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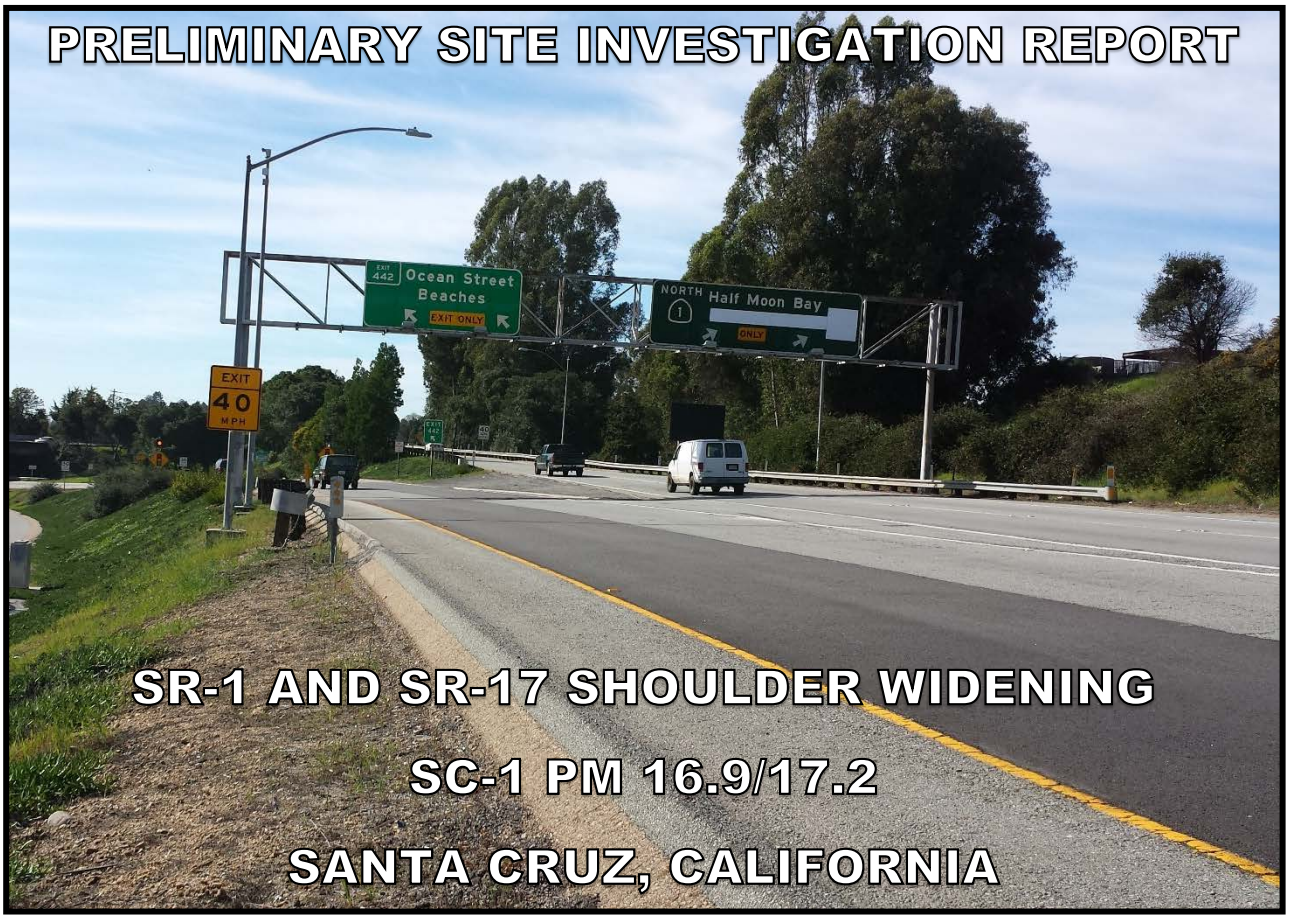
Preliminary Site Investigation Report

Manufacturer Drawing for Alternative Flared Terminal System

Water Conservation

PRELIMINARY SITE INVESTIGATION REPORT



SR-1 AND SR-17 SHOULDER WIDENING

SC-1 PM 16.9/17.2

SANTA CRUZ, CALIFORNIA

PREPARED FOR:
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DISTRICT 5
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GEOCON PROJECT NO. S9800-02-46
CALTRANS EA 05-1A8701
CALTRANS PROJECT # 05-1200-0034-1

MARCH 2015

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REPORT LIMITATIONS

This report has been prepared exclusively for the State of California Department of Transportation (Caltrans) District 5. 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.

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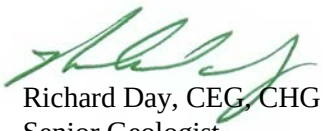

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PRELIMINARY SITE INVESTIGATION REPORT

1.0 INTRODUCTION

This Preliminary Site Investigation Report for the State Route 1 (SR-1) and State Route 17 (SR-17) Shoulder Widening project in Santa Cruz County, California was prepared by Geocon Consultants, Inc. under California Department of Transportation (Caltrans) Contract No. 06A1895 and Task Order No. 46 (TO-46), EA 05-1A8701.

1.1 Project Description and Proposed Improvements

The project proposes to widen the shoulders north and south of the existing SR-1/SR-17 separation from the northbound SR-1 merge with SR-17 to the northbound SR-1 Ocean Street off-ramp in Santa Cruz, California. Work will take place in Santa Cruz, California, and within Caltrans right-of-way. The project location is depicted on the Vicinity Map, Figure 1. The Site Plan (Figure 2) shows the boring locations.

1.2 General Objectives

The purpose of the site investigation was to evaluate concentrations of California Assessment Manual 17 (CAM 17) metals, particularly aerially-deposited lead (ADL), in soil 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 reuse and disposal options.

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 10 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 10 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 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 DTSC Variance

The DTSC issued a statewide Variance effective July 1, 2009, regarding the management of ADL-impacted soils within Caltrans right-of-way. Under the Variance, soil that is classified as a non-RCRA hazardous waste, based primarily on ADL content, may be suitable for reuse within Caltrans right-of-way. ADL soil that is classified as a RCRA hazardous waste is not eligible for reuse under the Variance and must be disposed of as a RCRA hazardous waste (Caltrans Type Z-3).

ADL soil reused under the Variance must always be at least five feet above the highest groundwater elevation and, depending on lead concentrations, must be covered with at least one foot of non-hazardous soil or a pavement structure. The ADL soil may not be placed in areas where it might contact groundwater or surface water (such as streams and rivers), and must be buried in locations that are protected from erosion that may result from storm water run-on and run-off.

Review of the statewide Variance indicates the following conditions regarding the reuse and management of ADL-impacted soil as fill material for construction and maintenance operations. If ADL soil meets the Variance criteria but is not intended to be reused within Caltrans right-of-way, then the excavated soil must be disposed of as a California hazardous waste (Caltrans Type Z-2). A copy of the Variance is presented as Appendix A.

Caltrans Type Y-1: ADL soil exhibiting a total lead concentration less than or equal to 1,411 milligrams per kilogram (mg/kg), a DI-WET (WET using deionized water as extractant) lead concentration less than or equal to 1.5 milligrams per liter (mg/l), and a pH value greater than or equal to 5.5 may be reused within the same Caltrans corridor and must be covered with at least one foot of non-hazardous soil.

Caltrans Type Y-2: ADL soil exhibiting a total lead concentration less than or equal to 1,411 mg/kg, a DI-WET lead concentration less than or equal to 1.5 mg/l, and a pH value greater than 5 and less than 5.5 may be reused within the same Caltrans corridor and must be covered and protected from infiltration by a pavement structure.

