KIEWIT MERIDIAM PARTNERS

STRUCTURE SURVEY ASSESSMENT REPORT – I-70 VIADUCT E-17-FX

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Laura M. Tobin		12/5/2020
Printed Name of Originator	Signature of Originator	Date

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1 INTRODUCTION

This Structural Survey Assessment Report (SSAR) was prepared on behalf of Kiewit Meridiam Partners (KMP) to address the presence of asbestos containing building materials (ACBMs), heavy metals containing paint, including lead based paint (LBP), and hazardous materials that may be associated with the Interstate 70 (I-70) viaduct, E-17-FX, located between mile posts 275 and 276 in Denver County, Colorado, as part of the Central 70 project.

In accordance with the Central 70 Structural Survey Assessment Plan (SSAP), updated December 3, 2020, a SSAR should address the presence of ACBM, heavy metals containing paint, including LBP, and universal wastes or regulated materials prior to demolition of a structure within the Central 70 Project area. Based on this assessment and previous assessments completed for the structure, universal wastes and regulated building materials have not been observed as part of this structure.

Because the bridge is scheduled for demolition as part of the Central 70 project, in 2009, the Colorado Department of Transportation (CDOT) contracted Tetra Tech to conduct an assessment of the entire I-70 viaduct structure to determine the presence of any lead containing paint or asbestos containing materials (ACM). As a supplement to the limited sampling conducted by Tetra Tech in 2009, additional inspection and sampling for the presence of ACM and metals containing paint was conducted in 2020. This report summarizes the scope of work and results of the supplemental investigation. Lab and personnel accreditations for the supplemental sampling activities are included in Appendix G of this report.

2 SITE SURVEY METHODOLOGY

2.1 INITIAL ASBESTOS CONTAINING MATERIALS AND PAINT CHIP SAMPLING - 2009

Tetra Tech used bulk sampling procedures of the suspected ACM in accordance with the U.S. EPA Asbestos Hazard Emergency Response Act (AHERA) sampling procedures detailed in 40 Code of Federal Regulations (CFR) 763.86, and the Department of Housing and Urban Development (HUD) regulations.

Sampling procedures included a visual inspection of the structure to identify suspect materials, an evaluation of friability, a sampling plan based on homogeneous type and accessibility, and collection of samples. The assessment included the collection of eleven bulk samples for ACM analysis and one paint chip sample for LBP analysis across the viaduct structure.

The asbestos samples were delivered to FRS Geotech in Denver under chain of custody procedures for analysis using Polarized Light Microscopy (PLM) using EPA Method 600/R-93/116. The paint chip samples were delivered to Reservoirs Environmental Inc. (REI) in Denver under chain of custody procedures for analysis using Flame Atomic Absorption Spectrometry. Laboratory results are included in Appendix A, the Tetra Tech Asbestos and Lead Based Paint Assessment Report.

2.2 SUPPLEMENTAL ASBESTOS CONTAINING MATERIALS SAMPLING - 2020

In accordance with the SSAP, prior to demolition which may disturb material identified as an ACM, the viaduct structure components were inspected to determine if abatement is required. The objective of the survey is to identify specific locations, quantities, and conditions of ACM throughout the structures so that these materials can be properly managed and disposed of prior to demolition.

On October 7 and 20 and November 4, 2020, supplemental inspections of the I-70 viaduct were conducted to observe the structure for the potential presence of hazardous building materials and to collect additional samples for the presence of ACM. All personnel who perform ACM survey fieldwork are required to have current accreditation by the EPA AHERA and be certified by the Colorado Department of Public Health and Environment (CDPHE) as a Certified Asbestos Building Inspector (CABI), in accordance with the CDPHE Air Quality Control Commission Regulation No. 8, Part B – Asbestos Regulation (January 30, 2008).

Bulk sampling procedures of the suspected ACM were used, in accordance with the U.S. EPA Asbestos Hazard Emergency Response Act (AHERA) sampling procedures detailed in 40 Code of Federal Regulations (CFR) 763.86, and the Central 70 Sampling and Analysis Plan (SAP) and SSAP, as well as National Emissions Standards for Hazardous Air Pollutants (NESHAPs) and CDPHE Regulation 8. Thirty-seven samples were collected for the analysis of ACM, consisting of:

- Three samples of white cementitious concrete patching material
- Three samples of light gray cementitious concrete patching material
- Three samples of dark gray cementitious concrete patching material
- Three samples of tan cementitious concrete patching material
- Three samples of brown cementitious concrete patching material
- Three samples of brownish gray cementitious concrete patching material
- Two samples of pre-cast concrete reinforcements at old expansion joints
- Two samples of asphalt

- Two samples of expansion joint rubber
- Two samples of gray guardrail panels
- Seven samples of gray paint on structural steel over UPRR tracks
- Two samples of waterproofing tar on bridge deck concrete
- Two samples of bridge deck concrete.

A description of the sampling location, friability, and an estimate of approximate surface area is included below in Table 3.1.

The samples were delivered under chain of custody to Origins Laboratory in Denver and were analyzed by Reservoirs Environmental Inc. in Denver for analysis of ACM using PLM analysis performed in general accordance with the procedures outlined in the EPA's Test Method for the Determination of Asbestos in Bulk Building Materials (EPA 600/R-93/116). Aerial photographs of the viaduct structure that indicated sample collection locations are included in Appendix B. Photographs of the ACM sampling locations are included in Appendix C.

2.3 SUPPLEMENTAL HEAVY METALS CONTAINING PAINT SAMPLING - 2020

On October 7 and 20 and November 4, 2020, supplemental inspections of the I-70 viaduct were conducted to further characterize the paint present on the viaduct structure prior to demolition. Sixteen distinct painted areas were observed with paint chip samples collected from each homogenous area.

Demolition of lead containing materials is covered under the Occupational Safety and Health Administration (OSHA) Construction Industry Standard for Lead (Title 29 of the CFR, Part 1926.62). OSHA guidance indicates that paint is regulated at any detectable level of lead, and that contractors should be notified before paint is disturbed. Additionally, the concentration of other heavy metals potentially contained within the paint must be understood prior to demolition to protect worker health as well as assess concentrations prior to disturbance and disposal. Lead inspection methods used were adapted from the HUD Guidelines for the Evaluation and Control of Lead-Based Paint in Housing (June 1995).

Additionally, heavy metal containing paint require a hazardous waste determination pursuant to 40 CFR 262.11 and 40 CFR 261.24 prior to disposal. When approaching the management and disposal of heavy metal containing paint, the first step is to determine whether the paint contains heavy metals and whether the concentrations of any detected metal constituents necessitate worker protection measures and additional waste characterization steps.

Paint chip samples collected from the viaduct were analyzed for RCRA 8 metals by EPA Method 6010C/7471. Using the 20x Rule, the laboratory analytical results can be compared to the Toxicity Characteristic Leaching Procedure (TCLP) regulatory limits established by the EPA. The TCLP test is used to determine if a waste material will leach these constituents to soil or groundwater. The total metals analysis represents the total amount of metals analyzed that are present in the sample. If the total concentration of a metal in the sample is less than 20 times the TCLP regulatory limit, then theoretically, the sample cannot leach enough of that constituent to exceed the TCLP limit, even if all the metal dissolved.

A total of sixteen paint chip samples were collected for the analysis of Resource Conservation and Recovery Act (RCRA) 8 metals, consisting of:

- One sample of gray paint/red primer on structural steel over the Union Pacific Railroad (UPRR) tracks
- One sample of brown paint/red primer on structural steel over the UPRR tracks
- One sample of gray paint on metal drainpipe
- One sample of white paint on concrete girder
- One sample of gray paint on concrete girder
- One sample of light gray paint on concrete guardrail

- One sample of white road lane paint on viaduct bridge deck
- One sample of yellow road lane paint on viaduct bridge deck
- One sample of white graffiti cover up paint on concrete column
- One sample of light blue graffiti cover up paint on concrete column
- One sample of lime green paint on concrete column
- One sample of green paint on concrete column
- One sample of yellow paint on concrete column
- One sample of red paint on concrete column
- One sample of gray graffiti cover up paint on concrete column
- One sample of beige graffiti cover up paint on concrete column

The paint chip samples were submitted to Origins Laboratory in Denver and analyzed by GEL Laboratories, LLC for RCRA 8 metals by EPA Method 6010C/7471. Aerial photographs of the viaduct structure that indicated sample collection locations are included in Appendix B. Photographs of the sampling locations are included in Appendix D.

3 FINDINGS AND CONCLUSIONS

3.1 INITIAL ASBESTOS CONTAINING MATERIALS AND PAINT CHIP SAMPLING RESULTS

The results of the 2009 sampling indicated that no ACM was identified in the samples collected during this assessment. Additionally, no LBP was identified in the samples collected during this assessment. The assessment concluded "No ACM or LBP remediation is required prior to renovation or demolition". A TCLP test was not recommended for waste materials associated with demolition of this material based on these results prior to disposal as LBP was not detected in any samples.

3.2 SUPPLEMENTAL ASBESTOS CONTAINING MATERIALS SAMPLING RESULTS

The laboratory results for the supplemental sampling of the I-70 Viaduct conducted on October 7 and 20 and November 4, 2020 are presented in Appendix E. The results of the laboratory analysis concluded that none of the thirty-seven samples collected contained ACM.

Table 3.1 2020 Suspect Asbestos Containing Materials Sampling Results

SAMPLE ID	MATERIAL DESCRIPTION	SAMPLE LOCATION	FRIABILITY	CATEGORY	APPROX. QUANTITY	ANALYTICAL RESULT (% ASBESTOS)
C-E17FX-ACM01-01-SM-102020	White cementitious concrete patching material	Pre-cast concrete reinforcements on concrete girder at pier span 103 - 104	Non-friable	Surfacing	150 SF	None Detected
C-E17FX-ACM01-02-SM-102020			Non-friable			None Detected
C-E17FX-ACM01-03-SM-102020			Non-friable			None Detected
C-E17FX-ACM02-01-SM-102020	Light gray cementitious concrete patching material	Northwest corner of structural steel above Union Pacific Railroad (UPRR) tracks	Non-friable	Surfacing	120 SF	None Detected
C-E17FX-ACM02-02-SM-102020			Non-friable			None Detected
C-E17FX-ACM02-03-SM-102020			Non-friable			None Detected
C-E17FX-ACM03-01-SM-102020	Dark gray cementitious concrete patching material	Northwest corner of structural steel above UPRR tracks	Non-friable	Surfacing	275 SF	None Detected
C-E17FX-ACM03-02-SM-102020			Non-friable			None Detected
C-E17FX-ACM03-03-SM-102020			Non-friable			None Detected

SAMPLE ID	MATERIAL DESCRIPTION	SAMPLE LOCATION	FRIABILITY	CATEGORY	APPROX. QUANTITY	ANALYTICAL RESULT (% ASBESTOS)
C-E17FX-ACM04-01-SM-102020	Tan cementitious concrete patching material	Pier cap at pier 50	Non-friable	Surfacing	250 SF	None Detected
C-E17FX-ACM04-02-SM-102020		Pier cap at pier 104	Non-friable			None Detected
C-E17FX-ACM04-03-SM-100720		Concrete girder east of pier 104	Non-friable			None Detected
C-E17FX-ACM05-01-SM-102020	Brown cementitious concrete patching material	Pier cap at pier 54	Non-friable	Surfacing	30 SF	None Detected
C-E17FX-ACM05-02-SM-102020			Non-friable			None Detected
C-E17FX-ACM05-03-SM-102020			Non-friable			None Detected
C-E17FX-ACM06-01-SM-100720	Brownish gray cementitious concrete patching material	Concrete girder east of pier 104	Non-friable	Surfacing	50 SF	None Detected
C-E17FX-ACM06-02-SM-100720			Non-friable			None Detected
C-E17FX-ACM06-03-SM-100720			Non-friable			None Detected
C-E17FX-ACM07-01-SM-102020	Pre-cast concrete reinforcements at old expansion joints	Pier span 103 - 104	Non-friable	Miscellaneous	3,980 SF	None Detected
C-E17FX-ACM07-02-SM-102020			Non-friable			None Detected
C-E17FX-ACM08-01-SM-110420	Asphalt	Westbound right lane near Columbine St	Non-friable	Miscellaneous	597,000 SF	None Detected
C-E17FX-ACM08-02-SM-110420		Westbound right lane near York St				None Detected
C-E17FX-ACM09-01-SM-110420	Expansion joint rubber	Westbound right lane near Columbine St	Non-friable	Miscellaneous	1,165 LF	None Detected
C-E17FX-ACM09-02-SM-110420		Westbound right lane near York St	Non-friable			None Detected
C-E17FX-ACM10-01-SM-110420	Gray guardrail panels	Westbound right lane near Columbine St	Non-friable	Miscellaneous	86,220 SF	None Detected
C-E17FX-ACM10-02-SM-110420		Westbound right lane near York St	Non-friable			None Detected

SAMPLE ID	MATERIAL DESCRIPTION	SAMPLE LOCATION	FRIABILITY	CATEGORY	APPROX. QUANTITY	ANALYTICAL RESULT (% ASBESTOS)
C-E17FX-ACM11-01-SM-102020	Gray paint on structural steel over UPRR tracks	Northwest corner structural steel at pier cap	Non-friable	Surfacing	68,000 SF	None Detected
C-E17FX-ACM11-02-SM-102020			Non-friable			None Detected
C-E17FX-ACM11-03-SM-102020			Non-friable			None Detected
C-E17FX-ACM11-04-SM-102020			Non-friable			None Detected
C-E17FX-ACM11-05-SM-102020			Non-friable			None Detected
C-E17FX-ACM11-06-SM-102020			Non-friable			None Detected
C-E17FX-ACM11-07-SM-102020			Non-friable			None Detected
C-E17FX-ACM12-01-SM-110420	Waterproofing tar on bridge deck concrete	Westbound right lane near Columbine St	Non-friable	Miscellaneous	597,000 SF	None Detected
C-E17FX-ACM12-02-SM-110420		Westbound right lane near York St	Non-friable			None Detected
C-E17FX-ACM13-01-SM-110420	Bridge deck concrete	Westbound right lane near Columbine St	Non-friable	Miscellaneous	597,000 SF	None Detected
C-E17FX-ACM13-02-SM-110420		Westbound right lane near York St				None Detected

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3.3 SUPPLEMENTAL HEAVY METALS CONTAINING PAINT SAMPLING RESULTS

For the purposes of this report, paint has been classified as being either in Good, Fair, or Poor condition. The following are the general definitions of each condition category.

- Intact (Good) Condition: Paint is intact with no sign of peeling or damage over the component system
- Fair Condition: Paint shows signs of wear (chalking, peeling, chipping, abrasion, or minimal delamination less than 10% of a component surface, due to age or other factors such as moisture or physical contact.
- Poor condition: Paint is substantially delaminating or peeling greater than 10% of a component surface or 25% in a focused area of the component system.

Table 3.2 2020 Heavy Metals Containing Paint Sample Locations and Descriptions

SAMPLE ID	PAINT DESCRIPTION	SAMPLE LOCATION	CONDITION
C-E17FX-PC01-01-SM-102020	Gray paint/red primer on structural steel over UPRR tracks	Northwest corner of structural steel over UPRR tracks	Fair
C-E17FX-PC02-01-SM-102020	Brown paint/red primer on structural steel over UPRR tracks	Northwest corner of structural steel over UPRR tracks	Good
C-E17FX-PC04-01-SM-100720	Gray paint on metal drainpipe	Pier 38	Good
C-E17FX-PC05-01-SM-102020	White paint on concrete girder	Pier 33	Good
C-E17FX-PC06-01-SM-102020	Gray paint on concrete girder	Between piers 37 & 38	Good
C-E17FX-PC07-01-SM-102020	Light gray paint on concrete guardrail	Between piers 37 & 38	Fair
C-E17FX-PC08-01-SM-110420	White road lane paint on viaduct bridge deck	Westbound right lane between Josephine & Columbine Streets	Fair
C-E17FX-PC09-01-SM-110420	Yellow road lane paint on viaduct bridge deck	Eastbound left lane at Columbine Street	Good
C-E17FX-PC12-01-SM-100720	White graffiti cover up paint on concrete column	Pier 38	Good
C-E17FX-PC13-01-SM-100720	Light blue graffiti cover up paint on concrete column	Pier 39	Good
C-E17FX-PC14-01-SM-100720	Lime green paint on concrete column	Pier 61	Good
C-E17FX-PC15-01-SM-100720	Green paint on concrete column	Pier 69	Good
C-E17FX-PC16-01-SM-100720	Yellow paint on concrete column	Pier 70	Good
C-E17FX-PC17-01-SM-100720	Red paint on concrete column	Pier 71	Good
C-E17FX-PC18-01-SM-100720	Gray graffiti cover up paint on concrete column	Pier 104	Good
C-E17FX-PC19-01-SM-100720	Beige graffiti cover up paint on concrete column	Pier 104	Good

The laboratory results for the supplemental sampling of the I-70 Viaduct conducted on October 7 and 20 and November 4, 2020 are presented in Appendix F.

The results of the laboratory analysis concluded that OSHA regulations would apply to work activities involving disturbance of this paint. However, the concentration of lead in all samples is below the US EPA regulation under 40 CFR Part 745, which defines LBP as paint containing equal to or greater than 0.5% lead by weight (>0.5%) or 5,000 mg/kg. The laboratory results of the RCRA 8 Metals sample analysis are included in Appendix D and summarized in the table below:

Table 3.3 2020 Heavy Metals Containing Paint Sampling Results

RCRA 8 METALS CONCENTRATIONS (MILLIGRAMS PER KG)

SAMPLE ID	ARSENIC	BARIUM	CADMIUM	CHROMIUM	LEAD	SELENIUM	SILVER	MERCURY
C-E17FX-PC01-01-SM-102020	<50.8	**2,730**	2.41	**5,280**	**246**	**22.7**	<8.47	*
C-E17FX-PC02-01-SM-102020	<51.7	1,810	2.13	**11,700**	**255**	9.78	<8.62	*
C-E17FX-PC04-01-SM-100720	0.501	1,670	0.389	3.53	6.77	0.865	<0.484	<0.0217
C-E17FX-PC05-01-SM-102020	<2.77	7.82	0.203	1.71	1.28	1.95	<0.461	<0.0207
C-E17FX-PC06-01-SM-102020	<2.74	61.3	0.743	5.51	62.5	2.12	0.688	0.00993
C-E17FX-PC07-01-SM-102020	<2.98	74.0	0.864	15.5	41.9	3.12	1.18	<0.0224
C-E17FX-PC08-01-SM-110420	<2.81	26.5	0.140	4.64	11.0	1.48	1.05	<0.0201
C-E17FX-PC09-01-SM-110420	<2.88	22.5	0.106	3.50	1.67	1.45	<0.481	<0.0214
C-E17FX-PC12-01-SM-100720	1.46	1850	0.517	23.7	84.6	1.63	<0.491	3.19
C-E17FX-PC13-01-SM-100720	2.28	898	0.444	**151**	**750**	1.78	0.228	0.622
C-E17FX-PC14-01-SM-100720	2.15	204	0.296	7.43	38.4	1.36	0.340	1.38
C-E17FX-PC15-01-SM-100720	12.7	302	0.729	23.2	30.0	1.28	<0.488	0.0205
C-E17FX-PC16-01-SM-100720	0.964	314	0.134	6.49	11.2	1.60	0.154	<0.0204
C-E17FX-PC17-01-SM-100720	4.45	281	0.507	16.6	8.28	1.32	<0.501	<0.0232
C-E17FX-PC18-01-SM-100720	3.96	222	0.475	14.8	**175**	1.40	0.456	2.89
C-E17FX-PC19-01-SM-100720	2.84	121	0.594	11.4	48.5	1.94	0.761	0.551

BOLD results indicate concentrations which exceed 20 times their applicable TCLP regulatory limit.
* = Insufficient sample volume remaining following 6010C analysis for lab to analyze mercury by EP Method 7471.

TCLP analysis is recommended of the demolition debris in several locations sampled due to concentrations of lead, chromium, and other heavy metals exceeding 20 times the TCLP hazardous waste limit of 5 parts per million (5 ppm), or 0.01%/100 mg/kg in samples C-E17FX-PC13-01-SM-100720 and C-E17FX-PC18-01-SM-100720. TCLP analysis is to be conducted on a sample of material representative of the waste to be potentially landfilled or otherwise disposed of. Therefore, TCLP analysis of the aforementioned samples will be conducted during the demolition activities and prior to disposal of the waste material associated with those samples. Demolition debris consisting of metal (i.e. samples C-E17FX-PC01-01-SM-102020 and C-E17FX-PC02-01-SM-102020) will not require a TCLP analysis as the metal material will be recycled rather than landfilled (TCLP analysis is only required when being landfilled to simulate potential leaching of heavy metals through the landfill over time).

3.4 SUMMARY

Demolition of the I-70 viaduct is set to begin in June 2021. All materials identified in these sampling events as containing heavy metals will be managed following all OSHA requirements (Title 29 of the CFR, Part 1926.62) for worker health and safety. This includes worker notification and implementation of a heavy metals management plan. Discussion of these management activities and offsite disposal and/or recycling of all components will be detailed in the Structure Survey Completion Report following demolition of the viaduct structure.

ACRONYMS

ACGIHS	American Conference of Government Industrial Hygienists
ACBM	Asbestos Containing Building Materials
AHERA	Asbestos Hazard Emergency Response Act
APCD	Air Pollution Control Division
ANSI	American National Standards Institute
CABI	Colorado Asbestos Building Inspector
CCR	Colorado Code of Regulations
CDOT	Colorado Department of Transportation
CDPHE	Colorado Department of Public Health and Environment
CFR	Code of Federal Regulations
HUD	Housing and Urban Development
KMP	Kiewit Meridiam Partners
LBP	lead based paint
LCP	Lead containing paint
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
PLM	polarized light microscopy
RCRA	Resource Conservation and Recovery Act
RHMs	Regulated Hazardous Materials
ROW	right of way
SAP	Sampling and Analysis Plan
SSAP	Structure Survey Assessment Plan
SSAR	Structure Survey Assessment Report
SSCR	Structure Survey Completion Report
TCLP	Toxicity Characteristic Leaching Process
UPRR	Union Pacific Railroad
US EPA	United States Environmental Protection Agency

APPENDIX

A

TETRA TECH ASBESTOS AND LEAD BASED PAINT ASSESSMENT - 2009

May 27, 2009

Ms. Theresa Santangelo-Dreiling
Colorado Department of Transportation
Property Management Program
Hazardous Materials Unit
15285 South Golden Road, Building 47
Golden, Colorado 80401

RE: Asbestos and Limited Lead-Based Paint Inspection of Bridge E-17-FX Located on Interstate 70 at Mile Marker 274.66

Dear Ms. Santangelo-Dreiling:

This letter report presents the results of the asbestos and limited lead-based paint inspection of Bridge E-17-FX, conducted under Contract 08 HAA 00035. The following sections include an outline of the scope of the project, descriptions of the methodologies employed during the inspection, a summary of findings and recommendations based on those findings.

PURPOSE AND SCOPE

The purpose of the asbestos and limited lead-based paint inspection was to detect the presence of regulated asbestos containing material (RACM) and lead-based paint (LBP) in or on the structural components and driving surface of the Site bridge(s). As described in our proposal, the scope of the project included a physical assessment of the Site structure(s), collection and analysis of suspect asbestos containing material (ACM) and LBP samples, and preparation of a report containing the findings of the inspection and analyses as well as recommendations based on those findings.

INSPECTION METHODOLOGIES

This asbestos and LBP survey included observations of the bridge structure, obtaining representative samples, determination of friability and condition, and analysis of suspect ACM and LBP. The methodologies for inspection and analyses were generally based on U.S. Environmental Protection Agency (EPA) and Department of Housing and Urban Development (HUD) regulations, including EPA Asbestos Hazard Emergency Response Act (AHERA) and EPA Title X.

Sampling Methodology

ACM samples were obtained by physically removing a small portion (approximately one (1) square-inch) of the material using a sharp instrument (utility knives, coring tools, etc.). Samples of asphalt paving materials were obtained using an electric hammer drill with a coring bit after the surface of the sample area was thoroughly cleaned with de-ionized water. All layers of the sampled material were penetrated, and the disturbance

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of adjacent material was kept at a minimum. The samples were then placed into labeled containers and sealed. The sampling instruments were then wet-wiped to remove any materials which could contaminate following samples. Each sample was labeled identifying the sample number and location. Sampling was conducted in a manner by which damage to building materials was minimized. Sample locations were repaired after sampling using caulking, joint compound, and/or duct tape, as appropriate. All samples were logged onto field data sheets that contain a brief description of the sample areas, inspector identification, the date of inspection and a description of the material sampled.

If applicable, LBP samples were obtained by physically removing a small portion (approximately two (2) square-inches) of the paint using a sharp instrument (utility knives, coring tools, etc.). All layers of the paint were penetrated, and the disturbance of adjacent material was kept at a minimum. The samples were then placed into labeled containers and sealed. The sampling instruments were then wet-wiped to remove any materials which could contaminate following samples. Each sample was labeled identifying the sample number and location. Sampling was conducted in a manner by which damage to building materials was minimized.

