

PRELIMINARY SITE INVESTIGATION REPORT

Robinson Creek Bridge Replacement on Lambert Lane Booneville, Mendocino County, California

Existing Bridge 10C-0146
BRLO-5910 (099)

Prepared by:



Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
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January 15, 2021
Project No. 16-278.1

Prepared for:



**11017 Cobblerock Drive, Suite 100
Rancho Cordova, California 95670**

January 15, 2021
CAInc File: 16-278.1

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Preliminary Site Investigation Report
Robinson Creek Bridge Replacement on Lambert Lane
Boonville, Mendocino County, California
Existing Bridge 10C-0146
BRLO-5910 (099)

Mr. Foster,

Crawford & Associates, Inc. presents this Preliminary Site Investigation report for the Robinson Creek Bridge Replacement on Lambert Lane project.

This report presents the results of supplemental environmental testing at the project site, including a survey of aerially deposited lead concentrations in soil, assessment of lead and cadmium concentrations in the roadway striping paint, and an assessment of the bridge for the presence of asbestos and lead. This report presents sampling procedures, analytical results, and conclusions and recommendations.

Thank you for the opportunity to be part of your team for the Robinson Creek Bridge Replacement on Lambert Lane project.

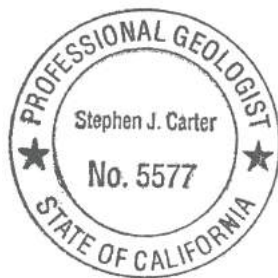
Sincerely,

CRAWFORD & ASSOCIATES, INC.,

Reviewed by,



Stephen J. Carter
Senior Geologist
P.G. 5577



W. Eric Nichols
Senior Project Manager
P.E. C82103



TABLE OF CONTENTS

1	EXECUTIVE SUMMARY	1
2	INTRODUCTION.....	2
2.1	PURPOSE.....	2
2.2	SCOPE OF SERVICES.....	2
3	FIELD ACTIVITIES.....	2
3.1	ASBESTOS SURVEY.....	2
3.2	SOIL SAMPLE COLLECTION.....	3
3.3	ROADWAY PAINT SAMPLE COLLECTION	3
4	ANALYTICAL LABORATORY RESULTS.....	3
4.1	HAZARDOUS WASTE CLASSIFICATION CRITERIA	3
4.2	LABORATORY RESULTS.....	4
4.3	DISCUSSION OF LABORATORY RESULTS.....	5
4.3.1	SOIL SAMPLES.....	5
4.3.2	ROADWAY STRIPING PAINT	5
5	CONCLUSIONS AND RECOMMENDATIONS	6
5.1	ASBESTOS	6
5.2	LEAD PAINT ON BRIDGE STRUCTURE	6
5.3	LEAD-IMPACTED SOIL	6
5.4	ROADWAY STRIPING PAINT	6
6	LIMITATIONS	7

TABLES

Table 1 – Summary of Analytical Data.....	5
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APPENDICES

- APPENDIX A – Figures**
APPENDIX B – National Analytical Laboratories, Inc. Report
APPENDIX C – BC Laboratories, Inc. Report

1 EXECUTIVE SUMMARY

Crawford & Associates Inc. (CAInc) previously completed an Initial Site Assessment (ISA) for the Robinson Creek Bridge Replacement on Lambert Lane (dated 5 July 2016). That ISA was reviewed and accepted by Caltrans as submitted with the requirement that a preliminary site investigation (PSI) be completed prior to final PS&E. While the ISA made no recommendation for additional investigation, Caltrans directed that the PSI include a survey for lead and asbestos on the subject bridge, an assessment of aerially deposited lead (ADL) in soil, and metal concentrations in the roadway paint striping..

Based on this Caltrans directive, CAINc performed the following scope of work.

- Contracted with a Certified Asbestos Consultant and Certified Lead Inspector/Assessor to inspect the bridge for the presence of asbestos-containing construction material (ACCM) and lead-based paint.
- Collected soil samples at the four corners of the bridge to evaluate for aerially deposited lead impact.
- Collected a sample of the roadway striping paint to evaluate concentrations of lead and cadmium.

Based on this scope of work, the following results were reported.

- Asbestos or ACCM were not identified on the bridge structure.
- Lead was reported in white paint on the bridge railing at a concentration of 0.013% (by weight).
- One boring was advanced near each of the four bridge corners, to depths up to 17 inches below ground surface (bgs). Two samples were collected from each boring (0-6 inches bgs, and 12 to total depth bgs). Total lead concentrations in these samples ranged from 2.1 to 20 milligrams/kilogram (mg/kg), below the current hazardous waste threshold. Soil pH was 6.02, within the non-hazardous range.
- One roadway paint striping sample was analyzed for lead and cadmium. Total cadmium was reported at a concentration of 0.27 mg/kg, below the hazardous waste threshold.
- The total lead concentration in the roadway paint sample was 170 mg/kg. The soluble (WET) concentration was 13 milligrams/liter (mg/l), and the soluble (TCLP) concentration was 0.53 mg/l. The WET concentration exceeds the current California hazardous waste threshold (5.0 mg/l).

Based on these results, CAINc make the following conclusions and recommendations.

- Asbestos is not reported in samples collected from the bridge structure. No further action with respect to asbestos is required.
- Paint from the bridge approach railings contains lead at a concentration of 0.013% (by weight). Painted surfaces must be disposed of in accordance with the Caltrans 2018 Standard Special Provision (SSP) 14-11.13. Because these railings are constructed with chemically treated wood, SSP 14-11.14 is also applicable. The presence of lead-containing material on the bridge requires a lead compliance plan.

- Non-hazardous concentrations of lead were reported in shallow soil (≤ 17 inches deep) in the vicinity of the bridge structure. SSP 7-1.02K(6)(j)(iii) requires a lead compliance plan for soil disturbance even when lead concentrations are non-hazardous. This soil may be reused at the site without restriction.
- The lead concentration in the roadway traffic striping paint exceeds the hazardous waste threshold. If this material is removed by planing or grinding the residue must be handled and disposed of as hazardous waste. SSP 14-11.12 requires proper management and disposal of the hazardous waste residue, and a lead compliance plan.

2 INTRODUCTION

2.1 PURPOSE

CAInc previously completed an ISA for the Robinson Creek Bridge Replacement on Lambert Lane (dated July 5, 2016). The bridge is located about 350 feet southwest of State Route 128 in Booneville, California. A Vicinity Map (Figure 1) is included in Appendix A.

Correspondence from Mendocino County (dated March 28, 2019) indicated that Caltrans accepted the draft ISA as submitted, with the requirement that a PSI was required prior to final PS&E. While the ISA made no recommendation for additional investigation, Caltrans directed that the PSI include a survey for lead and asbestos on the subject bridge, an assessment of ADL in soil, and an assessment of metal concentrations in the roadway striping paint.

2.2 SCOPE OF SERVICES

To satisfy Caltrans' requirements, CAINC performed the following tasks.

- Contracted with National Analytical Laboratories, Inc. (NAL) to provide an inspection of the bridge structure for the presence of asbestos or asbestos-containing materials, and lead or lead-containing material.
- Advanced four shallow soil borings in the vicinity of the bridge using hand tools. Soil samples collected from these borings were analyzed to evaluate ADL concentrations in the soil.
- Collected one sample of the roadway striping to evaluate the concentrations of lead and cadmium in the paint.

3 FIELD ACTIVITIES

3.1 ASBESTOS SURVEY

Certified Asbestos Consultant (DOSH #1405310) and Certified Lead Inspector/Assessor (CDPH #24367) Ms. Shannon Johanson from NAL inspected the bridge on October 18, 2019. This inspection included collecting four samples for asbestos analysis, and one paint sample from the guard rails for analysis of lead.

NAL submitted their samples to EMSL Analytical, Inc. of Carle Place, NY (CAELAP #2339) for analysis. Asbestos was not reported in the four samples analyzed. Lead was reported in the paint sample at a concentration of 0.013% (by weight). The NAL report, including a sample location

sketch, chain-of-custody (COC) documentation, and the laboratory report is included in in Appendix B.

3.2 SOIL SAMPLE COLLECTION

Soil samples were collected at locations HA-19-001 through HA-19-004; sample locations are shown on the Site Plan (Figure 2, Appendix A). A single 3-inch diameter boring was advanced at each sample location using a hand auger (locations HA-19-001 through HA-19-004 on the Site Plan). Two discrete soil samples were collected from each boring: 0 to 6 inches bgs (A sample), and 12 inches bgs to total depth (B sample). The borings were advanced to depths between 15 and 17 inches bgs, where auger refusal was encountered in all borings.

Soil samples were collected from the auger bucket. Each sample was homogenized in the field then placed into a sample container provided by the laboratory. After sampling was completed at each location, the borehole was backfilled with the remaining spoils and native material as necessary to return the excavation to approximately original grade.

Care was taken to avoid cross-contamination between sample intervals due to sloughing, or “fall-in.” Sampling equipment (hand auger and hand tools) was washed with a weak detergent bath (Liquid-Nox) and rinsed with clean water before moving to a new sample location. Wash and rinse water from the cleaning process was disposed of at the site away from drainage inlets or known environmentally sensitive areas.