ADL soil exhibiting a total lead concentration less than or equal to 1,411 mg/kg, a DI-WET lead concentration greater than 1.5 mg/l and less than or equal to 150 mg/l, and a pH value greater than five may be reused within the same Caltrans corridor and must be covered and protected from infiltration by a pavement structure.

ADL soil exhibiting a total lead concentration greater than 1,411 mg/kg and less than or equal to 3,397 mg/kg, a DI-WET lead concentration less than or equal to 150 mg/l, and a pH value greater than five may be reused within the same Caltrans corridor and must be covered and protected from infiltration by a pavement structure.

Caltrans Type Z-2: ADL soil exhibiting a total lead concentration greater than 3,397 mg/kg, a DI-WET lead concentration greater than 150 mg/l, or a pH value less than or equal to five is not eligible for reuse under the Variance and must be disposed of as a California hazardous waste.

Caltrans Type Z-3: ADL soil exhibiting a TCLP lead concentration greater than or equal to 5 mg/l is not eligible for reuse under the Variance and must be disposed of as a RCRA hazardous waste.

2.3 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 (≤3m 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 Table 3 for comparative purposes.

3.0 SCOPE OF SERVICES

The scope of services performed under TO-46, EA 05-1A8701 included the following:

3.1 Pre-Field Activities

- Prepared the Health and Safety Plan, dated February 2015.
- Retained the services of Statewide Traffic and Safety to provide traffic control services during the field investigation.
- Retained the services of Advanced Technology Laboratories, Signal Hill, California (ATL), a Caltrans-approved and California-certified analytical laboratory, to perform the chemical analyses of soil samples.

3.2 Field Activities

The field investigation was performed on February 11, 2015, by Geocon staff. Eleven soil borings were advanced at the project location using hand-auger drilling techniques. The borings were advanced to a maximum depth of 2.5 feet. Samples were collected at depths of 0, 1, and 2 feet. The soil samples were transported to ATL for analysis under standard chain-of-custody (COC) documentation.

4.0 INVESTIGATIVE METHODS

4.1 Sampling Procedures

Samples were collected using a hand-auger. The 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 for transportation to the laboratory. Soil borings were backfilled to surface with soil cuttings. Groundwater was not encountered during the investigation. Boring coordinates are presented in Table 1.

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 ATL under standard turnaround-time (TAT) per the Task Order Manager. The laboratory reports and COC documentation are included in Appendix B.

The samples were analyzed as follows:

- 5 samples for CAM 17 metals using EPA Test Methods 6010 ICAP and 7471.
- 28 samples for total lead using EPA Test Method 6010 ICAP.
- 14 samples with total lead concentrations equal to or exceeding 50 mg/kg (i.e. equal to or exceeding 10 times the STLC of 5.0 mg/l) were further analyzed for WET lead.
- 8 samples with WET lead concentrations equal to or exceeding 5 mg/l (i.e. equal to or exceeding the STLC of 5.0 mg/l) and were further analyzed for DI-WET lead.
- 8 samples with WET lead concentrations equal to or 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.
- 9 samples for pH using EPA Test Method 9045C.

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 10 samples, batch of samples or type of matrix, whichever was more frequent.
- One sample analyzed in duplicate for every 10 samples, batch of samples or type of matrix, whichever was more frequent.
- One spiked sample for every 10 samples, batch of samples or type of matrix; whichever was more frequent, with spike made at 10 times the detection limit or at the analyte level.

Prior to submitting the samples to the laboratory, 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 moist, brown clayey silt to 1 foot, and hard, brown, silty sand to 2.5 feet. In the areas near the SR-17 overcrossing (borings B4 and B11), the soil was compacted and contained gravel. Road debris, including trash and vehicle parts, was observed to a greater extent on the ground surface near borings B4, B5, and B11. Groundwater was not encountered in the borings.

5.2 Laboratory Analytical Results

The analytical results are summarized in Tables 2 and 3 and are summarized below:

- Metals antimony, beryllium, cadmium, mercury, selenium, silver, and thallium were not detected above their respective laboratory reporting limits.
- Total lead was reported at concentrations ranging from 1.3 mg/kg to 930 mg/kg.
- WET lead was reported at concentrations ranging from 1.2 mg/l to 56 mg/l.
- DI-WET lead was reported at concentrations ranging from <1.0 mg/l to 3.1 mg/l.
- TCLP lead was reported at concentrations ranging from <0.050 mg/l to 0.57 mg/l.
- Remaining CAM 17 metals were reported in the samples at total concentrations below 10 times their respective STLCs.
- pH ranged between 4.0 and 7.5 pH units.

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. Samples and internal laboratory QA/QC samples showed acceptable recoveries and relative percent differences (RPDs). Based on this limited data review, no additional qualifications of the soil data are necessary, and the data are of sufficient quality for the purposes of this report.

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 C. The following table presents the calculated UCLs and statistics for the site:

Northbound SR-17 Shoulder (Borings B1 to B7)

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	503	554	322	24	930
1 to 1.5	77.1	86.5	42.3	1.9	210
2 to 2.5	4.62	4.95	3.57	1.6	8.4

SR-17 Median (Borings B8 to B11)

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	NC	NC	208	60	390
1 to 1.5	NC	NC	140	1.3	460
2 to 2.5	NC	NC	19.4	2.0	61

NC – Not calculated due to insufficient data population

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 14 (*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 0.9226, which yields a corresponding *correlation coefficient* (*r*) of 0.9605.

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 $y = 0.0572(x)$, 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 C. The predicted WET lead concentrations are summarized in Tables 4a and 4b.

6.0 CONCLUSIONS

6.1 Lead in Soil

6.1.1 Northbound SR-17 Shoulder (borings B1 to B7)

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 4a.

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 1 ft	503	**28.8**	554	**Hazardous**
Underlying soil (1 to 2.5 ft)	*53*	*3.0*	*59*	*Non-hazardous*
0 to 2 ft	290	**16.6**	320	**Hazardous**
Underlying soil (2 to 2.5 ft)	4.6	0.3	5.0	*Non-hazardous*
0 to 2.5 ft	233	**13.3**	257	**Hazardous**

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 1 foot would be classified as California hazardous waste. Based on the TCLP lead results, excavated soil would not be classified as a RCRA hazardous waste. Based on the reported DI-WET and pH results, soil excavated to 1 foot may be reused (as Caltrans Type Y-1) within Caltrans right-of-way in accordance with the DTSC Variance. Underlying soil (i.e., deeper than 1 foot) would be classified as non-hazardous based on lead results.

6.1.2 SR-17 Median (borings B8 to B11)

The following table summarizes the predicted waste classification for excavated soil based on the calculated weighted averages of the total lead and predicted WET lead concentrations for data collected from the site. Weighted averages are calculated by using the maximum 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 in the following table and in Table 4b.

Excavation Depth	Maximum Total Lead (mg/kg)	Predicted WET Lead (mg/l)	Waste Classification
0 to 1 ft	390	**22.3**	**Hazardous**
Underlying soil (1 to 2.5 ft)	*327*	***18.7***	***Hazardous***
0 to 2 ft	425	**24.3**	**Hazardous**
Underlying soil (2 to 2.5 ft)	61	3.5	*Non-hazardous*
0 to 2.5 ft	352	**20.1**	**Hazardous**

Based on the data presented in the above table, excavated soil to a depth of 2 feet would be classified as California hazardous waste. Based on the TCLP lead results, excavated soil would not be classified as a RCRA hazardous waste. Based on the reported DI-WET and pH results, soil excavated from may be reused (as Caltrans Type Y-1) within Caltrans right-of-way in accordance with the DTSC Variance. Underlying soil (i.e., deeper than 2 feet) would be classified as non-hazardous based on lead content.

