TETRA TECH

July 23, 2019

Ms. Sara Hudson
Regional Director
Snowy Mountain Development Corporation c/o
Central Montana Brownfields Coalition
613 NE Main Street
Lewistown, Montana 59457

Delivered via email info@snowymountaindevelopment.com

SUBJECT: Hazardous Substance Assessment Report
Harlowton Railyard
Harlowton, Wheatland County, Montana
Tetra Tech Project No. 117-8292004.100

Dear Ms. Hudson:

This Hazardous Substance Assessment Reports includes the results for asbestos, lead-based paint (LBP), Lead Toxicity Characteristic Leaching Procedure Sampling (TCLP), polychlorinated biphenyls (PCB), mercury, and chlorofluorocarbons (CFCs) results, and was prepared for the Central Montana Brownfields Coalition (CMBC). This project was funded by a U.S. Environmental Protection Agency (EPA) Brownfields Assessment Grant. Tetra Tech was retained by CMBC to perform Qualified Environmental Professional (QEP) services to complete the following scope of work.

Field work was conducted on June 4, 5, 7, and 10, 2019 by Tetra Tech personnel at the above referenced site. Based on correspondence with CMBC prior to commencement of the project, Tetra Tech was instructed to conduct the assessment for informational purposes to evaluate the potential for demolition or renovation. Details of our assessment are provided below.

ASBESTOS ASSESSMENT

The ACM assessment was conducted in accordance with the Administrative Rules of Montana 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. Jay Harper of Tetra Tech, MDEQ Accredited Asbestos Inspector, collected samples of suspect ACM. Their Inspector Accreditation Certifications are presented in Attachment A.

The bulk samples were shipped, along with completed chain-of-custody documentation, to Crisp Analytical Labs, L.L.C. of Carrolton, Texas for the analysis of asbestos fibers, using U.S. Environmental Protection Agency (EPA) Method 600/R4-93-116 (polarized light microscopy). Only one of the samples from each homogenous material was tested if the initial sample tested positive for asbestos. In accordance with EPA regulations, samples which detected ACM at concentrations greater than 0% but less than 1% via PLM analysis were assumed to contain asbestos. A copy of the laboratory analytical reports is contained in Attachment B.

Tetra Tech
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A summary of the ACMs identified to contain greater than 1% asbestos and estimated abatement costs are provided in Table 1. Approximate sample collection locations are presented on Figures 1 through 7 and approximate ACM locations are presented on Figures 8 through 15.

Table 1
Summary of ACM Greater than 1%
Harlowton Railyard
Harlowton, Wheatland County, Montana

HA Number	Material Description	Percent Asbestos	Material Type	NESHAP Category	Condition	Estimated Quantity	Estimated Abatement Cost
Foreman's Office							
FO-F3.1	9-inch by 9-inch maroon with white streak patterned vinyl floor tile	4% Chrysotile	Miscellaneous	Category I Non-Friable	Fair	1,152 SF	$3,456
FO-M3.1	Joint compound associated with smooth wallboard system walls and ceilings	2% Chrysotile	Miscellaneous	Category II Non-Friable	Significantly Damaged	3,258 SF	$6,516
FO-M4.1	Transite panel wainscot lower walls	20% Chrysotile	Miscellaneous	Category II Non-Friable	Good	1,016 SF	$3,048
FO-M8.1	Exterior tan caulking associated with door and windows	2% Chrysotile	Miscellaneous	Category II Non-Friable	Good	14 EACH	$4,900
FO-M33.1	Loose exfoliated vermiculite attic insulation and debris throughout	Trace Tremolite	TSI	RACM	Significantly Damaged	1,152 SF	$4,608
Metal Rack							
MR-M33.1	Gray gasket material	52% Chrysotile	Miscellaneous	Category I Non-Friable	Good	1 EACH	$300
MR-M35.1	Black tar sealant	4% Chrysotile	Miscellaneous	Category I Non-Friable	Good	4 SF	$300
Round House							
RH-M1.1	Black felt beneath non-asbestos containing built-up tar roof system located under rolled asphalt roofing and metal	28% Chrysotile	Miscellaneous	Category I Non-Friable	Significantly Damaged	23,700	$94,800
RH-M4.1	Transite wall panel	19% Chrysotile	Miscellaneous	Category II Non-Friable	Good	90 SF	$720

Table 1
Summary of ACM Greater than 1%
Harlowton Railyard
Harlowton, Wheatland County, Montana

HA Number	Material Description	Percent Asbestos	Material Type	NESHAP Category	Condition	Estimated Quantity	Estimated Abatement Cost
Round House (continues)							
RH-M29.1	Exterior window glazing	2% Chrysotile	Miscellaneous	Category II Non-Friable	Significantly Damaged	10 EACH	$3,500
RH-T2.1	Mudded pipe joint insulation	16% Amosite	TSI	RACM	Significantly Damaged	1 EACH	$125
RH-T3.1	Straight pipe insulation (Mag Block)	18% Amosite	TSI	RACM	Significantly Damaged	225 LF	$10,800
RH-T3.2	Straight pipe insulation (Aircell)	65% Chrysotile	TSI	RACM	Significantly Damaged	110 LF	$5,280
RH-T3.3	Straight pipe insulation debris	21% Amosite	TSI	RACM	Significantly Damaged	NA	$500
RH-T3.4	Straight pipe insulation debris (Aircell)	66% Chrysotile	TSI	RACM	Significantly Damaged	NA	$500
RH-T3.5	Straight pipe insulation	19% Chrysotile	TSI	RACM	Significantly Damaged	NA	$1,000
Storage Building							
SB-M3.1	Joint compound associated with smooth wallboard system walls and ceilings	3% Chrysotile	Miscellaneous	Category II Non-Friable	Good	3,820 SF	$11,460
SB-M4.1	Transite panel wainscot	42% Chrysotile	Miscellaneous	Category II Non-Friable	Good	464 SF	$1,392
SB-M29.1	Window glazing	2% Chrysotile	Miscellaneous	Category II Non-Friable	Significantly Damaged	1 EACH	$300
SB-T11.1	Gray duct wrap	60% Chrysotile	TSI	RACM	Good	1 EACH	$500

Table 1
Summary of ACM Greater than 1%
Harlowton Railyard
Harlowton, Wheatland County, Montana

HA Number	Material Description	Percent Asbestos	Material Type	NESHAP Category	Condition	Estimated Quantity	Estimated Abatement Cost
Site Area							
SA-M4.1	Transite panel debris	20% Chrysotile	Miscellaneous	Category II Non-Friable	Significantly Damaged	NA	$2,400
SA-M35.1	Rope gasket debris	49% Chrysotile	Miscellaneous	Category I Non-Friable	Significantly Damaged	NA	$2,400
SA-M35.2	White braided gasket material debris	38% Chrysotile	Miscellaneous	Category I Non-Friable	Significantly Damaged		
Design Services							$8,800
Asbestos Oversight and Clearance Services							$15,880
10% Contingency							$17,468
TOTAL ASBESTOS PROJECT COSTS ESTIMATED							**$192,153**

HA: Homogeneous Area Number
NESHAP: National Emission Standard for Hazardous Air Pollutants
RACM: Regulated Asbestos Containing Material
TSI: Thermal System Insulation I
SF: Square Feet
LF: Linear Feet
NA: Not Applicable

In accordance with state and federal regulations pertaining to asbestos, the ACMs identified in Table 1 are required to be abated prior to disturbance. The ACMs are required to be removed by a licensed asbestos abatement contractor using appropriate asbestos abatement methods and procedures in accordance with applicable state and federal regulations. Following the completion of asbestos abatement, a visual inspection and asbestos air clearance need to be conducted as required by ARM 17.74.357. Any contractor preparing to bid or perform work on the site should be informed of the potential presence of ACMs. Contractors should also be informed of compliance requirements under current state and federal regulations.

The following materials sampled from the site were suspected to contain asbestos but were found not to contain asbestos by laboratory analysis:

Foreman's Office

- Black mastic associated with asbestos-containing 9-inch by 9-inch maroon with white streak patterned vinyl floor tile (FO-F3.1A, B, C)
- Green asphalt roofing shingles (FO-M1.1A, B, C)
- Red brick and associated grey mortar located on exterior walls (FO-M13.1A, B, C)

- Foundation concrete (FO-M18.1A, B, C)
- Exterior tan window glazing (FO-M29.1A, B, C)
- Black braided electrical wire insulation located throughout building (FO-M34.1A, B, C)
- Gray braided electrical wire insulation located throughout building (FO-M34.2A, B, C)
- White braided electrical wire insulation located throughout building (FO-M34.3A, B, C)
- Black vapor barriers location beneath exterior siding (FO-M35.1A, B, C)

Metal Rack

- Foundation concrete (MR-M18.1A, B, C)
- Black metal coating associated with frame (MR-M34.1A, B, C)
- Black rubber hose with white fibrous reinforcement (MR-M36.1A, B, C)

Oil Tank Tower

- Red brick and gray mortar associated with tank base (OT-M13.1A, B, C)
- Foundation concrete (OT-M18.1A, B, C)
- Black gasket material associated with piping (OT-M33.1A, B, C)

Pump Cover

- Top layer of red rolled asphalt roofing material (PC-M1.1A, B, C)
- Bottom layer of red rolled asphalt roofing material (PC-M1.2A, B, C)
- Pump sump concrete (PC-M18.1A, B, C)

Round House

- Green rolled asphalt roofing material and black built-up tar roof system over asbestos-containing black felt located beneath metal roofing (RH-M1.1A, B, C)
- Red brick and associated gray mortar located on the north and south walls. (RH-M13.1A, B, C)
- Foundation concrete (RH-M18.1A, B, C)
- Thick black tar paper located on large bay doors on the east end of building. (RH-M33.1A, B, C)
- Black tar paper vapor barrier located under the wood siding on the west and south exterior walls. (RH-M33.2A, B, C)
- Black electrical box condenser insulation located room RH-5. (RH-M34.1A, B, C)
- Green wall coating (RH-S3.1A, B, C, D, E, F, G)
- White plaster walls (RH-S3.2A, B, C, D, E, F, G)
- Straight pipe insulation debris located inside electrical box in Room RH-1 (RH-T3.6A, B, C)

Storage Building

- Green asphalt shingle roofing material (SB-M1.1A, B, C)
- Foundation concrete (SB-M18.1A, B, C)
- Loose exfoliated vermiculite wall insulation located in east wall of Room SB-1 (SB-M33.1A, B, C)

Site Area

- Black fire hose debris (SA-M33.1A, B, C)
- Black tar canvas pipe wrap debris (SA-M34.1A, B, C)
- Tan fire brick and associated brown mortar debris (SA-M36.2A, B, C)

"Y" Sidewalk

- Sidewalk concrete (YS-M18.1A, B, C)

LEAD BASED PAINT ASSESSMENT

Mr. Jay Harper of Tetra Tech tested painted interior and exterior components of suspect lead to meet the requirements of EPA and United States Department of Housing and Urban development (HUD). Mr. Harper was under the direct supervision of Mr. Roger Herman, Jr. of Tetra Tech, EPA Accredited Lead Inspector/Risk Assessor.

Components tested during this LBP inspection included all accessible interior and exterior components. Tested painted components were cataloged based on location, specific component type, and substrate material.

The EPA and HUD define a LBP inspection as a surface-by-surface investigation to determine the presence of LBP. Tetra Tech generally followed the HUD LBP inspection guidelines (HUD, 1995, revised 1997 and 2000) for the purposes of this inspection[1]. The EPA and HUD define LBP as any surface coating that contains 1.0 milligram per square centimeter (mg/cm² or 0.5% by weight).

Tetra Tech used field X-Ray Fluorescence (XRF) methodology to determine the presence or absence of LBP. XRF is identified as the recommended method to determine lead in paint. For these inspections, Tetra Tech personnel utilized the *Niton XLP, Spectrum Analyzer XRF*, which automatically calculates measurable amounts of lead in paint by correcting for substrate conditions. The XRF *Performance Characteristic Sheet* for the XRF used by Tetra Tech specifies the ranges where XRF results are positive, negative, or inconclusive. The *Performance Characteristic Sheet* for this instrument is presented in Attachment C.

XRF data indicated that LBP, as defined by the EPA, is present. XRF data also indicated that lead is present in concentrations less than the EPA limit of 1.0 mg/cm² and greater than 0.02 mg/cm². A complete listing of the XRF readings collected during this inspection is provided in Attachment D.

[1] As specified in Housing and Urban Development, Guidelines for the Control of Lead-Based Paint Hazards in Housing, June 1995, revised 1997 and 2000

A summary of the EPA defined LBP identified during this inspection and estimated abatement costs are provided in Table 2.

Table 2
Summary of LBP
Harlowton Railyard
Harlowton, Wheatland County, Montana

Component and General Description	Observed Condition	Highest Lead Concentration mg/cm^2	Estimated Quantity	Estimated Abatement Cost
Foreman's Office				
Green painted metal pipe	Good	1.1	1 EACH	$250
Green painted wood shelf	Good	3.9	1 EACH	$150
Metal Rack				
Black painted metal I-beam frame	Good	28.0	NA	$15,800
Black painted metal ladder	Good	12.3		
Black painted metal tank	Good	2.6		
Round House				
Maroon, red, and white painted brick walls	Deteriorated	1.5	3,700 SF	$59,200
Yellow, red, and white painted wood column	Deteriorated	3.3	16 EACH	$11,200
Yellow painted metal electrical box	Deteriorated	4.2	3 EACH	$750
Maroon, red, and white painted wood walls	Deteriorated	3.5	4,000 SF	$64,000
Storage Building				
Silver painted metal piping	Good	1.2	! EACH	$150
Design Services				$4,800
LBP Oversight and Clearance Services				$7,575
10% Contingency				$15,908
TOTAL ASBESTOS PROJECT COSTS ESTIMATED				**$174,983**

mg/cm^2 = milligrams per centimeter squared
Reported concentrations are the highest recorded reading for individual component types
Reported LBP components are based on EPA Standards
SF: Square Feet
LF: Linear Feet
NA: Not Applicable
Note: If any of these structures are to be demolished, LBP abatement cost for that structure would be $0, excluding the Metal Rack.

These buildings do not meet criteria established by the EPA that would require compliance with *The Residential Lead-Based Paint Hazard Reduction Act* (Title X), as the building are not continuously occupied by children.

OSHA has regulations pertaining to the disturbance of paint with any concentration of lead (29 CFR1926.62). OSHA requires that safe work practices be utilized to reduce exposure to harmful levels of lead, regardless of the work being performed. Safe work practices may include use of PPE (respiratory protection, disposable coveralls, and eye protection), initial exposure assessment, and use of wet methods. Tetra Tech recommends that renovation or removal involving any painted surfaces be conducted by a contractor who has received a minimum of OSHA Lead in the Construction Training (commonly referred to as "OSHA Lead Awareness Training").

LEAD TCLP SAMPLE COLLECTION

Tetra Tech collected six composite samples of building and structure substrates anticipated to be representative of potential future demolition waste streams. Representative amounts of building and structure substrates were collected and submitted under chain of custody protocol to International Asbestos Testing Laboratories, of Mount Laurel, New Jersey for lead TCLP analysis. The test was conducted in accordance with ASTM D3335-85a, EPA SW-846 3050B: 7000B.

A summary of the Resource Conservation and Recovery Act (RCRA) defined lead TCLP identified during this inspection is provided in Table 3.

Table 3
Summary of Lead TCLP
Harlowton Railyard
Harlowton, Wheatland County, Montana

Sample Number	Total Lead (ppm)	TCLP Lead Concentration (mg/L)
Foreman's Office		
FO-01	2,000	0.30
Metal Rack		
FO-01	3,200	5.8
Oil Tank Tower		
FO-01	5,600	1.4
Pump Cover		
FO-1	30	NA

Table 3 Summary of Lead TCLP Harlowton Railyard Harlowton, Wheatland County, Montana		
Sample Number	**Total Lead (ppm)**	**TCLP Lead Concentration (mg/L)**
Round House		
FO-1	830	0.20
Storage Building		
FO-1	2,700	1.5

ppm: parts per million
mg/L: milligrams per litre
NA: Not Analyzed

In accordance with the RCRA, hazardous waste (with respect to lead concentration) is defined as materials that have a concentration greater than 5 milligrams per liter (mg/L) of lead in TCLP extract. The composite samples collected from four of the samples are considered non-hazardous waste as determined by laboratory analysis. The composite samples collected from the Pump Cover was determined by laboratory analysis to have a lead concentration of less than 100 mg/kg of total lead does not require TCLP analysis. The composite samples collected from the Metal Rack structure was determined by laboratory analysis to have lead concentration greater than 5 mg/L, the wastes generated during the demolition of this structure would be considered hazardous waste. A copy of the lead TCLP laboratory analytical report is contained in Attachment E.

POLYCHLORINATED BIPHENYLS, MERCURY, AND CHLOROFLUOROCARBONS RESULTS

PCB, mercury, and CFCs assessment services were conducted by Mr. Jay Harper. The site assessment entailed a visual and physical examination within the structures. Tetra Tech did not observe any components suspected to contain PCB, mercury, and CFCs.

LIMITATIONS

Our opinions are intended exclusively for use by the Snowy Mountain Development Corporation. 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 at the sole risk of the user. Furthermore, the opinions presented herein apply to the site conditions existing at the time of our assessment. Therefore, our opinions and recommendations may not apply to future conditions that may exist at the site which we have not had the opportunity to evaluate.

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

Respectfully submitted,

Tetra Tech, Inc.

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

Nicholas S. Sovner
Brownfields Project Manager

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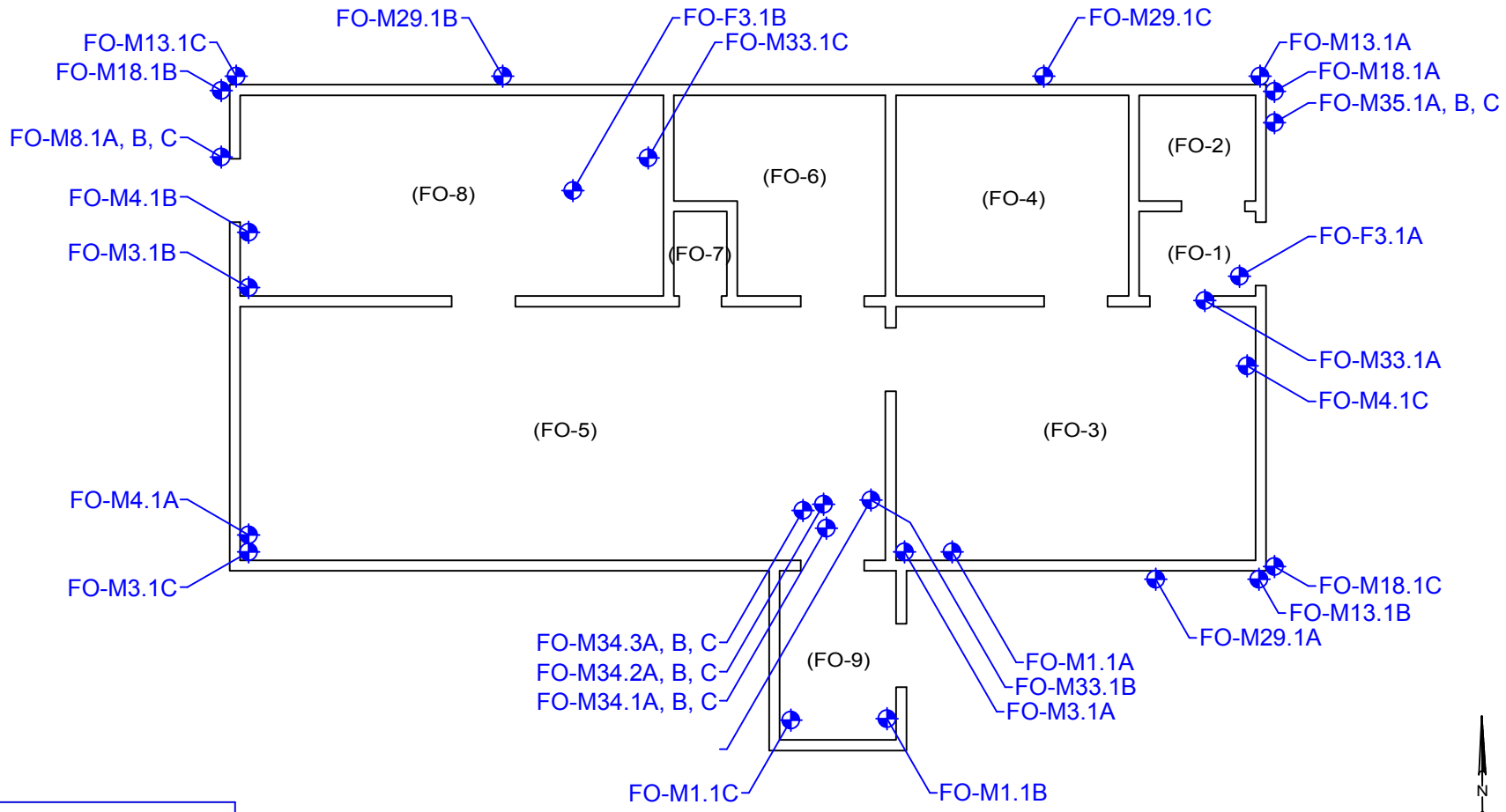
Figures
Attachment A – Inspector Accreditation Certifications
Attachment B – Asbestos Laboratory Analytical Reports
Attachment C – Performance Characteristics Sheet
Attachment D – XRF Results
Attachment E – Lead TCLP Laboratory Analytical Report

FIGURES



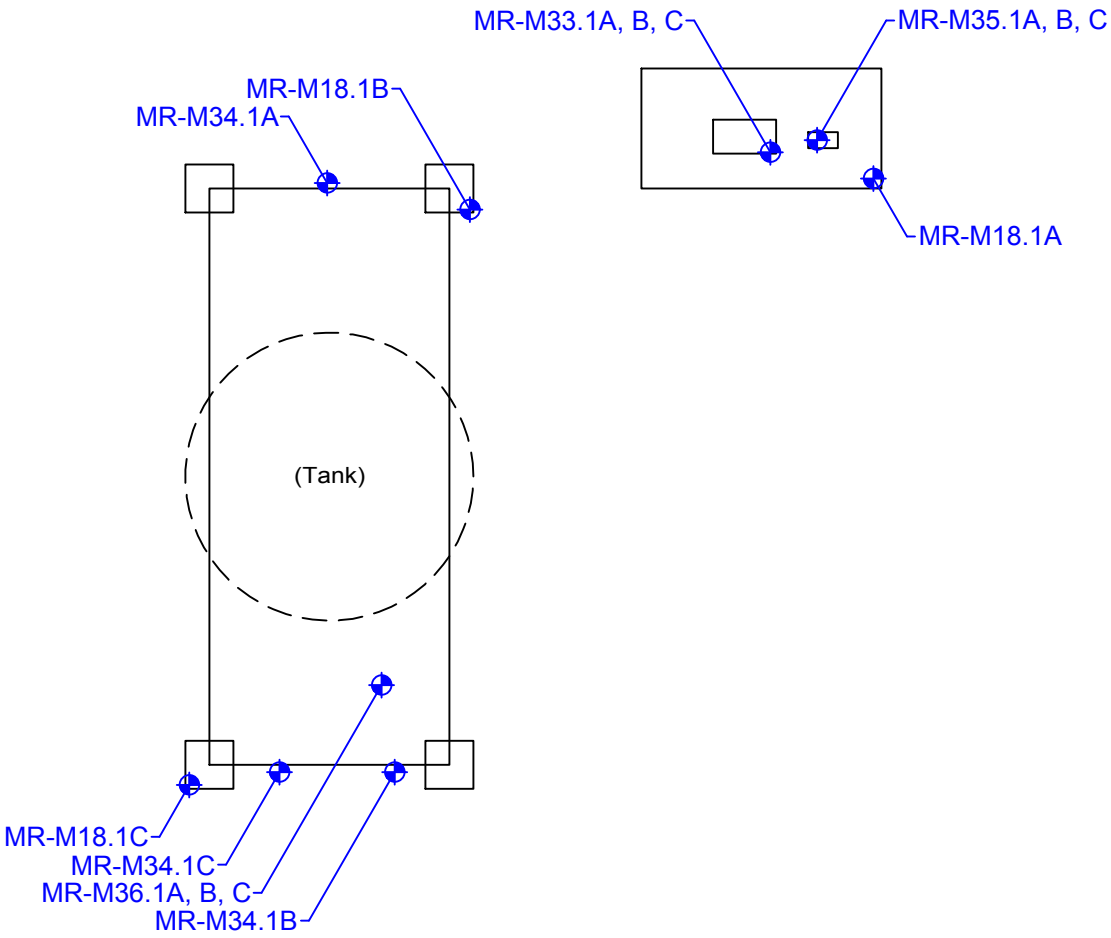
Legend

Sample Location

( ) Room Number

Pre-Demolition Asbestos Inspection
Sample Collection Locations
Snowy Mountain Development Corporation
Harlowton Railyard - Foreman's Office
Harlowton, Montana

DATE: 06/27/2019	DRAWN BY: DLL
REVIEWED: RH	APPROX. SCALE: 1" = 8'
PROJ. NO. 117-8292004	FIGURE NO. 1



Legend

Sample Location

( ) Room Number

N

0 4 8

SCALE IN FEET

Pre-Demolition Asbestos Inspection
Sample Collection Locations
Snowy Mountain Development Corporation
Harlowton Railyard - Metal Rack
Harlowton, Montana

DATE: 06/27/2019	DRAWN BY: DLL
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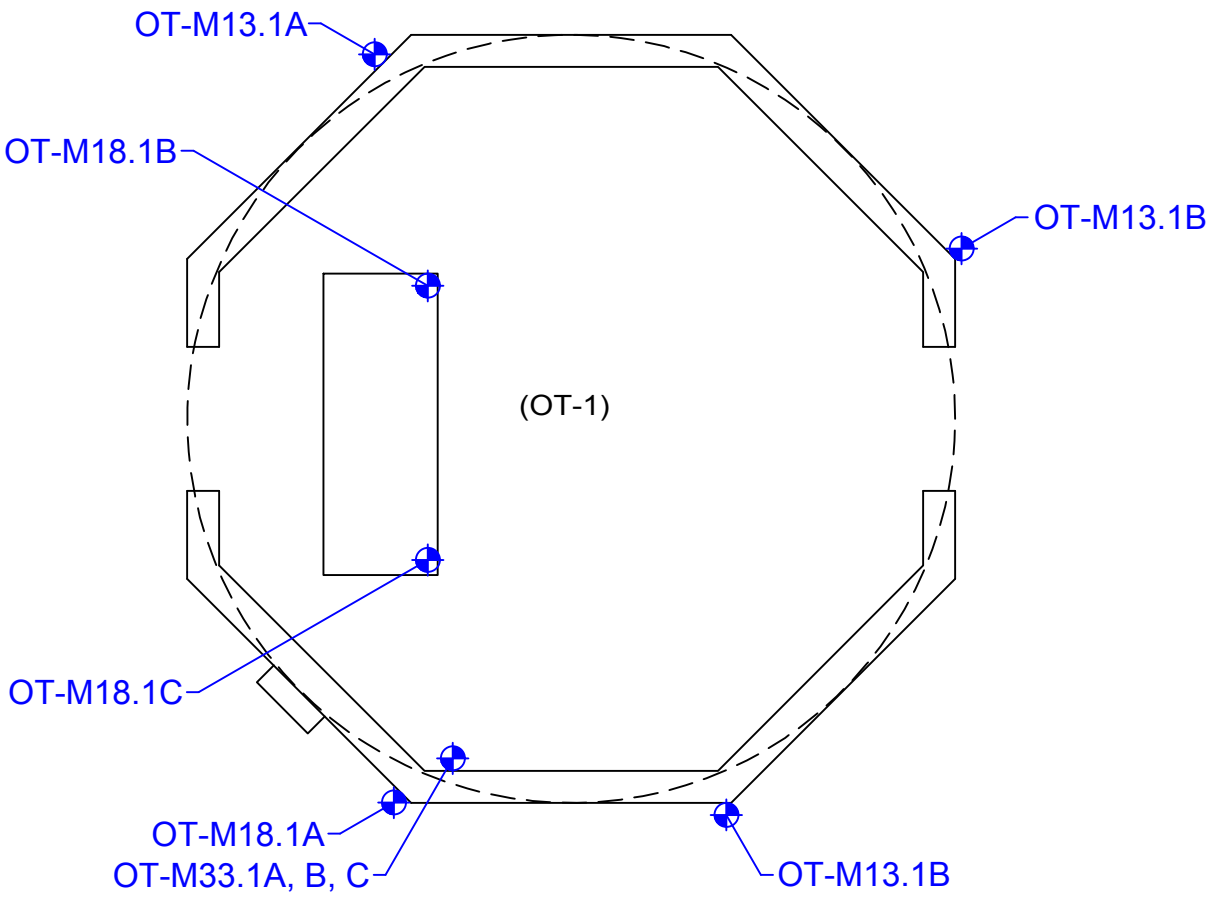
PROJ. NO. 117-8292004	FIGURE NO. 2