Samples were labeled, placed in an ice chest, and then transported under COC to BC Laboratories, Inc. (CAELAP #1186) for analysis.

3.3 ROADWAY PAINT SAMPLE COLLECTION

Roadway striping consisted of a thin layer of paint applied to the asphalt. Samples of the paint were collected at two locations (both identified as P-1 on the Site Plan), homogenized in the field into a single sample, and placed in a container supplied by the laboratory. The paint sample was collected using a cold chisel and ball peen hammer to remove a thin layer of painted asphalt material (approximately 1/8-inch thick). This sample was labeled, entered onto the COC, and then transported to BC Laboratories.

4 ANALYTICAL LABORATORY RESULTS

4.1 HAZARDOUS WASTE CLASSIFICATION CRITERIA

Regulatory criteria to classify a waste as “California hazardous” for handling and disposal purposes are stipulated in the California Code of Regulations (CCR), Title 22, Division 4.5, Chapter 11, Article 3, §66261.24. Criteria to classify a waste as “Resource, Conservation and Recovery Act (RCRA) hazardous” are contained in Chapter 40 of the Code of Federal Regulations (40 CFR), §261.

Per the California Department of Toxic Substances Control, a lead-containing waste is classified as “California hazardous” when: (1) the total lead content exceeds 1,000 mg/kg, the Total Threshold Limit Concentration (TTLC); or (2) the soluble lead content exceeds 5.0 mg/l, the

Preliminary Site Investigation Report

Robinson Creek Bridge Replacement on Lambert Lane
Booneville, Mendocino County, California

16-278.1

January 15, 2021

Soluble Threshold Limit Concentration (STLC) based on the Waste Extraction Test (WET) method. A waste has the potential to exceed the STLC when the waste's total lead content is greater than or equal to ten times the STLC value, since the WET uses a 1:10 dilution ratio. When the total lead concentration is greater than or equal to 50 mg/kg (ten times lead's STLC, and assuming that 100% of the total lead is soluble), the WET is performed to determine the soluble lead concentration in the waste. A similar approach is applied to cadmium, where the TTLC is 100 mg/kg and the STLC (WET) is 1.0 mg/l.

A lead-containing waste is classified as "RCRA hazardous" when the soluble lead content exceeds the Federal regulatory level of 5.0 mg/l as determined by the Toxicity Characteristic Leaching Potential (TCLP) method (EPA Method 1311). A waste may have the potential to exceed this threshold value when the waste's total lead content is greater than or equal to 20 times the threshold value, since the TCLP uses a 1:20 dilution ratio. When the total lead concentration is greater than or equal to 100 mg/kg (twenty times lead's threshold value, and assuming that 100% of the total lead is soluble), the TCLP is performed to determine the soluble lead concentration in the waste. A similar approach is utilized with cadmium, where the STLC (TCLP) is 1.0 mg/l.

The above regulatory criteria are based on toxicity. Wastes may also be classified as hazardous based on other criteria such as ignitability, corrosivity, and reactivity. For the purposes of ADL investigations, toxicity and corrosivity (e.g., chemical concentrations and soil pH values, respectively) are the primary factors considered for waste classification. Soil with a pH ≤ 2.5 or ≥ 12 are considered corrosive, and are considered hazardous. Waste that is classified as either "California hazardous" or "RCRA hazardous" requires management as a hazardous waste and disposal at an appropriately permitted disposal facility.

4.2 LABORATORY RESULTS

All soil samples were analyzed for total lead concentration using EPA Method 5030/6010B. Sample A from boring 2 was analyzed for pH using EPA Method 9045D. The roadway striping paint (sample P1) was analyzed for total lead and total cadmium using EPA Method 5030/6010B. Based on the total lead concentration, this sample was further subjected to the WET and TCLP extraction procedures; the extracts were analyzed for lead using EPA Method 6010B.

Analytical results for soil and roadway paint samples collected during this study are summarized in Table 1. The laboratory report and COC documentation are included in Appendix C.

Preliminary Site Investigation Report

Robinson Creek Bridge Replacement on Lambert Lane

Booneville, Mendocino County, California

16-278.1

January 15, 2021

Table 1 – Summary of Analytical Data

Sample ID	Date collected	Depth (in)	Total Pb (mg/kg)	Total Cd (mg/kg)	Soluble Pb (WET) (mg/l)	Soluble Pb (TCLP) (mg/l)	pH
HA-19-001A	10/17/19	0-6	5.3*†	--	--	--	--
HA-19-001B	10/17/19	12-17	2.1*	--	--	--	--
HA-19-002A	10/17/19	0-6	12	--	--	--	6.02
HA-19-002B	10/17/19	12-15	7.3	--	--	--	--
HA-19-003A	10/17/19	0-6	16	--	--	--	--
HA-19-003B	10/17/19	12-15	5.7	--	--	--	--
HA-19-004A	10/17/19	0-6	20	--	--	--	--
HA-19-004B	10/17/19	12-16	9.4	--	--	--	--
P-1	10/17/19	--	170	0.27*	13	0.53	--
Hazardous waste limit			1,000	100	5.0	5.0	x≤2.5 or x≥12

Pb = lead

Cd = cadmium

mg/kg - milligrams per kilogram

mg/l = milligrams per liter

in = inches below ground surface

-- = not analyzed/not applicable

* Estimated value

† Detection and quantitation limits were raised due to sample dilution caused by high analyte concentration or matrix interference.

WET = Waste Extraction Test

TCLP = Toxicity Characteristic Leaching Potential

4.3 DISCUSSION OF LABORATORY RESULTS**4.3.1 SOIL SAMPLES**

Eight soil samples were analyzed for total lead. Lead was reported in all eight samples, at concentrations ranging from 2.1 to 20 mg/kg. All reported lead concentrations in soil are below 50 mg/kg; further analysis of these samples is not required. The pH for sample 2A was 6.02.

Based on these results, soil excavated from ground surface to 17 inches bgs in the vicinity of the bridge would not be classified as hazardous.

4.3.2 ROADWAY STRIPING PAINT

The total lead concentration in this sample was reported at 170 mg/kg, above the threshold requiring additional analysis. The soluble lead concentration was reported at 13 mg/l (WET

method) and 0.53 mg/l (TCLP method). The total cadmium concentration in this sample was reported at 0.27 mg/kg, below the threshold requiring additional analysis.

Because the WET lead concentration exceeds the STLC of 5.0 mg/l, this material is classified as a "California" hazardous waste.

5 CONCLUSIONS AND RECOMMENDATIONS

5.1 ASBESTOS

As required under the federal asbestos National Emissions Standards for Hazardous Air Pollutants regulations (NESHAP, 40 CFR Part 61, Subpart M), a Certified Asbestos Consultant inspected the bridge on October 18, 2019; asbestos or ACCM was not reported. No further action with respect to asbestos is required. Written notification to the Air Quality Management District of demolition or renovation operations on structures is required at least 10 business days prior to conducting the work, regardless of the presence or absence of asbestos in building materials. A copy of the NESHAP notification form is included in Appendix B.

5.2 LEAD PAINT ON BRIDGE STRUCTURE

The bridge railings at the approach are constructed of pressure-treated timber wood painted white. The white paint contains lead at a concentration of 0.013% (by weight). Painted surfaces must be disposed of in accordance with the 2018 Caltrans Standard Specifications (SS) 14-11.13, Disturbance Of Existing Paint Systems On Bridges. Because these railings are constructed of chemically treated wood, SS 14-11.14 Treated Wood Waste is also applicable. The presence of lead at the project site requires preparation of a Lead Compliance Plan (SS 7-1.02K(6)(j)(ii)), and a Health & Safety Plan for workers in accordance with Cal OSHA Title 8, Section 1532.1. Additional testing may be required for disposal characterization.

5.3 LEAD-IMPACTED SOIL

Non-hazardous concentrations of lead were reported in shallow soil (up to 17 inches bgs) in the vicinity of the bridge structure. Excavation of lead-impacted soil must be included in the Lead Compliance Plan, even when lead concentrations are non-hazardous. Based on the analytical data, this soil may be reused at the site without restriction. Additional testing may be required for off-site disposal of excavated soil.

5.4 ROADWAY STRIPING PAINT

Roadway traffic striping paint contains lead at a concentration that exceeds the hazardous waste threshold, and may produce toxic fumes when heated. If this striping paint is removed by planing or grinding, the residue must be handled and disposed of as hazardous waste per SS 14-11.12 Removal of Yellow Traffic Stripe and Pavement Marking with Hazardous Waste Residue, and must be included in the lead compliance plan. Painted asphalt paving material that is properly recycled does not need to be handled as hazardous waste.

Preliminary Site Investigation Report

Robinson Creek Bridge Replacement on Lambert Lane
Booneville, Mendocino County, California

16-278.1

January 15, 2021

6 LIMITATIONS

This report summarizes the results of the sampling and testing results for the specific areas and intervals tested. Other areas within the project site may yield different results. Site conditions may change after documented observations have been made. A warrant or guarantee cannot be made that hazardous materials do not exist at the site. To further reduce risk, an extensive invasive exploration may be necessary prior to project implementation.

