talc pa - palygorskite (clay) Approved Signatories: ma - matrix qu - quartz sy - synthetic

for Mater Jose Matute

Analyst

95999

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

Technical Manager

C.T. Rea

Senior Analyst Tanner Rasmussen Julio Robles

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118831AG Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court **Turnaround Time:** Date: 11/19/2024

5 days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 11/7/2024 Date Of Sampling:

Fax# 406-248-9282 Purchase Order #:

Laboratory Analysts Physical Description of Asbestos type / Sample # Com Layer Homo-Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type / (Y/N)percent

104B M34.1 Blown In Insulation/ gray

96005 M34.1C insulation None Detected 100% ce

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica gy - gypsum ve - vermiculite

mw - mineral wool wo - wollastonite ta - talc

ce - cellulose br - brucite ka - kaolin (clay)

bi - binder ot - other or - organic pe - perlite pa - palygorskite (clay)

ma - matrix qu - quartz sy - synthetic

fg - fiberglass

for Matet Jose Matute Analyst

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

C.T. Re-Technical Manager

Senior Analyst Tanner Rasmussen Julio Robles

Approved Signatories:

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798 CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Polarized Light Asbestiform Materials Point Count Laboratory Analysis Report - Point Count

#### **Analysis and Method**

Point counting was performed on a polarized light microscope with a calibrated reticle according to the revised NESHAP method of November 20, 1990 (Federal Register, V.55, N.224, 11/20/90). Original asbestos content of bulk materials was determined using procedures outlined in the interim method (40 CFR part 763, Appendix E to subpart E) and AHERA method (EPA-600/R-93/116). Samples were prepared using HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion staining / becke line method.

#### **Qualifications**

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one of these disciplines is preferred, but not required. Extensive in-house training programs are used to augment education background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. This report is not covered by the scope of NVLAP accreditation. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

Customer Info: Attn: Customer Project: CA Labs Project #: Tetra Tech, Inc. Customer Project: CAL24118831AG

7100 Commercial Ave Suite 4 Billings, Montana 59101

Turnaround Time: Date: 11/19/24

5 days

Court

Samples Rec'd: 11/12/24 10:30AM

Date Of Sampling: 11/07/24

Date Of Sampling: Purchase Order #:

Phone # 406-248-9161 Fax # 406-248-9282

Laboratory Sample # Layer Analysts Physical Homo-geneous Point Counted % / Sample ID # Description of (Y/N) Asbestos Type Subsample

Ext. Caulking/ off-104B <sub>M8.1A-</sub> white sealant with

95994 M8.1A 1 debris n 0.50% Chrysotile

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

This report relates to the items tested. This report is not to be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST or any other agency of the federal government. This report may not be reproduced except in full without written permission from CA Labs. These results are submitted pursuant to CA Labs' current terms and sale, condition of sale, including the company's standard warranty and limitations of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, CA Labs will store the samples for a period of ninety (90) days before discarding. A shipping or handling fee may be assessed for the return of any samples. All samples received in good condition unless noted.

Approved Signatories:

Technical Manager
Tanner Rasmussen

Senior Analyst Julio Robles

Jose Matute
Analyst

Metal



<b>CONTACT INFORM</b>	ATION		
COMPANY:	Tetra Tech, Inc.	Phone:	406.248.9161 CALZ (1/883)
Primary Contact	Roger W. Herman, Jr.	Phone / Email:	roger.herman@tetratech.com cell - 406.670.4844
<b>Additional Contact</b>	Rylee Prinz	Phone / Email:	RYLEE.PRINZ@tetratech.com cell - (541) 863-2234
Sampler Name(s)	Rylee Prinz	Sampler Signatu	
Date of Inspection:	11/7/24		
PROJECT INFORM	ATION		
Client	MSU	Project Name	Pailey Court
Project Location	Bozeman, Montana	Project Number	
PLM INSTRUCTION	<u>s</u>		
PLM EPA 600/R-93/116  PLM Point Count, PC 40	PLM CARB 435 (rock/soil) TEN  O Points (All samples greater than 0%, but		TEM CARB 435 (rock/soil)
✓ Multi-Layered Samples			
✓ Analyze and Repo	ort All Separable Layers per EPA 600	Only Analyze sepecifically noted layer	
✓ Analyze Until Positive S	itop by Material Type as Noted		
TURNAROUND TIME  10 Day  5 Day	3 Day 2 Day 1 Day	Same Day Rush Results by	y:
Relinquished	By Date & Time	VIA Receive	ed By Date & Time
pyber frinz	11/9/24 10:40	FEDEX	2 220 51 11110

10:30AM



CAC74116831

# CHAIN OF CUSTODY -BULK ASBESTOS-

**PROJECT INFORMATION** 

**Project Name** 

**Project Identifier** 

Pailey Court

Project Number 117-001068-25005

Bulk Sample #	HA ID	Sample Material Description	Material Location	Notes
A B	104B M 3.1	White wall board system with Assocaited white Paint	Throughout Interior	
C		, and a mile i diffe	Throughout interior	
A B C	104B M 8.1	White Exterior caulking	Around exterior Windows	
A B C	104B M 13.1	3 inch by 6 inch Red Brick with Assocaited grey Mortor	Throughout Exterior	
A B C	104B M 20.1	Green foam Moisture barrier with assocaited silver backing	Throughout Exterior	
A B C	104B M 34.1	Grey blown in insulation	Throughout Attic	

10:30AM

Andrew Sikes

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798



CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Materials Characterization - Bulk Asbestos Analysis

**Laboratory Analysis Report - Polarized Light** 

Tetra Tech, Inc.

7100 Commercial Ave Suite 4 Billings, Montana 59101 Customer Project: 117-001068-25005, Paisley Court

Reference #: CAL24118832AS Date: 11/19/24

#### **Analysis and Method**

Summary of polarized light microscopy (PLM / Stereomicroscopy bulk asbestos analysis) using the methods described in 40CFR Part 763 Appendix E to Subpart E (Interim and EPA 600 / R-93 / 116 (Improved). The sample is first viewed with the aid of a stereomicroscope. Numerous liquid slide preparations are created for analysis under the polarized microscope where identifications and quantifications are preformed. Calibrated liquid refractive oils are used as liquid mouting medium. These oils are used for identification (dispersion staining). A calibrated visual estimation is reported, should any asbestiform mineral be present. Other techniques such as acid washing are used in conjugation with refractive oils for detection of smaller quantities of asbestos. All asbestos percentages are based on calibrated visual estimation traceable to NIST standards for regulated asbestos. Traceability to measurement and calibration is achieved by using known amounts and types of asbestos from standards where analyst and laboratory accuracy are measured. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 0.50% (well above the laboratory definition of trace).

#### **Discussion**

Vermiculite containing samples may contain trace amounts of actinolite/tremolite. When not detected by PLM, these samples should be analyzed using TEM methods and / or water separation techniques. Suspected actinolite/vermiculite presence will be indicated through the sample comment section of this report.

Fibrous talc containing samples may contain a regulated asbestos fiber known as anthophyllite. Under certain conditions the same fiber may actually contain both talc and anthophyllite (a phenomenon called intergrowth). Again, TEM detection methods are recommended. CA Labs PLM report comments will denote suspected amounts of asbestiform anthophyllite with talc, where further analysis is recommended.

Some samples (floor tiles, surfacings, etc.) may contain fibers too small to be detectable by PLM analysis and should be analyzed by TEM bulk protocols.

A "trace asbestos" will be reported if the analyst observes far less than 1% asbestos. CA Labs defines "trace asbestos" as a few fibers detected by the analyst in several preparations and will indicate as such under these circumstances.

Since allowable variation in quantification of samples close to 1% is high, <1% may be reported. Such results are ideal for point counting, and the technique is mandatory for friable samples (NESHAP, Nov. 1990 and clarification letter 8 May 1991) under 1% percent asbestos or "trace asbestos". In order to make all initial PLM reports issued from CA Labs NESHAP compliant, all <1% asbestos results (except floor tiles) will be point counted at no additional charge.

#### Qualifications

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses or hold a degree in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one these disciplines is preferred, but not required. Extensive in-house training programs are used to augment the educational background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235
AIHA LAP, LLC Laboratory #102929

## Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

### CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Overview of Project Sample Material Containing Asbestos

Customer	Project:		117-001068-25005, Paisley Cou	urt	CA Labs Project #: CAL24118832AS
Laboratory Sample ID	Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types

No Asbestos Detected.

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

AIHA LAP, LLC Laboratory #102929

### Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):

ca - carbonate gypsum - gypsum bi - binder or - organic ma - matrix mi - mica ve - vermiculite

ot - other

pe - perlite qu - quartz fg - fiberglass mw - mineral wool wo - wollastinite ta - talc sy - synthetic ce - cellulose br - brucite ka - kaolin (clay) pa - palygorskite (clay)

This report relates to the items tested as received. This report is not to be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST, AIHA LAP, LLC, or any other agency of the federal government. This report may not be reproduced except in full without written permission from CA Labs. These results are submitted pursuant to CA Labs' current terms and sale, condition of sale, including the company's standard warranty and limitations of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, CA Labs will store the samples for a period of ninety (90) days before discarding. A shipping or handling fee may be assessed for the return of any samples.

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: **Customer Project:** CA Labs Project #: CAL24118832AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court

**Turnaround Time:** Date: 11/19/2024

5 Days Samples Rec'd: 11/12/24 10:30AM Phone # 406-248-9161 11/7/2024 Date Of Sampling: Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent us percent type / (Y/N)percent 105A-Wallboard System/ white 100% surfaced white compound 96006 M3.1A None Detected qu,bi,ca M3.1 96006 A-2 white drywall with brown paper None Detected 21% ce 79% qu,gy n 105A-Wallboard System/ white M3.1 100% 96007 M3.1B surfaced white compound None Detected qu,bi,ca n M3.1 96007 white drywall with brown paper None Detected 80% qu,gy 20% ce 105A-Wallboard System/ white 96008 M3.1C drywall None Detected 100% qu,gy 105A-M8.1 96009 M8.1A Caulking/ white sealant None Detected 10 A-1 100% qu,bi 105A-M8.1 96010 M8.1B 10 Caulking/ white sealant None Detected 100% qu,bi

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate gy - gypsum bi - binder or - organic

ma - matrix

mi - mica ve - vermiculite ot - other

pe - perlite

qu - quartz

fg - fiberglass mw - mineral wool wo - wollastonite

ta - talc

sy - synthetic

ce - cellulose br - brucite ka - kaolin (clav)

pa - palygorskite (clay)

Approved Signatories:

a Metet Jose Matute

Analyst

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

Technical Manager

Tanner Rasmussen

Senior Analyst Julio Robles

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

T. Re-

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

406-248-9161

M13.1

C-2 gray mortar

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/7/2024

100% qu,ca

# Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: **Customer Project:** CA Labs Project #: CAL24118832AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Phone #

Court

**Turnaround Time:** Date: 11/19/2024

5 Days Samples Rec'd: 11/12/24 10:30AM

Date Of Sampling:

Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type /

(Y/N)percent 105A-M8.1 96011 M8.1C 10 C-1 Caulking/ white sealant None Detected 100% qu,bi 105A-M13.1 96012 M13.1A Brick and Mortar/ red bricking None Detected 100% qu,ot A-1 M13.1 96012 None Detected 100% qu,ca A-2 gray mortar 105A-M13.1 96013 M13.1B Brick and Mortar/ red bricking None Detected 100% qu.ot M13.1 96013 B-2 gray mortar None Detected 100% qu,ca 105A-M13.1 96014 M13.1C Brick and Mortar/ red bricking None Detected C-1 100% qu,ot

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

sy - synthetic

ca - carbonate mi - mica gy - gypsum ve - vermiculite bi - binder ot - other or - organic pe - perlite ma - matrix qu - quartz

fg - fiberglass ce - cellulose mw - mineral wool br - brucite wo - wollastonite ka - kaolin (clav) ta - talc pa - palygorskite (clay)

None Detected

Approved Signatories:

a Metet Jose Matute

Analyst

96014

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

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Technical Manager

Senior Analyst Tanner Rasmussen Julio Robles

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.T. Re-

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/7/2024

# Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** Attn: CA Labs Project #: CAL24118832AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court **Turnaround Time:** Date: 11/19/2024

5 Days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 Date Of Sampling: Fax# 406-248-9282 Purchase Order #:

Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type / (Y/N)percent

105A-M34.1 96015 M34.1A A-1 Insulation/ gray insulation None Detected 100% ce 105A-M34.1 96016 M34.1B B-1 Insulation/ gray insulation None Detected 100% ce 105A-M34.1 96017 M34.1C Insulation/ gray insulation None Detected 100% ce

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

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ca - carbonate mi - mica fg - fiberglass ce - cellulose gy - gypsum ve - vermiculite mw - mineral wool br - brucite bi - binder ot - other wo - wollastonite ka - kaolin (clay) or - organic pe - perlite ta - talc pa - palygorskite (clay)

Approved Signatories: ma - matrix qu - quartz sy - synthetic

Jose Matute Analyst

a Metit

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

T. Re-Technical Manager

Senior Analyst Tanner Rasmussen Julio Robles

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive



CONTACT INFORM	ATION						
OMPANY:	Tetra Tech, Inc.			Phone:	406.248.9161	Cac241/6832	
rimary Contact	imary Contact Roger W. Herman, Jr. dditional Contact Rylee Prinz			Phone / Email:	roger.herman@tetratech.com cell – 406.670.4844		
Additional Contact				Phone / Email: RYLEE.PRINZ@tetratech.com cell - (541) 863-22			
Sampler Name(s) Rylee Prinz			Sampler Signature(s				
Date of Inspection: 11/7/24				_			
PO JECT INFORM	ATION						
ROJECT INFORM	ATION	MSU		Project Name	Paisley Court	;	
Project Location	Bozer	nan, Montana		Project Number	117-001068-25005		
		ck/soil) 🔲 TEN	M CHATFIELD	TEM NOB 198.4	TEM CARB 435 (rock/soil)		
PLM EPA 600/R-93/116 PLM Point Count, PC 40	PLM CARB 435 (ro			☐ TEM NOB 198.4 ☐ -	TEM CARB 435 (rock/soil)		
PLM EPA 600/R-93/116 PLM Point Count, PC 40 Multi-Layered Sample	PLM CARB 435 (ro	ater than 0%, but	t less than 2%)		TEM CARB 435 (rock/soil)		
	PLM CARB 435 (ro	ater than 0%, but	t less than 2%)	TEM NOB 198.4	TEM CARB 435 (rock/soil)		
PLM EPA 600/R-93/116 PLM Point Count, PC 40 Multi-Layered Sample	PLM CARB 435 (ro DO Points (All samples gre s: ort All Separable Layers p	ater than 0%, but	t less than 2%)		TEM CARB 435 (rock/soil)		
PLM EPA 600/R-93/116 PLM Point Count, PC 40 Multi-Layered Sample Analyze and Rep	PLM CARB 435 (ro DO Points (All samples gre s: ort All Separable Layers p	ater than 0%, but	t less than 2%)		TEM CARB 435 (rock/soil)		
PLM EPA 600/R-93/116 PLM Point Count, PC 40 Multi-Layered Sample Analyze and Rep	PLM CARB 435 (ro DO Points (All samples gre s: ort All Separable Layers p Stop by Material Type as	ater than 0%, but	t less than 2%)		TEM CARB 435 (rock/soil)		
PLM EPA 600/R-93/116 PLM Point Count, PC 40 Multi-Layered Sample Analyze and Rep Analyze Until Positive	PLM CARB 435 (ro DO Points (All samples gre s: ort All Separable Layers p Stop by Material Type as	ater than 0%, but er EPA 600	t less than 2%) Only Analyze s	epecifically noted layer	TEM CARB 435 (rock/soil)		
PLM EPA 600/R-93/116 PLM Point Count, PC 40 Multi-Layered Sample Analyze and Rep Analyze Until Positive	PLM CARB 435 (ro DO Points (All samples gre s: ort All Separable Layers p Stop by Material Type as	ater than 0%, but er EPA 600	t less than 2%) Only Analyze s	epecifically noted layer	TEM CARB 435 (rock/soil)		
PLM EPA 600/R-93/116 PLM Point Count, PC 40 Multi-Layered Sample Analyze and Rep Analyze Until Positive URNAROUND TIM 10 Day  5 Day	PLM CARB 435 (ro DO Points (All samples gre s: ort All Separable Layers p Stop by Material Type as  B 3 Day 2 0	er EPA 600   Noted  Day 1 Day	t less than 2%)  Only Analyze s  Same D	epecifically noted layer  ay Rush Results by:			
PLM EPA 600/R-93/116 PLM Point Count, PC 40 Multi-Layered Sample Analyze and Rep Analyze Until Positive	PLM CARB 435 (ro DO Points (All samples gre s: ort All Separable Layers p Stop by Material Type as  B 3 Day 2 0	er EPA 600 D  Noted  Day Day  Te & Time	t less than 2%) Only Analyze s	epecifically noted layer		Date & Time	

10:30AM



CALZ1/1/8832

# **PROJECT INFORMATION**

# CHAIN OF CUSTODY -BULK ASBESTOS-

Project Identifier

**Paisley Court** 

Project Number 117-001068-25005

Bulk Sample #	HA ID	Sample Material Description	Material Location	Notes
A B C	105A M 3.1	White wall board system with Assocaited white Paint	Throughout Interior	
A B C	105A M 8.1	White Exterior caulking	Around exterior Windows	
A B C	105A M 13.1	3 inch by 6 inch Red Brick with Assocaited grey Mortor	Throughout Exterior	
A B C	105A M 34.1	Grey blown in insulation	Throughout Attic	

10:30AW

## Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798



### CA Labs. L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Materials Characterization - Bulk Asbestos Analysis

**Laboratory Analysis Report - Polarized Light** 

Tetra Tech, Inc.

