

# **INFORMATION HANDOUT**

**For Contract No. 04-1A3404**

**At 04-SCI-9-3.6, 11.4**

**Identified by**

**Project ID 0412000162**

## **PERMITS**

U.S. Fish and Wildlife Service, Letter of Concurrence 08ESMF00-2014-I-0671-1, Dated March 16, 2015

## **MATERIALS INFORMATION**

Preliminary Site Investigation Report, Dated February 2015



# United States Department of the Interior



In Reply Refer to:  
08ESMF00-2014-I-  
0671-1

FISH AND WILDLIFE SERVICE  
Sacramento Fish and Wildlife Office  
2800 Cottage Way, Suite W-2605  
Sacramento, California 95825-1846

MAR 16 2015

Ms. Melanie Brent, Office Chief  
Caltrans District 4 Environmental Analysis  
California Department of Transportation  
P.O. Box 23660  
Oakland, California 94623-0660

Subject: Informal Consultation on the Proposed State Route 9 Bridge Rail Replacement Project, Contra Costa County, California (Caltrans EA 04-1A340)

Dear Ms. Brent:

This letter responds to a letter from the California Department of Transportation (Caltrans) dated September 30, 2014, which requested informal consultation and written concurrence for the proposed State Route 9 (SR-9) Bridge Rail Replacement Project, Santa Clara County, California. The U.S. Fish and Wildlife Service (Service) received your letter on October 6, 2014. This consultation concerns the effects of the proposed action on the threatened California red-legged frog (*Rana draytonii*). No designated or proposed critical habitat for either species is present within the action area. This letter is issued under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Act).

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) legislation (23 U.S.C. 327) allows the Secretary of the U.S. Department of Transportation acting through the Federal Highway Administration (FHWA) to establish a Surface Transportation Project Delivery Pilot Program, whereby a State may assume the FHWA responsibilities under the National Environmental Policy Act (NEPA) for environmental review, agency consultation and other action pertaining to the review or approval of a specific project. Caltrans assumed these responsibilities for the FHWA on July 1, 2007 through a Memorandum of Understanding (MOU) within the State of California ([http://www.dot.ca.gov/ser/downloads/MOUs/nepa\\_delegation/sec6005mou.pdf](http://www.dot.ca.gov/ser/downloads/MOUs/nepa_delegation/sec6005mou.pdf)).

The action area is defined in 50 CFR §402.02, as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.” For the purposes of the proposed action the Service considers the action area to comprise the existing Saratoga Creek Bridge (bridge number 37-0073) at Post Mile (PM) 3.6 extending 116 linear feet and encompassing the project footprint, including all construction access, staging areas, vehicle parking, and construction work zones as specified by Caltrans and submitted to the Service in September 30, 2014, letter requesting informal consultation, supporting documentation provided by Caltrans, and email and

phone correspondence. Habitat within the action area comprises paved roadways and shoulders, gravel shoulders, redwood forest, and stream habitat.

The purpose of the proposed action is to install new metal beam guardrails, and replace the existing concrete bridge rails and bridge deck surfacing at a single bridge crossing over Booker Creek, a tributary to Saratoga Creek. Work will take 3-4 months to complete and will require lane closures and a traffic management plan. The existing bridge will remain in place, but several bridge features will be replaced including the rail, base, and deck surface requiring saw cutting and jack hammering. A trench would be excavated with a backhoe or similar equipment. Extra material and broken concrete would be hauled away from the construction site to an appropriate waste disposal facility. The new bridge deck slab, new bridge railings, new slab along the wall, and new concrete barrier on top of retaining wall will be constructed by pouring concrete into forms from concrete pumps. No work will be conducted within Booker Creek. Netting or a similar system would be suspended under the structure to prevent construction debris from entering Booker Creek. Pavement work is the only work that will be conducted outside of the seasonal work window corresponding to the dry season from June 15 to October 15.

The September 30, 2014, letter to the Service indicated that no suitable California red-legged frog habitat is present within Booker Creek within the action area. Booker Creek does not convey water during the dry season and has small areas of shallowly pooled water. The habitat is characteristic of redwood forest with minimal undergrowth and areas of refugia. The project has been designed to avoid impacts to Booker Creek and its riparian habitat. Conservation measures outlined in the September 30, 2014, letter will be incorporated to minimize habitat disturbance and project the creek from falling debris. A storm water pollution prevention plan and construction best management practices will further minimize the potential to affect water quality.

The Service has reviewed the submitted project as described in the September 30, 2014, letter to the Service, project modifications outlined in the February 27, 2015, email from Caltrans, supporting documentation, and evaluation of project effects. The Service concurs with the determination that the project as described is not likely to adversely affect the California red-legged frog as the effects will be discountable. The Service concurs that the proposed action is not likely to adversely affect the California red-legged frog based on the following: (1) construction activities, including staging, laydown and vehicle parking, will occur within paved or unvegetated road shoulders; (2) no work will occur within Booker Creek or the riparian habitat, and measures will be implemented to prevent debris from falling into the creek; (3) construction access, staging, storage and parking areas will be located within the right-of-way and outside any designated environmentally sensitive areas; (4) Caltrans will implement construction and erosion control Best Management Practices; (5) areas adjacent to sensitive habitat will be clearly demarked with temporary high-visibility fencing and wildlife exclusion fencing will be installed to provide a barrier between suitable California red-legged frog habitat and the active construction area; (6) all on-site personnel will attend environmental awareness training prior to beginning project activities; (7) work will be conducted during the dry season between June 15 and October 15; and (8) Service-approved biological monitors will conduct preconstruction surveys prior to ground disturbing activities and remain on-site to monitor construction activities adjacent to California red-legged frog habitat.

This concludes informal consultation on the proposed SR-9 Bridge Rail Replacement Project, Santa Clara County, California. Therefore, unless new information reveals effects of the proposed action that may affect listed species in a manner or to an extent not considered, or a new species is listed, no further action pursuant to the Act is necessary. If you have questions please contact Jerry Roe,

Ms. Melanie Brent

3

Endangered Species Biologist, or Ryan Olah Coast Bay/Forest Foothills Division Chief, at the letterhead address (916) 414-6600, or via email at [Jerry\\_Roc@fws.gov](mailto:Jerry_Roc@fws.gov) or [Ryan\\_Olah@fws.gov](mailto:Ryan_Olah@fws.gov).

Sincerely,



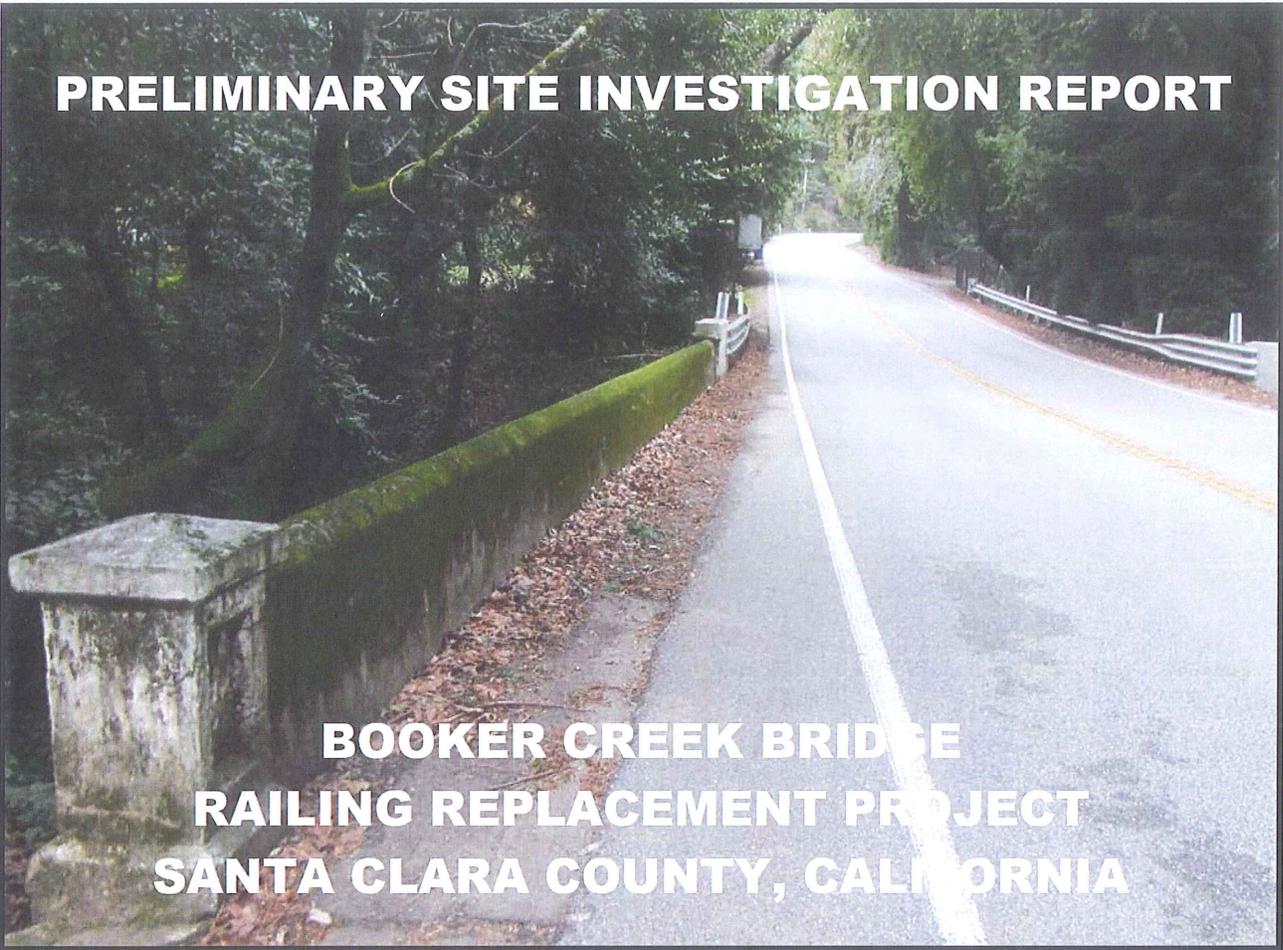
Eric Tattersall  
Deputy Assistant Field Supervisor

cc:

Melissa Escaron, California Department of Fish and Wildlife, Napa, California



# PRELIMINARY SITE INVESTIGATION REPORT



## BOOKER CREEK BRIDGE RAILING REPLACEMENT PROJECT SANTA CLARA COUNTY, CALIFORNIA

PREPARED FOR:

CALIFORNIA DEPARTMENT OF TRANSPORTATION  
DISTRICT 4  
OFFICE OF ENVIRONMENTAL ENGINEERING  
111 GRAND AVENUE, MS8C  
OAKLAND, CA 94612



PREPARED BY:

GEOCON CONSULTANTS, INC.  
6671 BRISA STREET  
LIVERMORE, CA 94550



GEOCON PROJECT NO. E8721-02-22  
CALTRANS EA 04-1A3401  
CALTRANS PROJECT # 04-1200-0162-1

FEBRUARY 2015



## TABLE OF CONTENTS

PRELIMINARY SITE INVESTIGATION REPORT		Page
REPORT LIMITATIONS .....		i
PROJECT TEAM.....		ii
1.0	INTRODUCTION .....	1
1.1	Project Description and Proposed Improvements .....	1
1.2	General Objectives .....	1
2.0	BACKGROUND .....	1
2.1	Hazardous Waste Determination Criteria .....	1
2.2	Environmental Screening Levels.....	2
2.3	Naturally Occurring Asbestos .....	3
3.0	SCOPE OF SERVICES.....	3
3.1	Pre-field Activities .....	3
3.2	Field Activities .....	4
4.0	INVESTIGATIVE METHODS .....	4
4.1	Sampling Procedures .....	4
4.2	Laboratory Analyses .....	5
4.3	Laboratory QA/QC.....	5
5.0	INVESTIGATIVE RESULTS .....	6
5.1	Subsurface Conditions .....	6
5.2	Laboratory Analytical Results.....	6
5.3	Laboratory Quality Assurance/Quality Control .....	6
5.4	Statistical Evaluation for Lead Detected in Soil Samples.....	7
5.4.1	Calculating the UCLs for the Arithmetic Mean .....	7
5.4.2	Correlation of Total and WET Lead .....	7
6.0	CONCLUSIONS .....	9
6.1	Lead in Soil .....	9
6.2	Remaining CAM 17 Metals in Soil.....	9
6.3	Organic Compounds in Soil .....	10
6.4	Naturally Occurring Asbestos .....	11
6.5	Worker Protection .....	11

### FIGURES

1. Vicinity Map
2. Site Plan

### TABLES

1. Boring Coordinates
2. Summary of Lead and pH Results
3. Summary of CAM 17 Metals Results
4. Summary of Petroleum Hydrocarbons Results
5. Summary of NOA Results

### APPENDICES

- A. Laboratory Reports and Chain-of-Custody Documentation
- B. Metal and Organics Statistical Analysis



## REPORT LIMITATIONS

This report has been prepared exclusively for the State of California Department of Transportation (Caltrans) District 4. The information contained herein is only valid as of the date of the report and will require an update to reflect additional information obtained.

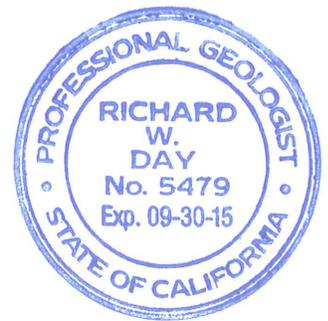
This report is not a comprehensive site characterization and should not be construed as such. The findings as presented in this report are predicated on the results of the limited sampling and laboratory testing performed. In addition, the information obtained is not intended to address potential impacts related to sources other than those specified herein. Therefore, the report should be deemed conclusive with respect to only the information obtained. We make no warranty, express or implied, with respect to the content of this report or any subsequent reports, correspondence or consultation. Geocon strived to perform the services summarized herein in accordance with the local standard of care in the geographic region at the time the services were rendered.

The contents of this report reflect the views of the author who is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the State of California or the Federal Highway Administration. This report does not constitute a standard, specification, or regulation.

### GEOCON CONSULTANTS, INC.

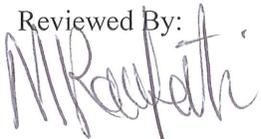
  
Luann Beadle  
Senior Staff Scientist

  
Richard Day, CEG, CHG  
Senior Geologist



### CALIFORNIA DEPARTMENT OF TRANSPORTATION – DISTRICT 4 OFFICE OF ENVIRONMENTAL ENGINEERING

Reviewed By:

  
Max Raafati, PE  
Task Order Manager

  
Cristina Preciado, PE  
Task Order Manager

Recommended By:

  
Ray Boyer, PE  
District Branch Chief

Approved By:

  
Allen Baradar, PE  
District Office Chief



## PROJECT TEAM

Contact	Affiliation	Responsibility
Romy Fuentes, PE 510.622.8803 510.622.0198 fax <a href="mailto:romy_f_fuentes@dot.ca.gov">romy_f_fuentes@dot.ca.gov</a>	Caltrans – District 4 Consultant Services 111 Grand Avenue, MS7B Oakland, CA 94612	Contract Manager
Max Raafati, PE Cristina Preciado, PE 510.286.5657 510.286.5639 fax <a href="mailto:max.raafati@dot.ca.gov">max.raafati@dot.ca.gov</a> <a href="mailto:cristina.preciado@dot.ca.gov">cristina.preciado@dot.ca.gov</a>	Caltrans – District 4 Environmental Engineering 111 Grand Avenue, MS8C Oakland, CA 94612	Task Order Managers
Richard Day, CEG, CHG Luann Beadle 925.371.5900 925.371.5915 fax <a href="mailto:livermore@geoconinc.com">livermore@geoconinc.com</a>	Geocon Consultants, Inc. 6671 Brisa Street Livermore, CA 94550 <i>(Caltrans Consultant)</i>	Project Management Sample Collection Field QA/QC Investigation Report
Doug Krause, CIH 530.758.6397 530.758.6506 fax <a href="mailto:dskrause@pacbell.net">dskrause@pacbell.net</a>	Krause & Associates 216 F. Street Suite 162 Davis, CA 95616 <i>(Geocon Subconsultant)</i>	Health and Safety
Jose Tenorio, Jr. 702.307.2659 702.307.2691 fax <a href="mailto:jojo@atl-labs.com">jojo@atl-labs.com</a>	Asset Laboratories 3151 Post Road Las Vegas, NV 89118 <i>(Geocon Subcontractor)</i>	Soil Sample Analysis



# PRELIMINARY SITE INVESTIGATION REPORT

## 1.0 INTRODUCTION

This Preliminary Site Investigation Report for bridge improvement activities at the Booker Creek Bridge (Bridge No. 37-0073) along State Route 17 (SR-17) in Santa Clara County, California, was prepared by Geocon Consultants, Inc. under California Department of Transportation (Caltrans) Contract No. 04A4336 and Task Order No. 22 (TO-22), EA 04-1A3401.

### 1.1 Project Description and Proposed Improvements

The project proposes to remove and replace the existing bridge railings at Booker Creek located at Post Mile 3.6 (PM 3.6) Santa Clara County, California. Work will take place within Caltrans right-of-way. The project location is depicted on the attached Site Plan, Figure 1.

### 1.2 General Objectives

The purpose of the site investigation was to evaluate concentrations of California Assessment Manual 17 (CAM 17) metals, particularly aeriially-deposited lead (ADL), total petroleum hydrocarbons as diesel (TPHd), as motor oil (TPHmo), and as gasoline, (TPHg), and naturally-occurring asbestos (NOA) in soil and groundwater, if encountered, within the project limits. The information obtained from this investigation will be used by Caltrans to evaluate soil handling practices, worker health and safety, and soil and groundwater reuse and disposal options.

The bridge structure was also evaluated for lead-containing paint (LCP) and asbestos containing materials (ACM). The LCP-ACM report was provided under separate cover.

## 2.0 BACKGROUND

### 2.1 Hazardous Waste Determination Criteria

Regulatory criteria to classify a waste as California hazardous for handling and disposal purposes are contained in the 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), Section 261.