Analytical Methodology

The ACM samples collected during the onsite inspection were transported under chain-of-custody to FRS Geotech, Inc. (FRS) at 1441 West 46th Avenue, Suite 14 in Denver, Colorado for analysis of asbestos content. The analytical procedure utilized by FRS during analysis of the bulk samples was the EPA-recommended method 600/R-93/116, or Polarized Light Microscopy with Dispersion Staining. FRS was instructed to hold the samples for six months from the date of analysis in the event that further analysis is required.

If applicable, the LBP samples collected during the onsite inspection were transported under chain-of-custody to Reservoirs Environmental, Inc. (Reservoirs) at 5801 Logan Street, Suite 100 in Denver, Colorado for analysis of lead content. The analytical procedure utilized by Reservoirs during analysis of the paint samples was the EPA-recommended method Flame Atomic Absorption Spectrometry. Reservoirs was instructed to hold the samples for six months from the date of analysis in the event that further analysis is required.

The laboratory analytical results are attached to this letter report.

FINDINGS AND RECOMMENDATIONS

Based on the results of the physical assessment, sampling and analyses the following findings were made:

- No ACM was detected at the Site bridge(s).
- No LBP was detected at the Site bridge(s).

Based on these findings, Tetra Tech recommends the following:

- No ACM or LBP remediation is required prior to renovation or demolition.

LIMITATIONS

Tetra Tech has endeavored to meet what it believes is the applicable standard of care for the services performed and, in doing so, is obliged to advise CDOT of limitations regarding this report. Tetra Tech believes that providing information about limitations is essential to help clients identify and thereby manage risks. These risks can be mitigated, but not eliminated, through additional research. Tetra Tech will, upon request, advise CDOT of the additional research opportunities available and associated costs.

This asbestos and limited lead-based paint bridge inspection did not include any inquiry with respect to methane, lead in drinking water, formaldehyde, subsurface investigation activities or other services or potential conditions or features not specifically identified and discussed herein. In those instances where additional services or service enhancements are included in the report as requested or authorized by CDOT, specific limitations attendant to those services are presented in the text of the report.

The findings and opinions conveyed via this report are based upon information obtained at a particular date from a variety of sources specified herein, and which Tetra Tech believes are reliable. Nonetheless, Tetra Tech cannot and does not warrant the authenticity or reliability of the information sources it has relied upon.

This report represents Tetra Tech's services to CDOT as of the report date. In that regard, the report constitutes Tetra Tech's final document, and the text of the report may not be altered in any manner after final issuance of the same. Opinions relative to environmental conditions given in this report are based upon information derived from the most recent Site reconnaissance date and from other activities described herein. CDOT is herewith advised that the conditions observed by Tetra Tech are subject to change. Certain indicators of the presence of hazardous materials may have been latent or not present at the time of the most recent Site reconnaissance and may have subsequently become observable. In similar manner, the research effort conducted for the asbestos building inspection is limited. Accordingly, it is possible that Tetra Tech's research, while fully appropriate for an asbestos building inspection and in compliance with the scope of service, may not include other important information sources. Assuming such sources exists, their information could not have been considered in the formulation of our findings and conclusions.

This report is not a comprehensive site characterization or regulatory compliance audit and should not be construed as such. The opinions presented in this report are based upon findings derived from a Site reconnaissance, a review of specified records and sources and comments made by interviewees. Specifically, Tetra Tech does not and cannot represent that the Site contains no hazardous or toxic materials, products, or other latent conditions beyond those observed by Tetra Tech during its site assessment. Further, the services herein shall in no way be construed, designed or intended to be relied upon as legal interpretation or advice.

Please do not hesitate to contact us at 303.665.4392 if you have any questions regarding this letter report.

Sincerely,
Tetra Tech

Ryan J. Egan
Project Manager

Attachments: Analytical Results

FRS Geotech, Inc.
1441 W. 46th Ave, Ste. 14
Denver, CO 80211-2338

Phone: (303) 477-2559
(800) 386-3136
FAX: (303) 477-2580
e-mail: frsgeo@ix.netcom.com

May 26, 2009

Mr. Ryan Egan
Tetra Tech
363 Centennial Pkwy
Suite 210
Louisville, CO 80027

Re: Project: CDOT--Bridge E-17-FX, PO#114-181881

FRS Lab Number 113647

Dear Mr. Ryan Egan:

The bulk samples submitted to FRS Geotech, Inc. have been analyzed by polarized light microscopy (PLM), the EPA-recommended method for determination of fibrous constituents in building materials. The percent of asbestos contained in the samples is a visual estimation based upon comparisons with published charts. The results of these analyses are summarized in the enclosed table. This report relates only to the items received and tested by our laboratory. According to requirements set by the National Institute of Standards and Technology/NVLAP, this report must not be used to claim endorsement by NVLAP or any agency of the US Government. Also, NVLAP guidelines specify that this report should not be reproduced, except in full, without the written approval of FRS.

A copy of your Chain of Custody is attached for your convenience. This report is considered highly confidential. Results will not be discussed with any person not associated with you.

Please call if you have any questions about this work.

Sincerely,

David A. Schroeder, Ph.D.
Data Controller

Enclosures

NVLAP Accredited Lab #102078-0
AIHA Accredited Lab #101557

FRS GEOTECH, INC.
1441 W. 46th Avenue, Ste. 14
Denver, CO 80211-2338

RESULTS OF BULK ASBESTOS SAMPLE ANALYSIS BY POLARIZED LIGHT MICROSCOPY (PLM) EPA-600/R-93/116

Phone: (303) 477-2559
(800) 386-3136
Fax: (303) 477-2580
e-mail: frsgeo@ix.netcom.com

Client: **Tetra Tech**

Lab No.: **113647**

Project: **CDOT--Bridge E-17-FX, PO#114-181881**

Sample No. [layer] / Description	Volume (%)	Sample Date	Nonasbestos Fibrous Material (%)		Asbestos Minerals (%)	Summary (%)	
M15.1A Flex joint [brown]	100%	05/13/09	Fiberglass Cellulose Synthetics Others .	 95	Amosite Anthophyllite Chrysotile Crocidolite Trem./Act.	Total Asbestos: Other Fibrous Material Nonfibrous Material	None Detected 95 5
M15.1B Flex joint [brown]	100%	05/13/09	Fiberglass Cellulose Synthetics Others .	 90	Amosite Anthophyllite Chrysotile Crocidolite Trem./Act.	Total Asbestos: Other Fibrous Material Nonfibrous Material	None Detected 90 10
M15.1C Flex joint [brown]	100%	05/13/09	Fiberglass Cellulose Synthetics Others .	 95	Amosite Anthophyllite Chrysotile Crocidolite Trem./Act.	Total Asbestos: Other Fibrous Material Nonfibrous Material	None Detected 95 5
M16.1A Concrete [gray]	100%	05/13/09	Fiberglass Cellulose Synthetics Others .		Amosite Anthophyllite Chrysotile Crocidolite Trem./Act.	Total Asbestos: Other Fibrous Material Nonfibrous Material	None Detected -- 100
M16.1B Concrete [gray]	100%	05/13/09	Fiberglass Cellulose Synthetics Others .		Amosite Anthophyllite Chrysotile Crocidolite Trem./Act.	Total Asbestos: Other Fibrous Material Nonfibrous Material	None Detected -- 100
M16.1C Concrete [gray]	100%	05/13/09	Fiberglass Cellulose Synthetics Others .		Amosite Anthophyllite Chrysotile Crocidolite Trem./Act.	Total Asbestos: Other Fibrous Material Nonfibrous Material	None Detected -- 100

* Composite analysis (multilayered sample, see individual layer analyses).

Analyst(s): Mark Cooperrider

Completed: 05/26/2009

FRS GEOTECH, INC.
1441 W. 46th Avenue, Ste. 14
Denver, CO 80211-2338

RESULTS OF BULK ASBESTOS SAMPLE ANALYSIS BY POLARIZED LIGHT MICROSCOPY (PLM) EPA-600/R-93/116

Phone: (303) 477-2559
(800) 386-3136
Fax: (303) 477-2580
e-mail: frsgeo@ix.netcom.com

Client: **Tetra Tech**

Lab No.: **113647**

Project: **CDOT--Bridge E-17-FX, PO#114-181881**

Sample No. [layer] / Description	Volume (%)	Sample Date	Nonasbestos Fibrous Material (%)	Asbestos Minerals (%)	Summary (%)	
M16.1D **Concrete [gray]**	**100%**	**05/13/09**	Fiberglass Cellulose Synthetics Others .	**Amosite** **Anthophyllite** **Chrysotile** **Crocidolite** **Trem./Act.**	**Total Asbestos:** **Other Fibrous Material** **Nonfibrous Material**	**None Detected** -- 100
M16.1E **Concrete [gray]**	**100%**	**05/13/09**	Fiberglass Cellulose Trace <1% Synthetics Spider web . Trace <1%	**Amosite** **Anthophyllite** **Chrysotile** **Crocidolite** **Trem./Act.**	**Total Asbestos:** **Other Fibrous Material** **Nonfibrous Material**	**None Detected** Trace <1% 99
S1.1A **Surfacing [gray]**	**100%**	**05/13/09**	Fiberglass Cellulose Synthetics Others .	**Amosite** **Anthophyllite** **Chrysotile** **Crocidolite** **Trem./Act.**	**Total Asbestos:** **Other Fibrous Material** **Nonfibrous Material**	**None Detected** -- 100
S1.1B **Surfacing [multiple colors (inseparable)]**	**100%**	**05/13/09**	Fiberglass Cellulose Synthetics Wollastonite . Trace <1%	**Amosite** **Anthophyllite** **Chrysotile** **Crocidolite** **Trem./Act.**	**Total Asbestos:** **Other Fibrous Material** **Nonfibrous Material**	**None Detected** Trace <1% 99
S1.1C **Surfacing [multiple colors (inseparable)]**	**100%**	**05/13/09**	Fiberglass Cellulose Synthetics Others .	**Amosite** **Anthophyllite** **Chrysotile** **Crocidolite** **Trem./Act.**	**Total Asbestos:** **Other Fibrous Material** **Nonfibrous Material**	**None Detected** -- 100

* Composite analysis (multilayered sample, see individual layer analyses).

Analyst(s): Mark Cooperrider David A. Schroeder

Completed: 05/26/2009

Client: Tetra Tech
Address: 363 Centennial Pkwy
Suite 210
City: Louisville
State: CO Zip: 80027
Telephone: (303) 665-4392
FAX*: (303) 665-4391
Person to Contact: Ryan Egan
Alternate Phone (303) 416-0532

FRS GEOTECH, INC.
Bulk Chain of Custody
1441 W. 46th Ave., Suite 14
Denver, CO 80211-2338
(303)477-2559 or (800)386-3136
FAX: (303)477-2580
e-mail: frsgeo@ix.netcom.com
Asbestos X **Mold** ___

FRS Lab No.: ___ Page 1 of 1
Job Description: CDOT - Bridge E-17-FX
P.O. #: 114-181881
Turnaround time requested:
Rush ___ 1-day ___ 5-day ✓ Other: ___
Return Samples No
*NOTE: Specifying a FAX number authorizes FRS Geotech, Inc. to FAX confidential reports to that number.

Accept/ Reject	Sample Number	Sample Date	Sample Description and Location
	M15.1A	5/13/09	Flex Joint
	B		
	C		
	M16.1A		Concrete
	B		
	C		
	D		
	E		
	S1.1A		Surfacing
	B		
	C		

Relinquished by (Name, date, time)
1. [signature] 5/21/09 1600
2.

Received by (Name, date, time):
1.
2.

Send White and Yellow copies with samples (Yellow copy returned with Report). Keep Pink copy for Client Records.

Reservoirs Environmental, Inc.

May 26, 2009

Laboratory Code:	**RES**
Subcontract Number:	**NA**
Laboratory Report:	**RES 173206-1**
Project Description:	**1147-181881**
	CDOT-Bridge E-17-FX

Ryan Egan
Tetra Tech (Louisville)
363 Centennial Parkway, Ste 210
Louisville CO 80027

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the American Industrial Hygiene Association, Lab ID 101533 - Accreditation Certificate #480. The laboratory is currently proficient in both PAT & ELPAT programs respectively.

Reservoirs has analyzed the following sample(s) using Atomic Absorption Spectroscopy (AAS) / Atomic Emission Spectroscopy - Inductively Coupled Plasma (AES-ICP) per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the analysis table. Results have been sent to your office.

RES 173206-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those authorized by the client. The results described in this report only apply to the samples analyzed. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you should have any questions about this report, please feel free to call me at 303-964-1986.

Sincerely,

Jeanne Spencer Orr
President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Accredited Laboratory #101896
AIHA Certificate of Accredidation #480 LAB ID 101533

TABLE ANALYSIS: LEAD IN PAINT

RES Job Number:	**RES 173206-1**
Client:	**Tetra Tech (Louisville)**
Client Project Number / P.O.:	**1147-181881**
Client Project Description:	**CDOT-Bridge E-17-FX**
Date Samples Received:	**May 22, 2009**
Analysis Type:	**USEPA SW846 3050B / AA (7420)**
Turnaround:	**24 Hour**
Date Samples Analyzed:	**May 22, 2009**

Client ID Number	Lab ID Number	Reporting Limit (%)	LEAD CONCENTRATION (%)
LBP-01	EM 423427	0.004	BRL

*** Unless otherwise noted all quality control samples performed within specifications established by the laboratory.**

BRL = Below Reporting Limit

Data Qa _____

Due Date: 5/26/09

Due Time: _____

RES 173206

Jc

REI LAB Reservoirs Environmental, Inc.

Page ___1___ of ___1___

SUBMITTED BY:	INVOICE TO: (IF DIFFERENT)	CONTACT INFORMATION:	
Company: Tetra Tech, Inc. (Louisville)	Company:	Contact: Ryan Egan	Contact: Mark Daley
Address: 363 Centennial Parkway Suite 210 Louisville, Colorado 80027	Address:	Phone: 303.665.4392 Fax: 303.665.4391 Cell/pager: 303.416.0532	Phone: 303.665.4392 Fax: 303.665.4391 Cell/pager: 303.548.5197
Project Number and/or P.O. #: 114-181881		Final Data Deliverable Email Address:	
Project Description/Location: CDOT - Bridge E-17-FX		ryan.egan@tetratech.com	

ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm

PLM / PCM / TEM ____ RUSH (Same Day) ___ PRIORITY (Next Day) ___STANDARD

(Rush PCM = 2hr, TEM = 6hr.)

CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 5pm

Metal(s) / Dust ___ RUSH _X_ 24 hr. ___3-5 Day

RCRA 8 / Metals & Welding Fume Scan / TCLP ___ RUSH ___ 5 day ___10 day

Organics ___ 24 hr. ___ 3 day ___5 Day

****Prior notification is required for RUSH turnarounds.****

****Turnaround times establish a laboratory priority, subject to laboratory volume and are not guaranteed. Additional fees apply for afterhours, weekends and holidays.****

Special Instructions: _____

VALID MATRIX CODES

Air = A, Bulk = B, Dust = D, Paint = P, Soil = S, Wipe = W, Drinking Water = DW, Waste Water = WW, Other = O

ASTM E1792 approved wipe media only

LAB NOTES:

	Client sample ID number (Sample ID's must be unique)	PLM - Short report, Long report, Point Count	TEM - AHERA, Level II, 7402, ISO, +/-, Quant, Semi-quant, Micro-vac, ISO-Indirect Preps	PCM - 7400A, 7400B, OSHA	DUST - Total, Respirable	METALS - Analyte(s) Lead RCRA 8, TCLP, Welding Fume, Metals Scan	ORGANICS - BTEX, MTBE, 8260, GRO, DRO	OTHER -	Sample Volume (L) / Area	Matrix Code	# Containers	Date Collected mm/dd/yy	Time Collected hh/mm a/p	EM Number (Laboratory Use Only)
1	LBP-01					X			N/A	P	1	5/13/09	N/A	4232427
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														

Number of samples received: _____ (Additional samples shall be listed on attached long form.)

NOTE: REI will analyze incoming samples based upon information received and will not be responsible for errors or omissions in calculations resulting from the inaccuracy of original data. By signing client/company representative agrees that submission of the following samples for requested analysis as indicated on this Chain of Custody shall constitute an analytical services agreement with payment terms of NET 30 days, failure to comply with payment terms may result in a 1.5% monthly interest surcharge.

Relinquished By: [signature] Date/Time: 5/21/09 1600

Laboratory Use Only

Received By: [signature] Date/Time: [illegible] Carrier: FedEx

Sample Condition: On Ice Y/N Sealed Y/N Intact (Y/N)

Temp. (F°) _____

Results:	Contact	Page	Phone	Email	Fax	Date	Time	Initials	Contact	Page	Phone	Email	Fax	Date	Time	Initials
	Contact	Page	Phone	Email	Fax	Date	Time	Initials	Contact	Page	Phone	Email	Fax	Date	Time	Initials

APPENDIX

B

SAMPLING LOCATIONS ON AERIAL PHOTOGRAPHS

Brighton Blvd
Union Pacific Railroad
PC05
PC06
PC07
PC12
PC13
PC04
PC01
PC02
ACM03-01
ACM03-02
ACM03-03
ACM02-01
ACM02-02
ACM02-03
ACM11-01
ACM11-02
ACM11-03
ACM11-04
ACM11-05
ACM11-06
ACM11-07
Google Earth
©2020 Google
300 ft
N

York St
Josephine St
Columbine St
ACM04-01
ACM08-02
ACM12-02
ACM13-02
ACM09-02
ACM10-02
ACM05-01
ACM05-02
ACM05-03
PC08
ACM10-01
PC09
PC14
ACM08-01
ACM12-01
ACM13-01
ACM09-01
Google Earth
©2020 Google
300 ft
N

Clayton St
Fillmore St
Milwaukee St
Steele St
PC15
PC16
PC17
Google Earth
©2020 Google
300 ft
N

ACM01-02
ACM01-03
ACM07-01
PC18
PC19
ACM06-01
ACM06-02
ACM06-03
ACM04-02
ACM01-01
ACM07-02
ACM04-03
Monroe St
Madison St
Cook St
Garfield St
N
300 ft
Google Earth
©2020 Google

APPENDIX

C

ACM SAMPLING LOCATION PHOTOGRAPHS

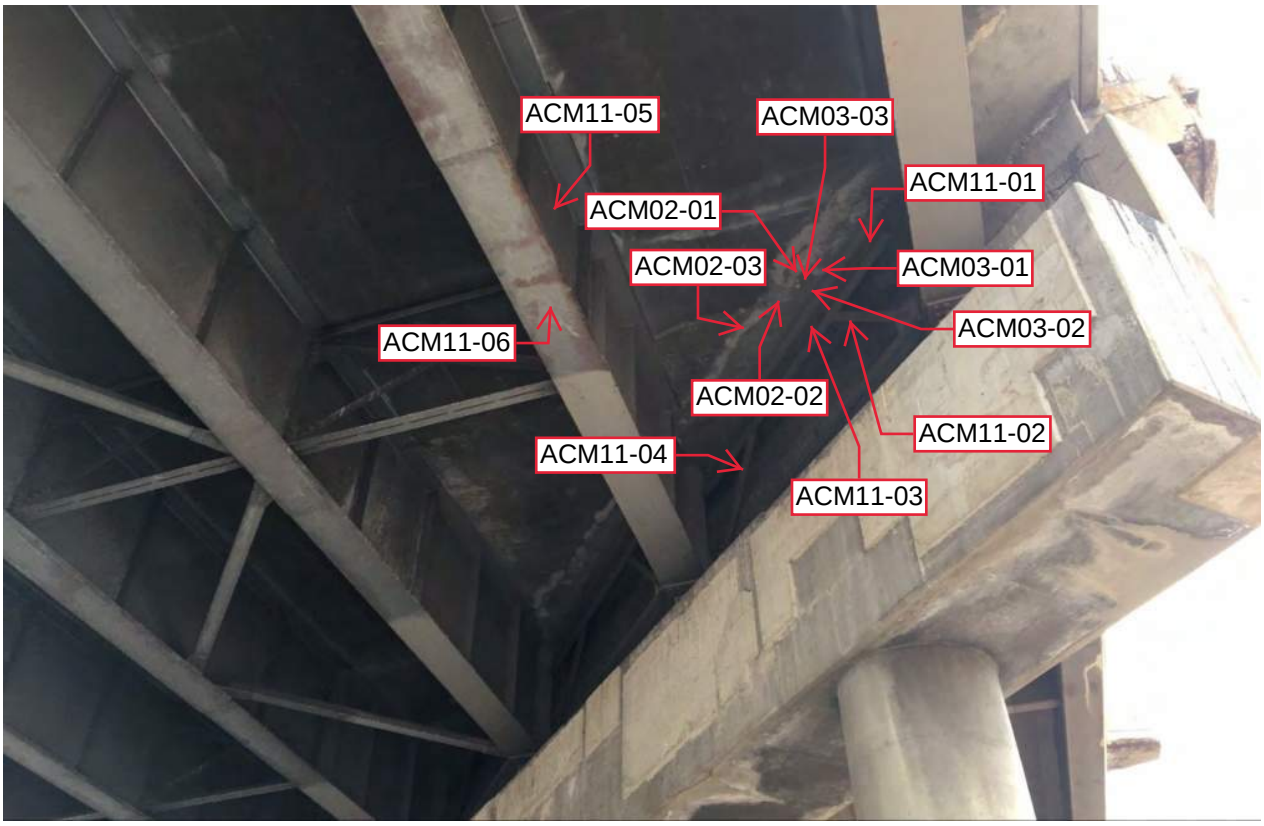
ACM06-01
ACM06-02
ACM06-03
ACM04-03

ACM04-02

ACM01-02
ACM01-03
ACM07-02
ACM07-01
ACM01-01

ACM05-03
ACM05-02
ACM05-01
54

ACM04-01


ACM11-05
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ACM02-01
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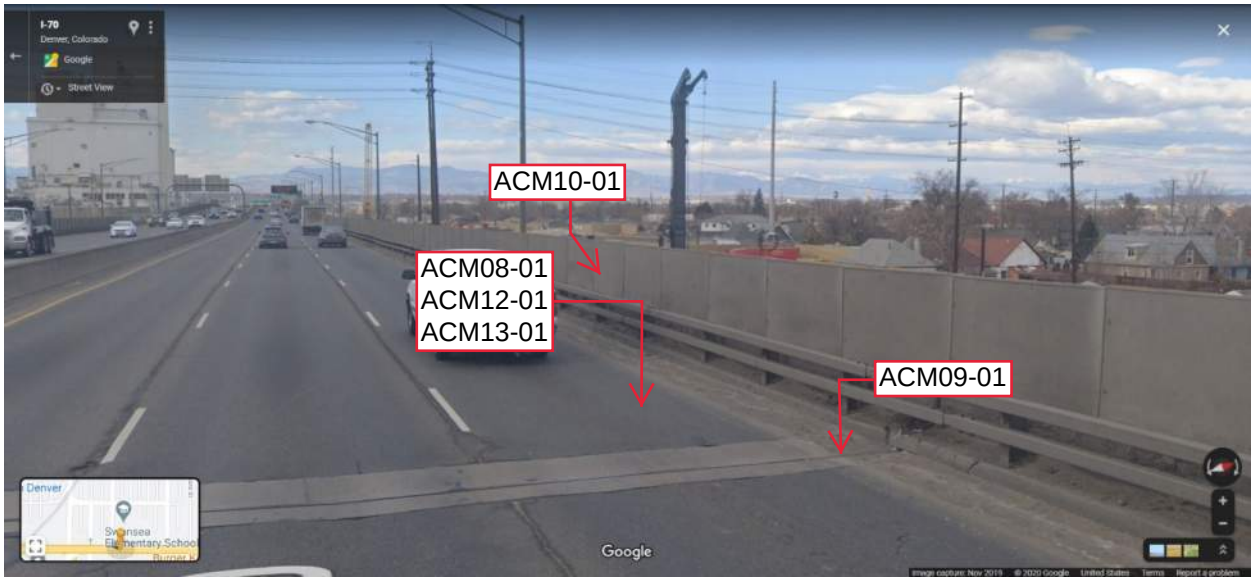
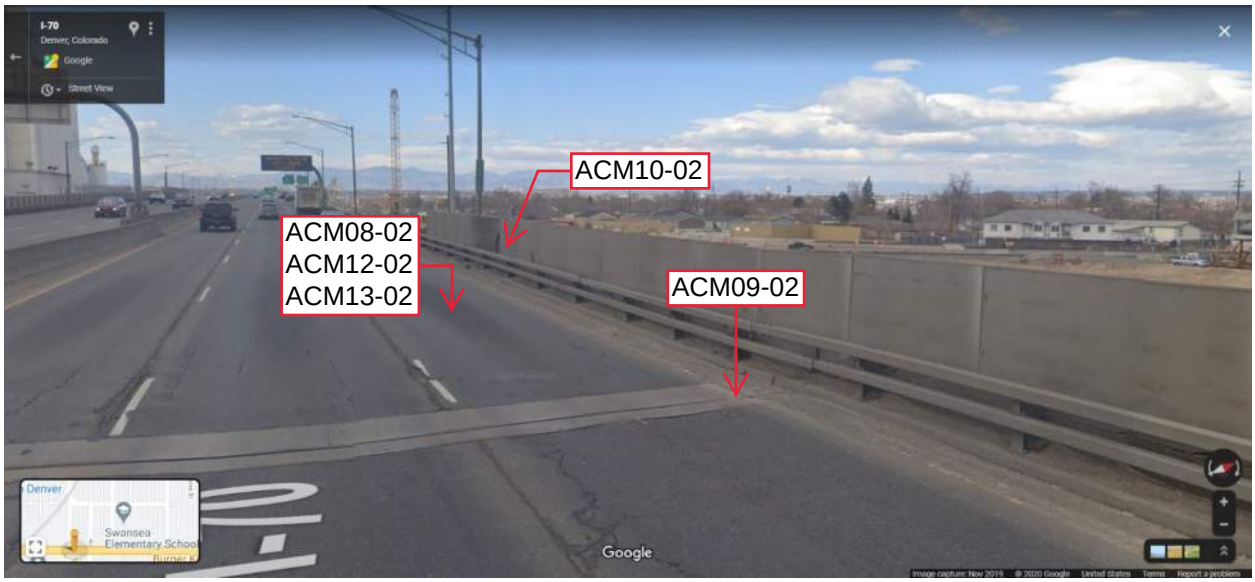
ACM11-02
ACM11-04
ACM11-03