7100 Commercial Ave Suite 4 Billings, Montana 59101

Customer Project: 117-001068-25005, Paisley Court Reference #:

CAL24118834AG Date: 11/19/24

#### **Analysis and Method**

Summary of polarized light microscopy (PLM / Stereomicroscopy bulk asbestos analysis) using the methods described in 40CFR Part 763 Appendix E to Subpart E (Interim and EPA 600 / R-93 / 116 (Improved). The sample is first viewed with the aid of a stereomicroscope. Numerous liquid slide preparations are created for analysis under the polarized microscope where identifications and quantifications are preformed. Calibrated liquid refractive oils are used as liquid mouting medium. These oils are used for identification (dispersion staining). A calibrated visual estimation is reported, should any asbestiform mineral be present. Other techniques such as acid washing are used in conjugation with refractive oils for detection of smaller quantities of asbestos. All asbestos percentages are based on calibrated visual estimation traceable to NIST standards for regulated asbestos. Traceability to measurement and calibration is achieved by using known amounts and types of asbestos from standards where analyst and laboratory accuracy are measured. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 0.50% (well above the laboratory definition of trace).

#### Discussion

Vermiculite containing samples may contain trace amounts of actinolite/tremolite. When not detected by PLM, these samples should be analyzed using TEM methods and / or water separation techniques. Suspected actinolite/vermiculite presence will be indicated through the sample comment section of this report.

Fibrous talc containing samples may contain a regulated asbestos fiber known as anthophyllite. Under certain conditions the same fiber may actually contain both talc and anthophyllite (a phenomenon called intergrowth). Again, TEM detection methods are recommended. CA Labs PLM report comments will denote suspected amounts of asbestiform anthophyllite with talc, where further analysis is recommended.

Some samples (floor tiles, surfacings, etc.) may contain fibers too small to be detectable by PLM analysis and should be analyzed by TEM bulk protocols.

A "trace asbestos" will be reported if the analyst observes far less than 1% asbestos. CA Labs defines "trace asbestos" as a few fibers detected by the analyst in several preparations and will indicate as such under these circumstances.

Since allowable variation in quantification of samples close to 1% is high, <1% may be reported. Such results are ideal for point counting, and the technique is mandatory for friable samples (NESHAP, Nov. 1990 and clarification letter 8 May 1991) under 1% percent asbestos or "trace asbestos". In order to make all initial PLM reports issued from CA Labs NESHAP compliant, all <1% asbestos results (except floor tiles) will be point counted at no additional charge.

#### Qualifications

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses or hold a degree in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one these disciplines is preferred, but not required. Extensive in-house training programs are used to augment the educational background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235 AIHA LAP, LLC Laboratory #102929

> > Page 1 of 6

## Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

## CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Overview of Project Sample Material Containing Asbestos

Customer	Project:		117-001068-25005, Paisley Co	ourt	CA Labs Project #: CAL24118834AG	
Laboratory Sample ID	Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types	
96036	105B M8.1A	M8.1A-1	Ext. Caulking/ white sealant with debris	<1% Chrysotile	white sealant with debris	
96037	105B M8.1B	M8.1B-1	Ext. Caulking/ white sealant with debris	<1% Chrysotile	_	
96038	105B M8.1C	M8.1C-1	Ext. Caulking/ white sealant with debris	<1% Chrysotile		

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

AIHA LAP, LLC Laboratory #102929

#### Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):

ca - carbonate gypsum - gypsum bi - binder or - organic ma - matrix mi - mica ve - vermiculite ot - other pe - perlite qu - quartz fg - fiberglass mw - mineral wool wo - wollastinite ta - talc pa - palygorskite (clay)

sy - synthetic ce - cellulose br - brucite ka - kaolin (clay)

This report relates to the items tested as received. This report is not to be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST, AIHA LAP, LLC, or any other agency of the federal government. This report may not be reproduced except in full without written permission from CA Labs. These results are submitted pursuant to CA Labs' current terms and sale, condition of sale, including the company's standard warranty and limitations of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, CA Labs will store the samples for a period of ninety (90) days before discarding. A shipping or handling fee may be assessed for the return of any samples.

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/7/2024

percent

Approved Signatories:

# Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118834AG Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court

**Turnaround Time:** Date: 11/19/2024

5 days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 Date Of Sampling: Fax# 406-248-9282

Purchase Order #: Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous percent us estimate percent type /

(Y/N)

105B M3.1A- Wallboard System and Paint/ 100% white surfaced white compound 96033 M3.1A None Detected qu,bi,ca

M3.1A-96033 white compound (beneath tape) None Detected 100% qu,ca 2

M3.1A 96033 white drywall with brown paper None Detected 80% qu,gy .3 20% ce <sub>M3.1B-</sub> Wallboard System and Paint/ 105B 100%

96034 M3.1B white surfaced white compound None Detected n qu.bi.ca

M3.1B-96034 white drywall with brown paper None Detected 21% ce 79% qu,gy

M3.1C- Wallboard System and Paint/ 105B 100% 96035 M3.1C white surfaced white compound None Detected n qu,bi,ca

M3.1C-96035 white drywall with brown paper None Detected 21% ce 79% qu,gy

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica fg - fiberglass ce - cellulose gy - gypsum ve - vermiculite mw - mineral wool br - brucite bi - binder ot - other wo - wollastonite ka - kaolin (clay)

or - organic pe - perlite ta - talc pa - palygorskite (clay) ma - matrix qu - quartz sy - synthetic

for Matet Jose Matute

Analyst

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

(TRe-

Technical Manager Senior Analyst Tanner Rasmussen Julio Robles

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

Crisp Analytical, L.L.C.

M8.1A- Ext. Caulking/ white sealant

with debris

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

406-248-9161

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118834AG Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

105B

M8.1A

Phone #

96036

Court

<1% Chrysotile

**Turnaround Time:** Date: 11/19/2024

5 days Samples Rec'd: 11/12/24 10:30AM 11/7/2024 Date Of Sampling:

Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type / (Y/N)percent

M8.1B- Ext. Caulking/ white sealant 105B 96037 M8.1B with debris <1% Chrysotile 100% qu,bi n 105B M8 1C- Ext. Caulking/ white sealant 96038 M8.1C with debris <1% Chrysotile n 100% qu,bi M13.1 3x6 Brick and Mortar/ red 105B 96039 M13.1A bricking None Detected A-1 100% qu.ot M13.1 96039 A-2 gray mortar None Detected 100% qu,ca M13.1 3x6 Brick and Mortar/ red 105B 96040 M13.1B bricking None Detected 100% qu,ot

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

## AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate gy - gypsum bi - binder or - organic

ma - matrix

gray mortar

M13.1

mi - mica ve - vermiculite ot - other

pe - perlite

qu - quartz

fg - fiberglass mw - mineral wool wo - wollastonite ta - talc

sy - synthetic

ce - cellulose br - brucite ka - kaolin (clay)

pa - palygorskite (clay)

Approved Signatories:

100% qu,ca

100% qu,bi

for Matet Jose Matute

Analyst

96040

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

Technical Manager

Senior Analyst Tanner Rasmussen Julio Robles

6. Anthophyllite in association with Fibrous Talc

TRen

7. Contamination suspected from other building materials

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

10. TEM analysis suggested

None Detected

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/7/2024

# Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118834AG Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court **Turnaround Time:** Date: 11/19/2024

5 days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 Date Of Sampling: Fax# 406-248-9282 Purchase Order #:

Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type / (Y/N)percent

105B M13.1 3x6 Brick and Mortar/ red 96041 M13.1C bricking None Detected 100% qu,ot

M13.1 96041 None Detected 100% qu,ca C-2 gray mortar 105B M34.1 Blown In Insulation/ gray

96042 M34.1A insulation None Detected 100% ce

105B Blown In Insulation/ gray 96043 M34.1B insulation None Detected B-1 100% ce

M34.1 Blown In Insulation/ gray 105B 96044 M34.1C None Detected 100% ce

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica fg - fiberglass ce - cellulose gy - gypsum ve - vermiculite mw - mineral wool br - brucite bi - binder ot - other wo - wollastonite ka - kaolin (clay)

or - organic pe - perlite ta - talc pa - palygorskite (clay) Approved Signatories: ma - matrix qu - quartz sy - synthetic

for Matet Jose Matute Analyst

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

C.T. Rea Technical Manager

Senior Analyst Tanner Rasmussen Julio Robles

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798



CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Polarized Light Asbestiform Materials Point Count

**Laboratory Analysis Report - Point Count** 

#### **Analysis and Method**

Point counting was performed on a polarized light microscope with a calibrated reticle according to the revised NESHAP method of November 20, 1990 (Federal Register, V.55, N.224, 11/20/90). Original asbestos content of bulk materials was determined using procedures outlined in the interim method (40 CFR part 763, Appendix E to subpart E) and AHERA method (EPA-600/R-93/116). Samples were prepared using HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion staining / becke line method.

## Qualifications

Phone #

Laboratory

Sample ID

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one of these disciplines is preferred, but not required. Extensive in-house training programs are used to augment education background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. This report is not covered by the scope of NVLAP accreditation. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

**Customer Info:** Attn: **Customer Project:** CA Labs Project #: Tetra Tech. Inc. CAL24118834AG 117-001068-25005. Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Sample #

406-248-9161

Layer Analysts Physical

Description of

**Turnaround Time:** 11/19/24 Date:

5 days

Homo-geneous

(Y/N)

Court

Point Counted % /

Asbestos Type

Samples Rec'd: 11/12/24 10:30AM

11/07/24

Date Of Sampling: 406-248-9282

Fax# Purchase Order #:

		Subsample		
	105B	<sub>M8.1A</sub> . <b>Ext. Caulking</b> / white		2.224.24
96036	M8.1A	1 sealant with debris	n	0.25% Chrysotile
96037	105B M8.1B	<sub>M8.1B-</sub> <b>Ext. Caulking</b> / white 1 sealant with debris	n	0.25% Chrysotile
00001		. Journal Will Goons		C.EC /C OIII y Counc
	105B	<sub>M8.1C-</sub> Ext. Caulking/ white		
96038	M8.1C	1 sealant with debris	n	0.50% Chrysotile

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

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Approved Signatories:

Technical Manager Tanner Rasmussen

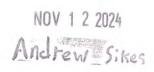
Senior Analyst Julio Robles

Jose Matute Analyst



<b>CONTACT INFORM</b>	ATION		0 212111100211	
COMPANY:	Tetra Tech, Inc.	Phone:	406.248.9161 CAZY//6834	
<b>Primary Contact</b>	Roger W. Herman, Jr.	Phone / Email:	roger.herman@tetratech.com cell - 406.670.484	44
<b>Additional Contact</b>	Rylee Prinz	Phone / Email:	RYLEE.PRINZ@tetratech.com cell - (541) 863-22	234
Sampler Name(s)	Rylee Prinz	Sampler Signature		
Date of Inspection:	11/7/24			
PROJECT INFORM	ATION			
Client	MSU	Project Name	Paisley Court	
<b>Project Location</b>	Bozeman, Montana	Project Number	117-001068-25005	
	00 Points (All samples greater than 0%, but les	ss than 2%)		
✓ Multi-Layered Sample				
✓ Analyze and Repo	ort All Separable Layers per EPA 600 On	nly Analyze sepecifically noted layer		
✓ Analyze Until Positive	Stop by Material Type as Noted			
TURNAROUND TIM  ☐ 10 Day		Same Day Rush Results by:		
Relinquished	By Date & Time	VIA Received	By Date & Time	
Byla Finz	11/9/24 11:15	FEDEX		

10:30AM





CAL241/8834

# **CHAIN OF CUSTODY** -BULK ASBESTOS-

**PROJECT INFORMATION Project Name** 

**Paisley Court** 

Project Number 117-001068-25005

Project Identifie	r 105B			
Bulk Sample #	HA ID	Sample Material Description	Material Location	Notes
A B C	105B M 3.1	White wall board system with Assocaited white Paint	Throughout Interior	
A B C	105B M 8.1	White Exterior caulking	Around exterior Windows	
A B C	105B M 13.1	3 inch by 6 inch Red Brick with Assocaited grey Mortor	Throughout Exterior	
A B C	105B M 34.1	Grey blown in insulation	Throughout Attic	

10:30AM

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798



CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Materials Characterization - Bulk Asbestos Analysis

**Laboratory Analysis Report - Polarized Light** 

Reference #:

Tetra Tech, Inc.

7100 Commercial Ave Suite 4 Billings, Montana 59101 Customer Project: 117-001068-25005, Paisley Court

CAL24118835AS Date: 11/19/24

#### **Analysis and Method**

Summary of polarized light microscopy (PLM / Stereomicroscopy bulk asbestos analysis) using the methods described in 40CFR Part 763 Appendix E to Subpart E (Interim and EPA 600 / R-93 / 116 (Improved). The sample is first viewed with the aid of a stereomicroscope. Numerous liquid slide preparations are created for analysis under the polarized microscope where identifications and quantifications are preformed. Calibrated liquid refractive oils are used as liquid mouting medium. These oils are used for identification (dispersion staining). A calibrated visual estimation is reported, should any asbestiform mineral be present. Other techniques such as acid washing are used in conjugation with refractive oils for detection of smaller quantities of asbestos. All asbestos percentages are based on calibrated visual estimation traceable to NIST standards for regulated asbestos. Traceability to measurement and calibration is achieved by using known amounts and types of asbestos from standards where analyst and laboratory accuracy are measured. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 0.50% (well above the laboratory definition of trace).

#### **Discussion**

Vermiculite containing samples may contain trace amounts of actinolite/tremolite. When not detected by PLM, these samples should be analyzed using TEM methods and / or water separation techniques. Suspected actinolite/vermiculite presence will be indicated through the sample comment section of this report.

Fibrous talc containing samples may contain a regulated asbestos fiber known as anthophyllite. Under certain conditions the same fiber may actually contain both talc and anthophyllite (a phenomenon called intergrowth). Again, TEM detection methods are recommended. CA Labs PLM report comments will denote suspected amounts of asbestiform anthophyllite with talc, where further analysis is recommended.

Some samples (floor tiles, surfacings, etc.) may contain fibers too small to be detectable by PLM analysis and should be analyzed by TEM bulk protocols.

A "trace asbestos" will be reported if the analyst observes far less than 1% asbestos. CA Labs defines "trace asbestos" as a few fibers detected by the analyst in several preparations and will indicate as such under these circumstances.

Since allowable variation in quantification of samples close to 1% is high, <1% may be reported. Such results are ideal for point counting, and the technique is mandatory for friable samples (NESHAP, Nov. 1990 and clarification letter 8 May 1991) under 1% percent asbestos or "trace asbestos". In order to make all initial PLM reports issued from CA Labs NESHAP compliant, all <1% asbestos results (except floor tiles) will be point counted at no additional charge.