This report was prepared for the specific use of Quincy Engineering, Inc. and the County of Mendocino for this project and applies only to the area identified as the project area. CAInc is not responsible for interpretations by others of data presented in this report. This report does not represent a legal opinion. No warranty is expressed or implied. Conclusions in this report are based on professional judgment and experience. Work for this assessment was performed in accordance with generally accepted standards of practice in northern California at the time of the assessment.

Preliminary Site Investigation Report

Robinson Creek Bridge Replacement on Lambert Lane
Booneville, Mendocino County, California

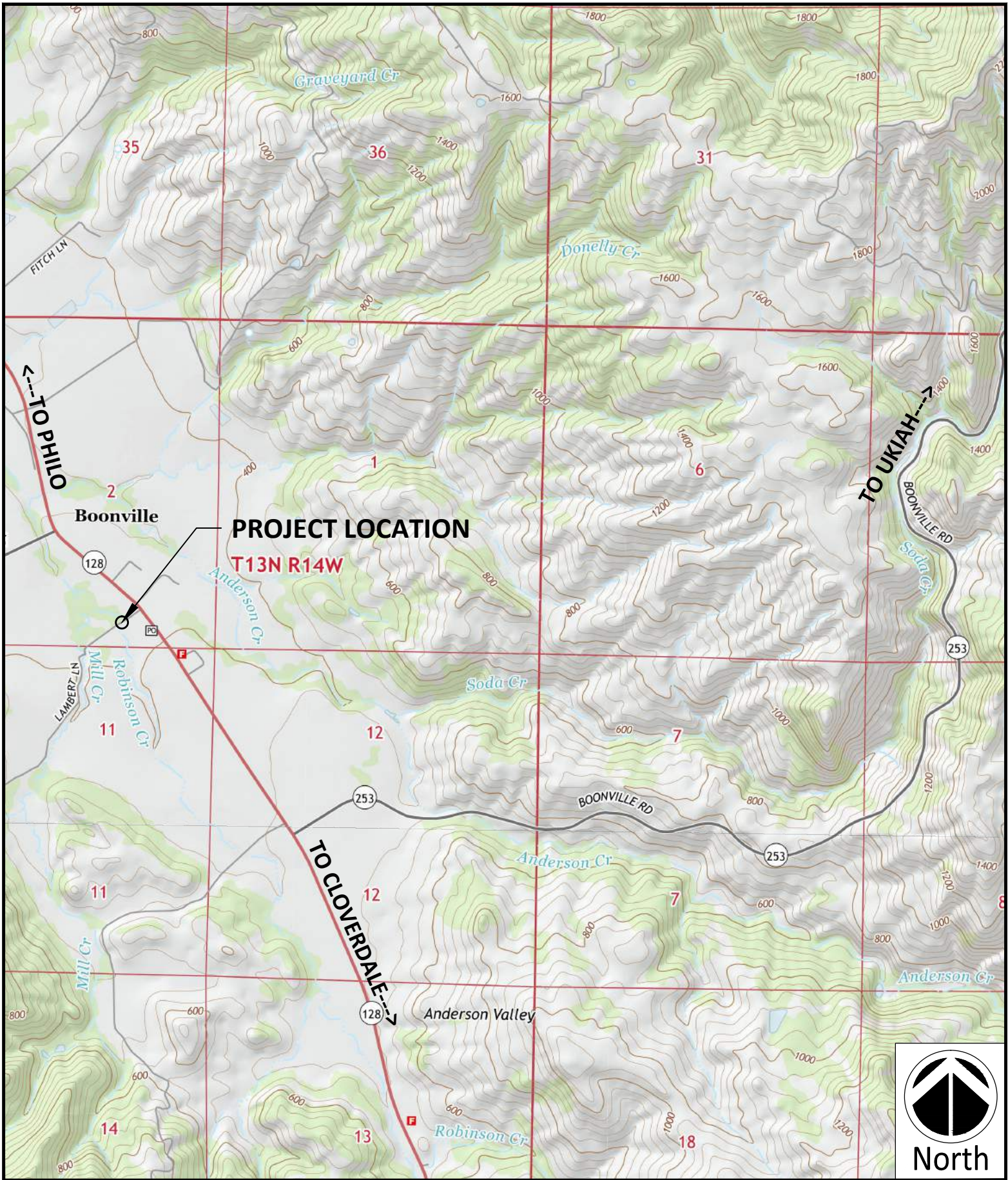
16-278.1

January 15, 2021

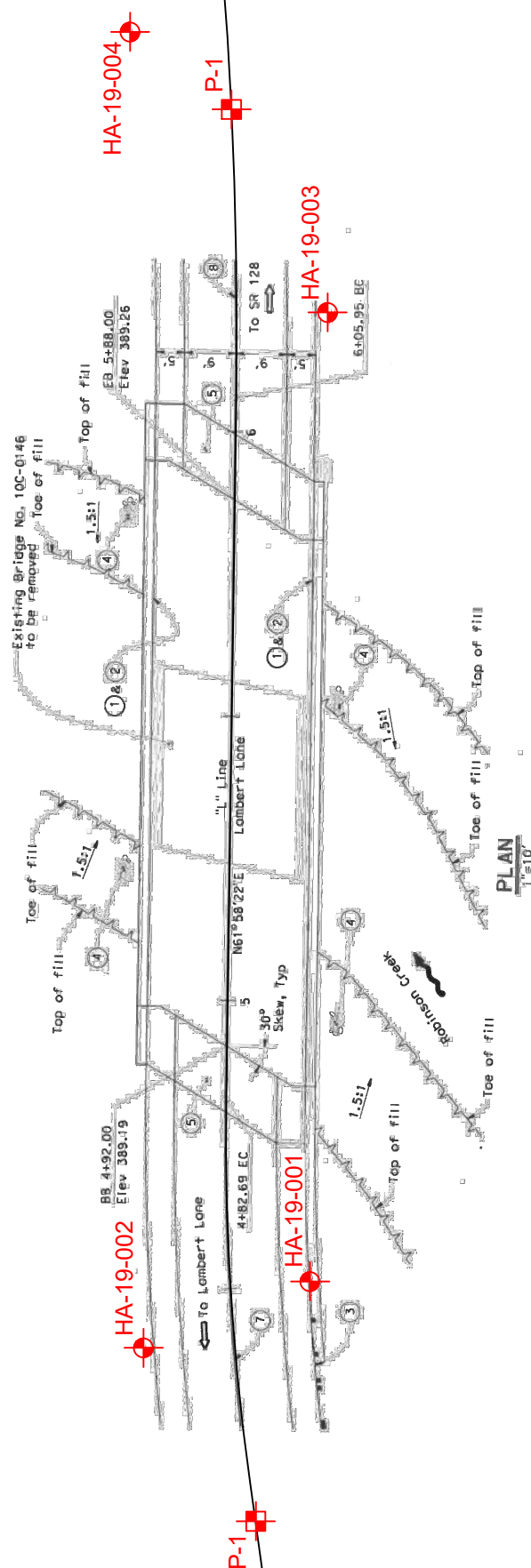
APPENDIX A

Figure 1. Vicinity Map

Figure 2. Site Plan



Project Mgr.			Map Sources -USGS 7.5' Quadrangle, Boonville, Mendocino County, California, 2015 -USGS 7.5' Quadrangle, Ornbau Valley, Mendocino County, California, 2015	 Crawford & Associates, Inc. Geotechnical Engineering, Design and Construction Services 1100 Corporate Way Suite 230 Sacramento, CA 95831 (916) 455-4225	ROBINSON CREEK BRIDGE REPLACEMENT ON LAMBERT LANE BRIDGE #10C-146 BOONVILLE, MENDOCINO COUNTY, CA	Figure 1 Vicinity Map Project No. 16-278.1 Scale 1"=2000' Date 05/23/2016
Project Eng.						
Designer						
Checked By						
Drawn By	RRH	05/23/2016				
By		Date				



Legend

- Approximate Hand Auger Location
- Approximate Paint Sample Location

Crawford & Associates, Inc.
 Geotechnical Engineering, Design
 and Construction Services
 1100 Corporate Way
 Suite 230
 Sacramento, CA 95831
 (916) 455-4225
Taber
 Since 1954

Robinson Creek Bridge Replacement

Boonville, CA

Figure 2

Sample Location
Map

Proj. No: 16-278.1
 Scale: 1"=30'
 Date: 11/26/19

Preliminary Site Investigation Report

Robinson Creek Bridge Replacement on Lambert Lane

Booneville, Mendocino County, California

16-278.1

January 15, 2021

APPENDIX B

National Analytical Laboratories, Inc. Report

Dated October 23, 2019

Asbestos and Lead Building Inspection/Survey

Robinson Creek Bridge

39.008447°, -123.3683425°
1812 Lambert Lane
Mendocino, CA

Presented to:

Steve Carter, PG
Senior Geologist

Crawford & Associates
1165 Scenic Drive, Suite B
Modesto, CA 95350

Inspection Date:

October 18, 2019

Conducted by:

Shannon Johanson
Certified Asbestos Consultant
Certified Lead Inspector/Assessor

National Analytical Laboratories, Inc.
2201 Francisco Dr., Ste.140-261
El Dorado Hills, CA 95762
Office: (916) 361-0555 | Fax: (916) 361-0540
E-Mail: NAL1@NAL1.com | Web Page: www.NAL1.com





October 23, 2019

Steve Carter, PG
Senior Geologist
Crawford & Associates
1165 Scenic Drive, Suite B
Modesto, CA 95350

RE: Asbestos and Lead Bridge Inspection/Survey
Robinson Creek Bridge
39.008447°, -123.3683425°
1812 Lambert Lane
Mendocino, CA

Dear Mr. Carter,

This report is in regards to the asbestos and lead bridge inspection conducted at the Robinson Creek Bridge, located at 1812 Lambert Lane, in Boonville, CA. Of the four (4) suspected asbestos containing materials collected, none (0) were found to contain asbestos. The one (1) suspected lead containing area tested was found to be a Lead Containing Material (LCM). Shannon Johanson, Certified Asbestos Consultant and Certified Lead Inspector/Assessor, for National Analytical Laboratories, Inc. (N.A.L.), conducted the inspection on October 18, 2019.