6.2 Remaining CAM 17 Metals in Soil

Remaining CAM 17 metals were reported in the samples at total concentrations below 10 times their respective STLCs; therefore, soil would be classified as non-hazardous based on remaining CAM 17 metals concentrations.

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. Non-parametric bootstrap techniques were used to calculate the 95% UCLs of the arithmetic means of the total arsenic and lead concentrations. The bootstrap test results are included in Appendix C. ESLs, UCL, 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[1]	Published Background Range [1]
Arsenic	4.0	3.82	0.39	1.6	10	3.5	0.6 to 11.0
Lead	930	187	80	320	320	23.9	12.4 to 97.1

Concentrations reported in mg/kg
[1] Kearney Foundation of Soil Science, March 1996

The 95% UCL arsenic concentration is greater than the residential and commercial land use ESLs; however, it is less than 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.

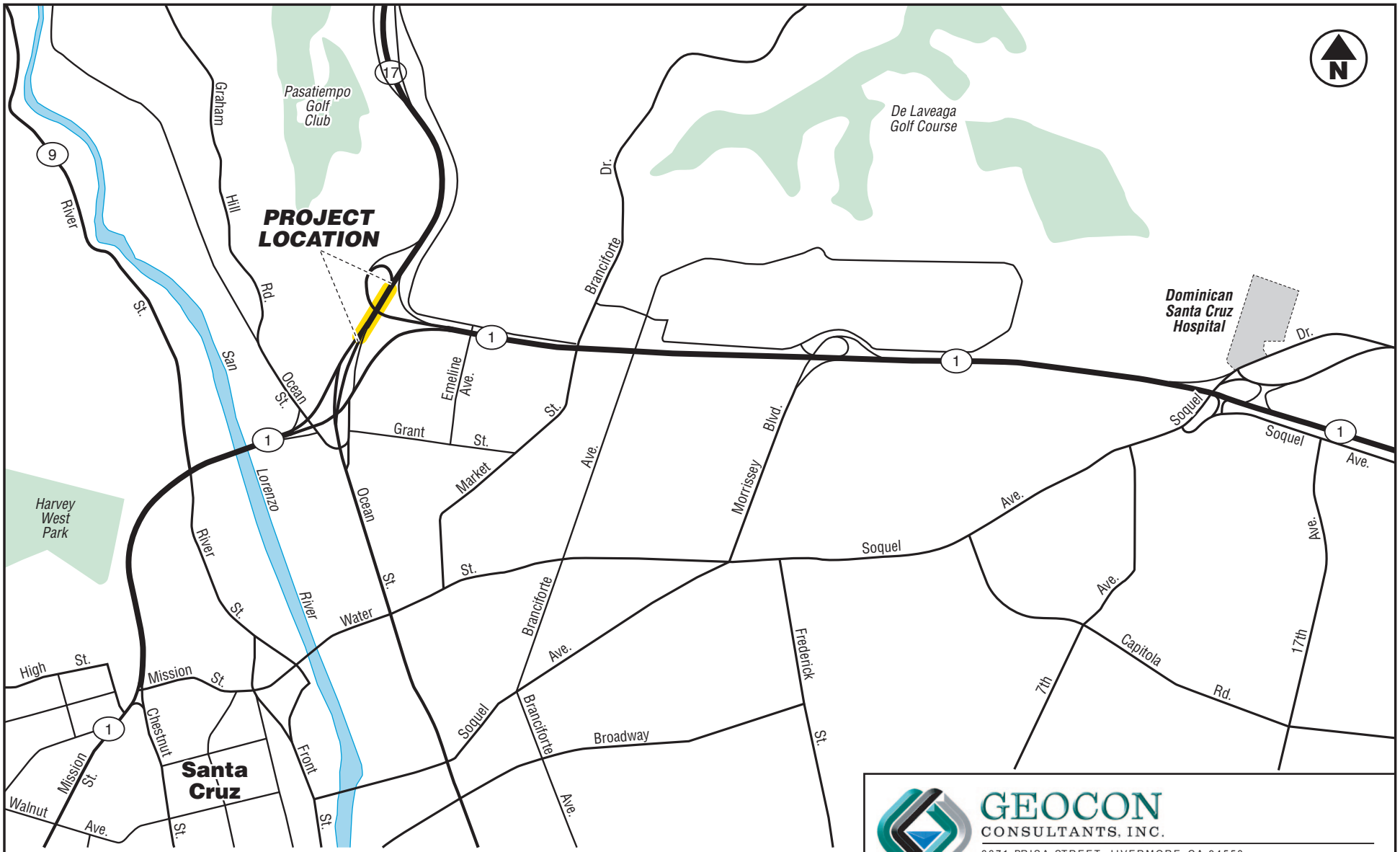
The 95% UCL lead concentration is above the residential land use ESL and the published background range; however, it is below the commercial land use ESL and the construction exposure ESL.

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 Worker Protection

The contractor(s) should prepare a project-specific health and safety plan to prevent or minimize worker exposure to metals in soil. The plan should include protocols for environmental and personnel monitoring, requirements for personal protective equipment, and other health and safety protocols and procedures for the handling of soil.



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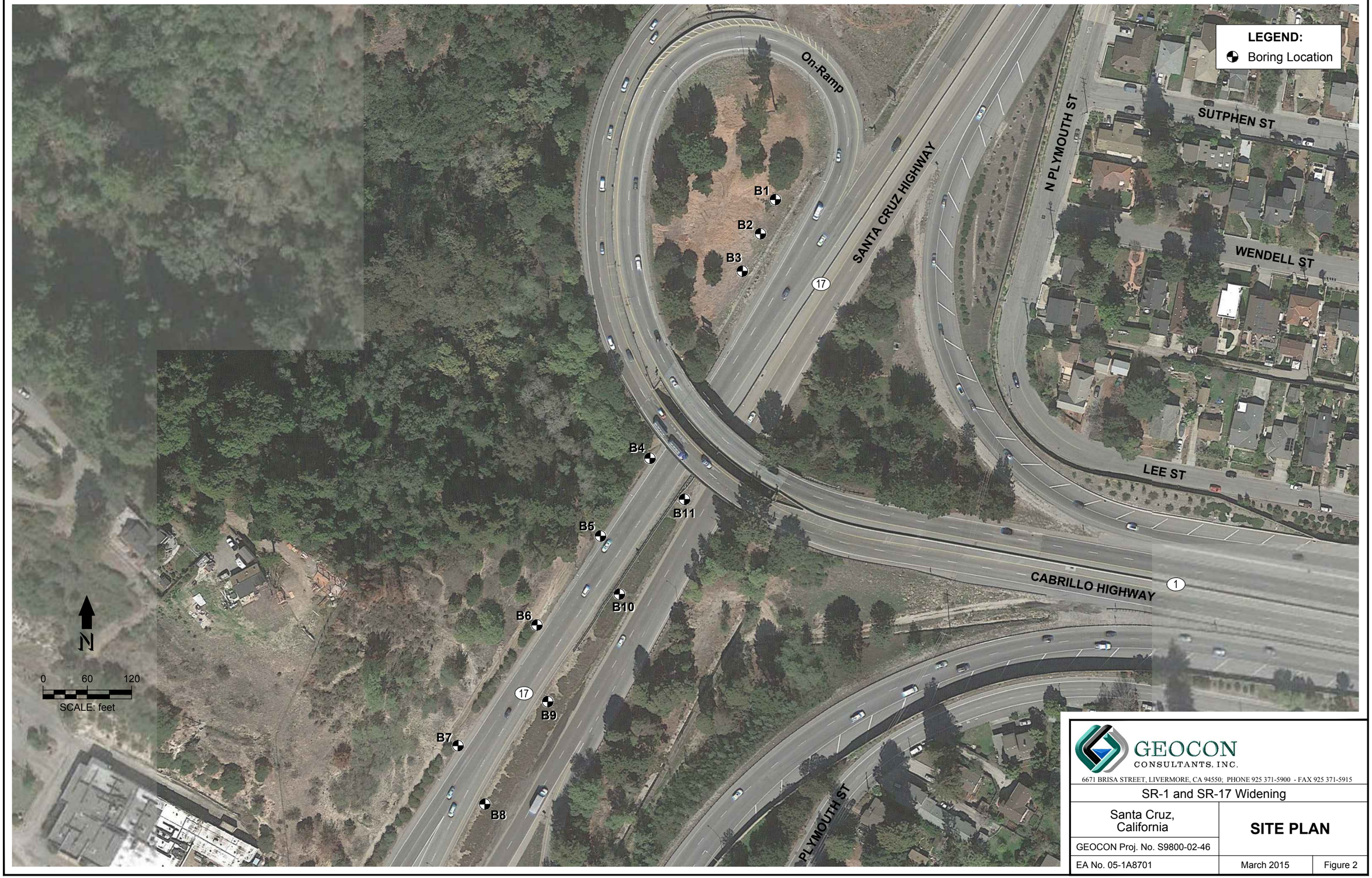
SR-1 and SR-17 Widening