#### Qualifications

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses or hold a degree in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one these disciplines is preferred, but not required. Extensive in-house training programs are used to augment the educational background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235
AIHA LAP, LLC Laboratory #102929

## Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

## CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Overview of Project Sample Material Containing Asbestos

Customer	Project:		117-001068-25005, Paisley Co	ourt	CA Labs Project #: CAL24118835AS
Laboratory Sample ID	Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types
96048	106A- M8.1A	M8.1A-1	Caulking/ white sealant with debris	<1% Chrysotile	white sealant with debris
96049	106A- M8.1B	M8.1B-1	Caulking/ white sealant with debris	<1% Chrysotile	_
96050	106A- M8.1C	M8.1C-1	Caulking/ white sealant with debris	<1% Chrysotile	

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

AIHA LAP, LLC Laboratory #102929

## Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):

ca - carbonate gypsum - gypsum bi - binder or - organic ma - matrix mi - mica ve - vermiculite ot - other pe - perlite qu - quartz fg - fiberglass mw - mineral wool wo - wollastinite ta - talc sy - synthetic

ce - cellulose

br - brucite ka - kaolin (clay) pa - palygorskite (clay)

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Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/7/2024

# Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118835AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court **Turnaround Time:** Date: 11/19/2024

5 Days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 Date Of Sampling:

Fax# 406-248-9282 Purchase Order #:

Laboratory Analysts Physical Description of Asbestos type / Non-Sample # Com Layer Homo-Non-asbestos Sample ID ment geneo calibrated visual fiber type / fibrous estimate percent percent type / us (Y/N)percent

	106A-	M3.1	Wallboard System/ white				100%
96045	M3.1A	A-1	surfaced white compound	n	None Detected		qu,bi,ca
000.0		7	ounded mine competend	•••			44,5,,54
		M3.1					
96045		A-2	white drywall with brown paper	n	None Detected	20% ce	80% qu,gy
	106A-	M3.1	Wallboard System/ white				100%
96046	M3.1B	B-1	surfaced white compound	n	None Detected		qu,bi,ca
		M3.1					
96046		B-2	white drywall with brown paper	n	None Detected	20% ce	80% qu,gy
	106A-	M3.1	Wallboard System/ white				100%
96047	M3.1C	C-1	surfaced white compound	n	None Detected		qu,bi,ca
		M3.1					
96047		C-2	white drywall with brown paper	n	None Detected	20% ce	80% qu,gy
	106A-	M8.1	Caulking/ white sealant with				100%

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

## AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica gy - gypsum ve - vermiculite bi - binder ot - other or - organic pe - perlite

qu - quartz

debris

ma - matrix

fg - fiberglass mw - mineral wool wo - wollastonite ta - talc sy - synthetic

ce - cellulose br - brucite ka - kaolin (clay) pa - palygorskite (clay)

Approved Signatories:

qu,gy,bi

Josh Strange

96048

- Fire Damage significant fiber damage reported percentages reflect unaltered fibers
   Fire Damage no significant fiber damages effecting fibrous percentages

M8.1A

- 3. Actinolite in association with Vermiculite
- 4. Layer not analyzed attached to previous positive layer and contamination is suspected
- 5. Not enough sample to analyze

Technical Manager

<1% Chrysotile

Tanner Rasmussen

TRe

Senior Analyst Julio Robles

- 6. Anthophyllite in association with Fibrous Talc
- 7. Contamination suspected from other building materials
- 8. Favorable scenario for water separation on vermiculite for possible analysis by another method
- 9. < 1% Result point counted positive
- 10. TEM analysis suggested

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** Attn: CA Labs Project #: CAL24118835AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court **Turnaround Time:** Date: 11/19/2024

5 Days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 11/7/2024 Date Of Sampling:

Fax # 406-248-9282 Purchase Order #:

Laboratory Sample ID	Sample #		ayer #	Analysts Physical Description of Subsample	Homo- geneo us (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non- fibrous type / percent
	106A-			Caulking/ white sealant with				100%
96049	M8.1B	Е	3-1 (	debris	n	<1% Chrysotile		qu,gy,bi
	106A-	M	18.1	Caulking/ white sealant with				100%
96050	M8.1C	C	C-1 (	debris	n	<1% Chrysotile		qu,gy,bi
	106A-	Ma	13.1					
96051	M13.1A			Brick and Mortar/ red bricking	У	None Detected		100% qu,ot
		<b>M</b> 1	13.1					
96051		A	4-2 (	gray mortar	У	None Detected		100% qu,ca
	106A-	Mi	13.1					
96052	M13.1B	Е	3-1 <b>L</b>	Brick and Mortar/ red bricking	У	None Detected		100% qu,ot
		<b>M</b> 1	13.1					
96052		Е	3-2	gray mortar	У	None Detected		100% qu,ca

M13.1C Brick and Mortar/ red bricking None Detected Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

qu - quartz

## AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica gy - gypsum ve - vermiculite bi - binder ot - other or - organic pe - perlite

ma - matrix

fg - fiberglass mw - mineral wool wo - wollastonite ta - talc sy - synthetic

ce - cellulose br - brucite ka - kaolin (clay) pa - palygorskite (clay)

Approved Signatories:

100% qu,ot

Josh Strange Analyst

96053

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

M13.1

- 3. Actinolite in association with Vermiculite

106A-

- 4. Layer not analyzed attached to previous positive layer and contamination is suspected
- 5. Not enough sample to analyze

Technical Manager

Senior Analyst Tanner Rasmussen Julio Robles

TRe

<sup>6.</sup> Anthophyllite in association with Fibrous Talc

<sup>7.</sup> Contamination suspected from other building materials

<sup>8.</sup> Favorable scenario for water separation on vermiculite for possible analysis by another method

<sup>9. &</sup>lt; 1% Result point counted positive

<sup>10.</sup> TEM analysis suggested

Crisp Analytical, L.L.C.

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CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** Attn: CA Labs Project #: CAL24118835AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court

**Turnaround Time:** 

Date: 11/19/2024

5 Days

Samples Rec'd: 11/12/24 10:30AM 11/7/2024 Date Of Sampling:

Phone # 406-248-9161 Fax# 406-248-9282

Purchase Order #:

Non-asbestos Nonfibrous

Laboratory Analysts Physical Description of Sample # Com Layer Sample ID ment Subsample

Homogeneo us (Y/N)

Asbestos type / calibrated visual estimate percent

fiber type / percent

type / percent

M13.1 96053 C-2

None Detected

None Detected

100% qu,ca

106A-M34.1 96054 M34.1A A-1

M34.1

None Detected

100% ce

100% ce

106A-96056 M34.1C

106A-

M34.1B

96055

M34.1

gray mortar

Insulation/ brown insulation C-1

Insulation/ brown insulation

**Insulation**/ brown insulation

None Detected 100% ce

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate gy - gypsum bi - binder

or - organic

ma - matrix

mi - mica ve - vermiculite ot - other

pe - perlite

qu - quartz

fg - fiberglass mw - mineral wool wo - wollastonite ta - talc

sy - synthetic

ce - cellulose br - brucite ka - kaolin (clay)

T. Re-

pa - palygorskite (clay)

Approved Signatories:

Josh Strange Analyst

- Fire Damage significant fiber damage reported percentages reflect unaltered fibers
   Fire Damage no significant fiber damages effecting fibrous percentages
- 3. Actinolite in association with Vermiculite
- 4. Layer not analyzed attached to previous positive layer and contamination is suspected
- 5. Not enough sample to analyze

Technical Manager

Senior Analyst Julio Robles

Tanner Rasmussen 6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

Crisp Analytical, L.L.C.

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CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Polarized Light Asbestiform Materials Point Count

**Laboratory Analysis Report - Point Count** 

#### **Analysis and Method**

Point counting was performed on a polarized light microscope with a calibrated reticle according to the revised NESHAP method of November 20, 1990 (Federal Register, V.55, N.224, 11/20/90). Original asbestos content of bulk materials was determined using procedures outlined in the interim method (40 CFR part 763, Appendix E to subpart E) and AHERA method (EPA-600/R-93/116). Samples were prepared using HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion staining / becke line method.

## Qualifications

Phone #

Laboratory

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one of these disciplines is preferred, but not required. Extensive in-house training programs are used to augment education background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. This report is not covered by the scope of NVLAP accreditation. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

Court

Point Counted % /

**Customer Info:** Attn: **Customer Project:** CA Labs Project #: Tetra Tech. Inc. CAL24118835AS 117-001068-25005. Paislev

Homo-geneous

7100 Commercial Ave Suite 4 Billings, Montana 59101

Sample #

**Turnaround Time:** 11/19/24 Date:

5 Days

Layer Analysts Physical

406-248-9161

Samples Rec'd: 11/12/24 10:30AM 11/07/24

Date Of Sampling: Fax# 406-248-9282

Purchase Order #:

Sample ID	·	#	Description of Subsample	(Y/N)	Asbestos Type
96048	106A- M8.1A	M8.1 A-1	Caulking/ white sealant with debris	n	0.25% Chrysotile
	106A-	M8.1	Caulking/ white		
96049	M8.1B	B-1	sealant with debris	n	0.25% Chrysotile
96050	106A- M8.1C	M8.1 C-1	Caulking/ white sealant with debris	n	0.25% Chrysotile

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

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Approved Signatories:

**Technical Manager** Tanner Rasmussen

Senior Analyst Julio Robles

Josh Strange Analyst



CONTACT INFORM					Cal 24 460 25
COMPANY:	Tetra Tech, Inc.		_Phone:	406.248.9161	CALZ4//8835
Primary Contact	Roger W. Herman, Jr.		_ Phone / Email:		etratech.com cell – 406.670.4844
Additional Contact			_Phone / Email:		tetratech.com cell - (541) 863-2234
	Rylee Prinz		_Sampler Signature	(S Water	
Date of Inspection:	11/7/24		_		
PROJECT INFORM	ATION				
Client	MSU		Project Name	Paisley Court	
Project Location	Bozeman, Monta	ana	Project Number	117-001068-25005	5
PLM INSTRUCTION	<u>s</u>				
[ ] DIALEDA COD (D. CO. (14.5		1			
✓ PLM EPA 600/R-93/116	PLM CARB 435 (rock/soil)	TEM CHATFIELD	☐ TEM NOB 198.4 ☐ 1	EM CARB 435 (rock/soil)	
✓ Multi-Layered Sample:	00 Points (All samples greater than 0% s: ort All Separable Layers per EPA 600		sepecifically noted layer		
- Analyze and Repl	ore All Separable Layers per LFA 000	om, / maryze	separation in the layer		
✓ Analyze Until Positive	Stop by Material Type as Noted				
TURNAROUND TIM	E				
☐ 10 Day	=	Day Same D	Day Rush Results by:		
	_ , _ , _ ,	,	, <u> </u>		
Relinquished	By Date & Time	VIA	Received	Ву	Date & Time
Kylee Kin	11/9/24 11:2	1 FEDEX			1

10:30AM

NOV 1 2 2024 Andrew Sikes



7100 Commercial Avenue Suite 4 Billings, Montana 59101

Phone: 406.248.9161 Fax 406.248.9282

CAC 24/18835

# **CHAIN OF CUSTODY** -BULK ASBESTOS-

**PROJECT INFORMATION** 

**Project Name** 

**Paisley Court** 

106A

**Project Number** 117-001068-25005

Bulk Sample #	HA ID	Sample Material Description	Material Location	Notes
A B C	106A M 3.1	White wall board system with Assocaited white Paint	Throughout Interior	
A B C	106A M 8.1	White Exterior caulking	Around exterior Windows	
A B C	106A M 13.1	3 inch by 6 inch Red Brick with Assocaited grey Mortor	Throughout Exterior	
A B C	106A M 34.1	Grey blown in insulation	Throughout Attic	

10:30AM

NOV 1 2 2024

Andrew Sikes

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798



CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Materials Characterization - Bulk Asbestos Analysis

**Laboratory Analysis Report - Polarized Light** 

Reference #:

Tetra Tech, Inc.

7100 Commercial Ave Suite 4 Billings, Montana 59101 Customer Project: 117-001068-25005, Paisley Court

CAL24118836AG Date: 11/19/24

#### **Analysis and Method**

Summary of polarized light microscopy (PLM / Stereomicroscopy bulk asbestos analysis) using the methods described in 40CFR Part 763 Appendix E to Subpart E (Interim and EPA 600 / R-93 / 116 (Improved). The sample is first viewed with the aid of a stereomicroscope. Numerous liquid slide preparations are created for analysis under the polarized microscope where identifications and quantifications are preformed. Calibrated liquid refractive oils are used as liquid mouting medium. These oils are used for identification (dispersion staining). A calibrated visual estimation is reported, should any asbestiform mineral be present. Other techniques such as acid washing are used in conjugation with refractive oils for detection of smaller quantities of asbestos. All asbestos percentages are based on calibrated visual estimation traceable to NIST standards for regulated asbestos. Traceability to measurement and calibration is achieved by using known amounts and types of asbestos from standards where analyst and laboratory accuracy are measured. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 0.50% (well above the laboratory definition of trace).

#### Discussion

Vermiculite containing samples may contain trace amounts of actinolite/tremolite. When not detected by PLM, these samples should be analyzed using TEM methods and / or water separation techniques. Suspected actinolite/vermiculite presence will be indicated through the sample comment section of this report.

Fibrous talc containing samples may contain a regulated asbestos fiber known as anthophyllite. Under certain conditions the same fiber may actually contain both talc and anthophyllite (a phenomenon called intergrowth). Again, TEM detection methods are recommended. CA Labs PLM report comments will denote suspected amounts of asbestiform anthophyllite with talc, where further analysis is recommended.

Some samples (floor tiles, surfacings, etc.) may contain fibers too small to be detectable by PLM analysis and should be analyzed by TEM bulk protocols.

A "trace asbestos" will be reported if the analyst observes far less than 1% asbestos. CA Labs defines "trace asbestos" as a few fibers detected by the analyst in several preparations and will indicate as such under these circumstances.

Since allowable variation in quantification of samples close to 1% is high, <1% may be reported. Such results are ideal for point counting, and the technique is mandatory for friable samples (NESHAP, Nov. 1990 and clarification letter 8 May 1991) under 1% percent asbestos or "trace asbestos". In order to make all initial PLM reports issued from CA Labs NESHAP compliant, all <1% asbestos results (except floor tiles) will be point counted at no additional charge.

#### Qualifications

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses or hold a degree in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one these disciplines is preferred, but not required. Extensive in-house training programs are used to augment the educational background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235
AIHA LAP, LLC Laboratory #102929

Page 1 of 6

## Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

## CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Overview of Project Sample Material Containing Asbestos

Customer	Project:		117-001068-25005, Paisley Co	ourt	CA Labs Project #: CAL24118836AG
Laboratory Sample ID	Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types
96060	106 M8.1A	M8.1A-1	Ext. Caulking/ white sealant with debris	<1% Chrysotile	white sealant with debris
96061	106 M8.1B	M8.1B-1	Ext. Caulking/ white sealant with debris	<1% Chrysotile	_
96062	106 M8.1C	M8.1C-1	Ext. Caulking/ white sealant with debris	<1% Chrysotile	_

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

AIHA LAP, LLC Laboratory #102929

#### Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):

ca - carbonate gypsum - gypsum bi - binder or - organic ma - matrix mi - mica ve - vermiculite

ot - other

pe - perlite qu - quartz fg - fiberglass mw - mineral wool wo - wollastinite ta - talc sy - synthetic pa - palygorskite (clay)

ce - cellulose br - brucite ka - kaolin (clay)

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Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

M3.1A-

2

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118836AG Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court

None Detected

**Turnaround Time:** Date: 11/19/2024

5 days Samples Rec'd: 11/12/24 10:30AM

22% ce

78% qu,gy

Phone # 406-248-9161 11/7/2024 Date Of Sampling:

Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos

Wallboard System w/ Paint/

white drywall with brown paper

Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous percent us estimate percent type / (Y/N)percent

off-white surfaced white 100% M3.1A-96057 106 M3.1A compound None Detected qu,bi,ca

Wallboard System w/ Paint/ M3.1B- off-white surfaced white 100% 96058 106 M3.1B compound None Detected qu,bi,ca n

M3.1B-96058 white drywall with brown paper None Detected n 20% ce 80% qu,gy Wallboard System w/ Paint/

M3.1C- off-white surfaced white 100% 96059 106 M3.1C compound n None Detected qu,bi,ca

M3.1C-96059 white drywall with brown paper None Detected 2 22% ce 78% qu,gy

M8.1A- Ext. Caulking/ white sealant 100% 96060 106 M8.1A with debris <1% Chrysotile qu,bi,ca

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica fg - fiberglass gy - gypsum ve - vermiculite mw - mineral wool bi - binder ot - other

wo - wollastonite ka - kaolin (clay) or - organic pe - perlite ta - talc pa - palygorskite (clay) Approved Signatories: ma - matrix qu - quartz sy - synthetic

Co Materte Jose Matute Analyst

96057

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

Technical Manager

ce - cellulose

br - brucite

C.T. Re-

Senior Analyst Tanner Rasmussen Julio Robles

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

Crisp Analytical, L.L.C.