SUMMARY OF FINDINGS -

The asbestos bridge inspection and analytical results indicate that no asbestos is present in the specific bridge materials that were tested.

Based on the lead bridge inspection and analytical results, the White Paint surfaces were found to contain LCM levels above the OSHA Limit of Detection.

SECTION I: ASBESTOS INSPECTION -

The inspection was completed according to the EPA's Asbestos Containing Building Materials (ACBM) In-Schools Rule; 40 CFR 763.85 (Inspection and Re-Inspection). Currently, EPA regulations classify ACBM as materials containing more than 1-percent (1%) of asbestos. Cal-OSHA currently regulates asbestos to 1/10th of 1% (0.1%) and requires that a certified asbestos worker conduct this work.

Breathe easy.....

Once at the physical bridge site, Ms. Johanson performed an entire bridge walk around and under, to visually assess the bridge structure. The bridge system is an asphalt/road base covered concrete deck system, with a concrete abutment and wood railing. Since the bridge is failing, the County has installed a temporary green steel span over the old bridge.

Upon completion of the visual inspection, the suspect asbestos bulk sample materials were collected in accordance with EPA and OSHA protocol. They were placed into new, air tight, plastic bags, sealed, and identified with unique identification numbers. The bulk samples were transported to the laboratory under chain of custody protocol for analysis.

Minor destructive renovation sampling was conducted during the site visit. In the event that demolition work reveals any unforeseen suspect materials or if any future renovation work is to be conducted in other areas at the site; the contractor shall cease all work and contact the building owner for further testing.

EMSL Analytical, Inc. (EMSL), in Carle Place, New York, analyzed the bulk suspect asbestos containing samples, utilizing Polarized Light Microscopy (PLM) Method. National Voluntary Laboratory Accreditation Program (NVLAP) certification #101048-10 and California Environmental Laboratory Accreditation Program (CAELAP) certification #2339, certifies EMSL Analytical, Inc.

The location and results from this sampling are as follows:

Sample ID#	Material	Location	Results
01	Concrete Curb	Robinson Creek Bridge, South Side, at West End	None Detected
02	Concrete Curb	Robinson Creek Bridge, North Side, at East End	None Detected
03	Concrete Pier	Robinson Creek Bridge, North Side, at West End	None Detected
04	Concrete Pier	Robinson Creek Bridge, South Side, at East End	None Detected

ASBESTOS CONCLUSION -

No asbestos was detected in the above listed samples/materials. Therefore, the contractor, their employees and/or the sub-contractors, can complete their work, in the specific areas tested, without any health or safety concerns in regards to the exposure of airborne asbestos fibers.

SECTION II: LEAD INSPECTION –

Upon completion of the visual inspection, suspect painted finishes and/or materials were sampled for potential lead content, in accordance with EPA and OSHA protocol. They were



labeled with a unique identification number and analyzed.

EMSL Analytical, Inc. (EMSL) in Carle Place, New York, utilizing the SW-846-3050B*/7000B method analyzed the suspect LCM samples. National Voluntary Laboratory Accreditation Program (NVLAP) Certification #10148-10 and California Environmental Laboratory Accreditation Program (CAELAP) Certification #2339, certifies EMSL.

Since the laboratory results are reported by weight percent, during the collection of the suspect lead sample, the paint must be removed down to, but not including, the bare substrate (wood, metal, etc.). Inclusion of the any amount of the substrate material in the paint sample will dilute the sample result(s).

Once the determination is made on where the LCM is located, the In-place Management or the Abatement of the LCM can commence. If the In-Place Management method is to be used, prior to the repainting of the effected surface areas, the loose flaky paint must be removed until the remaining paint adheres smoothly to the substrate. Once this task is completed, the surface area can be repainted without the possibility of paint being dislodged and falling to the floor or ground areas. If the Abatement method of all surfaces is to be completed, then the debris and any loose flaky paint must be bagged or burrito wrapped prior to the removal of the debris from the work area(s) and subsequently the site. Because the paint sample listed below was found to contain LCM, all areas where the LCM will be disturbed will require abatement, encapsulation, and/or prep work by a certified lead worker. Therefore, the employer must ensure that the worker is properly trained in accordance with Title 8 (Cal/OSHA 8 CCR 1532 (1) (2) and shall produce evidence that the worker is not being exposed above the Action Level (AL) and/or the Permissible Exposure Limit (PEL). In the event that no current data is readily available for the worker(s), then the employer shall conclude that the worker is being exposed above the PEL. This SHALL trigger the employer to provide advanced training and certifications for the employees working with LCM.

Although not all the materials (non-suspect) were sampled, the like materials that were not tested will be treated as homogeneous and, the materials will be treated as containing LCM throughout the site.

The location and result of the suspect sample found to be LCM is as follows:

Sample ID#	Material Description	Sample Location\Component	Condition	Concentration % By Weight
01	White Paint	Robinson Creek Bridge, North Side, at Wood Guard Rail	Poor	0.031% LCM

Prior to the demolition work being completed and/or the transporting of the debris from the site, Health and Safety Code 25157.8 (AB 2784 National Resources) requires that all lead debris be sampled for Waste Characterization. This will assist the Contractor in making a determination of whether or not the material is to be considered Hazardous or Non-Hazardous Lead waste or



general construction debris. The sequence of testing to be completed by the Contractor is as follows:

- ♥ Total Threshold Limit concentration (TTLC) with a result of 50 mg/kg or more but less than 1,000 mg/kg of lead must be retested using the Soluble Threshold Limit concentration (STLC) method;
- ♥ A STLC result of 5.0 mg/L or greater is considered California Hazardous Waste;
- ♥ Total Characteristic Leaching Procedure (TCLP) testing shall only be accomplished when approved by the Owners Representative; This procedure shall be generally reserved for out-of-state shipments; and A TCLP result of 5.0 mg/L or more deems the waste Federal RCRA materials; and
- ♥ The California hazardous waste threshold for total lead using STLC is 5 mg/L and
- ♥ Lead paint that is intact on a surface does not permit the material to be classed as non-hazardous. Waste profiling shall be accomplished if the paint contains more than 350 ppm by Flame AAS. Exception: Metals that are coated with paint are to be recycled.

LEAD RECOMMENDATION -

In order to stabilize the current lead conditions, N.A.L. recommends Lead Certified CDPH Workers, conduct in-place management work, of the LCM surfaces scheduled for renovation/demolition. Once the abatement, in-place management, and/or prep work is completed and the areas are stabilized, the existing surfaces will be in good condition and not create a health or safety concern to the workers conducting the general construction work at the site. A Scope of Work and/or specifications should be utilized to conduct the lead work at the site.

Included at the end of this report are site photographs, laboratory analytical results, chain of custody forms, and sample location map. If you have any questions regarding this report or if we can be of further assistance, please contact our office.

Reviewed and submitted by:



Shannon Johanson
Certified Asbestos Consultant,
DOSH# 14-5310
Certified Lead Inspector/Assessor,
CDPH# 24367



SITE PHOTOGRAPHS -



Photograph#:	1	Robinson Creek Bridge
Date of Inspection:	10/18/19	
Subject:		



Photograph#:	2	Robinson Creek Bridge
Date of Inspection:	10/18/19	
Subject:		



Photograph#:	3	Robinson Creek Bridge
Date of Inspection:	10/18/19	
Subject:		





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EMSL Order: 061923916

Customer ID: NAL51

Customer PO:

Project ID:

Attention: Paula Lee

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Ste. 140-261

El Dorado Hills, CA 95762

Project: Robinson Creek Bridge: 39.008447 123.3683425, Boonville, CA

Phone: (916) 361-0555

Fax: (916) 361-0540

Received Date: 10/22/2019 10:04 AM

Analysis Date: 10/22/2019

Collected Date: 10/18/2019

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
01 061923916-0001	Robinson Creek Bridge, South Side at West End/Concrete Curb	Gray/Tan/Various Non-Fibrous Homogeneous		70% Quartz 20% Ca Carbonate 10% Non-fibrous (Other)	None Detected
02 061923916-0002	Robinson Creek Bridge, North Side at East End/Concrete Curb	Gray/Tan/Various Non-Fibrous Homogeneous		75% Quartz 15% Ca Carbonate 10% Non-fibrous (Other)	None Detected
03 061923916-0003	Robinson Creek Bridge, North Side at West End/Concrete Pier	Gray/Tan Fibrous Homogeneous	<1% Cellulose	65% Quartz 25% Ca Carbonate 10% Non-fibrous (Other)	None Detected
04 061923916-0004	Robinson Creek Bridge, South Side at East End/Concrete Pier	Brown/Gray/Tan Fibrous Heterogeneous	3% Cellulose	70% Quartz 20% Ca Carbonate 7% Non-fibrous (Other)	None Detected

Analyst(s)

Tomas Montes De Oca (4)


Daniel Clarke, Asbestos Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Carle Place, NY NVLAP Lab Code 101048-10, CA ELAP 2339, NYS ELAP 11469

Initial report from: 10/22/2019 15:28:47



NAL LOG-IN RECORD

Login # 42178

Ph: 916.361.0555 Fx: 916.361.0540

National Analytical Laboratories, Inc.