ACM11-07

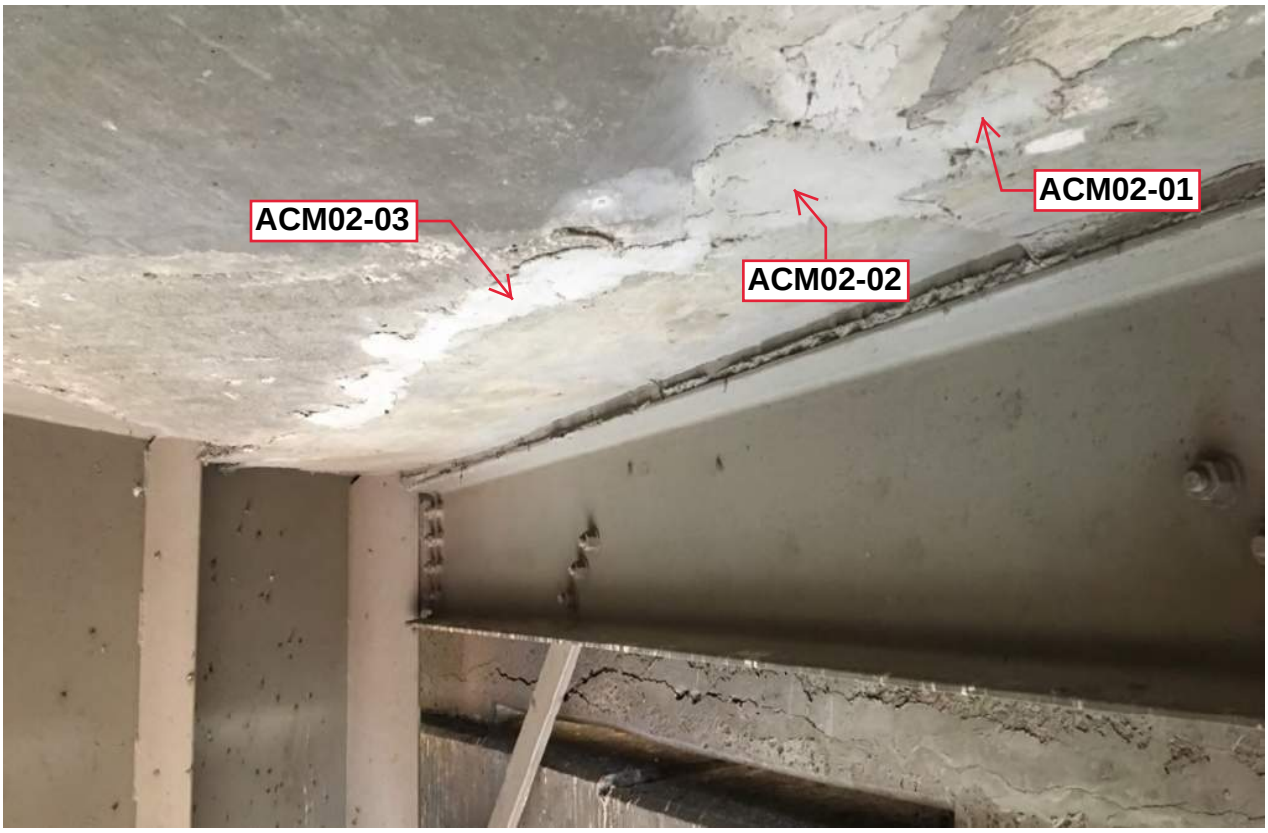

I-70
Denver, Colorado
Google
Street View
ACM10-01
ACM08-01
ACM12-01
ACM13-01
ACM09-01
Denver
Google


I-70
Denver, Colorado
Google
Street View
ACM10-02
ACM08-02
ACM12-02
ACM13-02
ACM09-02
Denver
Swansea
Elementary School
Google

ACM01-01
C-E17FX-ACM01-01-SM-102020

ACM01-02
C-E17FX-ACM01-02-SM-102020

ACM01-03
C-E17FX-ACM01-03-SM-102020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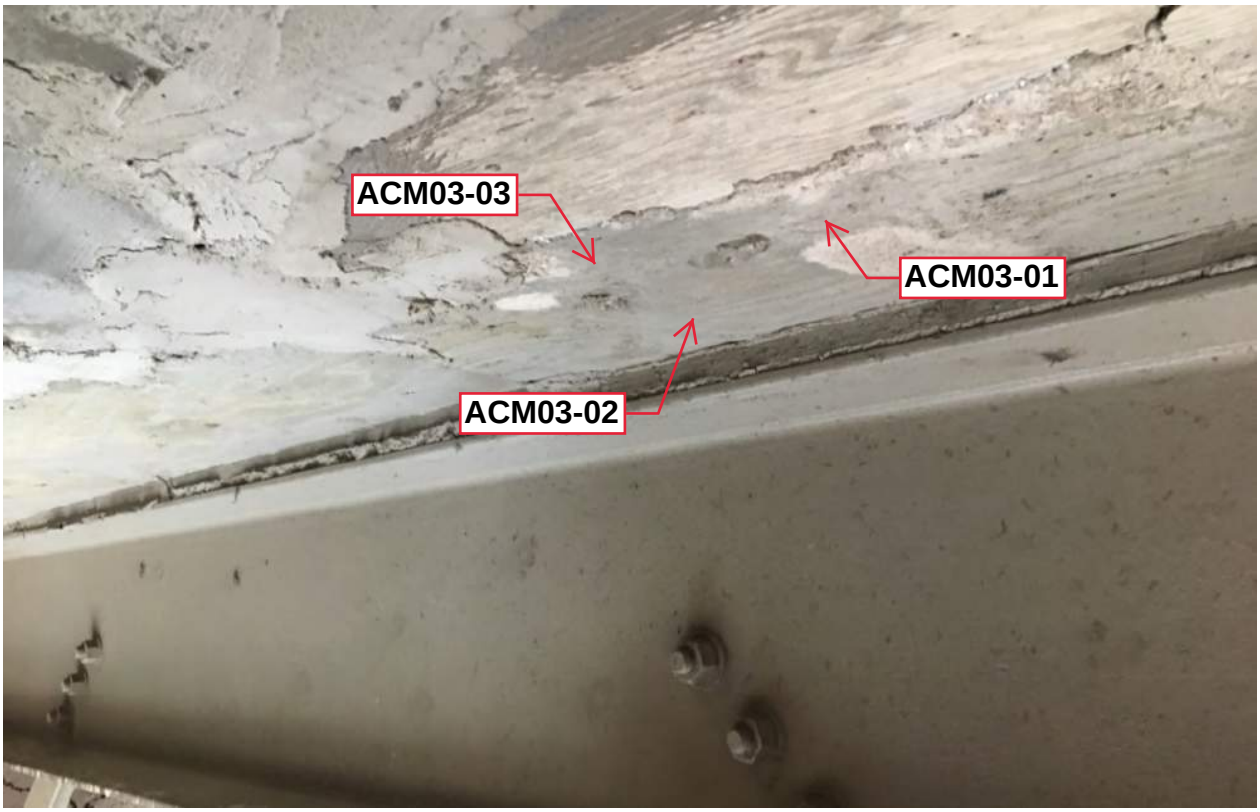
ACM02-02
ACM02-01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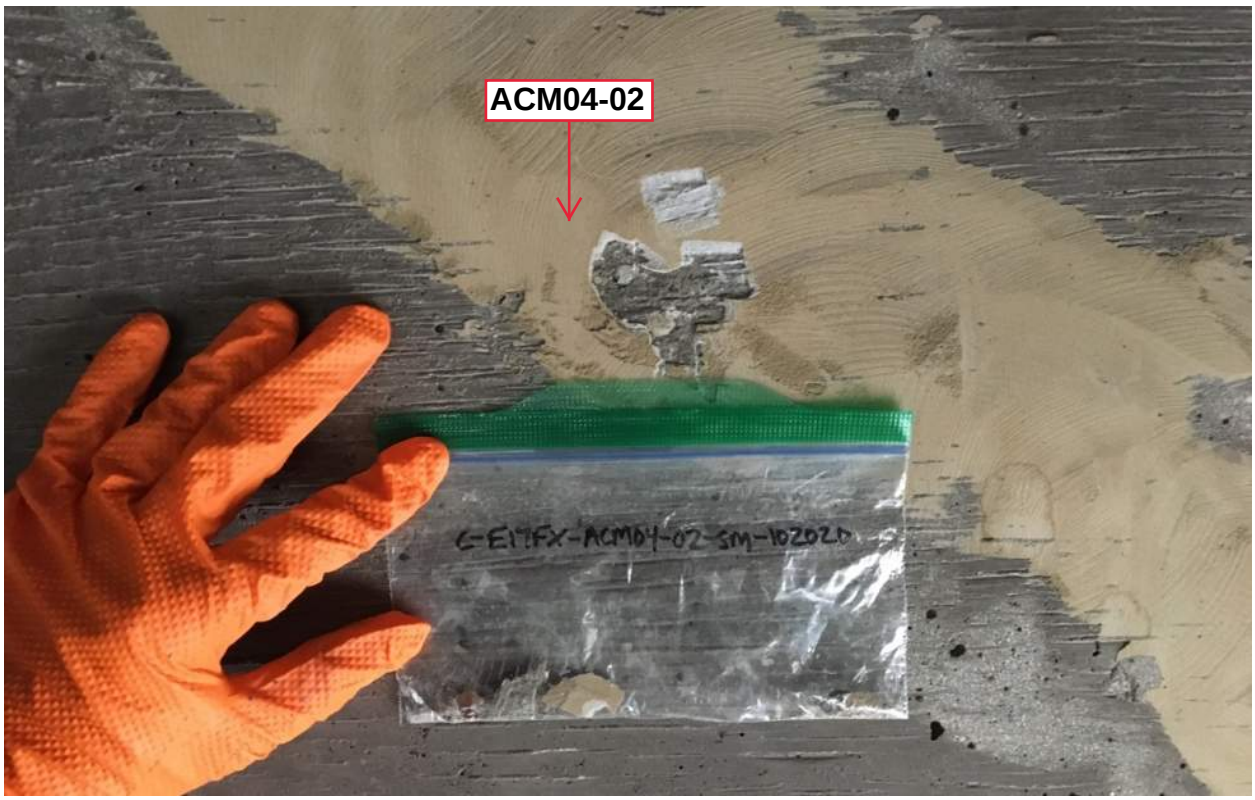
ACM03-01
ACM03-02

ACM04-01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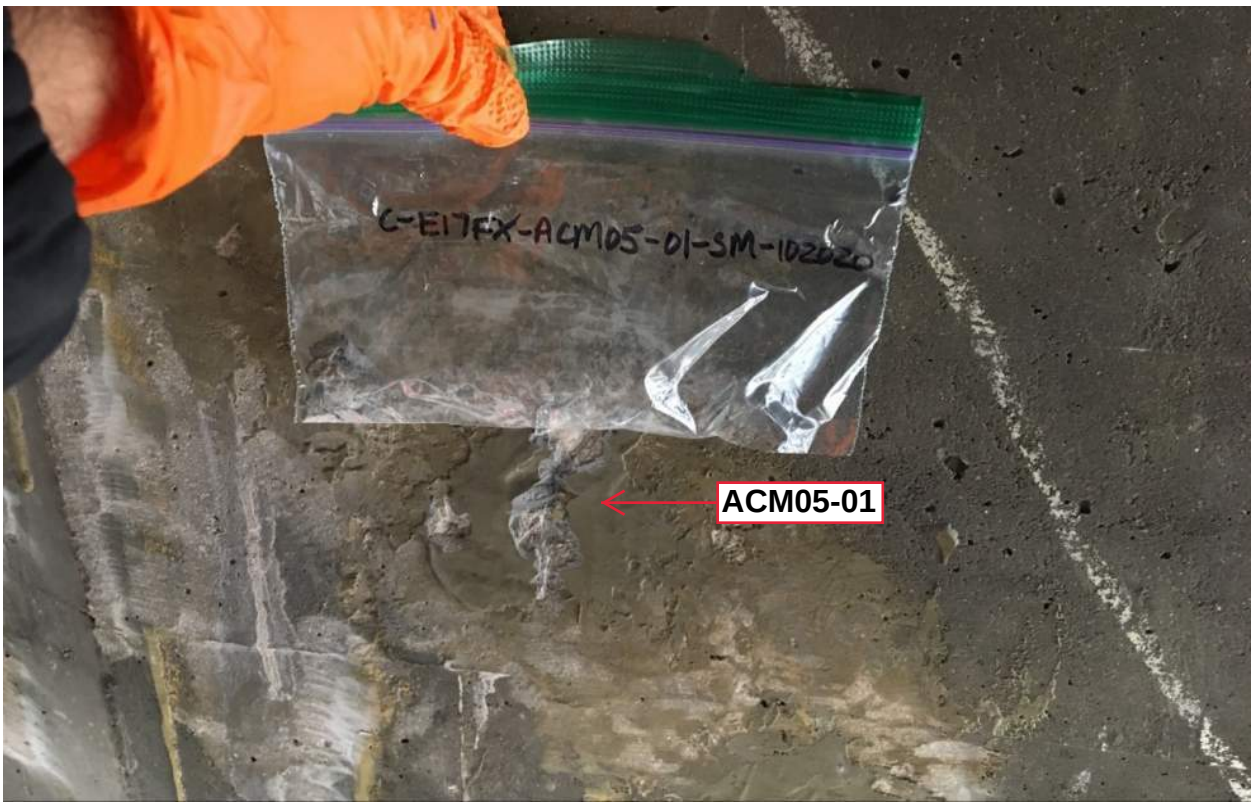
C-E17FX-ACM04-02-SM-102020

ACM04-03
Ziploc
C-E17FX-ACM04-03-SM-100720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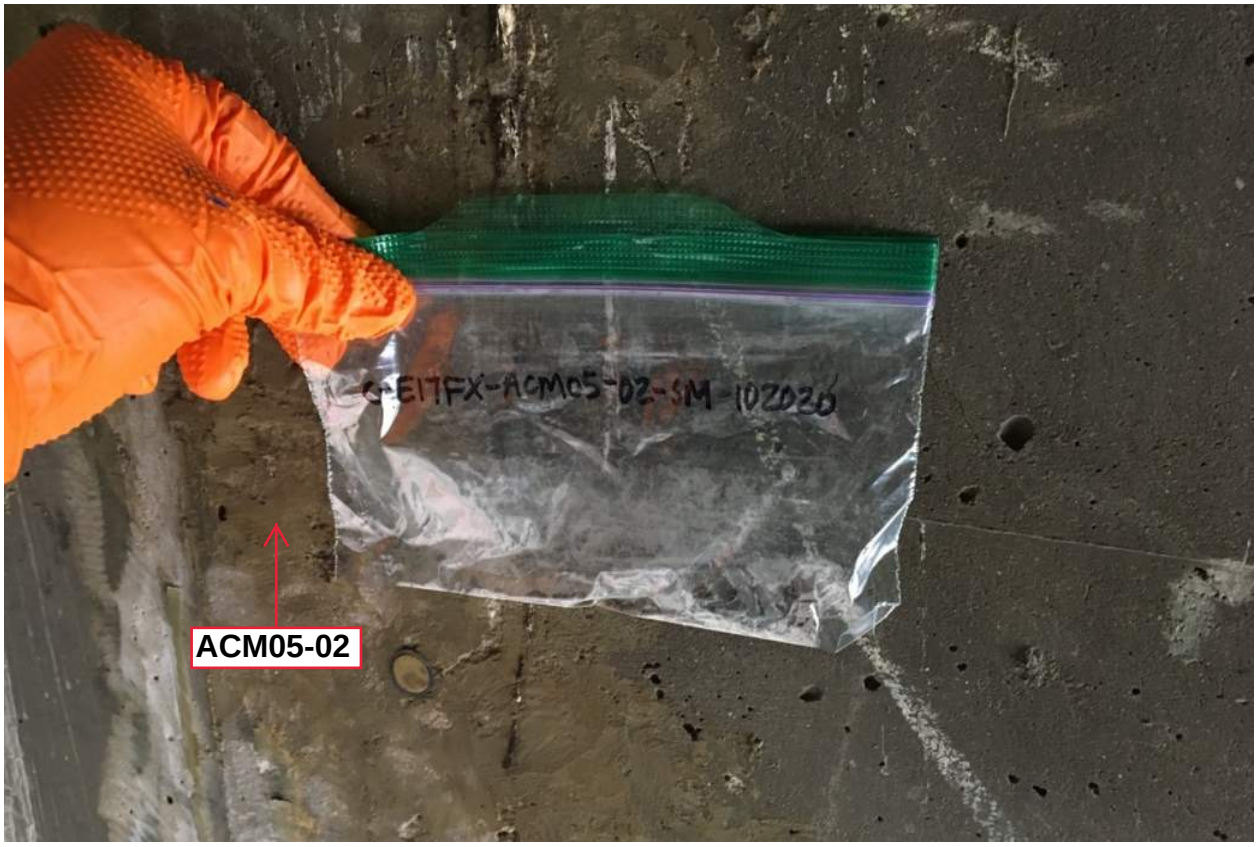
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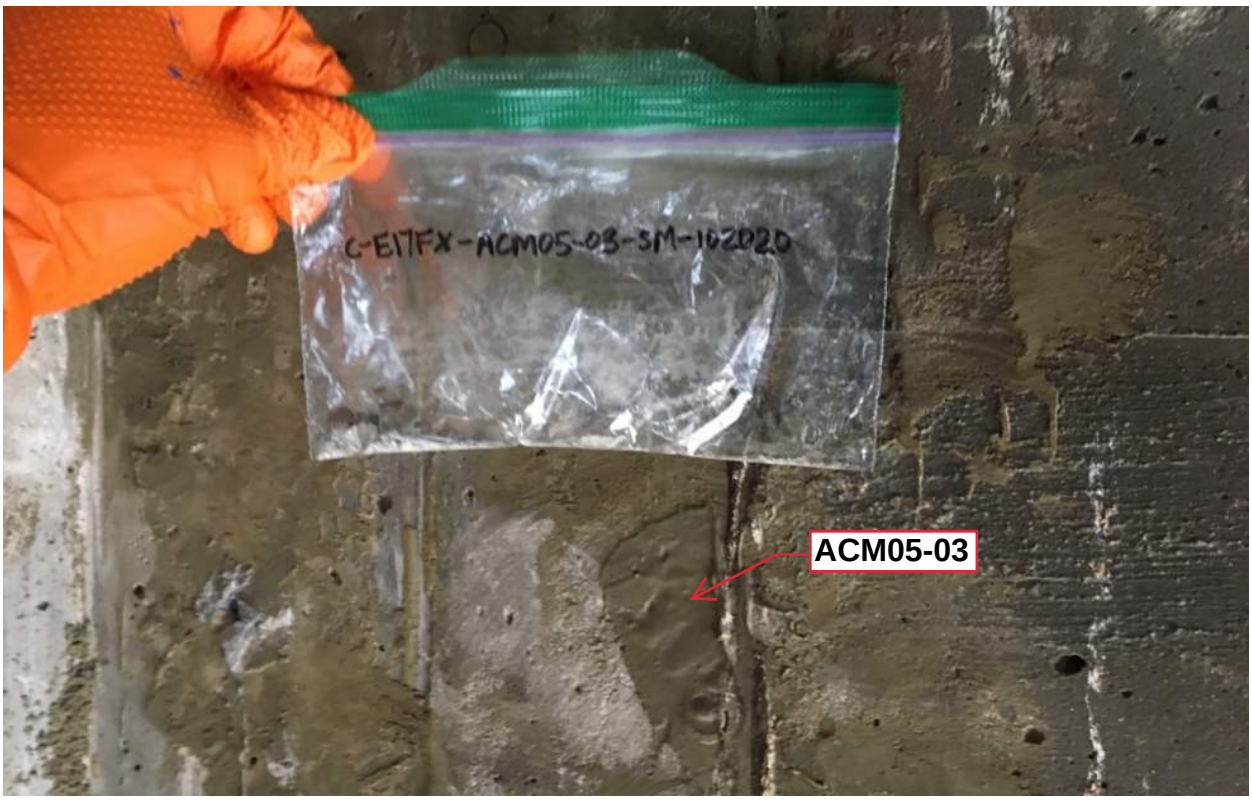
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ACM05-03

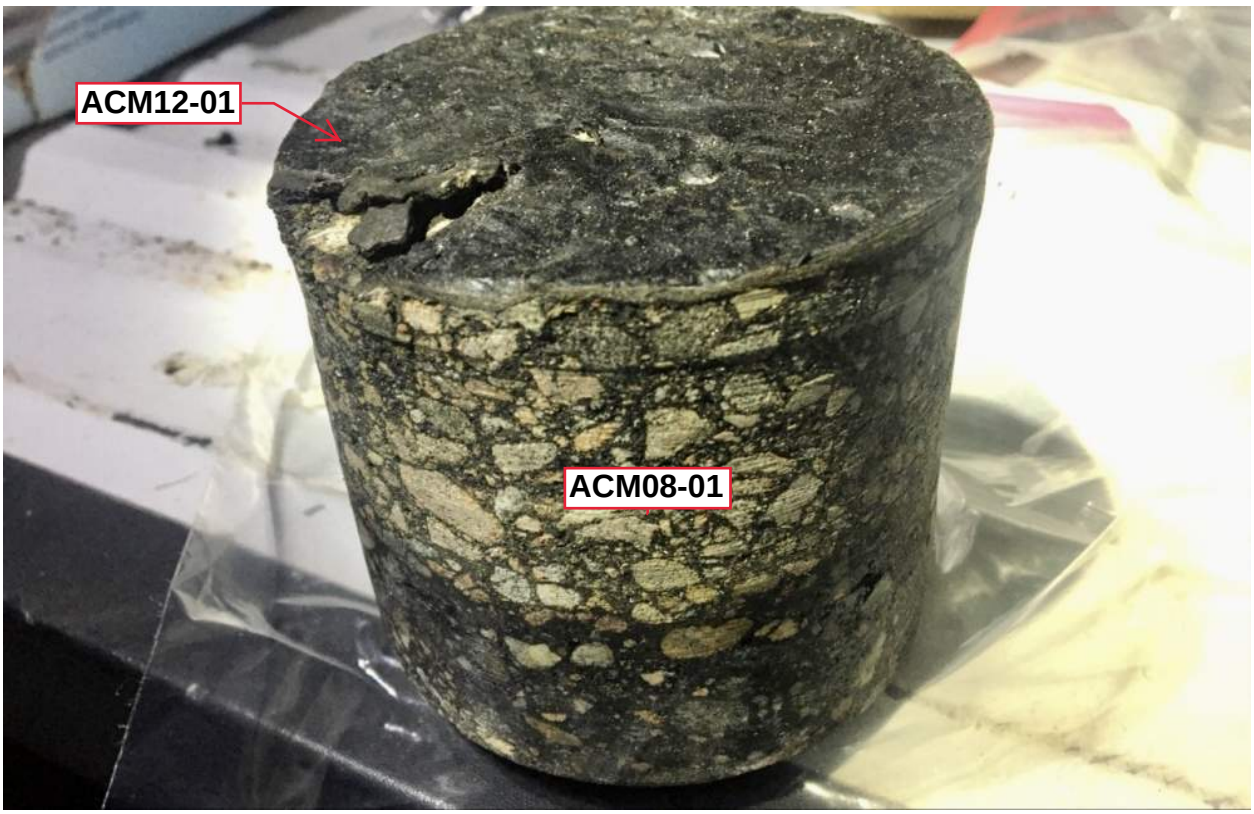
ACM06-01
C-EITFX-ACM06-01-SM-100720

ACM06-02

ACM06-03

ACM07-01

ACM07-02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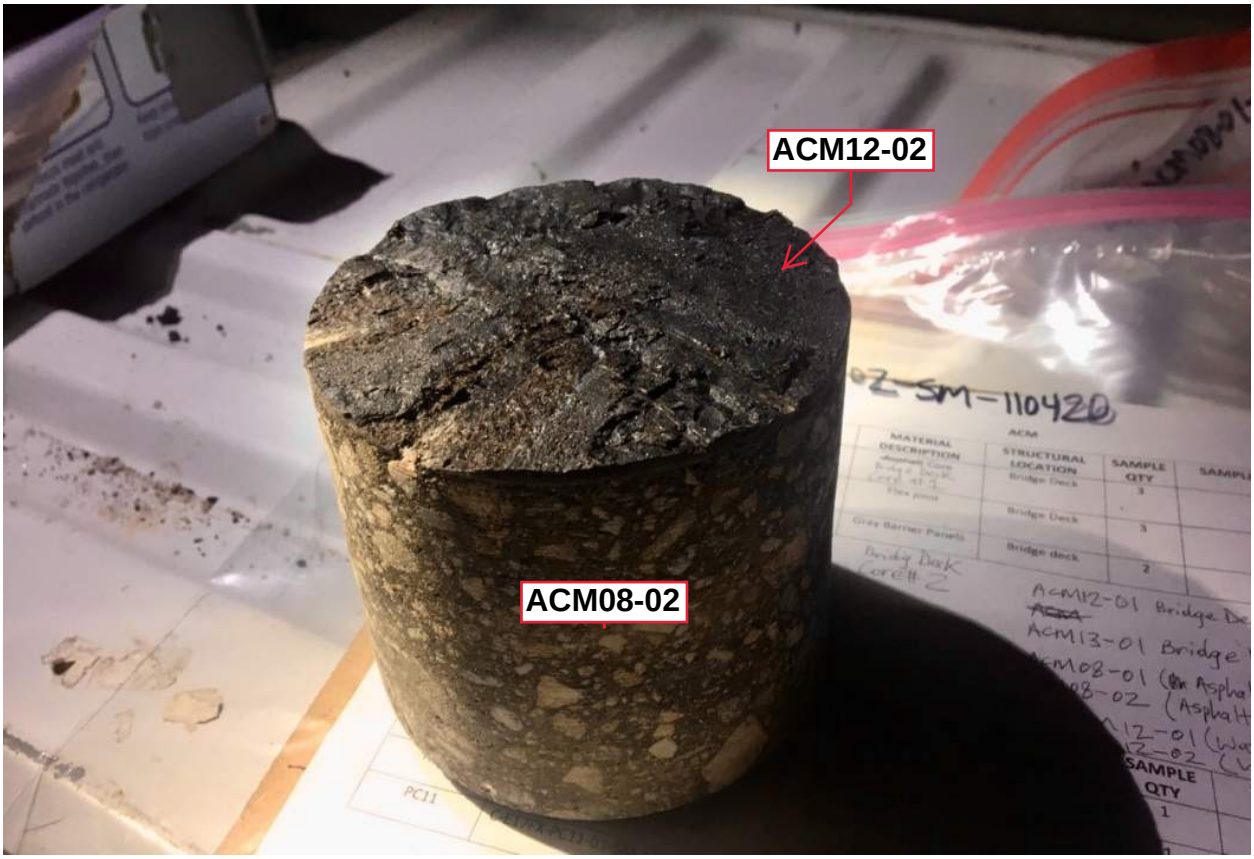
ACM08-01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ACM08-02