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CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/7/2024

100%

100% qu,ot

# Polarized Light Asbestiform Materials Characterization

Court

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118836AG Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

96061

**Turnaround Time:** Date: 11/19/2024

5 days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 Date Of Sampling:

Fax# 406-248-9282 Purchase Order #:

M8.1B- Ext. Caulking/ white sealant

with debris

M13.1

Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type / (Y/N)percent

106 M8.1B <1% Chrysotile qu,bi,ca M8.1C- Ext. Caulking/ white sealant 100% 96062 106 M8.1C with debris <1% Chrysotile n qu,bi,ca

M13.1 3x6 Brick and Mortar/ red 96063 106 M13.1A bricking None Detected 100% qu,ot

96063 None Detected A-2 gray mortar 100% gu.ca

M13.1 3x6 Brick and Mortar/ red 96064 106 M13.1B bricking None Detected 100% qu,ot

M13.1 96064 None Detected B-2 gray mortar 100% qu,ca

M13.1 3x6 Brick and Mortar/ red

bricking None Detected Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica fg - fiberglass ce - cellulose gy - gypsum ve - vermiculite mw - mineral wool br - brucite bi - binder ot - other wo - wollastonite ka - kaolin (clay)

or - organic pe - perlite ta - talc pa - palygorskite (clay) Approved Signatories: ma - matrix qu - quartz sy - synthetic

for Matet Jose Matute

Analyst

96065

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

106 M13.1C

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

C.T. Rem Technical Manager

Senior Analyst Tanner Rasmussen Julio Robles

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

406-248-9161

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118836AG Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court

**Turnaround Time:** Date: 11/19/2024

5 days

Samples Rec'd: 11/12/24 10:30AM 11/7/2024 Date Of Sampling:

Phone # Fax# 406-248-9282 Purchase Order #:

Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type / (Y/N)percent

M13 1 96065 None Detected 100% qu,ca C-2 gray mortar Blown In Insulation/ gray M34.1 96066 106 M34.1A insulation None Detected 100% ce A-1 M34.1 Blown In Insulation/ gray 96067 106 M34.1B insulation None Detected 100% ce Blown In Insulation/ gray 96068 106 M34.1C insulation None Detected 100% ce

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

## AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica gy - gypsum ve - vermiculite bi - binder ot - other

or - organic

ma - matrix

mw - mineral wool wo - wollastonite pe - perlite ta - talc qu - quartz sy - synthetic

fg - fiberglass

ce - cellulose br - brucite ka - kaolin (clay)

pa - palygorskite (clay)

Approved Signatories:

for Matet Jose Matute

Analyst

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

Technical Manager

C.T. Rea

Senior Analyst Tanner Rasmussen Julio Robles

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

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Crisp Analytical, L.L.C.

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CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Polarized Light Asbestiform Materials Point Count **Laboratory Analysis Report - Point Count**

#### **Analysis and Method**

Point counting was performed on a polarized light microscope with a calibrated reticle according to the revised NESHAP method of November 20, 1990 (Federal Register, V.55, N.224, 11/20/90). Original asbestos content of bulk materials was determined using procedures outlined in the interim method (40 CFR part 763, Appendix E to subpart E) and AHERA method (EPA-600/R-93/116). Samples were prepared using HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion staining / becke line method.

#### Qualifications

Phone #

Fax#

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one of these disciplines is preferred, but not required. Extensive in-house training programs are used to augment education background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. This report is not covered by the scope of NVLAP accreditation. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

**Customer Info:** Attn: **Customer Project:** CA Labs Project #: Tetra Tech. Inc. CAL24118836AG 117-001068-25005. Paislev

7100 Commercial Ave Suite 4 Billings, Montana 59101

**Turnaround Time:** 11/19/24 Date:

Court

Samples Rec'd: 11/12/24 10:30AM

5 days

11/07/24 Date Of Sampling:

Purchase Order #:

Laboratory Sample # Layer Analysts Physical Homo-geneous Point Counted % / Sample ID Description of

Subsample

(Y/N)Asbestos Type

M8.1A- Ext. Caulking/ white 96060 106 M8.1A sealant with debris

406-248-9161

406-248-9282

0.50% Chrysotile

M8.1B- Ext. Caulking/ white

sealant with debris 96061 106 M8.1B 0.25% Chrysotile

M8.1C- Ext. Caulking/ white

96062 sealant with debris 0.25% Chrysotile

Dallas NVLAP Lab Code 200349-0 TEM/PLM

## AIHA LAP, LLC Laboratory #102929

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Approved Signatories:

Technical Manager Tanner Rasmussen

Senior Analyst Julio Robles

Jose Matute Analyst



COMPANY:	Tetra Tech, Inc.	Phone:	406.248.9161 CXZY//8836
Primary Contact	Roger W. Herman, Jr.	Phone / Email:	roger.herman@tetratech.com cell - 406.670.4844
Additional Contact	Rylee Prinz	Phone / Email:	RYLEE.PRINZ@tetratech.com cell - (541) 863-2234
	Rylee Prinz	Sampler Signature	(S Rubas
Date of Inspection:	11/7/24		
PROJECT INFORMA	ATION		
Client	MSU	Project Name	Paisley Court
Project Location	Bozeman, Montana	Project Number	117-001068-25005
PLM INSTRUCTION	<u>8</u>		
✓ PLM EPA 600/R-93/116	- V	TEM NOB 198.4	EM CARB 435 (rock/soil)
✓ PLM EPA 600/R-93/116			EM CARB 435 (rock/s <mark>oil)</mark>
✓ PLM EPA 600/R-93/116	PLM CARB 435 (rock/soil) TEM CHATFIELD  O Points (All samples greater than 0%, but less than 2%)		EM CARB 435 (rock/soil)
✓ PLM EPA 600/R-93/116  ✓ PLM Point Count, PC 40  ✓ Multi-Layered Samples	PLM CARB 435 (rock/soil) TEM CHATFIELD  O Points (All samples greater than 0%, but less than 2%)		EM CARB 435 (rock/soil)
✓ PLM EPA 600/R-93/116  ✓ PLM Point Count, PC 40  ✓ Multi-Layered Samples  ✓ Analyze and Repo	PLM CARB 435 (rock/soil) TEM CHATFIELD  O Points (All samples greater than 0%, but less than 2%)		EM CARB 435 (rock/soil)
✓ PLM EPA 600/R-93/116  ✓ PLM Point Count, PC 40  ✓ Multi-Layered Samples  ✓ Analyze and Repo	PLM CARB 435 (rock/soil) TEM CHATFIELD  O Points (All samples greater than 0%, but less than 2%)  ort All Separable Layers per EPA 600 Only Analyze  Stop by Material Type as Noted		EM CARB 435 (rock/soil)
✓ PLM EPA 600/R-93/116  ✓ PLM Point Count, PC 40  ✓ Multi-Layered Samples  ✓ Analyze and Repo	PLM CARB 435 (rock/soil) TEM CHATFIELD  O Points (All samples greater than 0%, but less than 2%)  ort All Separable Layers per EPA 600 Only Analyze  Stop by Material Type as Noted	sepecifically noted layer	EM CARB 435 (rock/soil)
✓ PLM EPA 600/R-93/116  ✓ PLM Point Count, PC 40  ✓ Multi-Layered Samples  ✓ Analyze and Repo  ✓ Analyze Until Positive S  FURNAROUND TIM  10 Day  ✓ 5 Day	PLM CARB 435 (rock/soil) TEM CHATFIELD  O Points (All samples greater than 0%, but less than 2%)  ort All Separable Layers per EPA 600 Only Analyze  Stop by Material Type as Noted  B 3 Day 2 Day 1 Day Same	sepecifically noted layer  . Day Rush Results by:	
✓ PLM EPA 600/R-93/116  ✓ PLM Point Count, PC 40  ✓ Multi-Layered Samples  ✓ Analyze and Repo  ✓ Analyze Until Positive S	PLM CARB 435 (rock/soil) TEM CHATFIELD  O Points (All samples greater than 0%, but less than 2%)  ort All Separable Layers per EPA 600 Only Analyze  Stop by Material Type as Noted  B 3 Day 2 Day 1 Day Same	sepecifically noted layer  Day Rush Results by:	

10:30AM

NOV 1 2 2024 Andrew Sikes



CAC24/18836

# **CHAIN OF CUSTODY** -BULK ASBESTOS-

**PROJECT INFORMATION** 

**Project Name** 

**Paisley Court** 

106B

Project Number 117-001068-25005

Bulk Sample #	HA ID	Sample Material Description	Material Location	Notes
A B C	106 M 3.1	White wall board system with Assocaited white Paint	Throughout Interior	
A B C	106 M 8.1	White Exterior caulking	Around exterior Windows	
A B C	106 M 13.1	3 inch by 6 inch Red Brick with Assocaited grey Mortor	Throughout Exterior	
A B C	106 M 34.1	Grey blown in insulation	Throughout Attic	

NOV 1 2 2024

Crisp Analytical, L.L.C.

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CA Labs. L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Materials Characterization - Bulk Asbestos Analysis

**Laboratory Analysis Report - Polarized Light** 

Tetra Tech, Inc.

7100 Commercial Ave Suite 4 Billings, Montana 59101

Customer Project: 117-001068-25005, Paisley Court Reference #:

CAL24118840AG Date: 11/19/24

#### **Analysis and Method**

Summary of polarized light microscopy (PLM / Stereomicroscopy bulk asbestos analysis) using the methods described in 40CFR Part 763 Appendix E to Subpart E (Interim and EPA 600 / R-93 / 116 (Improved). The sample is first viewed with the aid of a stereomicroscope. Numerous liquid slide preparations are created for analysis under the polarized microscope where identifications and quantifications are preformed. Calibrated liquid refractive oils are used as liquid mouting medium. These oils are used for identification (dispersion staining). A calibrated visual estimation is reported, should any asbestiform mineral be present. Other techniques such as acid washing are used in conjugation with refractive oils for detection of smaller quantities of asbestos. All asbestos percentages are based on calibrated visual estimation traceable to NIST standards for regulated asbestos. Traceability to measurement and calibration is achieved by using known amounts and types of asbestos from standards where analyst and laboratory accuracy are measured. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 0.50% (well above the laboratory definition of trace).

#### Discussion

Vermiculite containing samples may contain trace amounts of actinolite/tremolite. When not detected by PLM, these samples should be analyzed using TEM methods and / or water separation techniques. Suspected actinolite/vermiculite presence will be indicated through the sample comment section of this report.

Fibrous talc containing samples may contain a regulated asbestos fiber known as anthophyllite. Under certain conditions the same fiber may actually contain both talc and anthophyllite (a phenomenon called intergrowth). Again, TEM detection methods are recommended. CA Labs PLM report comments will denote suspected amounts of asbestiform anthophyllite with talc, where further analysis is recommended.

Some samples (floor tiles, surfacings, etc.) may contain fibers too small to be detectable by PLM analysis and should be analyzed by TEM bulk protocols.

A "trace asbestos" will be reported if the analyst observes far less than 1% asbestos. CA Labs defines "trace asbestos" as a few fibers detected by the analyst in several preparations and will indicate as such under these circumstances.

Since allowable variation in quantification of samples close to 1% is high, <1% may be reported. Such results are ideal for point counting, and the technique is mandatory for friable samples (NESHAP, Nov. 1990 and clarification letter 8 May 1991) under 1% percent asbestos or "trace asbestos". In order to make all initial PLM reports issued from CA Labs NESHAP compliant, all <1% asbestos results (except floor tiles) will be point counted at no additional charge.

#### Qualifications

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses or hold a degree in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one these disciplines is preferred, but not required. Extensive in-house training programs are used to augment the educational background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235 AIHA LAP, LLC Laboratory #102929

## Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

## CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Overview of Project Sample Material Containing Asbestos

Customer Project:			117-001068-25005, Paisley Co	ourt	CA Labs Project #: CAL24118840AG	
Laboratory Sample ID	Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types	
	107A				white sealant	
96107	M8.1A	M8.1A-1	Ext. Caulking/ white sealant	<1% Chrysotile	_	
	107A					
96109	M8.1B	M8.1B-1	Ext. Caulking/ white sealant	<1% Chrysotile	_	
	107A					
96110	M8.1C	M8.1C-1	Ext. Caulking/ white sealant	<1% Chrysotile		

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

AIHA LAP, LLC Laboratory #102929

#### Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):

ca - carbonate gypsum - gypsum bi - binder or - organic ma - matrix mi - mica ve - vermiculite ot - other pe - perlite qu - quartz fg - fiberglass mw - mineral wool wo - wollastinite ta - talc pa - palygorskite (clay)

sy - synthetic ce - cellulose br - brucite ka - kaolin (clay)

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12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/7/2024

# Polarized Light Asbestiform Materials Characterization

Court

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118840AG Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

**Turnaround Time:** Date: 11/19/2024

5 days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 Date Of Sampling: Fax# 406-248-9282 Purchase Order #:

Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type /

(Y/N)percent 107A M3.1A- Wallboard System w/ Paint/ M3.1A white surfacing 100% qu,bi 96105 None Detected M3.1Awhite drywall with brown paper 96105 None Detected 21% ce 2 79% qu,gy 107A M3 1B- Wallboard System w/ Paint/ 96106 M3.1B white surfacing None Detected 100% qu,bi M3.1B-96106 white drywall with brown paper None Detected 2 22% ce 78% au.av M3.1C- Wallboard System w/ Paint/ 107A 96107 M3.1C white surfacing None Detected 100% qu,bi M3.1C-96107 white drywall with brown paper None Detected 79% qu,gy 2 21% ce 107A M8.1A-M8.1A Ext. Caulking/ white sealant <1% Chrysotile 96107 100% qu,bi

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

## AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica gy - gypsum ve - vermiculite bi - binder ot - other or - organic pe - perlite ma - matrix qu - quartz

fg - fiberglass ce - cellulose mw - mineral wool br - brucite wo - wollastonite ka - kaolin (clay) ta - talc pa - palygorskite (clay) sy - synthetic

Approved Signatories:

Robert Olivarez

Analyst

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

Technical Manager

(T. Rea

Senior Analyst Julio Robles

Tanner Rasmussen 6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

Crisp Analytical, L.L.C.

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CA Labs, L.L.C.

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# Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118840AG Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court

**Turnaround Time:** Date: 11/19/2024

5 days Samples Rec'd: 11/12/24 10:30AM Phone # 406-248-9161 11/7/2024 Date Of Sampling: Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type / (Y/N)percent 107A M8 1B-M8.1B 96109 Ext. Caulking/ white sealant <1% Chrysotile 100% qu,bi 107A M8.1C-Ext. Caulking/ white sealant 96110 M8.1C <1% Chrysotile 100% qu,bi 107A M13.1 3x6 Brick and Mortar/ red M13.1A bricking None Detected 96111 100% qu,ot M13.1 96111 None Detected A-2 gray mortar 100% gu.ca M13.1 3x6 Brick and Mortar/ red 107A 96112 M13.1B bricking None Detected 100% qu,ot M13.1 96112 None Detected B-2 gray mortar 100% qu,ca M13.1 3x6 Brick and Mortar/ red 107A M13.1C bricking None Detected 96113 100% qu,ot

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

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sy - synthetic

br - brucite ka - kaolin (clay) pa - palygorskite (clay)

ce - cellulose

Approved Signatories:

Robert Olivarez

Analyst

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

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Technical Manager

Tanner Rasmussen

TiRen

Senior Analyst Julio Robles

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8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/7/2024

# Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118840AG Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court

**Turnaround Time:** Date: 11/19/2024

5 days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 Date Of Sampling: Fax# 406-248-9282 Purchase Order #:

Laboratory Analysts Physical Description of Asbestos type / Sample # Com Layer Homo-Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type / (Y/N)percent

M13 1 96113 None Detected 100% qu,ca C-2 gray mortar 107A Blown In Insulation/ gray M34.1 96114 M34.1A insulation None Detected 100% ce A-1 M34.1 Blown In Insulation/ gray 107A 96115 M34.1B insulation None Detected 100% ce M34.1 96115 white insulation None Detected B-2 100% fg 107A Blown In Insulation/ gray 96116 M34.1C insulation None Detected 100% ce

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

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ca - carbonate mi - mica fg - fiberglass ce - cellulose gy - gypsum ve - vermiculite mw - mineral wool br - brucite bi - binder ot - other wo - wollastonite ka - kaolin (clay) or - organic ta - talc

pe - perlite pa - palygorskite (clay) ma - matrix qu - quartz sy - synthetic

Robert Olivarez Analyst

- Fire Damage significant fiber damage reported percentages reflect unaltered fibers
   Fire Damage no significant fiber damages effecting fibrous percentages
- 3. Actinolite in association with Vermiculite
- 4. Layer not analyzed attached to previous positive layer and contamination is suspected
- 5. Not enough sample to analyze

C.T. Rea

Technical Manager Tanner Rasmussen Senior Analyst Julio Robles

Approved Signatories:

- 6. Anthophyllite in association with Fibrous Talc
- 7. Contamination suspected from other building materials
- 8. Favorable scenario for water separation on vermiculite for possible analysis by another method
- 9. < 1% Result point counted positive
- 10. TEM analysis suggested

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798 CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Polarized Light Asbestiform Materials Point Count Laboratory Analysis Report - Point Count

#### **Analysis and Method**

Point counting was performed on a polarized light microscope with a calibrated reticle according to the revised NESHAP method of November 20, 1990 (Federal Register, V.55, N.224, 11/20/90). Original asbestos content of bulk materials was determined using procedures outlined in the interim method (40 CFR part 763, Appendix E to subpart E) and AHERA method (EPA-600/R-93/116). Samples were prepared using HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion staining / becke line method.