Job Site/Job #:

Client#-Lot#

4734 / 52

Crawford & Associates

Phone Number

FAX Number

Contact

E-Mail Address

Robinson Creek Bridge:

39.008447 123.3683425

Boonville, CA

Date 10/18/2019

Sampling Date: 10/18/2019

Sampling Time

Type Of Work: PLM-BI

No. of Samples 4

Turnaround: 6 hours

T.H.

Num.	Sample ID#	Location/Description
1	01	Robinson Creek Bridge, South Side at West End / Concrete Curb
2	02	Robinson Creek Bridge, North Side at East End / Concrete Curb
3	03	Robinson Creek Bridge, North Side at West End / Concrete Pier
4	04	Robinson Creek Bridge, South Side at East End / Concrete Pier

061923916

19 OCT 22 AM 10:04
 NATIONAL ANALYTICAL, INC.
 CARLE PLACE, NY

Chain of Custody Information

Released By Signature	Date/Time	Received By Signature	Date/Time	Due:
<i>Shannon Chanen</i>	10/18/19	<i>[Signature]</i>	10-22-19	10/22/19
Released By Signature	Date/Time	Received By Signature	Date/Time	At:

Jorge Montalvo 10/22/19

**EMSL Analytical, Inc.**

528 Mineola Avenue, Carle Place, NY 11514

Phone/Fax: (516) 997-7251 / (516) 997-7528

<http://www.EMSL.com>carleplacelab@emsl.com

EMSL Order: 061923909

CustomerID: NAL51

CustomerPO:

ProjectID:

Attn: **Paula Lee**
National Analytical Laboratories (NAL)
2201 Francisco Dr.
Ste. 140-261
El Dorado Hills, CA 95762

Phone: (916) 361-0555
Fax: (916) 361-0540
Received: 10/22/19 10:18 AM
Collected: 10/18/2019

Project: **Robinson Creek Bridge, 39.008447 123.3683425, Boonville, CA****Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)***

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
01	061923909-0001	10/18/2019	10/22/2019	0.031 % wt
Site: Robinson Creek Bridge, North Side at Wood Guard Rail/White Paint				

Alger Liang, Lead Laboratory Manager
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request.

Samples analyzed by EMSL Analytical, Inc. Carle Place, NY Lab ID 102344 is accredited by the AIHA-LAP, LLC in the Environmental Lead accreditation program for Lead in Paint, CT PH-0249, NYS ELAP 11469

Initial report from 10/22/2019 14:51:57



NAL LOG-IN RECORD

Login # 42177

Ph: 916.361.0555 Fx: 916.361.0540

National Analytical Laboratories, Inc.

Job Site/Job #:

Client#-Lot#

4734 / 51

Crawford & Associates

Phone Number

FAX Number

Contact

E-Mail Address

Robinson Creek Bridge:

39.008447 123.3683425

Boonville, CA

Date 10/18/2019

Sampling Date: 10/18/2019

Sampling Time

Type Of Work: Flame AA

No. of Samples 1

Turnaround: 8 hours

Num.	Sample ID#	Location/Description
1	01	Robinson Creek Bridge, North Side at Wood Guard Rail / White Paint

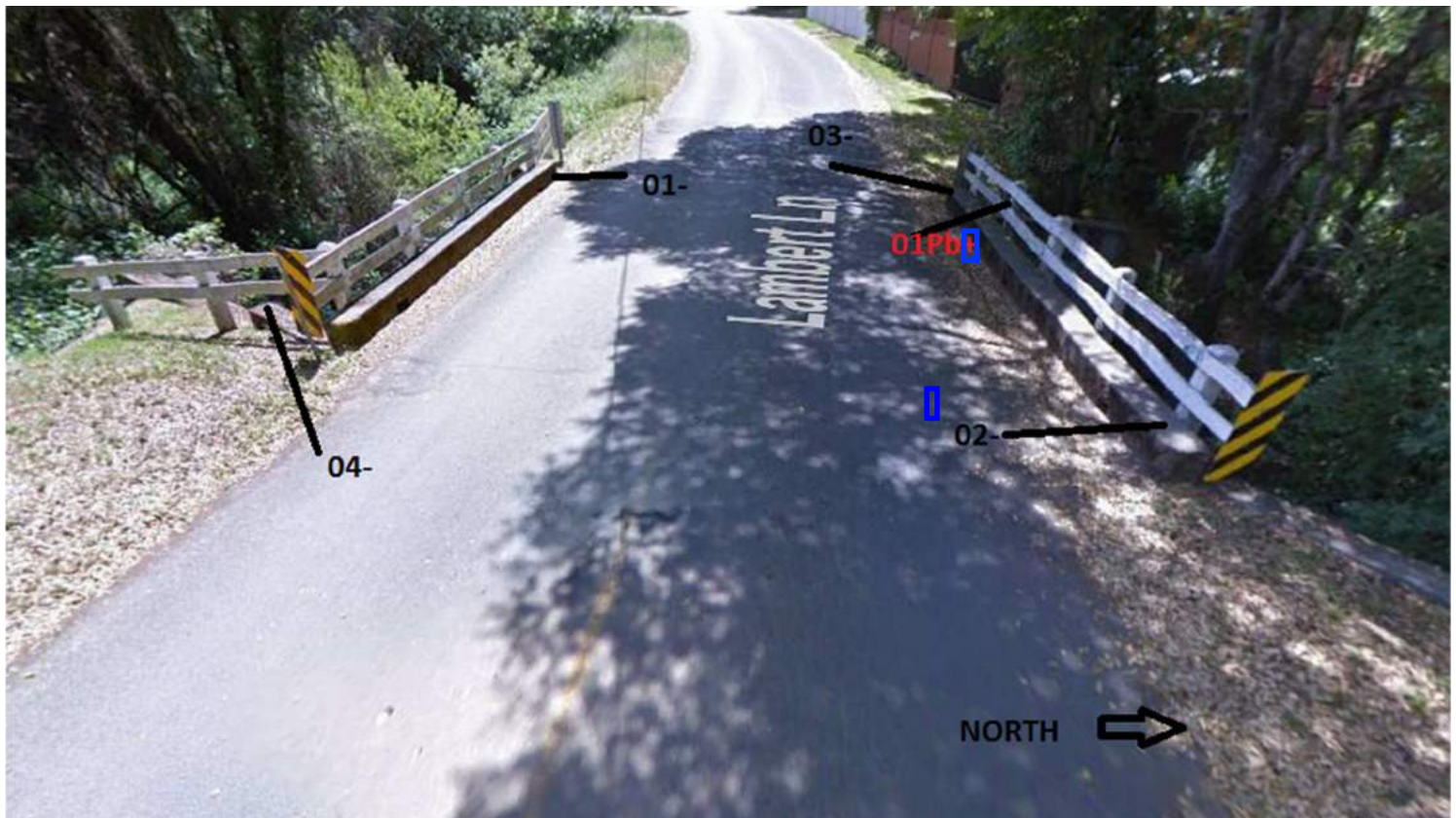
061923909

19 OCT 22 AM 10:18
 NATIONAL ANALYTICAL, INC.
 CARLE PLACE, NY

Chain of Custody Information

Released By Signature	Date/Time	Received By Signature	Date/Time	Due:
Shannon Johanson			10/22/19	
Released By Signature	Date/Time	Received By Signature	Date/Time	At:

10/22/19



ASBESTOS AND LEAD SAMPLE LOCATION MAP	Site Name: Robinson Creek Bridge	Project #:	
Survey Date: 4/14/07	Site Address:	Scale: Not to scale	
Area: 	1812 Lambert	Layout and sample locations are approximated. Legend: ASBESTOS - Non-ACCM Samples + ACCM Samples LEAD - Below Detection Limit + Lead Containing Material + Lead Based Paint/Material	