Legend

Sample Location

( ) Room Number

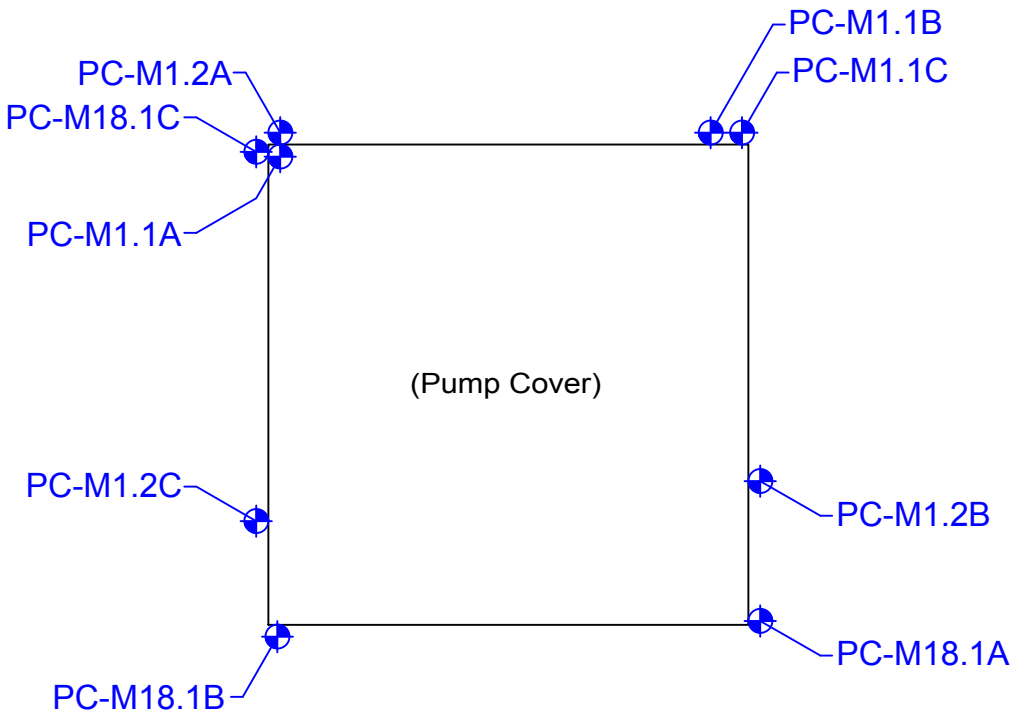
N

0 2 4

SCALE IN FEET

Pre-Demolition Asbestos Inspection
Sample Collection Locations
Snowy Mountain Development Corporation
Harlowton Railyard - Oil Tower
Harlowton, Montana

DATE: 06/27/2019	DRAWN BY: DLL
REVIEWED: RH	APPROX. SCALE: 1" = 4'
PROJ. NO. 117-8292004	FIGURE NO. 3



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Sample Location

( ) Room Number

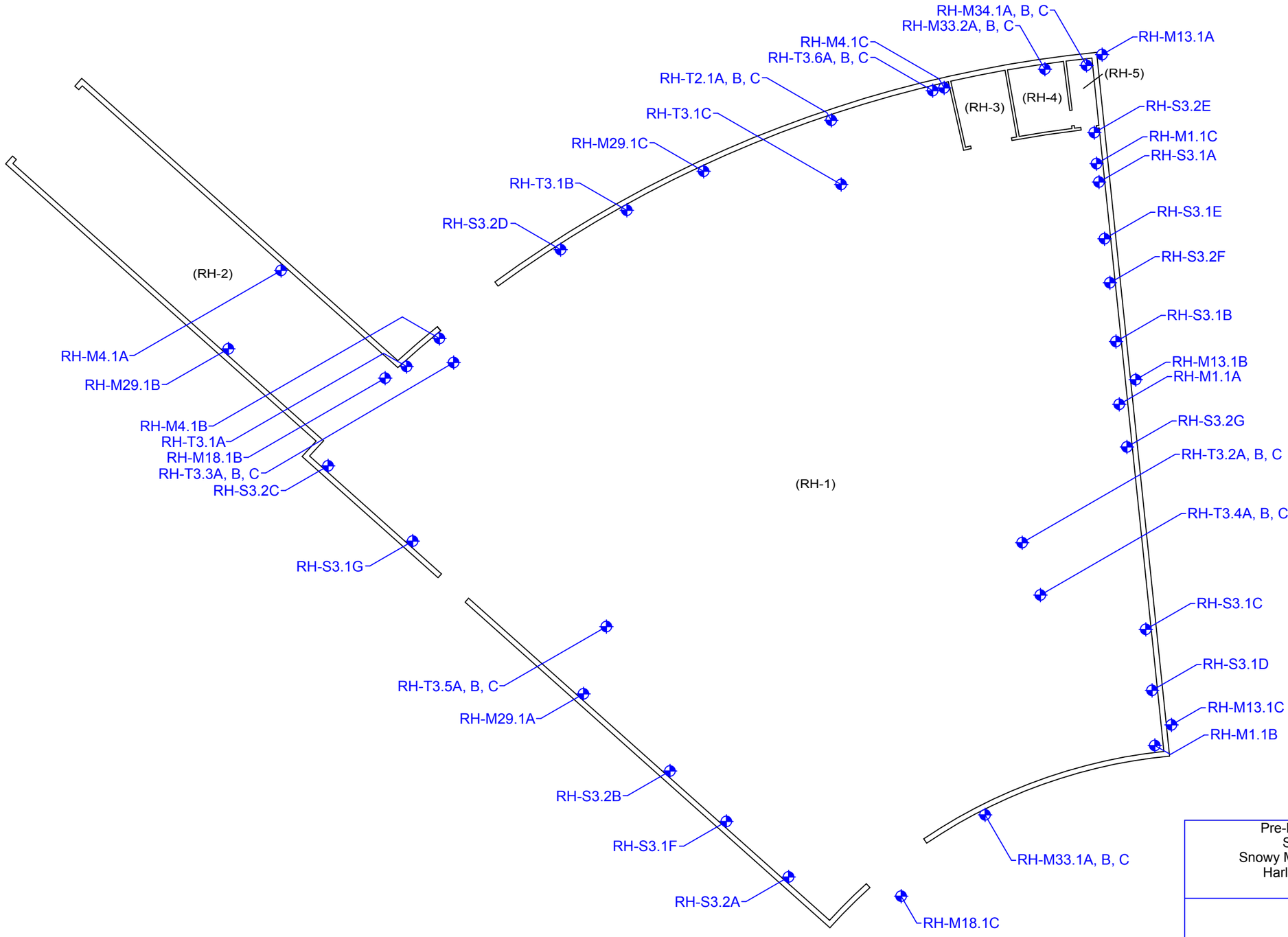
N

0 2 4

SCALE IN FEET

Pre-Demolition Asbestos Inspection
Sample Collection Locations
Snowy Mountain Development Corporation
Harlowton Railyard - Pump Cover
Harlowton, Montana

DATE: 06/27/2019	DRAWN BY: DLL
REVIEWED: RH	APPROX. SCALE: 1" = 4'
PROJ. NO. 117-8292004	FIGURE NO. 4



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Sample Location

( ) Room Number

Pre-Demolition Asbestos Inspection
Sample Collection Locations
Snowy Mountain Development Corporation
Harlowton Railyard - Round House
Harlowton, Montana

DRAWN BY:	APPROX. SCALE:	FIGURE NO.
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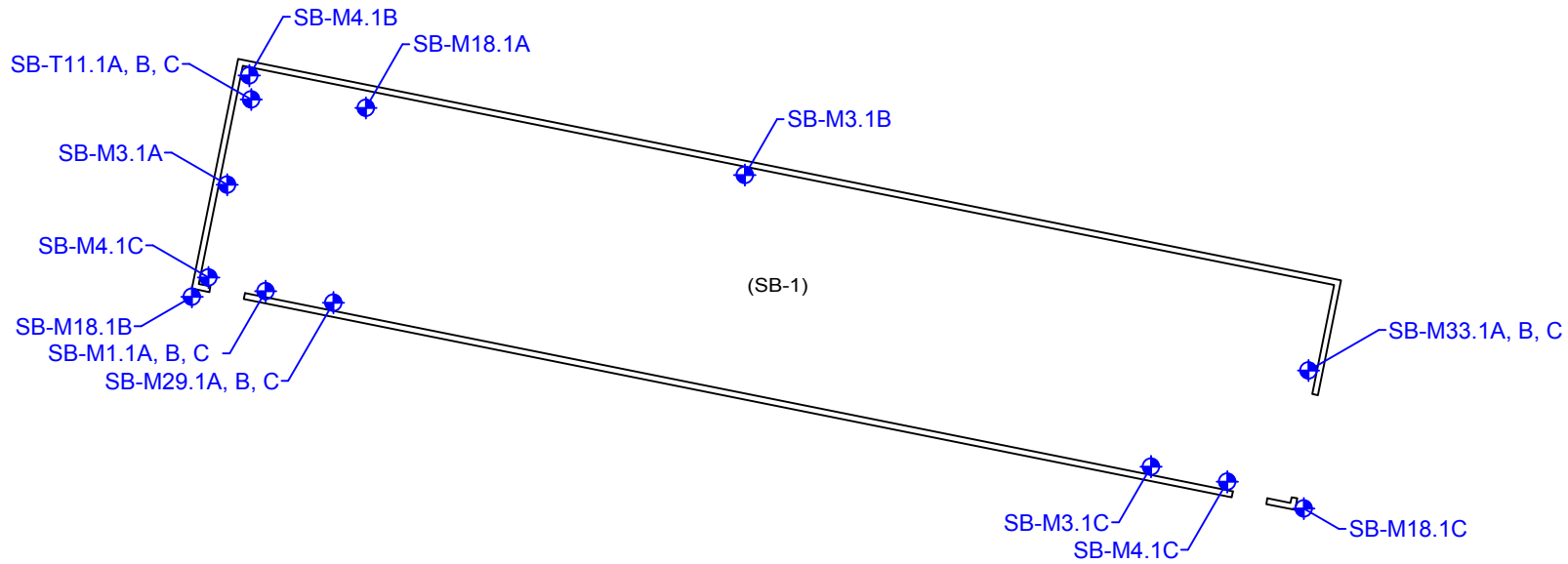
RH	06/27/2019	117-8292004



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Sample Location

( ) Room Number

N

0 8 16

SCALE IN FEET

Pre-Demolition Asbestos Inspection
Sample Collection Locations
Snowy Mountain Development Corporation
Harlowton Railyard - Storage Building
Harlowton, Montana

DATE: 06/27/2019	DRAWN BY: DLL
REVIEWED: RH	APPROX. SCALE: 1" = 16'
PROJ. NO. 117-8292004	FIGURE NO. 6

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Sample Location

Pre-Demolition Asbestos Inspection
Sample Collection Locations
Snowy Mountain Development Corporation
Harlowton Railyard - Site Area and "Y" Sidewalk
Harlowton, Montana

DRAWN BY:	APPROX. SCALE:	FIGURE NO.
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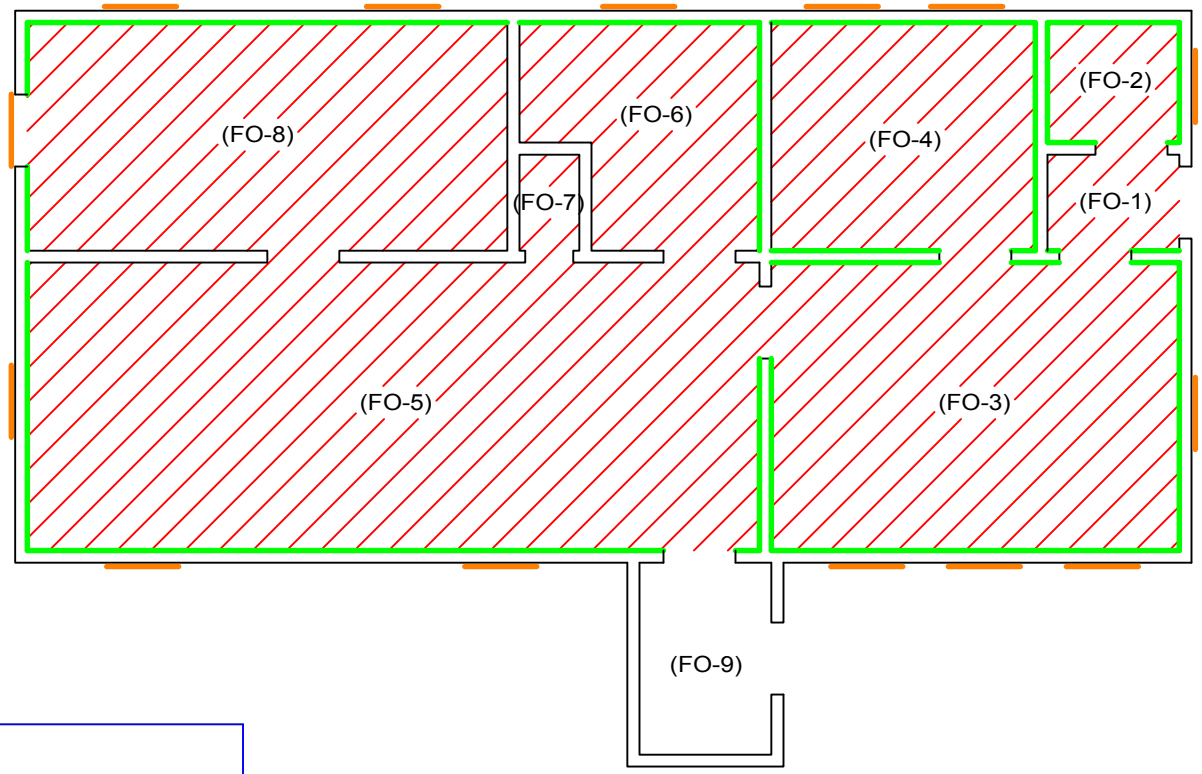
RH	07/03/2019	117-8292004



Legend

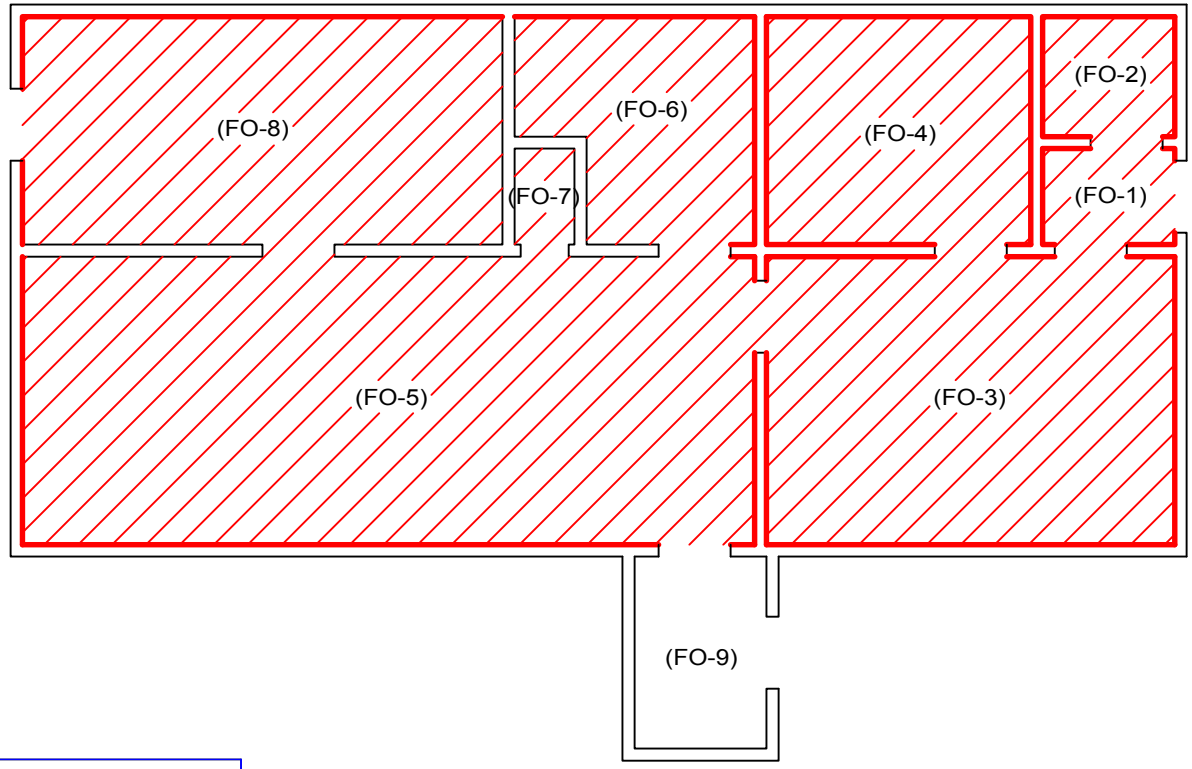
- FO-F3.1 - 9-inch by 9-inch maroon with white streak patterned vinyl floor tile
- FO-M4.1 - Transite panel wainscot
- FO-M8.1 - Exterior tan caulking associated with door and windows
- ( ) Room Number

N

0 4 8
SCALE IN FEET

Pre-Demolition Asbestos Inspection
Greater than 1% Asbestos Material Locations
Snowy Mountain Development Corporation
Harlowton Railyard - Foreman's Office
Harlowton, Montana

DATE: 07/01/2019	DRAWN BY: DLL
REVIEWED: RH	APPROX. SCALE: 1" = 8'
PROJ. NO. 117-8292004	FIGURE NO. 8



Legend

FO-M3.1 - Joint compound associated with smooth wallboard system (Walls)

FO-M3.1 - Joint compound associated with smooth wallboard system (Ceiling and debris)

( ) Room Number

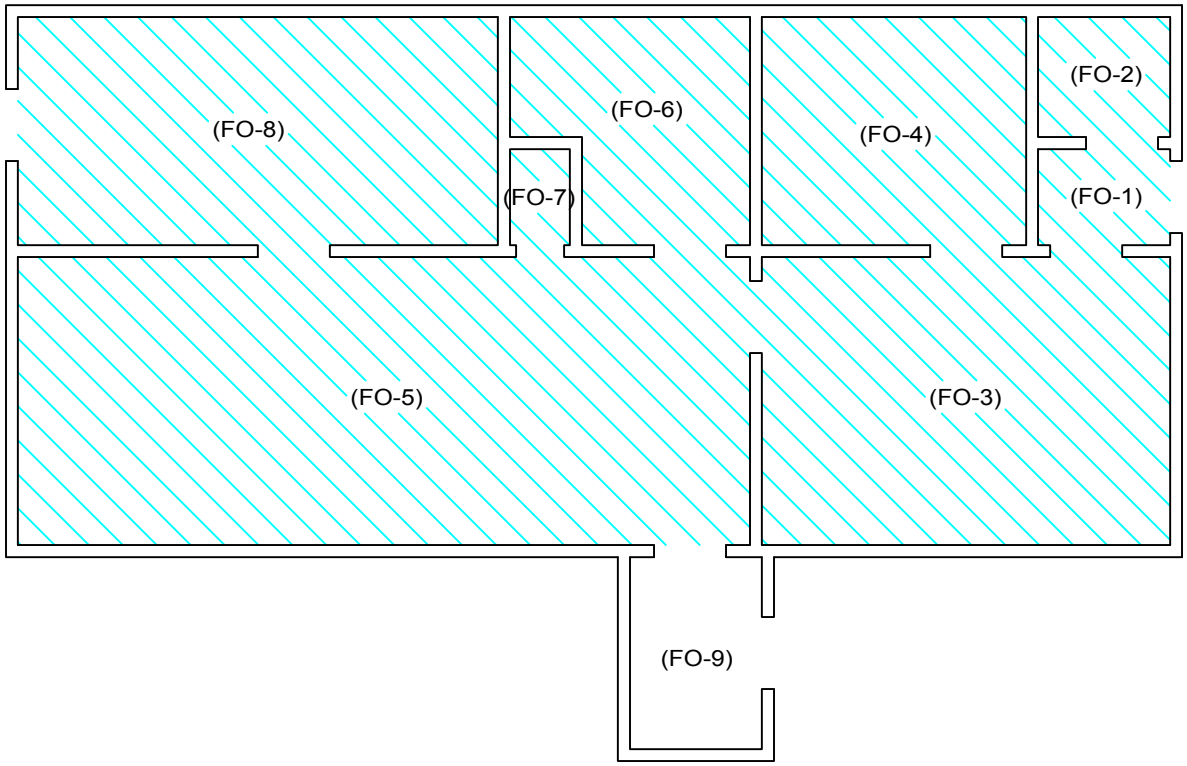
N

0 4 8

SCALE IN FEET

Pre-Demolition Asbestos Inspection
Greater than 1% Asbestos Material Locations
Snowy Mountain Development Corporation
Harlowton Railyard - Foreman's Office
Harlowton, Montana

DATE: 07/01/2019	DRAWN BY: DLL
REVIEWED: RH	APPROX. SCALE: 1" = 8'
PROJ. NO. 117-8292004	FIGURE NO. 9



Legend

FO-M33.1 - Loose exfoliated vermiculite insulation in attic and debris throughout

( ) Room Number

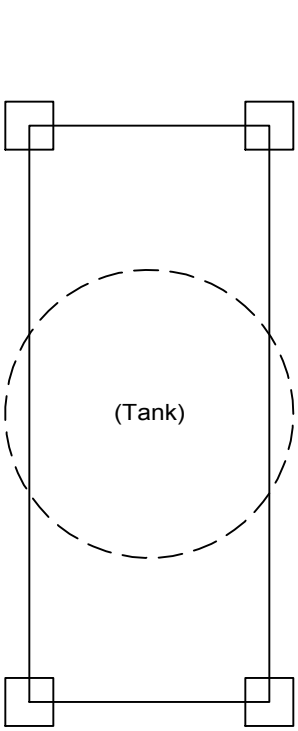
N

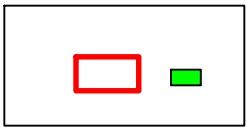
0 4 8

SCALE IN FEET

Pre-Demolition Asbestos Inspection
Less than 1% Asbestos Material Locations
Snowy Mountain Development Corporation
Harlowton Railyard - Foreman's Office
Harlowton, Montana

DATE: 07/03/2019	DRAWN BY: DLL
REVIEWED: RH	APPROX. SCALE: 1" = 8'
PROJ. NO. 117-8292004	FIGURE NO. 10



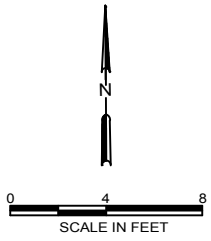


Legend

MR-M33.1 - Grey gasket material

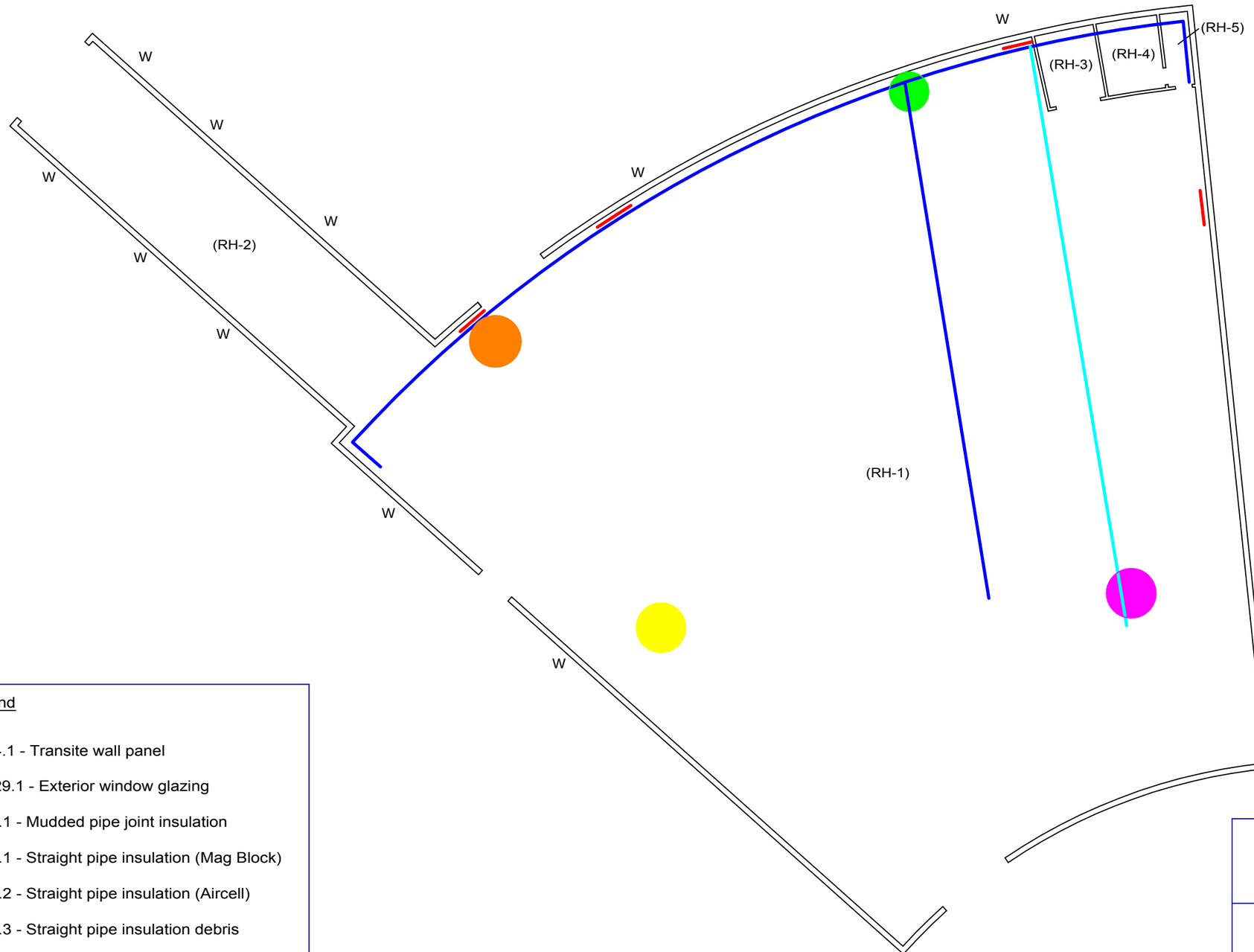
MR-M35.1 - Black tar sealant

( ) Room Number



Pre-Demolition Asbestos Inspection
Greater than 1% Asbestos Material Locations
Snowy Mountain Development Corporation
Harlowton Railyard - Metal Rack
Harlowton, Montana