For waste containing metals, the waste is classified as California hazardous when: 1) the representative total metal content equals or exceeds the respective Total Threshold Limit Concentration (TTLC); or 2) the representative soluble metal content equals or exceeds the respective



Soluble Threshold Limit Concentration (STLC) based on the standard Waste Extraction Test (WET). A waste has the potential of exceeding the STLC when the waste's total metal content is greater than or equal to ten times the respective STLC value since the WET uses a 1:10 dilution ratio. Hence, when a total metal is detected at a concentration greater than or equal to ten times the respective STLC, and assuming that 100 percent of the total metals are soluble, soluble metal analysis is required. A material is classified as RCRA hazardous, or Federal hazardous, when the representative soluble metal content equals or exceeds the Federal regulatory level based on the Toxicity Characteristic Leaching Procedure (TCLP).

The above regulatory criteria are based on chemical concentrations. Wastes may also be classified as hazardous based on other criteria such as ignitability and corrosivity; however, for the purposes of this investigation, toxicity (i.e., representative lead concentrations) is the primary factor considered for waste classification since waste generated during the construction activities would not likely warrant testing for ignitability or other criteria. Waste that is classified as either California hazardous or RCRA hazardous requires management as a hazardous waste.

## 2.2 Environmental Screening Levels

The San Francisco Bay Regional Water Quality Control Board (SFRWQCB) has prepared a technical report entitled *User's Guide: Derivation and Application of Environmental Screening Levels, Interim Final 2013* (updated December 2013), which presents Environmental Screening Levels (ESLs) for over 100 commonly found contaminants in soil, groundwater, soil gas, and surface water, to assist in evaluating sites impacted by releases of hazardous chemicals. "The ESLs are considered to be protective for typical bay area sites. Under most circumstances, ...the presence of a chemical in soil, soil gas, or groundwater at concentrations below the corresponding ESL can be assumed to not pose a significant threat to human health, water resources, or the environment." (SFRWQCB, December 2013). ESLs are risk assessment tools and are "not intended to serve as a rule to determine if a waste is hazardous under the state or federal regulations."

Residential and commercial/industrial land use ESLs are commonly used by contractors, soil trucking companies, and private and commercial land owners as default acceptance criteria to evaluate suitability of import soil material. The following ESL tables were used for this characterization:

- Table A. Shallow Soil ( $\leq 3$ m bgs), Groundwater is a Current or Potential Source of Drinking Water
- Table K-3. Direct Exposure Soil Screening Levels, Construction/Trench Worker Exposure Scenario

The respective ESLs are listed at the end of Tables 3 and 4 for comparative purposes.



## **2.3 Naturally Occurring Asbestos**

As defined in current California Air Resources Board (CARB) rules, serpentine material refers to any material that contains at least 10% serpentine, and asbestos-containing serpentine refers to serpentine materials with an asbestos content greater than 5% as determined by CARB Test Method 435 (CARB 435). The use of serpentine material for road surfacing is prohibited in California by Title 17 of the California Code of Regulations (CCR) Section 93106, Asbestos Airborne Toxic Control Measure (ATCM) for Surfacing Application (ATCM 93106), unless the material has been tested and determined to have an asbestos content of less than 0.25%. Materials found to contain asbestos of 0.25% or more are considered to be designated waste if transported offsite, requiring disposal at a landfill facility designated to accept asbestos waste. Alternatively, asbestos-containing materials may be reused onsite if buried beneath a minimum 6 inches of soil.

The CARB specifies mitigation practices for construction, grading, quarrying, and surface mining operations that contain natural occurrences of asbestos outlined in Title 17, Section 93105, Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations (ATCM 93105). Based on Part (e) Subpart (2) of ATCM 93105 an asbestos dust mitigation plan is required and must be implemented for a project if NOA is disturbed after the start of construction. Additionally, ATCM 93105 specifies that the air pollution control district (APCD) must be notified and an asbestos dust mitigation plan submitted to the APCD. The ATCM states that air monitoring may be required on the property. NOA potentially poses a health hazard when it becomes an airborne particulate.

The construction/maintenance activities mentioned above could disturb NOA-laden debris and soil, thereby potentially creating an airborne hazard. Mitigation practices can reduce the risk of exposure to airborne NOA containing dust. Dust suppression practices include wetting the materials being disturbed and wearing approved respirators with high-efficiency particulate air (HEPA) filters during construction activities.

## **3.0 SCOPE OF SERVICES**

The scope of services performed under TO-22, EA 04-1A3401 included the following:

### **3.1 Pre-field Activities**

- Prepared the Preliminary Site Investigation Workplan and Health and Safety Plan, dated January 2015.
- Retained the services of Asset Laboratories (Asset), a Caltrans-approved and California-certified analytical laboratory, to perform the chemical analyses of soil samples.
- Retained the services of EMSL, Inc. (EMSL), a Caltrans-approved and California-certified analytical laboratory, to perform the asbestos analysis of soil samples.



### **3.2 Field Activities**

The field investigation was performed on January 19, 2015, by Geocon staff. The following field activities were performed during the sampling efforts:

- Advanced eight soil borings at the project location using hand-auger drilling techniques. The borings were advanced to a maximum depth of 2.5 feet. Groundwater was not encountered.

The following soil samples were collected:

- 5 for total lead analysis
- 11 for CAM 17 metals analysis
- 8 for TPHd and TPHmo analyses
- 8 samples for TPHg analysis
- 8 samples for NOA analysis

Soil samples were transported to Asset and EMSL for analysis under standard chain-of-custody (COC) documentation. Two equipment rinse blank samples were collected and submitted to Asset for total lead analysis.

## **4.0 INVESTIGATIVE METHODS**

### **4.1 Sampling Procedures**

Soil samples were collected from the 8 boring locations identified by the Caltrans TO Manager using hand-auger drilling techniques. Boring coordinates are presented on Table 1. A Site Plan, Figure 1, shows the project location, and borings locations are shown on Figure 2.

Soil samples were placed in new resealable plastic bags or stainless steel tubes and sealed with Teflon tape and plastic lids prior to being stored in a chest cooled with ice.

Sample containers were labeled and transported to Caltrans-approved, certified environmental laboratories using standard COC documentation. Soil borings were backfilled to surface with soil cuttings.

Geocon provided QA/QC procedures during the field activities. These procedures included washing the sampling equipment with a Liqui-Nox® solution followed by a double rinse with deionized water.



Decontamination water was disposed of to the ground surface within Caltrans right-of-way in a manner not to create runoff, away from drain inlets or potential water bodies.

## 4.2 Laboratory Analyses

Laboratory analyses were performed by Asset and EMSL under standard turnaround-times (TAT) per the Task Order Manager. The laboratory reports and COC documentation are included in Appendix A.

The samples were analyzed as follows:

- 5 samples for total lead using EPA Test Method 6010 ICAP.
- 11 samples for CAM 17 metals using EPA Test Methods 6010 ICAP and 7471.
- 7 samples with total lead concentrations equal to or exceeding 50 mg/kg (i.e. equal to or exceeding ten times the STLC of 5.0 mg/l) were further analyzed for WET lead.
- 2 samples with WET lead concentrations exceeding 5 mg/l (i.e. equal to or exceeding the STLC of 5.0 mg/l) and total lead equal to or exceeding 100 mg/kg were further analyzed for TCLP lead.
- 2 samples with total mercury concentrations equal to or exceeding 20 mg/l (i.e. equal to or exceeding the TTLC of 2.0 mg/l) were further analyzed for TCLP mercury.
- 8 samples for TPHd using EPA Test Method 8015B.
- 8 samples for TPHmo using EPA Test Method 8015B.
- 8 samples for TPHg using EPA Test Method 8015B.
- 8 samples for NOA using CARB 435.

The QA/QC equipment rinse blank samples were analyzed for total lead using EPA Test Method 6010 ICAP.

## 4.3 Laboratory QA/QC

QA/QC procedures were performed for each method of analysis with specificity for each analyte listed in the test method's QA/QC. The laboratory QA/QC procedures included the following:

- One method blank for every ten samples, batch of samples or type of matrix, whichever was more frequent.
- One sample analyzed in duplicate for every ten samples, batch of samples or type of matrix, whichever was more frequent.
- One spiked sample for every ten samples, batch of samples or type of matrix; whichever was more frequent, with spike made at ten times the detection limit or at the analyte level.

Prior to submitting the samples to the laboratories, the COC documentation was reviewed for accuracy and completeness.



## 5.0 INVESTIGATIVE RESULTS

### 5.1 Subsurface Conditions

Borings were completed using hand-auger drilling techniques. Soil to a depth of 2.5 feet consisted predominately of brown clayey silt with some gravels. Groundwater was not encountered in the borings.

### 5.2 Laboratory Analytical Results

The analytical results are summarized in Tables 2 through 5 and are summarized below:

Sample Results:

- The following metals were not detected above their respective laboratory reporting limits: antimony, beryllium, cadmium, selenium, silver, and thallium.
- Total lead was reported at concentrations ranging from 5.0 mg/kg to 350 mg/kg.
- WET lead was reported at concentrations ranging from 2.0 mg/l to 21 mg/l.
- TCLP lead was reported at concentrations of 0.62 mg/l and 0.088 mg/l.
- Remaining CAM 17 metals were reported in the samples at total concentrations below ten times their respective STLCs.
- TPHd was reported at concentrations ranging from 2.0 mg/kg to 180 mg/kg.
- TPHmo was reported at concentrations ranging from 2.6 mg/kg to 840 mg/kg.
- TPHg was not detected at or above the laboratory reporting limit of 1.0 mg/kg.
- NOA was not detected at a target analytical sensitivity of 0.25%.

QA/QC Sample Results:

- Total lead was not detected at or above the laboratory reporting limit of 0.0050 mg/l in the equipment rinse blank samples.

### 5.3 Laboratory Quality Assurance/Quality Control

We reviewed the QA/QC results provided with the laboratory analytical reports. The data indicate non-detect results for the method blanks at or above reporting limits. The Relative Percent Difference (RPD) value was outside of acceptance criteria for several duplicate samples; therefore, calculations were based on raw values. The surrogate was diluted out for two samples.



## 5.4 Statistical Evaluation for Lead Detected in Soil Samples

Statistical methods were applied to the total lead data to evaluate: 1) the upper confidence limits (UCLs) of the arithmetic means of the total lead concentrations for each sampling depth; and 2) if an acceptable correlation between total and WET lead concentrations exists that would allow the prediction of WET lead concentrations based on calculated UCLs.

### 5.4.1 Calculating the UCLs for the Arithmetic Mean

The upper one-sided 90% and 95% UCLs of the arithmetic mean are defined as the values that, when calculated repeatedly for randomly drawn subsets of site data, equal or exceed the true mean 90% and 95% of the time, respectively. Statistical confidence limits are the classical tool for addressing uncertainties of a distribution mean. The UCLs of the arithmetic mean concentration are used as the mean concentrations because it is not possible to know the true mean due to the essentially infinite number of soil samples that could be collected from a site. The UCLs therefore account for uncertainties due to limited sampling data. As data become less limited at a site, uncertainties decrease, and the UCLs move closer to the true mean.

Non-parametric bootstrap techniques were used to calculate the UCLs. The bootstrap test results are included in Appendix B. The following table presents the calculated UCLs and statistics for the site:

**Borings B1 to B8**

Sample Interval (feet)	Total Lead 90% UCL (mg/kg)	Total Lead 95% UCL (mg/kg)	Total Lead Mean (mg/kg)	Total Lead Minimum (mg/kg)	Total Lead Maximum (mg/kg)
0 to 0.5	166	181	115	5.3	350
2 to 2.5	36.8	39.8	26.2	5.0	67

### 5.4.2 Correlation of Total and WET Lead

Total and corresponding WET lead concentrations are bivariate data with a linear structure. This linear structure should allow for the prediction of WET lead concentrations based on the 95% UCL total lead concentrations presented in the table above.

To estimate the degree of interrelation between total and corresponding WET lead values ( $x$  and  $y$ , respectively), the *correlation coefficient* [ $r$ ] is used. The correlation coefficient is a ratio that ranges from +1 to -1. A *correlation coefficient* of +1 indicates a perfect direct relationship between two variables; a *correlation coefficient* of -1 indicates that one variable changes inversely with relation to the other. Between the two extremes is a spectrum of less-than-perfect relationships, including zero, which indicates the lack of any sort of linear relationship at all. The *correlation*



*coefficient* was calculated for the 7 ( $x, y$ ) data points (i.e., soil samples analyzed for both total lead [ $x$ ] and WET lead [ $y$ ]) from the site. The resulting *coefficient of determination* ( $r^2$ ) equaled 0.9255, which yields a corresponding *correlation coefficient* ( $r$ ) of 0.962.

For the *correlation coefficient* that indicates a linear relationship between total and WET lead concentrations, it is possible to compute the line of dependence or a best-fit line between the two variables. A least squares method was used to find the equation of a best-fit line (regression line) by forcing the y-intercept equal to zero since that is a known point. The equation of the regression line was determined to be  $y = 0.0576(x)$ , where  $x$  represents total lead concentrations and  $y$  represents predicted WET lead concentrations.

This equation was used to estimate the expected WET lead concentrations for the total lead UCLs for the data set (see Section 5.4.1). Regression analysis results and a scatter plot depicting the ( $x, y$ ) data points along with the regression line are included in Appendix B. The predicted WET lead concentrations are summarized in Table 6.



## 6.0 CONCLUSIONS

### 6.1 Lead in Soil

The following table summarizes the predicted waste classification for excavated soil based on the calculated weighted averages of the total lead UCLs and predicted WET lead concentrations for data collected from the site. Weighted averages are calculated by using the total lead concentration for each 0.5-foot-depth interval as the value for the underlying 0.5-foot-depth interval (unless a sample was collected from the underlying depth interval). The total and WET lead calculations are summarized below and in Table 6.

Excavation Depth	90% UCL Total Lead (mg/kg)	90% UCL Predicted WET Lead (mg/l)	95% UCL Total Lead (mg/kg)	Waste Classification
0 to 2.0 ft	166	9.6	181	<b>Hazardous</b>
<i>Underlying soil (2.0 to 2.5 ft)</i>	36.8	2.1	39.8	<i>Non-hazardous</i>

90% UCL applicable for waste classification and onsite reuse; 95% UCL applicable for risk assessment and offsite disposal

Based on the data presented in the above table, soil excavated to a depth of two feet would be classified as California hazardous waste based on a 90% UCL-predicted WET lead concentration greater than the STLC of 5 mg/l. STLC. Based on the TCLP lead results, excavated soil would not be classified as a RCRA hazardous waste. Underlying soil deeper than 2 feet would be classified as non-hazardous based on lead content.

### 6.2 Remaining CAM 17 Metals in Soil

With the exception of lead, CAM 17 metals were reported in the samples at total concentrations below ten times their respective STLCs.

The CAM 17 metals concentrations in site soil were compared to ESLs. Arsenic and lead were reported at concentrations greater than one or more ESL values. Statistical methods were used to calculate the total arsenic and lead concentrations.

Non-parametric bootstrap techniques were used to calculate the 95% UCLs. The bootstrap test results are included in Appendix B. ESLs, UCLs, and published background concentrations for arsenic and lead are summarized in the following table.



Metal	Maximum	95% UCL	Shallow Soil Residential ESL	Shallow Soil Commercial/Industrial ESL	Worker Direct Exposure ESL	Published Background Mean <sup>1</sup>	Published Background Range <sup>1</sup>
Arsenic	15	7.84	0.39	1.6	10	3.5	0.6 to 11.0
Lead	350	110	80	320	320	23.9	12.4 to 97.1

Concentrations reported in mg/kg

<sup>1</sup> Kearney Foundation of Soil Science, March 1996

\* – Maximum concentrations of re-analyses were used in statistical analyses

The 95% UCL arsenic concentration is greater than the residential and commercial land use ESLs; however, it is below the construction exposure ESL, and within the published background range. The SFRWQCB *November 2007 Update to Environmental Screening Levels (ESLs) Technical Document* states that ambient background concentrations of arsenic typically exceed risk-based screening levels. In such instances, it may be more appropriate to compare site data to regionally specific established background levels.

The 95% UCL lead concentration is above the residential land use ESL and the published background range; however, it is below the commercial land use ESL and the construction exposure ESL.

Based on the reported results for arsenic and lead, reuse or disposal of excavated soil may be restricted depending on proposed use.

Metals results for soil samples are summarized in Table 3.

### 6.3 Organic Compounds in Soil

TPHg was not detected in the samples at or above the reporting limit of 1.0 mg/kg.

TPHd was reported at concentrations ranging from 2.0 mg/kg to 180 mg/kg. Two samples were above the residential land use ESL of 100 mg/kg and the commercial/industrial land use ESL of 110 mg/kg. All samples were below the construction/direct exposure ESL of 900 mg/kg. TPHd has a 95% UCL of 89.2 mg/kg.

TPHmo was reported at concentrations ranging from 2.6 mg/kg to 840 mg/kg. Two sample results exceeded the residential land use ESL of 100 mg/kg and the commercial/industrial land use ESL of 500 mg/kg. All samples were below the construction/direct exposure ESL of 28,000 mg/kg. TPHmo has a 95% UCL of 413 mg/kg.

Based on the reported TPHd and TPHmo concentrations exceeding the residential and commercial/industrial land use ESLs, reuse or disposal of excavated soil may be restricted based on TPHd and TPHmo content depending on proposed use.



Metal	Maximum	95% UCL	Shallow Soil Residential ESL	Shallow Soil Commercial/Industrial ESL	Worker Direct Exposure ESL	Published Background Mean <sup>1</sup>	Published Background Range <sup>1</sup>
Arsenic	15	7.84	0.39	1.6	10	3.5	0.6 to 11.0
Lead	350	110	80	320	320	23.9	12.4 to 97.1

Concentrations reported in mg/kg

<sup>1</sup> Kearney Foundation of Soil Science, March 1996

\* – Maximum concentrations of re-analyses were used in statistical analyses

The 95% UCL arsenic concentration is greater than the residential and commercial land use ESLs; however, it is below the construction exposure ESL, and within the published background range. The SFRWQCB *November 2007 Update to Environmental Screening Levels (ESLs) Technical Document* states that ambient background concentrations of arsenic typically exceed risk-based screening levels. In such instances, it may be more appropriate to compare site data to regionally specific established background levels.

The 95% UCL lead concentration is above the residential land use ESL and the published background range; however, it is below the commercial land use ESL and the construction exposure ESL.