MENDOCINO COUNTY
AIR QUALITY MANAGEMENT DISTRICT
**ASBESTOS NOTIFICATION FORM FOR
DEMOLITION AND RENOVATION**

306 East Gobbi Street
Ukiah, California 95482
(707) 463-4354 Fax: 463-5707
mcaqmd@co.mendocino.ca.us
www.mendoair.org

For District Use Only:		Date Received:		Notification #: ASB-		Facility #	
I. Type of Notification:		☐ Original		☐ Cancellation		☐ Revision #:	
II. Site Address: 1812 Lambert Lane Mendocino, CA					Cross Street:		
Building Description: Bridge							
Current Use:		Proposed Use:		Single Family Dwelling: ☐ Yes ☒ No			
☐ Demolition	☐ Ordered Demolition Attach Copy of Order		☐ Renovation	☐ Emergency Renovation Describe			
III. Owner Name:					Telephone:		
Mailing Address:							
City:				State:		Zip:	
IV. Is Asbestos Present		☐ Yes ☒ No		Survey Date 10/18/19		Attach Copy of Survey/Report	
Approximate Amount of Asbestos Containing Materials:							
Amount of RACM:		Sq. Ft.: 0		Linear Ft.: 0		Cubic Ft. 0	
Amount of Category I ACM: 0				Amount of Category II ACM: 0			
Scheduled Dates Asbestos Removal (MM/DD/YY)				Start Date:		Complete Date:	
Scheduled Dates of Demo/Renovation (MM/DD/YY)				Start Date:		Complete Date:	
Describe work to be performed, include work practices & engineering controls to be used to prevent airborne emissions of Asbestos:							
If your project is below the "threshold" amounts described on Page 2, sign and date the bottom of this Notification Form and submit it to the District for approval. For all other projects complete items V – VIII below. Note: All burned structures require consultation with the Air Quality Management District.							
V. Demolition or General Contractor:							
Mailing Address:					Telephone:		
City:				State:		Zip:	
VI. Asbestos Consultant:						CAC#:	
Mailing Address:					Telephone:		
City:				State:		Zip:	
Asbestos Removal Contractor:					DOSH#		
Mailing Address:					Telephone:		
City:				State:		Zip:	
Contact:				Title:		Telephone:	
VII. Waste Transporter:						EPA ID#	
Mailing Address:					Telephone:		
City:				State:		Zip:	
VIII. Disposal Site:				Address/City			
I certify that the above information is true and correct to the best of my knowledge.							
_____ (Signature of Owner/Operator)				_____ (Date)			
District Use Only:	This project has met the requirements of Federal Asbestos NESHAP regulations under 40 CFR, 61.145 and may proceed with demolition or renovation activities upon completion of identified asbestos abatement and Lead Agency approval.						
	District Representative: _____						Date: _____

MENDOCINO COUNTY
AIR QUALITY MANAGEMENT DISTRICT

**ASBESTOS NOTIFICATION FORM
FOR DEMOLITION AND RENOVATION**
INSTRUCTIONS

In accordance with the provisions of the Code of Federal Regulations, 40 CFR 61 subpart M for asbestos, anyone conducting a demolition or renovation project must thoroughly inspect the affected facility or portion of the facility for the presence of asbestos, including projects without Asbestos Containing Material (ACM) and provide written notification of the project to the Air Quality Management District. The notification requirements apply to all commercial buildings, government buildings, schools, multi-family dwellings and single family dwellings and other structures.

Demolition or renovation activities involving at least 160 square feet (80 linear meters or 260 linear feet) of regulated asbestos-containing materials (RACM) require abatement as well as notification. These amounts are known as “threshold” amounts.

For all demolition or renovation projects, fill out the form as completely as possible, including:

- Section I: Type of Notification,
- Section II: Building description,
- Section III: Owner Information,
- Section IV: Asbestos Information if Present,
- Section V: Demolition or General Contractor information if they are being used on this project,
- Section VI: Asbestos Consultant/Surveyor Information,
- Section VII: Waste Transporter Information, and
- Section VIII: Disposal Site Information

Should the structure contain “threshold” amounts of asbestos materials that must be abated prior to the demolition or renovation, fill out the Notification Form as completely as possible and submit the Notification and any related documents to the District for approval at least 10 days prior to any abatement activity.

If your project is below the “threshold” amounts or a Single family dwelling, complete items I through III, sign and date the bottom of the Notification Form and submit it to the District for approval.

Note: All burned structures require consultation with the Air Quality Management District.

If the demolition is being ordered by a government agency, please provide a copy of the Demolition Order. For emergency renovations or demolitions please provide any documentation and describe the project. For specifically-defined "Emergency" conditions, the 10 working day period may be waived.

Fees associated with Asbestos Notification for Demolition and Renovation are attached to this form.

Please notify the District if the job is postponed or cancelled or if there are any revisions.

Asbestos Notification for Demolition and Renovation forms may be mailed or hand delivered. In accordance with federal law, faxed or emailed notifications cannot be accepted.

Call the District office at 707/463-4354 if you have any questions or need further assistance.

In addition to the requirements of 40 CFR 61 subpart M, the California Health & Safety Code, Section 19827.5 requires written approval from the Mendocino County Air Quality Management District prior to the issuance of any demolition or renovation permit. CH&SC, Section 19827.5. states: ...”A demolition permit shall not be issued by any city, county...or state or local agency which is authorized to issue demolition permits...except upon the receipt from the permit applicant of a copy of each written asbestos notification regarding the building that has been required to be submitted to the US EPA or to a designated state agency...pursuant to Part 61 of Title 40 of the Code of Federal Regulations...”

Please note: Contact your California Certified Asbestos Consultant or Abatement Contractor for more information about removing asbestos safely.

MENDOCINO COUNTY
AIR QUALITY MANAGEMENT DISTRICT

ASBESTOS NOTIFICATION FORM
FOR DEMOLITION AND RENOVATION
FEE SCHEDULE

Mendocino County Air Quality Management District
Regulation 1, Rule 1-310, Fees

SCHEDULE 8
ASBESTOS OPERATIONS FEE SCHEDULE

Anyone conducting a demolition or renovation project subject to the provisions of Title 40 of the Code of Federal Regulations, Part 61, Subpart M for asbestos and required to submit a written notification of the project to the District shall pay to the District the following fee:

Asbestos operations other than single-family residential dwellings of less than five units.

Less than 100 lineal feet or less than 100 square feet	\$ 35.00
100 to 200 square feet or 100 to 300 lineal feet	\$ 65.00
200 to 500 square feet or 300 to 600 lineal feet	\$130.00
500 to 2,000 square feet or 600 to 2,400 lineal feet	\$200.00
2,000 to 20,000 square feet or 2,400 to 20,000 lineal feet	\$325.00
greater than 20,000 square feet or 20,000 lineal feet	\$650.00

If, upon inspection or in the course of a demolition or renovation project, it is discovered that the project properly belongs in a higher fee category than was initially determined, the owner or operator shall pay the balance of the fee for the higher category.

The appropriate fees listed above shall accompany the notification form. Failure to pay the appropriate fee at the time of notification form will be considered a failure to notify. In such case the owner or operator could be subject to significant penalties pursuant to federal law and regulation.

Any demolition or renovation project requiring an inspection by the Air Quality Management District shall pay an additional fee to the District for the actual cost of the inspection as determined by the Air Pollution Control Officer in accordance with Rule 1-330, Technical Services Fees.

Schedule 8 is not subject to annual CPI factor adjustments.

[Adopted 6/01/93; Amended 9/14/93; Amended 5/6/03]

Preliminary Site Investigation Report

Robinson Creek Bridge Replacement on Lambert Lane
Booneville, Mendocino County, California

16-278.1

January 15, 2021

APPENDIX C

BC Laboratories, Inc. Report

Dated December 2, 2019



Laboratories, Inc.

Environmental Testing Laboratory Since 1949



Date of Report: 12/02/2019

Steve Carter

Crawford & Associates, Inc.

1100 Corporate Way, Suite 230
Sacramento, CA 95831

Client Project: 16-278.1 Robinson Creek Bridge at Lambert Lane

BCL Project: Soil Samples

BCL Work Order: 1937185

Invoice ID: B361465, B362643, B363505

Enclosed are the results of analyses for samples received by the laboratory on 11/1/2019. If you have any questions concerning this report, please feel free to contact me.

Revised Report: This report supercedes Report ID 1000965810

Sincerely,

Contact Person: Felicia Johnson
Client Service Rep

Stuart Buttram
Technical Director

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

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Table of Contents

Sample Information

Chain of Custody and Cooler Receipt form.....	3
Laboratory / Client Sample Cross Reference.....	5

Sample Results

1937185-01 - 1A	
Total Concentrations (TTLC).....	7
1937185-02 - 1B	
Total Concentrations (TTLC).....	8
1937185-03 - 2A	
Chemical Analysis.....	9
Total Concentrations (TTLC).....	10
1937185-04 - 2B	
Total Concentrations (TTLC).....	11
1937185-05 - 3A	
Total Concentrations (TTLC).....	12
1937185-06 - 3B	
Total Concentrations (TTLC).....	13
1937185-07 - 4A	
Total Concentrations (TTLC).....	14
1937185-08 - 4B	
Total Concentrations (TTLC).....	15
1937185-09 - P-1	
WET Test (STLC).....	16
TCLP Toxicity.....	17
Total Concentrations (TTLC).....	18

Quality Control Reports

Chemical Analysis

Laboratory Control Sample.....	19
Precision and Accuracy.....	20

WET Test (STLC)

Method Blank Analysis.....	21
Laboratory Control Sample.....	22
Precision and Accuracy.....	23

TCLP Toxicity

Method Blank Analysis.....	24
Laboratory Control Sample.....	25
Precision and Accuracy.....	26

Total Concentrations (TTLC)

Method Blank Analysis.....	27
Laboratory Control Sample.....	28
Precision and Accuracy.....	29

Notes

Notes and Definitions.....	30
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Laboratories, Inc.