DATE: 07/01/2019	DRAWN BY: DLL
REVIEWED: RH	APPROX. SCALE: 1" = 8'
PROJ. NO. 117-8292004	FIGURE NO. 11



Legend

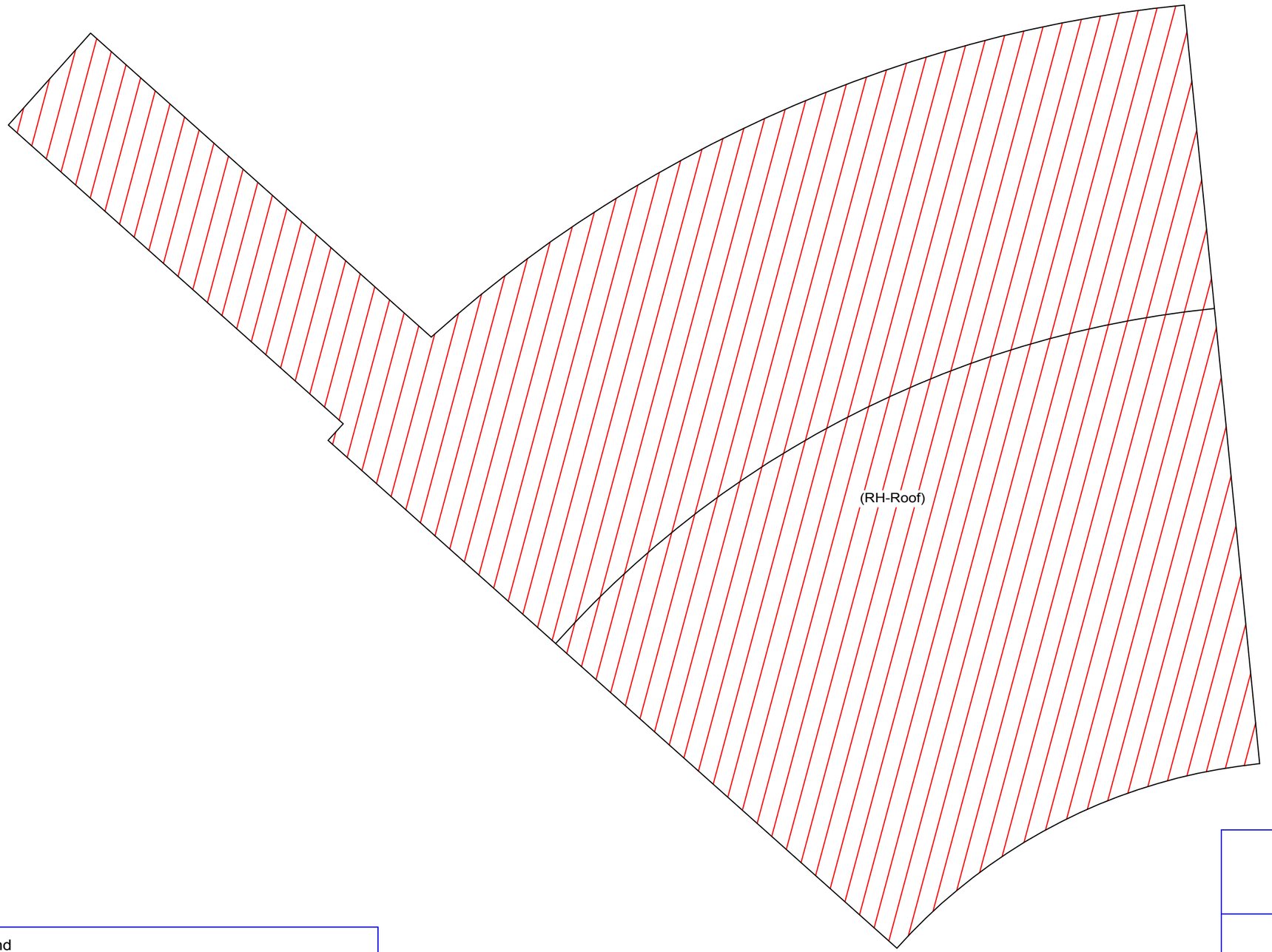
- RH-M4.1 - Transite wall panel
- W RH-M29.1 - Exterior window glazing
- RH-T2.1 - Mudded pipe joint insulation
- RH-T3.1 - Straight pipe insulation (Mag Block)
- RH-T3.2 - Straight pipe insulation (Aircell)
- RH-T3.3 - Straight pipe insulation debris
- RH-T3.4 - Straight pipe insulation debris (Aircell)
- RH-T3.5 - Straight pipe insulation
- ( ) Room Number

N

0 10 20
SCALE IN FEET

Pre-Demolition Asbestos Inspection
Greater than 1% Asbestos Material Locations
Snowy Mountain Development Corporation
Harlowton Railyard - Round House
Harlowton, Montana

DRAWN BY: DLL	APPROX. SCALE: 1" = 20'	FIGURE NO. 12
REVIEWED: RH	DATE: 07/01/2019	PROJ. NO. 117-8292004



Legend

RH-M1.1 - Black felt beneath non-asbestos containing built-up tar roof system located under rolled asphalt roofing and metal

( ) Room Number

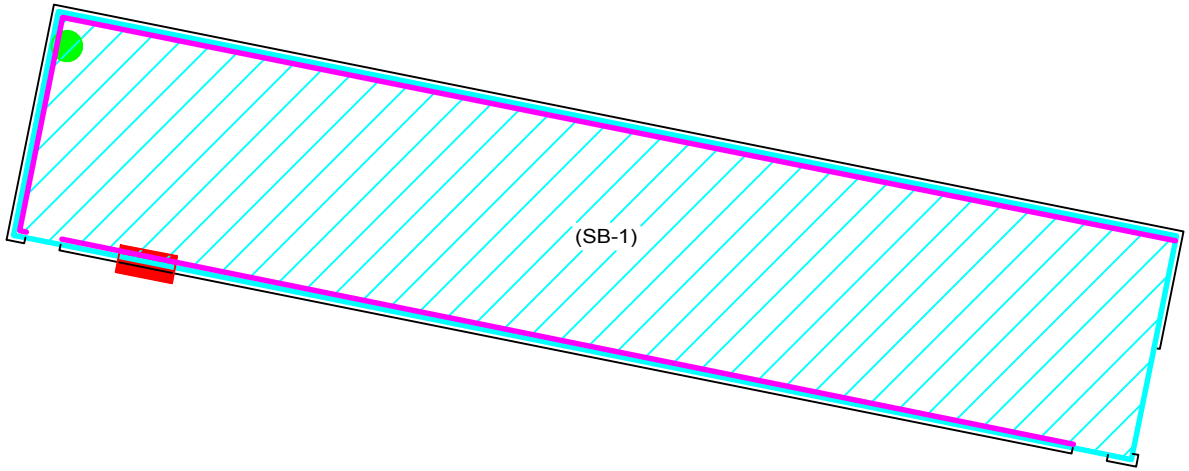
N

0 10 20

SCALE IN FEET

Pre-Demolition Asbestos Inspection
Greater than 1% Asbestos Material Locations
Snowy Mountain Development Corporation
Harlowton Railyard - Round House
Harlowton, Montana

DRAWN BY: DLL	APPROX. SCALE: 1" = 20'	FIGURE NO. 13
REVIEWED: RH	DATE: 07/01/2019	PROJ. NO. 117-8292004



Legend

- SB-M3.1 - Joint compound associated with smooth wallboard system (walls)
- SB-M3.1 - Joint compound associated with smooth wallboard system (ceiling)
- SB-M4.1 - Transite panel wainscot
- SB-M29.1 - Window glazing
- SB-T11.1 - Duct wrap
- ( ) Room Number

N

0 8 16

SCALE IN FEET

Pre-Demolition Asbestos Inspection
Greater than 1% Asbestos Material Locations
Snowy Mountain Development Corporation
Harlowton Railyard - Storage Building
Harlowton, Montana

DATE: 07/03/2019	DRAWN BY: DLL
REVIEWED: RH	APPROX. SCALE: 1" = 16'
PROJ. NO. 117-8292004	FIGURE NO. 14

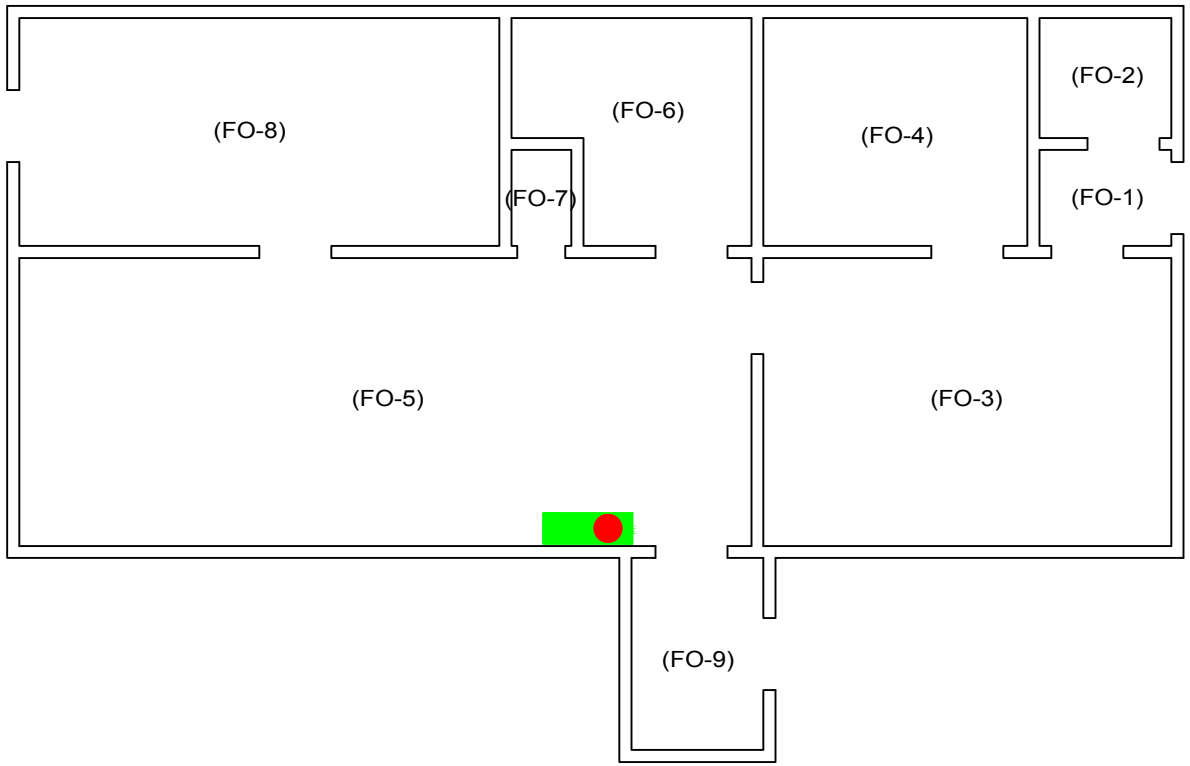
Legend

SA-M4.1 - Transite panel debris

SA-M35.1 / SA-M35.2 - Rope and braided gaskets debris

Pre-Demolition Asbestos Inspection
Sample Collection Locations
Snowy Mountain Development Corporation
Harlowton Railyard - Site Area and "Y" Sidewalk
Harlowton, Montana

DRAWN BY:	APPROX. SCALE:	FIGURE NO.
DLL	1" = 50'	15
REVIEWED:	DATE:	PROJ. NO.
RH	07/03/2019	117-8292004



Legend

Green painted metal pipe

Green painted wood shelf

( ) Room Number

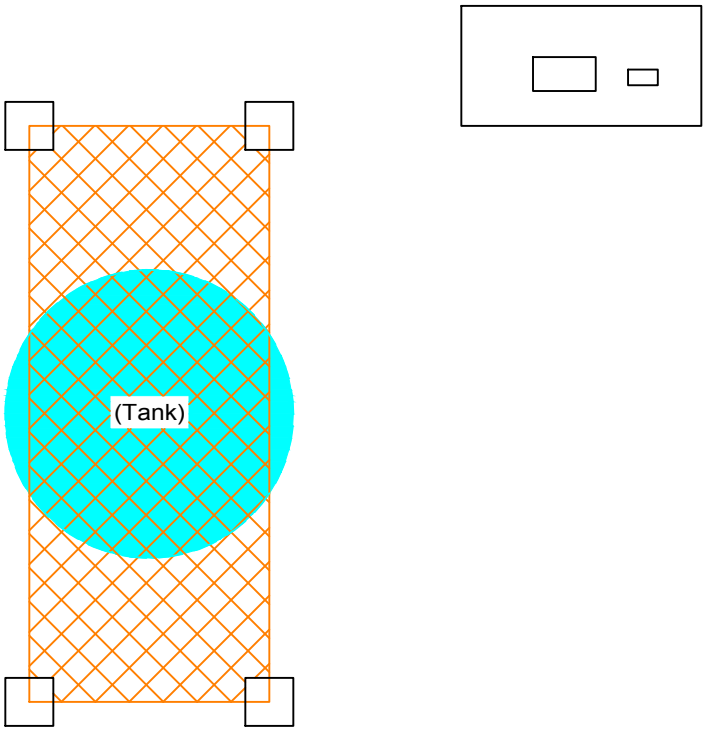
N

0 4 8

SCALE IN FEET

Lead-Based Paint Inspection
LBP Locations
Snowy Mountain Development Corporation
Harlowton Railyard - Foreman's Office
Harlowton, Montana

DATE: 07/08/2019	DRAWN BY: DLL
REVIEWED: RH	APPROX. SCALE: 1" = 8'
PROJ. NO. 117-8292004	FIGURE NO. 16



Legend

Black painted metal rack and ladder

Black painted metal tank

( ) Room Number

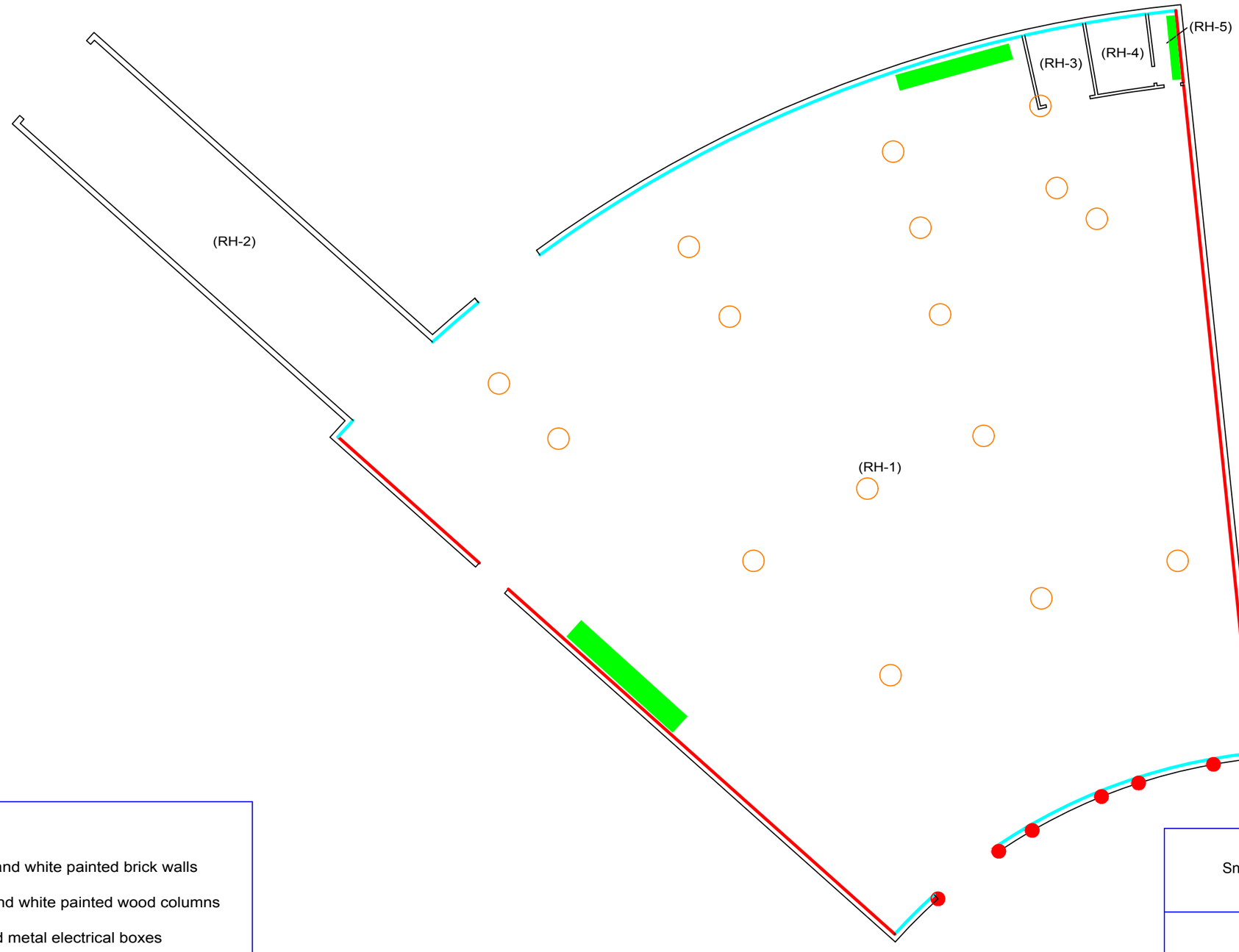
N

0 4 8

SCALE IN FEET

Lead-Based Paint Inspection
LBP Locations
Snowy Mountain Development Corporation
Harlowton Railyard - Metal Rack
Harlowton, Montana

DATE: 07/08/2019	DRAWN BY: DLL
REVIEWED: RH	APPROX. SCALE: 1" = 8'
PROJ. NO. 117-8292004	FIGURE NO. 17

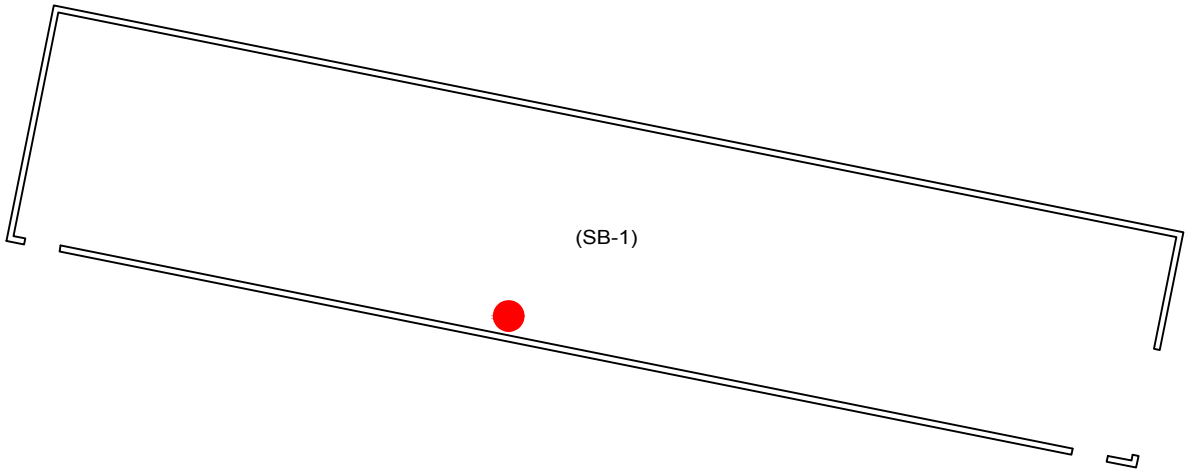


Legend

- Maroon, red, and white painted brick walls
- Yellow, red, and white painted wood columns
- Yellow painted metal electrical boxes
- Red painted metal door hinge
- Maroon, red, and white painted wood walls
- ( ) Room Number

Lead-Based Paint Inspection
LBP Locations
Snowy Mountain Development Corporation
Harlowton Railyard - Round House
Harlowton, Montana

DRAWN BY:	APPROX. SCALE:	FIGURE NO.
DLL	1" = 20'	18
REVIEWED:	DATE:	PROJ. NO.
RH	07/08/2019	117-8292004



Legend

Silver painted metal pipe

( ) Room Number

N

0 8 16

SCALE IN FEET

Lead-Based Paint Inspection
LBP Locations
Snowy Mountain Development Corporation
Harlowton Railyard - Storage Building
Harlowton, Montana

DATE: 07/03/2019	DRAWN BY: DLL
REVIEWED: RH	APPROX. SCALE: 1" = 16'
PROJ. NO. 117-8292004	FIGURE NO. 19

TETRA TECH

ATTACHMENT A

Inspector Accreditation Certification

JAY L HARPER

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).

MTA-3388

Asbestos Inspector	04/08/2020
Project Contractor/Supervisor	03/15/2020

MT DEQ Asbestos Control Program

TETRA TECH

ATTACHMENT B

Asbestos Laboratory Analytical Report

CA Labs
Dedicated to Quality

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

7100 Commercial Ave. Ste 4
Billings, MT 59101

Customer Project: 117-8292004, Harlowton Railyard- Forman Office
Reference #: CAL19063630AG Date: 6/12/2019

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 TCEQ# T104704513-15-3 TDH 30-0235
AIHA LAP, LLC Laboratory #102929

CA Labs
Dedicated to Quality

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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: 117-8292004, Harlowton Railyard- Forman Office **CA Labs Project #:** CAL19063630AG

Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types
FO-F3.1A	*F3.1A-1*	***Patterned 9x9 Vinyl Floor Tile and Mastic**/ brown floor tile*	***4% Chrysotile***	***brown floor tile***
FO-M3.1A	*M3.1 A-1*	***Smooth Wallboard System**/ green surfaced tan compound*	***2% Chrysotile***	***green surfaced tan compound***
	M3.1 A-2	*tan compound (beneath tape)*	***2% Chrysotile***	***tan compound (beneath tape)***
FO-M4.1A	*M4.1 A-1*	***Transite Panel**/ green surfaced gray transite*	***20% Chrysotile***	***green surfaced gray transite***
FO-M8.1A	*M8.1 A-1*	***Caulking**/ white surfaced tan caulking*	***2% Chrysotile***	***white surfaced tan caulking***
FO-M33.1A	*M33.1 A-1*	***Vermiculite Insulation**/ brown vermiculite insulation*	***Trace Tremolite***	***brown vermiculite insulation***
FO-M33.1B	*M33.1 B-1*	***Vermiculite Insulation**/ brown vermiculite insulation*	***Trace Tremolite***	
FO-M33.1C	*M33.1 C-1*	***Vermiculite Insulation**/ brown vermiculite insulation*	***Trace Tremolite***	

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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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Polarized Light Asbestiform Materials Characterization

Customer Info: **Attn:**
Tetra Tech
7100 Commercial Ave. Ste 4
Billings, MT 59101

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

Customer Project:
117-8292004, Harlowton Railyard- Forman Office
Turnaround Time:
3 days

CA Labs Project #:
CAL19063630AG

Date: 6/12/2019
Samples Received: 6/7/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
FO-F3.1A		*F3.1A-1*	***Patterned 9x9 Vinyl Floor Tile and Mastic**/ brown floor tile*	*y*	***4% Chrysotile***		96% qu,ca
		F3.1A-2	*black mastic*	*y*	***None Detected***		100% gy,bi
FO-F3.1B		*F3.1B-1*	***Patterned 9x9 Vinyl Floor Tile and Mastic**/ brown floor tile*		*Positive Stop*		
		F3.1B-2	*black mastic*	*y*	***None Detected***		100% gy,bi
FO-F3.1C		*F3.1C-1*	***Patterned 9x9 Vinyl Floor Tile and Mastic**/ brown floor tile*		*Positive Stop*		
		F3.1C-2	*black mastic*	*y*	***None Detected***		100% gy,bi
FO-M1.1A		*M1.1A-1*	***Asphalt Roofing Shingles**/ black roofing shingle with green gravel*	*y*	***None Detected***	12% ce	88% qu,bi

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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	

Approved Signatories:

Julio Robles
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. 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
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

CA Labs
Dedicated to Quality

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Polarized Light Asbestiform Materials Characterization

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

Customer Project:
117-8292004, Harlowton Railyard- Forman Office
Turnaround Time:
3 days

CA Labs Project #:
CAL19063630AG

Date: 6/12/2019
Samples Received: 6/7/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
FO-M1.1B		*M1.1 B-1*	***Asphalt Roofing Shingles**/ black roofing shingle with green gravel*	*y*	***None Detected***	12% ce	88% qu,bi
FO-M1.1C		*M1.1 C-1*	***Asphalt Roofing Shingles**/ black roofing shingle with green gravel*	*y*	***None Detected***	12% ce	88% qu,bi
FO-M3.1A		*M3.1 A-1*	***Smooth Wallboard System**/ green surfaced tan compound*	*n*	***2% Chrysotile***		98% mi,bi,ca
		M3.1 A-2	*tan compound (beneath tape)*	*y*	***2% Chrysotile***		98% mi,ca
		M3.1 A-3	*white drywall with brown paper*	*n*	***None Detected***	20% ce	80% qu,gy
FO-M3.1B		*M3.1 B-1*	***Smooth Wallboard System**/ green surfaced tan compound*		*Positive Stop*		
		M3.1 B-2	*tan compound (beneath tape)*		*Positive Stop*		

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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	

Approved Signatories:

Julio Robles
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. 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
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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Turnaround Time:
3 days

CA Labs Project #:
CAL19063630AG

Date: 6/12/2019
Samples Received: 6/7/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
		M3.1 B-3	*white drywall with brown paper*	*n*	***None Detected***	20% ce	80% qu,gy
FO-M3.1C		*M3.1 C-1*	***Smooth Wallboard System**/ green surfaced tan compound*		*Positive Stop*		
		M3.1 C-2	*tan compound (beneath tape)*		*Positive Stop*		
		M3.1 C-3	*white drywall with brown paper*	*n*	***None Detected***	20% ce	80% qu,gy
FO-M4.1A		*M4.1 A-1*	***Transite Panel**/ green surfaced gray transite*	*n*	***20% Chrysotile***		80% qu,bi,ca
FO-M4.1B		*M4.1 B-1*	***Transite Panel**/ green surfaced gray transite*		*Positive Stop*		
FO-M4.1C		*M4.1 C-1*	***Transite Panel**/ green surfaced gray transite*		*Positive Stop*		

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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	

Approved Signatories:

Julio Robles
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

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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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Polarized Light Asbestiform Materials Characterization

Customer Info: **Attn:**
Tetra Tech
7100 Commercial Ave. Ste 4
Billings, MT 59101

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

Customer Project:
117-8292004, Harlowton Railyard- Forman Office
Turnaround Time:
3 days

CA Labs Project #:
CAL19063630AG

Date: 6/12/2019
Samples Received: 6/7/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
FO-M8.1A		*M8.1 A-1*	***Caulking**/ white surfaced tan caulking*	*n*	***2% Chrysotile***		98% qu,bi,ca
FO-M8.1B		*M8.1 B-1*	***Caulking**/ white surfaced tan caulking*		*Positive Stop*		
FO-M8.1C		*M8.1 C-1*	***Caulking**/ white surfaced tan caulking*		*Positive Stop*		
FO-M13.1A		*M13.1 A-1*	***Brick and Mortar**/ red bricking*	*y*	***None Detected***		100% qu,ot
		M13.1 A-2	*gray mortar*	*y*	***None Detected***		100% qu,ca
FO-M13.1B		*M13.1 B-1*	***Brick and Mortar**/ red bricking*	*y*	***None Detected***		100% qu,ot
		M13.1 B-2	*gray mortar*	*y*	***None Detected***		100% qu,ca

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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	

Approved Signatories:

Julio Robles
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. 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
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

CA Labs
Dedicated to Quality

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:**
Tetra Tech
7100 Commercial Ave. Ste 4
Billings, MT 59101

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

Customer Project:
117-8292004, Harlowton Railyard- Forman Office
Turnaround Time:
3 days

CA Labs Project #:
CAL19063630AG

Date: 6/12/2019
Samples Received: 6/7/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
FO-M13.1C		*M13.1 C-1*	***Brick and Mortar**/ red bricking*	*y*	***None Detected***		100% qu,ot
		M13.1 C-2	*gray mortar*	*y*	***None Detected***		100% qu,ca
FO-M18.1A		*M18.1 A-1*	***Concrete**/ gray concrete*	*y*	***None Detected***		100% qu,ca
FO-M18.1B		*M18.1 B-1*	***Concrete**/ gray concrete*	*y*	***None Detected***		100% qu,ca
FO-M18.1C		*M18.1 C-1*	***Concrete**/ gray concrete*	*y*	***None Detected***		100% qu,ca
FO-M29.1A		*M29.1 A-1*	***Window Glazing**/ gray caulking*	*y*	***None Detected***	2% ta	98% qu,ca
FO-M29.1B		*M29.1 B-1*	***Window Glazing**/ white surfaced tan caulking*	*n*	***None Detected***		100% qu,bi,ca

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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	

Approved Signatories:

Julio Robles
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
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9. < 1% Result point counted positive
10. TEM analysis suggested

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Polarized Light Asbestiform Materials Characterization

Customer Info: **Attn:**
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7100 Commercial Ave. Ste 4
Billings, MT 59101

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

Customer Project:
117-8292004, Harlowton Railyard- Forman Office
Turnaround Time:
3 days

CA Labs Project #:
CAL19063630AG

Date: 6/12/2019
Samples Received: 6/7/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
FO-M29.1C		*M29.1 C-1*	***Window Glazing**/ white surfaced tan caulking*	*n*	***None Detected***		100% qu,bi,ca
FO-M33.1A	***3,10***	*M33.1 A-1*	***Vermiculite Insulation**/ brown vermiculite insulation*	*y*	***Trace Tremolite***		100% ve
FO-M33.1B	***3,10***	*M33.1 B-1*	***Vermiculite Insulation**/ brown vermiculite insulation*	*y*	***Trace Tremolite***		100% ve
FO-M33.1C	***3,10***	*M33.1 C-1*	***Vermiculite Insulation**/ brown vermiculite insulation*	*y*	***Trace Tremolite***		100% ve
FO-M34.1A		*M34.1 A-1*	***Braided Wire Insulation**/ black woven covering*	*y*	***None Detected***	100% ce	
		M34.1 A-2	*white woven covering*	*y*	***None Detected***	67% ce	33% qu,bi
FO-M34.1B		*M34.1 B-1*	***Braided Wire Insulation**/ black woven covering*	*y*	***None Detected***	100% ce	

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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	

Approved Signatories:

Julio Robles
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

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Polarized Light Asbestiform Materials Characterization

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Phone # 406-248-9161
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Customer Project:
117-8292004, Harlowton Railyard- Forman Office
Turnaround Time:
3 days

CA Labs Project #:
CAL19063630AG

Date: 6/12/2019
Samples Received: 6/7/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
		M34.1 B-2	*white woven covering*	*y*	***None Detected***	67% ce	33% qu,bi
FO-M34.1C		*M34.1 C-1*	***Braided Wire Insulation**/ black woven covering*	*y*	***None Detected***	100% ce	
		M34.1 C-2	*white woven covering*	*y*	***None Detected***	67% ce	33% qu,bi
FO-M34.2A		*M34.2 A-1*	***Braided Wire Insulation**/ black woven covering*	*y*	***None Detected***	67% ce	33% qu,bi
FO-M34.2B		*M34.2 B-1*	***Braided Wire Insulation**/ black woven covering*	*y*	***None Detected***	67% ce	33% qu,bi
FO-M34.2C		*M34.2 C-1*	***Braided Wire Insulation**/ black woven covering*	*y*	***None Detected***	67% ce	33% qu,bi
FO-M34.3A		*M34.3 A-1*	***Braided Wire Insulation**/ tan and black woven covering*	*n*	***None Detected***	60% ce	40% qu,bi

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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	

Approved Signatories:

Julio Robles
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

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9. < 1% Result point counted positive
10. TEM analysis suggested

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Polarized Light Asbestiform Materials Characterization

Customer Info: **Attn:**
Tetra Tech
7100 Commercial Ave. Ste 4
Billings, MT 59101

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

Customer Project:
117-8292004, Harlowton Railyard- Forman Office
Turnaround Time:
3 days

CA Labs Project #:
CAL19063630AG

Date: 6/12/2019
Samples Received: 6/7/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
FO-M34.3B		*M34.3 B-1*	***Braided Wire Insulation**/ tan and black woven covering*	*n*	***None Detected***	60% ce	40% qu,bi
FO-M34.3C		*M34.3 C-1*	***Braided Wire Insulation**/ tan and black woven covering*	*n*	***None Detected***	60% ce	40% qu,bi
FO-M35.1A		*M35.1 A-1*	***Paper Vapor Barrier**/ black mastic with brown covering*	*n*	***None Detected***	60% ce	40% qu,bi
FO-M35.1B		*M35.1 B-1*	***Paper Vapor Barrier**/ black mastic with brown covering*	*n*	***None Detected***	60% ce	40% qu,bi
FO-M35.1C		*M35.1 C-1*	***Paper Vapor Barrier**/ black mastic with brown covering*	*n*	***None Detected***	60% ce	40% qu,bi

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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.