Santa Cruz, California

VICINITY MAP

GEOCON Proj. No. S9800-02-46

Task Order No. 46 | March 2015 | Figure 1



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SR-1 and SR-17 Widening

Santa Cruz, California

SITE PLAN

GEOCON Proj. No. S9800-02-46

EA No. 05-1A8701 | March 2015 | Figure 2

SITE0215

TABLE 1
Boring Coordinates
SR-1 and SR-17 Widening
Santa Cruz, California

Boring	Latitude	Longitude
B1	36.990753	-122.021599
B2	36.990627	-122.021668
B3	36.990487	-122.021751
B4	36.989795	-122.022181
B5	36.989507	-122.022410
B6	36.989177	-122.022706
B7	36.988732	-122.023071
B8	36.988515	-122.022948
B9	36.988894	-122.022655
B10	36.989293	-122.022322
B11	36.989643	-122.022019

TABLE 2
Summary of Lead and pH Results
SR-1 and SR-17 Widening
Santa Cruz, California

Sample ID	Sample Depth (feet)	Total Lead (mg/kg)	WET Lead (mg/l)	DI-WET Lead (mg/l)	TCLP Lead (mg/l)	pH
B1-0	0 to 0.5	100	4.6	---	---	---
B1-1	1 to 1.5	2.7	---	---	---	---
B1-2	2 to 2.5	3.1	---	---	---	---
B2-0	0 to 0.5	97	4.6	---	---	---
B2-1	1 to 1.5	5.7	---	---	---	4.0
B2-2	2 to 2.5	4.6	---	---	---	---
B3-0	0 to 0.5	180	7.6	<1.0	<0.050	7.5
B3-1	1 to 1.5	64	3.5	---	---	---
B3-2	2 to 2.5	2.8	---	---	---	---
B4-0	0 to 0.5	880	55	3.1	0.57	5.6
B4-1	1 to 1.5	5.4	---	---	---	---
B4-2	2 to 2.5	8.4	---	---	---	---
B5-0	0 to 0.5	930	56	1.2	0.29	---
B5-1	1 to 1.5	210	14	<1.0	0.18	5.9
B5-2	2 to 2.5	1.6	---	---	---	---
B6-0	0 to 0.5	24	---	---	---	---
B6-1	1 to 1.5	1.9	---	---	---	6.3
B6-2	2 to 2.5	1.8	---	---	---	---
B7-0	0 to 0.5	43	---	---	---	---
B7-1	1 to 1.5	6.1	---	---	---	---
B7-2	2 to 2.5	2.7	---	---	---	---
B8-0	0 to 0.5	190	11	<1.0	0.13	5.4
B8-1	1 to 1.5	97	3.5	---	---	---
B8-2	2 to 2.5	61	1.2	---	---	---
B9-0	0 to 0.5	60	2.6	---	---	---
B9-1	1 to 1.5	1.3	---	---	---	6.5
B9-2	2 to 2.5	2.0	---	---	---	---
B10-0	0 to 0.5	190	11	<1.0	0.075	6.4
B10-1	1 to 1.5	2.1	---	---	---	---
B10-2	2 to 2.5	12	---	---	---	---

TABLE 2
Summary of Lead and pH Results
SR-1 and SR-17 Widening
Santa Cruz, California

Sample ID	Sample Depth (feet)	Total Lead (mg/kg)	WET Lead (mg/l)	DI-WET Lead (mg/l)	TCLP Lead (mg/l)	pH
B11-0	0 to 0.5	390	26	<1.0	0.11	6.5
B11-1	1 to 1.5	460	9.9	<1.0	0.21	---
B11-2	2 to 2.5	2.4	---	---	---	---
Hazardous Waste Criteria						
	TTLC (mg/kg)	1,000	---	---	---	---
	STLC (mg/l)	---	5.0	---	---	---
	TCLP (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
DI-WET = Waste Extraction Test using deionized water as the extraction fluid
TCLP = Toxicity Characteristic Leaching Procedure
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration

TABLE 3
Summary of CAM 17 Metals Results
SR-1 and SR-17 Widening
Santa Cruz, 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	1.8	62	<1.0	<1.0	8.3	3.0	20	100	<0.10	1.4	7.0	<1.0	<1.0	<1.0	12	100
B4-1	1 to 1.5	<2.0	4.0	88	<1.0	<1.0	8.8	<1.0	5.2	5.4	<0.10	2.4	4.4	<1.0	<1.0	<1.0	9.2	18
B7-0	0 to 0.5	<2.0	3.7	52	<1.0	<1.0	7.1	2.1	9.5	43	<0.10	<1.0	4.6	<1.0	<1.0	<1.0	11	46
B9-1	1 to 1.5	<2.0	1.4	45	<1.0	<1.0	9.4	<1.0	2.4	1.3	<0.10	1.7	3.5	<1.0	<1.0	<1.0	11	14
B10-2	2 to 2.5	<2.0	4.0	57	<1.0	<1.0	10	1.3	6.9	12	<0.10	<1.0	4.8	<1.0	<1.0	<1.0	19	23
ESLs																		
Residential Land Use		20	0.39	750	4.0	12	1,000	23	230	80	6.7	40	150	10	20	0.78	200	600
Commercial/Industrial Land Use		40	1.6	1,500	8.0	12	2,500	80	230	320	10	40	150	10	40	10	200	600
Construction Worker Exposure		120	10	61,000	180	110	460,000*	49	12,000	320	27	1,500	6,100	1,500	1,500	3.1	1,500	93,000
Hazardous Waste Criteria																		
TTLC (mg/kg)		500	500	10,000	75	100	2,500	8,000	2,500	1,000	20	3,500	2,000	100	500	700	2,400	5,000
STLC (mg/l)		15	5.0	100	0.75	1.0	5.0	80	25	5.0	0.2	350	20	1.0	5.0	7.0	24	250
TCLP (mg/l)		---	5.0	100	---	1.0	6.0	---	---	5.0	0.2	---	---	1.0	5.0	---	---	---