ACM09-01
ACM09-02

ACM10-01
ACM10-02

ACM11-01
PC01
ACM11-03
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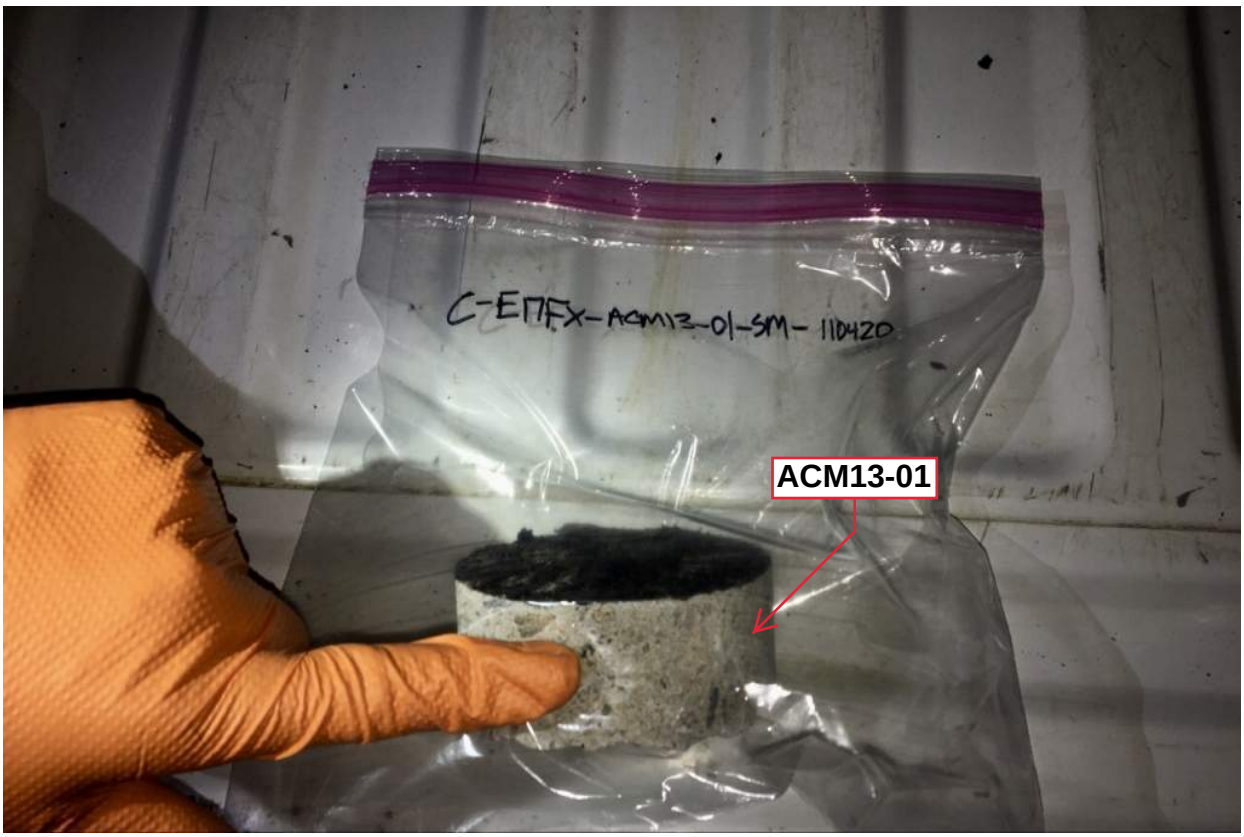
ACM11-02
ACM11-07

ACM11-05
ACM11-06


C-E17FX-ACM13-01-SM- 110420
ACM13-01

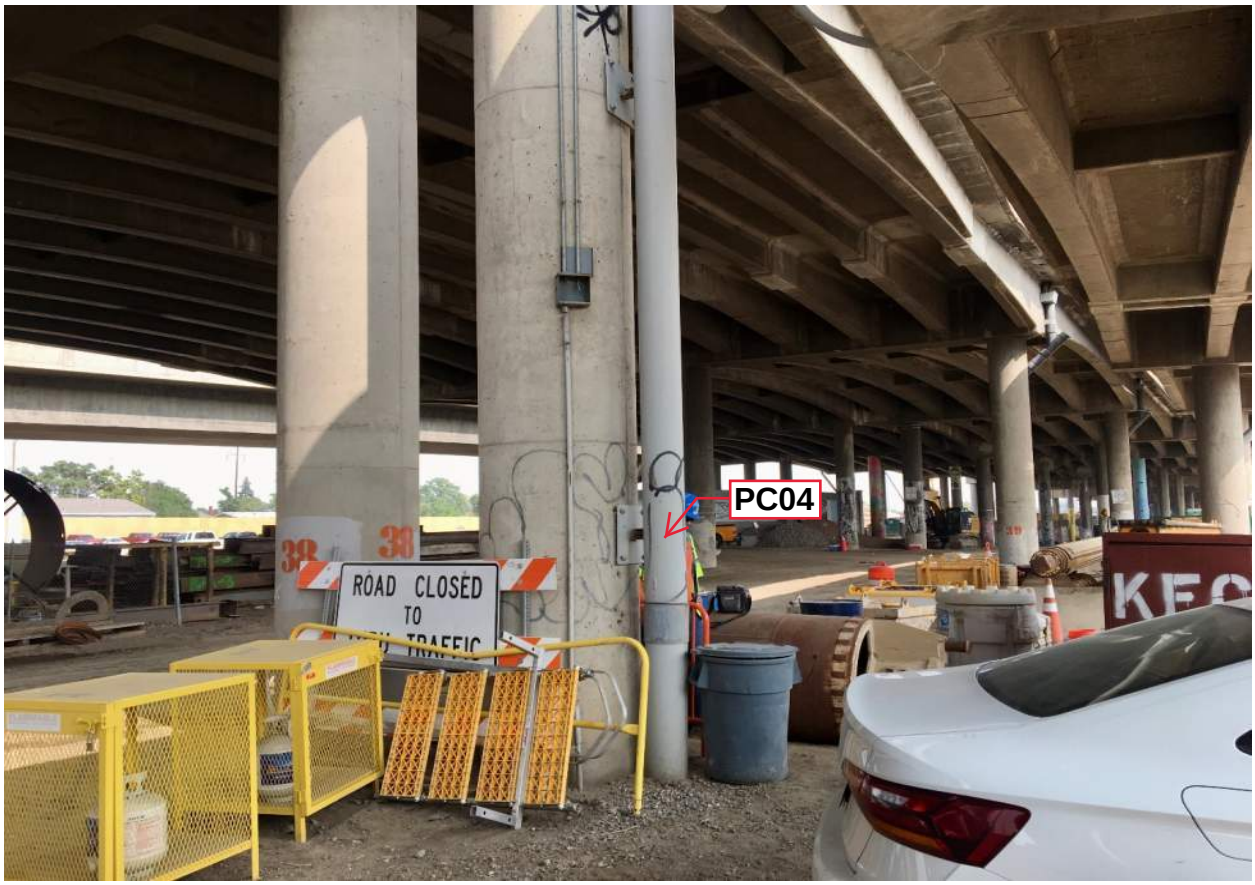
C-E17FX-ACM13-02-SM-110420
ACM13-02

APPENDIX

D

PAINT SAMPLING LOCATION PHOTOGRAPHS

EXIT 275B
Coliseum
Coors Field
NEXT RIGHT
RIGHT LANE
MUST
EXIT
PC02
PC01


PC04
ROAD CLOSED
TO

PC05

PC07
PC06

I-70
Denver, Colorado
Google
Street View
PC08
Denver
Swansea
Elementary School
Google
Image capture: Nov 2019 © 2020 Google United States Terms Report a problem

I-70
Denver, Colorado
Google
Street View
PC09
Denver
Google
Image capture: Nov 2019 © 2020 Google United States Terms Report a problem

38
PC12

39
PC13

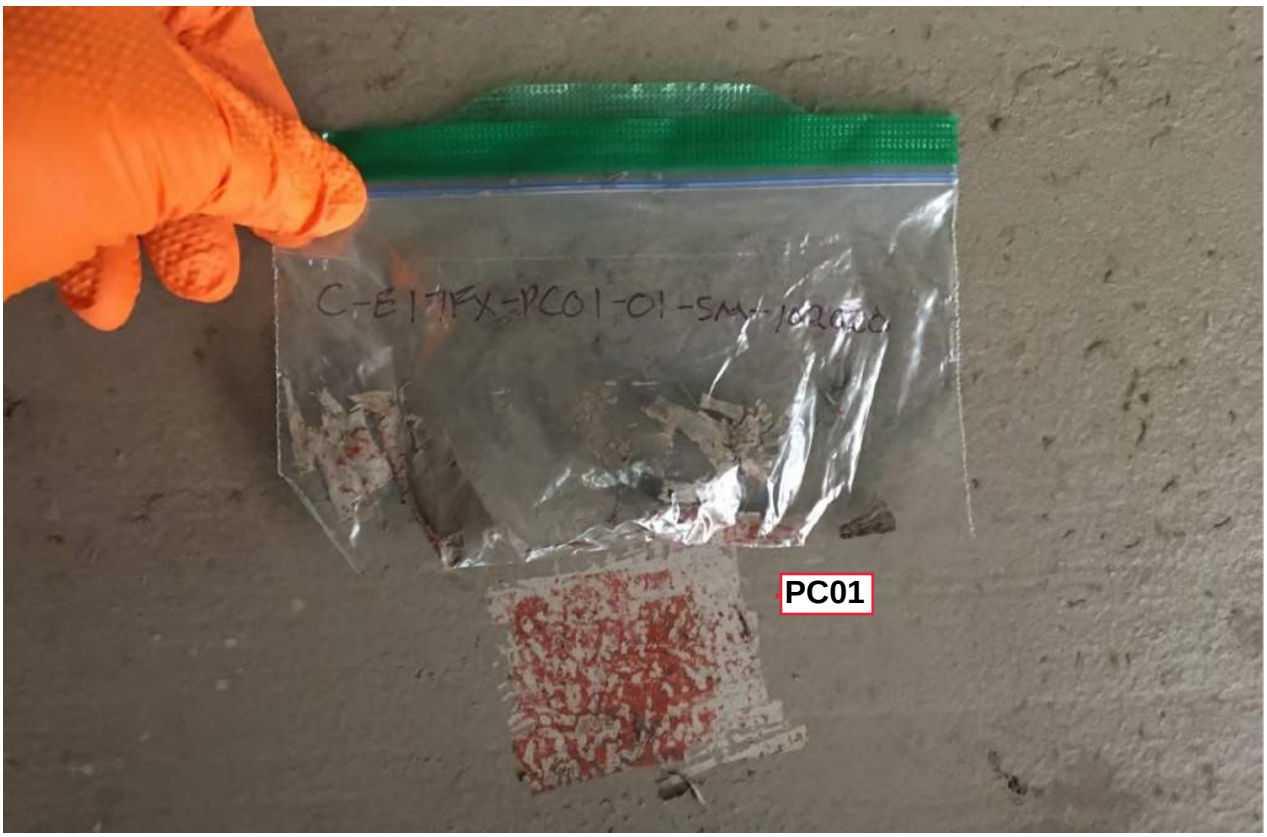
EAST
61
PC14

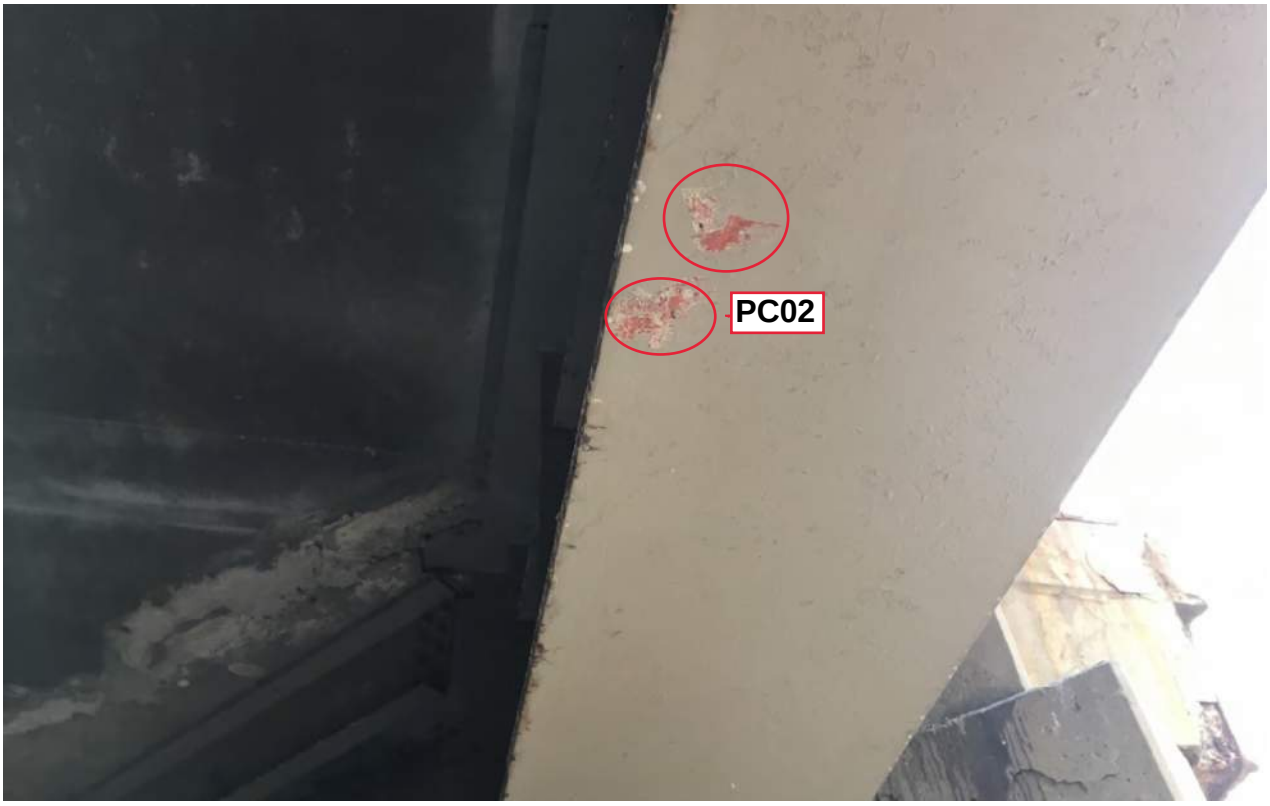
PC15

PC16

PC17

104
PC19
PC18

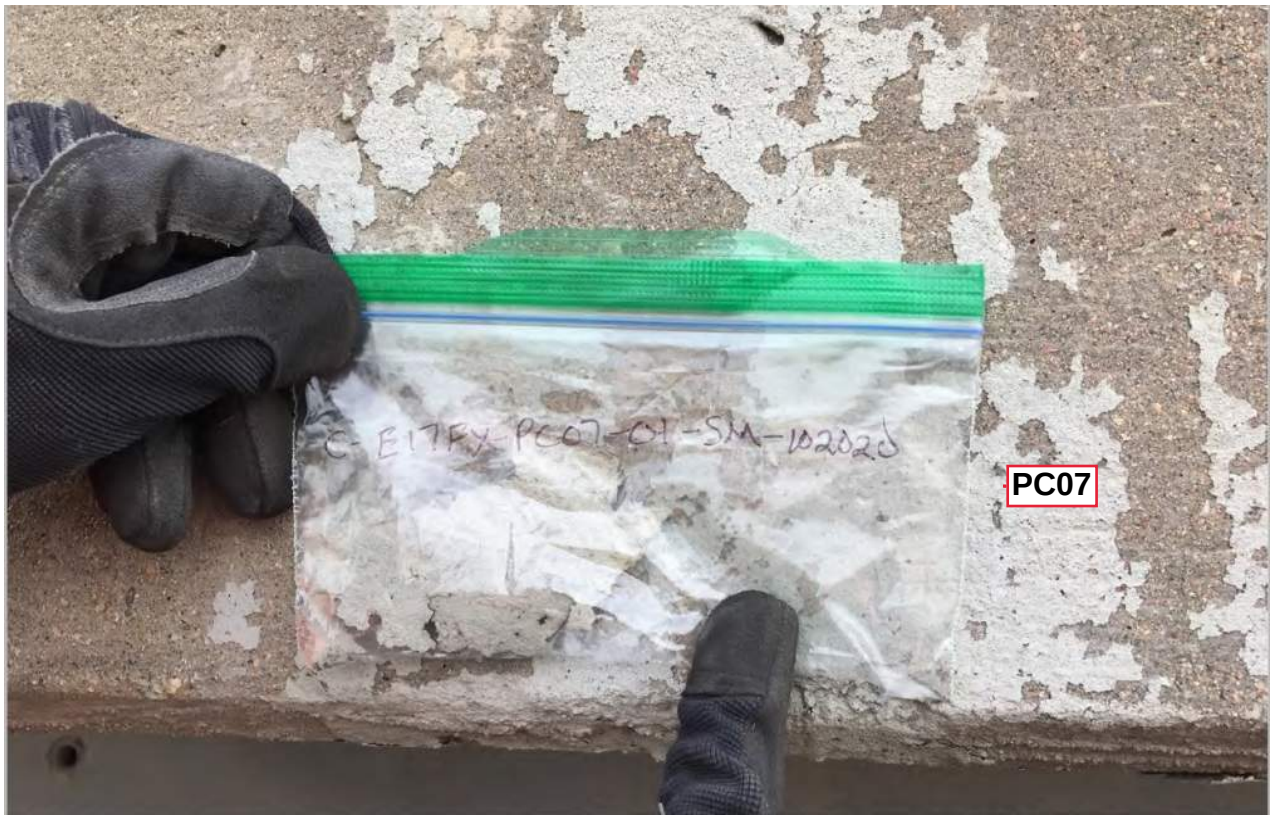

C-E1-1FX-PC01-01-SM-102000
PC01


PC02

PC04

PC05

PC06

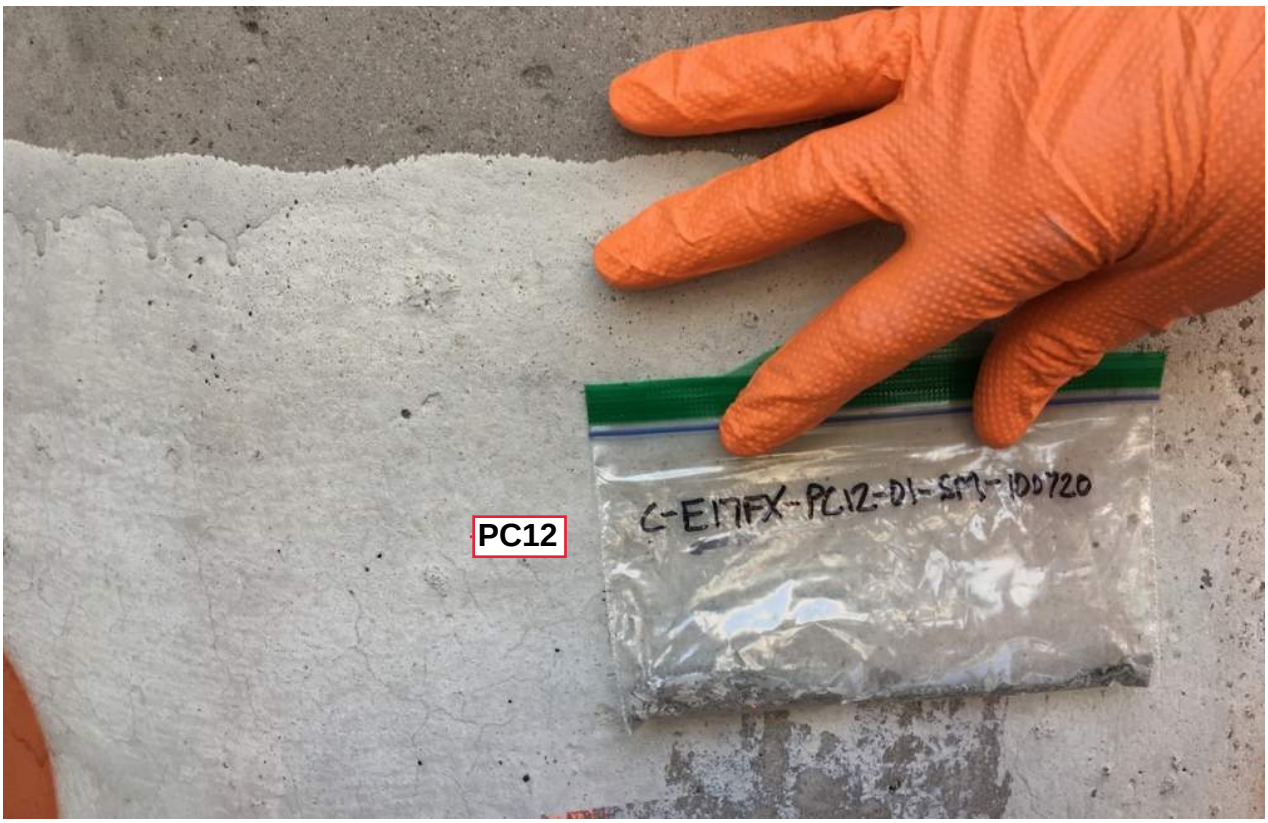

C-E17FX-PC07-01-SM-102020
PC07

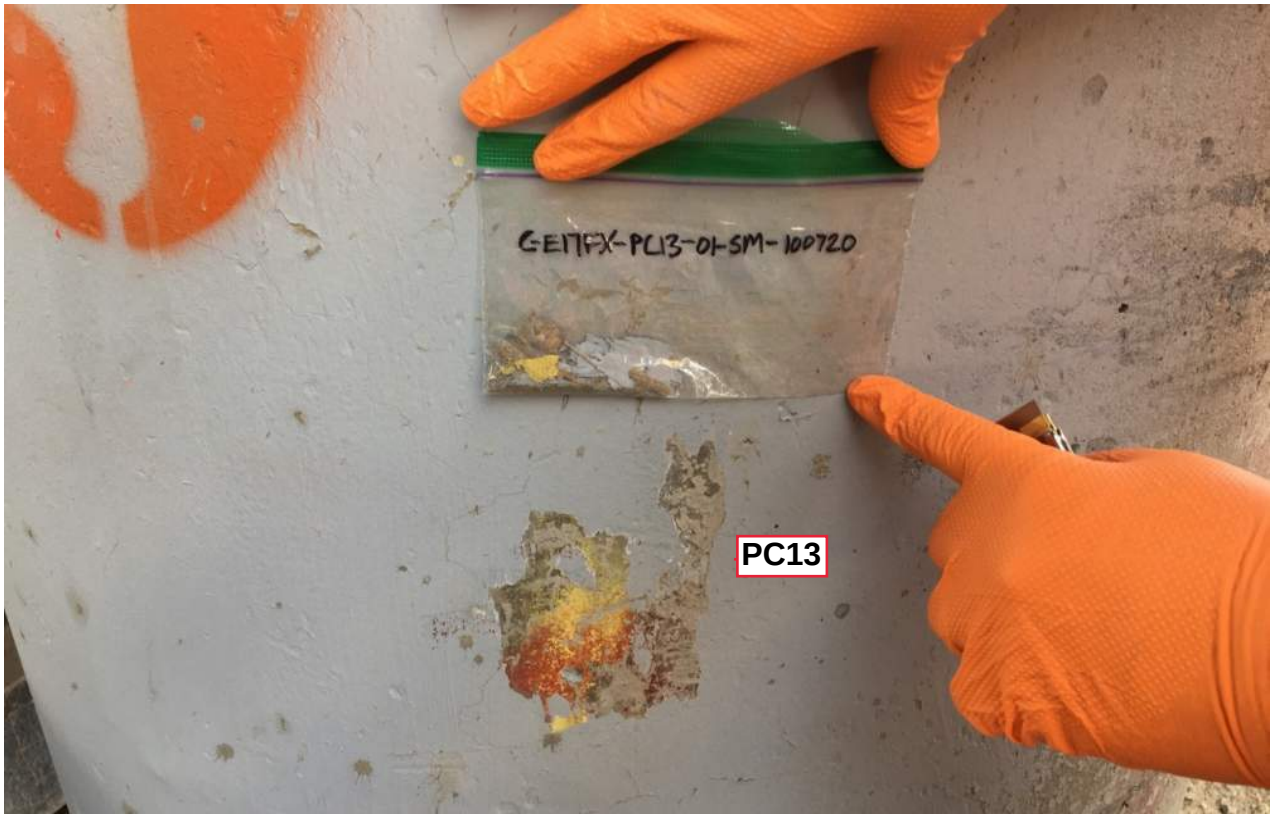
PC08

C-E17FX-PC08-01-SM-110420
(White Road Paint)