Based on the reported results for arsenic and lead, reuse or disposal of excavated soil may be restricted depending on proposed use.

Metals results for soil samples are summarized in Table 3.

### 6.3 Organic Compounds in Soil

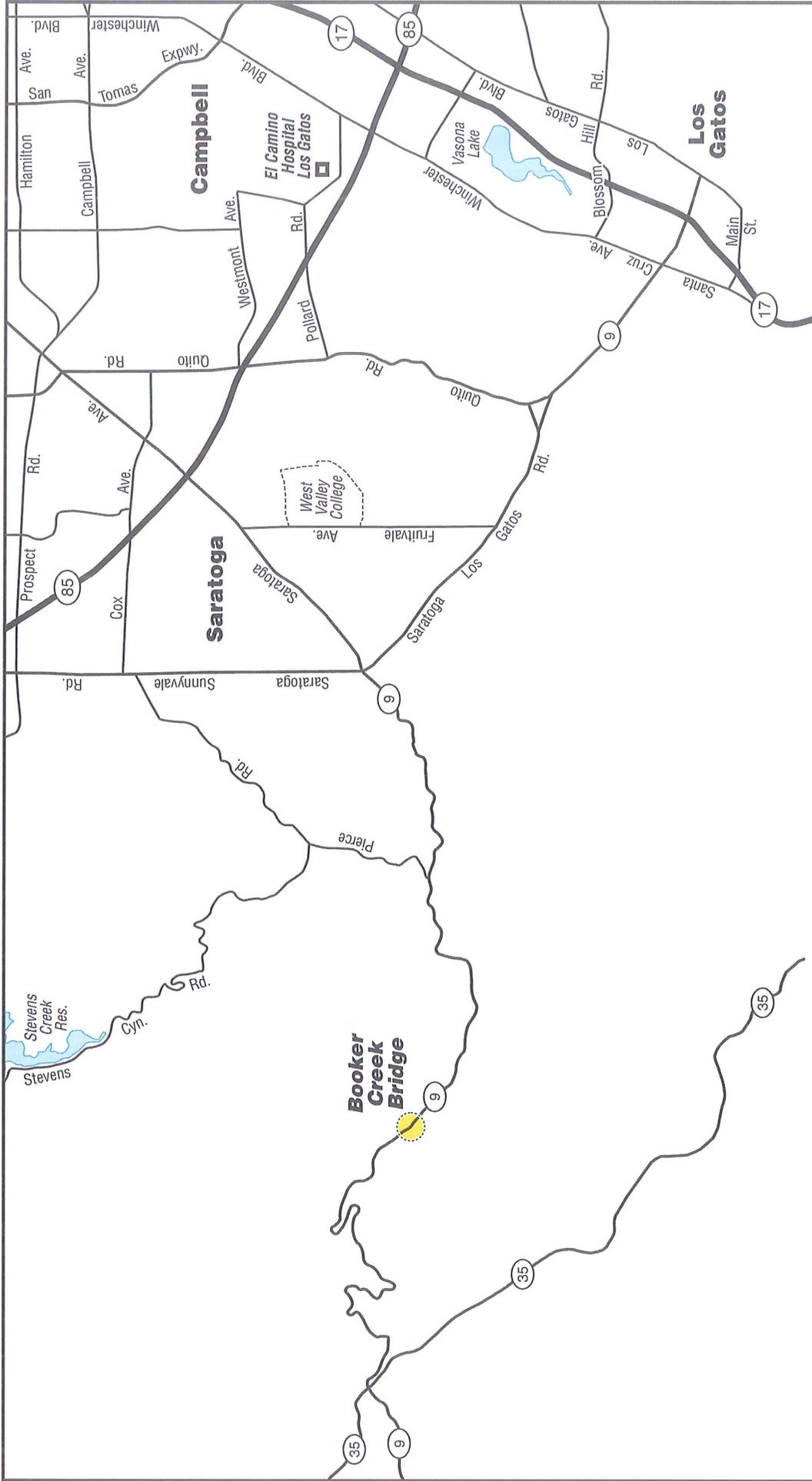
TPHg was not detected in the samples at or above the reporting limit of 1.0 mg/kg.

TPHd was reported at concentrations ranging from 2.0 mg/kg to 180 mg/kg. Two samples were above the residential land use ESL of 100 mg/kg and the commercial/industrial land use ESL of 110 mg/kg. All samples were below the construction/direct exposure ESL of 900 mg/kg. TPHd has a 95% UCL of 89.2 mg/kg.

TPHmo was reported at concentrations ranging from 2.6 mg/kg to 840 mg/kg. Two sample results exceeded the residential land use ESL of 100 mg/kg and the commercial/industrial land use ESL of 500 mg/kg. All samples were below the construction/direct exposure ESL of 28,000 mg/kg. TPHmo has a 95% UCL of 413 mg/kg.

Based on the reported TPHd and TPHmo concentrations exceeding the residential and commercial/industrial land use ESLs, reuse or disposal of excavated soil may be restricted based on TPHd and TPHmo content depending on proposed use.





Booker Creek Bridge (37-0073)

Santa Clara County,  
California

**VICINITY MAP**

GEOCON Proj. No. E8721-02-22

Task Order No. 22

February 2015

Figure 1

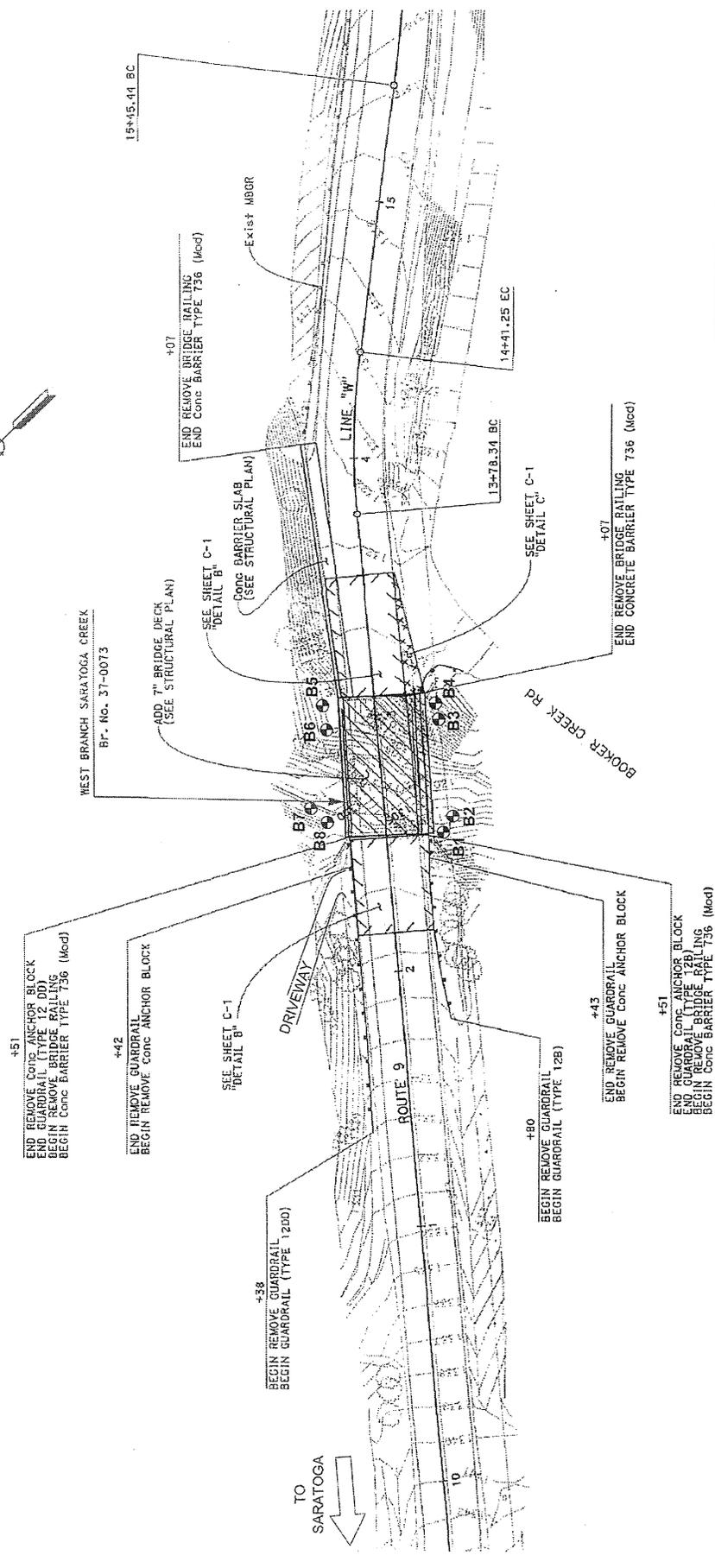
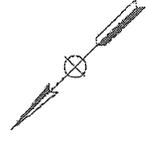


**TABLE 1**  
**Boring Coordinates**  
**Booker Creek Bridge**  
**Santa Clara County, California**

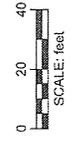
<b>Boring</b>	<b>Latitude</b>	<b>Longitude</b>
B1	37.253664	-122.088457
B2	37.253722	-122.088544
B3	37.253764	-122.088550
B4	37.253649	-122.088396
B5	37.253676	-122.088256
B6	37.253700	-122.088284
B7	37.253552	-122.088325
B8	37.253557	-122.088289



**LEGEND:**  
 Boring Location



 <p><b>GEOCON</b> CONSULTANTS, INC. 407 BRVA STREET, LIVERMORE, CA 94550. PHONE 925.271.9800 - FAX 925.271.9813</p>	
Booker Creek Bridge	
Santa Clara County, California	
GEOCON Proj. No. EB72-1-02-22	
EA No. 04-1A9401	February 2015
<b>SITE PLAN</b>	
Figure 2	





**TABLE 2**  
**Summary of Lead and pH Results**  
**Booker Creek Bridge**  
**Santa Clara County, California**

Sample ID	Sample Depth (feet)	Total Lead (mg/kg)	WET Lead (mg/l)	TCLP Lead (mg/l)	pH
B1-0	0 to 0.5	240	16	0.062	---
B1-2	2 to 2.5	67	2.7	---	6.7
B2-0	0 to 0.5	90	4.5	---	---
B2-2	2 to 2.5	58	2.0	---	7.0
B3-0	0 to 0.5	5.3	---	---	---
B3-2	2 to 2.5	8.6	---	---	7.3
B4-0	0 to 0.5	22	---	---	---
B4-2	2 to 2.5	5.0	---	---	7.4
B5-0	0 to 0.5	350	21	0.088	---
B5-2	2 to 2.5	31	---	---	7.3
B6-0	0 to 0.5	66	2.5	---	---
B6-2	2 to 2.5	26	---	---	7.1
B7-0	0 to 0.5	14	---	---	---
B7-2	2 to 2.5	6.5	---	---	7.0
B8-0	0 to 0.5	130	3.5	---	---
B8-2	2 to 2.5	7.6	---	---	7.2
Rinse Blank 1		<0.0050 mg/l			
Rinse Blank 2		<0.0050 mg/l			
<b>Hazardous Waste Criteria</b>					
	TTL (mg/kg)	1,000	---	---	---
	STL (mg/l)	---	5.0	---	---
	TCL (mg/l)	---	---	5.0	---

**Notes:**

mg/kg = Milligrams per kilogram

mg/l = Milligrams per liter

WET = Waste Extraction Test using citric acid as the extraction fluid

TTL = Total Threshold Limit Concentration

STL = Soluble Threshold Limit Concentration

TCL = Toxicity Characteristic Leaching Procedure



TABLE 3  
Summary of CAM 17 Metals Results  
Booker Creek Bridge  
Santa Clara County, California

Sample ID	Sample Depth (ft)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
B1-0	0 to 0.5	<2.0	15	110	<1.0	<1.0	27	5.0	20	240	0.11	<1.0	27	<1.0	<1.0	<1.0	23	220
B2-0	0 to 0.5	<2.0	8.0	110	<1.0	<1.0	44	6.3	19	90	0.18	<1.0	39	<1.0	<1.0	<1.0	23	70
B2-2	2 to 2.5	<2.0	12	130	<1.0	<1.0	18	5.0	16	58	0.12	<1.0	19	<1.0	<1.0	<1.0	23	48
B3-0	0 to 0.5	<2.0	3.7	36	<1.0	<1.0	28	8.3	24	5.3	0.23	<1.0	13	<1.0	<1.0	<1.0	65	44
B4-0	0 to 0.5	<2.0	3.7	62	<1.0	<1.0	16	6.5	20	22	0.14	<1.0	12	<1.0	<1.0	<1.0	37	48
B5-0	0 to 0.5	<2.0	3.5	210	<1.0	<1.0	24	4.5	26	350	0.16	<1.0	28	<1.0	<1.0	<1.0	26	110
B5-2	2 to 2.5	<2.0	4.0	74	<1.0	<1.0	13	3.8	12	31	0.18	<1.0	14	<1.0	<1.0	<1.0	22	42
B6-0	0 to 0.5	<2.0	3.6	54	<1.0	<1.0	19	2.9	15	66	0.39	<1.0	18	<1.0	<1.0	<1.0	21	51
B7-0	0 to 0.5	<2.0	2.6	74	<1.0	<1.0	12	4.4	12	14	<0.10	<1.0	8.1	<1.0	<1.0	<1.0	17	32
B8-0	0 to 0.5	<2.0	5.2	130	<1.0	<1.0	19	5.6	21	130	<0.10	<1.0	20	<1.0	<1.0	<1.0	20	91
B8-2	2 to 2.5	<2.0	3.8	80	<1.0	<1.0	13	5.0	17	7.6	<0.10	1.1	9.7	<1.0	<1.0	<1.0	23	34

ESLs

Residential Land Use	20
Commercial/Industrial Land Use	40
Construction Worker Exposure	120

Hazardous Waste Criteria

TTLIC (mg/kg)	500
STLC (mg/l)	15
TCLP (mg/l)	--

Notes:

Results are shown in milligrams per kilogram (mg/kg).  
 \*Value listed is for Chromium III, as there is no construction exposure standard for total chromium.  
 Values listed in italics are results of IPEZ analysis  
 < = Analyte was not detected above the laboratory reporting limit.  
 ESLs = Environmental Screening Levels, Tables A and K-3, SFRWQCB, December 2013.  
 TTLIC = total threshold limit concentration  
 STLC = soluble threshold limit concentration  
 TCLIP = toxicity characteristic leaching procedure



**TABLE 4**  
**Summary of Petroleum Hydrocarbons Results**  
**Booker Creek Bridge**  
**Santa Clara County, California**

Sample ID	Sample Depth (ft)	TPHd (mg/kg)	TPHmo (mg/kg)	TPHg (mg/kg)
B1-0	0 to 0.5	160	730	---
B1-2	2 to 2.5	---	---	<1.0
B2-2	2 to 2.5	18	72	<1.0
B3-0	0 to 0.5	3.9	13	---
B3-2	2 to 2.5	---	---	<1.0
B4-2	2 to 2.5	5.8	17	<1.0
B5-0	0 to 0.5	180	840	---
B5-2	2 to 2.5	---	---	<1.0
B6-2	2 to 2.5	11	41	<1.0
B7-0	0 to 0.5	5.7	22	---
B7-2	2 to 2.5	---	---	<1.0
B8-2	2 to 2.5	2.0	2.6	<1.0
<b><u>ESLs</u></b>				
	Residential	100	100	100
	Commercial/Industrial	110	500	500
	Construction Exposure	900	28,000	2,700

Notes:

mg/kg = milligrams per kilogram

TPHd = Total petroleum hydrocarbons as diesel

TPHmo = Total petroleum hydrocarbons as motor oil

ESLs = Environmental Screening Levels, Tables A and K-3, SFRWQCB, December 2013.



**TABLE 5**  
**Summary of NOA Results**  
**Booker Creek Bridge**  
**Santa Clara County, California**

Sample ID	Sample Depth (feet)	Asbestos Content
B1-2	2 to 2.5	ND
B2-2	2 to 2.5	ND
B3-2	2 to 2.5	ND
B4-2	2 to 2.5	ND
B5-2	2 to 2.5	ND
B6-2	2 to 2.5	ND
B7-2	2 to 2.5	ND
B8-2	2 to 2.5	ND

---

ND = None detected at 0.25% target analytical sensitivity.



**TABLE 5**  
**Summary of NOA Results**  
**Booker Creek Bridge**  
**Santa Clara County, California**

Sample ID	Sample Depth (feet)	Asbestos Content
B1-2	2 to 2.5	ND
B2-2	2 to 2.5	ND
B3-2	2 to 2.5	ND
B4-2	2 to 2.5	ND
B5-2	2 to 2.5	ND
B6-2	2 to 2.5	ND
B7-2	2 to 2.5	ND
B8-2	2 to 2.5	ND

---

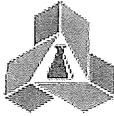
ND = None detected at 0.25% target analytical sensitivity.



APPENDIX

A



ADVANCED  TECHNOLOGY  
LABORATORIES

January 27, 2015

Chris Giuntoli  
Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550  
Tel: (925) 961-5274  
Fax:(925) 371-5915

ELAP No.: 1838  
CSDLAC No.: 10196  
ORELAP No.: CA300003  
TCEQ No. : T104704502

Re: ATL Work Order Number : 1500236

Client Reference : BOOKER / 17 BRIDGES, E8721-02-22

Enclosed are the results for sample(s) received on January 20, 2015 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,



Eddie Rodriguez  
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



## Certificate of Analysis

Geocon Consultants, Inc.