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 WET analysis
< = Analyte was not detected above the laboratory reporting limit
ESLs = Environmental Screening Levels, Tables A and K-3, SFRWQCB, December 2013
TTLC = total threshold limit concentration
STLC = soluble threshold limit concentration
TCLP = toxicity characteristic leaching procedure

TABLE 4a
Summary of Lead Statistical Analysis
SR-1 and SR-17 Widening
Santa Cruz, California

NB SR-17 Shoulder (borings B1 to B7)

TOTAL LEAD

	90% UCL	95% UCL
0 to 0.5 ft	503	554
1 to 1.5 ft	77.1	86.5
2 to 2.5 ft	4.62	4.95

EXCAVATION SCENARIOS

	Weighted Averages		
	90% UCL		95% UCL
Excavation Depth	Total Lead (mg/kg)	WET Lead* (mg/l)	Total Lead (mg/kg)
0 to 1 ft	503	28.8	554
Underlying Soil (1 to 2 ft)	*53*	*3.0*	*59*
0 to 2 ft	290	16.6	320
Underlying Soil (2 to 2.5 ft)	*4.6*	*0.3*	*5.0*
0 to 2.5 ft	233	13.3	257

Notes:
UCL = Upper Confidence Limit (90% UCL is applicable for waste classification; 95% UCL applicable for risk assessment)
mg/kg = milligrams per kilogram
mg/l = milligrams per liter
* = WET lead concentrations are predicted using slope of regression line,
where y = predicted WET lead and x = total lead.

Regression Line Slope: $y =$ 0.057 x

TABLE 4b
Summary of Lead Statistical Analysis
SR-1 and SR-17 Widening
Santa Cruz, California

SR-17 Median (borings B8 to B11)

TOTAL LEAD

	Maximum
0 ft	390
1 ft	460
2 ft	61

EXCAVATION SCENARIOS

	Weighted Averages	
Excavation Depth	**Maximum Total Lead (mg/kg)**	**WET Lead* (mg/l)**
0 to 1 ft	390	22.3
Underlying Soil (1 to 2.5 ft)	*327*	*18.7*
0 to 2 ft	425	24.3
Underlying Soil (2 to 2.5 ft)	*61*	*3.5*
0 to 2.5 ft	352	20.1

Notes:
mg/kg = milligrams per kilogram
mg/l = milligrams per liter
* = WET lead concentrations are predicted using slope of regression line, where y = predicted WET lead and x = total lead.

Regression Line Slope: $y = 0.057\ x$

APPENDIX A

Department of Toxic Substances Control

Matthew Rodriquez
Secretary for
Environmental Protection

Barbara A. Lee, Director
1001 "I" Street
P.O. Box 806
Sacramento, California 95812-0806

Edmund G. Brown Jr.
Governor

December 16, 2014

Ms. Katrina C. Pierce, Chief
Division of Environmental Analysis
California Department of Transportation
P.O. Box 942873, MS-27
Sacramento, CA 94273-0001

SUBJECT: SECOND EXTENSION OF STATEWIDE VARIANCE NO. V09HQSCD006 FOR CALTRANS' HANDLING OF AERIALLY DEPOSITED LEAD SOIL

Dear Ms. Pierce:

This letter is in response to the December 2, 2014, request from the California Department of Transportation (Caltrans), for an extension for Variance No. V09HQSCD006 (Variance).

The original Variance was issued on June 30, 2009, with an effective period of five years, such that it was set to expire on June 30, 2014. Caltrans requested an extension in May 2014 and received a six-month extension of the Variance to December 31, 2014. The Department of Toxic Substances Control (DTSC) will be unable to issue Caltrans a new five-year Variance before the current Variance extension expires on December 31, 2014. This letter hereby extends the effective date of Variance from December 31, 2014 to June 30, 2015. This extension enables Caltrans to proceed with already-scheduled highway improvement projects without interruption.

The Variance applies to Caltrans' management of soil contaminated by aerial deposition of lead from motor vehicle exhaust. Such soil, historically referred to as "aerially deposited lead (ADL) soil," occurs along many roadsides statewide, and must be appropriately handled by Caltrans in the course of highway improvement projects. For such soil that contains lead in concentrations exceeding state, but not federal, regulatory thresholds for hazardous waste, the

Variance waives specific hazardous waste management standards. In lieu of the standards waived, the Variance imposes alternate management standards (conditions) on Caltrans' soil handling activities, to ensure that the handling and relocation of the soil is conducted in a manner protective of human health and safety and the environment. The Variance applies to Caltrans' highway improvement projects in all Caltrans Districts.

If you have further questions regarding this Variance extension, please contact Mr. Bob Gipson, DTSC Project Manager, at (916) 327-4061.

Sincerely,

Pauline Batarseh

Pauline Batarseh, Chief
Policy Implementation and Support Branch
Policy and Program Support Division
Hazardous Waste Management Program

Cc:
Shaila Chowdhury
Chief, Office of Hazardous Waste, Air, Noise and Paleontology
Division of Environmental Analysis
California Department of Transportation
Sacramento, CA 94273-0001

Richard Bailey
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Bob Gipson
Environmental Scientist
Policy Implementation Unit
Policy Implementation and Support Branch
Policy and Program Support Division
Hazardous Waste Management Program
Department of Toxic Substances Control
1001 I Street, Sacramento, CA 95812-0806

California Environmental Protection Agency
Department of Toxic Substances Control

VARIANCE

Applicant Names:

State of California
Department of Transportation
(Caltrans)
1120 N Street
Sacramento, California 95814

Variance No. V09HQSCD006

Effective Date: July 1, 2009

Expiration Date: July 1, 2014

Modification History:

Pursuant to California Health and Safety Code, Section 25143, the Department of Toxic Substances Control hereby issues the attached Variance consisting of 9 pages to the Department of Transportation.

Beverly Rikala
Team Leader, Operating Facilities Team
Department of Toxic Substances Control

Date: 6/30/09

1. INTRODUCTION.

a) Pursuant to Health and Safety Code, section 25143, the California Department of Toxic Substances Control (DTSC) grants this variance to the applicant below for waste considered to be hazardous solely because of its lead concentrations and as further specified herein.

b) DTSC hereby grants this variance only from the requirements specified herein and only in accordance with all terms and conditions specified herein.

2. IDENTIFYING INFORMATION.

APPLICANT/OWNER/OPERATOR

State of California
Department of Transportation, (Caltrans)
All Districts

3. TYPE OF VARIANCE.

Generation, Manifest, Transportation, Storage and Disposal.

4. ISSUANCE AND EXPIRATION DATES.

DATE ISSUED: July 1, 2009 EXPIRATION DATE: July 1, 2014

5. APPLICABLE STATUTES AND REGULATIONS. The hazardous waste that is the subject of this variance is fully regulated under Health and Safety Code, section 25100, et seq. and California Code of Regulations, title 22, division 4.5 except as specifically identified in Section 8 of this variance.

6. DEFINITION. For purposes of this variance, "lead-contaminated soil(s)" shall mean soil that meets the criteria for hazardous waste but contains less than 3397 mg/kg total lead and is hazardous primarily because of aerially-deposited lead contamination associated with exhaust emissions from the operation of motor vehicles.