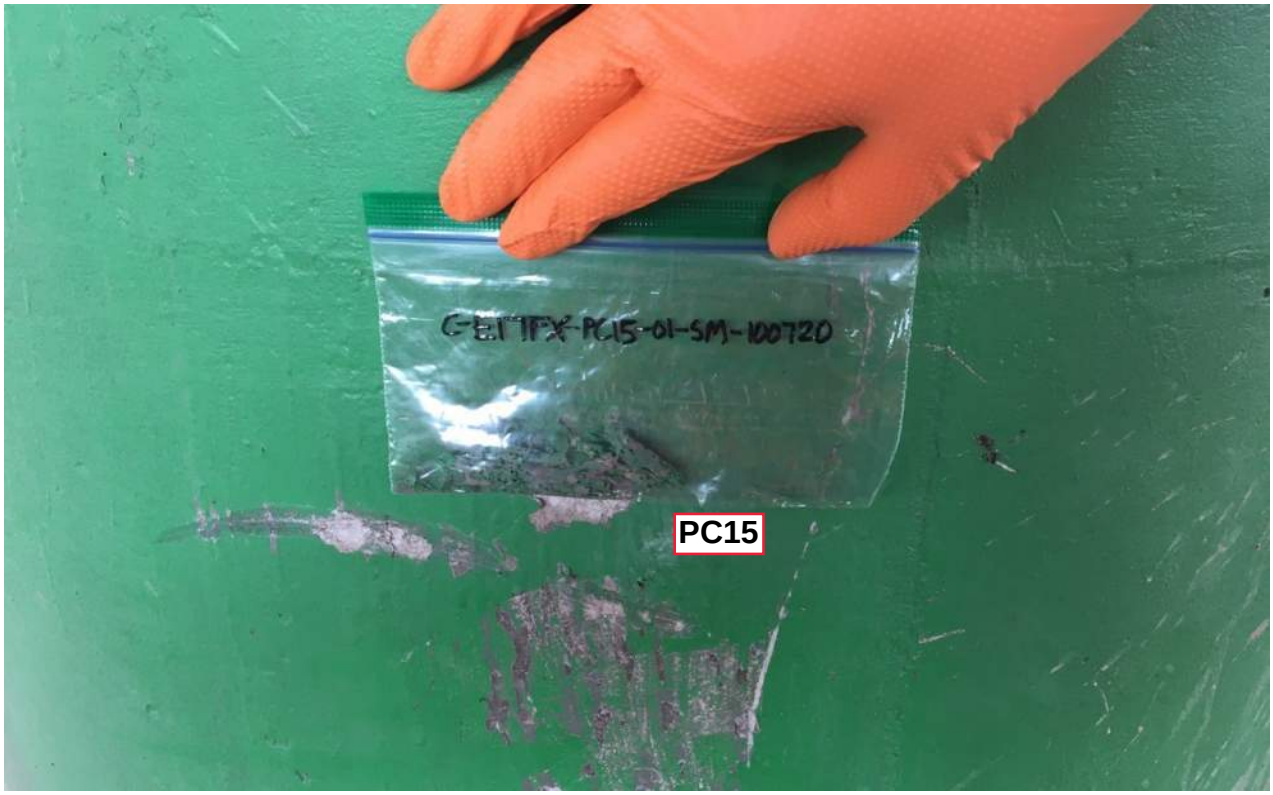
PC09

C-E17FX-PC09-01-SM-110420
(Yellow Road Paint)


PC12
C-E17FX-PC12-01-SM-100720

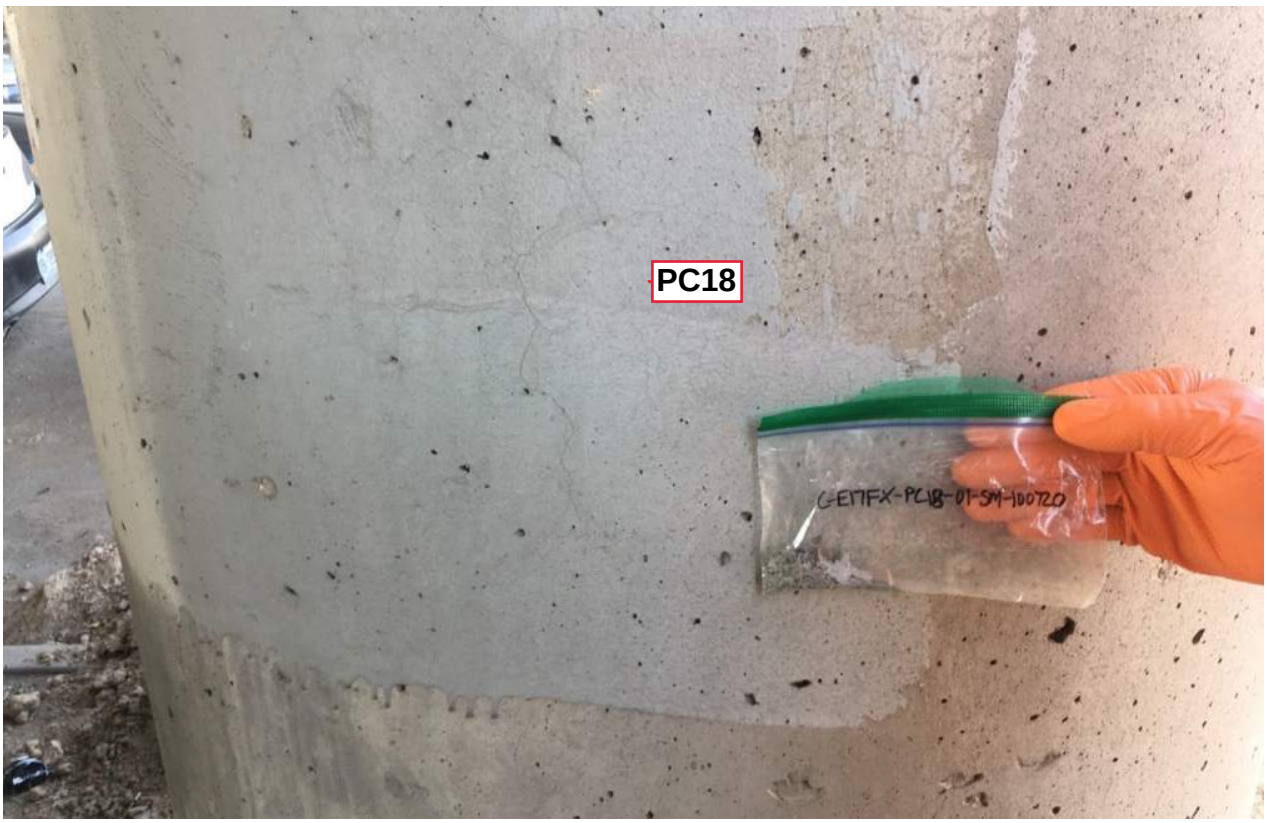

GE17FX-PC13-01-SM-100720
PC13

G-E17FX-PC14-01-SM-100720
PC14


G-E17FX-PC15-01-SM-100720
PC15

G-E17FX-PC16-01-SM-100720
PC16

PC17


PC18
G-ETIFX-PC18-01-SM-100720

PC19
G-ETIFX-PC19-01-SM-100720
PC19

APPENDIX

E

ACM LABORATORY ANALYSIS – OCTOBER AND NOVEMBER 2020

REI LAB **Reservoirs Environmental, Inc.**

October 28, 2020

Subcontractor Number:	
Laboratory Report:	**RES 476316-1**
Project #/P.O. #:	**Y010290**
Project Description:	**Central 70**

Jenn Pellegrini
Origins Laboratory Inc
1725 W Elk Pl.
Denver CO 80211

Dear Jenn,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 476316-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer
by Emily Giddens

Jeanne Spencer
President

RESERVOIRS ENVIRONMENTAL INC.

NVLAP Lab Code 101896-0

TABLE: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 476316-1**
Client: **Origins Laboratory Inc**
Client Project Number / P.O.: **Y010290**
Client Project Description: **Central 70**
Date Samples Received: **October 21, 2020**
Method: **EPA 600/R-93/116 - Short Report, Bulk**
Turnaround: **Standard**
Date Samples Analyzed: **October 27, 2020**

ND=None Detected
TR=Trace, <1% Visual Estimate
Trem/Act=Tremolite/Actinolite

Client Sample Number	LAYER	Physical Description	Sub Part (%)	**Asbestos Content** **Mineral**	**Visual Estimate (%)**	Non Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
C-E17FX-ACM01-01-SM-102020	A	Gray granular cementitious material	100		**ND**	0	100
C-E17FX-ACM01-02-SM-102020	A	Gray granular cementitious material	100		**ND**	0	100
C-E17FX-ACM01-03-SM-102020	A	Gray granular cementitious material	100		**ND**	0	100
C-E17FX-ACM02-01-SM-102020	A	Dark gray granular cementitious material	100		**ND**	0	100
C-E17FX-ACM02-02-SM-102020	A	Dark gray granular cementitious material	100		**ND**	0	100
C-E17FX-ACM02-03-SM-102020	A	Dark gray granular cementitious material	100		**ND**	0	100
C-E17FX-ACM03-01-SM-102020	A	Dark gray granular cementitious material	100		**ND**	0	100
C-E17FX-ACM03-02-SM-102020	A	Dark gray granular cementitious material	100		**ND**	0	100
C-E17FX-ACM03-03-SM-102020	A	Dark gray granular cementitious material	100		**ND**	0	100
C-E17FX-ACM04-01-SM-102020	A	Light gray/tan granular cementitious material	40		**ND**	0	100
	B	Dark gray granular cementitious material	60		**ND**	0	100
C-E17FX-ACM04-02-SM-102020	A	Dark gray granular cementitious material	35		**ND**	0	100
	B	Light gray/tan granular cementitious material	65		**ND**	0	100

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

RESERVOIRS ENVIRONMENTAL INC.

NVLAP Lab Code 101896-0

TABLE: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 476316-1**
Client: **Origins Laboratory Inc**
Client Project Number / P.O.: **Y010290**
Client Project Description: **Central 70**
Date Samples Received: **October 21, 2020**
Method: **EPA 600/R-93/116 - Short Report, Bulk**
Turnaround: **Standard**
Date Samples Analyzed: **October 27, 2020**

ND=None Detected
TR=Trace, <1% Visual Estimate
Trem/Act=Tremolite/Actinolite

Client Sample Number	LAYER	Physical Description	Sub Part (%)	**Asbestos Content** **Mineral**	**Visual Estimate (%)**	Non Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
C-E17FX-ACM05-01-SM-102020	A	Gray granular cementitious material	15		**ND**	0	100
	B	Dark gray granular resinous material	85		**ND**	0	100
C-E17FX-ACM05-02-SM-102020	A	Gray granular cementitious material	12		**ND**	0	100
	B	Dark gray granular resinous material	88		**ND**	0	100
C-E17FX-ACM05-03-SM-102020	A	Gray granular cementitious material	15		**ND**	0	100
	B	Dark gray granular resinous material	85		**ND**	0	100
C-E17FX-ACM07-01-SM-102020	A	Gray/multi-colored granular cementitious material	100		**ND**	3	97
C-E17FX-ACM07-02-SM-102020	A	Gray/multi-colored granular cementitious material w/ a trace of white foam	100		**ND**	2	98
C-E17FX-ACM11-01-SM-102020	A	Gray/multi-colored resinous material	100		**ND**	0	100
C-E17FX-ACM11-02-SM-102020	A	Gray/multi-colored resinous material	100		**ND**	0	100
C-E17FX-ACM11-03-SM-102020	A	Gray/multi-colored resinous material	100		**ND**	0	100
C-E17FX-ACM11-04-SM-102020	A	Gray/silver resinous material	100		**ND**	0	100

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

RESERVOIRS ENVIRONMENTAL INC.

NVLAP Lab Code 101896-0

TABLE: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number:	**RES 476316-1**
Client:	**Origins Laboratory Inc**
Client Project Number / P.O.:	**Y010290**
Client Project Description:	**Central 70**
Date Samples Received:	**October 21, 2020**
Method:	**EPA 600/R-93/116 - Short Report, Bulk**
Turnaround:	**Standard**
Date Samples Analyzed:	**October 27, 2020**

ND=None Detected
TR=Trace, <1% Visual Estimate
Trem/Act=Tremolite/Actinolite

Client Sample Number	LAYER	Physical Description	Sub Part (%)	**Asbestos Content** **Mineral**	**Visual Estimate (%)**	Non Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
C-E17FX-ACM11-05-SM-102020	A	Gray/multi-colored resinous material	100		**ND**	0	100
C-E17FX-ACM11-06-SM-102020	A	Gray/multi-colored resinous material	100		**ND**	0	100
C-E17FX-ACM11-07-SM-102020	A	Gray/red resinous material	100		**ND**	0	100

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

Emily R Giddens

Emily R. Giddens

Analyst / Data QA

Reservoirs Environmental, Inc.

RES Job #: 476316

SUBMITTED BY	INVOICE TO	CONTACT INFORMATION	SERIES
Company: Origins Laboratory Inc	Company: Origins Laboratory Inc	Contact: Jenn Pellegrini	-1 PLM Standard
Address: 1725 W Elk Pl.	Address: 1725 W Elk Pl.	Phone: (303) 433-1322	
		Fax:	
Denver, CO 80211	Denver, CO 80211	Cell:	
Project Number and/or P.O. #: Y010290		Final Data Deliverable Email Address:	
Project Description/Location: Central 70		jpellegrini@originslab.com (+ 2 ADDNL. CONTACTS)	

ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm & Sat. 8am - 5pm

PLM / PCM / TEM DTL RUSH PRIORITY STANDARD

CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 5pm

Dust RUSH PRIORITY STANDARD

Metals RUSH PRIORITY STANDARD

*PRIOR NOTICE REQUIRED FOR SAME DAY TAT

Organics* SAME DAY RUSH PRIORITY STANDARD

MICROBIOLOGY LABORATORY HOURS: Weekdays: 8am - 5pm

Viable Analysis** PRIORITY STANDARD

**TAT DEPENDENT ON SPEED OF MICROBIAL GROWTH

Medical Device Analysis RUSH STANDARD

Mold Analysis RUSH PRIORITY STANDARD

Turnaround times establish a laboratory priority, subject to laboratory volume and are not guaranteed. Additional fees apply for afterhours, weekends and holidays.

Special Instructions:

VALID MATRIX CODES

Air = A	Bulk = B
Dust = D	Food = F
Paint = P	Soil = S
Surface = SU	Swab = SW
Tape = T	Wipe = W
Drinking Water = DW	
Waste Water = WW	
ASTM E1792 approved wipe media only	

REQUESTED ANALYSIS

Client Sample ID Number (Sample ID's must be unique)	PLM - Short Report, Long Report, CARB 435 (ASBESTOS)	TEM - AHERA, (+/- or Quantified), Microvac (+/- or Quantified), Wipe (+/- or Quantified), NIOSH 7402, Yamate Level II, ISO 10312, ISO 13794, Chatfield, Waste Water, Drinking Water, Bulk +/- CARB Modified Ahera (ASBESTOS)	PCM - 7400A, 7400B, OSHA (ASBESTOS)	DUST - Total, Respirable (CHEMISTRY)	METALS - Analyte(s) Lead Only (7082, 7420, Waste Water, Foodware), Multi Metal (7303, 6020A, 200.8, Waste Water, Foodware, OSHA ID-125G), pH (Liquid, Non-Liquid), TCLP, RCRA 8 Scan, Welding Fume Scan, Full Metals Scan (CHEMISTRY)	ORGANICS - Methamphetamine, TSS (CHEMISTRY)	Viables: Campylobacter, Bacillus, Salmonella (Culturable, 1-2), Listeria, E.coli O157:H7, E.coli/Coliforms - Plated, S. aureus, Yeast & Mold, Areobic Plate Count, Coliforms/E.coli (State Water, Drinking Water, Non-Drinking Water, +/-, Quantification), Lactic Acid, Viable Microbioal Count (wo/ID, w/ID), Enterococcus (+/- or Quantification), Legionella (P, NP, C) (MICROBIOLOGY)	MEDICAL - Bioburden, LAL (MICROBIOLOGY)	MOLD - Spore Trap, Bulk Mold, Particulate Identification (MICROBIOLOGY)	Sample Volume (L) / Area	Length(or Aliquots) x Width(or Area per Aliquot)	Matrix Code	# of Containers	Date Collected mm/dd/yy	Time Collected hh:mm	Laboratory Analysis Instructions (LAB NOTES)
1 C-E17FX-ACM01-01-SM-102020	X											B		10/20/20	09:20	
2 C-E17FX-ACM01-02-SM-102020	X											B		10/20/20	09:25	
3 C-E17FX-ACM01-03-SM-102020	X											B		10/20/20	09:30	
4 C-E17FX-ACM02-01-SM-102020	X											B		10/20/20	13:05	
5 C-E17FX-ACM02-02-SM-102020	X											B		10/20/20	13:10	
6 C-E17FX-ACM02-03-SM-102020	X											B		10/20/20	13:15	
7 C-E17FX-ACM03-01-SM-102020	X											B		10/20/20	13:20	
8 C-E17FX-ACM03-02-SM-102020	X											B		10/20/20	13:25	
9 C-E17FX-ACM03-03-SM-102020	X											B		10/20/20	13:30	
10 C-E17FX-ACM04-01-SM-102020	X											B		10/20/20	09:00	
11 C-E17FX-ACM04-02-SM-102020	X											B		10/20/20	10:50	
12 C-E17FX-ACM05-01-SM-102020	X											B		10/20/20	10:25	
13 C-E17FX-ACM05-02-SM-102020	X											B		10/20/20	10:30	

REI will analyze incoming samples based on information received and will not be responsible for errors or omissions in calculations resulting from the inaccuracy of original data. By signing, client/company representative agrees that submission of the following samples for requested analysis as indicated on this Chain of Custody shall consitute an analytical services agreement with payment terms of NET 30 days. Failure to comply with payment terms may result in a 1.5% monthly interest surcharge.

Relinquished By:	Jason Guerrin	Date/Time: 10/21/2020 11:59:50	Sample Condition: Acceptable
Received By:	Brett Colbert	Date/Time: 10/21/2020 12:32:20	Carrier: Hand

Reservoirs Environmental, Inc.

Res Job#: **476316**

Submitted By: **Origins Laboratory Inc**

REQUESTED ANALYSIS

VALID MATRIX CODES

Air = A | Bulk = B
Dust = D | Food = F
Paint = P | Soil = S
Surface = SU | Swab = SW
Tape = T | Wipe = W
Drinking Water = DW
Waste Water = WW
ASTM E1792 approved wipe media only

LAB NOTES

Client Sample ID Number (Sample ID's must be unique)	PLM - Short Report, Long Report, CARB 435	TEM - AHERA, (+/- or Quantified), Microvac (+/- or Quantified), Wipe (+/- or Quantified), NIOSH 7402, Yamate Level II, ISO 10312, ISO 13794, Chatfield, Waste Water, Drinking Water, Bulk +/-, CARB Modified Ahera	PCM - 7400A, 7400B, OSHA	DUST - Total, Respirable	METALS - Analyte(s) Lead Only (7082, 7420, Waste Water, Foodware), Multi Metal (7303, 6020A, 200.8, Waste Water, Foodware, OSHA ID-125G), pH (Liquid, Non-Liquid) TCLP, RCRA 8 Scan, Welding Fume Scan, Full Metals Scan	ORGANICS - Methamphetamine, TSS	Viables: Campylobacter, Bacillus, Salmonella (Culturable, 1-2), Listeria, E.coli O157:H7, E.coli/Coliforms - Plated, S. aureus, Yeast & Mold, Areobic Plate Count, Coliforms/E.coli (State Water, Drinking Water, Non-Drinking Water, +/-, Quantification), Lactic Acid, Viable Microbioal Count (wo/ID, w/ID), Enterococcus (+/- or Quantification)	MEDICAL - Bioburden, LAL	MOLD - Spore Trap, Bulk Mold, Particulate Identification	Sample Volume (L) / Area	Length(or Aliquots) x Width(or Area per Aliquot)	Matrix Code	# of Containers	Date Collected mm/dd/yy	Time Collected hh:mm	Laboratory Analysis Instructions
	ASBESTOS			CHEMISTRY			MICROBIOLOGY									
14 C-E17FX-ACM05-03-SM-102020	X											B		10/20/20	10:35	
15 C-E17FX-ACM07-01-SM-102020	X											B		10/20/20	09:30	
16 C-E17FX-ACM07-02-SM-102020	X											B		10/20/20	09:35	
17 C-E17FX-ACM11-01-SM-102020	X											B		10/20/20	13:30	
18 C-E17FX-ACM11-02-SM-102020	X											B		10/20/20	13:35	
19 C-E17FX-ACM11-03-SM-102020	X											B		10/20/20	13:36	
20 C-E17FX-ACM11-04-SM-102020	X											B		10/20/20	13:39	
21 C-E17FX-ACM11-05-SM-102020	X											B		10/20/20	13:42	
22 C-E17FX-ACM11-06-SM-102020	X											B		10/20/20	13:45	
23 C-E17FX-ACM11-07-SM-102020	X											B		10/20/20	13:48	

REI LAB **Reservoirs Environmental, Inc.**

November 14, 2020

Subcontractor Number:	
Laboratory Report:	**RES 477812-1**
Project #/P.O. #:	**Y011093**
Project Description:	**Central 70**

Jenn Pellegrini
Origins Laboratory Inc
1725 W Elk Pl.
Denver CO 80211

Dear Jenn,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 477812-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer
by Tyler Hutchinson

Jeanne Spencer
President

RESERVOIRS ENVIRONMENTAL INC.