Project Number : BOOKER / 17 BRIDGES, E8721-02-22

6671 Brisa Street

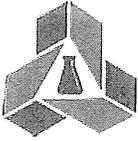
Report To : Chris Giuntoli

Livermore , CA 94550

Reported : 01/27/2015

### SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B1-0	1500236-01	Soil	1/19/15 10:20	1/20/15 8:10
B1-2	1500236-02	Soil	1/19/15 10:25	1/20/15 8:10
B2-0	1500236-03	Soil	1/19/15 10:30	1/20/15 8:10
B2-2	1500236-04	Soil	1/19/15 10:35	1/20/15 8:10
B3-0	1500236-05	Soil	1/19/15 10:15	1/20/15 8:10
B3-2	1500236-06	Soil	1/19/15 10:20	1/20/15 8:10
B4-0	1500236-07	Soil	1/19/15 10:10	1/20/15 8:10
B4-2	1500236-08	Soil	1/19/15 10:15	1/20/15 8:10
B5-0	1500236-09	Soil	1/19/15 10:55	1/20/15 8:10
B5-2	1500236-10	Soil	1/19/15 11:00	1/20/15 8:10
B6-0	1500236-11	Soil	1/19/15 11:10	1/20/15 8:10
B6-2	1500236-12	Soil	1/19/15 11:15	1/20/15 8:10
B7-0	1500236-13	Soil	1/19/15 11:00	1/20/15 8:10
B7-2	1500236-14	Soil	1/19/15 11:05	1/20/15 8:10
B8-0	1500236-15	Soil	1/19/15 11:15	1/20/15 8:10
B8-2	1500236-16	Soil	1/19/15 11:20	1/20/15 8:10
RB-1	1500236-17	Aqueous	1/19/15 15:30	1/20/15 8:10
RB-2	1500236-18	Aqueous	1/19/15 15:30	1/20/15 8:10



### Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

**Client Sample ID B1-0**  
**Lab ID: 1500236-01**

#### Title 22 Metals by ICP-AES EPA 6010B

**Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5A0640	01/26/2015	01/27/15 11:48	
Arsenic	15	1.0	1	B5A0640	01/26/2015	01/27/15 11:48	
Barium	110	1.0	1	B5A0640	01/26/2015	01/27/15 11:48	
Beryllium	ND	1.0	1	B5A0640	01/26/2015	01/27/15 11:48	
Cadmium	ND	1.0	1	B5A0640	01/26/2015	01/27/15 11:48	
Chromium	27	1.0	1	B5A0640	01/26/2015	01/27/15 11:48	
Cobalt	5.0	1.0	1	B5A0640	01/26/2015	01/27/15 11:48	
Copper	20	2.0	1	B5A0640	01/26/2015	01/27/15 11:48	
Lead	240	1.0	1	B5A0640	01/26/2015	01/27/15 11:48	
Molybdenum	ND	1.0	1	B5A0640	01/26/2015	01/27/15 11:48	
Nickel	27	1.0	1	B5A0640	01/26/2015	01/27/15 11:48	
Selenium	ND	1.0	1	B5A0640	01/26/2015	01/27/15 11:48	
Silver	ND	1.0	1	B5A0640	01/26/2015	01/27/15 11:48	
Thallium	ND	1.0	1	B5A0640	01/26/2015	01/27/15 11:48	
Vanadium	23	1.0	1	B5A0640	01/26/2015	01/27/15 11:48	
Zinc	220	1.0	1	B5A0640	01/26/2015	01/27/15 11:48	

#### Mercury by AA (Cold Vapor) EPA 7471A

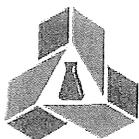
**Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	0.11	0.10	1	B5A0647	01/26/2015	01/27/15 11:20	

#### Diesel Range Organics by EPA 8015B

**Analyst: CR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	160	10	10	B5A0617	01/23/2015	01/25/15 22:01	
ORO	730	10	10	B5A0617	01/23/2015	01/25/15 22:01	
Surrogate: p-Terphenyl	0%	40 - 112		B5A0617	01/23/2015	01/25/15 22:01	S4



## Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

Client Sample ID B1-2

Lab ID: 1500236-02

### Lead by ICP-AES EPA 6010B

Analyst: SB

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	67	1.0	1	B5A0588	01/26/2015	01/27/15 13:53	

### Gasoline Range Organics by EPA 8015B (Modified)

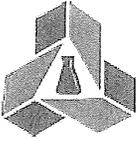
Analyst: MFR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5A0616	01/23/2015	01/23/15 18:34	
Surrogate: 4-Bromofluorobenzene	92.8 %	33 - 151		B5A0616	01/23/2015	01/23/15 18:34	

### pH by EPA 9045C

Analyst: LA

Analyte	Result (pH Units)	PQL (pH Units)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
pH	6.7	0.10	1	B5A0662	01/26/2015	01/26/15 14:30	



### Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

**Client Sample ID B2-0**  
**Lab ID: 1500236-03**

#### Title 22 Metals by ICP-AES EPA 6010B

**Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5A0640	01/26/2015	01/27/15 11:53	
Arsenic	8.0	1.0	1	B5A0640	01/26/2015	01/27/15 11:53	
Barium	110	1.0	1	B5A0640	01/26/2015	01/27/15 11:53	
Beryllium	ND	1.0	1	B5A0640	01/26/2015	01/27/15 11:53	
Cadmium	ND	1.0	1	B5A0640	01/26/2015	01/27/15 11:53	
Chromium	44	1.0	1	B5A0640	01/26/2015	01/27/15 11:53	
Cobalt	6.3	1.0	1	B5A0640	01/26/2015	01/27/15 11:53	
Copper	19	2.0	1	B5A0640	01/26/2015	01/27/15 11:53	
Lead	90	1.0	1	B5A0640	01/26/2015	01/27/15 11:53	
Molybdenum	ND	1.0	1	B5A0640	01/26/2015	01/27/15 11:53	
Nickel	39	1.0	1	B5A0640	01/26/2015	01/27/15 11:53	
Selenium	ND	1.0	1	B5A0640	01/26/2015	01/27/15 11:53	
Silver	ND	1.0	1	B5A0640	01/26/2015	01/27/15 11:53	
Thallium	ND	1.0	1	B5A0640	01/26/2015	01/27/15 11:53	
Vanadium	23	1.0	1	B5A0640	01/26/2015	01/27/15 11:53	
Zinc	70	1.0	1	B5A0640	01/26/2015	01/27/15 11:53	

#### Mercury by AA (Cold Vapor) EPA 7471A

**Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	0.18	0.10	1	B5A0647	01/26/2015	01/27/15 11:22	



### Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

Client Sample ID B2-2

Lab ID: 1500236-04

#### Title 22 Metals by ICP-AES EPA 6010B

Analyst: RR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5A0640	01/26/2015	01/27/15 11:55	
Arsenic	12	1.0	1	B5A0640	01/26/2015	01/27/15 11:55	
Barium	130	1.0	1	B5A0640	01/26/2015	01/27/15 11:55	
Beryllium	ND	1.0	1	B5A0640	01/26/2015	01/27/15 11:55	
Cadmium	ND	1.0	1	B5A0640	01/26/2015	01/27/15 11:55	
Chromium	18	1.0	1	B5A0640	01/26/2015	01/27/15 11:55	
Cobalt	5.0	1.0	1	B5A0640	01/26/2015	01/27/15 11:55	
Copper	16	2.0	1	B5A0640	01/26/2015	01/27/15 11:55	
Lead	58	1.0	1	B5A0640	01/26/2015	01/27/15 11:55	
Molybdenum	ND	1.0	1	B5A0640	01/26/2015	01/27/15 11:55	
Nickel	19	1.0	1	B5A0640	01/26/2015	01/27/15 11:55	
Selenium	ND	1.0	1	B5A0640	01/26/2015	01/27/15 11:55	
Silver	ND	1.0	1	B5A0640	01/26/2015	01/27/15 11:55	
Thallium	ND	1.0	1	B5A0640	01/26/2015	01/27/15 11:55	
Vanadium	23	1.0	1	B5A0640	01/26/2015	01/27/15 11:55	
Zinc	48	1.0	1	B5A0640	01/26/2015	01/27/15 11:55	

#### Mercury by AA (Cold Vapor) EPA 7471A

Analyst: SB

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	0.12	0.10	1	B5A0647	01/26/2015	01/27/15 11:28	

#### Gasoline Range Organics by EPA 8015B (Modified)

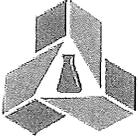
Analyst: MFR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5A0616	01/23/2015	01/23/15 21:22	
Surrogate: 4-Bromofluorobenzene	99.6 %	33 - 151		B5A0616	01/23/2015	01/23/15 21:22	

#### Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	18	1.0	1	B5A0617	01/23/2015	01/25/15 21:12	
ORO	72	1.0	1	B5A0617	01/23/2015	01/25/15 21:12	



## Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

**Client Sample ID B2-2**

**Lab ID: 1500236-04**

### Diesel Range Organics by EPA 8015B

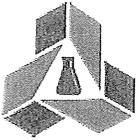
**Analyst: CR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: <i>p</i> -Terphenyl	68.1 %	40 - 112		B5A0617	01/23/2015	01/25/15 21:12	

### pH by EPA 9045C

**Analyst: LA**

Analyte	Result (pH Units)	PQL (pH Units)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
pH	7.0	0.10	1	B5A0662	01/26/2015	01/26/15 14:30	



### Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

**Client Sample ID B3-0**  
**Lab ID: 1500236-05**

#### Title 22 Metals by ICP-AES EPA 6010B

**Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5A0640	01/26/2015	01/27/15 11:56	
Arsenic	3.7	1.0	1	B5A0640	01/26/2015	01/27/15 11:56	
Barium	36	1.0	1	B5A0640	01/26/2015	01/27/15 11:56	
Beryllium	ND	1.0	1	B5A0640	01/26/2015	01/27/15 11:56	
Cadmium	ND	1.0	1	B5A0640	01/26/2015	01/27/15 11:56	
Chromium	28	1.0	1	B5A0640	01/26/2015	01/27/15 11:56	
Cobalt	8.3	1.0	1	B5A0640	01/26/2015	01/27/15 11:56	
Copper	24	2.0	1	B5A0640	01/26/2015	01/27/15 11:56	
Lead	5.3	1.0	1	B5A0640	01/26/2015	01/27/15 11:56	
Molybdenum	ND	1.0	1	B5A0640	01/26/2015	01/27/15 11:56	
Nickel	13	1.0	1	B5A0640	01/26/2015	01/27/15 11:56	
Selenium	ND	1.0	1	B5A0640	01/26/2015	01/27/15 11:56	
Silver	ND	1.0	1	B5A0640	01/26/2015	01/27/15 11:56	
Thallium	ND	1.0	1	B5A0640	01/26/2015	01/27/15 11:56	
Vanadium	65	1.0	1	B5A0640	01/26/2015	01/27/15 11:56	
Zinc	44	1.0	1	B5A0640	01/26/2015	01/27/15 11:56	

#### Mercury by AA (Cold Vapor) EPA 7471A

**Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	0.23	0.10	1	B5A0647	01/26/2015	01/27/15 11:30	

#### Diesel Range Organics by EPA 8015B

**Analyst: CR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	3.9	1.0	1	B5A0617	01/23/2015	01/25/15 19:52	
ORO	13	1.0	1	B5A0617	01/23/2015	01/25/15 19:52	
Surrogate: p-Terphenyl	67.0 %	40 - 112		B5A0617	01/23/2015	01/25/15 19:52	



## Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

**Client Sample ID B3-2**

**Lab ID: 1500236-06**

### Lead by ICP-AES EPA 6010B

**Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	8.6	1.0	1	B5A0588	01/26/2015	01/27/15 13:54	

### Gasoline Range Organics by EPA 8015B (Modified)

**Analyst: MFR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5A0616	01/23/2015	01/23/15 21:38	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>89.6 %</i>	<i>33 - 151</i>		B5A0616	01/23/2015	<i>01/23/15 21:38</i>	

### pH by EPA 9045C

**Analyst: LA**

Analyte	Result (pH Units)	PQL (pH Units)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
pH	7.3	0.10	1	B5A0662	01/26/2015	01/26/15 14:30	



## Certificate of Analysis

Geocon Consultants, Inc.

Project Number : BOOKER / 17 BRIDGES, E8721-02-22

6671 Brisa Street

Report To : Chris Giuntoli

Livermore , CA 94550

Reported : 01/27/2015

**Client Sample ID B4-0**

**Lab ID: 1500236-07**

### Title 22 Metals by ICP-AES EPA 6010B

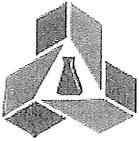
Analyst: RR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5A0641	01/26/2015	01/27/15 12:01	
Arsenic	3.7	1.0	1	B5A0641	01/26/2015	01/27/15 12:01	
Barium	62	1.0	1	B5A0641	01/26/2015	01/27/15 12:01	
Beryllium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:01	
Cadmium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:01	
Chromium	16	1.0	1	B5A0641	01/26/2015	01/27/15 12:01	
Cobalt	6.5	1.0	1	B5A0641	01/26/2015	01/27/15 12:01	
Copper	20	2.0	1	B5A0641	01/26/2015	01/27/15 12:01	
Lead	22	1.0	1	B5A0641	01/26/2015	01/27/15 12:01	
Molybdenum	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:01	
Nickel	12	1.0	1	B5A0641	01/26/2015	01/27/15 12:01	
Selenium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:01	
Silver	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:01	
Thallium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:01	
Vanadium	37	1.0	1	B5A0641	01/26/2015	01/27/15 12:01	
Zinc	48	1.0	1	B5A0641	01/26/2015	01/27/15 12:01	

### Mercury by AA (Cold Vapor) EPA 7471A

Analyst: SB

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	0.14	0.10	1	B5A0647	01/26/2015	01/27/15 11:32	



## Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

**Client Sample ID B4-2**  
**Lab ID: 1500236-08**

**Lead by ICP-AES EPA 6010B**

**Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	5.0	1.0	1	B5A0588	01/26/2015	01/27/15 13:55	

**Gasoline Range Organics by EPA 8015B (Modified)**

**Analyst: MFR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5A0616	01/23/2015	01/23/15 21:54	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96.1 %</i>	<i>33 - 151</i>		B5A0616	01/23/2015	<i>01/23/15 21:54</i>	

**Diesel Range Organics by EPA 8015B**

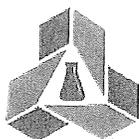
**Analyst: CR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
<b>DRO</b>	<b>5.8</b>	<b>1.0</b>	<b>1</b>	B5A0617	01/23/2015	01/25/15 20:08	
<b>ORO</b>	<b>17</b>	<b>1.0</b>	<b>1</b>	B5A0617	01/23/2015	01/25/15 20:08	
<i>Surrogate: p-Terphenyl</i>	<i>69.2 %</i>	<i>40 - 112</i>		B5A0617	01/23/2015	<i>01/25/15 20:08</i>	

**pH by EPA 9045C**

**Analyst: LA**

Analyte	Result (pH Units)	PQL (pH Units)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
pH	7.4	0.10	1	B5A0662	01/26/2015	01/26/15 14:30	



## Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

**Client Sample ID B5-0**

**Lab ID: 1500236-09**

**Title 22 Metals by ICP-AES EPA 6010B**

**Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5A0641	01/26/2015	01/27/15 12:07	
Arsenic	3.5	1.0	1	B5A0641	01/26/2015	01/27/15 12:07	
Barium	210	1.0	1	B5A0641	01/26/2015	01/27/15 12:07	
Beryllium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:07	
Cadmium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:07	
Chromium	24	1.0	1	B5A0641	01/26/2015	01/27/15 12:07	
Cobalt	4.5	1.0	1	B5A0641	01/26/2015	01/27/15 12:07	
Copper	26	2.0	1	B5A0641	01/26/2015	01/27/15 12:07	
Lead	350	1.0	1	B5A0641	01/26/2015	01/27/15 12:07	
Molybdenum	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:07	
Nickel	28	1.0	1	B5A0641	01/26/2015	01/27/15 12:07	
Selenium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:07	
Silver	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:07	
Thallium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:07	
Vanadium	26	1.0	1	B5A0641	01/26/2015	01/27/15 12:07	
Zinc	110	1.0	1	B5A0641	01/26/2015	01/27/15 12:07	

**Mercury by AA (Cold Vapor) EPA 7471A**

**Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	0.16	0.10	1	B5A0647	01/26/2015	01/27/15 11:34	

**Diesel Range Organics by EPA 8015B**

**Analyst: CR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	180	10	10	B5A0617	01/23/2015	01/25/15 22:17	
ORO	840	10	10	B5A0617	01/23/2015	01/25/15 22:17	
Surrogate: <i>p</i> -Terphenyl	0%	40 - 112		B5A0617	01/23/2015	01/25/15 22:17	S4



## Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

**Client Sample ID B5-2**  
**Lab ID: 1500236-10**

### Title 22 Metals by ICP-AES EPA 6010B

Analyst: RR

Analyte	Result	PQL	Dilution	Batch	Prepared	Date/Time	
	(mg/kg)	(mg/kg)				Analyzed	Notes
Antimony	ND	2.0	1	B5A0641	01/26/2015	01/27/15 12:13	
<b>Arsenic</b>	<b>4.0</b>	1.0	1	B5A0641	01/26/2015	01/27/15 12:13	
<b>Barium</b>	<b>74</b>	1.0	1	B5A0641	01/26/2015	01/27/15 12:13	
Beryllium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:13	
Cadmium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:13	
<b>Chromium</b>	<b>13</b>	1.0	1	B5A0641	01/26/2015	01/27/15 12:13	
<b>Cobalt</b>	<b>3.8</b>	1.0	1	B5A0641	01/26/2015	01/27/15 12:13	
<b>Copper</b>	<b>12</b>	2.0	1	B5A0641	01/26/2015	01/27/15 12:13	
<b>Lead</b>	<b>31</b>	1.0	1	B5A0641	01/26/2015	01/27/15 12:13	
Molybdenum	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:13	
<b>Nickel</b>	<b>14</b>	1.0	1	B5A0641	01/26/2015	01/27/15 12:13	
Selenium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:13	
Silver	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:13	
Thallium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:13	
<b>Vanadium</b>	<b>22</b>	1.0	1	B5A0641	01/26/2015	01/27/15 12:13	
<b>Zinc</b>	<b>42</b>	1.0	1	B5A0641	01/26/2015	01/27/15 12:13	

### Mercury by AA (Cold Vapor) EPA 7471A

Analyst: SB

Analyte	Result	PQL	Dilution	Batch	Prepared	Date/Time	
	(mg/kg)	(mg/kg)				Analyzed	Notes
Mercury	0.18	0.10	1	B5A0647	01/26/2015	01/27/15 11:36	