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1937185 Page 1 of 2

BC LABORATORIES		Chain of Custody	
* Required Fields		ANALYSIS REQUESTED	
Client/Company Name: Crawford & Associates		Phone: * 916-307-6166 FAX: * 916-307-6166	
Address: 4220 Rocklin Road, Suite 1		E-mail: steve.carter@crawford-inc.com	
City: Rocklin State: CA Zip: 95677		Carbon Copies: ☐ CDHS ☐ Fresno Co ☐ EPA ☐	
Project Information: 16-278.1 Robinson Creek Bridge at Lambert Lane		Material Co: ☐ Tulare Co ☐	
How would you like your completed results sent? ☒ E-Mail ☐ Fax ☐ EDI ☐ Mail Only		Other: ☐	
Sampler Name Printed / Signature: Steve Carter		Regulatory Compliance Electronic Data Transfer: ☐ Y ☒ N	
Matrix Types: RSW = Raw Surface Water CSW = Chlorinated Waste Water BW = Bottled Water		System No. * ☐ Y ☒ N	
RCW = Raw Ground Water FFW = Finished Water WW = Waste Water SW = Storm Water DW = Drinking Water SO = Solid			
Sample #		Sample Description / Location	
1		1A Soil	
2		1B Soil	
3		2A Soil	
4		2B Soil	
5		3A Soil	
6		3B Soil	
7		4A Soil	
8		4B Soil	
9		P-1 Asphalt	
Relinquished by: (Signature and Printed Name) Steve Carter		Company CA Inc	
Received by: (Signature and Printed Name) Steve Carter		Company BC LABS	
Received for Lab by: (Signature and Printed Name)		Company	
Date 11/1/14 Time 0830		Date 11-1-14 Time 09:20	
Payment Received at Delivery: ☐ Yes ☒ No		Check/Cash/Cred PIA #	
Shipping Method: CAO UPS GSO WALK-IN SVC FEDEX OTHER		Packing Material: WET BLUE NONE	

0916-0010-0010-0010



Laboratories, Inc.

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1937185 Page 2 of 2

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page 1 Of 1							
Submission #: 19-37185											
SHIPPING INFORMATION Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐ BC Lab Field Service ☐ Other (Specify) <u>GSO</u>		SHIPPING CONTAINER Ice Chest ☒ None ☐ Box ☐ Other (Specify) _____		FREE LIQUID YES ☐ NO ☐ W / S							
Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:											
Custody Seals: Ice Chest ☐ Containers ☐ None ☒ Comments:											
All samples received? Yes ☒ No ☐		All samples containers intact? Yes ☒ No ☐		Description(s) match COC? Yes ☒ No ☐							
COC Received ☒ YES ☐ NO		Emissivity: <u>95</u> Container: <u>Steel</u> Thermometer ID: <u>274</u>		Date/Time: <u>11-1-19</u>							
Temperature: (A) <u>3.6</u> °C / (C) <u>3.6</u> °C		Analyst Init: <u>[Signature]</u>									
SAMPLE CONTAINERS		SAMPLE NUMBERS									
		1	2	3	4	5	6	7	8	9	10
QT PE UNPRES											
4oz / 8oz / 16oz PE UNPRES											
2oz Cr ⁶⁺											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
PT NITROGEN FORMS											
PT TOTAL SULFIDE											
2oz. NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
PIA PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
40 ml VOA VIAL- 504											
QT EPA 508/608/8080											
QT EPA 515.1/8150											
QT EPA 525											
QT EPA 525 TRAVEL BLANK											
40ml EPA 547											
40ml EPA 531.1											
8oz EPA 548											
QT EPA 549											
QT EPA 8015M											
QT EPA 8270											
8oz / 16oz / 32oz AMBER											
8oz / 16oz / 32oz JAR											
SOIL SLEEVE		A	A	A	A	A	A	A	A		
PCB VIAL											
PLASTIC BAG										A	
TEDLAR BAG											
FERROUS IRON											
ENCORE											
SMART KIT											
SUMMA CANISTER											

Comments:

Sample Numbering Completed By: [Signature]

A = Actual / C = Corrected

Date/Time: 11-1-19

[Signature]

Rev 21 05/23/2016

(S:\WPDoc\WordPerfect\LAB\DOCS\FORMS\ISAMRECrv 20)

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Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 12/02/2019 11:33
Project: Soil Samples
Project Number: 16-278.1 Robinson Creek Bridge at Lambert Lane
Project Manager: Steve Carter

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1937185-01	COC Number:	---	Receive Date:	11/01/2019 09:20
	Project Number:	---	Sampling Date:	10/17/2019 00:00
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	1A	Lab Matrix:	Solids
	Sampled By:	---	Sample Type:	Soil
1937185-02	COC Number:	---	Receive Date:	11/01/2019 09:20
	Project Number:	---	Sampling Date:	10/17/2019 00:00
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	1B	Lab Matrix:	Solids
	Sampled By:	---	Sample Type:	Soil
1937185-03	COC Number:	---	Receive Date:	11/01/2019 09:20
	Project Number:	---	Sampling Date:	10/17/2019 00:00
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	2A	Lab Matrix:	Solids
	Sampled By:	---	Sample Type:	Soil
1937185-04	COC Number:	---	Receive Date:	11/01/2019 09:20
	Project Number:	---	Sampling Date:	10/17/2019 00:00
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	2B	Lab Matrix:	Solids
	Sampled By:	---	Sample Type:	Soil
1937185-05	COC Number:	---	Receive Date:	11/01/2019 09:20
	Project Number:	---	Sampling Date:	10/17/2019 00:00
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	3A	Lab Matrix:	Solids
	Sampled By:	---	Sample Type:	Soil
1937185-06	COC Number:	---	Receive Date:	11/01/2019 09:20
	Project Number:	---	Sampling Date:	10/17/2019 00:00
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	3B	Lab Matrix:	Solids
	Sampled By:	---	Sample Type:	Soil
1937185-07	COC Number:	---	Receive Date:	11/01/2019 09:20
	Project Number:	---	Sampling Date:	10/17/2019 00:00
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	4A	Lab Matrix:	Solids
	Sampled By:	---	Sample Type:	Soil

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Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 12/02/2019 11:33
Project: Soil Samples
Project Number: 16-278.1 Robinson Creek Bridge at Lambert Lane
Project Manager: Steve Carter

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1937185-08	COC Number:	---	Receive Date:	11/01/2019 09:20
	Project Number:	---	Sampling Date:	10/17/2019 00:00
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	4B	Lab Matrix:	Solids
	Sampled By:	---	Sample Type:	Soil
1937185-09	COC Number:	---	Receive Date:	11/01/2019 09:20
	Project Number:	---	Sampling Date:	10/17/2019 00:00
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	P-1	Lab Matrix:	Solids
	Sampled By:	---	Sample Type:	Soil

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Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 12/02/2019 11:33
Project: Soil Samples
Project Number: 16-278.1 Robinson Creek Bridge at Lambert Lane
Project Manager: Steve Carter

Total Concentrations (TTLC)

BCL Sample ID: 1937185-01		Client Sample Name: 1A, 10/17/2019 12:00:00AM						
Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	5.3	mg/kg	12	1.4	EPA-6010B	1000	J,A07	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	11/05/19 11:00	11/07/19 22:09	KDF	PE-OP3	4.545	B061242

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Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 12/02/2019 11:33
Project: Soil Samples
Project Number: 16-278.1 Robinson Creek Bridge at Lambert Lane
Project Manager: Steve Carter

Total Concentrations (TTLC)

BCL Sample ID:	1937185-02	Client Sample Name:	1B, 10/17/2019 12:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	2.1	mg/kg	2.5	0.28	EPA-6010B	1000	J	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	11/05/19 11:00	11/06/19 19:54	KDF	PE-OP3	0.971	B061242

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Reported: 12/02/2019 11:33
Project: Soil Samples
Project Number: 16-278.1 Robinson Creek Bridge at Lambert Lane
Project Manager: Steve Carter

Chemical Analysis

BCL Sample ID:	1937185-03	Client Sample Name:	2A, 10/17/2019 12:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	6.02	pH Units	0.05	0.05	EPA-9045D		pH1:1	1
pH Measurement Temperature	25.0	C	0.1	0.1	EPA-9045D			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9045D	11/07/19 10:15	11/07/19 10:15	RT1	MANUAL	1	B061505

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Reported: 12/02/2019 11:33
Project: Soil Samples
Project Number: 16-278.1 Robinson Creek Bridge at Lambert Lane
Project Manager: Steve Carter