NVLAP Lab Code 101896-0

TABLE: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 477812-1**
Client: **Origins Laboratory Inc**
Client Project Number / P.O.: **Y011093**
Client Project Description: **Central 70**
Date Samples Received: **November 06, 2020**
Method: **EPA 600/R-93/116 - Short Report, Bulk**
Turnaround: **Standard**
Date Samples Analyzed: **November 14, 2020**

ND=None Detected
TR=Trace, <1% Visual Estimate
Trem/Act=Tremolite/Actinolite

Client Sample Number	LAYER	Physical Description	Sub Part (%)	**Asbestos Content** **Mineral**	**Visual Estimate (%)**	Non Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
C-E17FX-ACM09-01-SM-110420	A	Black resinous material	100		**ND**	0	100
C-E17FX-ACM09-02-SM-110420	A	Black resinous material	100		**ND**	0	100
C-E17FX-ACM10-01-SM-110420	A	Gray fibrous resinous material	25		**ND**	60	40
	B	Tan wood w/ gray resinous material	75		**ND**	80	20
C-E17FX-ACM10-02-SM-110420	A	Gray fibrous resinous material	30		**ND**	60	40
	B	Tan wood w/ gray resinous material	70		**ND**	80	20
C-E17FX-ACM08-01-SM-110420	A	Black granular tar	100		**ND**	0	100
C-E17FX-ACM08-02-SM-110420	A	Black granular tar	100		**ND**	0	100
C-E17FX-ACM12-01-SM-110420	A	Black fibrous resinous tar	10		**ND**	20	80
	B	Black resinous tar	90		**ND**	0	100
C-E17FX-ACM12-02-SM-110420	A	Black fibrous resinous tar	3		**ND**	20	80
	B	Black resinous tar	97		**ND**	0	100
C-E17FX-ACM13-01-SM-110420	A	Black resinous tar	2		**ND**	0	100
	B	Gray granular cementitious material	98		**ND**	0	100

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

RESERVOIRS ENVIRONMENTAL INC.

NVLAP Lab Code 101896-0

TABLE: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number:	**RES 477812-1**
Client:	**Origins Laboratory Inc**
Client Project Number / P.O.:	**Y011093**
Client Project Description:	**Central 70**
Date Samples Received:	**November 06, 2020**
Method:	**EPA 600/R-93/116 - Short Report, Bulk**
Turnaround:	**Standard**
Date Samples Analyzed:	**November 14, 2020**

ND=None Detected
TR=Trace, <1% Visual Estimate
Trem/Act=Tremolite/Actinolite

Client Sample Number	LAYER	Physical Description	Sub Part (%)	**Asbestos Content** **Mineral**	**Visual Estimate (%)**	Non Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
C-E17FX-ACM13-02-SM-110420	A	Black resinous tar	TR		**ND**	0	100
	B	Gray granular cementitious material	100		**ND**	0	100

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

Tyler Hutchinson

Analyst / Data QA

Reservoirs Environmental, Inc.

RES Job #: 477812

SUBMITTED BY	INVOICE TO	CONTACT INFORMATION	SERIES
Company: Origins Laboratory Inc	Company: Origins Laboratory Inc	Contact: Jenn Pellegrini	-1 PLM Standard
Address: 1725 W Elk Pl.	Address: 1725 W Elk Pl.	Phone: (303) 433-1322	
		Fax:	
Denver, CO 80211	Denver, CO 80211	Cell:	
Project Number and/or P.O. #: Y011093		Final Data Deliverable Email Address:	
Project Description/Location: Central 70		jpellegrini@originslab.com (+ 2 ADDNL. CONTACTS)	

ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm & Sat. 8am - 5pm

PLM / PCM / TEM DTL RUSH PRIORITY STANDARD

CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 5pm

Dust RUSH PRIORITY STANDARD

Metals RUSH PRIORITY STANDARD

*PRIOR NOTICE REQUIRED FOR SAME DAY TAT

Organics* SAME DAY RUSH PRIORITY STANDARD

MICROBIOLOGY LABORATORY HOURS: Weekdays: 8am - 5pm

Viable Analysis** PRIORITY STANDARD

**TAT DEPENDENT ON SPEED OF MICROBIAL GROWTH

Medical Device Analysis RUSH STANDARD

Mold Analysis RUSH PRIORITY STANDARD

Turnaround times establish a laboratory priority, subject to laboratory volume and are not guaranteed. Additional fees apply for afterhours, weekends and holidays.

Special Instructions:
Samples 5 & 6, DO NOT ANALYZE OUTER LAYER, only analyze concrete.

REQUESTED ANALYSIS

PLM - Short Report, Long Report, CARB 435
TEM - AHERA, (+/- or Quantified), Microvac (+/- or Quantified), Wipe (+/- or Quantified), NIOSH 7402, Yamate Level II, ISO 10312, ISO 13794, Chatfield, Waste Water, Drinking Water, Bulk +/- CARB Modified Ahera
PCM - 7400A, 7400B, OSHA
DUST - Total, Respirable
METALS - Analyte(s) Lead Only (7082, 7420, Waste Water, Foodware), Multi Metal (7303, 6020A, 200.8, Waste Water, Foodware, OSHA ID-125G), pH (Liquid, Non-Liquid), TCLP, RCRA 8 Scan, Welding Fume Scan, Full Metals Scan
ORGANICS - Methamphetamine, TSS
Viables: Campylobacter, Bacillus, Salmonella (Culturable, 1-2), Listeria, E.coli O157:H7, E.coli/Coliforms - Plated, S. aureus, Yeast & Mold, Areobic Plate Count, Coliforms/E.coli (State Water, Drinking Water, Non-Drinking Water, +/-, Quantification), Lactic Acid, Viable Microbioal Count (wo/ID, w/ID), Enterococcus (+/- or Quantification), Legionella (P, NP, C)
MEDICAL - Bioburden, LAL
MOLD - Spore Trap, Bulk Mold, Particulate Identification

VALID MATRIX CODES

Air = A	Bulk = B
Dust = D	Food = F
Paint = P	Soil = S
Surface = SU	Swab = SW
Tape = T	Wipe = W
Drinking Water = DW	
Waste Water = WW	
ASTM E1792 approved wipe media only	

Client Sample ID Number (Sample ID's must be unique)	PLM	TEM	PCM	DUST	METALS	ORGANICS	Viables	MEDICAL	MOLD	Sample Volume (L) / Area	Length(or Aliquots) x Width(or Area per Aliquot)	Matrix Code	# of Containers	Date Collected mm/dd/yy	Time Collected hh:mm	Laboratory Analysis Instructions
	ASBESTOS			CHEMISTRY			MICROBIOLOGY									
1 C-E17FX-ACM09-01-SM-110420	X											B		11/04/20	20:00	
2 C-E17FX-ACM09-02-SM-110420	X											B		11/04/20	20:05	
3 C-E17FX-ACM10-01-SM-110420	X											B		11/04/20	20:10	
4 C-E17FX-ACM10-02-SM-110420	X											B		11/04/20	20:15	
5 C-E17FX-ACM08-01-SM-110420	X											B		11/04/20	20:20	
6 C-E17FX-ACM08-02-SM-110420	X											B		11/04/20	20:25	
7 C-E17FX-ACM12-01-SM-110420	X											B		11/04/20	20:30	
8 C-E17FX-ACM12-02-SM-110420	X											B		11/04/20	20:35	
9 C-E17FX-ACM13-01-SM-110420	X											B		11/04/20	20:40	
10 C-E17FX-ACM13-02-SM-110420	X											B		11/04/20	20:45	

REI will analyze incoming samples based on information received and will not be responsible for errors or omissions in calculations resulting from the inaccuracy of original data. By signing, client/company representative agrees that submission of the following samples for requested analysis as indicated on this Chain of Custody shall consitute an analytical services agreement with payment terms of NET 30 days. Failure to comply with payment terms may result in a 1.5% monthly interest surcharge.

Relinquished By:	Jason Guerrin	Date/Time: 11/06/2020 13:11:07	Sample Condition: Acceptable
Received By:	Sophia Ingram	Date/Time: 11/06/2020 14:23:56	Carrier: Hand

REI LAB **Reservoirs Environmental, Inc.**

October 13, 2020

Subcontractor Number:
Laboratory Report: **RES 475329-1**
Project #/P.O. #: **Y010118**
Project Description: **Central 70**

Jenn Pellegrini
Origins Laboratory Inc
1725 W Elk Pl.
Denver CO 80211

Dear Jenn,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 475329-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer
by Piper-Lenore Murphy

Jeanne Spencer
President

RESERVOIRS ENVIRONMENTAL INC.

NVLAP Lab Code 101896-0

TABLE: PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number:	**RES 475329-1**
Client:	**Origins Laboratory Inc**
Client Project Number / P.O.:	**Y010118**
Client Project Description:	**Central 70**
Date Samples Received:	**October 08, 2020**
Method:	**EPA 600/R-93/116 - Short Report, Bulk**
Turnaround:	**Standard**
Date Samples Analyzed:	**October 13, 2020**

ND=None Detected
TR=Trace, <1% Visual Estimate
Trem/Act=Tremolite/Actinolite

Client Sample Number	LAYER	Physical Description	Sub Part (%)	**Asbestos Content** **Mineral**	**Visual Estimate (%)**	Non Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
C-E17FX-ACM04-03-SM-100720	A	Gray granular material	100		**ND**	TR	100
C-E17FX-ACM06-01-SM-100720	A	Gray granular material	100		**ND**	0	100
C-E17FX-ACM06-02-SM-100720	A	Gray granular material	100		**ND**	0	100
C-E17FX-ACM06-03-SM-100720	A	Gray granular material	100		**ND**	0	100

TEM Analysis recommended for organically bound material (i.e. floor tile) if PLM results are <1%.

Piper-Lenore O. Murphy

Analyst / Data QA

Reservoirs Environmental, Inc.

RES Job #: 475329

SUBMITTED BY		INVOICE TO		CONTACT INFORMATION		SERIES
Company:	Origins Laboratory Inc	Company:	Origins Laboratory Inc	Contact:	Jenn Pellegrini	-1 PLM Standard
Address:	1725 W Elk Pl.	Address:	1725 W Elk Pl.	Phone:	(303) 433-1322	
				Fax:		
	Denver, CO 80211		Denver, CO 80211	Cell:		
Project Number and/or P.O. #:	Y010118			Final Data Deliverable Email Address:		
Project Description/Location:	Central 70			jpellegrini@originslab.com (+ 2 ADDNL. CONTACTS)		

ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm & Sat. 8am - 5pm

PLM / PCM / TEM DTL RUSH PRIORITY STANDARD

CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 5pm

Dust RUSH PRIORITY STANDARD

Metals RUSH PRIORITY STANDARD

*PRIOR NOTICE REQUIRED FOR SAME DAY TAT

Organics* SAME DAY RUSH PRIORITY STANDARD

MICROBIOLOGY LABORATORY HOURS: Weekdays: 8am - 5pm

Viable Analysis** PRIORITY STANDARD

**TAT DEPENDENT ON SPEED OF MICROBIAL GROWTH

Medical Device Analysis RUSH STANDARD

Mold Analysis RUSH PRIORITY STANDARD

Turnaround times establish a laboratory priority, subject to laboratory volume and are not guaranteed. Additional fees apply for afterhours, weekends and holidays.

Special Instructions:

VALID MATRIX CODES

Air = A	Bulk = B
Dust = D	Food = F
Paint = P	Soil = S
Surface = SU	Swab = SW
Tape = T	Wipe = W
Drinking Water = DW	
Waste Water = WW	
ASTM E1792 approved wipe media only	

Client Sample ID Number (Sample ID's must be unique)	PLM - Short Report, Long Report, CARB 435	TEM - AHERA, (+/- or Quantified), Microvac (+/- or Quantified), Wipe (+/- or Quantified), NIOSH 7402, Yamate Level II, ISO 10312, ISO 13794, Chatfield, Waste Water, Drinking Water, Bulk +/- CARB Modified Ahera	PCM - 7400A, 7400B, OSHA	DUST - Total, Respirable	METALS - Analyte(s) Lead Only (7082, 7420, Waste Water, Foodware), Multi Metal (7303, 6020A, 200.8, Waste Water, Foodware, OSHA ID-125G), pH (Liquid, Non-Liquid), TCLP, RCRA 8 Scan, Welding Fume Scan, Full Metals Scan	ORGANICS - Methamphetamine, TSS	Viables: Campylobacter, Bacillus, Salmonella (Culturable, 1-2), Listeria, E.coli O157:H7, E.coli/Coliforms - Plated, S. aureus, Yeast & Mold, Areobic Plate Count, Coliforms/E.coli (State Water, Drinking Water, Non-Drinking Water, +/-, Quantification), Lactic Acid, Viable Microbioal Count (wo/ID, w/ID), Enterococcus (+/- or Quantification), Legionella (P, NP, C)	MEDICAL - Bioburden, LAL	MOLD - Spore Trap, Bulk Mold, Particulate Identification	Sample Volume (L) / Area	Length(or Aliquots) x Width(or Area per Aliquot)	Matrix Code	# of Containers	Date Collected mm/dd/yy	Time Collected hh:mm	Laboratory Analysis Instructions
	ASBESTOS			CHEMISTRY			MICROBIOLOGY									
1 C-E17FX-ACM04-03-SM-100720	X											B		10/07/20	10:12	
2 C-E17FX-ACM06-01-SM-100720	X											B		10/07/20	10:23	
3 C-E17FX-ACM06-02-SM-100720	X											B		10/07/20	10:26	
4 C-E17FX-ACM06-03-SM-100720	X											B		10/07/20	22:29	

REI will analyze incoming samples based on information received and will not be responsible for errors or omissions in calculations resulting from the inaccuracy of original data. By signing, client/company representative agrees that submission of the following samples for requested analysis as indicated on this Chain of Custody shall consitute an analytical services agreement with payment terms of NET 30 days. Failure to comply with payment terms may result in a 1.5% monthly interest surcharge.

Relinquished By:	Jason Guerrin	Date/Time: 10/08/2020 12:49:44	Sample Condition: Acceptable
Received By:	Sophia Ingram	Date/Time: 10/08/2020 15:12:27	Carrier: Hand

APPENDIX

F

METALS CONTAINING PAINT LABORATORY ANALYSIS – OCTOBER AND NOVEMBER 2020

ORIGINS LABORATORY, INC

October 15, 2020

Kiewit

Megan Wood

3543 E. 46th Ave.

Denver CO 80216

Project Name - Central 70 **Project Number - [none]**

Attached are your analytical results for Central 70 received by Origins Laboratory, Inc. October 08, 2020. This project is associated with Origins project number Y010119-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com

THE NELAC INSTITUTE

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
C-E17FX-PC04-01-SM-100720	Y010119-01	Solid	October 7, 2020 13:24	10/08/2020 12:00
C-E17FX-PC12-01-SM-100720	Y010119-02	Solid	October 7, 2020 12:53	10/08/2020 12:00
C-E17FX-PC13-01-SM-100720	Y010119-03	Solid	October 7, 2020 12:57	10/08/2020 12:00
C-E17FX-PC14-01-SM-100720	Y010119-04	Solid	October 7, 2020 11:16	10/08/2020 12:00
C-E17FX-PC15-01-SM-100720	Y010119-05	Solid	October 7, 2020 11:38	10/08/2020 12:00
C-E17FX-PC16-01-SM-100720	Y010119-06	Solid	October 7, 2020 11:35	10/08/2020 12:00
C-E17FX-PC17-01-SM-100720	Y010119-07	Solid	October 7, 2020 11:42	10/08/2020 12:00
C-E17FX-PC18-01-SM-100720	Y010119-08	Solid	October 7, 2020 10:55	10/08/2020 12:00
C-E17FX-PC19-01-SM-100720	Y010119-09	Solid	October 7, 2020 10:48	10/08/2020 12:00

Origins Laboratory, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jordan A. Merrill For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

ORIGINS LABORATORY, INC

www.originslaboratory.com

page 1 of 1

Client: Kiewit
Address:
Telephone Number: 970-819-8147
Email Address: Megan.wood1@kiewit.com, laura.tbir@wsp.com, jim.bowie@wsp.com, ron@pathfinderusa.com, stephen.dertatevasion@wsp.com

Project Manager: Megan Wood
Project Name: Central 70
Project Number:
Samples Collected By: Jim Bowie

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative: Unpreserved	HCl	HNO_3	Other	Matrix: Groundwater	Soil	Air Summa Canister #	Other	Analysis: RCRA 8 Metals 6010C/7471A							Sample Instructions
C-E17FX-PC04-01-SM-100720	10/7/20	1324	1	X							X	X							Report results in mg/Kg
C-E17FX-PC12-01-SM-100720		1253																	
C-E17FX-PC13-01-SM-100720		1257																	
C-E17FX-PC14-01-SM-100720		1116																	
C-E17FX-PC15-01-SM-100720		1138																	
C-E17FX-PC16-01-SM-100720		1135																	
C-E17FX-PC17-01-SM-100720		1142																	
C-E17FX-PC18-01-SM-100720		1055																	
C-E17FX-PC19-01-SM-100720		1048																	

Relinquished By: Date: 10-8-20 Time: 12:00 Received By: Date: 10/8/20 Time: 12:00
Relinquished By: Date: Time: Received By: Date: Time:

Turnaround Time: Same Day ☐ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Standard ☒

Temp Received- Date Results Needed

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Origins Laboratory, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jordan A. Merrill For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

Origins Laboratory

F-012207-01-R1
Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: Y010119

Client: Kiewit

Client Project ID: C70

Checklist Completed by: JG

Shipped Via: HD (UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 10/8/20

Airbill #: N/A

Matrix(s) Received: (Check all that apply): ____Soil/Solid ____Water X Other: ____ (Describe)

Cooler Number/Temperature: — / — °C ____/____ °C ____/____ °C ____/____ °C

Thermometer ID: N/A

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C[1]?			✓	
Is there ice present (document if blue ice is used)			✓	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)			✓	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)			✓	
Were all samples received intact[1]?	✓			
Was adequate sample volume provided[1]?	✓			
Are short holding time analytes or samples with HTs due within 48 hours present[1]?		✓		
Is a chain-of-custody (COC) present and filled out completely[1]?	✓			
Does the COC agree with the number and type of sample bottles received[1]?	✓			
Do the sample IDs on the bottle labels match the COC[1]?	✓			
Is the COC properly relinquished by the client with date and time recorded[1]?	✓			
For volatiles in water – is there headspace (> ¼ inch bubble) present? **If yes, contact client and note in narrative.**			✓	
Are samples preserved that require preservation and was it checked [1]? *(note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO3, HCL, H2SO4) / (pH > 10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)*			✓	

Additional Comments (if any):

[1]If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) — Date/Time Reviewed: 10-9-20

Origins Laboratory, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jordan A. Merrill For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

C-E17FX-PC04-01-SM-100720
10/7/2020 1:24:00PM

GEL Laboratories, LLC
Y010119-01 (Solid)

RCRA 8 Metals by EPA 6010C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
Arsenic	**0.501**	2.90	mg/kg	1	2050620	LS	10/12/2020	10/13/2020	J
Barium	**1670**	4.84	"	10	"	LS	"	"	
Cadmium	**0.389**	0.484	"	1	"	LS	"	"	J
Chromium	**3.53**	0.967	"	"	"	LS	"	"	
Lead	**6.77**	1.93	"	"	"	LS	"	"	
Selenium	**0.865**	2.90	"	"	"	LS	"	"	J
Silver	ND	0.484	"	"	"	LS	"	"	U

RCRA 8 Metals by EPA 7471

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
Mercury	ND	0.0217	mg/kg	1	2050501	MTM1	"	10/13/2020	U

Origins Laboratory, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jordan A. Merrill For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

C-E17FX-PC12-01-SM-100720
10/7/2020 12:53:00PM

GEL Laboratories, LLC
Y010119-02 (Solid)

RCRA 8 Metals by EPA 6010C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
Arsenic	**1.46**	2.95	mg/kg	1	2050620	LS	10/12/2020	10/13/2020	J
Barium	**1850**	4.91	"	10	"	LS	"	"	
Cadmium	**0.517**	0.491	"	1	"	LS	"	"	
Chromium	**23.7**	0.982	"	"	"	LS	"	"	
Lead	**84.6**	1.96	"	"	"	LS	"	"	
Selenium	**1.63**	2.95	"	"	"	LS	"	"	J
Silver	ND	0.491	"	"	"	LS	"	"	U

RCRA 8 Metals by EPA 7471

Mercury	**3.19**	0.474	mg/kg	20	2050501	MTM1	"	10/13/2020	

Origins Laboratory, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jordan A. Merrill For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

C-E17FX-PC13-01-SM-100720
10/7/2020 12:57:00PM

GEL Laboratories, LLC
Y010119-03 (Solid)

RCRA 8 Metals by EPA 6010C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
Arsenic	**2.28**	2.87	mg/kg	1	2050620	LS	10/12/2020	10/13/2020	J
Barium	**898**	0.478	"	"	"	LS	"	"	
Cadmium	**0.444**	0.478	"	"	"	LS	"	"	J
Chromium	**151**	0.956	"	"	"	LS	"	"	
Lead	**750**	1.91	"	"	"	LS	"	"	
Selenium	**1.78**	2.87	"	"	"	LS	"	"	J
Silver	**0.228**	0.478	"	"	"	LS	"	"	J

RCRA 8 Metals by EPA 7471

Mercury	**0.622**	0.0240	mg/kg	1	2050501	MTM1	"	10/13/2020	

Origins Laboratory, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jordan A. Merrill For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

C-E17FX-PC14-01-SM-100720
10/7/2020 11:16:00AM

GEL Laboratories, LLC
Y010119-04 (Solid)

RCRA 8 Metals by EPA 6010C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
Arsenic	**2.15**	3.00	mg/kg	1	2050620	LS	10/12/2020	10/13/2020	J
Barium	**204**	0.500	"	"	"	LS	"	"	
Cadmium	**0.296**	0.500	"	"	"	LS	"	"	J
Chromium	**7.43**	1.00	"	"	"	LS	"	"	
Lead	**38.4**	2.00	"	"	"	LS	"	"	
Selenium	**1.36**	3.00	"	"	"	LS	"	"	J
Silver	**0.340**	0.500	"	"	"	LS	"	"	J

RCRA 8 Metals by EPA 7471

Mercury	**1.38**	0.209	mg/kg	10	2050501	MTM1	"	10/13/2020	

Origins Laboratory, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jordan A. Merrill For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

C-E17FX-PC15-01-SM-100720
10/7/2020 11:38:00AM

GEL Laboratories, LLC
Y010119-05 (Solid)

RCRA 8 Metals by EPA 6010C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
Arsenic	**12.7**	2.93	mg/kg	1	2050620	LS	10/12/2020	10/14/2020	
Barium	**302**	0.488	"	"	"	LS	"	"	
Cadmium	**0.729**	0.488	"	"	"	LS	"	"	
Chromium	**23.2**	0.977	"	"	"	LS	"	"	
Lead	**30.0**	1.95	"	"	"	LS	"	"	
Selenium	**1.28**	2.93	"	"	"	LS	"	"	J
Silver	ND	0.488	"	"	"	LS	"	"	U

RCRA 8 Metals by EPA 7471

Mercury	**0.0205**	0.0237	mg/kg	1	2050501	MTM1	"	10/13/2020	J

Origins Laboratory, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jordan A. Merrill For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

C-E17FX-PC16-01-SM-100720
10/7/2020 11:35:00AM

GEL Laboratories, LLC
Y010119-06 (Solid)

RCRA 8 Metals by EPA 6010C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
Arsenic	**0.964**	2.95	mg/kg	1	2050620	LS	10/12/2020	10/13/2020	J
Barium	**314**	0.491	"	"	"	LS	"	"	
Cadmium	**0.134**	0.491	"	"	"	LS	"	"	J
Chromium	**6.49**	0.982	"	"	"	LS	"	"	
Lead	**11.2**	1.96	"	"	"	LS	"	"	
Selenium	**1.60**	2.95	"	"	"	LS	"	"	J
Silver	**0.154**	0.491	"	"	"	LS	"	"	J

RCRA 8 Metals by EPA 7471

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
Mercury	ND	0.0204	mg/kg	1	2050501	MTM1	"	10/13/2020	U

Origins Laboratory, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jordan A. Merrill For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

C-E17FX-PC17-01-SM-100720
10/7/2020 11:42:00AM

GEL Laboratories, LLC
Y010119-07 (Solid)

RCRA 8 Metals by EPA 6010C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
Arsenic	**4.45**	3.01	mg/kg	1	2050620	LS	10/12/2020	10/13/2020	
Barium	**281**	0.501	"	"	"	LS	"	"	
Cadmium	**0.507**	0.501	"	"	"	LS	"	"	
Chromium	**16.6**	1.00	"	"	"	LS	"	"	
Lead	**8.28**	2.00	"	"	"	LS	"	"	
Selenium	**1.32**	3.01	"	"	"	LS	"	"	J
Silver	ND	0.501	"	"	"	LS	"	"	U

RCRA 8 Metals by EPA 7471

Mercury	ND	0.0232	mg/kg	1	2050501	MTM1	"	10/13/2020	U

Origins Laboratory, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jordan A. Merrill For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

C-E17FX-PC18-01-SM-100720
10/7/2020 10:55:00AM

GEL Laboratories, LLC
Y010119-08 (Solid)

RCRA 8 Metals by EPA 6010C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
Arsenic	**3.96**	2.87	mg/kg	1	2050620	LS	10/12/2020	10/13/2020	
Barium	**222**	0.479	"	"	"	LS	"	"	
Cadmium	**0.475**	0.479	"	"	"	LS	"	"	J
Chromium	**14.8**	0.958	"	"	"	LS	"	"	
Lead	**175**	1.92	"	"	"	LS	"	"	
Selenium	**1.40**	2.87	"	"	"	LS	"	"	J
Silver	**0.456**	0.479	"	"	"	LS	"	"	J

RCRA 8 Metals by EPA 7471

Mercury	**2.89**	0.432	mg/kg	20	2050501	MTM1	"	10/13/2020	

Origins Laboratory, Inc.