### Gasoline Range Organics by EPA 8015B (Modified)

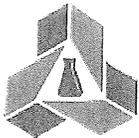
Analyst: MFR

Analyte	Result	PQL	Dilution	Batch	Prepared	Date/Time	
	(mg/kg)	(mg/kg)				Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5A0616	01/23/2015	01/23/15 22:10	
<i>Surrogate: 4-Bromofluorobenzene</i>	97.4 %	33 - 151		B5A0616	01/23/2015	01/23/15 22:10	

### pH by EPA 9045C

Analyst: LA

Analyte	Result	PQL	Dilution	Batch	Prepared	Date/Time	
	(pH Units)	(pH Units)				Analyzed	Notes
pH	7.3	0.10	1	B5A0662	01/26/2015	01/26/15 14:30	



## Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

Client Sample ID B6-0

Lab ID: 1500236-11

### Title 22 Metals by ICP-AES EPA 6010B

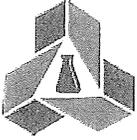
Analyst: RR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5A0641	01/26/2015	01/27/15 12:14	
Arsenic	3.6	1.0	1	B5A0641	01/26/2015	01/27/15 12:14	
Barium	54	1.0	1	B5A0641	01/26/2015	01/27/15 12:14	
Beryllium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:14	
Cadmium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:14	
Chromium	19	1.0	1	B5A0641	01/26/2015	01/27/15 12:14	
Cobalt	2.9	1.0	1	B5A0641	01/26/2015	01/27/15 12:14	
Copper	15	2.0	1	B5A0641	01/26/2015	01/27/15 12:14	
Lead	66	1.0	1	B5A0641	01/26/2015	01/27/15 12:14	
Molybdenum	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:14	
Nickel	18	1.0	1	B5A0641	01/26/2015	01/27/15 12:14	
Selenium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:14	
Silver	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:14	
Thallium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:14	
Vanadium	21	1.0	1	B5A0641	01/26/2015	01/27/15 12:14	
Zinc	51	1.0	1	B5A0641	01/26/2015	01/27/15 12:14	

### Mercury by AA (Cold Vapor) EPA 7471A

Analyst: SB

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	0.39	0.10	1	B5A0647	01/26/2015	01/27/15 11:38	



### Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore , CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

**Client Sample ID B6-2**  
**Lab ID: 1500236-12**

**Lead by ICP-AES EPA 6010B**

**Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	26	1.0	1	B5A0588	01/26/2015	01/27/15 13:56	

**Gasoline Range Organics by EPA 8015B (Modified)**

**Analyst: MFR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5A0616	01/23/2015	01/23/15 22:26	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>93.7 %</i>	<i>33 - 151</i>		B5A0616	01/23/2015	<i>01/23/15 22:26</i>	

**Diesel Range Organics by EPA 8015B**

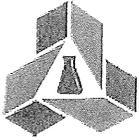
**Analyst: CR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
<b>DRO</b>	<b>11</b>	<b>1.0</b>	<b>1</b>	<b>B5A0617</b>	<b>01/23/2015</b>	<b>01/25/15 20:56</b>	
<b>ORO</b>	<b>41</b>	<b>1.0</b>	<b>1</b>	<b>B5A0617</b>	<b>01/23/2015</b>	<b>01/25/15 20:56</b>	
<i>Surrogate: p-Terphenyl</i>	<i>72.6 %</i>	<i>40 - 112</i>		B5A0617	01/23/2015	<i>01/25/15 20:56</i>	

**pH by EPA 9045C**

**Analyst: LA**

Analyte	Result (pH Units)	PQL (pH Units)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
pH	7.1	0.10	1	B5A0662	01/26/2015	01/26/15 14:30	



### Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, B8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

**Client Sample ID B7-0**  
**Lab ID: 1500236-13**

#### Title 22 Metals by ICP-AES EPA 6010B

**Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5A0641	01/26/2015	01/27/15 12:16	
Arsenic	2.6	1.0	1	B5A0641	01/26/2015	01/27/15 12:16	
Barium	74	1.0	1	B5A0641	01/26/2015	01/27/15 12:16	
Beryllium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:16	
Cadmium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:16	
Chromium	12	1.0	1	B5A0641	01/26/2015	01/27/15 12:16	
Cobalt	4.4	1.0	1	B5A0641	01/26/2015	01/27/15 12:16	
Copper	12	2.0	1	B5A0641	01/26/2015	01/27/15 12:16	
Lead	14	1.0	1	B5A0641	01/26/2015	01/27/15 12:16	
Molybdenum	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:16	
Nickel	8.1	1.0	1	B5A0641	01/26/2015	01/27/15 12:16	
Selenium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:16	
Silver	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:16	
Thallium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:16	
Vanadium	17	1.0	1	B5A0641	01/26/2015	01/27/15 12:16	
Zinc	32	1.0	1	B5A0641	01/26/2015	01/27/15 12:16	

#### Mercury by AA (Cold Vapor) EPA 7471A

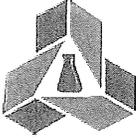
**Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B5A0648	01/26/2015	01/27/15 11:43	

#### Diesel Range Organics by EPA 8015B

**Analyst: CR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	5.7	1.0	1	B5A0617	01/23/2015	01/25/15 20:40	
ORO	22	1.0	1	B5A0617	01/23/2015	01/25/15 20:40	
Surrogate: p-Terphenyl	71.0 %	40 - 112		B5A0617	01/23/2015	01/25/15 20:40	



### Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

**Client Sample ID B7-2**

**Lab ID: 1500236-14**

**Lead by ICP-AES EPA 6010B**

**Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	6.5	1.0	1	B5A0588	01/26/2015	01/27/15 13:56	

**Gasoline Range Organics by EPA 8015B (Modified)**

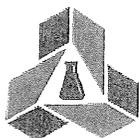
**Analyst: MFR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5A0616	01/23/2015	01/23/15 22:42	
<i>Surrogate: 4-Bromofluorobenzene</i>	98.8 %	33 - 151		B5A0616	01/23/2015	01/23/15 22:42	

**pH by EPA 9045C**

**Analyst: LA**

Analyte	Result (pH Units)	PQL (pH Units)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
pH	7.0	0.10	1	B5A0662	01/26/2015	01/26/15 14:30	



### Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

**Client Sample ID B8-0**

**Lab ID: 1500236-15**

#### Title 22 Metals by ICP-AES EPA 6010B

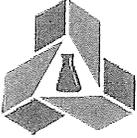
**Analyst: RR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5A0641	01/26/2015	01/27/15 12:17	
Arsenic	5.2	1.0	1	B5A0641	01/26/2015	01/27/15 12:17	
Barium	130	1.0	1	B5A0641	01/26/2015	01/27/15 12:17	
Beryllium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:17	
Cadmium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:17	
Chromium	19	1.0	1	B5A0641	01/26/2015	01/27/15 12:17	
Cobalt	5.6	1.0	1	B5A0641	01/26/2015	01/27/15 12:17	
Copper	21	2.0	1	B5A0641	01/26/2015	01/27/15 12:17	
Lead	130	1.0	1	B5A0641	01/26/2015	01/27/15 12:17	
Molybdenum	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:17	
Nickel	20	1.0	1	B5A0641	01/26/2015	01/27/15 12:17	
Selenium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:17	
Silver	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:17	
Thallium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:17	
Vanadium	20	1.0	1	B5A0641	01/26/2015	01/27/15 12:17	
Zinc	91	1.0	1	B5A0641	01/26/2015	01/27/15 12:17	

#### Mercury by AA (Cold Vapor) EPA 7471A

**Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B5A0648	01/26/2015	01/27/15 11:57	



### Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

**Client Sample ID B8-2**  
**Lab ID: 1500236-16**

#### Title 22 Metals by ICP-AES EPA 6010B

Analyst: RR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5A0641	01/26/2015	01/27/15 12:19	
Arsenic	3.8	1.0	1	B5A0641	01/26/2015	01/27/15 12:19	
Barium	80	1.0	1	B5A0641	01/26/2015	01/27/15 12:19	
Beryllium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:19	
Cadmium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:19	
Chromium	13	1.0	1	B5A0641	01/26/2015	01/27/15 12:19	
Cobalt	5.0	1.0	1	B5A0641	01/26/2015	01/27/15 12:19	
Copper	17	2.0	1	B5A0641	01/26/2015	01/27/15 12:19	
Lead	7.6	1.0	1	B5A0641	01/26/2015	01/27/15 12:19	
Molybdenum	1.1	1.0	1	B5A0641	01/26/2015	01/27/15 12:19	
Nickel	9.7	1.0	1	B5A0641	01/26/2015	01/27/15 12:19	
Selenium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:19	
Silver	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:19	
Thallium	ND	1.0	1	B5A0641	01/26/2015	01/27/15 12:19	
Vanadium	23	1.0	1	B5A0641	01/26/2015	01/27/15 12:19	
Zinc	34	1.0	1	B5A0641	01/26/2015	01/27/15 12:19	

#### Mercury by AA (Cold Vapor) EPA 7471A

Analyst: SB

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B5A0648	01/26/2015	01/27/15 11:59	

#### Gasoline Range Organics by EPA 8015B (Modified)

Analyst: MFR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B5A0616	01/23/2015	01/23/15 22:58	
Surrogate: 4-Bromofluorobenzene	99.1 %	33 - 151		B5A0616	01/23/2015	01/23/15 22:58	

#### Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	2.0	1.0	1	B5A0617	01/23/2015	01/25/15 11:52	
ORO	2.6	1.0	1	B5A0617	01/23/2015	01/25/15 11:52	



## Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

**Client Sample ID B8-2**

**Lab ID: 1500236-16**

### Diesel Range Organics by EPA 8015B

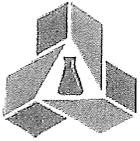
**Analyst: CR**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
<i>Surrogate: p-Terphenyl</i>	80.2 %	40 - 112		B5A0617	01/23/2015	01/25/15 11:52	

### pH by EPA 9045C

**Analyst: LA**

Analyte	Result (pH Units)	PQL (pH Units)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
pH	7.2	0.10	1	B5A0662	01/26/2015	01/26/15 14:30	



## Certificate of Analysis

Geocon Consultants, Inc.

6671 Brisa Street

Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22

Report To : Chris Giuntoli

Reported : 01/27/2015

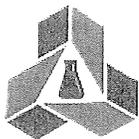
**Client Sample ID RB-1**

**Lab ID: 1500236-17**

**Lead by ICP-AES EPA 6010B**

**Analyst: RR**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	ND	0.0050	1	B5A0651	01/26/2015	01/27/15 11:02	



### Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

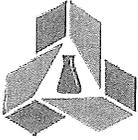
**Client Sample ID RB-2**

**Lab ID: 1500236-18**

**Lead by ICP-AES EPA 6010B**

**Analyst: RR**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	ND	0.0050	1	B5A0651	01/26/2015	01/27/15 11:06	



## Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

### QUALITY CONTROL SECTION

#### Title 22 Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	----------------	-----------------	-----	--------------	-------

**Batch B5A0640 - EPA 3050B\_S**

**Blank (B5A0640-BLK1)**

Prepared: 1/26/2015 Analyzed: 1/27/2015

Antimony	ND	2.0			NR
Arsenic	ND	1.0			NR
Barium	ND	1.0			NR
Beryllium	ND	1.0			NR
Cadmium	ND	1.0			NR
Chromium	ND	1.0			NR
Cobalt	ND	1.0			NR
Copper	ND	2.0			NR
Lead	ND	1.0			NR
Molybdenum	ND	1.0			NR
Nickel	ND	1.0			NR
Selenium	ND	1.0			NR
Silver	ND	1.0			NR
Thallium	ND	1.0			NR
Vanadium	ND	1.0			NR
Zinc	ND	1.0			NR

**LCS (B5A0640-BS1)**

Prepared: 1/26/2015 Analyzed: 1/27/2015

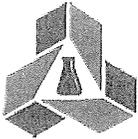
Antimony	46.3252	2.0	50.0000	92.7	80 - 120
Arsenic	46.2521	1.0	50.0000	92.5	80 - 120
Barium	51.1176	1.0	50.0000	102	80 - 120
Beryllium	47.2171	1.0	50.0000	94.4	80 - 120
Cadmium	48.7241	1.0	50.0000	97.4	80 - 120
Chromium	51.1056	1.0	50.0000	102	80 - 120
Cobalt	49.1526	1.0	50.0000	98.3	80 - 120
Copper	47.7905	2.0	50.0000	95.6	80 - 120
Lead	49.2418	1.0	50.0000	98.5	80 - 120
Molybdenum	46.7694	1.0	50.0000	93.5	80 - 120
Nickel	48.3888	1.0	50.0000	96.8	80 - 120
Selenium	42.9021	1.0	50.0000	85.8	80 - 120
Silver	47.5165	1.0	50.0000	95.0	80 - 120
Thallium	47.7547	1.0	50.0000	95.5	80 - 120
Vanadium	49.5414	1.0	50.0000	99.1	80 - 120
Zinc	48.4508	1.0	50.0000	96.9	80 - 120

**Duplicate (B5A0640-DUP1)**

Source: 1500234-41

Prepared: 1/26/2015 Analyzed: 1/27/2015

Antimony	ND	2.0	ND	NR		20
Arsenic	4.01290	1.0	4.59073	NR	13.4	20
Barium	138.400	1.0	77.7930	NR	56.1	20 R
Beryllium	0.396966	1.0	0.397987	NR	0.257	20



## Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

### Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result	PQL	Spike	Source		% Rec		RPD	Notes
	(mg/kg)	(mg/kg)	Level	Result	% Rec	Limits	RPD	Limit	

**Batch B5A0640 - EPA 3050B\_S (continued)**

**Duplicate (B5A0640-DUP1) - Continued**

Source: 1500234-41

Prepared: 1/26/2015 Analyzed: 1/27/2015

Cadmium	0.720734	1.0		0.598994	NR		18.4	20	
Chromium	16.0193	1.0		16.2485	NR		1.42	20	
Cobalt	4.53626	1.0		3.24038	NR		33.3	20	R
Copper	22.3432	2.0		22.5772	NR		1.04	20	
Lead	5.04810	1.0		4.58182	NR		9.68	20	
Molybdenum	1.69806	1.0		1.42330	NR		17.6	20	
Nickel	12.8360	1.0		10.0305	NR		24.5	20	R
Selenium	1.75657	1.0		2.31766	NR		27.5	20	R
Silver	ND	1.0		ND	NR			20	
Thallium	ND	1.0		ND	NR			20	
Vanadium	34.4202	1.0		37.5701	NR		8.75	20	
Zinc	34.2969	1.0		34.8022	NR		1.46	20	

**Matrix Spike (B5A0640-MS1)**

Source: 1500234-41

Prepared: 1/26/2015 Analyzed: 1/27/2015

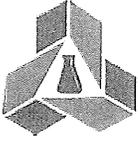
Antimony	77.1092	2.0	125.000	ND	61.7	21 - 126			
Arsenic	89.9723	1.0	125.000	4.59073	68.3	57 - 113			
Barium	178.404	1.0	125.000	77.7930	80.5	29 - 146			
Beryllium	86.3580	1.0	125.000	0.397987	68.8	65 - 110			
Cadmium	78.9481	1.0	125.000	0.598994	62.7	56 - 107			
Chromium	104.465	1.0	125.000	16.2485	70.6	49 - 127			
Cobalt	82.9854	1.0	125.000	3.24038	63.8	57 - 112			
Copper	124.209	2.0	125.000	22.5772	81.3	56 - 127			
Lead	84.5339	1.0	125.000	4.58182	64.0	33 - 134			
Molybdenum	87.2628	1.0	125.000	1.42330	68.7	62 - 108			
Nickel	88.8776	1.0	125.000	10.0305	63.1	42 - 127			
Selenium	82.8993	1.0	125.000	2.31766	64.5	58 - 105			
Silver	92.6888	1.0	125.000	ND	74.2	63 - 113			
Thallium	77.3826	1.0	125.000	ND	61.9	53 - 110			
Vanadium	125.726	1.0	125.000	37.5701	70.5	66 - 112			
Zinc	113.688	1.0	125.000	34.8022	63.1	28 - 137			

**Matrix Spike Dup (B5A0640-MSD1)**

Source: 1500234-41

Prepared: 1/26/2015 Analyzed: 1/27/2015

Antimony	77.4342	2.0	125.000	ND	61.9	21 - 126	0.421	20	
Arsenic	88.4850	1.0	125.000	4.59073	67.1	57 - 113	1.67	20	
Barium	193.669	1.0	125.000	77.7930	92.7	29 - 146	8.20	20	
Beryllium	85.0514	1.0	125.000	0.397987	67.7	65 - 110	1.52	20	
Cadmium	77.3170	1.0	125.000	0.598994	61.4	56 - 107	2.09	20	
Chromium	107.111	1.0	125.000	16.2485	72.7	49 - 127	2.50	20	
Cobalt	87.9324	1.0	125.000	3.24038	67.8	57 - 112	5.79	20	
Copper	120.425	2.0	125.000	22.5772	78.3	56 - 127	3.09	20	
Lead	82.2180	1.0	125.000	4.58182	62.1	33 - 134	2.78	20	
Molybdenum	84.8260	1.0	125.000	1.42330	66.7	62 - 108	2.83	20	



## Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

### Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	----------------	-----------------	-----	--------------	-------

**Batch B5A0640 - EPA 3050B\_S (continued)**

Matrix Spike Dup (B5A0640-MSD1) - Continued

Source: 1500234-41

Prepared: 1/26/2015 Analyzed: 1/27/2015

Nickel	94.3459	1.0	125.000	10.0305	67.5	42 - 127	5.97	20	
Selenium	82.1144	1.0	125.000	2.31766	63.8	58 - 105	0.951	20	
Silver	91.8312	1.0	125.000	ND	73.5	63 - 113	0.930	20	
Thallium	76.7245	1.0	125.000	ND	61.4	53 - 110	0.854	20	
Vanadium	135.886	1.0	125.000	37.5701	78.7	66 - 112	7.77	20	
Zinc	120.732	1.0	125.000	34.8022	68.7	28 - 137	6.01	20	

**Batch B5A0641 - EPA 3050B\_S**

Blank (B5A0641-BLK1)