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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	

Approved Signatories:

Julio Robles
Analyst

Technical Manager
Tanner Rasmussen

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
10. TEM analysis suggested

TETRA TECH
618 South 25th Street
Billings, Montana 59101
Phone: 406.248.9161 Fax 406.248.9282

CAL19063630

ASBESTOS PLM CHAIN OF CUSTODY

CONTACT INFORMATION

Company:	Tetra Tech, Inc.	**Phone:**	406.248.9161
Primary Contact:	Daniel Lawrence	**Phone / Email:**	Direct – 406.384.0299 cell – 406.208.7781 daniel.lawrence@tetratech.com
Additional Contact:	Roger W. Herman, Jr.	**Phone / Email:**	direct – 406.384.0297 cell – 406.670.4844 roger.herman@tetratech.com
Sampler Name(s) (print):	Daniel Lawrence	**Sampler Signature(s):**	Jay L Hayes

PROJECT INFORMATION

Client:	Snowy Mountain Development Corp	**Project Name:**	Harlowton Railyard – Forman Office
Project Location:	Harlowton, MT	**Project Number:**	117-8292004

PLM INSTRUCTIONS

☒ **PLM EPA 600/R-93/116**

☒ **PLM Point Count, PC 400 Points (All samples greater than 0%, but less than 10%)**

☒ **Multi-Layered Samples:**

☒ Analyze and Report All Separable Layers per EPA 600 ☐ Report Composite for Drywall System per NESHAP (where applicable) ☒ Only Analyze specifically noted layer

☒ **Analyze Until Positive Stop:** Positive Stop by Material Type as Noted

TURNAROUND TIME

☐ **10 Day** ☐ **5 Day** ☒ **3 Day** ☐ **2 Day** ☐ **1 Day** ☐ **Same Day** ☐ **RUSH**, Results by: _____

Relinquished By	Date & Time	VIA	Received By	Date & Time
Daniel Lawrence	6/6/19 1000hrs	FEDEX	DNM 6/7/19	10:30 AM

TETRA TECH
618 South 25th Street
Billings, Montana 59101
Phone: 406.248.9161 Fax 406.248.9282

CAL19063630

ASBESTOS PLM CHAIN OF CUSTODY

HOMOGENEOUS ID	LAB ID	SAMPLE DESCRIPTION AND LOCATION	NOTES
FO-F3.1A		Maroon with white streak patterned 9-inch by 9-inch vinyl floor tile and associated black mastic	
FO-F3.1B		Maroon with white streak patterned 9-inch by 9-inch vinyl floor tile and associated black mastic	
FO-F3.1C		Maroon with white streak patterned 9-inch by 9-inch vinyl floor tile and associated black mastic	
FO-M1.1A		Green asphalt roofing shingles	
FO-M1.1B		Green asphalt roofing shingles	
FO-M1.1C		Green asphalt roofing shingles	
FO-M3.1A		Smooth wallboard system	
FO-M3.1B		Smooth wallboard system	
FO-M3.1C		Smooth wallboard system	
FO-M4.1A		Transite panel	
FO-M4.1B		Transite panel	

DKM 6/7/19 10:30 AM

TETRA TECH
618 South 25th Street
Billings, Montana 59101
Phone: 406.248.9161 Fax 406.248.9282

CAL 19063630

ASBESTOS PLM CHAIN OF CUSTODY

HOMOGENEOUS ID	LAB ID	SAMPLE DESCRIPTION AND LOCATION	NOTES
FO-M4.1C		Transite panel	
FO-M8.1A		Tan caulking	
FO-M8.1B		Tan caulking	
FO-M8.1C		Tan caulking	
FO-M13.1A		Red brick and associated grey mortar	
FO-M13.1B		Red brick and associated grey mortar	
FO-M13.1C		Red brick and associated grey mortar	
FO-M18.1A		Concrete	
FO-M18.1B		Concrete	
FO-M18.1C		Concrete	
FO-M29.1A		Window glazing	

D Nqm 6/7/19 10:30 AM

CAL 19063630

TETRA TECH
618 South 25th Street
Billings, Montana 59101
Phone: 406.248.9161 Fax 406.248.9282

ASBESTOS PLM CHAIN OF CUSTODY

HOMOGENEOUS ID	LAB ID	SAMPLE DESCRIPTION AND LOCATION	NOTES
FO-M29.1B		Window glazing	
FO-M29.1C		Window glazing	
FO-M33.1A		Vermiculite insulation	
FO-M33.1B		Vermiculite insulation	
FO-M33.1C		Vermiculite insulation	
FO-M34.1A		Black braided wire insulation	
FO-M34.1B		Black braided wire insulation	
FO-M34.1C		Black braided wire insulation	
FO-M34.2A		Grey braided wire insulation	
FO-M34.2B		Grey braided wire insulation	
FO-M34.2C		Grey braided wire insulation	

D Ngm 6/7/19 10:30 AM

TETRA TECH
618 South 25th Street
Billings, Montana 59101
Phone: 406.248.9161 Fax 406.248.9282

CAL19063630

ASBESTOS PLM CHAIN OF CUSTODY

HOMOGENEOUS ID	LAB ID	SAMPLE DESCRIPTION AND LOCATION	NOTES
FO-M34.3A		White braided wire insulation	
FO-M34.3B		White braided wire insulation	
FO-M34.3C		White braided wire insulation	
FO-M35.1A		Black paper vapor barrier	
FO-M35.1B		Black paper vapor barrier	
FO-M35.1C		Black paper vapor barrier	

DKJ 6/7/19 10:30 AM

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Materials Characterization - Bulk Asbestos Analysis

Laboratory Analysis Report - Polarized Light

Tetra Tech

7100 Commercial Ave. Ste 4
Billings, MT 59101

Customer Project: 117-8292004, Harlowton Railyard- Metal Rack
Reference #: CAL19063629AG Date: 6/12/2019

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 TCEQ# T104704513-15-3 TDH 30-0235
AIHA LAP, LLC Laboratory #102929

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Overview of Project Sample Material Containing Asbestos

Customer Project: 117-8292004, Harlowton Railyard- Metal Rack **CA Labs Project #:** CAL19063629AG

Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types
MR-M33.1A	*MR-M33.1A-1*	***Gasket Material**/ gray gasketing*	***52% Chrysotile***	***gray gasketing***
MR-M35.1A	*MR-M35.1A-1*	***Tar Sealant**/ black weathered tar*	***4% Chrysotile***	***black weathered tar***

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235
AIHA LAP, LLC Laboratory #102929

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

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

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Polarized Light Asbestiform Materials Characterization

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Turnaround Time:
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CA Labs Project #:
CAL19063629AG

Date: 6/12/2019
Samples Received: 6/7/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
MR-M18.1A		*MR-M18.1A-1*	***Concrete**/ gray concrete*	*y*	***None Detected***		100% qu,ca
MR-M18.1B		*MR-M18.1B-1*	***Concrete**/ gray concrete*	*y*	***None Detected***		100% qu,ca
MR-M18.1C		*MR-M18.1C-1*	***Concrete**/ gray concrete*	*y*	***None Detected***		100% qu,ca
MR-M33.1A		*MR-M33.1A-1*	***Gasket Material**/ gray gasketing*	*y*	***52% Chrysotile***		48% qu,bi,ca
MR-M33.1B		*MR-M33.1B-1*	***Gasket Material**/ gray gasketing*		*Positive Stop*		
MR-M33.1C		*MR-M33.1C-1*	***Gasket Material**/ gray gasketing*		*Positive Stop*		
MR-M34.1A		*MR-M34.1A-1*	***Metal Coating**/ orange surfacing with debris*	*n*	***None Detected***		100% qu,bi,ot

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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	

Approved Signatories:

Julio Robles
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. 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
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

CA Labs
Dedicated to Quality

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:**
Tetra Tech
7100 Commercial Ave. Ste 4
Billings, MT 59101

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

Customer Project:
117-8292004, Harlowton Railyard- Metal Rack
Turnaround Time:
3 days

CA Labs Project #:
CAL19063629AG

Date: 6/12/2019
Samples Received: 6/7/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
MR-M34.1B		*MR-M34.1B-1*	***Metal Coating**/ orange surfacing with debris*	*n*	***None Detected***		100% qu,bi,ot
MR-M34.1C		*MR-M34.1C-1*	***Metal Coating**/ orange surfacing with debris*	*n*	***None Detected***		100% qu,bi,ot
MR-M35.1A		*MR-M35.1A-1*	***Tar Sealant**/ black weathered tar*	*y*	***4% Chrysotile***		96% qu,bi
MR-M35.1B		*MR-M35.1B-1*	***Tar Sealant**/ black weathered tar*		*Positive Stop*		
MR-M35.1C		*MR-M35.1C-1*	***Tar Sealant**/ black weathered tar*		*Positive Stop*		
MR-M36.1A		*MR-M36.1A-1*	***Hose with Weave Cover**/ black rubber covering*	*y*	***None Detected***	15% ce	85% qu,bi
MR-M36.1B		*MR-M36.1B-1*	***Hose with Weave Cover**/ black rubber covering*	*y*	***None Detected***	15% ce	85% qu,bi

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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	

Approved Signatories:

Julio Robles
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

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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

CA Labs
Dedicated to Quality

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CA Labs, L.L.C.
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Polarized Light Asbestiform Materials Characterization

Customer Info: **Attn:**
Tetra Tech
7100 Commercial Ave. Ste 4
Billings, MT 59101

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

Customer Project:
117-8292004, Harlowton Railyard- Metal Rack
Turnaround Time:
3 days

CA Labs Project #:
CAL19063629AG

Date: 6/12/2019
Samples Received: 6/7/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
MR-M36.1C		*MR-M36.1C-1*	***Hose with Weave Cover**/ black rubber covering*	*y*	***None Detected***	15% ce	85% qu,bi

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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.

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

Approved Signatories:

Julio Robles
Analyst

Technical Manager
Tanner Rasmussen

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
10. TEM analysis suggested

TETRA TECH
618 South 25th Street
Billings, Montana 59101
Phone: 406.248.9161 Fax 406.248.9282

CAL19063629

ASBESTOS PLM CHAIN OF CUSTODY

CONTACT INFORMATION

Company:	Tetra Tech, Inc.	**Phone:**	406.248.9161
Primary Contact:	Daniel Lawrence	**Phone / Email:**	Direct – 406.384.0299 cell – 406.208.7781 daniel.lawrence@tetratech.com
Additional Contact:	Roger W. Herman, Jr.	**Phone / Email:**	direct – 406.384.0297 cell – 406.670.4844 roger.herman@tetratech.com
Sampler Name(s) (print):	Daniel Lawrence	**Sampler Signature(s):**	Jay L Hayes

PROJECT INFORMATION

Client:	Snowy Mountain Development Corp	**Project Name:**	Harlowton Railyard – Metal Rack
Project Location:	Harlowton, MT	**Project Number:**	117-8292004

PLM INSTRUCTIONS

☒ **PLM EPA 600/R-93/116**

☒ **PLM Point Count, PC 400 Points (All samples greater than 0%, but less than 10%)**

☒ **Multi-Layered Samples:**

☒ Analyze and Report All Separable Layers per EPA 600 ☐ Report Composite for Drywall System per NESHAP (where applicable) ☒ Only Analyze specifically noted layer

☒ **Analyze Until Positive Stop:** Positive Stop by Material Type as Noted

TURNAROUND TIME

☐ **10 Day** ☐ **5 Day** ☒ **3 Day** ☐ **2 Day** ☐ **1 Day** ☐ **Same Day** ☐ **RUSH**, Results by: _____

Relinquished By	Date & Time	VIA	Received By	Date & Time
Daniel Lawrence	6/6/19 1000hrs	FEDEX		

D Hayes 6/7/19 10:30 AM

TETRA TECH
618 South 25th Street
Billings, Montana 59101
Phone: 406.248.9161 Fax 406.248.9282

CAL 19063629

ASBESTOS PLM CHAIN OF CUSTODY

HOMOGENEOUS ID	LAB ID	SAMPLE DESCRIPTION AND LOCATION	NOTES
MR-M18.1A		Concrete	
MR-M18.1B		Concrete	
MR-M18.1C		Concrete	
MR-M33.1A		Gasket material	
MR-M33.1B		Gasket material	
MR-M33.1C		Gasket material	
MR-M34.1A		Black metal coating	
MR-M34.1B		Black metal coating	
MR-M34.1C		Black metal coating	
MR-M35.1A		Tar sealant	
MR-M35.1B		Tar sealant	

D Nyn 6/7/19 10:30 MM

CAL19063629

TETRA TECH
618 South 25th Street
Billings, Montana 59101
Phone: 406.248.9161 Fax 406.248.9282

ASBESTOS PLM CHAIN OF CUSTODY

HOMOGENEOUS ID	LAB ID	SAMPLE DESCRIPTION AND LOCATION	NOTES
MR-M35.1C		Tar sealant	
MR-M36.1A		Black hose with white weave cover	
MR-M36.1B		Black hose with white weave cover	
MR-M36.1C		Black hose with white weave cover	

6/7/19 10:30 AM

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CA Labs, L.L.C.
12232 Industriplex, Suite 32
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Phone 225-751-5632
Fax 225-751-5634

Materials Characterization - Bulk Asbestos Analysis

Laboratory Analysis Report - Polarized Light

Tetra Tech

7100 Commercial Ave. Ste 4
Billings, MT 59101

Customer Project: 117-8292004, Harlowton Railyard- Oil Tank Tower
Reference #: CAL19063631AG Date: 6/12/2019

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 TCEQ# T104704513-15-3 TDH 30-0235
AIHA LAP, LLC Laboratory #102929

CA Labs
Dedicated to Quality

Crisp Analytical, L.L.C.
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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: 117-8292004, Harlowton Railyard- Oil Tank Tower **CA Labs Project #:** CAL19063631AG

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 TCEQ# T104704513-15-3 TDH 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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Polarized Light Asbestiform Materials Characterization

Customer Info: **Attn:**
Tetra Tech
7100 Commercial Ave. Ste 4
Billings, MT 59101

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

Customer Project:
117-8292004, Harlowton Railyard- Oil Tank Tower
Turnaround Time:
3 days

CA Labs Project #:
CAL19063631AG

Date: 6/12/2019
Samples Received: 6/7/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
OT-M13.1A		*M13.1 A-1*	***Brick and Mortar**/ red bricking*	*y*	***None Detected***		100% qu,ot
		M13.1 A-2	*gray mortar*	*y*	***None Detected***		100% qu,ca
OT-M13.1B		*M13.1 B-1*	***Brick and Mortar**/ red bricking*	*y*	***None Detected***		100% qu,ot
		M13.1 B-2	*gray mortar*	*y*	***None Detected***		100% qu,ca
OT-M13.1C		*M13.1 C-1*	***Brick and Mortar**/ red bricking*	*y*	***None Detected***		100% qu,ot
		M13.1 C-2	*gray mortar*	*y*	***None Detected***		100% qu,ca
OT-M18.1A		*M18.1 A-1*	***Concrete**/ gray concrete*	*y*	***None Detected***		100% qu,ca

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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
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bi - binder	ot -other	wo - wollastonite	ka - kaolin (clay)
or - organic	pe - perlite	ta - talc	pa - palygorskite (clay)
ma - matrix	qu - quartz	sy - synthetic	

Approved Signatories:

Stanley Massett
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. Fire Damage no significant fiber damages effecting fibrous percentages
3. Actinolite in association with Vermiculite
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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

CA Labs
Dedicated to Quality

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Polarized Light Asbestiform Materials Characterization

Customer Info: **Attn:**
Tetra Tech
7100 Commercial Ave. Ste 4
Billings, MT 59101

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

Customer Project:
117-8292004, Harlowton Railyard- Oil Tank Tower
Turnaround Time:
3 days

CA Labs Project #:
CAL19063631AG

Date: 6/12/2019
Samples Received: 6/7/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
OT-M18.1B		*M18.1 B-1*	***Concrete**/ gray concrete*	*y*	***None Detected***		100% qu,ca
OT-M18.1C		*M18.1 C-1*	***Concrete**/ gray concrete*	*y*	***None Detected***		100% qu,ca
OT-M33.1A		*M33.1 A-1*	***Flange Gasket Material**/ black gasketing*	*n*	***None Detected***	18% ce	82% qu,bi
OT-M33.1B		*M33.1 B-1*	***Flange Gasket Material**/ black gasketing*	*n*	***None Detected***	18% ce	82% qu,bi
OT-M33.1C		*M33.1 C-1*	***Flange Gasket Material**/ black gasketing*	*n*	***None Detected***	18% ce	82% qu,bi

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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.

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

Stanley Massett
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
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9. < 1% Result point counted positive
10. TEM analysis suggested

CAL19063631

TETRA TECH
618 South 25th Street
Billings, Montana 59101
Phone: 406.248.9161 Fax 406.248.9282

ASBESTOS PLM CHAIN OF CUSTODY

CONTACT INFORMATION

Company:	Tetra Tech, Inc.	**Phone:**	406.248.9161
Primary Contact:	Daniel Lawrence	**Phone / Email:**	Direct – 406.384.0299 cell – 406.208.7781 daniel.lawrence@tetratech.com
Additional Contact:	Roger W. Herman, Jr.	**Phone / Email:**	direct – 406.384.0297 cell – 406.670.4844 roger.herman@tetratech.com
Sampler Name(s) (print):	Daniel Lawrence	**Sampler Signature(s):**	Jay L Hayes

PROJECT INFORMATION

Client:	Snowy Mountain Development Corp	**Project Name:**	Harlowton Railyard – Oil Tank Tower
Project Location:	Harlowton, MT	**Project Number:**	117-8292004

PLM INSTRUCTIONS

☒ **PLM EPA 600/R-93/116**

☒ **PLM Point Count, PC 400 Points (All samples greater than 0%, but less than 10%)**

☒ **Multi-Layered Samples:**

☒ Analyze and Report All Separable Layers per EPA 600 ☐ Report Composite for Drywall System per NESHAP (where applicable) ☒ Only Analyze specifically noted layer

☒ **Analyze Until Positive Stop:** Positive Stop by Material Type as Noted

TURNAROUND TIME

☐ **10 Day** ☐ **5 Day** ☒ **3 Day** ☐ **2 Day** ☐ **1 Day** ☐ **Same Day** ☐ **RUSH**, Results by:

Relinquished By	Date & Time	VIA	Received By	Date & Time
Daniel Lawrence	6/6/19 1000hrs	FEDEX		

D Nam 6/7/19 10:30 AM

CAL 19063631

TETRA TECH
618 South 25th Street
Billings, Montana 59101
Phone: 406.248.9161 Fax 406.248.9282

ASBESTOS PLM CHAIN OF CUSTODY

HOMOGENEOUS ID	LAB ID	SAMPLE DESCRIPTION AND LOCATION	NOTES
OT-M13.1A		Red brick and grey mortar	
OT-M13.1B		Red brick and grey mortar	
OT-M13.1C		Red brick and grey mortar	
OT-M18.1C		Concrete	"
OT-M18.1C		Concrete	"
OT-M18.1C		Concrete	
OT-M33.1A		Black flange gasket material	"
OT-M33.1B		Black flange gasket material	"
OT-M33.1C		Black flange gasket material	
"		"	"
"		"	"

DHan 6/7/19 10:30 AM

CA Labs
Dedicated to Quality

Crisp Analytical, L.L.C.
1929 Old Denton Road
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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

7100 Commercial Ave. Ste 4
Billings, MT 59101

Customer Project: 117-8292004, Harlowton Railyard- Pump Cover
Reference #: CAL19063634AG Date: 6/12/2019

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 TCEQ# T104704513-15-3 TDH 30-0235
AIHA LAP, LLC Laboratory #102929

CA Labs
Dedicated to Quality

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: 117-8292004, Harlowton Railyard- Pump Cover **CA Labs Project #:** CAL19063634AG

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 TCEQ# T104704513-15-3 TDH 30-0235
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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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Polarized Light Asbestiform Materials Characterization

Customer Info: **Attn:**
Tetra Tech
7100 Commercial Ave. Ste 4
Billings, MT 59101

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

Customer Project:
117-8292004, Harlowton Railyard- Pump Cover
Turnaround Time:
3 days

CA Labs Project #:
CAL19063634AG

Date: 6/12/2019
Samples Received: 6/7/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
PC-M1.1A		*M1.1 A-1*	***Rolled Asphalt Roofing Material**/ black roofing shingle with brown gravel*	*y*	***None Detected***	6% ce	94% qu,bi
PC-M1.1B		*M1.1 B-1*	***Rolled Asphalt Roofing Material**/ black roofing shingle with brown gravel*	*y*	***None Detected***	6% ce	94% qu,bi
PC-M1.1C		*M1.1 C-1*	***Rolled Asphalt Roofing Material**/ black roofing shingle with brown gravel*	*y*	***None Detected***	6% ce	94% qu,bi
PC-M1.2A		*M1.2 A-1*	***Rolled Asphalt Roofing Material**/ black tar with felt*	*n*	***None Detected***	12% ce	88% qu,bi
PC-M1.2B		*M1.2 B-1*	***Rolled Asphalt Roofing Material**/ black tar with felt*	*n*	***None Detected***	12% ce	88% qu,bi
PC-M1.2C		*M1.2 C-1*	***Rolled Asphalt Roofing Material**/ black tar with felt*	*n*	***None Detected***	12% ce	88% qu,bi
PC-M18.1A		*M18.1 A-1*	***Concrete**/ gray concrete*	*y*	***None Detected***		100% qu,ca

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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	

Approved Signatories:

Stanley Massett
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. 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
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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Polarized Light Asbestiform Materials Characterization

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7100 Commercial Ave. Ste 4
Billings, MT 59101

Phone # 406-248-9161
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Customer Project:
117-8292004, Harlowton Railyard- Pump Cover
Turnaround Time:
3 days

CA Labs Project #:
CAL19063634AG

Date: 6/12/2019
Samples Received: 6/7/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
PC-M18.1B		*M18.1 B-1*	***Concrete**/ gray concrete*	*y*	***None Detected***		100% qu,ca
PC-M18.1C		*M18.1 C-1*	***Concrete**/ gray concrete*	*y*	***None Detected***		100% qu,ca

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235

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

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10. TEM analysis suggested

TETRA TECH
618 South 25th Street
Billings, Montana 59101
Phone: 406.248.9161 Fax 406.248.9282

CAL19063634

ASBESTOS PLM CHAIN OF CUSTODY

CONTACT INFORMATION

Company:	Tetra Tech, Inc.	**Phone:**	406.248.9161
Primary Contact:	Daniel Lawrence	**Phone / Email:**	Direct – 406.384.0299 cell – 406.208.7781 daniel.lawrence@tetratech.com
Additional Contact:	Roger W. Herman, Jr.	**Phone / Email:**	direct – 406.384.0297 cell – 406.670.4844 roger.herman@tetratech.com
Sampler Name(s) (print):	Daniel Lawrence	**Sampler Signature(s):**	Jay L Thayer

PROJECT INFORMATION

Client:	Snowy Mountain Development Corp	**Project Name:**	Harlowton Railyard – Pump Cover
Project Location:	Harlowton, MT	**Project Number:**	117-8292004

PLM INSTRUCTIONS

☒ **PLM EPA 600/R-93/116**

☒ **PLM Point Count, PC 400 Points (All samples greater than 0%, but less than 10%)**

☒ **Multi-Layered Samples:**

☒ Analyze and Report All Separable Layers per EPA 600 ☐ Report Composite for Drywall System per NESHAP (where applicable) ☒ Only Analyze specifically noted layer

☒ **Analyze Until Positive Stop:** Positive Stop by Material Type as Noted

TURNAROUND TIME

☐ **10 Day** ☐ **5 Day** ☒ **3 Day** ☐ **2 Day** ☐ **1 Day** ☐ **Same Day** ☐ **RUSH**, Results by: _____

Relinquished By	Date & Time	VIA	Received By	Date & Time
Daniel Lawrence	6/6/19 1000hrs	FEDEX	D NW 6/7/19	10:30 MM

CAL 19063634

TETRA TECH
618 South 25th Street
Billings, Montana 59101
Phone: 406.248.9161 Fax 406.248.9282

ASBESTOS PLM CHAIN OF CUSTODY

HOMOGENEOUS ID	LAB ID	SAMPLE DESCRIPTION AND LOCATION	NOTES
PC-M1.1A		Red rolled asphalt roofing material (top)	
PC-M1.1B		Red rolled asphalt roofing material (top)	
PC-M1.1C		Red rolled asphalt roofing material (top)	
PC-M1.2A		Red rolled asphalt roofing material (bottom)	
PC-M1.2B		Red rolled asphalt roofing material (bottom)	
PC-M1.2C		Red rolled asphalt roofing material (bottom)	
PC-M18.1A		Concrete	
PC-M18.1B		Concrete	
PC-M18.1C		Concrete	

DAdgm 6/7/19 10:30 AM

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Materials Characterization - Bulk Asbestos Analysis

Laboratory Analysis Report - Polarized Light

Tetra Tech

7100 Commercial Ave. Ste 4
Billings, MT 59101

Customer Project: 117-8292004, Harlowton Railyard- Round House
Reference #: CAL19063723AG Date: 6/14/2019

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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Overview of Project Sample Material Containing Asbestos

Customer Project: 117-8292004, Harlowton Railyard- Round House **CA Labs Project #:** CAL19063723AG

Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types
RH-M1.1A	RH-M1.1A-4	*black felt*	***28% Chrysotile***	***black felt***
RH-M4.1A	RH-M4.1A-1	*green surfaced gray transite*	***19% Chrysotile***	***green surfaced gray transite***
RH-M29.1B	RH-M29.1B-1	*white caulking*	***2% Chrysotile***	***white caulking***
RH-T2.1A	RH-T2.1A-1	*white and tan insulation*	***16% Amosite***	***white and tan insulation***
RH-T3.1A	RH-T3.1A-1	*white insulation*	***18% Amosite***	***white insulation***
RH-T3.2A	RH-T3.2A-1	*gray layered insulation*	***65% Chrysotile***	***gray layered insulation***
RH-T3.3A	RH-T3.3A-1	*off-white insulation*	***21% Amosite***	***off-white insulation***
RH-T3.4A	RH-T3.4A-1	*gray layered insulation*	***66% Chrysotile***	

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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
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ka - kaolin (clay)
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Overview of Project Sample Material Containing Asbestos

Customer Project: 117-8292004, Harlowton Railyard- Round House **CA Labs Project #:** CAL19063723AG

Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types
RH-T3.5A	*RH-T3.5A-1*	*off-white insulation*	***19% Chrysotile***	