## Qualifications

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one of these disciplines is preferred, but not required. Extensive in-house training programs are used to augment education background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. This report is not covered by the scope of NVLAP accreditation. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

Customer Info: Attn: Customer Project: CA Labs Project #:

Tetra Tech, Inc. 117-001068-25005, Paisley CAL24118840AG

7100 Commercial Ave Suite 4

Court
Turnaround Time:

Date: 11/19/24

Billings, Montana 59101 T

Turnaround Time: Date: 11/19/2 5 days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161

Date Of Sampling: 11/07/24

Fax # 406-248-9282

Purchase Order #:

Laboratory Sample # Layer Analysts Physical Homo-geneous Point Counted % / Asbestos Type
Subsample (Y/N) Asbestos Type

107A M8.1A- Ext. Caulking/ white 96107 M8.1A sealant 0.25% Chrysotile M8.1B- Ext. Caulking/ white 107A 96109 M8.1B sealant 0.50% Chrysotile 107A M8.1C- Ext. Caulking/ white M8.1C Trace Chrysotile 96110 sealant

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

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Approved Signatories:

Robert Olivarez

lobert Olivarez Analyst Technical Manager
Tanner Rasmussen

Senior Analyst Julio Robles



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<b>Additional Contact</b>	Rylee Prinz	L.	Phone / Email:	RYLEE.PRINZ@tetratech.com cell - (541) 863-2234			
Sampler Name(s)	Rylee Prinz		Sampler Signature	(S Alexandre			
Date of Inspection:	11/7/24	1	_				
PROJECT INFORMA	ATION						
Client	MSU		Project Name	Paisley Court			
<b>Project Location</b>	Bozeman, Mo	ontana	Project Number	117-001068-2500	05	7	
PLM INSTRUCTION  PLM EPA 600/R-93/116  PLM Point Count, PC 40  Multi-Layered Samples	PLM CARB 435 (rock/soil)  Points (All samples greater than	TEM CHATFIELD	☐ TEM NOB 198.4 ☐ T	TEM CARB 435 (rock/soi	1)		
✓ Analyze and Repo	ort All Separable Layers per EPA 6	00 Only Analyze so	epecifically noted layer				
✓ Analyze Until Positive	Stop by Material Type as Noted						
TURNAROUND TIM  10 Day  5 Day	<b>E</b>	1 Day Same Da	ay Rush Results by:				
Relinquished	By Date & Ti	me VIA	Received	Ву	Date & Time	1	
Kules Pring	11/9/24 1	1:29 FEDEX			e e	1	

NOV 1 2 2024 Andrew Sikes

IVIALUUL



CAC24118840

# CHAIN OF CUSTODY -BULK ASBESTOS-

**PROJECT INFORMATION** 

**Project Name** 

**Paisley Court** 

oza

Project Number 117-001068-25005

ulk Sample #	HA ID	Sample Material Description	Material Location	Notes
Α				
В	107A M 3.1	White wall board system with Assocaited white Paint	Throughout Interior	
С				
Α				
В	107A M 8.1	White Exterior caulking	Around exterior Windows	
С				
Α				
В	107A M 13.1	3 inch by 6 inch Red Brick with Assocaited grey Mortor	Throughout Exterior	
C				
Α				
В	107A M 34.1	Grey blown in insulation	Throughout Attic	
C				

10:30AM

NOV 1 2 2024 Andrew Sikes

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798



CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Materials Characterization - Bulk Asbestos Analysis

**Laboratory Analysis Report - Polarized Light** 

Tetra Tech, Inc.

7100 Commercial Ave Suite 4 Billings, Montana 59101

Customer Project: 117-001068-25005, Paisley Court Reference #:

CAL24118838AS Date: 11/19/24

#### **Analysis and Method**

Summary of polarized light microscopy (PLM / Stereomicroscopy bulk asbestos analysis) using the methods described in 40CFR Part 763 Appendix E to Subpart E (Interim and EPA 600 / R-93 / 116 (Improved). The sample is first viewed with the aid of a stereomicroscope. Numerous liquid slide preparations are created for analysis under the polarized microscope where identifications and quantifications are preformed. Calibrated liquid refractive oils are used as liquid mouting medium. These oils are used for identification (dispersion staining). A calibrated visual estimation is reported, should any asbestiform mineral be present. Other techniques such as acid washing are used in conjugation with refractive oils for detection of smaller quantities of asbestos. All asbestos percentages are based on calibrated visual estimation traceable to NIST standards for regulated asbestos. Traceability to measurement and calibration is achieved by using known amounts and types of asbestos from standards where analyst and laboratory accuracy are measured. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 0.50% (well above the laboratory definition of trace).

#### **Discussion**

Vermiculite containing samples may contain trace amounts of actinolite/tremolite. When not detected by PLM, these samples should be analyzed using TEM methods and / or water separation techniques. Suspected actinolite/vermiculite presence will be indicated through the sample comment section of this report.

Fibrous talc containing samples may contain a regulated asbestos fiber known as anthophyllite. Under certain conditions the same fiber may actually contain both talc and anthophyllite (a phenomenon called intergrowth). Again, TEM detection methods are recommended. CA Labs PLM report comments will denote suspected amounts of asbestiform anthophyllite with talc, where further analysis is recommended.

Some samples (floor tiles, surfacings, etc.) may contain fibers too small to be detectable by PLM analysis and should be analyzed by TEM bulk protocols.

A "trace asbestos" will be reported if the analyst observes far less than 1% asbestos. CA Labs defines "trace asbestos" as a few fibers detected by the analyst in several preparations and will indicate as such under these circumstances.

Since allowable variation in quantification of samples close to 1% is high, <1% may be reported. Such results are ideal for point counting, and the technique is mandatory for friable samples (NESHAP, Nov. 1990 and clarification letter 8 May 1991) under 1% percent asbestos or "trace asbestos". In order to make all initial PLM reports issued from CA Labs NESHAP compliant, all <1% asbestos results (except floor tiles) will be point counted at no additional charge.

#### Qualifications

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses or hold a degree in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one these disciplines is preferred, but not required. Extensive in-house training programs are used to augment the educational background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235 AIHA LAP, LLC Laboratory #102929

> > Page 1 of 5

## Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

## CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Overview of Project Sample Material Containing Asbestos

Customer Project:			117-001068-25005, Paisley Cou	urt	CA Labs Project #: CAL24118838AS
Laboratory Sample ID	Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types

No Asbestos Detected.

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

AIHA LAP, LLC Laboratory #102929

## Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):

ca - carbonate gypsum - gypsum bi - binder or - organic ma - matrix mi - mica ve - vermiculite

ot - other

pe - perlite qu - quartz fg - fiberglass mw - mineral wool wo - wollastinite ta - talc sy - synthetic ce - cellulose

br - brucite ka - kaolin (clay) pa - palygorskite (clay)

This report relates to the items tested as received. This report is not to be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST, AIHA LAP, LLC, or any other agency of the federal government. This report may not be reproduced except in full without written permission from CA Labs. These results are submitted pursuant to CA Labs' current terms and sale, condition of sale, including the company's standard warranty and limitations of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, CA Labs will store the samples for a period of ninety (90) days before discarding. A shipping or handling fee may be assessed for the return of any samples.

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

406-248-9161

406-248-9282

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

# Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118838AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Phone #

Fax#

Court

Date: 11/19/2024

**Turnaround Time:** 5 Days

Samples Rec'd: 11/12/24 10:30AM

11/7/2024 Date Of Sampling:

Purchase Order #:

Laboratory Analysts Physical Description of Non-Sample # Com Layer Homo-Asbestos type / Non-asbestos Sample ID ment geneo calibrated visual fiber type / fibrous

Cample 15		mont	π	Gubsample	us (Y/N)	estimate percent	percent	type / percent
96081	107B- M3.1A		M3.1 A-1	Wallboard System/ tan surfaced white compound	n	None Detected		100% mi,qu,bi,ca
				•				
96081			M3.1 A-2	tan drywall with brown paper	n	None Detected	21% ce	79% qu,gy
	4070			Mallhaand Oracland codila				
96082	107B- M3.1B		M3.1 B-1	Wallboard System/ white surfaced white compound	n	None Detected		100% mi,qu,bi,ca
96082			M3.1 B-2	tan drywall with brown paper	n	None Detected	20% ce	80% qu,gy
96083	107B- M3.1C		M3.1 C-1	Wallboard System/ white surfaced white compound	n	None Detected		100% mi,qu,bi,ca
				•				
96083			M3.1 C-2	tan drywall with brown paper	n	None Detected	21% ce	79% qu,gy
06094	107B-		M8.1	Caulking/ white sealant with	n	Nama Datasta -		100%
96084	M8.1A		A-1	debris	n	None Detected		qu,gy,bi

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

## AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

qu - quartz

ca - carbonate mi - mica gy - gypsum ve - vermiculite bi - binder ot - other or - organic pe - perlite

ma - matrix

fg - fiberglass mw - mineral wool wo - wollastonite ta - talc sy - synthetic

ce - cellulose br - brucite ka - kaolin (clay) pa - palygorskite (clay)

Approved Signatories:

Justin Cox

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

T. Rea Technical Manager

Tanner Rasmussen

Senior Analyst Julio Robles

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/7/2024

100% qu,ot

# Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: **Customer Project:** CA Labs Project #: CAL24118838AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court

**Turnaround Time:** Date: 11/19/2024

5 Days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 Date Of Sampling:

Fax# 406-248-9282 Purchase Order #:

Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous percent us estimate percent type / (Y/N)percent

107B-100% M8.1 96085 M8.1B B-1 Caulking/ white sealant None Detected qu,gy,bi 107B-M8.1 100% 96086 M8.1C C-1 Caulking/ white sealant None Detected qu,gy,bi 107B-M13.1 96087 M13.1A Brick and Mortar/ red bricking None Detected 100% qu,ot M13.1 96087 None Detected A-2 gray mortar 100% qu,ca

107B-M13.1 96088 M13.1B B-1 Brick and Mortar/ red bricking None Detected 100% qu,ot

M13.1 96088 None Detected B-2 gray mortar 100% qu,ca

107B-M13.1 96089 M13.1C Brick and Mortar/ red bricking None Detected

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

## AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica fg - fiberglass gy - gypsum ve - vermiculite mw - mineral wool bi - binder ot - other wo - wollastonite

or - organic pe - perlite ta - talc

pa - palygorskite (clay) Approved Signatories: ma - matrix qu - quartz sy - synthetic

Justin Cox Analyst

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

.T. Re-

Technical Manager Senior Analyst Tanner Rasmussen Julio Robles

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

ce - cellulose

ka - kaolin (clav)

br - brucite

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/7/2024

# Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** Attn: CA Labs Project #: CAL24118838AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court

**Turnaround Time:** Date: 11/19/2024

5 Days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 Date Of Sampling: Fax# 406-248-9282 Purchase Order #:

Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type / (Y/N)percent

M13.1 96089 C-2 None Detected 100% qu,ca gray mortar 107B-M34.1 96090 M34.1A Insulation/ tan insulation None Detected 100% ce A-1 107B-M34.1 96091 M34.1B Insulation/ tan insulation None Detected 100% ce 107B-M34.1 96092 M34.1C Insulation/ tan insulation None Detected C-1 100% ce

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

## AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica fg - fiberglass ce - cellulose gy - gypsum ve - vermiculite mw - mineral wool br - brucite bi - binder ot - other wo - wollastonite ka - kaolin (clay) or - organic pe - perlite ta - talc pa - palygorskite (clay) ma - matrix qu - quartz sy - synthetic

Justin Cox

Analyst

- Fire Damage significant fiber damage reported percentages reflect unaltered fibers
   Fire Damage no significant fiber damages effecting fibrous percentages
- 3. Actinolite in association with Vermiculite
- 4. Layer not analyzed attached to previous positive layer and contamination is suspected
- 5. Not enough sample to analyze

T. Re-

Technical Manager Tanner Rasmussen

Senior Analyst Julio Robles

Approved Signatories:

- 6. Anthophyllite in association with Fibrous Talc
- 7. Contamination suspected from other building materials
- 8. Favorable scenario for water separation on vermiculite for possible analysis by another method
- 9. < 1% Result point counted positive
- 10. TEM analysis suggested



<b>CONTACT INFORM</b>	ATION						
COMPANY:	Tetra Tech, Inc.		Phone:	406.248.9161 CACU//8\$38			
<b>Primary Contact</b>	Roger W. Herman, Jr.		Phone / Email:	roger.herman@tetratech.com cell - 406.670.4844			
<b>Additional Contact</b>	Rylee Prinz		Phone / Email:	RYLEE.PRINZ@tetratech.com cell - (541) 863-2234			
Sampler Name(s)	Rylee Prinz		Sampler Signature(s Manager 1997)				
Date of Inspection:	11/7/24						
PROJECT INFORM	ATION						
Client	MSU		Project Name	Paisley Court			
<b>Project Location</b>	Bozeman, Montana		Project Number	117-001068-25005			
	00 Points (All samples greater than 0%, but	less than 2%)					
✓ Multi-Layered Sample	S:						
✓ Analyze and Rep	ort All Separable Layers per EPA 600	Only Analyze sep	pecifically noted layer				
✓ Analyze Until Positive	Stop by Material Type as Noted						
TURNAROUND TIM	E						
☐ 10 Day	3 Day 2 Day 1 Day	Same Day	Rush Results by:				
Relinquished	By Date & Time	VIA	Received	By Date & Time			
Ryler Prinz	11/9/24 11:37	FEDEX					

10:30AM

NOV 1 2 2024



CAL74/18838

## **CHAIN OF CUSTODY** -BULK ASBESTOS-

**PROJECT INFORMATION** 

**Project Name** 

**Paisley Court** 

Project Number 117-001068-25005

Bulk Sample #	HA ID	Sample Material Description	Material Location	Notes
A B C	107B M 3.1	White wall board system with Assocaited white Paint	Throughout Interior	
A B C	107B M 8.1	White Exterior caulking	Around exterior Windows	
A B C	107B M 13.1	3 inch by 6 inch Red Brick with Assocaited grey Mortor	Throughout Exterior	
A B C	107B M 34.1	Grey blown in insulation	Throughout Attic	

10:30AM

NOV 1 2 2024 Andrew Sikes

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798



CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Materials Characterization - Bulk Asbestos Analysis

**Laboratory Analysis Report - Polarized Light** 

Tetra Tech, Inc.

7100 Commercial Ave Suite 4 Billings, Montana 59101

Customer Project: 117-001068-25005, Paisley Court Reference #:

CAL24118839AS Date: 11/19/24

#### **Analysis and Method**

Summary of polarized light microscopy (PLM / Stereomicroscopy bulk asbestos analysis) using the methods described in 40CFR Part 763 Appendix E to Subpart E (Interim and EPA 600 / R-93 / 116 (Improved). The sample is first viewed with the aid of a stereomicroscope. Numerous liquid slide preparations are created for analysis under the polarized microscope where identifications and quantifications are preformed. Calibrated liquid refractive oils are used as liquid mouting medium. These oils are used for identification (dispersion staining). A calibrated visual estimation is reported, should any asbestiform mineral be present. Other techniques such as acid washing are used in conjugation with refractive oils for detection of smaller quantities of asbestos. All asbestos percentages are based on calibrated visual estimation traceable to NIST standards for regulated asbestos. Traceability to measurement and calibration is achieved by using known amounts and types of asbestos from standards where analyst and laboratory accuracy are measured. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 0.50% (well above the laboratory definition of trace).

#### **Discussion**

Vermiculite containing samples may contain trace amounts of actinolite/tremolite. When not detected by PLM, these samples should be analyzed using TEM methods and / or water separation techniques. Suspected actinolite/vermiculite presence will be indicated through the sample comment section of this report.

Fibrous talc containing samples may contain a regulated asbestos fiber known as anthophyllite. Under certain conditions the same fiber may actually contain both talc and anthophyllite (a phenomenon called intergrowth). Again, TEM detection methods are recommended. CA Labs PLM report comments will denote suspected amounts of asbestiform anthophyllite with talc, where further analysis is recommended.

Some samples (floor tiles, surfacings, etc.) may contain fibers too small to be detectable by PLM analysis and should be analyzed by TEM bulk protocols.

A "trace asbestos" will be reported if the analyst observes far less than 1% asbestos. CA Labs defines "trace asbestos" as a few fibers detected by the analyst in several preparations and will indicate as such under these circumstances.

Since allowable variation in quantification of samples close to 1% is high, <1% may be reported. Such results are ideal for point counting, and the technique is mandatory for friable samples (NESHAP, Nov. 1990 and clarification letter 8 May 1991) under 1% percent asbestos or "trace asbestos". In order to make all initial PLM reports issued from CA Labs NESHAP compliant, all <1% asbestos results (except floor tiles) will be point counted at no additional charge.

#### Qualifications

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses or hold a degree in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one these disciplines is preferred, but not required. Extensive in-house training programs are used to augment the educational background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235 AIHA LAP, LLC Laboratory #102929

#### Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

#### CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Overview of Project Sample Material Containing Asbestos

Customer	Project:		117-001068-25005, Paisley Cou	urt	CA Labs Project #: CAL24118839AS
Laboratory Sample ID	Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types

No Asbestos Detected.