7. FINDINGS/DETERMINATIONS. DTSC has determined that the variance applicant meets the requirements set forth in Health and Safety Code, section 25143 for a variance from specific regulatory requirements as outlined in Section 8 of this variance. The specific determinations and findings made by DTSC are as follows:

a) Caltrans intends to excavate, stockpile, transport, bury and cover large volumes of soil associated with highway construction projects. In the more urbanized highway corridors around the State this soil is contaminated with lead, primarily due to historic emissions from automobile exhausts. In situ sampling and laboratory testing has shown that some of the soil contains concentrations of lead in excess of State regulatory thresholds, and thus any generated waste from disturbance of the soil

would be regulated as hazardous waste. Such soil contains a Total Threshold Limit Concentration (TTLC) of 1000 milligrams per kilogram (mg/kg) or more lead and/or it meets or exceeds the Soluble Threshold Limit Concentration (STLC) for lead of 5 milligrams per liter (mg/l). A Human Health Risk Assessment prepared for this variance concludes that soil contaminated with elevated concentrations of lead can be managed in a way that presents no significant risk to human health.

b) The lead-contaminated soil will be placed only in Caltrans' right-of-way. Depending on concentration levels, the wastes will be covered with a minimum thickness of one (1) foot of non-hazardous soil or asphalt/concrete cover and will always be at least five (5) feet above the highest groundwater elevation. Caltrans will assure that proper health and safety procedures will be followed for workers, including any persons engaged in maintenance work in areas where the waste has been buried and covered.

c) DTSC finds and requires that the lead-contaminated soil excavated, stockpiled, transported, buried and covered pursuant to this variance is a non-RCRA hazardous waste, and that the waste management activity is insignificant as a potential hazard to human health and safety and the environment, when managed in accordance with the conditions, limitations and other requirements specified in this variance.

8. PROVISIONS WAIVED.

Provided Caltrans meets the terms and conditions of this variance, DTSC waives the hazardous waste management requirements of Health and Safety Code, Chapter 6.5 and California Code of Regulations, title 22 for the lead-contaminated soil that Caltrans reuses in projects that would require Caltrans to obtain a permit for a disposal facility and any other generator requirements that concern the transportation, manifesting, storage and land disposal of hazardous waste.

9. SPECIFIC CONDITIONS, LIMITATIONS AND OTHER REQUIREMENTS.

In order for the provisions discussed in section 8 to be waived, lead-contaminated soil must not exceed the contaminant concentrations discussed below and Caltrans management practices must meet all the following conditions:

a) Caltrans implementation of this variance shall comply with all applicable state laws and regulations for water quality control, water quality control plans, waste discharge requirements (including storm water permits), and others issued by the State Water Resources Control Board (SWRCB) and/or a California Regional Water Quality Control Board (RWQCB). Caltrans shall provide written notification to the appropriate RWQCB at least 30 days prior to advertisement for bids of projects that involve invocation of this variance, or as otherwise negotiated with the SWRCB or appropriate RWQCB.

b) The waivers in this variance shall only be applied to lead-contaminated soil that is not a RCRA hazardous waste and is hazardous primarily because of aerially-

deposited lead contamination associated with exhaust emissions from the operation of motor vehicles. The variance is not applicable to any other hazardous waste.

c) Soil containing 1.5 mg/l extractable lead or less (based on a modified waste extraction test using deionized water as the extractant) and 1411 mg/kg or less total lead may be used as fill provided that the lead-contaminated soil is placed a minimum of five (5) feet above the maximum historic water table elevation and covered with at least one (1) foot of nonhazardous soil that will be maintained by Caltrans to prevent future erosion.

d) Soil containing 150 mg/L extractable lead or less (based on a modified waste extraction test using deionized water as the extractant) and 3397 mg/kg or less total lead may be used as fill provided that the lead-contaminated soils are placed a minimum of five (5) feet above the maximum historic water table elevation and protected from infiltration by a pavement structure which will be maintained by Caltrans.

e) Lead-contaminated soil with a pH less than 5.5 but greater than 5.0 shall only be used as fill material under the paved portion of the roadway. Lead-contaminated soil with a pH at or less than 5.0 shall be managed as a hazardous waste.

f) For each project that has the potential to generate waste by disturbing lead-contaminated soil (as defined in 6), Caltrans shall conduct sampling and analysis to adequately characterize the soils containing aerially deposited lead in the areas of planned excavation along the project route. Such sampling and analysis shall include the Toxicity Characteristic Leaching Procedure (TCLP) as prescribed by the United States Environmental Protection Agency to determine whether concentrations of contaminants in soil exceed federal criteria for classification as a hazardous waste.

g) Lead-contaminated soil managed pursuant to this variance shall not be moved outside the designated corridor boundaries (see paragraph t) below. All lead-contaminated soil not buried and covered within the same Caltrans corridor where it originated is not eligible for management under this variance and shall be managed as a hazardous waste.

h) Lead-contaminated soil managed pursuant to this variance shall not be placed in areas where it would become in contact with groundwater or surface water (such as streams and rivers).

i) Lead-contaminated soil managed pursuant to this variance shall be buried and covered only in locations that are protected from erosion that may result from storm water run-on and run-off.

j) The lead-contaminated soil shall be buried and covered in a manner that will prevent accidental or deliberate breach of the asphalt, concrete, and/or cover soil.

k) The presence of lead-contaminated soil shall be incorporated into the projects' as-built drawings. The as-built drawings shall be annotated with the location, representative analytical data, and volume of lead-contaminated soil. The as-built drawings shall also state the depth of the cover. These as-built drawings shall be retained by Caltrans.

l) Caltrans shall ensure that no other hazardous wastes, other than the lead-contaminated hazardous waste soil, are placed in the burial areas.

m) Lead-contaminated soil shall not be buried within ten (10) feet of culverts or locations subject to frequent worker exposure.

n) Excavated lead-contaminated soil not placed into the designated area (fill area, roadbed area) by the end of the working day shall be stockpiled and covered with sheets of polyethylene or at least one foot of non-hazardous soil. The lead-contaminated soil, while stockpiled or under transport, shall be protected from contacting surface water and from being dislodged or transported by wind or storm water. The stockpile covers shall be inspected at least once a week and within 24 hours after rainstorms. If the lead-contaminated soil is stockpiled for more than 4 days from the time of excavation, Caltrans shall restrict public access to the stockpile by using barriers that meet the safety requirements of the construction zone. The lead-contaminated soil shall be stockpiled for no more than 90 days from the time the soil is first excavated. If the contaminated soil is stockpiled beyond the 90 day limit Caltrans shall:

1. notify DTSC in writing of the 90 day exceedance and expected date of removal;
2. perform weekly inspections of the stockpiled material to ensure that there is adequate protection from run-on, runoff, public access, and wind dispersion; and
3. notify DTSC on weekly basis of the stockpile status until the stockpile is removed.

The lead-contaminated soil shall be stockpiled for no more than 180 days from the time the soil is first excavated.

o) Caltrans shall ensure that all stockpiling of lead-contaminated soil remains within the project area of the specified corridor. Stockpiling of lead-contaminated soil within the specified corridor, but outside the project area, is prohibited.

p) Caltrans shall conduct confirmatory sampling of any stockpile area in areas not known or expected to contain lead-contaminated soil after removal of the lead-contaminated soil to ensure that contamination has not been left behind or has not migrated from the stockpiled material to the surrounding soils.

q) Caltrans shall stockpile lead-contaminated soil only on high ground (i.e. no sump areas or low points) so that stockpiled soil will not come in contact with surface

water run-on or run-off.

r) Caltrans shall not stockpile lead-contaminated soil in environmentally and ecologically sensitive areas.

s) Caltrans shall ensure that storm/rain run-off that has come into contact with stockpiled lead-contaminated soil will not flow to storm drains, inlets, or waters of the State.

t) Caltrans may dispose of the lead-contaminated soil only within the operating right-of-way of an existing highway, as defined in Streets and Highways Code, section 23. Caltrans may move lead-contaminated soil from one Caltrans project to another Caltrans project only if the lead-contaminated soil remains within the same designated corridor.