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235
AIHA LAP, LLC Laboratory #102929

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Polarized Light Asbestiform Materials Characterization

Customer Info: **Attn:**
Tetra Tech
7100 Commercial Ave. Ste 4
Billings, MT 59101

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

Customer Project:
117-8292004, Harlowton Railyard- Round House
Turnaround Time:
3 days

CA Labs Project #:
CAL19063723AG

Date: 6/14/2019
Samples Received: 6/11/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
RH-M1.1A		*RH-M1.1A-1*	*black roofing shingle with gray gravel*	*n*	***None Detected***	15% ce	85% qu,bi
		RH-M1.1A-2	*black tar*	*y*	***None Detected***		100% qu,bi
		RH-M1.1A-3	*black roofing shingle with green gravel*	*y*	***None Detected***	12% ce	88% qu,bi
		RH-M1.1A-4	*black felt*	*y*	***28% Chrysotile***		72% qu,bi
RH-M1.1B		*RH-M1.1B-1*	*black roofing shingle with gray gravel*	*y*	***None Detected***	16% ce	84% qu,bi
		RH-M1.1B-2	*black tar*	*y*	***None Detected***		100% qu,bi
		RH-M1.1B-3	*black roofing shingle with green gravel*	*y*	***None Detected***	12% ce	88% qu,bi

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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.*
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Approved Signatories:

Jeremy Ayars
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
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CA Labs Project #:
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Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
		RH-M1.1B-4	*black felt*		*Positive Stop*		
RH-M1.1C		*RH-M1.1C-1*	*black roofing shingle with green gravel*	*y*	***None Detected***	15% ce	85% qu,bi
		RH-M1.1C-2	*black tar*	*y*	***None Detected***		100% qu,bi
		RH-M1.1C-3	*black roofing shingle with green gravel*	*y*	***None Detected***	13% ce	87% qu,bi
		RH-M1.1C-4	*black felt*		*Positive Stop*		
RH-M4.1A		*RH-M4.1A-1*	*green surfaced gray transite*	*n*	***19% Chrysotile***		81% qu,ca,bi
RH-M4.1B		*RH-M4.1B-1*	*green surfaced gray transite*		*Positive Stop*		

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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.*
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Purchase Order #:

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RH-M4.1C		*RH-M4.1C-1*	*green surfaced gray transite*		*Positive Stop*		
RH-M13.1A		*RH-M13.1A-1*	*red bricking*	*y*	***None Detected***		100% qu,ot
		RH-M13.1A-2	*gray mortar*	*y*	***None Detected***		100% qu,ca
RH-M13.1B		*RH-M13.1B-1*	*red bricking*	*y*	***None Detected***		100% qu,ot
		RH-M13.1B-2	*gray mortar*	*y*	***None Detected***		100% qu,ca
RH-M13.1C		*RH-M13.1C-1*	*red bricking*	*y*	***None Detected***		100% qu,ot
		RH-M13.1C-2	*gray mortar*	*y*	***None Detected***		100% qu,ca

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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	

Approved Signatories:

Jeremy Ayars
Analyst

Technical Manager
Tanner Rasmussen

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
10. TEM analysis suggested

CA Labs
Dedicated to Quality

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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:**
Tetra Tech
7100 Commercial Ave. Ste 4
Billings, MT 59101

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

Customer Project:
117-8292004, Harlowton Railyard- Round House
Turnaround Time:
3 days

CA Labs Project #:
CAL19063723AG

Date: 6/14/2019
Samples Received: 6/11/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
RH-M18.1A		*RH-M18.1A-1*	*gray cement/mortar*	*y*	***None Detected***		100% qu,ca
RH-M18.1B		*RH-M18.1B-1*	*gray cement/mortar*	*y*	***None Detected***		100% qu,ca
RH-M18.1C		*RH-M18.1C-1*	*gray cement/mortar*	*y*	***None Detected***		100% qu,ca
RH-M29.1A		*RH-M29.1A-1*	*white caulking*	*y*	***None Detected***		100% qu,ca,bi
RH-M29.1B		*RH-M29.1B-1*	*white caulking*	*y*	***2% Chrysotile***		98% qu,ca,bi
RH-M29.1C		*RH-M29.1C-1*	*white caulking*		*Positive Stop*		
RH-M33.1A		*RH-M33.1A-1*	*white sealant*	*y*	***None Detected***		100% qu,ca,bi

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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.*
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or - organic	pe - perlite	ta - talc	pa - palygorskite (clay)
ma - matrix	qu - quartz	sy - synthetic	

Approved Signatories:

Jeremy Ayars
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

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Turnaround Time:
3 days

CA Labs Project #:
CAL19063723AG

Date: 6/14/2019
Samples Received: 6/11/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
		RH-M33.1A-2	*black felt and black tar layers*	*n*	***None Detected***	26% ce	74% qu,bi
		RH-M33.1A-3	*gray insulation*	*y*	***None Detected***	8% ce	92% qu,ca
RH-M33.1B		*RH-M33.1B-1*	*white sealant*	*y*	***None Detected***		100% qu,ca,bi
		RH-M33.1B-2	*black tar and black felt layers*	*n*	***None Detected***	29% ce	71% qu,bi
		RH-M33.1B-3	*gray insulation*	*y*	***None Detected***	14% ce	86% qu,bi
RH-M33.1C		*RH-M33.1C-1*	*black tar and black felt layers*	*n*	***None Detected***	27% ce	73% qu,bi
		RH-M33.1C-2	*gray insulation*	*y*	***None Detected***	11% ce	89% qu,bi

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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.*
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or - organic	pe - perlite	ta - talc	pa - palygorskite (clay)
ma - matrix	qu - quartz	sy - synthetic	

Approved Signatories:

Jeremy Ayars
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

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CA Labs Project #:
CAL19063723AG

Date: 6/14/2019
Samples Received: 6/11/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
RH-M33.2A		*RH-M33.2A-1*	*black felt*	*y*	***None Detected***	31% ce	69% qu,bi
RH-M33.2B		*RH-M33.2B-1*	*black felt*	*y*	***None Detected***	31% ce	69% qu,bi
RH-M33.2C		*RH-M33.2C-1*	*black felt*	*y*	***None Detected***	32% ce	68% qu,bi
RH-M34.1A		*RH-M34.1A-1*	*black tar woven covering*	*n*	***None Detected***	28% ce	72% qu,bi
RH-M34.1B		*RH-M34.1B-1*	*black tar woven covering*	*n*	***None Detected***	33% ce	67% qu,bi
RH-M34.1C		*RH-M34.1C-1*	*black tar woven covering*	*n*	***None Detected***	31% ce	69% qu,bi
RH-S3.1A		*RH-S3.1A-1*	*green surfacing*	*y*	***None Detected***		100% qu,bi

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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.*
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Approved Signatories:

Jeremy Ayars
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

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Turnaround Time:
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CA Labs Project #:
CAL19063723AG

Date: 6/14/2019
Samples Received: 6/11/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
		RH-S3.1A-2	*white compound*	*y*	***None Detected***		100% qu,ca
RH-S3.1B		*RH-S3.1B-1*	*green surfacing*	*y*	***None Detected***		100% qu,bi
RH-S3.1C		*RH-S3.1C-1*	*green surfacing*	*y*	***None Detected***		100% qu,bi
RH-S3.1D		*RH-S3.1D-1*	*green surfacing*	*y*	***None Detected***		100% qu,bi
RH-S3.1E		*RH-S3.1E-1*	*green surfacing*	*y*	***None Detected***		100% qu,bi
RH-S3.1F		*RH-S3.1F-1*	*green surfacing*	*y*	***None Detected***		100% qu,bi
RH-S3.1G		*RH-S3.1G-1*	*green surfacing*	*y*	***None Detected***		100% qu,bi

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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.*
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Approved Signatories:

Jeremy Ayars
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

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10. TEM analysis suggested

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Polarized Light Asbestiform Materials Characterization

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117-8292004, Harlowton Railyard- Round House
Turnaround Time:
3 days

CA Labs Project #:
CAL19063723AG

Date: 6/14/2019
Samples Received: 6/11/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
RH-S3.2A		*RH-S3.2A-1*	*white surfaced white and gray plaster*	*n*	***None Detected***		100% qu,ca,bi
RH-S3.2B		*RH-S3.2B-1*	*white surfaced white and gray plaster*	*n*	***None Detected***		100% qu,ca,bi
RH-S3.2C		*RH-S3.2C-1*	*white surfaced brown plaster*	*n*	***None Detected***		100% qu,ca,bi
RH-S3.2D		*RH-S3.2D-1*	*white surfaced white and gray plaster*	*n*	***None Detected***		100% qu,ca,bi
RH-S3.2E		*RH-S3.2E-1*	*white surfaced white and gray plaster*	*n*	***None Detected***		100% qu,ca,bi
RH-S3.2F		*RH-S3.2F-1*	*white surfaced white and gray plaster*	*n*	***None Detected***		100% qu,ca,bi
RH-S3.2G		*RH-S3.2G-1*	*white surfaced white and brown plaster*	*n*	***None Detected***		100% qu,ca,bi

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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.*
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Approved Signatories:

Jeremy Ayars
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
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CA Labs Project #:
CAL19063723AG

Date: 6/14/2019
Samples Received: 6/11/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
RH-T2.1A		*RH-T2.1A-1*	*white and tan insulation*	*n*	***16% Amosite***		84% qu,ca
RH-T2.1B		*RH-T2.1B-1*	*white and tan insulation*		*Positive Stop*		
RH-T2.1C		*RH-T2.1C-1*	*white and tan insulation*		*Positive Stop*		
RH-T3.1A		*RH-T3.1A-1*	*white insulation*	*y*	***18% Amosite***		82% qu,ca
RH-T3.1B		*RH-T3.1B-1*	*white insulation*		*Positive Stop*		
RH-T3.1C		*RH-T3.1C-1*	*white insulation*		*Positive Stop*		
RH-T3.2A		*RH-T3.2A-1*	*gray layered insulation*	*y*	***65% Chrysotile***		35% qu,ca

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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.*
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CA Labs Project #:
CAL19063723AG

Date: 6/14/2019
Samples Received: 6/11/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
RH-T3.2B		*RH-T3.2B-1*	*gray layered insulation*		*Positive Stop*		
RH-T3.2C		*RH-T3.2C-1*	*gray layered insulation*		*Positive Stop*		
RH-T3.3A		*RH-T3.3A-1*	*off-white insulation*	*y*	***21% Amosite***		79% qu,ca
RH-T3.3B		*RH-T3.3B-1*	*off-white insulation*		*Positive Stop*		
RH-T3.3C		*RH-T3.3C-1*	*off-white insulation*		*Positive Stop*		
RH-T3.4A		*RH-T3.4A-1*	*gray layered insulation*	*y*	***66% Chrysotile***		34% qu,ca
RH-T3.4B		*RH-T3.4B-1*	*gray layered insulation*		*Positive Stop*		

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235

AIHA LAP, LLC Laboratory #102929

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Billings, MT 59101

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

Customer Project:
117-8292004, Harlowton Railyard- Round House
Turnaround Time:
3 days

CA Labs Project #:
CAL19063723AG

Date: 6/14/2019
Samples Received: 6/11/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
RH-T3.4C		*RH-T3.4C-1*	*gray layered insulation*		*Positive Stop*		
RH-T3.5A		*RH-T3.5A-1*	*off-white insulation*	*y*	***19% Chrysotile***		81% qu,ca
RH-T3.5B		*RH-T3.5B-1*	*off-white insulation*		*Positive Stop*		
RH-T3.5C		*RH-T3.5C-1*	*off-white insulation*		*Positive Stop*		
RH-T3.6A		*RH-T3.6A-1*	*white insulation with white covering*	*n*	***None Detected***	25% ce	75% qu,ca
RH-T3.6B		*RH-T3.6B-1*	*white insulation*	*y*	***None Detected***		100% qu,ca
RH-T3.6C		*RH-T3.6C-1*	*white insulation*	*y*	***None Detected***		100% qu,ca

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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	

Approved Signatories:

Jeremy Ayars
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. 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
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

TETRA TECH
618 South 25th Street
Billings, Montana 59101
Phone: 406.248.9161 Fax 406.248.9282

ASBESTOS PLM CHAIN OF CUSTODY

CAL19063723

CONTACT INFORMATION

Company:	Tetra Tech, Inc.	**Phone:**	406.248.9161
Primary Contact:	Jay Harper	**Phone / Email:**	Direct – 406.384.0295 cell – 406.671.5690 jay.harper@tetratech.com
Additional Contact:	Roger W. Herman, Jr.	**Phone / Email:**	direct – 406.384.0297 cell – 406.670.4844 roger.herman@tetratech.com
Sampler Name(s) (print):	Daniel Lawrence	**Sampler Signature(s):**	Jay Harper

PROJECT INFORMATION

Client:	Snowy Mountain Development Corp	**Project Name:**	Harlowton Railyard – Round House
Project Location:	Harlowton, MT	**Project Number:**	117-8292004

PLM INSTRUCTIONS

☒ **PLM EPA 600/R-93/116**

☒ **PLM Point Count, PC 400 Points (All samples greater than 0%, but less than 10%)**

☒ **Multi-Layered Samples:**

☒ Analyze and Report All Separable Layers per EPA 600 ☐ Report Composite for Drywall System per NESHAP (where applicable) ☒ Only Analyze specifically noted layer

☒ **Analyze Until Positive Stop:** Positive Stop by Material Type as Noted

TURNAROUND TIME

☐ **10 Day** ☐ **5 Day** ☒ **3 Day** ☐ **2 Day** ☐ **1 Day** ☐ **Same Day** ☐ **RUSH**, Results by: _____

Relinquished By	Date & Time	VIA	Received By	Date & Time
Jay HArper	6/10/19 1000hrs	FEDEX	RD 6/11/2019 10:30 am	

TETRA TECH
618 South 25th Street
Billings, Montana 59101
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CAL19063723

ASBESTOS PLM CHAIN OF CUSTODY

HOMOGENEOUS ID	LAB ID	SAMPLE DESCRIPTION AND LOCATION	NOTES
RH-M1.1A		Roofing Materials – Built up under rolled roofing	
RH-M1.1B		Roofing Materials – Built up under rolled roofing	
RH-M1.1C		Roofing Materials – Built up under rolled roofing	
RH-M4.1A		Transite panel	
RH-M4.1B		Transite panel	
RH-M4.1C		Transite panel	
RH-M13.1A		Red brick and associated grey mortar	
RH-M13.1B		Red brick and associated grey mortar	
RH-M13.1C		Red brick and associated grey mortar	
RH-M18.1A		Concrete	
RH-M18.1B		Concrete	

RD 4/11/2019 10:30am

TETRA TECH
618 South 25th Street
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Phone: 406.248.9161 Fax 406.248.9282

CAL19063723

ASBESTOS PLM CHAIN OF CUSTODY

HOMOGENEOUS ID	LAB ID	SAMPLE DESCRIPTION AND LOCATION	NOTES
RH-M18.1C		Concrete	
RH-M29.1A		Window glazing	
RH-M29.1B		Window glazing	
RH-M29.1C		Window glazing	
RH-M33.1A		Tar paper (thick black)	
RH-M33.1B		Tar paper (thick black)	
RH-M33.1C		Tar paper (thick black)	
RH-M33.2A		Tar paper Vapor Barrier	
RH-M33.2B		Tar paper Vapor Barrier	
RH-M33.2C		Tar paper Vapor Barrier	
RH-M34.1A		Power box condenser insulation	

RD 6/11/2019 10:30am

TETRA TECH
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CAL19063723

ASBESTOS PLM CHAIN OF CUSTODY

HOMOGENEOUS ID	LAB ID	SAMPLE DESCRIPTION AND LOCATION	NOTES
RH-M34.1B		Power box condenser insulation	
RH-M34.1C		Power box condenser insulation	
RH-S3.1A		Wall Coating (Green)	
RH-S3.1B		Wall Coating (Green)	
RH-S3.1C		Wall Coating (Green)	
RH-S3.1D		Wall Coating (Green)	
RH-S3.1E		Wall Coating (Green)	
RH-S3.1F		Wall Coating (Green)	
RH-S3.1G		Wall Coating (Green)	
RH-S3.2A		Wall Coating (White)	
RH-S3.2B		Wall Coating (White)	

RD 6/11/2019 10:30 am

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Phone: 406.248.9161 Fax 406.248.9282

CAL19063723

ASBESTOS PLM CHAIN OF CUSTODY

HOMOGENEOUS ID	LAB ID	SAMPLE DESCRIPTION AND LOCATION	NOTES
RH-S3.2C		Wall Coating (White)	
RH-S3.2D		Wall Coating (White)	
RH-S3.2E		Wall Coating (White)	
RH-S3.2F		Wall Coating (White)	
RH-S3.2G		Wall Coating (White)	
RH-T2.1A		Pipe joint insulation	
RH-T2.1B		Pipe joint insulation	
RH-T2.1C		Pipe joint insulation	
RH-T3.1A		Straight run Pipe insulation (mag) on Pipes	
RH-T3.1B		Straight run Pipe insulation (mag) on Pipes	
RH-T3.1C		Straight run Pipe insulation (mag) on Pipes	

RD 6/11/2019 10:30 am

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CAL19063723

ASBESTOS PLM CHAIN OF CUSTODY

HOMOGENEOUS ID	LAB ID	SAMPLE DESCRIPTION AND LOCATION	NOTES
RH-T3.2A		Straight run Pipe insulation (Air Cell) on Pipes	
RH-T3.2B		Straight run Pipe insulation (Air Cell) on Pipes	
RH-T3.2C		Straight run Pipe insulation (Air Cell) on Pipes	
RH-T3.3A		Straight run Pipe insulation (debris pile)	
RH-T3.3B		Straight run Pipe insulation (debris pile)	
RH-T3.3C		Straight run Pipe insulation (debris pile)	
RH-T3.4A		Straight run Pipe insulation (Air Cell debris)	
RH-T3.4B		Straight run Pipe insulation (Air Cell debris)	
RH-T3.4C		Straight run Pipe insulation (Air Cell debris)	
RH-T3.5A		Straight run Pipe insulation (Debris on floors)	
RH-T3.5B		Straight run Pipe insulation (Debris on floors)	

RD 6/11/2019 10:30am

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Phone: 406.248.9161 Fax 406.248.9282

CAL19063723

ASBESTOS PLM CHAIN OF CUSTODY

HOMOGENEOUS ID	LAB ID	SAMPLE DESCRIPTION AND LOCATION	NOTES
RH-T3.5C		Straight run Pipe insulation (Debris on floors)	
RH-T3.6A		Straight run Pipe insulation (Debris in Electrical box)	
RH-T3.6B		Straight run Pipe insulation (Debris in Electrical box)	
RH-T3.6C		Straight run Pipe insulation (Debris in Electrical box)	

RD 6/11/19 10:30 am

CA Labs
Dedicated to Quality

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Baton Rouge, LA 70809
Phone 225-751-5632
Fax 225-751-5634

Materials Characterization - Bulk Asbestos Analysis

Laboratory Analysis Report - Polarized Light

Tetra Tech

7100 Commercial Ave. Ste 4
Billings, MT 59101

Customer Project: 117-8292004, Harlowton Railyard- Storage Building
Reference #: CAL19063628AG Date: 6/12/2019

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 TCEQ# T104704513-15-3 TDH 30-0235
AIHA LAP, LLC Laboratory #102929

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CA Labs, L.L.C.
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Baton Rouge, LA 70809
Phone 225-751-5632
Fax 225-751-5634

Overview of Project Sample Material Containing Asbestos

Customer Project: 117-8292004, Harlowton Railyard- Storage Building **CA Labs Project #:** CAL19063628AG

Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types
SB-M3.1A	*M3.1 A-1*	***Wallboard System**/ tan surfaced tan compound*	***3% Chrysotile***	***tan surfaced tan compound***
	M3.1 A-2	*tan compound (beneath tape)*	***3% Chrysotile***	***tan compound (beneath tape)***
SB-M4.1A	*M4.1 A-1*	***Transite Panel**/ gray fibrous paneling*	***42% Chrysotile***	***gray fibrous paneling***
SB-M29.1A	*M29.1 A-1*	***Window Glazing**/ green surfaced gray caulking*	***2% Chrysotile***	***green surfaced gray caulking***
SB-T11.1A	*T11.1 A-1*	***Duct Wrap**/ gray layered insulation*	***60% Chrysotile***	***gray layered insulation***
SB-T11.1B	*T11.1 B-1*	***Duct Wrap**/ gray layered insulation*	***60% Chrysotile***	
SB-T11.1C	*T11.1 C-1*	***Duct Wrap**/ gray layered insulation*	***60% Chrysotile***	

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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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Polarized Light Asbestiform Materials Characterization

Customer Info: **Attn:**
Tetra Tech
7100 Commercial Ave. Ste 4
Billings, MT 59101

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

Customer Project:
117-8292004, Harlowton Railyard- Storage Building
Turnaround Time:
3 days

CA Labs Project #:
CAL19063628AG

Date: 6/12/2019
Samples Received: 6/7/19 10:30AM
Date Of Sampling: None Detected
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
SB-M1.1A		*M1.1 A-1*	***Asphalt Roof Shingle**/ black roofing shingle with green gravel*	*y*	***None Detected***	12% ce	88% qu,bi
		M1.1 A-2	*silver surfaced black tar*	*n*	***None Detected***	30% ce	70% qu,bi
SB-M1.1B		*M1.1 B-1*	***Asphalt Roof Shingle**/ black roofing shingle with green gravel*	*y*	***None Detected***	14% ce	86% qu,bi
		M1.1 B-2	*silver surfaced black tar*	*n*	***None Detected***	30% ce	70% qu,bi
SB-M1.1C		*M1.1 C-1*	***Asphalt Roof Shingle**/ black roofing shingle with green gravel*	*y*	***None Detected***	12% ce	88% qu,bi
		M1.1 C-2	*silver surfaced black tar*	*n*	***None Detected***	31% ce	69% qu,bi
SB-M3.1A		*M3.1 A-1*	***Wallboard System**/ tan surfaced tan compound*	*n*	***3% Chrysotile***		97% mi,ca,bi

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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	

Approved Signatories:

Jeremy Ayars
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. 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
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

CA Labs
Dedicated to Quality

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Polarized Light Asbestiform Materials Characterization

Customer Info: **Attn:**
Tetra Tech
7100 Commercial Ave. Ste 4
Billings, MT 59101

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

Customer Project:
117-8292004, Harlowton Railyard- Storage Building
Turnaround Time:
3 days

CA Labs Project #:
CAL19063628AG

Date: 6/12/2019
Samples Received: 6/7/19 10:30AM
Date Of Sampling: None Detected
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
		M3.1 A-2	*tan compound (beneath tape)*	*y*	***3% Chrysotile***		97% mi,ca
		M3.1 A-3	*white drywall with brown paper*	*n*	***None Detected***	19% ce	81% qu,gy
SB-M3.1B		*M3.1 B-1*	***Wallboard System**/ tan surfaced tan compound*		*Positive Stop*		
		M3.1 B-2	*tan compound (beneath tape)*		*Positive Stop*		
		M3.1 B-3	*white drywall with brown paper*	*n*	***None Detected***	18% ce	82% qu,gy
SB-M3.1C		*M3.1 C-1*	***Wallboard System**/ tan surfaced tan compound*		*Positive Stop*		
		M3.1 C-2	*tan compound (beneath tape)*		*Positive Stop*		

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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
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or - organic	pe - perlite	ta - talc	pa - palygorskite (clay)
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Analyst

Technical Manager
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Senior Analyst
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Polarized Light Asbestiform Materials Characterization

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Phone # 406-248-9161
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Customer Project:
117-8292004, Harlowton Railyard- Storage Building
Turnaround Time:
3 days

CA Labs Project #:
CAL19063628AG

Date: 6/12/2019
Samples Received: 6/7/19 10:30AM
Date Of Sampling: None Detected
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
		M3.1 C-3	*white drywall with brown paper*	*n*	***None Detected***	19% ce	81% qu,gy
SB-M4.1A		*M4.1 A-1*	***Transite Panel**/ gray fibrous paneling*	*y*	***42% Chrysotile***		58% qu,ca
SB-M4.1B		*M4.1 B-1*	***Transite Panel**/ gray fibrous paneling*		*Positive Stop*		
SB-M4.1C		*M4.1 C-1*	***Transite Panel**/ gray fibrous paneling*		*Positive Stop*		
SB-M18.1A		*M18.1 A-1*	***Concrete**/ red surfaced gray cement/mortar*	*n*	***None Detected***		100% qu,ca,bi
SB-M18.1B		*M18.1 B-1*	***Concrete**/ red surfaced gray cement/mortar*	*n*	***None Detected***		100% qu,ca,bi
SB-M18.1C		*M18.1 C-1*	***Concrete**/ gray cement/mortar*	*y*	***None Detected***		100% qu,ca

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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.