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235 AIHA LAP, LLC Laboratory #102929

#### Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):

ca - carbonate gypsum - gypsum bi - binder or - organic ma - matrix mi - mica

pe - perlite qu - quartz fg - fiberglass mw - mineral wool wo - wollastinite ta - talc

pa - palygorskite (clay)

sy - synthetic ce - cellulose ve - vermiculite br - brucite ka - kaolin (clay) ot - other

This report relates to the items tested as received. This report is not to be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST, AIHA LAP, LLC, or any other agency of the federal government. This report may not be reproduced except in full without written permission from CA Labs. These results are submitted pursuant to CA Labs' current terms and sale, condition of sale, including the company's standard warranty and limitations of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, CA Labs will store the samples for a period of ninety (90) days before discarding. A shipping or handling fee may be assessed for the return of any samples.

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: **Customer Project:** CA Labs Project #: CAL24118839AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court

**Turnaround Time:** Date: 11/19/2024

Samples Rec'd: 11/12/24 10:30AM

5 Days Phone # 406-248-9161 11/7/2024 Date Of Sampling: Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent us percent type / (Y/N)percent 108A-Wallboard System/ white 100% surfaced white compound 96093 M3.1A None Detected qu,bi,ca M3.1 96093 A-2 white drywall with brown paper None Detected 21% ce 79% qu,gy n 108A-Wallboard System/ white M3.1 100% 96094 M3.1B surfaced white compound None Detected qu,bi,ca n M3.1 96094 white drywall with brown paper None Detected 80% qu,gy n 20% ce 108A-Wallboard System/ white 100% 96095 M3.1C surfaced white compound n None Detected qu,bi,ca M3.1 96095 white drywall with brown paper None Detected C-2 22% ce 78% qu,gy 108A-M8.1

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate gy - gypsum bi - binder or - organic

ma - matrix

Caulking/ white sealant

mi - mica ve - vermiculite ot - other

pe - perlite

qu - quartz

fg - fiberglass mw - mineral wool wo - wollastonite ta - talc

sy - synthetic

ce - cellulose br - brucite ka - kaolin (clav) pa - palygorskite (clay)

Approved Signatories:

a Metet

Jose Matute Analyst

96096

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

10

M8.1A

- 3. Actinolite in association with Vermiculite
- 4. Layer not analyzed attached to previous positive layer and contamination is suspected
- 5. Not enough sample to analyze

Technical Manager

Tanner Rasmussen

TRen

Senior Analyst Julio Robles

100% qu,bi

- 6. Anthophyllite in association with Fibrous Talc
- 7. Contamination suspected from other building materials
- 8. Favorable scenario for water separation on vermiculite for possible analysis by another method
- 9. < 1% Result point counted positive
- 10. TEM analysis suggested

None Detected

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: **Customer Project:** CA Labs Project #: CAL24118839AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court

**Turnaround Time:** Date: 11/19/2024

5 Days

Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 11/7/2024 Date Of Sampling: Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous us estimate percent percent type / (Y/N)percent 108A-M8.1 96097 M8.1B 10 B-1 Caulking/ white sealant None Detected 100% qu,bi 108A-M8.1 96098 M8.1C 10 C-1 Caulking/ white sealant None Detected 100% qu,bi 108A-M13.1 96099 M13.1A Brick and Mortar/ red bricking None Detected 100% qu,ot M13.1 96099 None Detected A-2 gray mortar 100% qu,ca 108A-M13.1 96100 M13.1B B-1 Brick and Mortar/ red bricking None Detected 100% qu,ot M13.1 96100 None Detected B-2 gray mortar 100% qu,ca 108A-M13.1 96101 M13.1C Brick and Mortar/ red bricking None Detected 100% qu,ot

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate gy - gypsum bi - binder or - organic

ma - matrix

mi - mica ve - vermiculite ot - other

pe - perlite

qu - quartz

fg - fiberglass mw - mineral wool wo - wollastonite

ta - talc

sy - synthetic

ce - cellulose br - brucite ka - kaolin (clav)

pa - palygorskite (clay)

Approved Signatories:

a Metet Jose Matute

Analyst

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

Technical Manager

Tanner Rasmussen

Senior Analyst Julio Robles

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

.T. Re-

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

10. TEM analysis suggested

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118839AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court

**Turnaround Time:** Date: 11/19/2024

5 Days Samples Rec'd: 11/12/24 10:30AM Phone # 406-248-9161 11/7/2024 Date Of Sampling:

Fax# 406-248-9282 Purchase Order #:

Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type / (Y/N)percent

M13.1 96101 C-2 None Detected 100% qu,ca gray mortar 108A-M34.1 96102 M34.1A Insulation/ gray insulation None Detected 100% ce A-1 108A-M34.1 96103 M34.1B Insulation/ gray insulation None Detected 100% ce 108A-M34.1 96104 M34.1C Insulation/ gray insulation None Detected C-1 100% ce

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica gy - gypsum ve - vermiculite bi - binder ot - other

pe - perlite

qu - quartz

or - organic

ma - matrix

mw - mineral wool wo - wollastonite ta - talc sy - synthetic

fg - fiberglass

ce - cellulose br - brucite ka - kaolin (clay)

pa - palygorskite (clay)

Approved Signatories:

a Metit

Jose Matute Analyst

- Fire Damage significant fiber damage reported percentages reflect unaltered fibers
   Fire Damage no significant fiber damages effecting fibrous percentages
- 3. Actinolite in association with Vermiculite
- 4. Layer not analyzed attached to previous positive layer and contamination is suspected
- 5. Not enough sample to analyze

T. Re-**Technical Manager** 

Tanner Rasmussen

Senior Analyst Julio Robles

- 6. Anthophyllite in association with Fibrous Talc
- 7. Contamination suspected from other building materials
- 8. Favorable scenario for water separation on vermiculite for possible analysis by another method
- 9. < 1% Result point counted positive
- 10. TEM analysis suggested



CONTACT INFORM					
COMPANY:	Tetra Tech, Inc.		_Phone:	406.248.9161 (X24	118839
Primary Contact			_Phone / Email:	m cell – 406.670.4844	
Additional Contact	Rylee Prinz		Phone / Email:	RYLEE.PRINZ@tetratech.co	om cell - (541) 863-2234
Sampler Name(s)	Rylee Prinz		Sampler Signature	(S William	
Date of Inspection:	11/7/24		_		
PROJECT INFORM	ATION				
Client	MSU		<b>Project Name</b>	Paisley Court	
Project Location	Bozeman, Mo	ontana	Project Number	117-001068-25005	
PLM INSTRUCTION	<u>IS</u>				
✓ PLM EPA 600/R-93/116	PLM CARB 435 (rock/soil)	TEM CHATFIELD	☐ TEM NOB 198.4 ☐ T	TEM CARB 435 (rock/soil)	
✓ PLM Point Count, PC 4	00 Points (All samples greater than	0%, but less than 2%)			
Multi Laurend Comb					
✓ Multi-Layered Sample					
✓ Analyze and Rep	ort All Separable Layers per EPA 60	00 Only Analyze s	sepecifically noted layer		
✓ Analyze Until Positive	Stop by Material Type as Noted				
TURNAROUND TIM	<u>E</u>				
☐ 10 Day	☐ 3 Day ☐ 2 Day ☐	] 1 Day   Same D	ay Rush Results by:		
Relinquished	By Date & Ti	me VIA	Received	By Date & Time	9
Bylly Prinz	11/9/24 1	1:52 FEDEX			
1					

10:30AM

NOV 1 2 2024 Andrew 5: Kee



CAC2(11 8839

## PROJECT INFORMATION

CHAIN OF CUSTODY
-BULK ASBESTOS-

Project Identifier

Paisley Court

**Project Number** 117-001068-25005

Bulk Sample HA ID		Sample Material Description	Material Location	Notes
A B C	108A M 3.1	White wall board system with Assocaited white Paint	Throughout Interior	
A B C	108A M 8.1	8.1 White Exterior caulking Around exterior Windows		
A B C	108A M 13.1	3 inch by 6 inch Red Brick with Assocaited grey Mortor	Throughout Exterior	
A B 108A M 34.1		Grey blown in insulation	Throughout Attic	

10:30AM

NOV 1 2 2024

Andrew Sikes

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798



CA Labs. L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Materials Characterization - Bulk Asbestos Analysis

**Laboratory Analysis Report - Polarized Light** 

Tetra Tech, Inc.

7100 Commercial Ave Suite 4 Billings, Montana 59101

Customer Project: 117-001068-25005, Paisley Court CAL24118824AG Reference #:

Date: 11/19/24

#### **Analysis and Method**

Summary of polarized light microscopy (PLM / Stereomicroscopy bulk asbestos analysis) using the methods described in 40CFR Part 763 Appendix E to Subpart E (Interim and EPA 600 / R-93 / 116 (Improved). The sample is first viewed with the aid of a stereomicroscope. Numerous liquid slide preparations are created for analysis under the polarized microscope where identifications and quantifications are preformed. Calibrated liquid refractive oils are used as liquid mouting medium. These oils are used for identification (dispersion staining). A calibrated visual estimation is reported, should any asbestiform mineral be present. Other techniques such as acid washing are used in conjugation with refractive oils for detection of smaller quantities of asbestos. All asbestos percentages are based on calibrated visual estimation traceable to NIST standards for regulated asbestos. Traceability to measurement and calibration is achieved by using known amounts and types of asbestos from standards where analyst and laboratory accuracy are measured. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 0.50% (well above the laboratory definition of trace).

#### Discussion

Vermiculite containing samples may contain trace amounts of actinolite/tremolite. When not detected by PLM, these samples should be analyzed using TEM methods and / or water separation techniques. Suspected actinolite/vermiculite presence will be indicated through the sample comment section of this report.

Fibrous talc containing samples may contain a regulated asbestos fiber known as anthophyllite. Under certain conditions the same fiber may actually contain both talc and anthophyllite (a phenomenon called intergrowth). Again, TEM detection methods are recommended. CA Labs PLM report comments will denote suspected amounts of asbestiform anthophyllite with talc, where further analysis is recommended.

Some samples (floor tiles, surfacings, etc.) may contain fibers too small to be detectable by PLM analysis and should be analyzed by TEM bulk protocols.

A "trace asbestos" will be reported if the analyst observes far less than 1% asbestos. CA Labs defines "trace asbestos" as a few fibers detected by the analyst in several preparations and will indicate as such under these circumstances.

Since allowable variation in quantification of samples close to 1% is high, <1% may be reported. Such results are ideal for point counting, and the technique is mandatory for friable samples (NESHAP, Nov. 1990 and clarification letter 8 May 1991) under 1% percent asbestos or "trace asbestos". In order to make all initial PLM reports issued from CA Labs NESHAP compliant, all <1% asbestos results (except floor tiles) will be point counted at no additional charge.

#### Qualifications

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses or hold a degree in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one these disciplines is preferred, but not required. Extensive in-house training programs are used to augment the educational background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235 AIHA LAP, LLC Laboratory #102929

> > Page 1 of 6

#### Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

#### CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Overview of Project Sample Material Containing Asbestos

Customer Project:		117-001068-25005, Paisley Co	CA Labs Project #: CAL24118824AG		
Laboratory Sample ID	Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types
95895	108B M8.1A	M8.1A-1	Ext. Caulking/ white sealant with debris	<1% Chrysotile	white sealant with debris
95896	108B M8.1B	M8.1B-1	Ext. Caulking/ white sealant with debris	<1% Chrysotile	_
95897	108B M8.1C	M8.1C-1	Ext. Caulking/ white sealant with debris	<1% Chrysotile	

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

AIHA LAP, LLC Laboratory #102929

#### Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):

ca - carbonate gypsum - gypsum bi - binder or - organic ma - matrix mi - mica ve - vermiculite ot - other pe - perlite qu - quartz fg - fiberglass mw - mineral wool wo - wollastinite ta - talc sy - synthetic

ce - cellulose

br - brucite ka - kaolin (clay) pa - palygorskite (clay)

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Unless notified in writing to return the samples covered by this report, CA Labs will store the samples for a period of ninety (90) days before discarding. A shipping or handling fee may be assessed for the return of any samples.

Crisp Analytical, L.L.C.

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CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Polarized Light Asbestiform Materials Characterization

Court

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118824AG Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

**Turnaround Time:** Date: 11/19/2024

5 days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 11/7/2024 Date Of Sampling: Fax # 406-248-9282 Purchase Order #:

Laboratory Analysts Physical Description of Asbestos type / Sample # Com Layer Homo-Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type / (Y/N)percent

95892	108B M3.1A	M3.1A- 1	Wall Board System w/ Paint/ white surfacing	у	None Detected		100% qu,bi
95892		M3.1A- 2	white drywall with brown paper	у	None Detected	20% ce	80% qu,gy
95893	108B M3.1B	M3.1B- 1	Wall Board System w/ Paint/ tan surfaced white compound	n	None Detected		100% qu,bi,ca
95893		M3.1B- 2	white drywall with brown paper	у	None Detected	20% ce	80% qu,gy
95894	108B M3.1C	M3.1C- 1	Wall Board System w/ Paint/ tan surfaced white compound	n	None Detected		100% qu,or
95894		M3.1C- 2	white drywall with brown paper	у	None Detected	20% ce	80% qu,gy

TDSHS 30-0235 Dallas NVLAP Lab Code 200349-0 TEM/PLM

M8.1A- Ext. Caulking/ white sealant

with debris

#### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica fg - fiberglass ce - cellulose gy - gypsum ve - vermiculite mw - mineral wool br - brucite bi - binder ot - other wo - wollastonite ka - kaolin (clay) or - organic pe - perlite ta - talc

pa - palygorskite (clay) Approved Signatories: ma - matrix qu - quartz sy - synthetic

Josh Strange

Analyst

95895

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

108B

M8.1A

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

(T. Rea Technical Manager

Senior Analyst Tanner Rasmussen Julio Robles

100%

qu,gy,bi

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

10. TEM analysis suggested

<1% Chrysotile

Crisp Analytical, L.L.C.

M8.1B- Ext. Caulking/ white sealant

with debris

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

406-248-9161

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/7/2024

100%

Approved Signatories:

qu,gy,bi

## Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118824AG Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

108B

M8.1B

108B

Phone #

95896

Court

<1% Chrysotile

**Turnaround Time:** Date: 11/19/2024

5 days Samples Rec'd: 11/12/24 10:30AM

Date Of Sampling:

Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous

estimate percent percent us type / (Y/N)percent

M8.1C- Ext. Caulking/ white sealant 100% 95897 M8.1C with debris <1% Chrysotile n qu,gy,bi 108B M13 1 3x6 Brick and Mortar/ red 95898 M13.1A bricking None Detected 100% qu,ot

M13.1 95898 None Detected A-2 gray mortar 100% gu.ca

M13.1 3x6 Brick and Mortar/ red 108B 95899 M13.1B bricking None Detected 100% qu,ot

M13.1 95899 None Detected B-2 gray mortar 100% qu,ca

M13.1 3x6 Brick and Mortar/ red 108B 95900 M13.1C bricking None Detected 100% qu,ot

Dallas NVLAP Lab Code 200349-0 TEM/PLM

AIHA LAP, LLC Laboratory #102929 Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica fg - fiberglass ce - cellulose gy - gypsum ve - vermiculite mw - mineral wool br - brucite bi - binder ot - other wo - wollastonite

ka - kaolin (clay) or - organic pe - perlite ta - talc pa - palygorskite (clay) ma - matrix qu - quartz sy - synthetic

Josh Strange

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

Technical Manager

Senior Analyst Tanner Rasmussen Julio Robles

6. Anthophyllite in association with Fibrous Talc

C.T. Re-

7. Contamination suspected from other building materials

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

10. TEM analysis suggested

TDSHS 30-0235

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

insulation

ma - matrix

C-1

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/7/2024

percent

## Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118824AG Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

M34.1C

Court **Turnaround Time:** Date: 11/19/2024

5 days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 Date Of Sampling: Fax# 406-248-9282 Purchase Order #:

Laboratory Analysts Physical Description of Asbestos type / Sample # Com Layer Homo-Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type /

(Y/N)

M13 1 95900 None Detected 100% qu,ca C-2 gray mortar 108B Blown In Insulation/ brown M34.1 95901 M34.1A insulation None Detected 100% ce 108B M34.1 Blown In Insulation/ brown 95902 M34.1B insulation None Detected 100% ce 108B Blown In Insulation/ brown

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

qu - quartz

ca - carbonate mi - mica fg - fiberglass ce - cellulose gy - gypsum ve - vermiculite mw - mineral wool br - brucite bi - binder ot - other wo - wollastonite ka - kaolin (clay) or - organic pe - perlite ta - talc pa - palygorskite (clay)

sy - synthetic

Josh Strange Analyst

95903

- Fire Damage significant fiber damage reported percentages reflect unaltered fibers
   Fire Damage no significant fiber damages effecting fibrous percentages
- 3. Actinolite in association with Vermiculite
- 4. Layer not analyzed attached to previous positive layer and contamination is suspected
- 5. Not enough sample to analyze

Technical Manager

Senior Analyst Julio Robles

Approved Signatories:

Tanner Rasmussen 6. Anthophyllite in association with Fibrous Talc

CTRen

7. Contamination suspected from other building materials

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

100% ce

9. < 1% Result point counted positive

10. TEM analysis suggested

None Detected

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798 CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Polarized Light Asbestiform Materials Point Count Laboratory Analysis Report - Point Count

#### **Analysis and Method**

Point counting was performed on a polarized light microscope with a calibrated reticle according to the revised NESHAP method of November 20, 1990 (Federal Register, V.55, N.224, 11/20/90). Original asbestos content of bulk materials was determined using procedures outlined in the interim method (40 CFR part 763, Appendix E to subpart E) and AHERA method (EPA-600/R-93/116). Samples were prepared using HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion staining / becke line method.