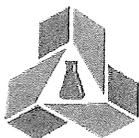
Prepared: 1/26/2015 Analyzed: 1/27/2015

Antimony	ND	2.0		NR
Arsenic	ND	1.0		NR
Barium	ND	1.0		NR
Beryllium	ND	1.0		NR
Cadmium	ND	1.0		NR
Chromium	ND	1.0		NR
Cobalt	ND	1.0		NR
Copper	ND	2.0		NR
Lead	ND	1.0		NR
Molybdenum	ND	1.0		NR
Nickel	ND	1.0		NR
Selenium	ND	1.0		NR
Silver	ND	1.0		NR
Thallium	ND	1.0		NR
Vanadium	ND	1.0		NR
Zinc	ND	1.0		NR

LCS (B5A0641-BS1)

Prepared: 1/26/2015 Analyzed: 1/27/2015

Antimony	45.7621	2.0	50.0000	91.5	80 - 120
Arsenic	45.8914	1.0	50.0000	91.8	80 - 120
Barium	51.3600	1.0	50.0000	103	80 - 120
Beryllium	47.6361	1.0	50.0000	95.3	80 - 120
Cadmium	48.7365	1.0	50.0000	97.5	80 - 120
Chromium	51.0266	1.0	50.0000	102	80 - 120
Cobalt	49.3411	1.0	50.0000	98.7	80 - 120
Copper	47.6647	2.0	50.0000	95.3	80 - 120
Lead	48.7962	1.0	50.0000	97.6	80 - 120
Molybdenum	46.8364	1.0	50.0000	93.7	80 - 120
Nickel	48.3838	1.0	50.0000	96.8	80 - 120
Selenium	43.0033	1.0	50.0000	86.0	80 - 120
Silver	47.7910	1.0	50.0000	95.6	80 - 120



## Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22

Report To : Chris Giuntoli

Reported : 01/27/2015

### Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	----------------	-----------------	------------	--------------	-------

**Batch B5A0641 - EPA 3050B\_S (continued)**

**LCS (B5A0641-BS1) - Continued**

Prepared: 1/26/2015 Analyzed: 1/27/2015

Thallium	47.3796	1.0	50.0000	94.8	80 - 120
Vanadium	49.8406	1.0	50.0000	99.7	80 - 120
Zinc	47.5632	1.0	50.0000	95.1	80 - 120

**Duplicate (B5A0641-DUP1)**

Source: 1500236-07

Prepared: 1/26/2015 Analyzed: 1/27/2015

Antimony	ND	2.0		0.539274	NR		20
Arsenic	3.82730	1.0		3.65504	NR	4.60	20
Barium	57.6234	1.0		61.6938	NR	6.82	20
Beryllium	0.340644	1.0		0.321807	NR	5.69	20
Cadmium	ND	1.0		ND	NR		20
Chromium	21.0743	1.0		15.6017	NR	29.8	20 R
Cobalt	7.12349	1.0		6.53292	NR	8.65	20
Copper	30.7137	2.0		20.2188	NR	41.2	20 R
Lead	19.8059	1.0		22.0979	NR	10.9	20
Molybdenum	0.679820	1.0		0.813060	NR	17.9	20
Nickel	13.3619	1.0		12.1739	NR	9.31	20
Selenium	0.840928	1.0		0.624733	NR	29.5	20 R
Silver	ND	1.0		ND	NR		20
Thallium	ND	1.0		ND	NR		20
Vanadium	42.3172	1.0		36.8259	NR	13.9	20
Zinc	49.6621	1.0		48.0802	NR	3.24	20

**Matrix Spike (B5A0641-MS1)**

Source: 1500236-07

Prepared: 1/26/2015 Analyzed: 1/27/2015

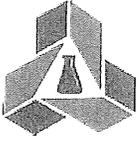
Antimony	76.0144	2.0	125.000	0.539274	60.4	21 - 126
Arsenic	86.9130	1.0	125.000	3.65504	66.6	57 - 113
Barium	147.063	1.0	125.000	61.6938	68.3	29 - 146
Beryllium	86.5236	1.0	125.000	0.321807	69.0	65 - 110
Cadmium	80.9075	1.0	125.000	ND	64.7	56 - 107
Chromium	105.275	1.0	125.000	15.6017	71.7	49 - 127
Cobalt	89.5946	1.0	125.000	6.53292	66.4	57 - 112
Copper	113.219	2.0	125.000	20.2188	74.4	56 - 127
Lead	101.583	1.0	125.000	22.0979	63.6	33 - 134
Molybdenum	85.1064	1.0	125.000	0.813060	67.4	62 - 108
Nickel	94.8322	1.0	125.000	12.1739	66.1	42 - 127
Selenium	80.9894	1.0	125.000	0.624733	64.3	58 - 105
Silver	89.8692	1.0	125.000	ND	71.9	63 - 113
Thallium	79.6810	1.0	125.000	ND	63.7	53 - 110
Vanadium	123.304	1.0	125.000	36.8259	69.2	66 - 112
Zinc	125.626	1.0	125.000	48.0802	62.0	28 - 137

**Matrix Spike Dup (B5A0641-MSD1)**

Source: 1500236-07

Prepared: 1/26/2015 Analyzed: 1/27/2015

Antimony	79.3276	2.0	125.000	0.539274	63.0	21 - 126	4.27	20
----------	---------	-----	---------	----------	------	----------	------	----



## Certificate of Analysis

Geocon Consultants, Inc.  
 6671 Brisa Street  
 Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
 Report To : Chris Giuntoli  
 Reported : 01/27/2015

### Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	-------	-----------------	-----	--------------	-------

**Batch B5A0641 - EPA 3050B\_S (continued)**

Matrix Spike Dup (B5A0641-MSD1) - Continued

Source: 1500236-07

Prepared: 1/26/2015 Analyzed: 1/27/2015

Arsenic	90.3896	1.0	125.000	3.65504	69.4	57 - 113	3.92	20	
Barium	158.910	1.0	125.000	61.6938	77.8	29 - 146	7.74	20	
Beryllium	90.3088	1.0	125.000	0.321807	72.0	65 - 110	4.28	20	
Cadmium	83.4978	1.0	125.000	ND	66.8	56 - 107	3.15	20	
Chromium	109.240	1.0	125.000	15.6017	74.9	49 - 127	3.70	20	
Cobalt	91.8212	1.0	125.000	6.53292	68.2	57 - 112	2.45	20	
Copper	119.917	2.0	125.000	20.2188	79.8	56 - 127	5.75	20	
Lead	106.820	1.0	125.000	22.0979	67.8	33 - 134	5.03	20	
Molybdenum	88.6574	1.0	125.000	0.813060	70.3	62 - 108	4.09	20	
Nickel	100.055	1.0	125.000	12.1739	70.3	42 - 127	5.36	20	
Selenium	84.1548	1.0	125.000	0.624733	66.8	58 - 105	3.83	20	
Silver	94.1102	1.0	125.000	ND	75.3	63 - 113	4.61	20	
Thallium	83.0064	1.0	125.000	ND	66.4	53 - 110	4.09	20	
Vanadium	127.298	1.0	125.000	36.8259	72.4	66 - 112	3.19	20	
Zinc	138.856	1.0	125.000	48.0802	72.6	28 - 137	10.0	20	



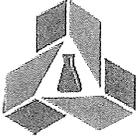
## Certificate of Analysis

Geocon Consultants, Inc.  
 6671 Brisa Street  
 Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
 Report To : Chris Giuntoli  
 Reported : 01/27/2015

### Lead by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
<b>Batch B5A0588 - EPA 3050 Modified_S</b>									
<b>Blank (B5A0588-BLK1)</b>				Prepared: 1/26/2015 Analyzed: 1/27/2015					
Lead	ND	1.0			NR				
<b>Blank (B5A0588-BLK2)</b>				Prepared: 1/26/2015 Analyzed: 1/27/2015					
Lead	ND	1.0			NR				
<b>LCS (B5A0588-BS1)</b>				Prepared: 1/26/2015 Analyzed: 1/27/2015					
Lead	46.7232	1.0	50.0000		93.4	80 - 120			
<b>Duplicate (B5A0588-DUP1)</b>				Source: 1500240-17		Prepared: 1/26/2015 Analyzed: 1/27/2015			
Lead	8.02794	1.0		7.86373	NR		2.07	20	
<b>Duplicate (B5A0588-DUP2)</b>				Source: 1500240-05		Prepared: 1/26/2015 Analyzed: 1/27/2015			
Lead	6.16675	1.0		4.86477	NR		23.6	20	R
<b>Matrix Spike (B5A0588-MS1)</b>				Source: 1500240-17		Prepared: 1/26/2015 Analyzed: 1/27/2015			
Lead	231.681	1.0	250.000	7.86373	89.5	33 - 134			
<b>Matrix Spike (B5A0588-MS2)</b>				Source: 1500240-05		Prepared: 1/26/2015 Analyzed: 1/27/2015			
Lead	222.647	1.0	250.000	4.86477	87.1	33 - 134			
<b>Matrix Spike Dup (B5A0588-MSD1)</b>				Source: 1500240-17		Prepared: 1/26/2015 Analyzed: 1/27/2015			
Lead	222.557	1.0	250.000	7.86373	85.9	33 - 134	4.02	20	
<b>Batch B5A0651 - EPA 3010A_W</b>									
<b>Blank (B5A0651-BLK1)</b>				Prepared: 1/26/2015 Analyzed: 1/27/2015					
Lead	ND	0.0050			NR				
<b>LCS (B5A0651-BS1)</b>				Prepared: 1/26/2015 Analyzed: 1/27/2015					
Lead	1.01294	0.0050	1.00000		101	80 - 120			
<b>LCS Dup (B5A0651-BSD1)</b>				Prepared: 1/26/2015 Analyzed: 1/27/2015					
Lead	1.02106	0.0050	1.00000		102	80 - 120	0.798	20	



## Certificate of Analysis

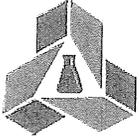
Geocon Consultants, Inc.  
 6671 Brisa Street  
 Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
 Report To : Chris Giuntoli  
 Reported : 01/27/2015

### Mercury by AA (Cold Vapor) EPA 7471A - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
<b>Batch B5A0647 - EPA 7471_S</b>									
<b>Blank (B5A0647-BLK1)</b>				Prepared: 1/26/2015 Analyzed: 1/27/2015					
Mercury	ND	0.10			NR				
<b>LCS (B5A0647-BS1)</b>				Prepared: 1/26/2015 Analyzed: 1/27/2015					
Mercury	0.758268	0.10	0.833333		91.0	80 - 120			
<b>Duplicate (B5A0647-DUP1)</b>				Source: 1500234-45 Prepared: 1/26/2015 Analyzed: 1/27/2015					
Mercury	0.033911	0.10		0.024303	NR		33.0	20	R
<b>Matrix Spike (B5A0647-MS1)</b>				Source: 1500234-45 Prepared: 1/26/2015 Analyzed: 1/27/2015					
Mercury	0.790232	0.10	0.833333	0.024303	91.9	70 - 130			
<b>Matrix Spike Dup (B5A0647-MSD1)</b>				Source: 1500234-45 Prepared: 1/26/2015 Analyzed: 1/27/2015					
Mercury	0.813398	0.10	0.833333	0.024303	94.7	70 - 130	2.89	20	
<b>Post Spike (B5A0647-PS1)</b>				Source: 1500234-45 Prepared: 1/26/2015 Analyzed: 1/27/2015					
Mercury	0.005441		5.00000E-3	0.000292	103	85 - 115			





### Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

#### Mercury by AA (Cold Vapor) EPA 7471A - Quality Control (cont'd)

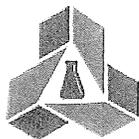
Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	----------------	-----------------	------------	--------------	-------

Batch B5A0648 - EPA 7471\_S (continued)

LCS (B5A0648-BS1)

Prepared: 1/26/2015 Analyzed: 1/27/2015

Mercury	0.772153	0.10	0.833333		92.7	80 - 120			
---------	----------	------	----------	--	------	----------	--	--	--



### Certificate of Analysis

Geocon Consultants, Inc. 6671 Brisa Street Livermore, CA 94550	Project Number : BOOKER / 17 BRIDGES, E8721-02-22 Report To : Chris Giuntoli Reported : 01/27/2015
--	--

#### Mercury by AA (Cold Vapor) EPA 7471A - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	-------	-----------------	-----	--------------	-------

**Batch B5A0648 - EPA 7471\_S (continued)**

Duplicate (B5A0648-DUP1)

Source: 1500236-13

Prepared: 1/26/2015 Analyzed: 1/27/2015

Mercury	0.029498	0.10		0.033832	NR		13.7	20	
---------	----------	------	--	----------	----	--	------	----	--



### Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

#### Mercury by AA (Cold Vapor) EPA 7471A - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	-------	-----------------	-----	--------------	-------

#### Batch B5A0648 - EPA 7471\_S (continued)

Matrix Spike (B5A0648-MS1)

Source: 1500236-13

Prepared: 1/26/2015 Analyzed: 1/27/2015

Mercury	0.820911	0.10	0.833333	0.033832	94.4	70 - 130			
---------	----------	------	----------	----------	------	----------	--	--	--



### Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

#### Mercury by AA (Cold Vapor) EPA 7471A - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	-------	-----------------	-----	--------------	-------

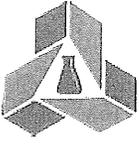
#### Batch B5A0648 - EPA 7471\_S (continued)

Matrix Spike Dup (B5A0648-MSD1)

Source: 1500236-13

Prepared: 1/26/2015 Analyzed: 1/27/2015

Mercury	0.811078	0.10	0.833333	0.033832	93.3	70 - 130	1.21	20	
---------	----------	------	----------	----------	------	----------	------	----	--



## Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

### Gasoline Range Organics by EPA 8015B (Modified) - Quality Control (cont'd)

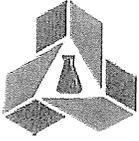
Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	----------------	-----------------	-----	--------------	-------

#### Batch B5A0616 - GCVOA\_S (continued)

LCS (B5A0616-BS1)

Prepared: 1/23/2015 Analyzed: 1/23/2015

Gasoline Range Organics	4.34900	1.0	5.00000		87.0	70 - 130			
Surrogate: 4-Bromofluorobenzene	0.2020		0.200000		101	33 - 151			



## Certificate of Analysis

Geocon Consultants, Inc.  
 6671 Brisa Street  
 Livermore , CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
 Report To : Chris Giuntoli  
 Reported : 01/27/2015

### Gasoline Range Organics by EPA 8015B (Modified) - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	----------------	-----------------	------------	--------------	-------

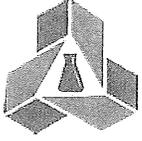
**Batch B5A0616 - GCVOA\_S (continued)**

**Duplicate (B5A0616-DUP1)**

**Source: 1500236-02**

Prepared: 1/23/2015 Analyzed: 1/23/2015

Gasoline Range Organics	ND	1.0		ND	NR			20	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.1981</i>		<i>0.200000</i>		<i>99.0</i>	<i>33 - 151</i>			



### Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

#### Mercury by AA (Cold Vapor) EPA 7471A - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
---------	------------------	---------------	----------------	------------------	-------	-----------------	-----	--------------	-------

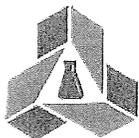
#### Batch B5A0648 - EPA 7471\_S (continued)

Post Spike (B5A0648-PS1)

Source: 1500236-13

Prepared: 1/26/2015 Analyzed: 1/27/2015

Mercury	5.4636E-3		5.00000E-3	0.000406	101	85 - 115			
---------	-----------	--	------------	----------	-----	----------	--	--	--



### Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

#### Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	----------------	-----------------	------------	--------------	-------

Batch B5A0616 - GCVOA\_S

Blank (B5A0616-BLK1)

Prepared: 1/23/2015 Analyzed: 1/23/2015

Gasoline Range Organics	ND	1.0			NR				
Surrogate: 4-Bromofluorobenzene	0.2023		0.200000		101	33 - 151			



## Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22

Report To : Chris Giuntoli

Reported : 01/27/2015

### Gasoline Range Organics by EPA 8015B (Modified) - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	-------	-----------------	-----	--------------	-------

#### Batch B5A0616 - GCVOA\_S (continued)

Matrix Spike (B5A0616-MS1)

Source: 1500309-03

Prepared: 1/23/2015 Analyzed: 1/23/2015

Gasoline Range Organics	3.60100	1.0	5.00000	ND	72.0	33 - 119			
Surrogate: 4-Bromofluorobenzene	0.1951		0.200000		97.6	33 - 151			



### Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

#### Gasoline Range Organics by EPA 8015B (Modified) - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	-------	-----------------	-----	--------------	-------

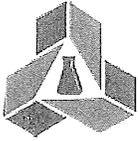
#### Batch B5A0616 - GCVOA\_S (continued)

#### Matrix Spike Dup (B5A0616-MSD1)

Source: 1500309-03

Prepared: 1/23/2015 Analyzed: 1/23/2015

Gasoline Range Organics	3.67300	1.0	5.00000	ND	73.5	33 - 119	1.98	20	
Surrogate: 4-Bromofluorobenzene	0.2098		0.200000		105	33 - 151			



## Certificate of Analysis

Geocon Consultants, Inc.  
 6671 Brisa Street  
 Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
 Report To : Chris Giuntoli  
 Reported : 01/27/2015

### Diesel Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
<b>Batch B5A0617 - GCSEMI_DRO_LL_S</b>									
<b>Blank (B5A0617-BLK1)</b>					Prepared: 1/23/2015 Analyzed: 1/25/2015				
DRO	ND	1.0					NR		
ORO	ND	1.0					NR		
<i>Surrogate: p-Terphenyl</i>	<i>1.907</i>		<i>2.66667</i>		<i>71.5</i>	<i>40 - 112</i>			



### Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

#### Diesel Range Organics by EPA 8015B - Quality Control (cont'd)

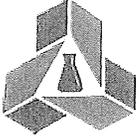
Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	-------	-----------------	-----	--------------	-------

#### Batch B5A0617 - GCSEMI\_DRO\_LL\_S (continued)

LCS (B5A0617-BS1)

Prepared: 1/23/2015 Analyzed: 1/25/2015

DRO	24.3947	1.0	33.3333		73.2	51 - 114			
Surrogate: <i>p</i> -Terphenyl	1.441		2.66667		54.0	40 - 112			



### Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore , CA 94550

Project Number : BOOKER / 17 BRIDGES, B8721-02-22  
Report To : Chris Giuntoli  
Reported : 01/27/2015

#### Diesel Range Organics by EPA 8015B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	-------	-----------------	-----	--------------	-------