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

Approved Signatories:

Jeremy Ayars
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

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10. TEM analysis suggested

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Polarized Light Asbestiform Materials Characterization

Customer Info: **Attn:**
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Billings, MT 59101

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

Customer Project:
117-8292004, Harlowton Railyard- Storage Building
Turnaround Time:
3 days

CA Labs Project #:
CAL19063628AG

Date: 6/12/2019
Samples Received: 6/7/19 10:30AM
Date Of Sampling: None Detected
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
SB-M29.1A		*M29.1 A-1*	***Window Glazing**/ green surfaced gray caulking*	*n*	***2% Chrysotile***		98% qu,ca,bi
SB-M29.1B		*M29.1 B-1*	***Window Glazing**/ green surfaced gray caulking*		*Positive Stop*		
SB-M29.1C		*M29.1 C-1*	***Window Glazing**/ green surfaced gray caulking*		*Positive Stop*		
SB-M33.1A	***8,10***	*M33.1 A-1*	***Vermiculite Insulation**/ brown insulation*	*y*	***None Detected***		100% ve
SB-M33.1B	***8,10***	*M33.1 B-1*	***Vermiculite Insulation**/ brown insulation*	*y*	***None Detected***		100% ve
SB-M33.1C	***8,10***	*M33.1 C-1*	***Vermiculite Insulation**/ brown insulation*	*y*	***None Detected***		100% ve
SB-T11.1A		*T11.1 A-1*	***Duct Wrap**/ gray layered insulation*	*y*	***60% Chrysotile***		40% qu,ca

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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	

Approved Signatories:

Jeremy Ayars
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. 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
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

CA Labs
Dedicated to Quality

Crisp Analytical, L.L.C.
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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:**
Tetra Tech
7100 Commercial Ave. Ste 4
Billings, MT 59101

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

Customer Project:
117-8292004, Harlowton Railyard- Storage Building
Turnaround Time:
3 days

CA Labs Project #:
CAL19063628AG

Date: 6/12/2019
Samples Received: 6/7/19 10:30AM
Date Of Sampling: None Detected
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
SB-T11.1B		*T11.1 B-1*	***Duct Wrap**/ gray layered insulation*	*y*	***60% Chrysotile***		40% qu,ca
SB-T11.1C		*T11.1 C-1*	***Duct Wrap**/ gray layered insulation*	*y*	***60% Chrysotile***		40% qu,ca

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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.*
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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	

Approved Signatories:

Jeremy Ayars
Analyst

Technical Manager
Tanner Rasmussen

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
10. TEM analysis suggested

TETRA TECH
618 South 25th Street
Billings, Montana 59101
Phone: 406.248.9161 Fax 406.248.9282

CAL1906 3628

ASBESTOS PLM CHAIN OF CUSTODY

CONTACT INFORMATION

Company:	Tetra Tech, Inc.	**Phone:**	406.248.9161
Primary Contact:	Daniel Lawrence	**Phone / Email:**	Direct – 406.384.0299 cell – 406.208.7781 daniel.lawrence@tetratech.com
Additional Contact:	Roger W. Herman, Jr.	**Phone / Email:**	direct – 406.384.0297 cell – 406.670.4844 roger.herman@tetratech.com
Sampler Name(s) (print):	Daniel Lawrence	**Sampler Signature(s):**	Jay I Hayes

PROJECT INFORMATION

Client:	Snowy Mountain Development Corp	**Project Name:**	Harlowton Railyard – Storage Building
Project Location:	Harlowton, MT	**Project Number:**	117-8292004

PLM INSTRUCTIONS

☒ **PLM EPA 600/R-93/116**

☒ **PLM Point Count, PC 400 Points (All samples greater than 0%, but less than 10%)**

☒ **Multi-Layered Samples:**

☒ Analyze and Report All Separable Layers per EPA 600 ☐ Report Composite for Drywall System per NESHAP (where applicable) ☒ Only Analyze specifically noted layer

☒ **Analyze Until Positive Stop:** Positive Stop by Material Type as Noted

TURNAROUND TIME

☐ **10 Day** ☐ **5 Day** ☒ **3 Day** ☐ **2 Day** ☐ **1 Day** ☐ **Same Day** ☐ **RUSH**, Results by: _____

Relinquished By	Date & Time	VIA	Received By	Date & Time
Daniel Lawrence	6/6/19 1000hrs	FEDEX		

DNgr 6/7/19 10:30 AM

TETRA TECH
618 South 25th Street
Billings, Montana 59101
Phone: 406.248.9161 Fax 406.248.9282

CAL19063628

ASBESTOS PLM CHAIN OF CUSTODY

HOMOGENEOUS ID	LAB ID	SAMPLE DESCRIPTION AND LOCATION	NOTES
SB-M1.1A		Green asphalt roof shingle	
SB-M1.1B		Green asphalt roof shingle	
SB-M1.1C		Green asphalt roof shingle	
SB-M3.1A		Smooth wallboard system	
SB-M3.1B		Smooth wallboard system	
SB-M3.1C		Smooth wallboard system	
SB-M4.1A		Transite panel	
SB-M4.1B		Transite panel	
SB-M4.1C		Transite panel	
SB-M18.1A		Concrete	
SB-M18.1B		Concrete	

DHM 6/7/19 10:30 AM

TETRA TECH
618 South 25th Street
Billings, Montana 59101
Phone: 406.248.9161 Fax 406.248.9282

CAL19063628

ASBESTOS PLM CHAIN OF CUSTODY

HOMOGENEOUS ID	LAB ID	SAMPLE DESCRIPTION AND LOCATION	NOTES
SB-M18.1C		Concrete	
SB-M29.1A		Window glazing	
SB-M29.1B		Window glazing	
SB-M29.1C		Window glazing	
SB-M33.1A		Vermiculite insulation	
SB-M33.1B		Vermiculite insulation	
SB-M33.1C		Vermiculite insulation	
SB-T11.1A		Duct wrap	
SB-T11.1B		Duct wrap	
SB-T11.1C		Duct wrap	

6/7/19 10:30 AM

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Phone 225-751-5632
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Materials Characterization - Bulk Asbestos Analysis

Laboratory Analysis Report - Polarized Light

Tetra Tech

7100 Commercial Ave. Ste 4
Billings, MT 59101

Customer Project: 117-8292004, Harlowton Railyard- Site Area
Reference #: CAL19063633AG Date: 6/12/2019

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 TCEQ# T104704513-15-3 TDH 30-0235
AIHA LAP, LLC Laboratory #102929

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Baton Rouge, LA 70809
Phone 225-751-5632
Fax 225-751-5634

Overview of Project Sample Material Containing Asbestos

Customer Project: 117-8292004, Harlowton Railyard- Site Area **CA Labs Project #:** CAL19063633AG

Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types
SA-M4.1A	*M4.1 A-1*	***Transite Panel Debris**/ gray transite*	***20% Chrysotile***	***gray transite***
SA-M35.1A	*M35.1 A-1*	***Rope Gasket Debris**/ silver surfaced black fibrous covering*	***49% Chrysotile***	***silver surfaced black fibrous covering***
SA-M35.2A	*M35.2 A-1*	***Braided Gasket Debris**/ silver gasketing*	***38% Chrysotile***	***silver gasketing***

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235
AIHA LAP, LLC Laboratory #102929

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

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

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Polarized Light Asbestiform Materials Characterization

Customer Info: **Attn:**
Tetra Tech
7100 Commercial Ave. Ste 4
Billings, MT 59101

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

Customer Project:
117-8292004, Harlowton Railyard- Site Area
Turnaround Time:
3 days

CA Labs Project #:
CAL19063633AG

Date: 6/12/2019
Samples Received: 6/7/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
SA-M4.1A		*M4.1 A-1*	***Transite Panel Debris**/ gray transite*	*y*	***20% Chrysotile***		80% qu,ca
SA-M4.1B		*M4.1 B-1*	***Transite Panel Debris**/ gray transite*		*Positive Stop*		
SA-M4.1C		*M4.1 C-1*	***Transite Panel Debris**/ gray transite*		*Positive Stop*		
SA-M33.1A		*M33.1 A-1*	***Fire Hose Debris**/ black covering*	*y*	***None Detected***	16% ce	84% qu,bi
SA-M33.1B		*M33.1 B-1*	***Fire Hose Debris**/ black covering*	*y*	***None Detected***	18% ce	82% qu,bi
SA-M33.1C		*M33.1 C-1*	***Fire Hose Debris**/ black covering*	*y*	***None Detected***	18% ce	82% qu,bi
SA-M34.1A		*M34.1 A-1*	***Canvas Pipe Wrap Debris**/ black tar*	*y*	***None Detected***		100% qu,bi

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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
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or - organic	pe - perlite	ta - talc	pa - palygorskite (clay)
ma - matrix	qu - quartz	sy - synthetic	

Approved Signatories:

Jeremy Ayars
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. 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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6. Anthophyllite in association with Fibrous Talc
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9. < 1% Result point counted positive
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Polarized Light Asbestiform Materials Characterization

Customer Info: **Attn:**
Tetra Tech
7100 Commercial Ave. Ste 4
Billings, MT 59101

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

Customer Project:
117-8292004, Harlowton Railyard- Site Area
Turnaround Time:
3 days

CA Labs Project #:
CAL19063633AG

Date: 6/12/2019
Samples Received: 6/7/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
		M34.1 A-2	*gray covering*	*y*	***None Detected***	34% ce	66% qu,bi
SA-M34.1B		*M34.1 B-1*	***Canvas Pipe Wrap Debris**/ black tar*	*y*	***None Detected***		100% qu,bi
		M34.1 B-2	*gray covering*	*y*	***None Detected***	33% ce	67% qu,bi
SA-M34.1C		*M34.1 C-1*	***Canvas Pipe Wrap Debris**/ black tar*	*y*	***None Detected***		100% qu,bi
		M34.1 C-2	*gray covering*	*y*	***None Detected***	34% ce	66% qu,bi
SA-M35.1A		*M35.1 A-1*	***Rope Gasket Debris**/ silver surfaced black fibrous covering*	*n*	***49% Chrysotile***		51% qu,bi
SA-M35.1B		*M35.1 B-1*	***Rope Gasket Debris**/ silver surfaced black fibrous covering*		*Positive Stop*		

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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.

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ma - matrix	qu - quartz	sy - synthetic	

Approved Signatories:

Jeremy Ayars
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

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2. Fire Damage no significant fiber damages effecting fibrous percentages
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Polarized Light Asbestiform Materials Characterization

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Customer Project:
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Turnaround Time:
3 days

CA Labs Project #:
CAL19063633AG

Date: 6/12/2019
Samples Received: 6/7/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
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SA-M35.2A		*M35.2 A-1*	***Braided Gasket Debris**/ silver gasketing*	*y*	***38% Chrysotile***		62% qu,bi
SA-M35.2B		*M35.2 B-1*	***Braided Gasket Debris**/ silver gasketing*		*Positive Stop*		
SA-M35.2C		*M35.2 C-1*	***Braided Gasket Debris**/ silver gasketing*		*Positive Stop*		
SA-M36.2A		*M36.2 A-1*	***Fire Brick Debris**/ tan cement/mortar*	*y*	***None Detected***		100% qu,ot
SA-M36.2B		*M36.2 B-1*	***Fire Brick Debris**/ tan cement/mortar*	*y*	***None Detected***		100% qu,ot
SA-M36.2C		*M36.2 C-1*	***Fire Brick Debris**/ brown cement/mortar*	*y*	***None Detected***		100% qu,ot

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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.*
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Approved Signatories:

Jeremy Ayars
Analyst

Technical Manager
Tanner Rasmussen

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
10. TEM analysis suggested

CAL19063633

TETRA TECH
618 South 25th Street
Billings, Montana 59101
Phone: 406.248.9161 Fax 406.248.9282

ASBESTOS PLM CHAIN OF CUSTODY

CONTACT INFORMATION

Company:	Tetra Tech, Inc.	**Phone:**	406.248.9161
Primary Contact:	Daniel Lawrence	**Phone / Email:**	Direct – 406.384.0299 cell – 406.208.7781 daniel.lawrence@tetratech.com
Additional Contact:	Roger W. Herman, Jr.	**Phone / Email:**	direct – 406.384.0297 cell – 406.670.4844 roger.herman@tetratech.com
Sampler Name(s) (print):	Daniel Lawrence	**Sampler Signature(s):**	Jay L Harper

PROJECT INFORMATION

Client:	Snowy Mountain Development Corp	**Project Name:**	Harlowton Railyard – Site Area
Project Location:	Harlowton, MT	**Project Number:**	117-8292004

PLM INSTRUCTIONS

☒ **PLM EPA 600/R-93/116**

☒ **PLM Point Count, PC 400 Points (All samples greater than 0%, but less than 10%)**

☒ **Multi-Layered Samples:**

☒ Analyze and Report All Separable Layers per EPA 600 ☐ Report Composite for Drywall System per NESHAP (where applicable) ☒ Only Analyze specifically noted layer

☒ **Analyze Until Positive Stop:** Positive Stop by Material Type as Noted

TURNAROUND TIME

☐ **10 Day** ☐ **5 Day** ☒ **3 Day** ☐ **2 Day** ☐ **1 Day** ☐ **Same Day** ☐ **RUSH**, Results by: _____

Relinquished By	Date & Time	VIA	Received By	Date & Time
Daniel Lawrence	6/6/19 1000hrs	FEDEX	DNym 6/7/19	10:30 am

TETRA TECH
618 South 25th Street
Billings, Montana 59101
Phone: 406.248.9161 Fax 406.248.9282

CAL1906 3633

ASBESTOS PLM CHAIN OF CUSTODY

HOMOGENEOUS ID	LAB ID	SAMPLE DESCRIPTION AND LOCATION	NOTES
SA-M4.1A		Transite panel debris	
SA-M4.1B		Transite panel debris	
SA-M4.1C		Transite panel debris	
SA-M33.1A		Fire hose debris	
SA-M33.1B		Fire hose debris	
SA-M33.1C		Fire hose debris	
SA-M34.1A		Black canvas pipe wrap debris	
SA-M34.1B		Black canvas pipe wrap debris	
SA-M34.1C		Black canvas pipe wrap debris	
SA-M35.1A		Rope gasket debris	
SA-M35.1B		Rope gasket debris	

DAM 6/7/19 10:30 AM

TETRA TECH
618 South 25th Street
Billings, Montana 59101
Phone: 406.248.9161 Fax 406.248.9282

CAL19063633

ASBESTOS PLM CHAIN OF CUSTODY

HOMOGENEOUS ID	LAB ID	SAMPLE DESCRIPTION AND LOCATION	NOTES
SA-M35.1C		Rope gasket debris	
SA-M35.2A		Braided gasket debris	
SA-M35.2B		Braided gasket debris	
SA-M35.2C		Braided gasket debris	
SA-M36.2A		Fire Brick debris	
SA-M36.2B		Fire Brick debris	
SA-M36.2C		Fire Brick debris	

D Hm 6/7/19 10:30 AM

CA Labs
Dedicated to Quality

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

7100 Commercial Ave. Ste 4
Billings, MT 59101

Customer Project: 117-8292004, Harlowton Railyard- Y Sidewalk
Reference #: CAL19063636AG Date: 6/12/2019

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 TCEQ# T104704513-15-3 TDH 30-0235
AIHA LAP, LLC Laboratory #102929

CA Labs
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Overview of Project Sample Material Containing Asbestos

Customer Project: 117-8292004, Harlowton Railyard- Y Sidewalk **CA Labs Project #:** CAL19063636AG

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 TCEQ# T104704513-15-3 TDH 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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Polarized Light Asbestiform Materials Characterization

Customer Info: **Attn:**
Tetra Tech
7100 Commercial Ave. Ste 4
Billings, MT 59101

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

Customer Project:
117-8292004, Harlowton Railyard- Y Sidewalk
Turnaround Time:
3 days

CA Labs Project #:
CAL19063636AG

Date: 6/12/2019
Samples Received: 6/7/19 10:30AM
Date Of Sampling: None Given
Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
YS-M18.1A		*M18.1 A-1*	***Concrete**/ gray concrete*	*y*	***None Detected***		100% qu,ca
YS-M18.1B		*M18.1 B-1*	***Concrete**/ gray concrete*	*y*	***None Detected***		100% qu,ca
YS-M18.1C		*M18.1 C-1*	***Concrete**/ gray concrete*	*y*	***None Detected***		100% qu,ca

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 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	

Approved Signatories:

Robert Olivarez
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. 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
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

TETRA TECH
618 South 25th Street
Billings, Montana 59101
Phone: 406.248.9161 Fax 406.248.9282

CAL 19063636

ASBESTOS PLM CHAIN OF CUSTODY

CONTACT INFORMATION

Company:	Tetra Tech, Inc.	**Phone:**	406.248.9161
Primary Contact:	Daniel Lawrence	**Phone / Email:**	Direct – 406.384.0299 cell – 406.208.7781 daniel.lawrence@tetratech.com
Additional Contact:	Roger W. Herman, Jr.	**Phone / Email:**	direct – 406.384.0297 cell – 406.670.4844 roger.herman@tetratech.com
Sampler Name(s) (print):	Daniel Lawrence	**Sampler Signature(s):**	

PROJECT INFORMATION

Client:	Snowy Mountain Development Corp	**Project Name:**	Harlowton Railyard – "Y" Sidewalk
Project Location:	Harlowton, MT	**Project Number:**	117-8292004

PLM INSTRUCTIONS

☒ **PLM EPA 600/R-93/116**

☒ **PLM Point Count, PC 400 Points (All samples greater than 0%, but less than 10%)**

☒ **Multi-Layered Samples:**

☒ Analyze and Report All Separable Layers per EPA 600 ☐ Report Composite for Drywall System per NESHAP (where applicable) ☒ Only Analyze specifically noted layer

☒ **Analyze Until Positive Stop:** Positive Stop by Material Type as Noted

TURNAROUND TIME

☐ **10 Day** ☐ **5 Day** ☒ **3 Day** ☐ **2 Day** ☐ **1 Day** ☐ **Same Day** ☐ **RUSH**, Results by:

Relinquished By	Date & Time	VIA	Received By	Date & Time
Daniel Lawrence	6/6/19 1000hrs	FEDEX	6/7/19	10:30 AM

TETRA TECH
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Billings, Montana 59101
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CAL 19063636

ASBESTOS PLM CHAIN OF CUSTODY

HOMOGENEOUS ID	LAB ID	SAMPLE DESCRIPTION AND LOCATION	NOTES
YS-M18.1C		Concrete	"
YS-M18.1C		Concrete	"
YS-M18.1C		Concrete	
"		"	"
"		"	"
"		"	"
"		"	"
"		"	"
"		"	"

6/7/19 10:30 AM

TETRA TECH

ATTACHMENT C

Performance Characteristics Sheet

Performance Characteristic Sheet

EFFECTIVE DATE: **September 24, 2004** **EDITION NO.: 1**

MANUFACTURER AND MODEL:

Make: *Niton LLC*
Tested Model: *XLp 300*
Source: ^{109}Cd
Note: This PCS is also applicable to the equivalent model variations indicated below, for the Lead-in-Paint K+L variable reading time mode, in the XLi and XLp series:

XLi 300A, XLi 301A, XLi 302A and XLi 303A.
XLp 300A, XLp 301A, XLp 302A and XLp 303A.
XLi 700A, XLi 701A, XLi 702A and XLi 703A.
XLp 700A, XLp 701A, XLp 702A, and XLp 703A.

Note: The XLi and XLp versions refer to the shape of the handle part of the instrument. The differences in the model numbers reflect other modes available, in addition to Lead-in-Paint modes. The manufacturer states that specifications for these instruments are identical for the source, detector, and detector electronics relative to the Lead-in-Paint mode.

FIELD OPERATION GUIDANCE

OPERATING PARAMETERS:

Lead-in-Paint K+L variable reading time mode.

XRF CALIBRATION CHECK LIMITS:

0.8 to 1.2 mg/cm^2 (inclusive)

The calibration of the XRF instrument should be checked using the paint film nearest 1.0 mg/cm^2 in the NIST Standard Reference Material (SRM) used (e.g., for NIST SRM 2579, use the 1.02 mg/cm^2 film).

If readings are outside the acceptable calibration check range, follow the manufacturer's instructions to bring the instruments into control before XRF testing proceeds.

SUBSTRATE CORRECTION:

For XRF results using Lead-in-Paint K+L variable reading time mode, substrate correction is <u>not</u> needed for:

Brick, Concrete, Drywall, Metal, Plaster, and Wood

INCONCLUSIVE RANGE OR THRESHOLD:

K+L MODE READING DESCRIPTION	SUBSTRATE	THRESHOLD (mg/cm^2)
Results not corrected for substrate bias on any substrate	Brick	1.0
	Concrete	1.0
	Drywall	1.0
	Metal	1.0
	Plaster	1.0
	Wood	1.0

BACKGROUND INFORMATION

EVALUATION DATA SOURCE AND DATE:

This sheet is supplemental information to be used in conjunction with Chapter 7 of the HUD *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* ("HUD Guidelines"). Performance parameters shown on this sheet are calculated from the EPA/HUD evaluation using archived building components. Testing was conducted in August 2004 on 133 testing combinations. The instruments that were used to perform the testing had new sources; one instrument's was installed in November 2003 with 40 mCi initial strength, and the other's was installed June 2004 with 40 mCi initial strength.

OPERATING PARAMETERS:

Performance parameters shown in this sheet are applicable only when properly operating the instrument using the manufacturer's instructions and procedures described in Chapter 7 of the HUD Guidelines.

SUBSTRATE CORRECTION VALUE COMPUTATION:

Substrate correction is not needed for brick, concrete, drywall, metal, plaster or wood when using Lead-in-Paint K+L variable reading time mode, the normal operating mode for these instruments. If substrate correction is desired, refer to Chapter 7 of the HUD Guidelines for guidance on correcting XRF results for substrate bias.

EVALUATING THE QUALITY OF XRF TESTING:

Randomly select ten testing combinations for retesting from each house or from two randomly selected units in multifamily housing. Use the K+L variable time mode readings.

Conduct XRF retesting at the ten testing combinations selected for retesting.

Determine if the XRF testing in the units or house passed or failed the test by applying the steps below.

Compute the Retest Tolerance Limit by the following steps:

Determine XRF results for the original and retest XRF readings. Do not correct the original or retest results for substrate bias. In single-family housing a result is defined as the average of three readings. In multifamily housing, a result is a single reading. Therefore, there will be ten original and ten retest XRF results for each house or for the two selected units.

Calculate the average of the original XRF result and retest XRF result for each testing combination.

Square the average for each testing combination.

Add the ten squared averages together. Call this quantity C.

Multiply the number C by 0.0072. Call this quantity D.

Add the number 0.032 to D. Call this quantity E.

Take the square root of E. Call this quantity F.

Multiply F by 1.645. The result is the Retest Tolerance Limit.

Compute the average of all ten original XRF results.

Compute the average of all ten re-test XRF results.

Find the absolute difference of the two averages.

If the difference is less than the Retest Tolerance Limit, the inspection has passed the retest. If the difference of the overall averages equals or exceeds the Retest Tolerance Limit, this procedure should be repeated with ten new testing combinations. If the difference of the overall averages is equal to or greater than the Retest Tolerance Limit a second time, then the inspection should be considered deficient.

Use of this procedure is estimated to produce a spurious result approximately 1% of the time. That is, results of this procedure will call for further examination when no examination is warranted in approximately 1 out of 100 dwelling units tested.

TESTING TIMES:

For the Lead-in-Paint K+L variable reading time mode, the instrument continues to read until it is moved away from the testing surface, terminated by the user, or the instrument software indicates the reading is complete. The following table provides testing time information for this testing mode. The times have been adjusted for source decay, normalized to the initial source strengths as noted above. Source strength and type of substrate will affect actual testing times. At the time of testing, the instruments had source strengths of 26.6 and 36.6 mCi.

Testing Times Using K+L Reading Mode (Seconds)						
	All Data			Median for laboratory-measured lead levels (mg/cm^2)		
Substrate	25^{th} Percentile	Median	75^{th} Percentile	Pb < 0.25	0.25 ≤ Pb<1.0	1.0 ≤ Pb
Wood Drywall	4	11	19	11	15	11
Metal	4	12	18	9	12	14
Brick Concrete Plaster	8	16	22	15	18	16

CLASSIFICATION RESULTS:

XRF results are classified as positive if they are greater than or equal to the threshold, and negative if they are less than the threshold.

DOCUMENTATION:

A document titled *Methodology for XRF Performance Characteristic Sheets* provides an explanation of the statistical methodology used to construct the data in the sheets, and provides empirical results from using the recommended inconclusive ranges or thresholds for specific XRF instruments. For a copy of this document call the National Lead Information Center Clearinghouse at 1-800-424-LEAD.

This XRF Performance Characteristic Sheet was developed by the Midwest Research Institute (MRI) and QuanTech, Inc., under a contract between MRI and the XRF manufacturer. HUD has determined that the information provided here is acceptable when used as guidance in conjunction with Chapter 7, Lead-Based Paint Inspection, of HUD's *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing.*

TETRA TECH

ATTACHEMENT D

XRF Results

Harlowton Railyard
Wheatland County
Harlowton, Montana

Reading No	Component	Substrate	Side	Condition	Color	Location	Room	Results	PbC	Units
1									2.48	cps
2			Cal Check					Negative	0.02	mg / cm ^2
3			Cal Check					Positive	1.1	mg / cm ^2
4			Cal Check					Positive	1.6	mg / cm ^2
5			Cal Check					Positive	3.4	mg / cm ^2
6	Wall	Drywall	A	Intact	Green	Formans Office	101	Negative	0.5	mg / cm ^2
7	Wall	Transite	A	Intact	Green	Formans Office	101	Negative	0.6	mg / cm ^2
8	Door Casing	Wood	A	Intact	Green	Formans Office	101	Negative	0.7	mg / cm ^2
9	Door Casing	Wood	C	Intact	Green	Formans Office	101	Negative	0.7	mg / cm ^2
10	Wall	Drywall	C	Intact	Green	Formans Office	102	Negative	0.11	mg / cm ^2
11	Wall	Transite	C	Intact	Green	Formans Office	102	Negative	0.8	mg / cm ^2
12	Window Sash	Transite	B	Intact	Green	Formans Office	102	Negative	0.05	mg / cm ^2
13	Window Casing	Transite	B	Intact	Green	Formans Office	102	Negative	0.04	mg / cm ^2
14	Wall	Transite	C	Intact	Green	Formans Office	103	Negative	0.25	mg / cm ^2
15	Wall	Drywall	C	Intact	Green	Formans Office	103	Negative	0.12	mg / cm ^2
16	Wall trim	Wood	C	Intact	Green	Formans Office	103	Negative	0.4	mg / cm ^2
17	Window Sash	Wood	C	Intact	Green	Formans Office	103	Negative	0.08	mg / cm ^2
18	Window Casing	Wood	C	Intact	Green	Formans Office	103	Negative	0.08	mg / cm ^2
19	Window Sill	Wood	C	Intact	Green	Formans Office	103	Negative	0.08	mg / cm ^2
20	Door Casing	Wood	D	Intact	Green	Formans Office	103	Negative	0.7	mg / cm ^2
21	Baseboard	Wood	D	Intact	Green	Formans Office	103	Negative	0.7	mg / cm ^2
22	Wall	Drywall	A	Intact	Green	Formans Office	104	Negative	0.08	mg / cm ^2
23	Wall	Transite	B	Intact	Green	Formans Office	104	Negative	0.6	mg / cm ^2
24	Door Casing	Wood	C	Intact	Green	Formans Office	104	Negative	0.7	mg / cm ^2
25	Baseboard	Wood	C	Intact	Green	Formans Office	104	Negative	0.6	mg / cm ^2
26	Window Sash	Wood	A	Intact	Green	Formans Office	104	Negative	0.1	mg / cm ^2
27	Window Casing	Wood	A	Intact	Green	Formans Office	104	Negative	0.04	mg / cm ^2
28	Wall	Drywall	C	Intact	Green	Formans Office	105	Negative	0.11	mg / cm ^2
29	Wall	Transite	C	Intact	Green	Formans Office	105	Negative	0.7	mg / cm ^2
30	Pipe	Metal	C	Intact	Green	Formans Office	105	Positive	1.1	mg / cm ^2
31	Shelf	Wood	C	Intact	Green	Formans Office	105	Positive	3.9	mg / cm ^2

Harlowton Railyard
Wheatland County
Harlowton, Montana

32	Window sash	Wood	C	Intact	Green	Formans Office	105	Negative	0.06	mg / cm ^2
33	Window Casing	Wood	C	Intact	Green	Formans Office	105	Negative	0.09	mg / cm ^2
34	Window Sill	Wood	C	Intact	Green	Formans Office	105	Negative	0.19	mg / cm ^2
35	Baseboard	Wood	D	Intact	Green	Formans Office	105	Negative	0.5	mg / cm ^2
36	Wall	Drywall	A	Intact	Green	Formans Office	106	Negative	0.1	mg / cm ^2
37	Wall	Transite	A	Intact	Green	Formans Office	106	Negative	0.8	mg / cm ^2
38	Window Sash	Wood	A	Intact	Green	Formans Office	106	Negative	0.04	mg / cm ^2
39	Window Casing	Wood	A	Intact	Green	Formans Office	106	Negative	0.06	mg / cm ^2
40	Window Sill	Wood	A	Intact	Green	Formans Office	106	Negative	0.04	mg / cm ^2
41	Wall	Drywall	D	Intact	Green	Formans Office	108	Negative	0.07	mg / cm ^2
42	Wall	Transite	D	Intact	Green	Formans Office	108	Negative	0.6	mg / cm ^2
43	Door	Wood	D	Intact	Green	Formans Office	108	Negative	0.8	mg / cm ^2
44	Door Casing	Wood	D	Intact	Green	Formans Office	108	Negative	0.4	mg / cm ^2
45	Baseboard	Wood	D	Intact	Green	Formans Office	108	Negative	0.29	mg / cm ^2
46	Window Sash	Wood	A	Intact	Green	Formans Office	108	Negative	0.08	mg / cm ^2
47	Door Casing	Wood	A	Intact	Green	Formans Office	108	Negative	0.03	mg / cm ^2
48	Exterior wall	Wood	B	Intact	White	Formans Office	NA	Negative	0.03	mg / cm ^2
49	Exterior wall	Wood	C	Intact	Grey	Formans Office	NA	Negative	0.02	mg / cm ^2
50	Door	Wood	A	Intact	Green	Formans Office	109	Negative	0.8	mg / cm ^2
51	Door Casing	Wood	A	Intact	Green	Formans Office	109	Negative	0.28	mg / cm ^2
52	Wall	Wood	D	Intact	Green	Formans Office	109	Negative	0.22	mg / cm ^2
53			Cal Check					Negative	0	mg / cm ^2
54			Cal Check					Positive	1	mg / cm ^2
55			Cal Check					Positive	1.5	mg / cm ^2
56			Cal Check					Positive	4	mg / cm ^2
57			Cal Check					Positive	3	mg / cm ^2
58			Cal Check				NA	Negative	0	mg / cm ^2
59			Cal Check				NA	Positive	1.3	mg / cm ^2
60			Cal Check				NA	Positive	1.2	mg / cm ^2
61			Cal Check				NA	Positive	1.4	mg / cm ^2
62			Cal Check				NA	Positive	3.1	mg / cm ^2
63	Door		C	Deteriorated	Red	Oil Tank Tower	NA	Negative	0.04	mg / cm ^2