#### Qualifications

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one of these disciplines is preferred, but not required. Extensive in-house training programs are used to augment education background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. This report is not covered by the scope of NVLAP accreditation. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

Customer Info: Attn: Customer Project: CA Labs Project #: Tetra Tech, Inc. Customer Project: CAL24118824AG

7100 Commercial Ave Suite 4 Billings, Montana 59101

Turnaround Time: Date: 11/19/24

5 days

Court

Samples Rec'd: 11/12/24 10:30AM

Date Of Sampling: 11/07/24

Date Of Sampling: Purchase Order #:

Phone # 406-248-9161 Fax # 406-248-9282

Laboratory Sample # Layer Analysts Physical Homo-geneous Point Counted % / Sample ID # Description of (Y/N) Asbestos Type

Subsample

108B M8.1A- Ext. Caulking/ white 95895 M8.1A sealant with debris 0.25% Chrysotile 108B M8.1B- Ext. Caulking/ white sealant with debris 95896 M8.1B 0.25% Chrysotile 108B M8.1C- Ext. Caulking/ white 95897 M8.1C sealant with debris Trace Chrysotile

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

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Approved Signatories:

Technical Manager Tanner Rasmussen

Senior Analyst Julio Robles

losh Strange

Josh Strange Analyst



CONTACT INFORM		Phone:		CZ41/8824		
OMPANY:						
Primary Contact	Roger W. Herman, Jr.		Phone / Email: roger.herman@tetratech.com			
Additional Contact	Rylee Prinz	Phone / Email:		th.com cell - (541) 863-2234		
Sampler Name(s)	Rylee Prinz	Sampler Signature	e(s Autor			
Date of Inspection:	11/7/24					
PROJECT INFORMA	ATION					
Client	MSU	Project Name	Paisley Court	<u></u>		
Project Location	Bozeman, Montana	Project Number	117-001068-25005			
PLM EPA 600/R-93/116 PLM Point Count, PC 40	PLM CARB 435 (rock/soil) TEM CHATFI	<del>-</del>	TEM CARB 435 (rock/soil)			
✓ Multi-Layered Sample:	5:					
✓ Analyze and Rep	ort All Separable Layers per EPA 600 🔲 Only Ana	alyze sepecifically noted layer				
✓ Analyze Until Positive	Stop by Material Type as Noted					
TURNAROUND TIM  10 Day  5 Day		ame Day Rush Results by:				
Relinquished	By Date & Time V	TIA Received	By Date &	Time		
Hylel Prinz	11/9/24 12:15 FED	DEX				
/						

10:30AM

NOV 1 2 2024 Andrew Sikes



CACZ4118824

## **CHAIN OF CUSTODY** -BULK ASBESTOS-

PROJECT INFORMATION

**Project Name** 

Paisley Court

Project Number 117-001068-25005

Bulk Sample #	HA ID	Sample Material Description	Material Location	Notes
A B C	108B M 3.1	White wall board system with Assocaited white Paint	Throughout Interior	
A B C	108B M 8.1	White Exterior caulking	Around exterior Windows	
A B C	108B M 13.1	3 inch by 6 inch Red Brick with Assocaited grey Mortor	Throughout Exterior	
A B C	108B M 34.1	Grey blown in insulation	Throughout Attic	

10:30AM

NOV 1 2 2024 Andrew Sikes

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798



CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Materials Characterization - Bulk Asbestos Analysis

**Laboratory Analysis Report - Polarized Light** 

Tetra Tech, Inc.

7100 Commercial Ave Suite 4 Billings, Montana 59101 Customer Project: 117-001068-25005, Paisley Court

Reference #: CAL24118841AS Date: 11/19/24

#### **Analysis and Method**

Summary of polarized light microscopy (PLM / Stereomicroscopy bulk asbestos analysis) using the methods described in 40CFR Part 763 Appendix E to Subpart E (Interim and EPA 600 / R-93 / 116 (Improved). The sample is first viewed with the aid of a stereomicroscope. Numerous liquid slide preparations are created for analysis under the polarized microscope where identifications and quantifications are preformed. Calibrated liquid refractive oils are used as liquid mouting medium. These oils are used for identification (dispersion staining). A calibrated visual estimation is reported, should any asbestiform mineral be present. Other techniques such as acid washing are used in conjugation with refractive oils for detection of smaller quantities of asbestos. All asbestos percentages are based on calibrated visual estimation traceable to NIST standards for regulated asbestos. Traceability to measurement and calibration is achieved by using known amounts and types of asbestos from standards where analyst and laboratory accuracy are measured. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 0.50% (well above the laboratory definition of trace).

#### **Discussion**

Vermiculite containing samples may contain trace amounts of actinolite/tremolite. When not detected by PLM, these samples should be analyzed using TEM methods and / or water separation techniques. Suspected actinolite/vermiculite presence will be indicated through the sample comment section of this report.

Fibrous talc containing samples may contain a regulated asbestos fiber known as anthophyllite. Under certain conditions the same fiber may actually contain both talc and anthophyllite (a phenomenon called intergrowth). Again, TEM detection methods are recommended. CA Labs PLM report comments will denote suspected amounts of asbestiform anthophyllite with talc, where further analysis is recommended.

Some samples (floor tiles, surfacings, etc.) may contain fibers too small to be detectable by PLM analysis and should be analyzed by TEM bulk protocols.

A "trace asbestos" will be reported if the analyst observes far less than 1% asbestos. CA Labs defines "trace asbestos" as a few fibers detected by the analyst in several preparations and will indicate as such under these circumstances.

Since allowable variation in quantification of samples close to 1% is high, <1% may be reported. Such results are ideal for point counting, and the technique is mandatory for friable samples (NESHAP, Nov. 1990 and clarification letter 8 May 1991) under 1% percent asbestos or "trace asbestos". In order to make all initial PLM reports issued from CA Labs NESHAP compliant, all <1% asbestos results (except floor tiles) will be point counted at no additional charge.

#### Qualifications

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses or hold a degree in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one these disciplines is preferred, but not required. Extensive in-house training programs are used to augment the educational background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235
AIHA LAP, LLC Laboratory #102929

Page 1 of 6

#### Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

#### CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Overview of Project Sample Material Containing Asbestos

Customer	Project:		117-001068-25005, Paisley Co	urt	CA Labs Project #: CAL24118841AS
Laboratory Sample ID	Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types

No Asbestos Detected.

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

AIHA LAP, LLC Laboratory #102929

#### Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):

ca - carbonate gypsum - gypsum bi - binder or - organic ma - matrix mi - mica ve - vermiculite

ot - other

pe - perlite qu - quartz fg - fiberglass mw - mineral wool wo - wollastinite ta - talc sy - synthetic ce - cellulose

br - brucite ka - kaolin (clay) pa - palygorskite (clay)

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Crisp Analytical, L.L.C.

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CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: **Customer Project:** CA Labs Project #: CAL24118841AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court

**Turnaround Time:** Date: 11/19/2024

5 Days

n

n

n

Samples Rec'd: 11/12/24 10:30AM 11/6/2024 Date Of Sampling:

Phone # 406-248-9161 Fax# 406-248-9282

Purchase Order #: Homo-Asbestos type / Non-asbestos

Non-

Laboratory Analysts Physical Description of Sample # Com Layer Sample ID ment Subsample

geneo us (Y/N)

calibrated visual fiber type / estimate percent percent

fibrous type / percent

109A-Wallboard System/ white surfaced white compound 96117 M3.1A

None Detected

100% qu,bi,ca

M3.1 96117 A-2

109A-

M3.1B

M3.1C

96118

96119

96119

96119

Wallboard System/ white M3.1

None Detected 21% ce 79% qu,gy

M3.1

white drywall with brown paper

white drywall with brown paper

surfaced white compound

None Detected 20% ce 80% qu,gy

100%

qu,bi,ca

qu,bi,ca

100% qu,ca

96118 109A-

Wallboard System/ white surfaced white compound

n None Detected

None Detected

100%

M3.1

C-2

white compound (beneath tape)

None Detected

M3.1

white drywall with brown paper Dallas NVLAP Lab Code 200349-0 TEM/PLM None Detected TDSHS 30-0235

21% ce 79% qu,gy

AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate gy - gypsum bi - binder or - organic

ma - matrix

mi - mica ve - vermiculite ot - other

pe - perlite

qu - quartz

fg - fiberglass mw - mineral wool wo - wollastonite ta - talc

sy - synthetic

ce - cellulose br - brucite ka - kaolin (clav) pa - palygorskite (clay)

Approved Signatories:

Robert Olivarez Analyst

- Fire Damage significant fiber damage reported percentages reflect unaltered fibers
   Fire Damage no significant fiber damages effecting fibrous percentages
- 3. Actinolite in association with Vermiculite
- 4. Layer not analyzed attached to previous positive layer and contamination is suspected
- 5. Not enough sample to analyze

.T. Re-

Technical Manager Senior Analyst Tanner Rasmussen Julio Robles

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

10. TEM analysis suggested

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

with debris

Caulking/ off-white sealant

406-248-9161

M8.1

10

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/6/2024

qu,bi,ca

100%

## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: **Customer Project:** CA Labs Project #: CAL24118841AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

M8.1A

109A-

Phone #

96120

Court

None Detected

**Turnaround Time:** Date: 11/19/2024

5 Days Samples Rec'd: 11/12/24 10:30AM

Date Of Sampling:

Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type / (Y/N)percent 109A-M8.1 Caulking/ off-white sealant 100%

96121 M8.1B 10 with debris None Detected n qu,bi,ca 109A-M8.1 Caulking/ off-white sealant 100% 96122 M8.1C 10 with debris None Detected qu,bi,ca n 109A-M13.1 96123 M13.1A Brick and Mortar/ red bricking None Detected 100% qu.ot M13.1 96123 A-2 gray mortar None Detected 100% qu,ca

109A-M13.1 96124 M13.1B Brick and Mortar/ red bricking None Detected 100% qu,ot

M13.1

None Detected gray mortar Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate gy - gypsum bi - binder or - organic

ma - matrix

mi - mica ve - vermiculite ot - other pe - perlite

qu - quartz

fg - fiberglass mw - mineral wool wo - wollastonite ta - talc

sy - synthetic

br - brucite ka - kaolin (clav)

ce - cellulose

pa - palygorskite (clay)

Approved Signatories:

100% qu,ca

96124

Robert Olivarez Analyst

- Fire Damage significant fiber damage reported percentages reflect unaltered fibers
   Fire Damage no significant fiber damages effecting fibrous percentages
- 3. Actinolite in association with Vermiculite
- 4. Layer not analyzed attached to previous positive layer and contamination is suspected
- 5. Not enough sample to analyze

Technical Manager

Tanner Rasmussen

Senior Analyst Julio Robles

- 6. Anthophyllite in association with Fibrous Talc
- 7. Contamination suspected from other building materials

T. Re-

- 8. Favorable scenario for water separation on vermiculite for possible analysis by another method
- 9. < 1% Result point counted positive
- 10. TEM analysis suggested

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/6/2024

## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: **Customer Project:** CA Labs Project #: CAL24118841AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court

**Turnaround Time:** Date: 11/19/2024

5 Days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 Date Of Sampling: Fax# 406-248-9282 Purchase Order #:

Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous percent us estimate percent type /

(Y/N)percent 109A-96125 M13.1C C-1 Brick and Mortar/ red bricking None Detected 100% qu,ot M13.1 96125 None Detected 100% qu,ca C-2 gray mortar 109A-M20.1 Moisture Barrier/ tan surfaced 96126 M20.1A black felt None Detected 60% ce n 40% qu,bi 109A-M20.1 Moisture Barrier/ tan surfaced 96127 M20.1B black felt None Detected n 60% ce 40% qu,bi 109A-M20.1 Moisture Barrier/ tan surfaced 96128 M20.1C black felt n None Detected 60% ce 40% qu,bi 109A-M34.1 96129 M34.1A Insulation/ tan insulation None Detected A-1 100% ce 109A-M34.1 96130 M34.1B Insulation/ tan insulation None Detected 100% ce

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica fg - fiberglass gy - gypsum ve - vermiculite mw - mineral wool bi - binder ot - other wo - wollastonite or - organic

pe - perlite ta - talc pa - palygorskite (clay)

Approved Signatories: ma - matrix qu - quartz sy - synthetic

Robert Olivarez

Analyst

- Fire Damage significant fiber damage reported percentages reflect unaltered fibers
   Fire Damage no significant fiber damages effecting fibrous percentages
- 3. Actinolite in association with Vermiculite
- 4. Layer not analyzed attached to previous positive layer and contamination is suspected
- 5. Not enough sample to analyze

T. Re-

Technical Manager Tanner Rasmussen

Senior Analyst Julio Robles

- 6. Anthophyllite in association with Fibrous Talc
- 7. Contamination suspected from other building materials

ce - cellulose

ka - kaolin (clav)

br - brucite

- 8. Favorable scenario for water separation on vermiculite for possible analysis by another method
- 9. < 1% Result point counted positive
- 10. TEM analysis suggested

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** Attn: CA Labs Project #: CAL24118841AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court

**Turnaround Time:** Date: 11/19/2024

5 Days Samples Rec'd: 11/12/24 10:30AM Phone # 406-248-9161 11/6/2024 Date Of Sampling:

Fax# 406-248-9282 Purchase Order #:

Laboratory Analysts Physical Description of Asbestos type / Sample # Com Layer Homo-Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type / (Y/N)percent

109A-M34.1 M34.1C 96131 C-1 Insulation/ tan insulation None Detected 100% ce

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

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Approved Signatories: ma - matrix qu - quartz sy - synthetic

Robert Olivarez Analyst

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

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4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

Technical Manager

Senior Analyst Tanner Rasmussen Julio Robles

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

T. Rem

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

10. TEM analysis suggested



CONTACT INFORM	ATION				( 1 - 1 - 1	-10	
COMPANY:	Tetra Tech, Inc.		Phone:	406.248.9161	424/1	8841	
Primary Contact	ct Roger W. Herman, Jr.		Phone / Email:	roger.hermar	r.herman@tetratech.com cell – 406.670.4844		
<b>Additional Contact</b>	Rylee Prinz		Phone / Email:	RYLEE.PRIN	Z@tetratech.com cel	II - (541) 863-2234	
Sampler Name(s)	Rylee Prinz		Sampler Signature	(S Philosophia			
Date of Inspection:	11/6/24						
PROJECT INFORM	ATION						
Client	MSU		Project Name	Paisley Court			
Project Location	Bozeman, Montana		<b>Project Number</b>	117-001068-25	5005		
PLM EPA 600/R-93/116  PLM Point Count, PC 4	PLM CARB 435 (rock/soil) TE	M CHATFIELD t less than 2%)	TEM NOB 198.4 T	EM CARB 435 (rock/:	soil)		
✓ Multi-Layered Sample	s:						
		Only Analyze se	pecifically noted layer				
✓ Analyze Until Positive	Stop by Material Type as Noted						
TURNAROUND TIM	E						
☐ 10 Day	3 Day 2 Day 1 Day	Same Da	y Rush Results by:				
Relinquished	By Date & Time	VIA	Received	Ву Г	Date & Time	1	
Bula Pinz	11/9/24 12:28	FEDEX				1	

10:30AM

NOV 1 2 2024 Andrew Sikes



7100 Commercial Avenue Suite 4 Billings, Montana 59101

Phone: 406.248.9161 Fax 406.248.9282

CAL24/1884/

# CHAIN OF CUSTODY -BULK ASBESTOS-

**PROJECT INFORMATION** 

**Project Name** 

Paisley Court 109A Project Number 117-001068-25005

Bulk Sample #	HA ID	Sample Material Description	Material Location	Notes
A B C	109A M 3.1	White wall board system with assocaited White Paint	Through out	
A B C	109A M 8.1	White Exterior Caulking	Around windows	
A B C	109A M 13.1	3 in by 6 inch Red brick with Associated Grey Mortar	Throughout exterior walls	
A B C	109A M 20.1	Black Moisture Barrier	Throughout exterior	
A B 109A M 34.1 C		Grey blown in insulation	Through out attic	

10:30AM

NOV 1 2 2024 Andrew Sikes

Crisp Analytical, L.L.C.