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Jordan A. Merrill For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

C-E17FX-PC19-01-SM-100720
10/7/2020 10:48:00AM

GEL Laboratories, LLC
Y010119-09 (Solid)

RCRA 8 Metals by EPA 6010C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
Arsenic	**2.84**	2.98	mg/kg	1	2050620	LS	10/12/2020	10/13/2020	J
Barium	**121**	0.496	"	"	"	LS	"	"	
Cadmium	**0.594**	0.496	"	"	"	LS	"	"	
Chromium	**11.4**	0.992	"	"	"	LS	"	"	
Lead	**48.5**	1.98	"	"	"	LS	"	"	
Selenium	**1.94**	2.98	"	"	"	LS	"	"	J
Silver	**0.761**	0.496	"	"	"	LS	"	"	

RCRA 8 Metals by EPA 7471

Mercury	**0.551**	0.0201	mg/kg	1	2050501	MTM1	"	10/13/2020	

Origins Laboratory, Inc.

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Jordan A. Merrill For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

RCRA 8 Metals by EPA 6010C - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2050620 - SW846 3050B										
BLANK (1204666269-BLK)					Prepared: 10/12/2020 Analyzed: 10/13/2020					
Arsenic	ND	2.86	mg/kg				-			U
Barium	ND	0.476	"				-			U
Cadmium	ND	0.476	"				-			U
Chromium	ND	0.952	"				-			U
Lead	ND	1.90	"				-			U
Selenium	0.693	2.86	"				-			J
Silver	ND	0.476	"				-			U
LCS (1204666270-BKS)					Prepared: 10/12/2020 Analyzed: 10/13/2020					
Selenium	48.3	3.00	mg/kg	50.0		96.6	80-120			
Arsenic	44.3	3.00	"	50.0		88.6	80-120			
Barium	47.1	0.500	"	50.0		94.3	80-120			
Cadmium	46.8	0.500	"	50.0		93.5	80-120			
Lead	48.1	2.00	"	50.0		96.1	80-120			
Silver	9.24	0.500	"	10.0		92.4	80-120			
Chromium	47.4	1.00	"	50.0		94.8	80-120			
DUP (1204666271 D)		**Source: 523997001**			Prepared: 10/12/2020 Analyzed: 10/13/2020					
Silver	ND	0.657	mg/kg dry		<0.131		0-20	200	20	U
Barium	105	0.657	"		79.7		0-20	27.2	20	
Cadmium	ND	0.657	"		<0.131		0-20	129	20	U
Chromium	13.1	1.31	"		12.0		0-20	8.74	20	
Lead	11.7	2.63	"		10.0		0-20	15.5	20	
Selenium	0.711	3.94	"		1.51		0-20	72	20	J
Arsenic	6.03	3.94	"		4.41		0-20	31	20	
MS (1204666272 S)		**Source: 523997001**			Prepared: 10/12/2020 Analyzed: 10/13/2020					

Origins Laboratory, Inc.

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Jordan A. Merrill For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

RCRA 8 Metals by EPA 6010C - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2050620 - SW846 3050B										
MS (1204666272 S)		**Source: 523997001**			Prepared: 10/12/2020 Analyzed: 10/13/2020					
Selenium	63.7	4.24	mg/kg dry	70.7	1.51	87.9	75-125			
Lead	72.2	2.83	"	70.7	10.0	88	75-125			
Chromium	76.6	1.41	"	70.7	12.0	91.3	75-125			
Cadmium	60.6	0.707	"	70.7	<0.141	85.7	75-125			
Arsenic	64.6	4.24	"	70.7	4.41	85	75-125			
Silver	12.8	0.707	"	14.1	<0.141	90.2	75-125			
Barium	160	0.707	"	70.7	79.7	114	75-125			

Origins Laboratory, Inc.

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Jordan A. Merrill For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

RCRA 8 Metals by EPA 7471 - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2050501 - SW846 7471A Prep										
BLANK (1204665851-BLK)					Prepared: 10/12/2020 Analyzed: 10/13/2020					
Mercury	ND	0.0221	mg/kg				-			U
LCS (1204665852-BKS)					Prepared: 10/12/2020 Analyzed: 10/13/2020					
Mercury	7.36	0.585	mg/kg	7.61		96.7	80-120			
DUP (1204665853 D)		**Source: 521680001**			Prepared: 10/12/2020 Analyzed: 10/13/2020					
Mercury	0.0135	0.0244	mg/kg dry		0.0138		0-20	2.23	20	J
MS (1204665854 S)		**Source: 521680001**			Prepared: 10/12/2020 Analyzed: 10/13/2020					
Mercury	0.276	0.0262	mg/kg dry	0.262	0.0138	100	80-120			

Origins Laboratory, Inc.

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Jordan A. Merrill For Noelle Doyle Mathis, President

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

Notes and Definitions

U Result not detected above the detection limit

J Greater than the detection limit but less than the reporting limit

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jordan A. Merrill For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

November 06, 2020

Kiewit

Megan Wood

3543 E. 46th Ave.

Denver CO 80216

Project Name - Central 70 **Project Number - [none]**

Attached are your analytical results for Central 70 received by Origins Laboratory, Inc. October 21, 2020. This project is associated with Origins project number Y010290-24.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com

THE NELAC INSTITUTE

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
C-E17FX-PC01-01-SM-102020	Y010290-24	Solid	October 20, 2020 13:27	10/21/2020 11:20
C-E17FX-PC02-01-SM-102020	Y010290-25	Solid	October 20, 2020 14:15	10/21/2020 11:20
C-E17FX-PC05-01-SM-102020	Y010290-26	Solid	October 20, 2020 15:30	10/21/2020 11:20
C-E17FX-PC06-01-SM-102020	Y010290-27	Solid	October 20, 2020 15:55	10/21/2020 11:20
C-E17FX-PC07-01-SM-102020	Y010290-28	Solid	October 20, 2020 15:56	10/21/2020 11:20

Per the email from Megan on 10/22/20, only 6010 metals will be run on the following samples due to limited volume. JEP

C-E17FX-PC01-01-SM-102020
C-E17FX-PC02-01-SM-102020

Origins Laboratory, Inc.

Jeff Pellegrini

Jen Pellegrini For Noelle Doyle Mathis, President

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

ORIGINS LABORATORY, INC

www.originslaboratory.com

page 1 of 3

Y0100290

Client: Kiewit
Address:
Telephone Number: (970) 819-8147
Email Address: Megan.Wood@Kiewit.com Lauren_Tobin@usi.com Jim.Bowe@usi.com Rose.Smith@usi.com Stephen.Dreier@usi.com

Project Manager: Megan Wood
Project Name: Central 70
Project Number:
Samples Collected By: [illegible]

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative: Unpreserved	HCl	HNO_3	Other	Matrix: Groundwater	Soil	Air Summa Canister #	Other	Analysis: Acrylamide	Coliform	Sample Instructions
C-ETFX-ACM01-SW-10/20/20	10/20/20	9:20	1	X								X		1
C-ETFX-ACM01-02-SW-102020		9:25	1	X								X		2
C-ETFX-ACM1-02-SW-102020		9:30	1	X								X		3
C-ETFX-ACM2-01-SW-102020		13:05	1	X								X		4
C-ETFX-ACM2-02-SW-102020		13:10	1	X								X		5
C-ETFX-ACM2-03-SW-102020		13:15	1	X								X		6
C-ETFX-ACM3-01-SW-102020		13:20	1	X								X		7
C-ETFX-ACM3-02-SW-102020		13:25	1	X								X		8
C-ETFX-ACM3-03-SW-102020		13:30	1	X								X		9
C-ETFX-ACM3-04-SW-102020		9:00	1	X								X		10

Relinquished By: [illegible] Date: 10/21/20 Time: 11:21
Received By: [illegible] Date: 10/21/20 Time: 11:20

Relinquished By: Date: Time:
Received By: Date: Time:

Turnaround Time: Same Day ☐ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Standard ☑

Temp Received: — Date Results Needed

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Origins Laboratory, Inc.

Jeff Pellegrini

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jen Pellegrini For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

ORIGINS LABORATORY, INC
www.originslaboratory.com
page 2 of 3

Client: Kiewit
Address:
Telephone Number: (970) 819-8147
Email Address: Megan.Wood@kiewit.com, Jim.Bourke@xsi.com, Ron@rosthills.com, Stephen.Dorlac@xsi.com

Project Manager: Megan Wood
Project Name: Central 70
Project Number:
Samples Collected By: JFB SDT

Sample ID Description	Date Sampled	Time Sampled	# of Contaners	Preservative: Unpreserved	HCl	HNO_3	Other	Matrix: Groundwater	Soil	Air Summa Canister #	Other	Analysis: Asm				Sample Instructions
CE70FX-Asm04-02-Sim-102020	10/20/20	10:05	1	X								X				1
CE70FX-Asm05-01-Sim-102020		10:25	1	X								X				2
CE70FX-Asm05-02-Sim-102020		10:30	1	X								X				3
CE70FX-Asm05-03-Sim-102020		10:35	1	X								X				4
CE70FX-Asm07-01-Sim-102020		9:30	1	X								X				5
CE70FX-Asm07-02-Sim-102020		9:35	1	X								X				6
CE70FX-Asm11-01-Sim-102020		13:30	1	X								X				7
CE70FX-Asm11-02-Sim-102020		13:35	1	X								X				8
CE70FX-Asm11-03-Sim-102020		13:36	1	X								X				9
CE70FX-Asm11-04-Sim-102020		13:39	1	X								X				10

Relinquished By: Date: 10/21/20 Time: 11:20 Received By: Date: 10/21/20 Time: 1120
Relinquished By: Date: Time: Received By: Date: Time:

Turnaround Time: Same Day ☐ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Standard ☒

Temp Received- Date Results Needed

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Origins Laboratory, Inc.

Jeff Pellegrini

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Jen Pellegrini For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

ORIGINS LABORATORY, INC
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page 3 of 3

Client: Kiewit
Address: (970) 819-8147
Telephone Number: (970) 819-8147
Email Address: megan.wood@kiewit.com, Lane.Tolen@usf.com, Jim.Bowie@usf.com, Ron@Earthlinkusa.com, Stephen.Dortakvision@usf.com

Project Manager: Megan Wood
Project Name: Central 70
Project Number:
Samples Collected By: SDT JFB

Y0U0290

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative: Unpreserved	HCl	HNO_3	Other	Matrix: Groundwater	Soil	Air Summa Canister #	Other	Analysis: ALM Gotec 7471					Sample Instructions
CE70X-KEM11-05-SM-102020	10/20/20	13:42	1	X								X					1
CE70X-KEM11-06-SM-102020		13:45	1	X								X					2
CE70X-KEM11-07-SM-102020		13:48	1	X								X					3
~~CE70X-KEM12-01-SM-102020~~			1	X													4
~~CE70X-KEM12-02-SM-102020~~			1	X													5
CE70X-PC01-01-SM-102020		13:27	1	X								X					6
CE70X-PC02-01-SM-102020		14:15	1	X								X					7
CE70X-RC501-SM-102020		15:30	1	X								X					8
CE70X-PC06-01-SM-102020		15:55	1	X								X					9
CE70X-PC07-01-SM-102020		15:56	1	X								X					10

Relinquished By:	Date: 10/21/20	Time: 11:20	Received By:
Relinquished By:	Date:	Time:	Received By:

Date: 10/21/20 Time: 1120
Date: Time:

Turnaround Time: Same Day ☐ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Standard ☒

Temp Received-
Date Results Needed

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Origins Laboratory, Inc.

Jeff Pellegrini

Jen Pellegrini For Noelle Doyle Mathis, President

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ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

Origins Laboratory

F-012207-01-R1
Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: 1010290

Client: Kiewit
Client Project ID: C70

Checklist Completed by: JG
Date/time completed: 10/21/20

Shipped Via: HD
(UPS, FedEx, Hand Delivered, Pick-up, etc.)
Airbill #: N/A

Matrix(s) Received: (Check all that apply): X Soil/Solid ____ Water ____ Other: ____

Cooler Number/Temperature: 1 / — °C ____/____ °C ____/____ °C ____/____ °C (Describe)

Thermometer ID: N/A

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C[1]?			✓	
Is there ice present (document if blue ice is used)			✓	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)			✓	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)			✓	
Were all samples received intact[1]?	✓			
Was adequate sample volume provided[1]?	✓			
Are short holding time analytes or samples with HTs due within 48 hours present[1]?		✓		
Is a chain-of-custody (COC) present and filled out completely[1]?	✓			
Does the COC agree with the number and type of sample bottles received[1]?	✓			
Do the sample IDs on the bottle labels match the COC[1]?	✓			
Is the COC properly relinquished by the client with date and time recorded[1]?	✓			
For volatiles in water – is there headspace (> ¼ inch bubble) present? **If yes, contact client and note in narrative.**			✓	
Are samples preserved that require preservation and was it checked [1]? *(note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)*			✓	
Additional Comments (if any):				

[1]If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) — 10-22-20 Date/Time Reviewed

Origins Laboratory, Inc.

Jen Pellegrini

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Jen Pellegrini For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

C-E17FX-PC01-01-SM-102020
10/20/2020 1:27:00PM

GEL Laboratories, LLC
Y010290-24 (Solid)

Total Metals by 6010C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
Arsenic	ND	50.8	mg/kg	10	2054527	TXT1	10/23/2020	10/26/2020	U
Barium	**2730**	8.47	"	"	"	TXT1	"	"	
Cadmium	**2.41**	8.47	"	"	"	TXT1	"	"	J
Chromium	**5280**	16.9	"	"	"	TXT1	"	"	
Lead	**246**	33.9	"	"	"	TXT1	"	"	
Selenium	**22.7**	50.8	"	"	"	TXT1	"	"	J
Silver	ND	8.47	"	"	"	TXT1	"	"	U

Origins Laboratory, Inc.

Jen Pellegrini

Jen Pellegrini For Noelle Doyle Mathis, President

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ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

C-E17FX-PC02-01-SM-102020
10/20/2020 2:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
GEL Laboratories, LLC									
Y010290-25 (Solid)									
Total Metals by 6010C									
Arsenic	ND	51.7	mg/kg	10	2054527	TXT1	10/23/2020	10/26/2020	U
Barium	**1810**	8.62	"	"	"	TXT1	"	"	
Cadmium	**2.13**	8.62	"	"	"	TXT1	"	"	J
Chromium	**11700**	17.2	"	"	"	TXT1	"	"	
Lead	**255**	34.5	"	"	"	TXT1	"	"	
Selenium	**9.78**	51.7	"	"	"	TXT1	"	"	J
Silver	ND	8.62	"	"	"	TXT1	"	"	U

Origins Laboratory, Inc.

Jen Pellegrini

Jen Pellegrini For Noelle Doyle Mathis, President

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ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

C-E17FX-PC05-01-SM-102020
10/20/2020 3:30:00PM

GEL Laboratories, LLC
Y010290-26 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
Total Metals by 6010C									
Lead	**1.28**	1.93	mg/kg	1	2055900	TXT1	10/26/2020	10/27/2020	J
Total Metals by 6010C									
Arsenic	ND	2.77	mg/kg	1	2054527	TXT1	10/23/2020	10/26/2020	U
Barium	**7.82**	0.461	"	"	"	TXT1	"	"	
Cadmium	**0.203**	0.461	"	"	"	TXT1	"	"	J
Chromium	**1.71**	0.923	"	"	"	TXT1	"	"	
Selenium	**1.95**	2.77	"	"	"	TXT1	"	"	J
Silver	ND	0.461	"	"	"	TXT1	"	"	U
Total Metals by 7471A									
Mercury	ND	0.0207	mg/kg	1	2054967	MTM1	"	10/26/2020	U

Origins Laboratory, Inc.

Jen Pellegrini

Jen Pellegrini For Noelle Doyle Mathis, President

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

C-E17FX-PC06-01-SM-102020
10/20/2020 3:55:00PM

GEL Laboratories, LLC
Y010290-27 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
Total Metals by 6010C									
Lead	**62.5**	1.91	mg/kg	1	2055900	TXT1	10/26/2020	10/27/2020	
Total Metals by 6010C									
Arsenic	ND	2.74	mg/kg	1	2054527	TXT1	10/23/2020	10/26/2020	U
Barium	**61.3**	0.457	"	"	"	TXT1	"	"	
Cadmium	**0.743**	0.457	"	"	"	TXT1	"	"	
Chromium	**5.51**	0.914	"	"	"	TXT1	"	"	
Selenium	**2.12**	2.74	"	"	"	TXT1	"	"	J
Silver	**0.688**	0.457	"	"	"	TXT1	"	"	
Total Metals by 7471A									
Mercury	**0.00993**	0.0218	mg/kg	1	2054967	MTM1	"	10/26/2020	J

Origins Laboratory, Inc.

Jen Pellegrini

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Jen Pellegrini For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

C-E17FX-PC07-01-SM-102020
10/20/2020 3:56:00PM

GEL Laboratories, LLC
Y010290-28 (Solid)

Total Metals by 6010C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
Arsenic	ND	2.98	mg/kg	1	2054527	TXT1	10/23/2020	10/26/2020	U
Barium	**74.0**	0.496	"	"	"	TXT1	"	"	
Cadmium	**0.864**	0.496	"	"	"	TXT1	"	"	
Chromium	**15.5**	0.992	"	"	"	TXT1	"	"	
Lead	**41.9**	1.98	"	"	"	TXT1	"	"	
Selenium	**3.12**	2.98	"	"	"	TXT1	"	"	
Silver	**1.18**	0.496	"	"	"	TXT1	"	"	

Total Metals by 7471A

Mercury	ND	0.0224	mg/kg	1	2054967	MTM1	"	10/26/2020	U

Origins Laboratory, Inc.

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Jen Pellegrini For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

Total Metals by 6010C - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2055900 - SW846 3050B										
BLANK (1204679087-BLK)					Prepared: 10/26/2020 Analyzed: 10/27/2020					
Lead	0.663	1.98	mg/kg				-			J
LCS (1204679088-BKS)					Prepared: 10/26/2020 Analyzed: 10/27/2020					
Lead	50.6	1.95	mg/kg	48.6		104	80-120			
DUP (1204679718 D)		**Source: 525062001**			Prepared: 10/26/2020 Analyzed: 10/27/2020					
Lead	29.8	2.31	mg/kg dry		25.2		0-20	16.6	20	
MS (1204679719 S)		**Source: 525062001**			Prepared: 10/26/2020 Analyzed: 10/27/2020					
Lead	83.9	2.31	mg/kg dry	57.7	25.2	102	75-125			

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Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

Total Metals by 6010C - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2054527 - SW846 3050B										
BLANK (1204675777-BLK)					Prepared: 10/23/2020 Analyzed: 10/26/2020					
Barium	ND	0.483	mg/kg				-			U
Cadmium	ND	0.483	"				-			U
Chromium	ND	0.965	"				-			U
Lead	2.40	1.93	"				-			
Selenium	0.647	2.90	"				-			J
Silver	ND	0.483	"				-			U
Arsenic	ND	2.90	"				-			U
LCS (1204675778-BKS)					Prepared: 10/23/2020 Analyzed: 10/26/2020					
Selenium	47.0	2.92	mg/kg	48.6		96.6	80-120			
Arsenic	45.6	2.92	"	48.6		93.8	80-120			
Barium	47.2	0.486	"	48.6		97.1	80-120			
Cadmium	46.9	0.486	"	48.6		96.5	80-120			
Lead	48.3	1.95	"	48.6		99.2	80-120			
Silver	9.70	0.486	"	9.73		99.7	80-120			
Chromium	48.7	0.973	"	48.6		100	80-120			

Origins Laboratory, Inc.

Jen Pellegrini

Jen Pellegrini For Noelle Doyle Mathis, President

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ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

Total Metals by 7471A - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2054967 - SW846 7471A Prep										
BLANK (1204676746-BLK)					Prepared: 10/23/2020 Analyzed: 10/26/2020					
Mercury	ND	0.0217	mg/kg				-			U
LCS (1204676747-BKS)					Prepared: 10/23/2020 Analyzed: 10/26/2020					
Mercury	0.234	0.0237	mg/kg	0.237		98.8	80-120			
MS (1204676748 S)		**Source: 523028003**			Prepared: 10/23/2020 Analyzed: 10/26/2020					
Mercury	0.293	0.0259	mg/kg dry	0.259	0.118	67.5	80-120			
MSD (1204676749 SD)		**Source: 523028003**			Prepared: 10/23/2020 Analyzed: 10/26/2020					
Mercury	0.308	0.0283	mg/kg dry	0.283	0.118	67.1	80-120	5.01	20	
PS (1204676751 S)		**Source: 523028003**			Prepared: 10/23/2020 Analyzed: 10/26/2020					
Mercury	0.00366	0.000246	mg/kg dry	0.00200		101	80-120			

Origins Laboratory, Inc.

Jen Pellegrini

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Jen Pellegrini For Noelle Doyle Mathis, President

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

Notes and Definitions

U Result not detected above the detection limit

J Greater than the detection limit but less than the reporting limit

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jen Pellegrini For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

November 16, 2020

Kiewit

Megan Wood

3543 E. 46th Ave.

Denver CO 80216

Project Name - Central 70 **Project Number - [none]**

Attached are your analytical results for Central 70 received by Origins Laboratory, Inc. November 05, 2020. This project is associated with Origins project number Y011093-11.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com

THE NELAC INSTITUTE

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
C-E17FX-PC08-01-SM110420	Y011093-11	Soil	November 4, 2020 20:50	11/05/2020 11:10
C-E17FX-PC09-01-SM110420	Y011093-12	Soil	November 4, 2020 21:10	11/05/2020 11:10

Origins Laboratory, Inc.

Jen Pellegrini

Jen Pellegrini For Noelle Doyle Mathis, President

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ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

ORIGINS LABORATORY, INC

www.originslaboratory.com

page 1 of 2

Y011093

Client: Kiewit
Address:
Telephone Number: 970-819-8147
Email Address: megan.wood@kiewit.com, laura.tobin@wsp.com, jim.bowie@wsp.com, ron@fochnilisusa.com, stephen.dertatevasion@wsp.com

Project Manager: Megan Wood
Project Name: Central 70
Project Number:
Samples Collected By: Stephen DerTatevasion

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative: Unpreserved	HCl	HNO_3	Other	Matrix: Groundwater	Soil	Air Summa Canister #	Other	Analysis: Asbestos (PLM)	Rcra 8 Metals (6010C/7470A)	Sample Instructions
C-E17FX-AGW01-01-SW-110420	11/4/20	2000	1	X							X	X		1
C-E17FX-AGW01-02-SW-110420		2005												2
C-E17FX-AGW10-01-SW-110420		2010												3
C-E17FX-AGW10-02-SW-110420		2015												4
C-E17FX-AGW08-01-SW-110420		2020												5
C-E17FX-AGW03-01-SW-110420		2025												6
C-E17FX-AGW12-01-SW-110420		2030												7
C-E17FX-AGW12-02-SW-110420		2035												8
C-E17FX-AGW13-01-SW-110420		2040												9
C-E17FX-AGW13-02-SW-110420		2045												10

Relinquished By: Date: 11-5-20 Time: 11:10 Received By: Date: 11/5/20 Time: 1110 Turnaround Time: Same Day ☐ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Standard ☑

Relinquished By: Date: Time: Received By: Date: Time:

Temp Received- Date Results Needed

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Origins Laboratory, Inc.

Jen Pellegrini

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Jen Pellegrini For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

ORIGINS LABORATORY, INC

www.originslaboratory.com

page 2 of 2

Y011093

Client: Kiewit
Address:
Telephone Number: 970-819-8147
Email Address: Megan.Wood1@Kiewit.com, laura.tobin@usa.com, jim.bowie@usa.com, tom@rothmillsusa.com, stephen.clerkteasion@usa.com

Project Manager: Megan Wood
Project Name: Central 70
Project Number:
Samples Collected By: Jim Bowie

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative: Unpreserved	HCl	HNO_3	Other	Matrix: Groundwater	Soil	Air Summa Canister #	Other	Analysis: RFKA & Metals 6010C/7471A	Sample Instructions
1 C-E17FX-RC08-01-SW-110420	11/4/20	2050	1	X							X	X	
2 C-E17FX-RC09-01-SW-110420	11/4/20	2110	1	X							X	X	
3													
4													
5													
6													
7													
8													
9													
10													

Relinquished By: Date: 11-5-20 Time: 11:10 Received By: Date: 11/5/20 Time: 11:10

Relinquished By: Date: Time: Received By: Date: Time:

Turnaround Time: Same Day ☐ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Standard ☑

Temp Received- Date Results Needed

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Origins Laboratory, Inc.