Harlowton Railyard
Wheatland County
Harlowton, Montana

64	Ladder	Metal	F	Deteriorated	Red	Oil Tank Tower	NA	Negative	0.6	mg / cm ^2
65	Hopper	Metal	A	Deteriorated	Red	Metal Rack	NA	Negative	0.8	mg / cm ^2
66	Control Box	Metal	A	Intact	silver	Metal Rack	NA	Negative	0.06	mg / cm ^2
67	I-beam	Metal	A	Intact	Black	Metal Rack	NA	Positive	28	mg / cm ^2
68	I-beam	Metal	C	Intact	Black	Metal Rack	NA	Positive	18.6	mg / cm ^2
69	Ladder	Metal	C	Intact	Black	Metal Rack	NA	Positive	8.5	mg / cm ^2
70	Ladder	Metal	A	Intact	Black	Metal Rack	NA	Positive	12.3	mg / cm ^2
71	Tank	Metal	A	Intact	Black	Metal Rack	NA	Positive	2.6	mg / cm ^2
72	Wall	Wood	C	Deteriorated	Red	Pump Cover	NA	Negative	0.1	mg / cm ^2
73	Wall	Wood	A	Deteriorated	Red	Pump Cover	NA	Negative	0.05	mg / cm ^2
74									2.38	cps
75			Cal Check					Negative	0	mg / cm ^2
76			Cal Check					Positive	1.2	mg / cm ^2
77			Cal Check					Positive	1.5	mg / cm ^2
78			Cal Check					Positive	3.3	mg / cm ^2
79	Wall	Wood	A	Deteriorated	Green	Round House	100	Negative	0.6	mg / cm ^2
80	Wall	Wood	A	Deteriorated	Red	Round House	100	Negative	0.4	mg / cm ^2
81	Wall	Brick	C	Deteriorated	Green	Round House	100	Negative	0.08	mg / cm ^2
82	Wall	Brick	C	Deteriorated	White	Round House	100	Negative	0.16	mg / cm ^2
83	Wall	Brick	C	Deteriorated	Maroon	Round House	100	Positive	1.5	mg / cm ^2
84	Door Trim	Wood	C	Deteriorated	Green	Round House	100	Negative	0.01	mg / cm ^2
85	Window Frame	Wood	C	Deteriorated	Maroon	Round House	100	Negative	0.09	mg / cm ^2
86	Window Frame	Wood	C	Deteriorated	Maroon	Round House	100	Negative	0.06	mg / cm ^2
87	Window Sash	Wood	C	Deteriorated	Maroon	Round House	100	Negative	0.04	mg / cm ^2
88	Column	Wood	Interior	Deteriorated	White	Round House	100	Positive	1.6	mg / cm ^2
89	Column	Wood	Interior	Deteriorated	Red	Round House	100	Negative	0.3	mg / cm ^2
90	Column	Wood	Interior	Deteriorated	Yellow	Round House	100	Positive	3.3	mg / cm ^2
91	Column	Wood	Interior	Deteriorated	Green	Round House	100	Negative	0.5	mg / cm ^2
92	Column	Wood	Interior	Deteriorated	Red	Round House	100	Positive	1.6	mg / cm ^2
93	Door Lock	Metal	B	Deteriorated	Red	Round House	100	Negative	0	mg / cm ^2
94	Main Power Switch	Metal	A	Deteriorated	Yellow	Round House	101	Positive	2.5	mg / cm ^2
95	Main Power Switch 2	Metal	A	Deteriorated	Yellow	Round House	101	Positive	4.2	mg / cm ^2

Harlowton Railyard
Wheatland County
Harlowton, Montana

96	Welder Main	Metal	A	Deteriorated	Yellow	Round House	101	Positive	2.2	mg / cm ^2
97	Heater Main	Metal	A	Deteriorated	Yellow	Round House	101	Positive	2.5	mg / cm ^2
98	Turn Table Main	Metal	A	Deteriorated	Blue	Round House	101	Negative	0	mg / cm ^2
99	Switch Box Sump Pump	Metal	D	Deteriorated	Yellow	Round House	100	Positive	3.2	mg / cm ^2
100	Exterior Door Hinge	Metal	B	Deteriorated	Red	Round House	NA	Positive	1.7	mg / cm ^2
101	Door	Metal	A	Deteriorated	Red	Round House	NA	Negative	0.1	mg / cm ^2
102	Wall	brick	A	Deteriorated	Maroon	Round House	NA	Negative	0.04	mg / cm ^2
103	Door Weight	brick	A	Deteriorated	Maroon	Round House	NA	Negative	0.07	mg / cm ^2
104	Wall	brick	A	Deteriorated	White	Round House	NA	Negative	0.6	mg / cm ^2
105	Wall	Wood	A	Deteriorated	White	Round House	NA	Positive	2.2	mg / cm ^2
106	Wall	Wood	A	Deteriorated	Red	Round House	NA	Positive	3.5	mg / cm ^2
107	Door	Metal	A	Deteriorated	Red	Round House	NA	Negative	0.4	mg / cm ^2
108	Wall	Wood	D	Deteriorated	Red	Round House	NA	Negative	0.24	mg / cm ^2
109	Window Casing	Wood	D	Deteriorated	Red	Round House	NA	Negative	0.15	mg / cm ^2
110	Wall	Wood	A	Deteriorated	Red	Round House	NA	Negative	0.19	mg / cm ^2
111	Window sash	Wood	C	Deteriorated	Grey	Round House	NA	Negative	0.22	mg / cm ^2
112			Cal Check					Negative	0	mg / cm ^2
113			Cal Check					Positive	1.1	mg / cm ^2
114			Cal Check					Positive	1.6	mg / cm ^2
115			Cal Check					Positive	3.8	mg / cm ^2
116									2.27	cps
117			Cal Check					Negative	0	mg / cm ^2
118			Cal Check					Positive	1.1	mg / cm ^2
119			Cal Check					Positive	2.1	mg / cm ^2
120			Cal Check					Positive	1.5	mg / cm ^2
121			Cal Check					Positive	3.4	mg / cm ^2
122	Wall	Drywall	A	Intact	Green	Storage Building	101	Negative	0.06	mg / cm ^2
123	Wall	Drywall	B	Intact	Green	Storage Building	101	Negative	0.13	mg / cm ^2
124	Wall	Wood	B	Intact	White	Storage Building	101	Negative	0.16	mg / cm ^2
125	Wall	Wood	B	Intact	Black	Storage Building	101	Negative	0.16	mg / cm ^2
126	Window Casing	Wood	B	Intact	Green	Storage Building	101	Negative	0.07	mg / cm ^2
127	Wall	Drywall	C	Intact	Green	Storage Building	101	Negative	0.06	mg / cm ^2

Harlowton Railyard
Wheatland County
Harlowton, Montana

128	Ceiling	Drywall		Intact	Green	Storage Building	101	Negative	0.02	mg / cm ^2
129	Light Fixture	Metal		Intact	White	Storage Building	101	Negative	0	mg / cm ^2
130	Hanging Heater	Metal		Intact	Silver	Storage Building	101	Negative	0.01	mg / cm ^2
131	Fan Motor	Metal		Intact	Silver	Storage Building	101	Negative	0	mg / cm ^2
132	Piping	Metal		Intact	Silver	Storage Building	101	Positive	1.2	mg / cm ^2
133	Control Box	Metal	C	Intact	Grey	Storage Building	101	Negative	0.02	mg / cm ^2
134	Heater Switch	Metal	C	Intact	Yellow	Storage Building	101	Negative	0.02	mg / cm ^2
135	Conduit	Metal	C	Intact	Green	Storage Building	101	Negative	0.03	mg / cm ^2
136	Conduit	Metal	A	Intact	Green	Storage Building	101	Negative	0.14	mg / cm ^2
137	Brakets	Metal	A	Intact	Green	Storage Building	101	Negative	0.01	mg / cm ^2
138	Main Switch Box	Metal	A	Intact	Yellow	Storage Building	101	Negative	0.08	mg / cm ^2
139	Window Trim	Wood	A	Intact	Green	Storage Building	101	Negative	0.04	mg / cm ^2
140	Window Casing	Wood	A	Intact	Green	Storage Building	101	Negative	0.23	mg / cm ^2
141	Exterior Door Trim	Wood	C	Intact	White	Storage Building	NA	Negative	0	mg / cm ^2
142	Door Casing	Wood	C	Intact	Green	Storage Building	NA	Negative	0.9	mg / cm ^2
143	Disconnect box	Metal	D	Intact	Black	Storage Building	101	Negative	0.02	mg / cm ^2
144	Exterior Wall	Metal	C	Intact	Grey	Storage Building	NA	Negative	0	mg / cm ^2
145	Exterior Wall	Metal	D	Intact	Grey	Storage Building	NA	Negative	0	mg / cm ^2
146	Exterior Wall	Metal	A	Intact	Grey	Storage Building	NA	Negative	0	mg / cm ^2
147	Exterior Wall	Metal	B	Intact	Grey	Storage Building	NA	Negative	0	mg / cm ^2
148	Electrical Box	Metal	B	Intact	Grey	Storage Building	NA	Negative	0	mg / cm ^2
149			Cal Check					Negative	0	mg / cm ^2
150			Cal Check					Positive	1.1	mg / cm ^2
151			Cal Check					Positive	1.6	mg / cm ^2
152			Cal Check					Positive	3.5	mg / cm ^2

TETRA TECH

ATTACHMENT E

Lead TCLP Laboratory Analytical Report

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592248 - Lead Paint
Project: Harlowton Railyard - Formans Office
Project No.: 117-8292004

LEAD PAINT SAMPLE ANALYSIS SUMMARY

Lab No.: 6809814
Client No.: FO-01

Description:
Location: Forman's Office TCLP

Result (% by Weight): 0.20
Result (ppm): 2000
Comments:

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 6/12/2019
Date Analyzed: 06/18/2019
Signature:
Analyst: Chad Shaffer

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592248 - Lead Paint
Project: Harlowton Railyard - Formans Office
Project No.: 117-8292004

Appendix to Analytical Report:

Customer Contact: Roger Herman
Method: ASTM D3335-85a, US EPA SW846 3050B:7000B

This appendix seeks to promote greater understanding of any observations, exceptions, special instructions, or circumstances that the laboratory needs to communicate to the client concerning the above samples. The information below is used to help promote your ability to make the most informed decisions for you and your customers. Please note the following points of contact for any questions you may have.

iATL Customer Service: customerservice@iatl.com
iATL Office Manager:wchampion@iatl.com
iATL Account Representative: Shirley Clark
Sample Login Notes: See Batch Sheet Attached
Sample Matrix: Paint
Exceptions Noted: See Following Pages

General Terms, Warrants, Limits, Qualifiers:

General information about iATL capabilities and client/laboratory relationships and responsibilities are spelled out in iATL policies that are listed at www.iATL.com and ir our Quality Assurance Manual per ISO 17025 standard requirements. The information therein is a representation of iATL definitions and policies for turnaround times, sample submittal, collection media, blank definitions, quantification issues and limit of detection, analytical methods and procedures, sub-contracting policies, results reporting options, fees, terms, and discounts, confidentiality, sample archival and disposal, and data interpretation.

iATL warrants the test results to be of a precision normal for the type and methodology employed for each sample submitted. iATL disclaims any other warrants, expressed or implied, including warranty of fitness for a particular purpose and warranty of merchantability. iATL accepts no legal responsibility for the purpose for which the client uses test results. Any analytical work performed must be governed by our Standard Terms and Conditions. Prices, methods and detection limits may be changed without notification. Please contact your Customer Service Representative for the most current information.

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Information Pertinent to this Report:

Analysis by ASTM D3335-85a by AAS

Certification:
- National Lead Laboratory Program (NLLAP): AIHA-LAP, LLC No. 100188
- NYSDOH-ELAP No. 11021

This report meets the standards set forth in the EPA's National Lead Laboratory Accreditation Program (NLLAP) through the Laboratory Quality System Requirements (LQSR) Revision 3.0 November 5, 2007. All Environmental Lead Proficiency Analytical Testing (ELPAT) is through the AIHA-PAT established program.

Regulatory limit is 0.5% lead by weight (EPA/HUD guidelines). Recommend multiple sampling for all samples less than regulatory limit for confirmation.
All results are based on the samples as received at the lab. iATL assumes that appropriate sampling methods have been used and that the data upon which these results are based have been accurately supplied by the client.
Method Detection Limit (MDL) per EPA Method 40CFR Part 136 Apendix B.
Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies.
LSD=0.2 ppm MDL=0.005% by weight. RL= 0.010% by weight (based upon 100 mg sampled).

Disclaimers / Qualifiers:

There may be some samples in this project that have a "NOTE:" associated with a sample result. We use added disclaimers or qualifiers to inform the client about something that requires further explanation. Here is a complete list with highlighted disclaimers pertinent to this project. For a full explanation of these and other disclaimers, please inquire at **customerservice@iatl.com.**

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Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592248 - Lead Paint
Project: Harlowton Railyard - Formans Office
Project No.: 117-8292004

* Insufficient sample provided to perform QC reanalysis (<200 mg)
** Not enough sample provided to analyze (<50 mg)
*** Matrix / substrate interference possible.

< less than sign, signifies none-detected below the empirical value based upon sub-sampled mass. This is often below the Reporting Limit (see above).

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CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592248 - Lead TCLP
Project: Harlowton Railyard - Formans Office
Project No.: 117-8292004

LEAD TCLP SAMPLE ANALYSIS SUMMARY

Lab No.:6809814
Client No.:FO-01

Description:
Location: Forman's Office TCLP

Total Lead (ppm): 2000
TCLP Result (mg/L): 0.30

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 6/12/2019
Date Analyzed: 06/19/2019
Signature:
Analyst: Chad Shaffer

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592248 - Lead TCLP
Project: Harlowton Railyard - Formans Office
Project No.: 117-8292004

Appendix to Analytical Report:

Customer Contact: Roger Herman
Analysis: AAS - US EPA 1311

This appendix seeks to promote greater understanding of any observations, exceptions, special instructions, or circumstances that the laboratory needs to communicate to the client concerning the above samples. The information below is used to help promote your ability to make the most informed decisions for you and your customers. Please note the following points of contact for any questions you may have.

iATL Customer Service: customerservice@iatl.com
iATL Office Manager:wchampion@iatl.com
iATL Account Representative: Shirley Clark
Sample Matrix: Various
Exceptions Noted: See Following Pages

General Terms, Warrants, Limits, Qualifiers:

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iATL warrants the test results to be of a precision normal for the type and methodology employed for each sample submitted. iATL disclaims any other warrants, expressed or implied, including warranty of fitness for a particular purpose and warranty of merchantability. iATL accepts no legal responsibility for the purpose for which the client uses test results. Any analytical work performed must be governed by our Standard Terms and Conditions. Prices, methods and detection limits may be changed without notification. Please contact your Customer Service Representative for the most current information.

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This report shall not be reproduced except in full, without written approval of the laboratory.

Information Pertinent to this Report:

Analysis: Toxicity Characteristic Leaching Procedure (TCLP) by AAS: USEPA 1311

Certification: - NATIONAL LEAD LABORATORY ACCREDITATION PROGRAM (NLLAP)
NYSDOH-ELAP No. 11021

TCLP threshold value is 5.0 mg/L.

All results are based on the samples as received at the lab. iATL assumes that appropriate sampling methods have been used and that the data upon which these results are based have been accurately supplied by the client.
Method Detection Limit (MDL) per EPA Method 40 CFR Part 136 Appendix B. Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies.
LSD = 0.2 ppmMDL = 4.7 mg/kgRL = 10 mg/kg (based upon 1000 mg sampled). Mg/kg = ppm.
Sample results are not corrected for contamination by field or analytical blanks.

* Samples containing 100 ppm total lead or more require TCLP analysis (Ref. 1311 Sec 1.2).

Disclaimers / Qualifiers:

There may be some samples in this project that have a "NOTE:" associated with a sample result. We use added disclaimers or qualifiers to inform the client about something that requires further explanation. Here is a complete list with highlighted disclaimers pertinent to this project. For a full explanation of these and other disclaimers, please inquire at **customerservice@iatl.com.**

Note: Insufficient material to provide TCLP analysis.(<55grams)

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway, Suite B • Mount Laurel, NJ 08054
Phone: 877-428-4285/856-231-9449 • Fax: 856-231-9818

Chain of Custody

– Environmental Lead –

Contact Information

Client Company:	tetra tech	**Project Number:**	117-8292004
Office Address:	7100 Commercial Ave. Suite 4	**Project Name:**	Harlowton Railyard - Formans Office
City, State, Zip:	Billings, Montana 59101	**Primary Contact:**	Jay Harper
Fax Number:		**Office Phone:**	406-248-9161
Email Address:	jay.harper@tetratech.com	**Cell Phone:**	406-671-5690

iATL is accredited by the National Lead Laboratory Accreditation Program (NLLAP) to perform analytical testing of environmental samples for lead (Pb). The accreditation is through AIHA-LAP, LLC and several other nationally recognized state programs.

Matrix/Method:

- ☐ Paint by AAS: ASTM D3335-85a, 2009
- ☐ Wipe/Dust by AAS: SW 846: 3050B: 700B, 2010
- ☐ Air by AAS: NIOSH 7082, 1994
- ☐ Soil by AAS: EPA SW 846 (Soil)
- ☐ Water by AAS-GF: ASTM D3559-03D, US EPA 200.9
- ☐ Other Metals (Cd, Zn, Cr) by AAS
- ☑ Toxicity Characteristic Leaching Procedure (TCLP) by AAS: US EPA 1311
- ☐ Other _____

Special Instructions:

_____

_____

Turnaround Time

Preliminary Results Requested Date: 6-19-2019 (Specific date / time)

☐ Verbal ☒ Email ☐ Fax

☐ 10 Day ☒ 5 Day ☐ 3 Day ☐ 2 Day ☐ 1 Day* ☐ 12 Hour** ☐ 6 Hour** ☐ RUSH**

* End of next business day unless otherwise specified. ** Matrix Dependent. ***Please notify the lab before shipping***

Chain of Custody

Relinquished (Name/Organization):	Jay Harper	Date:	6-11-2019	Time:	1400
Received (Name / iATL):		Date:		Time:	
Sample Login (Name / iATL):		Date:		Time:	
Analysis(Name(s) / iATL):		Date:		Time:	
QA/QC Review (Name / iATL):		Date:		Time:	
Archived / Released: _____	QA/QC InterLAB Use: _____	Date:		Time:	

iATL INTERNATIONAL
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Phone: 877-428-4285/856-231-9449 • Fax: 856-231-9818

Sample Log

–Environmental Lead –

Client: Tetra Tech Project: Harlowton Railyard- Formans Office

Sampling Date/Time: 6-6-2019

Client Sample #	iATL #	Location/ Description	Flow Rate	Start End	Sampling time (min)	Area (ft2) Volume (L)	Results ( )
FO-01		Formans office TCLP	N/A	N/A	N/A	N/A	

* = *Insufficient Sample Provided to Perform QC Reanalysis (<200mg)*
** = *Insufficient Sample Provided to Analyze (<50mg) ***= Matrix / Substrate Interference Possible*
FB = Method Requires the submittal of blank(s). ML = Multi Layered Sample. May result in inconsistent results.
These **preliminary results** are issued by iATL to expedite procedures by clients based upon the above data. iATL assumes that all of the sampling methods and data upon which these results are based, has been accurately supplied by the client. These results may not have been reviewed by the Laboratory Director. Final Certificate of Analysis will follow these preliminary results. The signed COA is to be considered the official results. All EPA, HUD, and NJDEP conditions apply.

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592249 - Lead Paint
Project: Harlowton Railyard - Metal Rack
Project No.: 117-8292004

LEAD PAINT SAMPLE ANALYSIS SUMMARY

Lab No.: 6809815
Client No.: FO-01

Description:
Location: Metal Rack TCLP

Result (% by Weight): 0.32
Result (ppm): 3200
Comments:

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 6/12/2019
Date Analyzed: 06/18/2019
Signature:
Analyst: Chad Shaffer

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client:	Tetra Tech	Report Date:	6/19/2019
	7100 Commercial Ave, Suite 4	Report No.:	592249 - Lead Paint
	Billings MT 59101	Project:	Harlowton Railyard - Metal Rack
		Project No.:	117-8292004
Client:	TET143		

Appendix to Analytical Report:

Customer Contact: Roger Herman
Method: ASTM D3335-85a, US EPA SW846 3050B:7000B

This appendix seeks to promote greater understanding of any observations, exceptions, special instructions, or circumstances that the laboratory needs to communicate to the client concerning the above samples. The information below is used to help promote your ability to make the most informed decisions for you and your customers. Please note the following points of contact for any questions you may have.

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iATL Office Manager: wchampion@iatl.com
iATL Account Representative: Shirley Clark
Sample Login Notes: See Batch Sheet Attached
Sample Matrix: Paint
Exceptions Noted: See Following Pages

General Terms, Warrants, Limits, Qualifiers:

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iATL warrants the test results to be of a precision normal for the type and methodology employed for each sample submitted. iATL disclaims any other warrants, expressed or implied, including warranty of fitness for a particular purpose and warranty of merchantability. iATL accepts no legal responsibility for the purpose for which the client uses test results. Any analytical work performed must be governed by our Standard Terms and Conditions. Prices, methods and detection limits may be changed without notification. Please contact your Customer Service Representative for the most current information.

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This report shall not be reproduced except in full, without written approval of the laboratory.

Information Pertinent to this Report:

Analysis by ASTM D3335-85a by AAS

Certification:
- National Lead Laboratory Program (NLLAP): AIHA-LAP, LLC No. 100188
- NYSDOH-ELAP No. 11021

This report meets the standards set forth in the EPA's National Lead Laboratory Accreditation Program (NLLAP) through the Laboratory Quality System Requirements (LQSR) Revision 3.0 November 5, 2007. All Environmental Lead Proficiency Analytical Testing (ELPAT) is through the AIHA-PAT established program.

Regulatory limit is 0.5% lead by weight (EPA/HUD guidelines). Recommend multiple sampling for all samples less than regulatory limit for confirmation.
All results are based on the samples as received at the lab. iATL assumes that appropriate sampling methods have been used and that the data upon which these results are based have been accurately supplied by the client.
Method Detection Limit (MDL) per EPA Method 40CFR Part 136 Apendix B.
Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies.
LSD=0.2 ppm MDL=0.005% by weight. RL= 0.010% by weight (based upon 100 mg sampled).

Disclaimers / Qualifiers:

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Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client:	Tetra Tech	Report Date:	6/19/2019
	7100 Commercial Ave, Suite 4	Report No.:	592249 - Lead Paint
	Billings MT 59101	Project:	Harlowton Railyard - Metal Rack
		Project No.:	117-8292004
Client:	TET143		

* Insufficient sample provided to perform QC reanalysis (<200 mg)
** Not enough sample provided to analyze (<50 mg)
*** Matrix / substrate interference possible.

< less than sign, signifies none-detected below the empirical value based upon sub-sampled mass. This is often below the Reporting Limit (see above).

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Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592249 - Lead TCLP
Project: Harlowton Railyard - Metal Rack
Project No.: 117-8292004

LEAD TCLP SAMPLE ANALYSIS SUMMARY

Lab No.:6809815
Client No.:FO-01

Description:
Location: Metal Rack TCLP

Total Lead (ppm): 3200
TCLP Result (mg/L): 5.8

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 6/12/2019
Date Analyzed: 06/19/2019
Signature: Chad Shaffer
Analyst: Chad Shaffer

Approved By: Frank E. Ehrenfeld, III
Laboratory Director

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592249 - Lead TCLP
Project: Harlowton Railyard - Metal Rack
Project No.: 117-8292004

Appendix to Analytical Report:

Customer Contact: Roger Herman
Analysis: AAS - US EPA 1311

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iATL Office Manager:wchampion@iatl.com
iATL Account Representative: Shirley Clark
Sample Matrix: Various
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iATL warrants the test results to be of a precision normal for the type and methodology employed for each sample submitted. iATL disclaims any other warrants, expressed or implied, including warranty of fitness for a particular purpose and warranty of merchantability. iATL accepts no legal responsibility for the purpose for which the client uses test results. Any analytical work performed must be governed by our Standard Terms and Conditions. Prices, methods and detection limits may be changed without notification. Please contact your Customer Service Representative for the most current information.

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Information Pertinent to this Report:

Analysis: Toxicity Characteristic Leaching Procedure (TCLP) by AAS: USEPA 1311

Certification: - NATIONAL LEAD LABORATORY ACCREDITATION PROGRAM (NLLAP)
NYSDOH-ELAP No. 11021

TCLP threshold value is 5.0 mg/L.

All results are based on the samples as received at the lab. iATL assumes that appropriate sampling methods have been used and that the data upon which these results are based have been accurately supplied by the client.
Method Detection Limit (MDL) per EPA Method 40 CFR Part 136 Appendix B. Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies.
LSD = 0.2 ppmMDL = 4.7 mg/kgRL = 10 mg/kg (based upon 1000 mg sampled). Mg/kg = ppm.
Sample results are not corrected for contamination by field or analytical blanks.

* Samples containing 100 ppm total lead or more require TCLP analysis (Ref. 1311 Sec 1.2).

Disclaimers / Qualifiers:

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Note: Insufficient material to provide TCLP analysis.(<55grams)

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway, Suite B • Mount Laurel, NJ 08054
Phone: 877-428-4285/856-231-9449 • Fax: 856-231-9818

Chain of Custody

– Environmental Lead –

Contact Information

Client Company:	tetra tech	**Project Number:**	117-8292004
Office Address:	7100 Commercial Ave. Suite 4	**Project Name:**	Harlowton Railyard - Metal Rack
City, State, Zip:	Billings, Montana 59101	**Primary Contact:**	Jay Harper
Fax Number:		**Office Phone:**	406-248-9161
Email Address:	jay.harper@tetratech.com	**Cell Phone:**	406-671-5690

iATL is accredited by the National Lead Laboratory Accreditation Program (NLLAP) to perform analytical testing of environmental samples for lead (Pb). The accreditation is through AIHA-LAP, LLC and several other nationally recognized state programs.

Matrix/Method:

- ☐ Paint by AAS: ASTM D3335-85a, 2009
- ☐ Wipe/Dust by AAS: SW 846: 3050B: 700B, 2010
- ☐ Air by AAS: NIOSH 7082, 1994
- ☐ Soil by AAS: EPA SW 846 (Soil)
- ☐ Water by AAS-GF: ASTM D3559-03D, US EPA 200.9
- ☐ Other Metals (Cd, Zn, Cr) by AAS
- ☑ Toxicity Characteristic Leaching Procedure (TCLP) by AAS: US EPA 1311
- ☐ Other _____

Special Instructions:

_____

_____

Turnaround Time

Preliminary Results Requested Date: 6-19-2019 (Specific date / time)

☐ Verbal ■ Email ☐ Fax

☐ 10 Day ■ 5 Day ☐ 3 Day ☐ 2 Day ☐ 1 Day* ☐ 12 Hour** ☐ 6 Hour** ☐ RUSH**

* End of next business day unless otherwise specified. ** Matrix Dependent. ***Please notify the lab before shipping***

Chain of Custody

Relinquished (Name/Organization):	Jay Harper	Date:	6-11-2019	Time:	1400
Received (Name / iATL):		Date:		Time:	
Sample Login (Name / iATL):		Date:		Time:	
Analysis(Name(s) / iATL):		Date:		Time:	
QA/QC Review (Name / iATL):		Date:		Time:	
Archived / Released: _____	QA/QC InterLAB Use: _____	Date:		Time:	

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Sample Log

–Environmental Lead –

Client: Tetra Tech Project: Harlowton Railyard- Metal Rack

Sampling Date/Time: 6-6-2019

Client Sample #	iATL #	Location/ Description	Flow Rate	Start End	Sampling time (min)	Area (ft2) Volume (L)	Results ( )
FO-01		Metal Rack TCLP	N/A	N/A	N/A	N/A	

** = Insufficient Sample Provided to Perform QC Reanalysis (<200mg)*
*** = Insufficient Sample Provided to Analyze (<50mg) ***= Matrix / Substrate Interference Possible*
FB = Method Requires the submittal of blank(s). ML = Multi Layered Sample. May result in inconsistent results.
These **preliminary results** are issued by iATL to expedite procedures by clients based upon the above data. iATL assumes that all of the sampling methods and data upon which these results are based, has been accurately supplied by the client. These results may not have been reviewed by the Laboratory Director. Final Certificate of Analysis will follow these preliminary results. The signed COA is to be considered the official results. All EPA, HUD, and NJDEP conditions apply.

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Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592251 - Lead Paint
Project: Harlowton Railyard - Oil Tank Tower
Project No.: 117-8292004

LEAD PAINT SAMPLE ANALYSIS SUMMARY

Lab No.: 6809817
Client No.: FO-01

Description:
Location: Oil Tank Tower TCLP

Result (% by Weight): 0.56
Result (ppm): 5600
Comments:

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 6/12/2019
Date Analyzed: 06/18/2019
Signature:
Analyst: Chad Shaffer

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592251 - Lead Paint
Project: Harlowton Railyard - Oil Tank Tower
Project No.: 117-8292004

Appendix to Analytical Report:

Customer Contact: Roger Herman
Method: ASTM D3335-85a, US EPA SW846 3050B:7000B

This appendix seeks to promote greater understanding of any observations, exceptions, special instructions, or circumstances that the laboratory needs to communicate to the client concerning the above samples. The information below is used to help promote your ability to make the most informed decisions for you and your customers. Please note the following points of contact for any questions you may have.

iATL Customer Service: customerservice@iatl.com
iATL Office Manager: wchampion@iatl.com
iATL Account Representative: Shirley Clark
Sample Login Notes: See Batch Sheet Attached
Sample Matrix: Paint
Exceptions Noted: See Following Pages

General Terms, Warrants, Limits, Qualifiers:

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iATL warrants the test results to be of a precision normal for the type and methodology employed for each sample submitted. iATL disclaims any other warrants, expressed or implied, including warranty of fitness for a particular purpose and warranty of merchantability. iATL accepts no legal responsibility for the purpose for which the client uses test results. Any analytical work performed must be governed by our Standard Terms and Conditions. Prices, methods and detection limits may be changed without notification. Please contact your Customer Service Representative for the most current information.

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This report shall not be reproduced except in full, without written approval of the laboratory.