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CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Materials Characterization - Bulk Asbestos Analysis

**Laboratory Analysis Report - Polarized Light** 

Tetra Tech, Inc.

7100 Commercial Ave Suite 4 Billings, Montana 59101

Customer Project: 117-001068-25005, Paisley Court Reference #:

CAL24118825AS Date: 11/19/24

#### **Analysis and Method**

Summary of polarized light microscopy (PLM / Stereomicroscopy bulk asbestos analysis) using the methods described in 40CFR Part 763 Appendix E to Subpart E (Interim and EPA 600 / R-93 / 116 (Improved). The sample is first viewed with the aid of a stereomicroscope. Numerous liquid slide preparations are created for analysis under the polarized microscope where identifications and quantifications are preformed. Calibrated liquid refractive oils are used as liquid mouting medium. These oils are used for identification (dispersion staining). A calibrated visual estimation is reported, should any asbestiform mineral be present. Other techniques such as acid washing are used in conjugation with refractive oils for detection of smaller quantities of asbestos. All asbestos percentages are based on calibrated visual estimation traceable to NIST standards for regulated asbestos. Traceability to measurement and calibration is achieved by using known amounts and types of asbestos from standards where analyst and laboratory accuracy are measured. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 0.50% (well above the laboratory definition of trace).

#### **Discussion**

Vermiculite containing samples may contain trace amounts of actinolite/tremolite. When not detected by PLM, these samples should be analyzed using TEM methods and / or water separation techniques. Suspected actinolite/vermiculite presence will be indicated through the sample comment section of this report.

Fibrous talc containing samples may contain a regulated asbestos fiber known as anthophyllite. Under certain conditions the same fiber may actually contain both talc and anthophyllite (a phenomenon called intergrowth). Again, TEM detection methods are recommended. CA Labs PLM report comments will denote suspected amounts of asbestiform anthophyllite with talc, where further analysis is recommended.

Some samples (floor tiles, surfacings, etc.) may contain fibers too small to be detectable by PLM analysis and should be analyzed by TEM bulk protocols.

A "trace asbestos" will be reported if the analyst observes far less than 1% asbestos. CA Labs defines "trace asbestos" as a few fibers detected by the analyst in several preparations and will indicate as such under these circumstances.

Since allowable variation in quantification of samples close to 1% is high, <1% may be reported. Such results are ideal for point counting, and the technique is mandatory for friable samples (NESHAP, Nov. 1990 and clarification letter 8 May 1991) under 1% percent asbestos or "trace asbestos". In order to make all initial PLM reports issued from CA Labs NESHAP compliant, all <1% asbestos results (except floor tiles) will be point counted at no additional charge.

#### Qualifications

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses or hold a degree in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one these disciplines is preferred, but not required. Extensive in-house training programs are used to augment the educational background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235 AIHA LAP, LLC Laboratory #102929

> > Page 1 of 7

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#### CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Overview of Project Sample Material Containing Asbestos

Customer	Project:		117-001068-25005, Paisley Co	ourt	CA Labs Project #: CAL24118825AS
Laboratory Sample ID	Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types
	109B-				white sealant
95907	M8.1A	M8.1A-1	Caulking/ white sealant	<1% Chrysotile	<del>_</del>
	109B-				
95908	M8.1B	M8.1B-1	Caulking/ white sealant	<1% Chrysotile	_
	109B-				
95909	M8.1C	M8.1C-1	Caulking/ white sealant	<1% Chrysotile	

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

AIHA LAP, LLC Laboratory #102929

#### Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):

ca - carbonate gypsum - gypsum bi - binder or - organic ma - matrix mi - mica ve - vermiculite ot - other pe - perlite qu - quartz fg - fiberglass mw - mineral wool wo - wollastinite ta - talc

sy - synthetic

ce - cellulose

br - brucite ka - kaolin (clay) pa - palygorskite (clay)

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Crisp Analytical, L.L.C.

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406-248-9161

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/6/2024

percent

80% qu,gy

## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: **Customer Project:** CA Labs Project #: CAL24118825AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

109B-

Phone #

Court

**Turnaround Time:** Date: 11/19/2024

5 Days Samples Rec'd: 11/12/24 10:30AM

Date Of Sampling:

Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type /

(Y/N)

Wallboard System/ white 100% surfaced white compound 95904 M3.1A None Detected qu,bi,ca M3.1 95904 A-2 white drywall with brown paper None Detected 20% ce 80% qu,gy n

109B-Wallboard System/ white M3.1 100% 95905 M3.1B surfaced white compound None Detected qu,bi,ca n

M3.1 95905 white compound (beneath tape) None Detected B-2 100% qu,ca

M3.1 95905 B-3 white drywall with brown paper None Detected 20% ce 80% qu,gy

109B-Wallboard System/ white 100% 95906 M3.1C surfaced white compound None Detected n qu,bi,ca

95906 white drywall with brown paper None Detected

M3.1

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

AIHA LAP, LLC Laboratory #102929 Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica fg - fiberglass ce - cellulose gy - gypsum ve - vermiculite mw - mineral wool br - brucite bi - binder ot - other wo - wollastonite ka - kaolin (clav) or - organic pe - perlite ta - talc pa - palygorskite (clay)

Approved Signatories: ma - matrix qu - quartz sy - synthetic

Josh Strange

Analyst

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

Technical Manager

Senior Analyst Tanner Rasmussen Julio Robles

20% ce

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

TRen

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

10. TEM analysis suggested

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: **Customer Project:** CA Labs Project #: CAL24118825AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court

**Turnaround Time:** Date: 11/19/2024

5 Days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 11/6/2024 Date Of Sampling: Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of Sample # Com Layer Homo-Asbestos type / Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type / (Y/N)percent 109B-100% M8.1 95907 M8.1A A-1 Caulking/ white sealant <1% Chrysotile qu,gy,bi 109B-M8.1 100% 95908 M8.1B B-1 Caulking/ white sealant <1% Chrysotile qu,gy,bi 109B-M8.1 100% 95909 M8.1C Caulking/ white sealant <1% Chrysotile qu,gy,bi 109B-M13.1 95910 M13.1A Brick and Mortar/ red bricking None Detected 100% qu.ot M13.1 95910 A-2 gray mortar None Detected 100% qu,ca

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate gy - gypsum bi - binder or - organic

ma - matrix

gray mortar

M13.1

M13.1

mi - mica ve - vermiculite ot - other

pe - perlite

qu - quartz

Brick and Mortar/ red bricking

fg - fiberglass mw - mineral wool wo - wollastonite ta - talc

sy - synthetic

ce - cellulose br - brucite ka - kaolin (clav) pa - palygorskite (clay)

Approved Signatories:

100% qu,ot

100% qu,ca

Josh Strange Analyst

95911

95911

- Fire Damage significant fiber damage reported percentages reflect unaltered fibers
   Fire Damage no significant fiber damages effecting fibrous percentages
- 3. Actinolite in association with Vermiculite

109B-

M13.1B

- 4. Layer not analyzed attached to previous positive layer and contamination is suspected
- 5. Not enough sample to analyze

Technical Manager

Senior Analyst Tanner Rasmussen Julio Robles

- 6. Anthophyllite in association with Fibrous Talc
- 7. Contamination suspected from other building materials

T. Re-

- 8. Favorable scenario for water separation on vermiculite for possible analysis by another method
- 9. < 1% Result point counted positive
- 10. TEM analysis suggested

None Detected

None Detected

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

406-248-9161

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/6/2024

## Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118825AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Phone #

Court

**Turnaround Time:** Date: 11/19/2024

5 Days Samples Rec'd: 11/12/24 10:30AM

Date Of Sampling:

Fax# 406-248-9282 Purchase Order #: Laboratory Analysts Physical Description of Asbestos type / Sample # Com Layer Homo-Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent type / us (Y/N)percent

				(1/11)			percent
95912	109B- M13.1C	M13.1 C-1	Brick and Mortar/ red bricking	у	None Detected		100% qu,ot
95912		M13.1 C-2	gray mortar	у	None Detected		100% qu,ca
95913	109B- M20.1A	M20.1 A-1	Felt/ black felt and black tar	n	None Detected	20% ce	80% qu,bi
95913		M20.1 A-2	brown wooden fragments	У	None Detected	100% ce	
95914	109B- M20.1B	M20.1 B-1	Felt/ black felt and black tar	n	None Detected	20% ce	80% qu,bi
95915	109B- M20.1C	M20.1 C-1	Felt/ black felt and black tar	n	None Detected	20% ce	80% qu,bi
95916	109B- M34.1A	M34.1 A-1	Insulation/ brown insulation	у	None Detected	100% ce	

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate mi - mica fg - fiberglass ce - cellulose gy - gypsum ve - vermiculite mw - mineral wool br - brucite bi - binder ot - other wo - wollastonite ka - kaolin (clay) or - organic pe - perlite ta - talc

pa - palygorskite (clay) Approved Signatories: ma - matrix qu - quartz sy - synthetic

Josh Strange

Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
 Fire Damage no significant fiber damages effecting fibrous percentages

3. Actinolite in association with Vermiculite

4. Layer not analyzed - attached to previous positive layer and contamination is suspected

5. Not enough sample to analyze

Technical Manager

T. Rea

Senior Analyst Tanner Rasmussen Julio Robles

6. Anthophyllite in association with Fibrous Talc

7. Contamination suspected from other building materials

8. Favorable scenario for water separation on vermiculite for possible analysis by another method

9. < 1% Result point counted positive

10. TEM analysis suggested

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

CA Labs, L.L.C.

12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

11/6/2024

### Polarized Light Asbestiform Materials Characterization

**Customer Info: Customer Project:** CA Labs Project #: Attn: CAL24118825AS Tetra Tech, Inc. 117-001068-25005, Paisley

7100 Commercial Ave Suite 4 Billings, Montana 59101

Court

**Turnaround Time:** Date: 11/19/2024

5 Days Samples Rec'd: 11/12/24 10:30AM

Phone # 406-248-9161 Date Of Sampling: Fax# 406-248-9282 Purchase Order #:

Laboratory Analysts Physical Description of Asbestos type / Sample # Com Layer Homo-Non-asbestos Non-Sample ID ment Subsample geneo calibrated visual fiber type / fibrous estimate percent percent us type / (Y/N)percent

109B-M34.1 95917 M34.1B B-1 Insulation/ brown insulation None Detected 100% ce 109B-M34.1 95918 M34.1C C-1 **Insulation**/ brown insulation None Detected 100% ce

> Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). All samples received in good condition unless noted. Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for

identification of asbestos types by dispersion attaining / becke line method. ca - carbonate mi - mica fg - fiberglass

ce - cellulose gy - gypsum ve - vermiculite mw - mineral wool br - brucite bi - binder ot - other wo - wollastonite ka - kaolin (clay) or - organic

pe - perlite ta - talc pa - palygorskite (clay) Approved Signatories: ma - matrix qu - quartz sy - synthetic

Josh Strange Analyst

- Fire Damage significant fiber damage reported percentages reflect unaltered fibers
   Fire Damage no significant fiber damages effecting fibrous percentages
- 3. Actinolite in association with Vermiculite
- 4. Layer not analyzed attached to previous positive layer and contamination is suspected
- 5. Not enough sample to analyze

T. Re-Technical Manager

Senior Analyst Tanner Rasmussen Julio Robles

- 6. Anthophyllite in association with Fibrous Talc
- 7. Contamination suspected from other building materials
- 8. Favorable scenario for water separation on vermiculite for possible analysis by another method
- 9. < 1% Result point counted positive
- 10. TEM analysis suggested

Crisp Analytical, L.L.C.

1929 Old Denton Road Carrollton, TX 75006 Phone 972-242-2754 Fax 972-242-2798

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12232 Industriplex, Suite 32 Baton Rouge, LA 70809 Phone 225-751-5632 Fax 225-751-5634

## Polarized Light Asbestiform Materials Point Count

**Laboratory Analysis Report - Point Count** 

#### **Analysis and Method**

Point counting was performed on a polarized light microscope with a calibrated reticle according to the revised NESHAP method of November 20, 1990 (Federal Register, V.55, N.224, 11/20/90). Original asbestos content of bulk materials was determined using procedures outlined in the interim method (40 CFR part 763, Appendix E to subpart E) and AHERA method (EPA-600/R-93/116). Samples were prepared using HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion staining / becke line method.

#### Qualifications

Phone #

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one of these disciplines is preferred, but not required. Extensive in-house training programs are used to augment education background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. This report is not covered by the scope of NVLAP accreditation. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

Court

**Customer Info:** Attn: **Customer Project:** CA Labs Project #: Tetra Tech. Inc. CAL24118825AS 117-001068-25005. Paislev

7100 Commercial Ave Suite 4 Billings, Montana 59101

**Turnaround Time:** 11/19/24 Date:

5 Days

406-248-9161

Samples Rec'd: 11/12/24 10:30AM 11/06/24

Date Of Sampling: Fax# 406-248-9282

Purchase Order #:

Sample ID	Sample #	Layer #	Analysts Physical Description of Subsample	Homo-geneous (Y/N)	Point Counted % / Asbestos Type
95907	109B- M8.1A	M8.1 A-1	Caulking/ white sealant	y	0.25% Chrysotile
				•	
	109B-	M8.1	Caulking/ white		
95908	M8.1B	B-1	sealant	У	0.25% Chrysotile
	109B-	M8.1	Caulking/ white		
95909	M8.1C	C-1	sealant	у	Trace Chrysotile

Dallas NVLAP Lab Code 200349-0 TEM/PLM TDSHS 30-0235

#### AIHA LAP, LLC Laboratory #102929

This report relates to the items tested. This report is not to be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST or any other agency of the federal government. This report may not be reproduced except in full without written permission from CA Labs. These results are submitted pursuant to CA Labs' current terms and sale, condition of sale, including the company's standard warranty and limitations of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, CA Labs will store the samples for a period of ninety (90) days before discarding. A shipping or handling fee may be assessed for the return of any samples. All samples received in good condition unless noted.

Approved Signatories:

**Technical Manager** Tanner Rasmussen

Senior Analyst Julio Robles

Josh Strange Analyst



CONTACT INFORM	ATION					
COMPANY:	Tetra Tech, Inc.	PI	none:	406.248.9161	ACZ9/18825	
Primary Contact			none / Email:	roger.herman@tetratech.com cell – 406.670.4844		
Additional Contact	Rylee Prinz	PI	none / Email:	RYLEE.PRINZ@tetratech.com cell - (541) 863-2234		
Sampler Name(s)	Rylee Prinz	Sa	Sampler Signature(s Adversaria)			
Date of Inspection:	11/6/24					
PROJECT INFORMA	ATION					
Client	MSU	Pr	oject Name	Paisley Court		
Project Location Bozeman, Montana		Pr	oject Number	117-001068-2500	)5	
PLM EPA 600/R-93/116 PLM Point Count, PC 40	PLM CARB 435 (rock/soil) TEM  O Points (All samples greater than 0%, but		TEM NOB 198.4 ✓ T	EM CARB 435 (rock/soi		
✓ Multi-Layered Samples	:					
✓ Analyze and Repo	ort All Separable Layers per EPA 600	Only Analyze sepec	ifically noted layer			
✓ Analyze Until Positive S	Stop by Material Type as Noted					
URNAROUND TIM	<u> </u>					
☐ 10 Day	3 Day 2 Day 1 Day	Same Day	Rush Results by:			
Relinquished	By Date & Time	VIA	Received	Ву	Date & Time	
Kylou plus	11/9/24 12:33	FEDEX				

10:30AM

NOV 12 2024 Andrew Sikes



7100 Commercial Avenue Suite 4 Billings, Montana 59101

Phone: 406.248.9161 Fax 406.248.9282

# CHAIN OF CUSTODY -BULK ASBESTOS-

CX74/18825

**PROJECT INFORMATION** 

**Project Name** 

**Project Identifier** 

Paisley Court

109B

**Project Number** 117-001068-25005

Bulk Sample HA ID		Sample Material Description	Material Location	Notes
Α				
В	109B M 3.1	White wall board system with assocaited White Paint	Through out	
С		, and a second vinte i and	Through out	
Α				
В	109B M 8.1	White Exterior Caulking	Around windows	
С			, addid willdows	
Α				
В	109B M 13.1	3 in by 6 inch Red brick with Associated Grey Mortar	Throughout exterior walls	
С		and the second s	dagitodi oxtorior walls	
Α				
В	109B M 20.1	Black Felt Moisture Barrier	Throughout exterior	
С			Throughout exterior	
Α				
В	109B M 34.1	Grey blown in insulation	Through out attic	
С		, and an	Through out attic	

10:30AM

NOV 1 2 2024 Andrew Sikes