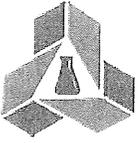
#### Batch B5A0617 - GCSEMI\_DRO\_LL\_S (continued)

Duplicate (B5A0617-DUP1)

Source: 1500236-08

Prepared: 1/23/2015 Analyzed: 1/25/2015

DRO	6.33033	1.0		5.83233	NR		8.19	20	
<i>Surrogate: p-Terphenyl</i>	<i>1.857</i>		<i>2.66667</i>		<i>69.6</i>	<i>40 - 112</i>			



### Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore , CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22

Report To : Chris Giuntoli

Reported : 01/27/2015

#### Diesel Range Organics by EPA 8015B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
---------	-------------------	----------------	----------------	------------------	-------	-----------------	-----	--------------	-------

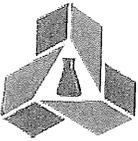
#### Batch B5A0617 - GCSEMI\_DRO\_LL\_S (continued)

Matrix Spike (B5A0617-MS1)

Source: 1500236-08

Prepared: 1/23/2015 Analyzed: 1/25/2015

DRO	38.9147	1.0	33.3333	5.83233	99.2	8 - 121			
Surrogate: <i>p</i> -Terphenyl	2.086		2.66667		78.2	40 - 112			



### Certificate of Analysis

Geocon Consultants, Inc.  
 6671 Brisa Street  
 Livermore, CA 94550

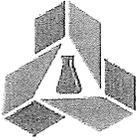
Project Number : BOOKER / 17 BRIDGES, E8721-02-22

Report To : Chris Giuntoli

Reported : 01/27/2015

#### Diesel Range Organics by EPA 8015B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
<b>Batch B5A0617 - GCSEMI_DRO_LL_S (continued)</b>									
<b>Matrix Spike Dup (B5A0617-MSD1)</b>									
				Source: 1500236-08					
						Prepared: 1/23/2015 Analyzed: 1/25/2015			
DRO	37.7123	1.0	33.3333	5.83233	95.6	8 - 121	3.14	20	
<i>Surrogate: p-Terphenyl</i>	<i>2.007</i>		<i>2.66667</i>		<i>75.3</i>	<i>40 - 112</i>			



### Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore , CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22

Report To : Chris Giuntoli

Reported : 01/27/2015

### pH by EPA 9045C - Quality Control

Analyte	Result (pH Units)	PQL (pH Units)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
---------	----------------------	-------------------	----------------	------------------	-------	-----------------	-----	--------------	-------

Batch B5A0662 - z\_Prep\_WC\_1\_S

Duplicate (B5A0662-DUP1)

Source: 1500236-16

Prepared: 1/26/2015 Analyzed: 1/26/2015

pH	7.21000	0.10		7.15000	NR		0.836	20	
----	---------	------	--	---------	----	--	-------	----	--



ADVANCED TECHNOLOGY  
LABORATORIES

February 09, 2015

Chris Giuntoli  
Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550  
Tel: (925) 961-5274  
Fax: (925) 371-5915

ELAP No.: 1838  
CSDLAC No.: 10196  
ORELAP No.: CA300003  
TCEQ No. : T104704502

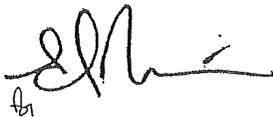
Re: ATL Work Order Number : 1500236

Client Reference : BOOKER / 17 BRIDGES, E8721-02-22

Enclosed are the results for sample(s) received on January 20, 2015 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,



Eddie Rodriguez  
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



## Certificate of Analysis

Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
Report To : Chris Giuntoli  
Reported : 02/09/2015

### SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B1-0	1500236-01	Soil	1/19/15 10:20	1/20/15 8:10
B1-2	1500236-02	Soil	1/19/15 10:25	1/20/15 8:10
B2-0	1500236-03	Soil	1/19/15 10:30	1/20/15 8:10
B2-2	1500236-04	Soil	1/19/15 10:35	1/20/15 8:10
B5-0	1500236-09	Soil	1/19/15 10:55	1/20/15 8:10
B6-0	1500236-11	Soil	1/19/15 11:10	1/20/15 8:10
B8-0	1500236-15	Soil	1/19/15 11:15	1/20/15 8:10



## Certificate of Analysis

Geocon Consultants, Inc.

Project Number : BOOKER / 17 BRIDGES, E8721-02-22

6671 Brisa Street

Report To : Chris Giuntoli

Livermore , CA 94550

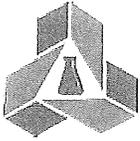
Reported : 02/09/2015

### STLC Metals by ICP-AES by EPA 6010B

Analyte: Lead

Analyst: RR

Laboratory ID	Client Sample ID	Result	Units	PQL	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1500236-01	B1-0	16	mg/L	1.0	20	B5B0207	02/09/2015	02/09/15 13:06	
1500236-02	B1-2	2.7	mg/L	1.0	20	B5B0207	02/09/2015	02/09/15 13:08	
1500236-03	B2-0	4.5	mg/L	1.0	20	B5B0207	02/09/2015	02/09/15 13:10	
1500236-04	B2-2	2.0	mg/L	1.0	20	B5B0207	02/09/2015	02/09/15 13:12	
1500236-09	B5-0	21	mg/L	1.0	20	B5B0207	02/09/2015	02/09/15 13:14	
1500236-11	B6-0	2.5	mg/L	1.0	20	B5B0207	02/09/2015	02/09/15 13:17	
1500236-15	B8-0	3.5	mg/L	1.0	20	B5B0207	02/09/2015	02/09/15 13:19	



## Certificate of Analysis

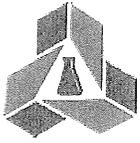
Geocon Consultants, Inc.  
 6671 Brisa Street  
 Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22  
 Report To : Chris Giuntoli  
 Reported : 02/09/2015

### QUALITY CONTROL SECTION

#### STLC Metals by ICP-AES by EPA 6010B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
<b>Batch B5B0207 - STLC_S Extraction</b>									
<b>Blank (B5B0207-BLK1)</b>					Prepared: 2/9/2015 Analyzed: 2/9/2015				
Lead	ND	1.0			NR				
<b>Blank (B5B0207-BLK2)</b>					Prepared: 2/9/2015 Analyzed: 2/9/2015				
Lead	ND	1.0			NR				
<b>LCS (B5B0207-BS1)</b>					Prepared: 2/9/2015 Analyzed: 2/9/2015				
Lead	1.93150		2.00000		96.6	80 - 120			
<b>Duplicate (B5B0207-DUP1)</b>		<b>Source: 1500242-23RE1</b>			Prepared: 2/9/2015 Analyzed: 2/9/2015				
Lead	0.206461	1.0		0.255343	NR		21.2	20	R
<b>Duplicate (B5B0207-DUP2)</b>		<b>Source: 1500349-01</b>			Prepared: 2/9/2015 Analyzed: 2/9/2015				
Lead	27.5348	1.0		25.6069	NR		7.26	20	
<b>Matrix Spike (B5B0207-MS1)</b>		<b>Source: 1500242-23RE1</b>			Prepared: 2/9/2015 Analyzed: 2/9/2015				
Lead	2.49539		2.50000	0.255343	89.6	44 - 130			
<b>Matrix Spike (B5B0207-MS2)</b>		<b>Source: 1500349-01</b>			Prepared: 2/9/2015 Analyzed: 2/9/2015				
Lead	26.6239		2.50000	25.6069	40.7	44 - 130			M1
<b>Matrix Spike Dup (B5B0207-MSD1)</b>		<b>Source: 1500242-23RE1</b>			Prepared: 2/9/2015 Analyzed: 2/9/2015				
Lead	2.48813		2.50000	0.255343	89.3	44 - 130	0.291	20	



## Certificate of Analysis

Geocon Consultants, Inc. 6671 Brisa Street Livermore, CA 94550	Project Number : BOOKER / 17 BRIDGES, E8721-02-22 Report To : Chris Giuntoli Reported : 02/09/2015
--	--

### Notes and Definitions

- R RPD value outside acceptance criteria. Calculation is based on raw values.
- M1 Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
- ND Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
- PQL Practical Quantitation Limit
- MDL Method Detection Limit
- NR Not Reported
- RPD Relative Percent Difference
- CA2 CA-ELAP (CDPH)
- OR1 OR-NELAP (OSPHL)
- TX1 TX-NELAP (TCEQ)

#### Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.

Diane Galvan

---

**From:** Luann Beadle [beadle@geoconinc.com]  
**Sent:** Tuesday, February 03, 2015 3:57 PM  
**To:** Diane Galvan  
**Subject:** Lab Order 1500236 (Booker Bridge)

Hi Diane,

Please run WET lead on the following samples on a regular TAT:

1500236-04 B2-2  
1500236-11 B6-0  
1500236-02 B1-2  
1500236-03 B2-0  
1500236-15 B8-0  
1500236-01 B1-0  
1500236-09 B5-0

Thanks,  
Luann



**Luann Beadle | Senior Staff Scientist**  
**Geocon Consultants, Inc.**

6871 Price Street, Livermore, California 94550  
P | 925.379.5900 A | 925.395.1669

[www.geoconinc.com](http://www.geoconinc.com) / [Facebook](#) / [LinkedIn](#)

**Bay Area / Fairfield / Sacramento / Bakersfield / Los Angeles / Orange County /**

**Riverside County / Palm Desert / San Diego**

- Geotechnical Investigations
- Foundation Analysis and Design
- Foundation Repair and Retention
- Foundation Underpinning
- Pavement Design and Construction
- Earth Retention and Slope Stabilization
- Geotechnical Investigation and Design
- Special Investigations and Testing
- Seismicity and Earthquake Engineering
- Project Cost Estimation and Management
- Architectural and Structural Engineering
- Historical Engineering

  
ADVANCED TECHNOLOGY  
LABORATORIES

February 13, 2015

Chris Giuntoli  
Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550  
Tel: (925) 961-5274  
Fax: (925) 371-5915

ELAP No.: 1838  
CSDLAC No.: 10196  
ORELAP No.: CA300003  
TCEQ No. : T104704502

Re: ATL Work Order Number : 1500236

Client Reference : BOOKER / 17 BRIDGES, E8721-02-22

Enclosed are the results for sample(s) received on January 20, 2015 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

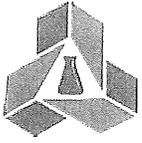
Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,



Eddie Rodriguez  
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



## Certificate of Analysis

Geocon Consultants, Inc.

Project Number : BOOKER / 17 BRIDGES, E8721-02-22

6671 Brisa Street

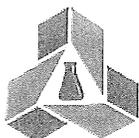
Report To : Chris Giuntoli

Livermore , CA 94550

Reported : 02/13/2015

### SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B1-0	1500236-01	Soil	1/19/15 10:20	1/20/15 8:10
B5-0	1500236-09	Soil	1/19/15 10:55	1/20/15 8:10



## Certificate of Analysis

Geocon Consultants, Inc.

Project Number : BOOKER / 17 BRIDGES, E8721-02-22

6671 Brisa Street

Report To : Chris Giuntoli

Livermore , CA 94550

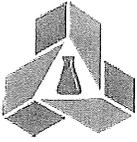
Reported : 02/13/2015

### TCLP Metals by ICP-AES EPA 6010B

Analyte: Lead

Analyst: RR

Laboratory ID	Client Sample ID	Result	Units	PQL	Dilution	Batch	Prepared	Date/Time	
								Analyzed	Notes
1500236-01	B1-0	0.062	mg/L	0.050	1	B5B0323	02/12/2015	02/13/15 09:39	
1500236-09	B5-0	0.088	mg/L	0.050	1	B5B0323	02/12/2015	02/13/15 09:41	



## Certificate of Analysis

Geocon Consultants, Inc.  
 6671 Brisa Street  
 Livermore, CA 94550

Project Number : BOOKER / 17 BRIDGES, E8721-02-22

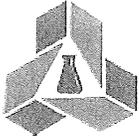
Report To : Chris Giuntoli

Reported : 02/13/2015

### QUALITY CONTROL SECTION

#### TCLP Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
<b>Batch B5B0323 - EPA 3010A_S</b>									
<b>Blank (B5B0323-BLK1)</b>									
Lead	ND	0.050							Prepared: 2/12/2015 Analyzed: 2/13/2015 NR
<b>Blank (B5B0323-BLK2)</b>									
Lead	ND	0.050							Prepared: 2/12/2015 Analyzed: 2/13/2015 NR
<b>LCS (B5B0323-BS1)</b>									
Lead	1.01417	0.050	1.00000		101	80 - 120			Prepared: 2/12/2015 Analyzed: 2/13/2015
<b>Duplicate (B5B0323-DUP1)</b>									
Lead	0.521494	0.050		0.413393	NR		23.1	20	Source: 1500299-16 Prepared: 2/12/2015 Analyzed: 2/13/2015 R
<b>Matrix Spike (B5B0323-MS1)</b>									
Lead	2.69747	0.050	2.50000	0.413393	91.4	77 - 121			Source: 1500299-16 Prepared: 2/12/2015 Analyzed: 2/13/2015
<b>Matrix Spike Dup (B5B0323-MSD1)</b>									
Lead	2.89100	0.25	2.50000	0.413393	99.1	77 - 121	6.93	20	Source: 1500299-16 Prepared: 2/12/2015 Analyzed: 2/13/2015 D5



## Certificate of Analysis

Geocon Consultants, Inc.

Project Number : BOOKER / 17 BRIDGES, E8721-02-22

6671 Brisa Street

Report To : Chris Giuntoli

Livermore , CA 94550

Reported : 02/13/2015

### Notes and Definitions

R	RPD value outside acceptance criteria. Calculation is based on raw values.
D5	Sample diluted due to failing internal standard in the original run.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

#### Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.



**EMSL Analytical, Inc**

464 McCormick Street, San Leandro, CA 94577  
Phone/Fax: (510) 895-3675 / (510) 895-3680  
<http://www.EMSL.com> [sanleandrolab@emsl.com](mailto:sanleandrolab@emsl.com)

EMSL Order: 091500957  
CustomerID: GECN21  
CustomerPO: E8721-02-22  
ProjectID: E8721-02-xx

Attn: **Chris Giuntoli**  
**Geocon Consultants, Inc.**  
**6671 Brisa Street**  
**Livermore, CA 94550**

Phone: (925) 371-5900  
Fax: (925) 371-5915  
Received: 01/21/15 9:00 AM  
Analysis Date: 2/3/2015  
Collected: 1/19/2015

Project: E8721-02-22

**Test Report: PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling) Level A for 0.25% Target Analytical Sensitivity**

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B8-2 091500957-0008		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected

Analyst(s)  
Adam C. Fink (8)

Chris Dojlidko, Laboratory Manager  
or other approved signatory

This report relates only to the samples listed above and may not be reproduced except in full, without EMSL's written approval. 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 is not responsible for sample collection activities or method limitations. Some samples may contain asbestos fibers below the resolution limit of PLM. EMSL recommends that samples reported as none detected or less than the limit of detection undergo additional analysis via TEM. Samples received in good condition unless otherwise noted.  
Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from 02/03/2015 22:10:42



**Asbestos Chain of Custody**  
**EMSL Order Number (Lab Use Only):**

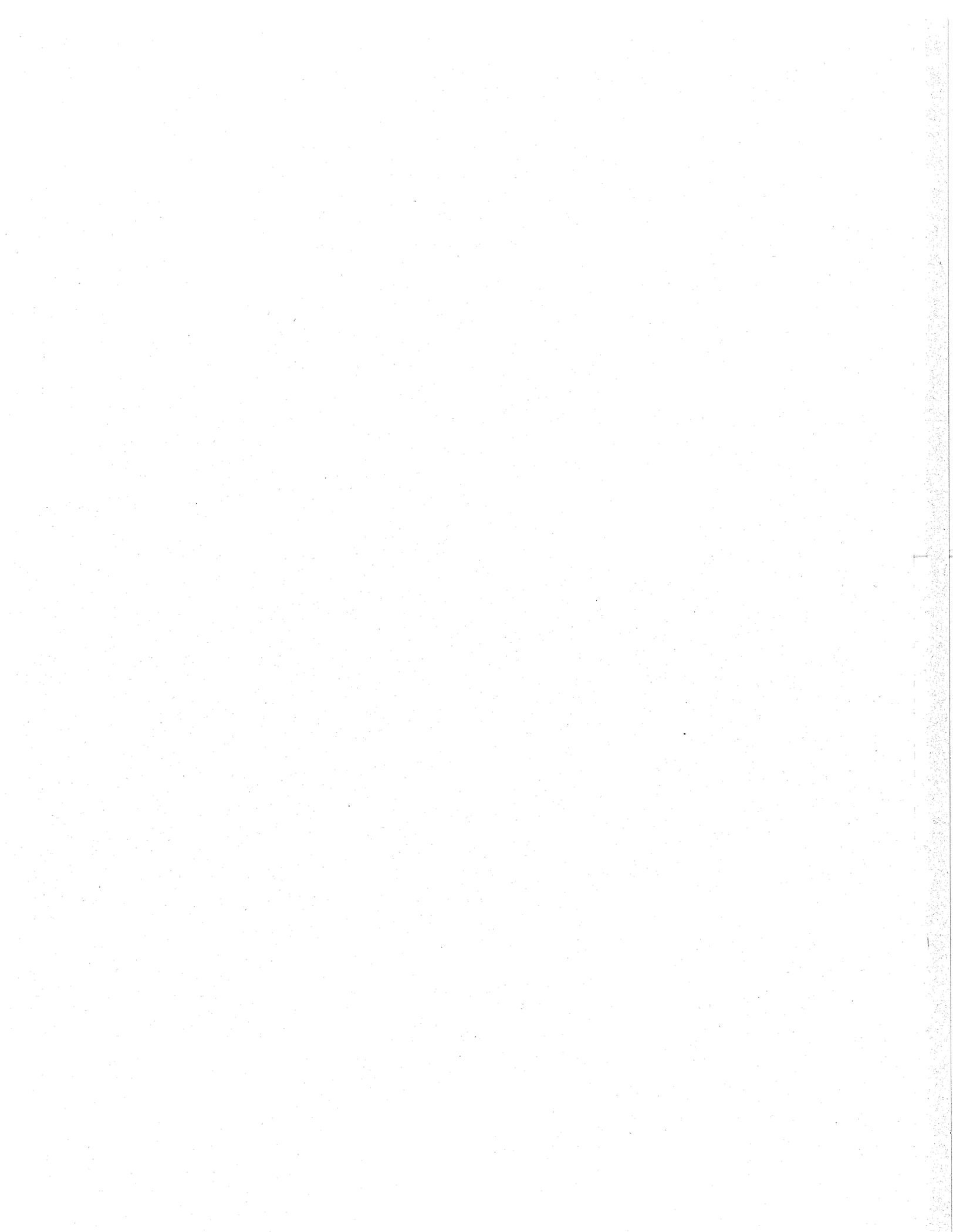
0915 00957

EMSL ANALYTICAL, INC.  
 2235 POLVOROSA DR., STE. 230  
 SAN LEANDRO, CA 94577  
 PHONE: (510) 895-3675  
 FAX: (510) 895-3680