Caltrans shall record any movement of lead-contaminated soil by using a bill of lading. The bill of lading must contain: 1) the US DOT description including shipping name, hazard class and ID number; 2) handling codes; 3) quantity of material; 4) volume of material; 5) date of shipment; 6) origin and destination of shipment; and 7) any specific handling instructions. The bill of lading shall be referenced in and kept on file with the project's as-built drawings. The lead-contaminated soil must be kept covered during transportation.

u) For each specific corridor where this variance is to be implemented, all of the following information shall be submitted in writing to DTSC at least five (5) days before construction of any project begins:

1. plan drawing designating the boundaries of the corridor where lead-contaminated soils will be excavated, stockpiled, buried and covered;

2. a list of the Caltrans projects that the corridor encompasses;

3. a list of Caltrans contractors that will be conducting any phase of work on any project affected by this variance;

4. duration of corridor construction;

5. location where sampling and analytical data used to make lead concentration level determinations are kept (e.g. a particular Caltrans project file);

6. name and phone number (including area code) of project resident engineer and project manager;

7. location where Caltrans and contractor health and safety plan and records are kept;

8. location of project special provisions (including page or section number) for soil excavation, transportation, stockpile, burial and placement of cover material;

9. location of project drawings (including drawing page number) for soil excavation, burial and placement of cover in plan and cross section (for example, "The project plans are located at the resident engineer's office located at 5th and Main Streets, City of Fresno, See pages xxxxx of contract xxxx");

10. updated information if a Caltrans project within the corridor is added, changed or deleted; and

11. type of environmental document prepared for each project, date of adoption, document title, Clearing House number and where the document is available for review. A copy of the Caltrans Categorical Exemption, Categorical Exclusion Form, or if filed, the Notice of Exemption for any project shall be submitted to the DTSC Headquarters Project Manager.

v) Changes in location of lead-contaminated soil placement, quantities or protection measures (field changes) shall be noted in the resident engineer's project log within five (5) days of the field change.

w) Caltrans shall ensure that field changes are in compliance with the requirements of this variance.

x) Operational procedures described in the California Environmental Quality Act (CEQA) Special Initial Study shall be followed by Caltrans for activities conducted under this variance.

y) Caltrans shall implement appropriate health and safety procedures to protect its employees and the public, and to prevent or minimize exposure to potentially hazardous wastes. A project-specific health and safety plan must be prepared and implemented. The monitoring and exposure standards shall be based on construction standards for exposure to lead in California Code of Regulations, title 8, section 1532.1.

z) Caltrans shall provide a district Coordinator for this variance. This Coordinator will be the primary point of contact for information flowing to, or received from, DTSC regarding any matter or submission under this variance. Caltrans shall promptly notify DTSC of the name of Coordinator and any change in the Coordinator.

aa) Caltrans shall conduct regular inspections, consistent with Caltrans' Maintenance Division's current Pavement Inspection and Slope Inspection programs, of the locations where lead-contaminated soil has been buried and/or covered pursuant to this variance. If site inspection reveals deterioration of cover so that conditions in the variance are not met, Caltrans shall repair or replace the cover.

bb) Caltrans shall develop and implement a record keeping mechanisms to record and retain permanent records of all locations where lead-contaminated soil has been buried per this variance. The records shall be made available to DTSC.

cc) If areas subject to the terms of this variance are sold, relinquished or abandoned (including roadways), all future property owners shall be notified in writing in advance by Caltrans of the requirements of this variance, and Caltrans shall provide the owner with a copy of the variance. A copy of such a notice shall be sent to DTSC and contain the corridor location and project. Caltrans shall also disclose to DTSC and the new owner the location of areas where lead-contaminated soil has been buried. Future property owners shall be subject to the same requirements as Caltrans.

dd) For the purposes of informing the public about instances where the variance is implemented, Caltrans shall:

1. maintain current fact sheets at all Caltrans resident engineer offices and the Caltrans District office. Caltrans shall make the fact sheets available to anyone expressing an interest in variance-related work.

2. maintain a binder(s) containing copies of all reports submitted to DTSC at the District office. Caltrans shall ensure that the binders are readily accessible to the public.

3. carry out the following actions when it identifies additional projects:

(A) notify the public via a display advertisement in a newspaper of general circulation in that area.

(B) update and distribute the fact sheet to the mailing list and repository locations.

ee) Lead-contaminated soil may be buried only in areas where access is limited or where lead-contaminated soil is covered and contained by a pavement structure.

ff) Dust containing lead-contaminated soil must be controlled. Water or dust palliative may be applied to control dust. If visible dust migration occurs, all excavation, stockpiling and truck loading and burying must be stopped. The granting of this variance confers no relief on Caltrans from compliance with the laws, regulations and requirements enforced by any local air district or the California Air Resources Board.

gg) Sampling and analysis is required to show the lead-contaminated soil meets the variance criteria. All sampling and analysis must be conducted in accordance with the appropriate methods specified in U.S. EPA SW-846.

hh) DTSC retains the right to require Caltrans or any future owner to remove, and properly dispose of, lead-contaminated soil in the event DTSC determines it is necessary for protection of public health, safety or the environment.

ii) DTSC finds that some projects involving lead-contaminated soil are joint projects between Caltrans and other government entities. In these joint projects, Caltrans may not be the lead agency implementing the project although Caltrans is still involved if the project occurs on its right-of-way.

Caltrans may invoke this variance for joint projects where Caltrans and local government entity are involved provided that 1) the project is within the Caltrans Right-of-Way; 2) Caltrans reviews/ oversees all phases of the project including design, contracting, environmental assessment, construction, operation, and maintenance; and 3) Caltrans oversees the project to verify all variance conditions are complied with. Caltrans will be fully responsible for the variance notification and implementation in these joint projects.

jj) All correspondence shall be directed to the following office:

Hazardous Waste Permitting
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Attn: Caltrans Lead Variance Notification Unit

10. DISCLAIMER.

a) The issuance of this variance does not relieve Caltrans of the responsibility for compliance with Health and Safety Code, chapter 6.5, or the regulations adopted thereunder, and any other laws and regulations other than those specifically identified in Section 8 of this variance. Caltrans is subject to all terms and conditions herein. The granting of this variance confers no relief from compliance with any federal, State or local requirements other than those specifically provided herein.

b) The issuance of this variance does not release Caltrans from any liability associated with the handling of hazardous waste, except as specifically provided herein and subject to all terms and conditions of this variance.

11. VARIANCE MODIFICATION OR REVOCATION. This variance is subject to review at the discretion of DTSC and may be modified or revoked by DTSC upon change of ownership and at any other time pursuant to Health and Safety Code, section 25143.