Jeff Pellegrini

Jen Pellegrini For Noelle Doyle Mathis, President

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ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

Origins Laboratory

F-012207-01-R1
Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: Y011093

Client: Kiewit
Client Project ID: C70

Checklist Completed by: JG
Date/time completed: 11/6/20

Shipped Via: HD
(UPS, FedEx, Hand Delivered, Pick-up, etc.)
Airbill #: N/A

Matrix(s) Received: (Check all that apply): X Soil/Solid ____ Water ____ Other: ____ (Describe)

Cooler Number/Temperature: 1 / — °C ____/____ °C ____/____ °C ____/____ °C

Thermometer ID: N/A

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C[1]?		✓		
Is there ice present (document if blue ice is used)		✓		
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		✓		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		✓		
Were all samples received intact[1]?	✓			
Was adequate sample volume provided[1]?	✓			
Are short holding time analytes or samples with HTs due within 48 hours present[1]?		✓		
Is a chain-of-custody (COC) present and filled out completely[1]?	✓			
Does the COC agree with the number and type of sample bottles received[1]?	✓			
Do the sample IDs on the bottle labels match the COC[1]?	✓			
Is the COC properly relinquished by the client with date and time recorded[1]?	✓			
For volatiles in water – is there headspace (> ¼ inch bubble) present? **If yes, contact client and note in narrative.**			✓	
Are samples preserved that require preservation and was it checked[1]? *(note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)*			✓	
Additional Comments (if any):				

[1]If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) JM

Date/Time Reviewed 11-9-20

Origins Laboratory, Inc.

Jen Pellegrini

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Jen Pellegrini For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

C-E17FX-PC08-01-SM110420
11/4/2020 8:50:00PM

GEL Laboratories, LLC
Y011093-11 (Soil)

RCRA 8 Metals by EPA 6010C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
Arsenic	ND	2.81	mg/kg dry	1	2060209	TXT1	11/09/2020	11/09/2020	U
Barium	**26.5**	0.468	"	"	"	TXT1	"	"	
Cadmium	**0.140**	0.468	"	"	"	TXT1	"	"	J
Chromium	**4.64**	0.936	"	"	"	TXT1	"	"	
Lead	**11.0**	1.87	"	"	"	TXT1	"	"	
Selenium	**1.48**	2.81	"	"	"	TXT1	"	"	J
Silver	**1.05**	0.468	"	"	"	TXT1	"	"	

RCRA 8 Metals by EPA 7471

Mercury	ND	0.0201	mg/kg dry	1	2060563	MTM1	"	11/10/2020	U

Origins Laboratory, Inc.

Jen Pellegrini

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ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

C-E17FX-PC09-01-SM110420
11/4/2020 9:10:00PM

GEL Laboratories, LLC
Y011093-12 (Soil)

RCRA 8 Metals by EPA 6010C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
Arsenic	ND	2.88	mg/kg dry	1	2060209	TXT1	11/09/2020	11/09/2020	U
Barium	**22.5**	0.481	"	"	"	TXT1	"	"	
Cadmium	**0.106**	0.481	"	"	"	TXT1	"	"	J
Chromium	**3.50**	0.962	"	"	"	TXT1	"	"	
Lead	**1.67**	1.92	"	"	"	TXT1	"	"	J
Selenium	**1.45**	2.88	"	"	"	TXT1	"	"	J
Silver	ND	0.481	"	"	"	TXT1	"	"	U

RCRA 8 Metals by EPA 7471

Mercury	ND	0.0214	mg/kg dry	1	2060563	MTM1	"	11/10/2020	U

Origins Laboratory, Inc.

Jen Pellegrini

Jen Pellegrini For Noelle Doyle Mathis, President

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ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

RCRA 8 Metals by EPA 6010C - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2060209 - SW846 3050B										
BLANK (1204688652-BLK)					Prepared: 11/09/2020 Analyzed: 11/09/2020					
Barium	ND	0.475	mg/kg				-			U
Cadmium	ND	0.475	"				-			U
Chromium	ND	0.951	"				-			U
Lead	0.719	1.90	"				-			J
Selenium	ND	2.85	"				-			U
Silver	0.101	0.475	"				-			J
Arsenic	ND	2.85	"				-			U
LCS (1204688653-BKS)					Prepared: 11/09/2020 Analyzed: 11/09/2020					
Arsenic	44.0	2.91	mg/kg	48.4		90.8	80-120			
Silver	9.38	0.484	"	9.69		96.8	80-120			
Selenium	44.6	2.91	"	48.4		92	80-120			
Lead	46.2	1.94	"	48.4		95.4	80-120			
Chromium	45.7	0.969	"	48.4		94.2	80-120			
Barium	45.1	0.484	"	48.4		93.2	80-120			
Cadmium	44.4	0.484	"	48.4		91.7	80-120			
DUP (1204688654 D)		**Source: 526729001**			Prepared: 11/09/2020 Analyzed: 11/09/2020					
Chromium	52.9	1.12	mg/kg dry		45.2		0-20	15.6	20	
Arsenic	ND	16.9	"		<2.81		0-20	109	20	U
Lead	3.22	2.25	"		2.61		0-20	21.1	20	
Selenium	2.05	3.37	"		3.23		0-20	44.7	20	J
Silver	ND	0.562	"		<0.112		0-20	3.97	20	U
Barium	161	0.562	"		154		0-20	4.48	20	
Cadmium	0.775	0.562	"		0.727		0-20	6.41	20	
MS (1204688655 S)		**Source: 526729001**			Prepared: 11/09/2020 Analyzed: 11/09/2020					

Origins Laboratory, Inc.

Jen Pellegrini

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Jen Pellegrini For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

RCRA 8 Metals by EPA 6010C - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2060209 - SW846 3050B										
MS (1204688655 S)		**Source: 526729001**			Prepared: 11/09/2020 Analyzed: 11/09/2020					
Cadmium	42.8	0.515	mg/kg dry	51.5	0.727	81.6	75-125			
Silver	8.92	0.515	"	10.3	<0.103	86.6	75-125			
Selenium	45.2	3.09	"	51.5	3.23	81.5	75-125			
Chromium	94.3	1.03	"	51.5	45.2	95.2	75-125			
Barium	188	0.515	"	51.5	154	67.1	75-125			
Arsenic	52.7	15.5	"	51.5	<2.58	102	75-125			
Lead	43.8	2.06	"	51.5	2.61	79.9	75-125			
PS (1204690074 S)		**Source: 526729001**			Prepared: 11/09/2020 Analyzed: 11/09/2020					
Barium	2.04	0.00562	mg/kg dry	0.500		83.9	75-125			

Origins Laboratory, Inc.

Jen Pellegrini

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Jen Pellegrini For Noelle Doyle Mathis, President

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

RCRA 8 Metals by EPA 7471 - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2060563 - SW846 7471A Prep										
BLANK (1204689532-BLK)					Prepared: 11/09/2020 Analyzed: 11/10/2020					
Mercury	ND	0.0218	mg/kg				-			U
LCS (1204689533-BKS)					Prepared: 11/09/2020 Analyzed: 11/10/2020					
Mercury	0.234	0.0223	mg/kg	0.223		105	80-120			
MS (1204689537 S)		**Source: 525102001**			Prepared: 11/09/2020 Analyzed: 11/10/2020					
Mercury	0.217	0.0222	mg/kg	0.222	<0.00744	97.8	80-120			
MSD (1204689538 SD)		**Source: 525102001**			Prepared: 11/09/2020 Analyzed: 11/10/2020					
Mercury	0.228	0.0233	mg/kg	0.233	<0.00779	98	80-120	4.75	20	

Origins Laboratory, Inc.

Jen Pellegrini

Jen Pellegrini For Noelle Doyle Mathis, President

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ORIGINS LABORATORY, INC

Kiewit
3543 E. 46th Ave.
Denver CO 80216

Megan Wood
Project Number: [none]
Project: Central 70

Notes and Definitions

U Result not detected above the detection limit

J Greater than the detection limit but less than the reporting limit

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.

Jen Pellegrini

Jen Pellegrini For Noelle Doyle Mathis, President

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

APPENDIX

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LABORATORY AND PERSONNEL ACCREDITATIONS

STEPHEN DER TATEVASION

Environmental Scientist

Years with the firm

< 1

Years total

6

Areas of practice

Phase I Environmental Site Assessments/Due Diligence

Phase II Subsurface Investigations

Underground Storage Tank Removals

Environmental Field Sampling (Soil, Groundwater, Surface Water, Sediment, & Asbestos Containing Material)

Groundwater Monitoring Well Installations

Soil Core Logging

Soil Excavation Oversight

Environmental Compliance Oversight for Construction Projects

Geographic Information Systems (GIS)

CAREER SUMMARY

Stephen Der Tatevasion is an environmental scientist with 6 years of experience supporting environmental due diligence, site investigation/characterization, and remediation projects in the environmental consulting industry. Stephen has experience performing CERCLA site characterization and remedial action projects for Department of Defense (DOD) clients across Alaska, and Phase I, II, and III Environmental Site Assessments (ESAs) for Oil & Gas, mining, transportation, real estate, commercial, dry cleaner, and gas station clients in Texas. Prior to joining WSP, Stephen was employed as an environmental scientist with Jacobs Engineering Group, Inc. in Anchorage, AK.

EDUCATION

B.S., Environmental Studies, Virginia Commonwealth University, Richmond, VA	2009
GIS Marketable Skills Certificate, Geographic Information Systems (GIS), Houston Community College, Houston, Texas.	2010

ADDITIONAL TRAINING

40-Hour Initial OSHA HAZWOPER Training	2011
8-Hour OSHA HAZWOPER Refresher Training	2019
8-Hour Initial HAZWOPER Supervisor Training	2019
24-Hour Initial Asbestos Building Inspector Training	2019

PROFESSIONAL MEMBERSHIPS

Rocky Mountain Association of Environmental Professionals (RMAEP)	2019

PROFESSIONAL EXPERIENCE

Phase I Environmental Site Assessments/Due Diligence

— Lovett Homes, Various Properties, Houston, TX: Performed Phase I ESAs prior to commercial real-estate transactions and development. Responsibilities included site visit/site reconnaissance, report preparation, and limited Phase II follow up sampling activities.

— Linn Energy, LLC., Oil & Gas Property Acquisition, Hugoton Basin, KS: Assisted a team of assessors with a pre-acquisition environmental assessment of an oil & gas property consisting of approximately 1,200 producing oil and gas well sites and associated infrastructure. Assessed compressor and metering stations, containment equipment, generators, tank batteries, tank farms, well pads, and drill sites and assisted with a naturally occurring radioactive material (NORM) inspection of a natural gas processing plant.

Phase II Subsurface Investigations

— Confidential Client, Former Celotex Corporation Asphalt Shingle Manufacturing Plant site, Houston, TX: Provided oversight and guidance of soil test trenching

activities and collected samples of subsurface roofing shingle debris to assess the presence, location and extent of asbestos-containing material (ACM) in subsurface soil prior to planned real-estate development.

— Rush Truck Centers, Former United Rentals Leaking UST Site, Houston, TX. Advanced soil borings and installed groundwater monitoring wells to investigate subsurface soil and groundwater adjacent to a leaking underground storage tank (LUST). Site received regulatory closure shortly after completion of the investigation and subsequent reporting, which successfully demonstrated site cleanup objectives were achieved.

— Trinity Episcopal School, 2215 Church Street Site, Galveston, TX: Began as a Phase II Limited Subsurface Investigation (LSI) consisting of a ground-penetrating radar (GPR) survey to investigate locations of historical USTs, and the advancement of soil borings, installation of temporary groundwater monitoring wells, and collection of soil and groundwater samples to assess subsurface conditions. Significant soil contamination encountered due to the presence of historical contaminated fill material and former leaking underground storage tanks. Performed oversight of the removal of an unexpected underground storage tank (UST) encountered during test trenching activities and performed subsequent confirmation soil sampling. Provided oversight of soil excavation and removal activities.

— Houston METRO, Former Industrial Parcel, Houston, TX: Performed a subsurface investigation of a former industrial parcel, including the advancement of soil borings, installation of groundwater monitoring wells, and collection of soil and groundwater samples to assess subsurface environmental conditions.

Soil Excavations

— USAF, Former North River Radio Relay Station Site, Unalakleet, AK: Assisted with polychlorinated biphenyl (PCB) and Petroleum, Oil, Lubricants (POL) contaminated soil excavation activities, including soil sampling, soil excavation oversight, transportation of soil samples to a mobile laboratory for analysis, oversight of the containerization of impacted soil in super sacks, organization and proper labeling of super sacks during onsite staging, and oversight of the transportation of super sacks to an offsite staging location in preparation for final transportation to a RCRA treatment, storage, and disposal (TSD) facility via barge. Assisted with preparation of a tech memo detailing field activities and results.

— Confidential Trinity Episcopal School, Galveston, TX: Coordinated and managed the excavation and offsite disposal of several hundred cubic yards of hydrocarbon and lead contaminated non-hazardous soil delineated through extensive soil sampling and analysis.

— Confidential Client, Historical Railroad Spur Investigation, Houston, TX: Performed oversight and guidance of the excavation of lead-impacted soil and buried slag resulting from historical industrial activities adjacent to the historical railroad spur. Utilized a hand-held XRF analyzer to field screen soil for metals concentrations and collected confirmation soil samples for analysis at an offsite laboratory. Collected waste characterization samples from soil stockpiles and provided oversight for the offsite disposal of soil in accordance with RCRA regulations.

Environmental Compliance Oversight for Construction Projects

— Houston METRO, Harrisburg Overpass Construction Project, Houston, TX: Performed environmental compliance oversight of construction and excavation activities throughout the subsurface phase of a concrete overpass construction project, lasting approximately one year. Responsibilities included: field screening suspect soil with a photoionization detector (PID), coordinating and managing the loading and transport of suspect soil, water, and/or construction materials to a waste staging yard, collecting waste characterization samples for waste profiling, guiding the loading, transport and manifestation of regulated soil, water, and/or construction materials immediately prior to site removal, conducting storm water pollution prevention plan (SWPPP) compliance inspections and documentation.

Groundwater Monitoring & Product Recovery

— U.S. Army, Fort Wainwright, Fairbanks, AK: Performed low-flow groundwater sampling to monitor a contaminant plume adjacent to a proposed housing development.

— U.S. Air Force, Eielson AFB, Fairbanks, AK: Performed low-flow groundwater sampling for an Installation Wide Monitoring Program (IWMP) sampling event. Utilized peristaltic pumps, YSI water quality parameter control unit/flow thru cell, oil/water interface meters, etc. to perform sampling.

— Luminant Mining Company, LLC, Monticello Winfield South Mine, Winfield, TX: Performed periodic low-flow groundwater monitoring and product recovery to demonstrate non-aqueous phase liquid (NAPL) plume stability in an effort to achieve regulatory closure through the Texas Commission on Environmental Quality (TCEQ) Leaking Petroleum Storage Tank (LPST) program. Prepared Annual Groundwater Monitoring Reports (AGMR) summarizing results from these events for submission to the TCEQ.

— Linn Energy, Inc., Oil & Gas Lease Site, Tatum, NM. Performed biannual groundwater sampling to monitor chloride concentrations in groundwater.

— Various Clients, Gas Station LUST Sites, Texas: Performed quarterly and/or biannual groundwater monitoring and product recovery at various gas station LUST sites.

Geographic Information Systems (GIS)

— United States Army Corps of Engineers (USACE), Attu Island, Anchorage, AK: Assisted with the development and organization of a Geographic Information System (GIS) database for a Formerly Used Defense Site (FUDS) using historical data to assess, delineate, and prioritize potential hazardous waste release areas for further investigation and cleanup.

Colorado Department
of Public Health
and Environment

ASBESTOS CERTIFICATION*

This certifies that

Stephen T. DerTatevasion

Certification No.: 25330

has met the requirements of 25-7-507, C.R.S. and Air Quality Control Commission Regulation No. 8, Part B, and is hereby certified by the state of Colorado in the following discipline:

Building Inspector*

Issued: **February 05, 2020**

Expires: **February 20, 2021**

**** This certificate is valid only with the possession of a current Division-approved training course certification in the discipline specified above.***

Authorized APCD Representative

SEAL

Acclaim Environmental Services, Inc.

7959 Ulster Court, Thornton, Colorado 80602
Tel: 303.424.4647
www.acclaim-enviro.com
acclaim-enviro@comcast.net

CERTIFIES THAT

STEPHEN DER TATEVASION

Has successfully completed

The **EPA-Approved AHERA Annual Refresher Course** for **INSPECTOR**. This course is EPA-approved under Section 206 of the Toxic Substances Control Act (TSCA) and meets the requirements of Colorado Regulation No. 8.

Course Date:	01/15/20
Exam Date:	N/A
Certificate No.:	AE20-004-BI-R-03
Expiration Date:	01/15/2021

K. Jay Gale, President

Certificate of Achievement

WSP My Learning Portal

STEPHEN DER TATEVASION

In honor of successfully completing the course

HAZWOPER 2020 Refresher (8-Hour)

Awarded on 01/23/2020

_____

Certificate of Achievement

WSP My Learning Portal

STEPHEN DER TATEVASION

In honor of successfully completing the course

Hazwoper Supervisor

Awarded on 02/07/2020

_____

ACCLAIM ENVIRONMENTAL
SERVICES INC

7959 Ulster Court, Thornton, Colorado 80602
Tel: 303.424.4647
Fax: 303.432.8669

CERTIFIES THAT

STEPHEN DER TATEVASION

Has successfully completed

The **EPA-Approved AHERA Asbestos Course** for **INSPECTOR**. This course is EPA-approved under Section 206 of the Toxic Substances Control Act (TSCA) and meets the requirements of Colorado Regulation No. 8.

Course Date:	02/11/19 – 02/13/19
Exam Date:	02/13/19
Certificate No.:	AE19-010-BI-I-02
Expiration Date:	02/13/20

K. Jay Gale, President

ENVIRONMENTAL
MANAGEMENT
INCORPORATED

Certificate of Training

T - 22537 - 20503
Certificate Number

This is to certify that

Stephen Der Tatevasion

has satisfactorily completed 40 hours

of

Hazardous Waste Operations & Emergency Response - 40 Hours

In compliance with 29 CFR 1910.120

Class Start Date: 6/13/2011 *Class End Date: 6/17/2011*

Steven Schuler	6/17/2011	6/17/2012	Stuart M. Jacques
	Exam Date	*Cert. Exp. Date*	*Director*

Environmental Management Inc. 206 E. Fireweed Lane Suite 201, Anchorage Alaska 99503 907-272-8852

© GOES 746

LITHO IN U.S.A.

My Learning Portal

CERTIFICATE OF ACHIEVEMENT

STEPHEN DER TATEVASION

has successfully completed

HAZWOPER-8-Hour-2019

HAZWOPER 2019 Refresher (8-Hour)

02/21/2019

My Learning Portal

CERTIFICATE OF ACHIEVEMENT

STEPHEN DER TATEVASION

has successfully completed

hazwopersupervisor.1

Hazwoper Supervisor

02/25/2019

JAMES BOWIE

Senior Environmental Scientist

Years with the firm

17

Years total

17

Areas of practice

Wastewater Sampling, Groundwater and Soil Sampling, Air Monitoring and Sampling, Remediation Systems, Asbestos and Lead Based Paint Inspector

CAREER SUMMARY

James Bowie provides 16 years of experience in environmental field investigation and project management expertise, supporting a diverse spectrum of site investigation and environmental construction sites. Jim has responsibility for monitoring and site characterization; site remediation and facility closure; overseeing remediation system operation, and maintenance and construction; and hazardous and non-hazardous waste compliance. Jim implements and oversees environmental remediation projects, as well as construction and excavation tasks; conducts asbestos containing building materials inspections and sampling, lead based paint, hazardous building materials, and mold inspections; creates and implements inspection work plans and prepares sampling reports, as well as reviews the work of others.

EDUCATION

B.S., Environmental Science, Water Resource Management, 2001
Metro State University, Denver, CO

ADDITIONAL TRAINING

40-Hour OSHA HAZWOPER Training, with current annual refresher
Adult and Pediatric First Aid/CPR/AED Certification
CDOT Erosion Control Supervisor Certification
CDPHE Lead Based Paint Inspector Certification
CDPHE Lead Based Paint Assessors Certification
CDPHE Asbestos Building Inspector Certification
CDPHE Asbestos Management Planner Certification
OSHA Confined Space Entry Certification
U.S. DOT Hazardous Materials Training
RCRA Hazardous Waste Management Training
Hazard Communication Training

PROFESSIONAL EXPERIENCE

Hazardous Materials and Remediation

- Provide construction oversight, coordination, and technical support for remedial excavations. This experience includes non-hazardous and hazardous waste management, utility coordination, stormwater and wastewater management (storage, *in-situ* treatment, permitted discharge), and environmental compliance; communicates with regulatory agencies regarding field modifications to site work plans.
- Managed projects involving soil and groundwater remediation and pilot test studies on numerous sites involving chlorinated solvents, heavy metals, petroleum, and other industrial contaminants.
- Extensive field experience in construction oversight, ambient air monitoring, remediation system equipment installation and start-up, remediation system operation and maintenance, and implementing scheduled system and groundwater monitoring. Projects include including remediation of lead contaminated soil including large excavations, underground tank excavations, wastewater treatment and discharge systems, vapor mitigation, heated air injection, in situ bioremediation, chemical injections, and construction of groundwater remediation systems.
- Mr. Bowie routinely performs scheduled system maintenance and makes system modifications to improve system performance on systems including groundwater capture and dewatering, air stripping units, carbon filtration systems, SVE systems, air sparge systems, ART well systems, slurry

walls, extraction and injection wells, solid handling systems, nitrate treatment systems, and in-situ chemical injections.

Site Characterization

- Conducts air and water discharge monitoring, slug tests, indoor air monitoring, infiltration tests, and pump tests. Conducts pilot studies for multiphase and dual phase extraction systems, and soil vapor removal. Experience performing ground water remediation system evaluations.
- Environmental field manager of a large RCRA site in Colorado that included site investigation, oversight of scheduled monitoring, conduct daily instrument calibration and particulate monitoring, operation and maintenance of remediation systems, scheduled progress reports, and client support with local municipalities.
- Conducts environmental site assessments and participated in document reviews in support of EPA requests for information on CERCLA sites.

Occupational Safety and Health

- Conducts asbestos and lead based paint building inspections and sampling assessments. As part of the Central 70 project, Jim managed the inspection and reports for 42 commercial and residential properties for assessment of asbestos containing material, lead based paint, and hazardous building materials.
- Creates and updates Asbestos Management Plans.
- Conducts inspections for water intrusion and mold.
- Prepares and implements Health and Safety Plans.
- Conducts ambient air monitoring.
- Manages field team members and oversees the work of others.

Colorado Department
of Public Health
and Environment

ASBESTOS CERTIFICATION*

This certifies that

Jim Bowie

Certification No.: 21144

has met the requirements of 25-7-507, C.R.S. and Air Quality Control Commission Regulation No. 8, Part B, and is hereby certified by the state of Colorado in the following discipline:

Building Inspector*

Issued: **March 10, 2020**

Expires: **April 24, 2021**

This certificate is valid only with the possession of a current Division-approved training course certification in the discipline specified above.

Authorized APCD Representative

SEAL

CLICKSAFETY®

certifies that

JAMES BOWIE

has successfully completed

Hazwoper Refresher 2018

In accordance with the requirements of 29 CFR 1910.120(e)
and has earned 0.8 IACET CEUs and 8 Contact Hours.

I confirm that I personally took the course listed above.

STUDENT SIGNATURE

ACCREDITED IACET PROVIDER

26947619	10/29/2018	8 HOURS
SERIAL NUMBER	COMPLETION DATE	COURSE DURATION

eTraining, Inc.

Certificate of Completion

This certifies that

James Bowie

has received 8 hours of training for successfully completing the

HAZWOPER 8 Hour Supervisor Course

29 CFR 1910.120 - 8 Hours

February 21, 2018 Certificate Number: 96305

www.etraintoday.com

Niall O'Malley, President

Larry A. Baylor, VP Content Development

State of Utah

Department of Health

Environmental Laboratory Certification Program

Certification is hereby granted to

Origins Laboratory, Inc.

1725 Elk Place
Denver, CO 80211

Has conformed with the
2009 TNI Standard
Scope of accreditation is limited to the
State of Utah accredited fields that accompany
this Certificate

EPA Number:	CO01082
Expiration Date:	4/30/2021
Certificate Number:	CO010822020-9

Robyn M. Atkinson, Ph.D, HCLD
Director, Utah Public Health Laboratory

Continued accredited status depends on successful ongoing participation in the program.

Colorado Department
of Public Health
and Environment

ASBESTOS LABORATORY

This certifies that

Reservoirs Environmental, Inc.

Registration No.: AL - 14820

has met the registration requirements of 25-7-507, C.R.S. and the Air Quality Control Commission Regulation No. 8, Part B, and is hereby authorized to perform asbestos laboratory testing activities, as required by Regulation No 8, Part B, in the state of Colorado.

Issued: February 12, 2020
Expires: February 14, 2021

Authorized APCD Representative

SEAL

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 101896-0

Reservoirs Environmental, Inc.

Denver, CO

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2020-07-01 through 2021-06-30

Effective Dates

For the National Voluntary Laboratory Accreditation Program