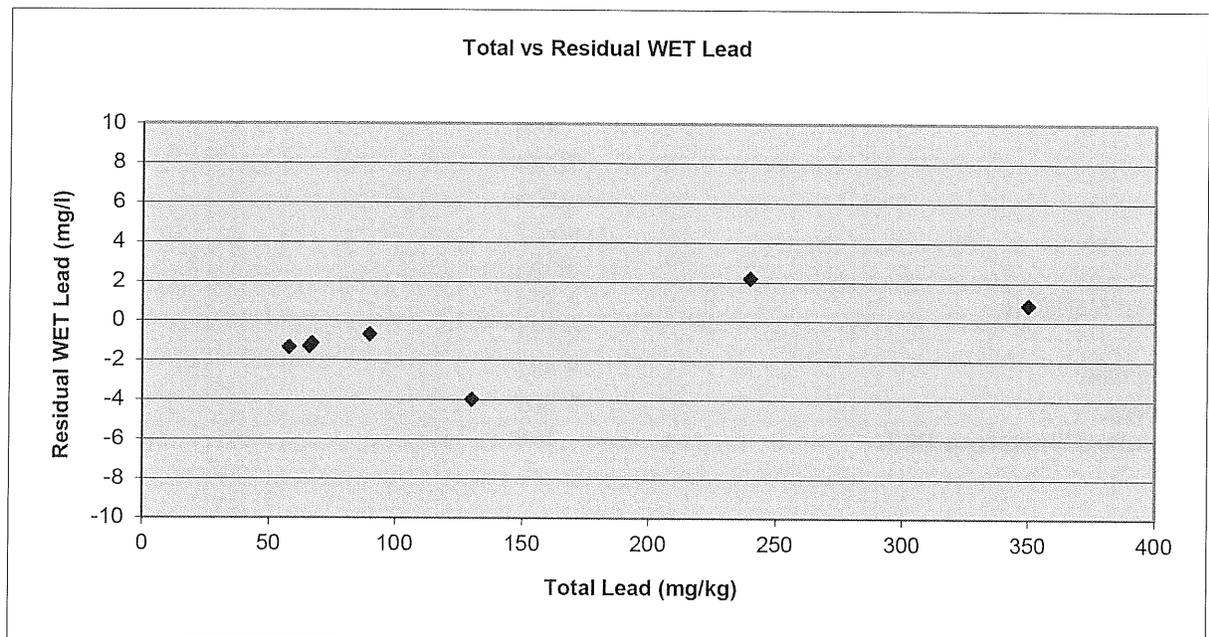
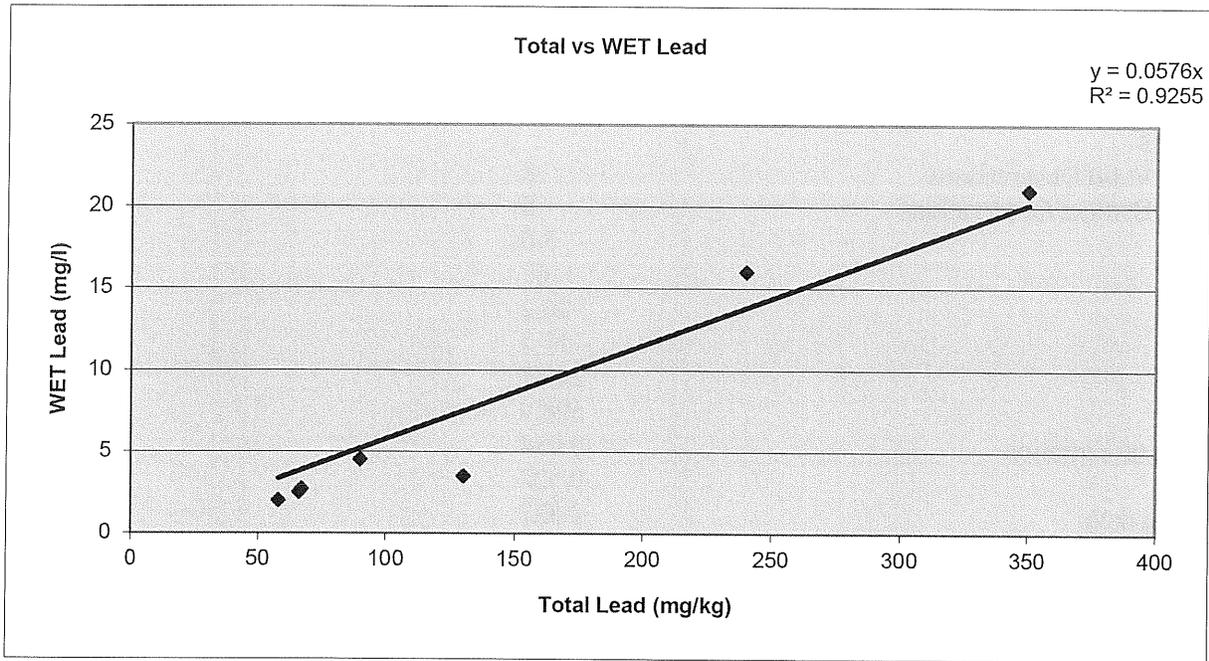
Company : <b>GEDCON</b>		EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different <small>If Bill to is Different note instructions in Comments**</small>	
Street: <b>0671 BRISA ST</b>		<i>Third Party Billing requires written authorization from third party</i>	
City: <b>LIVERMORE</b>	State/Province: <b>CA</b>	Zip/Postal Code: <b>94550</b>	Country:
Report To (Name): <b>CHRIS GIUNTOLI</b>		Fax #:	
Telephone #: <b>925-371-5900</b>		Email Address: <b>GIUNTOLI@GEDCONINC.COM</b>	
Project Name/Number: <b>E8721-02-22</b>		<b>E BEADLE@GEDCONINC.COM</b>	
Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email <input type="checkbox"/> Purchase Order:		U.S. State Samples Taken:	
<b>Turnaround Time (TAT) Options* - Please Check</b>			
<input type="checkbox"/> 3 Hour <input type="checkbox"/> 6 Hour <input type="checkbox"/> 24 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input type="checkbox"/> 1 Week <input checked="" type="checkbox"/> 2 Week			
<small>*For TEM Air 3 hours/6 hours, please call ahead to schedule. *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.</small>			
<b>PCM - Air</b> <input type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA		<b>TEM - Air</b> <input type="checkbox"/> 4-4.5hr TAT (AHERA only) <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> EPA Level II <input type="checkbox"/> ISO 10312	
<b>PLM - Bulk (reporting limit)</b> <input type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) <input type="checkbox"/> NYS 198.1 (friable in NY) <input type="checkbox"/> NYS 198.6 NOB (non-friable-NY) <input type="checkbox"/> NIOSH 9002 (<1%)		<b>TEM - Bulk</b> <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> NYS NOB 198.4 (non-friable-NY) <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM Mass Analysis-EPA 600 sec. 2.5 <b>TEM - Water: EPA 100.2</b> Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking	
		<b>TEM - Dust</b> <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167) <b>Soil/Rock/Vermiculite</b> <input checked="" type="checkbox"/> PLM CARB 435 - A (0.25% sensitivity) <input type="checkbox"/> PLM CARB 435 - B (0.1% sensitivity) <input type="checkbox"/> TEM CARB 435 - B (0.1% sensitivity) <input type="checkbox"/> TEM CARB 435 - C (0.01% sensitivity) <input type="checkbox"/> EPA Protocol (Semi-Quantitative) <input type="checkbox"/> EPA Protocol (Quantitative) <b>Other:</b> <input type="checkbox"/>	
<input type="checkbox"/> Check For Positive Stop - Clearly Identify Homogenous Group			
Samplers Name: <b>CHRIS GIUNTOLI</b>		Samplers Signature: <i>Chris Giuntoli</i>	
Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
B1-2	SOIL		1/19/15
B2-2	↓		↓
B3-2			
B4-2			
B5-2			
B6-2			
B7-2			
B8-2			
Client Sample # (s):		Total # of Samples: <b>8</b>	
Relinquished (Client): <i>Chris Giuntoli</i>		Date: <b>1/20/15</b>	Time: <b>1700</b>
Received (Lab): <b>AO</b>		Date: <b>1/21/15</b>	Time: <b>9:00</b>
Comments/Special Instructions:  <b>FE</b>			

APPENDIX

**B**



Sample ID	Sample Depth (feet)	Total Lead (mg/kg)	WET Lead (mg/l)	Residual WET Lead (mg/l)	Squared Residual WET Lead (mg/l)
B2-0	0 to 0.5	90	4.5	-0.68	0.46
B5-0	0 to 0.5	350	21	0.85	0.72
B1-2	2 to 2.5	67	2.7	-1.16	1.34
B6-0	0 to 0.5	66	2.5	-1.30	1.69
B2-2	2 to 2.5	58	2.0	-1.34	1.79
B1-0	0 to 0.5	240	16	2.18	4.76
B8-0	0 to 0.5	130	3.5	-3.98	15.88



**Pb - 0 to 0.5**

Number of Valid Observations	8
Number of Distinct Observations	8
Minimum	5.3
Maximum	350
Mean	115
Median	78
SD	122.5
Variance	14998
Coefficient of Variation	1.068
Skewness	1.219
Mean of log data	4.037
SD of log data	1.454
<b>90% Standard Bootstrap UCL</b>	<b>166</b>
<b>95% Standard Bootstrap UCL</b>	<b>181</b>

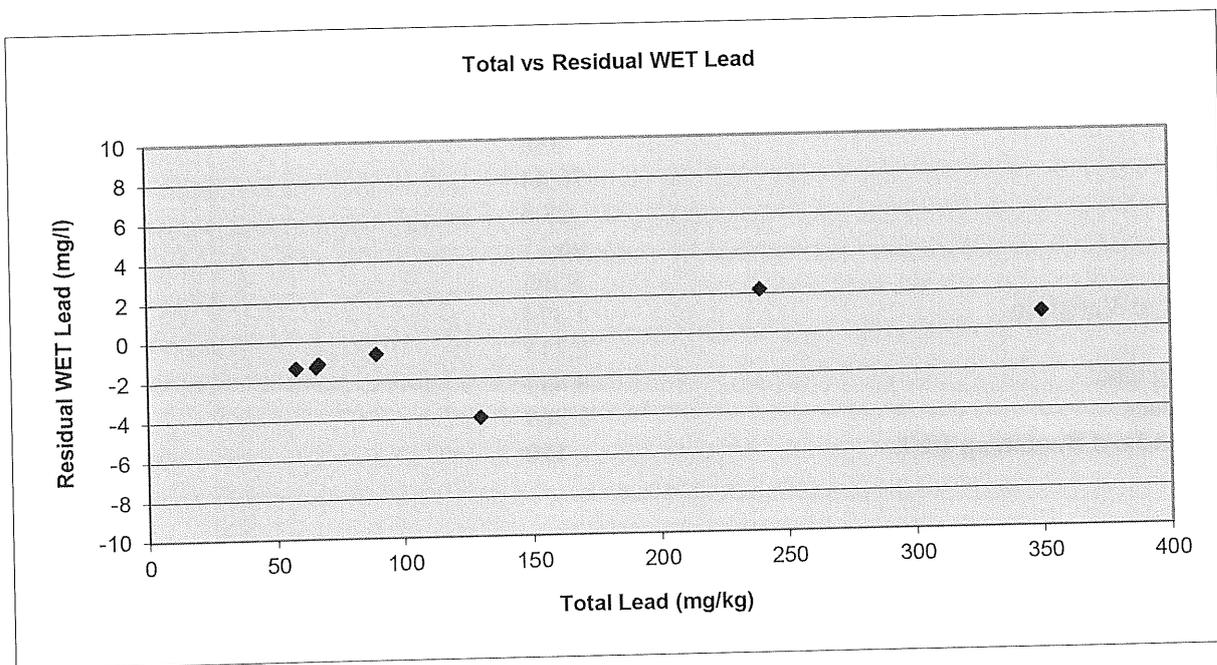
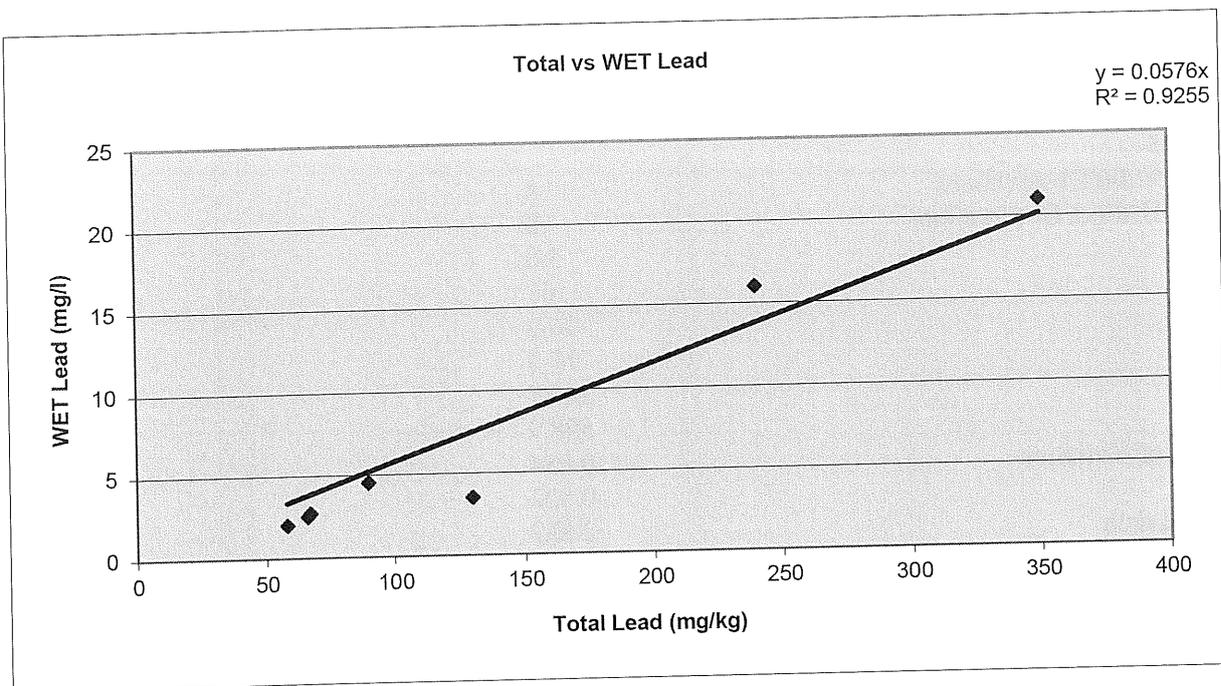
**Pb - 2 to 2.5**

Number of Valid Observations	8
Number of Distinct Observations	8
Minimum	5.0
Maximum	67
Mean	26.2
Median	17.3
SD	24.47
Variance	598.9
Coefficient of Variation	0.934
Skewness	0.922
Mean of log data	2.827
SD of log data	1.033
<b>90% Standard Bootstrap UCL</b>	<b>36.8</b>
<b>95% Standard Bootstrap UCL</b>	<b>39.8</b>

**Pb - Site**

Number of Valid Observations	16
Number of Distinct Observations	16
Minimum	5
Maximum	350
Mean	70.44
Median	28.5
SD	96.77
Variance	9365
Coefficient of Variation	1.374
Skewness	2.118
Mean of log data	3.432
SD of log data	1.369
<b>95% Standard Bootstrap UCL</b>	<b>110</b>

Sample ID	Sample Depth (feet)	Total Lead (mg/kg)	WET Lead (mg/l)	Residual WET Lead (mg/l)	Squared Residual WET Lead (mg/l)
B2-0	0 to 0.5	90	4.5	-0.68	0.46
B5-0	0 to 0.5	350	21	0.85	0.72
B1-2	2 to 2.5	67	2.7	-1.16	1.34
B6-0	0 to 0.5	66	2.5	-1.30	1.69
B2-2	2 to 2.5	58	2.0	-1.34	1.79
B1-0	0 to 0.5	240	16	2.18	4.76
B8-0	0 to 0.5	130	3.5	-3.98	15.88



**Pb - 0 to 0.5**

Number of Valid Observations	8
Number of Distinct Observations	8
Minimum	5.3
Maximum	350
Mean	115
Median	78
SD	122.5
Variance	14998
Coefficient of Variation	1.068
Skewness	1.219
Mean of log data	4.037
SD of log data	1.454
<b>90% Standard Bootstrap UCL</b>	<b>166</b>
<b>95% Standard Bootstrap UCL</b>	<b>181</b>

**Pb - 2 to 2.5**

Number of Valid Observations	8
Number of Distinct Observations	8
Minimum	5.0
Maximum	67
Mean	26.2
Median	17.3
SD	24.47
Variance	598.9
Coefficient of Variation	0.934
Skewness	0.922
Mean of log data	2.827
SD of log data	1.033
<b>90% Standard Bootstrap UCL</b>	<b>36.8</b>
<b>95% Standard Bootstrap UCL</b>	<b>39.8</b>

**Pb - Site**

Number of Valid Observations	16
Number of Distinct Observations	16
Minimum	5
Maximum	350
Mean	70.44
Median	28.5
SD	96.77
Variance	9365
Coefficient of Variation	1.374
Skewness	2.118
Mean of log data	3.432
SD of log data	1.369
<b>95% Standard Bootstrap UCL</b>	<b>110</b>