Information Pertinent to this Report:

Analysis by ASTM D3335-85a by AAS

Certification:
- National Lead Laboratory Program (NLLAP): AIHA-LAP, LLC No. 100188
- NYSDOH-ELAP No. 11021

This report meets the standards set forth in the EPA's National Lead Laboratory Accreditation Program (NLLAP) through the Laboratory Quality System Requirements (LQSR) Revision 3.0 November 5, 2007. All Environmental Lead Proficiency Analytical Testing (ELPAT) is through the AIHA-PAT established program.

Regulatory limit is 0.5% lead by weight (EPA/HUD guidelines). Recommend multiple sampling for all samples less than regulatory limit for confirmation.
All results are based on the samples as received at the lab. iATL assumes that appropriate sampling methods have been used and that the data upon which these results are based have been accurately supplied by the client.
Method Detection Limit (MDL) per EPA Method 40CFR Part 136 Apendix B.
Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies.
LSD=0.2 ppm MDL=0.005% by weight. RL= 0.010% by weight (based upon 100 mg sampled).

Disclaimers / Qualifiers:

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CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592251 - Lead Paint
Project: Harlowton Railyard - Oil Tank Tower
Project No.: 117-8292004

* Insufficient sample provided to perform QC reanalysis (<200 mg)
** Not enough sample provided to analyze (<50 mg)
*** Matrix / substrate interference possible.

< less than sign, signifies none-detected below the empirical value based upon sub-sampled mass. This is often below the Reporting Limit (see above).

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CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592251 - Lead TCLP
Project: Harlowton Railyard - Oil Tank Tower
Project No.: 117-8292004

LEAD TCLP SAMPLE ANALYSIS SUMMARY

Lab No.:6809817
Client No.:FO-01

Description:
Location: Oil Tank Tower TCLP

Total Lead (ppm): 5600
TCLP Result (mg/L): 1.4

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 6/12/2019
Date Analyzed: 06/19/2019
Signature:
Analyst: Chad Shaffer

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592251 - Lead TCLP
Project: Harlowton Railyard - Oil Tank Tower
Project No.: 117-8292004

Appendix to Analytical Report:

Customer Contact: Roger Herman
Analysis: AAS - US EPA 1311

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iATL Office Manager:wchampion@iatl.com
iATL Account Representative: Shirley Clark
Sample Matrix: Various
Exceptions Noted: See Following Pages

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This report shall not be reproduced except in full, without written approval of the laboratory.

Information Pertinent to this Report:

Analysis: Toxicity Characteristic Leaching Procedure (TCLP) by AAS: USEPA 1311

Certification: - NATIONAL LEAD LABORATORY ACCREDITATION PROGRAM (NLLAP)
NYSDOH-ELAP No. 11021

TCLP threshold value is 5.0 mg/L.

All results are based on the samples as received at the lab. iATL assumes that appropriate sampling methods have been used and that the data upon which these results are based have been accurately supplied by the client.
Method Detection Limit (MDL) per EPA Method 40 CFR Part 136 Appendix B. Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies.
LSD = 0.2 ppmMDL = 4.7 mg/kgRL = 10 mg/kg (based upon 1000 mg sampled). Mg/kg = ppm.
Sample results are not corrected for contamination by field or analytical blanks.

* Samples containing 100 ppm total lead or more require TCLP analysis (Ref. 1311 Sec 1.2).

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Note: Insufficient material to provide TCLP analysis.(<55grams)

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Phone: 877-428-4285/856-231-9449 • Fax: 856-231-9818

Chain of Custody

– Environmental Lead –

Contact Information

Client Company:	tetra tech	**Project Number:**	117-8292004
Office Address:	7100 Commercial Ave. Suite 4	**Project Name:**	Harlowton Railyard - Oil Tank Tower
City, State, Zip:	Billings, Montana 59101	**Primary Contact:**	Jay Harper
Fax Number:		**Office Phone:**	406-248-9161
Email Address:	jay.harper@tetratech.com	**Cell Phone:**	406-671-5690

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Matrix/Method:

- ☐ Paint by AAS: ASTM D3335-85a, 2009
- ☐ Wipe/Dust by AAS: SW 846: 3050B: 700B, 2010
- ☐ Air by AAS: NIOSH 7082, 1994
- ☐ Soil by AAS: EPA SW 846 (Soil)
- ☐ Water by AAS-GF: ASTM D3559-03D, US EPA 200.9
- ☐ Other Metals (Cd, Zn, Cr) by AAS
- ☑ Toxicity Characteristic Leaching Procedure (TCLP) by AAS: US EPA 1311
- ☐ Other _____

Special Instructions:

_____

_____

Turnaround Time

Preliminary Results Requested Date: 6-19-2019 (Specific date / time)

☐ Verbal ■ Email ☐ Fax

☐ 10 Day ■ 5 Day ☐ 3 Day ☐ 2 Day ☐ 1 Day* ☐ 12 Hour** ☐ 6 Hour** ☐ RUSH**

* End of next business day unless otherwise specified. ** Matrix Dependent. ***Please notify the lab before shipping***

Chain of Custody

Relinquished (Name/Organization):	Jay Harper	Date:	6-11-2019	Time:	1400
Received (Name / iATL):		Date:		Time:	
Sample Login (Name / iATL):		Date:		Time:	
Analysis(Name(s) / iATL):		Date:		Time:	
QA/QC Review (Name / iATL):		Date:		Time:	
Archived / Released: _____	QA/QC InterLAB Use: _____	Date:		Time:	

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Phone: 877-428-4285/856-231-9449 • Fax: 856-231-9818

Sample Log

–Environmental Lead –

Client: Tetra Tech Project: Harlowton Railyard- Oil Tank Tower

Sampling Date/Time: 6-6-2019

Client Sample #	iATL #	Location/ Description	Flow Rate	Start End	Sampling time (min)	Area (ft2) Volume (L)	Results ( )
FO-01		Oil Tank Tower TCLP	N/A	N/A	N/A	N/A	

* = *Insufficient Sample Provided to Perform QC Reanalysis (<200mg)*
** = *Insufficient Sample Provided to Analyze (<50mg) ***= Matrix / Substrate Interference Possible*
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Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592250 - Lead Paint
Project: Harlowton Railyard - Pump Cover
Project No.: 117-8292004

LEAD PAINT SAMPLE ANALYSIS SUMMARY

Lab No.: 6809816
Client No.: FO-01

Description:
Location: Pump Cover TCLP

Result (% by Weight): 0.0030
Result (ppm): 30
Comments:

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 6/12/2019
Date Analyzed: 06/18/2019
Signature:
Analyst: Chad Shaffer

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592250 - Lead Paint
Project: Harlowton Railyard - Pump Cover
Project No.: 117-8292004

Appendix to Analytical Report:

Customer Contact: Roger Herman
Method: ASTM D3335-85a, US EPA SW846 3050B:7000B

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iATL Office Manager:wchampion@iatl.com
iATL Account Representative: Shirley Clark
Sample Login Notes: See Batch Sheet Attached
Sample Matrix: Paint
Exceptions Noted: See Following Pages

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Information Pertinent to this Report:

Analysis by ASTM D3335-85a by AAS

Certification:
- National Lead Laboratory Program (NLLAP): AIHA-LAP, LLC No. 100188
- NYSDOH-ELAP No. 11021

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Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client:	Tetra Tech	Report Date:	6/19/2019
	7100 Commercial Ave, Suite 4	Report No.:	592250 - Lead Paint
	Billings MT 59101	Project:	Harlowton Railyard - Pump Cover
		Project No.:	117-8292004
Client:	TET143		

* Insufficient sample provided to perform QC reanalysis (<200 mg)
** Not enough sample provided to analyze (<50 mg)
*** Matrix / substrate interference possible.

< less than sign, signifies none-detected below the empirical value based upon sub-sampled mass. This is often below the Reporting Limit (see above).

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CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592250 - Lead TCLP
Project: Harlowton Railyard - Pump Cover
Project No.: 117-8292004

LEAD TCLP SAMPLE ANALYSIS SUMMARY

Lab No.:6809816 **Description:** **Total Lead (ppm):** 30
Client No.:FO-01 **Location:**Pump Cover TCLP **TCLP Result (mg/L):** NA
Note: Samples containing less than (<) 100 mg/Kg Total Lead do not require TCLP analysis (Ref. 1311 Sec 1.2).

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 6/12/2019
Date Analyzed: 06/19/2019
Signature:
Analyst: Chad Shaffer

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592250 - Lead TCLP
Project: Harlowton Railyard - Pump Cover
Project No.: 117-8292004

Appendix to Analytical Report:

Customer Contact: Roger Herman
Analysis: AAS - US EPA 1311

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Sample Matrix: Various
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Information Pertinent to this Report:

Analysis: Toxicity Characteristic Leaching Procedure (TCLP) by AAS: USEPA 1311

Certification: - NATIONAL LEAD LABORATORY ACCREDITATION PROGRAM (NLLAP)
NYSDOH-ELAP No. 11021

TCLP threshold value is 5.0 mg/L.

All results are based on the samples as received at the lab. iATL assumes that appropriate sampling methods have been used and that the data upon which these results are based have been accurately supplied by the client.
Method Detection Limit (MDL) per EPA Method 40 CFR Part 136 Appendix B. Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies.
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Note: Insufficient material to provide TCLP analysis.(<55grams)

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Phone: 877-428-4285/856-231-9449 • Fax: 856-231-9818

Chain of Custody

– Environmental Lead –

Contact Information

Client Company:	tetra tech	**Project Number:**	117-8292004
Office Address:	7100 Commercial Ave. Suite 4	**Project Name:**	Harlowton Railyard - Pump Cover
City, State, Zip:	Billings, Montana 59101	**Primary Contact:**	Jay Harper
Fax Number:		**Office Phone:**	406-248-9161
Email Address:	jay.harper@tetratech.com	**Cell Phone:**	406-671-5690

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- ☐ Air by AAS: NIOSH 7082, 1994
- ☐ Soil by AAS: EPA SW 846 (Soil)
- ☐ Water by AAS-GF: ASTM D3559-03D, US EPA 200.9
- ☐ Other Metals (Cd, Zn, Cr) by AAS
- ☑ Toxicity Characteristic Leaching Procedure (TCLP) by AAS: US EPA 1311
- ☐ Other _____

Special Instructions:

_____

_____

Turnaround Time

Preliminary Results Requested Date: 6-19-2019 (Specific date / time)

☐ Verbal ☑ Email ☐ Fax

☐ 10 Day ☑ 5 Day ☐ 3 Day ☐ 2 Day ☐ 1 Day* ☐ 12 Hour** ☐ 6 Hour** ☐ RUSH**

* End of next business day unless otherwise specified. ** Matrix Dependent. ***Please notify the lab before shipping***

Chain of Custody

Relinquished (Name/Organization):	Jay Harper	Date:	6-11-2019	Time:	1400
Received (Name / iATL):		Date:		Time:	
Sample Login (Name / iATL):		Date:		Time:	
Analysis(Name(s) / iATL):		Date:		Time:	
QA/QC Review (Name / iATL):		Date:		Time:	
Archived / Released: _____	QA/QC InterLAB Use: _____	Date:		Time:	

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway, Suite B • Mount Laurel, NJ 08054
Phone: 877-428-4285/856-231-9449 • Fax: 856-231-9818

Sample Log

–Environmental Lead –

Client: Tetra Tech Project: Harlowton Railyard- Pump Cover

Sampling Date/Time: 6-6-2019

Client Sample #	iATL #	Location/ Description	Flow Rate	Start End	Sampling time (min)	Area (ft2) Volume (L)	Results ( )
FO-01		Pump Cover TCLP	N/A	N/A	N/A	N/A	

* = *Insufficient Sample Provided to Perform QC Reanalysis (<200mg)*
** = *Insufficient Sample Provided to Analyze (<50mg) ***= Matrix / Substrate Interference Possible*
FB = Method Requires the submittal of blank(s). ML = Multi Layered Sample. May result in inconsistent results.
These **preliminary results** are issued by iATL to expedite procedures by clients based upon the above data. iATL assumes that all of the sampling methods and data upon which these results are based, has been accurately supplied by the client. These results may not have been reviewed by the Laboratory Director. Final Certificate of Analysis will follow these preliminary results. The signed COA is to be considered the official results. All EPA, HUD, and NJDEP conditions apply.

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Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592252 - Lead Paint
Project: Harlowton Railyard - Round House
Project No.: 117-8292004

LEAD PAINT SAMPLE ANALYSIS SUMMARY

Lab No.: 6809818
Client No.: FO-01

Description:
Location: Round House TCLP

Result (% by Weight): 0.083
Result (ppm): 830
Comments:

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 6/12/2019
Date Analyzed: 06/18/2019
Signature:
Analyst: Chad Shaffer

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592252 - Lead Paint
Project: Harlowton Railyard - Round House
Project No.: 117-8292004

Appendix to Analytical Report:

Customer Contact: Roger Herman
Method: ASTM D3335-85a, US EPA SW846 3050B:7000B

This appendix seeks to promote greater understanding of any observations, exceptions, special instructions, or circumstances that the laboratory needs to communicate to the client concerning the above samples. The information below is used to help promote your ability to make the most informed decisions for you and your customers. Please note the following points of contact for any questions you may have.

iATL Customer Service: customerservice@iatl.com
iATL Office Manager: wchampion@iatl.com
iATL Account Representative: Shirley Clark
Sample Login Notes: See Batch Sheet Attached
Sample Matrix: Paint
Exceptions Noted: See Following Pages

General Terms, Warrants, Limits, Qualifiers:

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iATL warrants the test results to be of a precision normal for the type and methodology employed for each sample submitted. iATL disclaims any other warrants, expressed or implied, including warranty of fitness for a particular purpose and warranty of merchantability. iATL accepts no legal responsibility for the purpose for which the client uses test results. Any analytical work performed must be governed by our Standard Terms and Conditions. Prices, methods and detection limits may be changed without notification. Please contact your Customer Service Representative for the most current information.

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This report shall not be reproduced except in full, without written approval of the laboratory.

Information Pertinent to this Report:

Analysis by ASTM D3335-85a by AAS

Certification:
- National Lead Laboratory Program (NLLAP): AIHA-LAP, LLC No. 100188
- NYSDOH-ELAP No. 11021

This report meets the standards set forth in the EPA's National Lead Laboratory Accreditation Program (NLLAP) through the Laboratory Quality System Requirements (LQSR) Revision 3.0 November 5, 2007. All Environmental Lead Proficiency Analytical Testing (ELPAT) is through the AIHA-PAT established program.

Regulatory limit is 0.5% lead by weight (EPA/HUD guidelines). Recommend multiple sampling for all samples less than regulatory limit for confirmation.
All results are based on the samples as received at the lab. iATL assumes that appropriate sampling methods have been used and that the data upon which these results are based have been accurately supplied by the client.
Method Detection Limit (MDL) per EPA Method 40CFR Part 136 Apendix B.
Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies.
LSD=0.2 ppm MDL=0.005% by weight. RL= 0.010% by weight (based upon 100 mg sampled).

Disclaimers / Qualifiers:

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Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592252 - Lead Paint
Project: Harlowton Railyard - Round House
Project No.: 117-8292004

* Insufficient sample provided to perform QC reanalysis (<200 mg)
** Not enough sample provided to analyze (<50 mg)
*** Matrix / substrate interference possible.

< less than sign, signifies none-detected below the empirical value based upon sub-sampled mass. This is often below the Reporting Limit (see above).

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ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592252 - Lead TCLP
Project: Harlowton Railyard - Round House
Project No.: 117-8292004

LEAD TCLP SAMPLE ANALYSIS SUMMARY

Lab No.:6809818
Client No.:FO-01

Description:
Location: Round House TCLP

Total Lead (ppm): 830
TCLP Result (mg/L): 0.20

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 6/12/2019
Date Analyzed: 06/19/2019
Signature:
Analyst: Chad Shaffer

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592252 - Lead TCLP
Project: Harlowton Railyard - Round House
Project No.: 117-8292004

Appendix to Analytical Report:

Customer Contact: Roger Herman
Analysis: AAS - US EPA 1311

This appendix seeks to promote greater understanding of any observations, exceptions, special instructions, or circumstances that the laboratory needs to communicate to the client concerning the above samples. The information below is used to help promote your ability to make the most informed decisions for you and your customers. Please note the following points of contact for any questions you may have.

iATL Customer Service: customerservice@iatl.com
iATL Office Manager:wchampion@iatl.com
iATL Account Representative: Shirley Clark
Sample Matrix: Various
Exceptions Noted: See Following Pages

General Terms, Warrants, Limits, Qualifiers:

General information about iATL capabilities and client/laboratory relationships and responsibilities are spelled out in iATL policies that are listed at www.iATL.com and ir our Quality Assurance Manual per ISO 17025 standard requirements. The information therein is a representation of iATL definitions and policies for turnaround times, sample submittal, collection media, blank definitions, quantification issues and limit of detection, analytical methods and procedures, sub-contracting policies, results reporting options, fees, terms, and discounts, confidentiality, sample archival and disposal, and data interpretation.

iATL warrants the test results to be of a precision normal for the type and methodology employed for each sample submitted. iATL disclaims any other warrants, expressed or implied, including warranty of fitness for a particular purpose and warranty of merchantability. iATL accepts no legal responsibility for the purpose for which the client uses test results. Any analytical work performed must be governed by our Standard Terms and Conditions. Prices, methods and detection limits may be changed without notification. Please contact your Customer Service Representative for the most current information.

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This report shall not be reproduced except in full, without written approval of the laboratory.

Information Pertinent to this Report:

Analysis: Toxicity Characteristic Leaching Procedure (TCLP) by AAS: USEPA 1311

Certification: - NATIONAL LEAD LABORATORY ACCREDITATION PROGRAM (NLLAP)
NYSDOH-ELAP No. 11021

TCLP threshold value is 5.0 mg/L.

All results are based on the samples as received at the lab. iATL assumes that appropriate sampling methods have been used and that the data upon which these results are based have been accurately supplied by the client.
Method Detection Limit (MDL) per EPA Method 40 CFR Part 136 Appendix B. Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies.
LSD = 0.2 ppmMDL = 4.7 mg/kgRL = 10 mg/kg (based upon 1000 mg sampled). Mg/kg = ppm.
Sample results are not corrected for contamination by field or analytical blanks.

* Samples containing 100 ppm total lead or more require TCLP analysis (Ref. 1311 Sec 1.2).

Disclaimers / Qualifiers:

There may be some samples in this project that have a "NOTE:" associated with a sample result. We use added disclaimers or qualifiers to inform the client about something that requires further explanation. Here is a complete list with highlighted disclaimers pertinent to this project. For a full explanation of these and other disclaimers, please inquire at **customerservice@iatl.com.**

Note: Insufficient material to provide TCLP analysis.(<55grams)

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Phone: 877-428-4285/856-231-9449 • Fax: 856-231-9818

Chain of Custody

– Environmental Lead –

Contact Information

Client Company:	tetra tech	**Project Number:**	117-8292004
Office Address:	7100 Commercial Ave. Suite 4	**Project Name:**	Harlowton Railyard - Round House
City, State, Zip:	Billings, Montana 59101	**Primary Contact:**	Jay Harper
Fax Number:		**Office Phone:**	406-248-9161
Email Address:	jay.harper@tetratech.com	**Cell Phone:**	406-671-5690

iATL is accredited by the National Lead Laboratory Accreditation Program (NLLAP) to perform analytical testing of environmental samples for lead (Pb). The accreditation is through AIHA-LAP, LLC and several other nationally recognized state programs.

Matrix/Method:

- ☐ Paint by AAS: ASTM D3335-85a, 2009
- ☐ Wipe/Dust by AAS: SW 846: 3050B: 700B, 2010
- ☐ Air by AAS: NIOSH 7082, 1994
- ☐ Soil by AAS: EPA SW 846 (Soil)
- ☐ Water by AAS-GF: ASTM D3559-03D, US EPA 200.9
- ☐ Other Metals (Cd, Zn, Cr) by AAS
- ☑ Toxicity Characteristic Leaching Procedure (TCLP) by AAS: US EPA 1311
- ☐ Other _____

Special Instructions:

_____

_____

Turnaround Time

Preliminary Results Requested Date: 6-19-2019 (Specific date / time)

☐ Verbal ■ Email ☐ Fax

☐ 10 Day ■ 5 Day ☐ 3 Day ☐ 2 Day ☐ 1 Day* ☐ 12 Hour** ☐ 6 Hour** ☐ RUSH**

* End of next business day unless otherwise specified. ** Matrix Dependent. ***Please notify the lab before shipping***

Chain of Custody

Relinquished (Name/Organization):	Jay Harper	Date:	6-11-2019	Time:	1400
Received (Name / iATL):		Date:		Time:	
Sample Login (Name / iATL):		Date:		Time:	
Analysis(Name(s) / iATL):		Date:		Time:	
QA/QC Review (Name / iATL):		Date:		Time:	
Archived / Released: _____	QA/QC InterLAB Use: _____	Date:		Time:	

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Phone: 877-428-4285/856-231-9449 • Fax: 856-231-9818

Sample Log

–Environmental Lead –

Client: Tetra Tech Project: Harlowton Railyard- Round House

Sampling Date/Time: 6-6-2019

Client Sample #	iATL #	Location/ Description	Flow Rate	Start End	Sampling time (min)	Area (ft2) Volume (L)	Results ( )
FO-01		Round HouseTCLP	N/A	N/A	N/A	N/A	

* = *Insufficient Sample Provided to Perform QC Reanalysis (<200mg)*
** = *Insufficient Sample Provided to Analyze (<50mg) ***= Matrix / Substrate Interference Possible*
FB = Method Requires the submittal of blank(s). ML = Multi Layered Sample. May result in inconsistent results.
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Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592253 - Lead Paint
Project: Harlowton Railyard - Storage Building
Project No.: 117-8292004

LEAD PAINT SAMPLE ANALYSIS SUMMARY

Lab No.: 6809819
Client No.: FO-01

Description:
Location: Storage Building TCLP

Result (% by Weight): 0.27
Result (ppm): 2700
Comments:

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 6/12/2019
Date Analyzed: 06/18/2019
Signature:
Analyst: Chad Shaffer

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client:	Tetra Tech	Report Date:	6/19/2019
	7100 Commercial Ave, Suite 4	Report No.:	592253 - Lead Paint
	Billings MT 59101	Project:	Harlowton Railyard - Storage Building
		Project No.:	117-8292004
Client:	TET143		

Appendix to Analytical Report:

Customer Contact: Roger Herman
Method: ASTM D3335-85a, US EPA SW846 3050B:7000B

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iATL Office Manager:wchampion@iatl.com
iATL Account Representative: Shirley Clark
Sample Login Notes: See Batch Sheet Attached
Sample Matrix: Paint
Exceptions Noted: See Following Pages

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Information Pertinent to this Report:

Analysis by ASTM D3335-85a by AAS

Certification:
- National Lead Laboratory Program (NLLAP): AIHA-LAP, LLC No. 100188
- NYSDOH-ELAP No. 11021

This report meets the standards set forth in the EPA's National Lead Laboratory Accreditation Program (NLLAP) through the Laboratory Quality System Requirements (LQSR) Revision 3.0 November 5, 2007. All Environmental Lead Proficiency Analytical Testing (ELPAT) is through the AIHA-PAT established program.

Regulatory limit is 0.5% lead by weight (EPA/HUD guidelines). Recommend multiple sampling for all samples less than regulatory limit for confirmation.
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Method Detection Limit (MDL) per EPA Method 40CFR Part 136 Apendix B.
Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies.
LSD=0.2 ppm MDL=0.005% by weight. RL= 0.010% by weight (based upon 100 mg sampled).

Disclaimers / Qualifiers:

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Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592253 - Lead Paint
Project: Harlowton Railyard - Storage Building
Project No.: 117-8292004

* Insufficient sample provided to perform QC reanalysis (<200 mg)
** Not enough sample provided to analyze (<50 mg)
*** Matrix / substrate interference possible.

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Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592253 - Lead TCLP
Project: Harlowton Railyard - Storage Building
Project No.: 117-8292004

LEAD TCLP SAMPLE ANALYSIS SUMMARY

Lab No.:6809819
Client No.:FO-01

Description:
Location: Storage Building TCLP

Total Lead (ppm): 2700
TCLP Result (mg/L): 1.5

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 6/12/2019
Date Analyzed: 06/19/2019
Signature:
Analyst: Chad Shaffer

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Tetra Tech
7100 Commercial Ave, Suite 4
Billings MT 59101

Client: TET143

Report Date: 6/19/2019
Report No.: 592253 - Lead TCLP
Project: Harlowton Railyard - Storage Building
Project No.: 117-8292004

Appendix to Analytical Report:

Customer Contact: Roger Herman
Analysis: AAS - US EPA 1311

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iATL Office Manager:wchampion@iatl.com
iATL Account Representative: Shirley Clark
Sample Matrix: Various
Exceptions Noted: See Following Pages

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Information Pertinent to this Report:

Analysis: Toxicity Characteristic Leaching Procedure (TCLP) by AAS: USEPA 1311

Certification: - NATIONAL LEAD LABORATORY ACCREDITATION PROGRAM (NLLAP)
NYSDOH-ELAP No. 11021

TCLP threshold value is 5.0 mg/L.

All results are based on the samples as received at the lab. iATL assumes that appropriate sampling methods have been used and that the data upon which these results are based have been accurately supplied by the client.
Method Detection Limit (MDL) per EPA Method 40 CFR Part 136 Appendix B. Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-ELLAP policies.
LSD = 0.2 ppmMDL = 4.7 mg/kgRL = 10 mg/kg (based upon 1000 mg sampled). Mg/kg = ppm.
Sample results are not corrected for contamination by field or analytical blanks.

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Note: Insufficient material to provide TCLP analysis.(<55grams)

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Phone: 877-428-4285/856-231-9449 • Fax: 856-231-9818

Chain of Custody

– Environmental Lead –

Contact Information

Client Company:	tetra tech	**Project Number:**	117-8292004
Office Address:	7100 Commercial Ave. Suite 4	**Project Name:**	Harlowton Railyard - Storage Building
City, State, Zip:	Billings, Montana 59101	**Primary Contact:**	Jay Harper
Fax Number:		**Office Phone:**	406-248-9161
Email Address:	jay.harper@tetratech.com	**Cell Phone:**	406-671-5690

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Matrix/Method:

- ☐ Paint by AAS: ASTM D3335-85a, 2009
- ☐ Wipe/Dust by AAS: SW 846: 3050B: 700B, 2010
- ☐ Air by AAS: NIOSH 7082, 1994
- ☐ Soil by AAS: EPA SW 846 (Soil)
- ☐ Water by AAS-GF: ASTM D3559-03D, US EPA 200.9
- ☐ Other Metals (Cd, Zn, Cr) by AAS
- ☑ Toxicity Characteristic Leaching Procedure (TCLP) by AAS: US EPA 1311
- ☐ Other _____

Special Instructions:

_____

_____

Turnaround Time

Preliminary Results Requested Date: 6-19-2019 (Specific date / time)

☐ Verbal ■ Email ☐ Fax

☐ 10 Day ■ 5 Day ☐ 3 Day ☐ 2 Day ☐ 1 Day* ☐ 12 Hour** ☐ 6 Hour** ☐ RUSH**

* End of next business day unless otherwise specified. ** Matrix Dependent. ***Please notify the lab before shipping***

Chain of Custody

Relinquished (Name/Organization):	Jay Harper	Date:	6-11-2019	Time:	1400
Received (Name / iATL):		Date:		Time:	
Sample Login (Name / iATL):		Date:		Time:	
Analysis(Name(s) / iATL):		Date:		Time:	
QA/QC Review (Name / iATL):		Date:		Time:	
Archived / Released: _____	QA/QC InterLAB Use: _____	Date:		Time:	

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ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway, Suite B • Mount Laurel, NJ 08054
Phone: 877-428-4285/856-231-9449 • Fax: 856-231-9818

Sample Log

–Environmental Lead –

Client: Tetra Tech Project: Harlowton Railyard- Storage Building

Sampling Date/Time: 6-6-2019

Client Sample #	iATL #	Location/ Description	Flow Rate	Start End	Sampling time (min)	Area (ft2) Volume (L)	Results ( )
FO-01		Storage Building TCLP	N/A	N/A	N/A	N/A	

* = *Insufficient Sample Provided to Perform QC Reanalysis (<200mg)*
** = *Insufficient Sample Provided to Analyze (<50mg) ***= Matrix / Substrate Interference Possible*
FB = Method Requires the submittal of blank(s). ML = Multi Layered Sample. May result in inconsistent results.
These **preliminary results** are issued by iATL to expedite procedures by clients based upon the above data. iATL assumes that all of the sampling methods and data upon which these results are based, has been accurately supplied by the client. These results may not have been reviewed by the Laboratory Director. Final Certificate of Analysis will follow these preliminary results. The signed COA is to be considered the official results. All EPA, HUD, and NJDEP conditions apply.