Total Concentrations (TTLC)

BCL Sample ID:	1937185-03	Client Sample Name:	2A, 10/17/2019 12:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	12	mg/kg	2.5	0.28	EPA-6010B	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	11/05/19 11:00	11/06/19 19:56	KDF	PE-OP3	0.935	B061242

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Reported: 12/02/2019 11:33
Project: Soil Samples
Project Number: 16-278.1 Robinson Creek Bridge at Lambert Lane
Project Manager: Steve Carter

Total Concentrations (TTLC)

BCL Sample ID:	1937185-04	Client Sample Name:	2B, 10/17/2019 12:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	7.3	mg/kg	2.5	0.28	EPA-6010B	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	11/05/19 11:00	11/06/19 19:57	KDF	PE-OP3	0.926	B061242

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Reported: 12/02/2019 11:33
Project: Soil Samples
Project Number: 16-278.1 Robinson Creek Bridge at Lambert Lane
Project Manager: Steve Carter

Total Concentrations (TTLC)

BCL Sample ID:	1937185-05	Client Sample Name:	3A, 10/17/2019 12:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	16	mg/kg	2.5	0.28	EPA-6010B	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	11/05/19 11:00	11/06/19 19:58	KDF	PE-OP3	0.990	B061242

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Reported: 12/02/2019 11:33
Project: Soil Samples
Project Number: 16-278.1 Robinson Creek Bridge at Lambert Lane
Project Manager: Steve Carter

Total Concentrations (TTLC)

BCL Sample ID:	1937185-06	Client Sample Name:	3B, 10/17/2019 12:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	5.7	mg/kg	2.5	0.28	EPA-6010B	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	11/05/19 11:00	11/06/19 20:00	KDF	PE-OP3	0.943	B061242

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Reported: 12/02/2019 11:33
Project: Soil Samples
Project Number: 16-278.1 Robinson Creek Bridge at Lambert Lane
Project Manager: Steve Carter

Total Concentrations (TTLC)

BCL Sample ID:	1937185-07	Client Sample Name:	4A, 10/17/2019 12:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	20	mg/kg	2.5	0.28	EPA-6010B	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	11/05/19 11:00	11/06/19 20:01	KDF	PE-OP3	0.943	B061242

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Reported: 12/02/2019 11:33
Project: Soil Samples
Project Number: 16-278.1 Robinson Creek Bridge at Lambert Lane
Project Manager: Steve Carter

Total Concentrations (TTLC)

BCL Sample ID:	1937185-08	Client Sample Name:	4B, 10/17/2019 12:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	9.4	mg/kg	2.5	0.28	EPA-6010B	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	11/05/19 11:00	11/06/19 20:07	KDF	PE-OP3	0.926	B061242

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Reported: 12/02/2019 11:33
Project: Soil Samples
Project Number: 16-278.1 Robinson Creek Bridge at Lambert Lane
Project Manager: Steve Carter

WET Test (STLC)

BCL Sample ID:	1937185-09	Client Sample Name:	P-1, 10/17/2019 12:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	STLC Limits	Lab Quals	Run #
Lead	13	mg/L	0.50	0.16	EPA-6010B	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	11/17/19 15:30	11/18/19 20:05	KDF	PE-OP3	1	B062499

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Reported: 12/02/2019 11:33
Project: Soil Samples
Project Number: 16-278.1 Robinson Creek Bridge at Lambert Lane
Project Manager: Steve Carter

TCLP Toxicity

BCL Sample ID: 1937185-09		Client Sample Name: P-1, 10/17/2019 12:00:00AM						
Constituent	Result	Units	PQL	MDL	Method	TCLP Limits	Lab Quals	Run #
Lead	0.53	mg/L	0.50	0.030	EPA-6010B	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	11/27/19 11:00	11/27/19 17:23	KDF	PE-OP3	1	B063318

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Reported: 12/02/2019 11:33
Project: Soil Samples
Project Number: 16-278.1 Robinson Creek Bridge at Lambert Lane
Project Manager: Steve Carter

Total Concentrations (TTLC)

BCL Sample ID:	1937185-09	Client Sample Name:	P-1, 10/17/2019 12:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Cadmium	0.27	mg/kg	0.50	0.052	EPA-6010B	100	J	1
Lead	170	mg/kg	2.5	0.28	EPA-6010B	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	11/05/19 11:00	11/06/19 20:09	KDF	PE-OP3	0.943	B061242

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Reported: 12/02/2019 11:33
Project: Soil Samples
Project Number: 16-278.1 Robinson Creek Bridge at Lambert Lane
Project Manager: Steve Carter

Chemical Analysis

Quality Control Report - Laboratory Control Sample

								<u>Control Limits</u>		
Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Percent Recovery	RPD	Lab
Quals										
QC Batch ID: B061505										
pH	B061505-BS1	LCS	3.9750	4.0000	pH Units	99.4		95 - 105		

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Reported: 12/02/2019 11:33
Project: Soil Samples
Project Number: 16-278.1 Robinson Creek Bridge at Lambert Lane
Project Manager: Steve Carter

Chemical Analysis

Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B061505		Used client sample: N									
pH	DUP	1936153-20	8.0140	8.0240		pH Units	0.1		20		

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Reported: 12/02/2019 11:33
Project: Soil Samples
Project Number: 16-278.1 Robinson Creek Bridge at Lambert Lane
Project Manager: Steve Carter

WET Test (STLC)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B062499						
Lead	B062499-BLK1	ND	mg/L	0.50	0.16	

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Project Number: 16-278.1 Robinson Creek Bridge at Lambert Lane
Project Manager: Steve Carter

WET Test (STLC)

Quality Control Report - Laboratory Control Sample

								<u>Control Limits</u>		
Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Percent Recovery	RPD	Lab
Quals										
QC Batch ID: B062499										
	Lead	B062499-BS1	LCS	21.296	20.000	mg/L	106	85 - 115		

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Project: Soil Samples
Project Number: 16-278.1 Robinson Creek Bridge at Lambert Lane
Project Manager: Steve Carter

WET Test (STLC)

Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B062499		Used client sample: N									
Lead	DUP	1937871-05	0.16301	ND		mg/L			20		
	MS	1937871-05	0.16301	21.422	20.408	mg/L		104		75 - 125	
	MSD	1937871-05	0.16301	21.522	20.408	mg/L	0.5	105	20	75 - 125	

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Reported: 12/02/2019 11:33
Project: Soil Samples
Project Number: 16-278.1 Robinson Creek Bridge at Lambert Lane
Project Manager: Steve Carter

TCLP Toxicity

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B063318						
Lead	B063318-BLK1	ND	mg/L	0.50	0.030	



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Project Manager: Steve Carter

TCLP Toxicity

Quality Control Report - Laboratory Control Sample

								<u>Control Limits</u>		
Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Percent Recovery	RPD	Lab
QC Batch ID: B063318										
Lead	B063318-BS1	LCS	21.396	20.000	mg/L	107		85 - 115		

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Project: Soil Samples
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Project Manager: Steve Carter

TCLP Toxicity

Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B063318		Used client sample: N									
Lead	DUP	1938315-01	ND	ND		mg/L			20		
	MS	1938315-01	ND	22.757	20.000	mg/L		114		75 - 125	
	MSD	1938315-01	ND	21.932	20.000	mg/L	3.7	110	20	75 - 125	

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Reported: 12/02/2019 11:33
Project: Soil Samples
Project Number: 16-278.1 Robinson Creek Bridge at Lambert Lane
Project Manager: Steve Carter

Total Concentrations (TTLC)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B061242						
Cadmium	B061242-BLK1	ND	mg/kg	0.50	0.052	
Lead	B061242-BLK1	ND	mg/kg	2.5	0.28	



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Project Manager: Steve Carter

Total Concentrations (TTLC)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B061242										
Cadmium	B061242-BS1	LCS	10.416	10.000	mg/kg	104		75 - 125		
Lead	B061242-BS1	LCS	109.38	100.00	mg/kg	109		75 - 125		

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Project: Soil Samples
Project Number: 16-278.1 Robinson Creek Bridge at Lambert Lane
Project Manager: Steve Carter

Total Concentrations (TTLC)

Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B061242		Used client sample: N									
Cadmium	DUP	1937203-04	0.26974	0.27547		mg/kg	2.1		20		J
	MS	1937203-04	0.26974	8.8194	10.000	mg/kg		85.5		75 - 125	
	MSD	1937203-04	0.26974	9.2081	10.000	mg/kg	4.3	89.4	20	75 - 125	
Lead	DUP	1937203-04	6.9214	5.1498		mg/kg	29.4		20		A02
	MS	1937203-04	6.9214	93.239	100.00	mg/kg		86.3		75 - 125	
	MSD	1937203-04	6.9214	97.099	100.00	mg/kg	4.1	90.2	20	75 - 125	

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Project Manager: Steve Carter

Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit
A02	The difference between duplicate readings is less than the quantitation limit.
A07	Detection and quantitation limits were raised due to sample dilution caused by high analyte concentration or matrix interference.
pH1:1	pH result reported on a 1:1 dilution of sample