12. CEQA DETERMINATION. DTSC adopted a Negative Declaration on June 30, 2009.

Approved:

6/30/09
Date

Beverly Rikala
Operating Facilities Team
Department of Toxic Substances Control

APPENDIX B

ADVANCED TECHNOLOGY LABORATORIES

February 20, 2015

Luann Beadle
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Tel: (925) 371-5900
Fax:(925) 371-5915

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

Re: ATL Work Order Number : 1500572

Client Reference : SR-1 and SR-17 Separation, S9800-02-46

Enclosed are the results for sample(s) received on February 12, 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

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B1-0	1500572-01	Soil	2/11/15 9:30	2/12/15 9:30
B1-1	1500572-02	Soil	2/11/15 9:34	2/12/15 9:30
B1-2	1500572-03	Soil	2/11/15 9:37	2/12/15 9:30
B2-0	1500572-04	Soil	2/11/15 9:30	2/12/15 9:30
B2-1	1500572-05	Soil	2/11/15 9:33	2/12/15 9:30
B2-2	1500572-06	Soil	2/11/15 9:42	2/12/15 9:30
B3-0	1500572-07	Soil	2/11/15 9:40	2/12/15 9:30
B3-1	1500572-08	Soil	2/11/15 9:43	2/12/15 9:30
B3-2	1500572-09	Soil	2/11/15 9:48	2/12/15 9:30
B4-0	1500572-10	Soil	2/11/15 10:08	2/12/15 9:30
B4-1	1500572-11	Soil	2/11/15 10:12	2/12/15 9:30
B4-2	1500572-12	Soil	2/11/15 10:16	2/12/15 9:30
B5-0	1500572-13	Soil	2/11/15 10:05	2/12/15 9:30
B5-1	1500572-14	Soil	2/11/15 10:10	2/12/15 9:30
B5-2	1500572-15	Soil	2/11/15 10:12	2/12/15 9:30
B6-0	1500572-16	Soil	2/11/15 10:20	2/12/15 9:30
B6-1	1500572-17	Soil	2/11/15 10:23	2/12/15 9:30
B6-2	1500572-18	Soil	2/11/15 10:26	2/12/15 9:30
B7-0	1500572-19	Soil	2/11/15 10:30	2/12/15 9:30
B7-1	1500572-20	Soil	2/11/15 10:31	2/12/15 9:30
B7-2	1500572-21	Soil	2/11/15 10:32	2/12/15 9:30
B8-0	1500572-22	Soil	2/11/15 10:58	2/12/15 9:30
B8-1	1500572-23	Soil	2/11/15 11:00	2/12/15 9:30
B8-2	1500572-24	Soil	2/11/15 11:05	2/12/15 9:30
B9-0	1500572-25	Soil	2/11/15 11:06	2/12/15 9:30
B9-1	1500572-26	Soil	2/11/15 11:08	2/12/15 9:30
B9-2	1500572-27	Soil	2/11/15 11:10	2/12/15 9:30
B10-0	1500572-28	Soil	2/11/15 11:23	2/12/15 9:30
B10-1	1500572-29	Soil	2/11/15 11:25	2/12/15 9:30
B10-2	1500572-30	Soil	2/11/15 11:28	2/12/15 9:30
B11-0	1500572-31	Soil	2/11/15 11:22	2/12/15 9:30
B11-1	1500572-32	Soil	2/11/15 11:25	2/12/15 9:30
B11-2	1500572-33	Soil	2/11/15 11:35	2/12/15 9:30

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B1-0

Lab ID: 1500572-01

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	B5B0476	02/17/2015	02/18/15 14:31	
Arsenic	**1.8**	1.0	1	B5B0476	02/17/2015	02/18/15 14:31	
Barium	**62**	1.0	1	B5B0476	02/17/2015	02/18/15 14:31	
Beryllium	ND	1.0	1	B5B0476	02/17/2015	02/18/15 14:31	
Cadmium	ND	1.0	1	B5B0476	02/17/2015	02/18/15 14:31	
Chromium	**8.3**	1.0	1	B5B0476	02/17/2015	02/18/15 14:31	
Cobalt	**3.0**	1.0	1	B5B0476	02/17/2015	02/18/15 14:31	
Copper	**20**	2.0	1	B5B0476	02/17/2015	02/18/15 14:31	
Lead	**100**	1.0	1	B5B0476	02/17/2015	02/18/15 14:31	
Molybdenum	**1.4**	1.0	1	B5B0476	02/17/2015	02/18/15 14:31	
Nickel	**7.0**	1.0	1	B5B0476	02/17/2015	02/18/15 14:31	
Selenium	ND	1.0	1	B5B0476	02/17/2015	02/18/15 14:31	
Silver	ND	1.0	1	B5B0476	02/17/2015	02/18/15 14:31	
Thallium	ND	1.0	1	B5B0476	02/17/2015	02/18/15 14:31	
Vanadium	**12**	1.0	1	B5B0476	02/17/2015	02/18/15 14:31	
Zinc	**100**	1.0	1	B5B0476	02/17/2015	02/18/15 14:31	

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	B5B0522	02/17/2015	02/19/15 11:31	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B1-1

Lab ID: 1500572-02

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**2.7**	1.0	1	B5B0463	02/18/2015	02/19/15 11:04	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B1-2

Lab ID: 1500572-03

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**3.1**	1.0	1	B5B0463	02/18/2015	02/19/15 11:05	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B2-0

Lab ID: 1500572-04

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**97**	1.0	1	B5B0463	02/18/2015	02/19/15 11:06	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B2-1

Lab ID: 1500572-05

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**5.7**	1.0	1	B5B0463	02/18/2015	02/19/15 11:07	

pH by EPA 9045C **Analyst: LA**

Analyte	Result (pH Units)	PQL (pH Units)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
pH	**4.0**	0.10	1	B5B0521	02/18/2015	02/18/15 16:31	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B2-2

Lab ID: 1500572-06

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**4.6**	1.0	1	B5B0463	02/18/2015	02/19/15 11:07	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B3-0

Lab ID: 1500572-07

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**180**	1.0	1	B5B0463	02/18/2015	02/19/15 11:08	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B3-1

Lab ID: 1500572-08

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**64**	1.0	1	B5B0463	02/18/2015	02/19/15 11:09	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B3-2

Lab ID: 1500572-09

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**2.8**	1.0	1	B5B0463	02/18/2015	02/19/15 11:12	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B4-0

Lab ID: 1500572-10

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**880**	1.0	1	B5B0463	02/18/2015	02/19/15 11:12	

pH by EPA 9045C **Analyst: LA**

Analyte	Result (pH Units)	PQL (pH Units)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
pH	**5.6**	0.10	1	B5B0521	02/18/2015	02/18/15 16:31	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B4-1

Lab ID: 1500572-11

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	B5B0476	02/17/2015	02/18/15 14:42	
Arsenic	**4.0**	1.0	1	B5B0476	02/17/2015	02/18/15 14:42	
Barium	**88**	1.0	1	B5B0476	02/17/2015	02/18/15 14:42	
Beryllium	ND	1.0	1	B5B0476	02/17/2015	02/18/15 14:42	
Cadmium	ND	1.0	1	B5B0476	02/17/2015	02/18/15 14:42	
Chromium	**8.8**	1.0	1	B5B0476	02/17/2015	02/18/15 14:42	
Cobalt	ND	1.0	1	B5B0476	02/17/2015	02/18/15 14:42	
Copper	**5.2**	2.0	1	B5B0476	02/17/2015	02/18/15 14:42	
Lead	**5.4**	1.0	1	B5B0476	02/17/2015	02/18/15 14:42	
Molybdenum	**2.4**	1.0	1	B5B0476	02/17/2015	02/18/15 14:42	
Nickel	**4.4**	1.0	1	B5B0476	02/17/2015	02/18/15 14:42	
Selenium	ND	1.0	1	B5B0476	02/17/2015	02/18/15 14:42	
Silver	ND	1.0	1	B5B0476	02/17/2015	02/18/15 14:42	
Thallium	ND	1.0	1	B5B0476	02/17/2015	02/18/15 14:42	
Vanadium	**9.2**	1.0	1	B5B0476	02/17/2015	02/18/15 14:42	
Zinc	**18**	1.0	1	B5B0476	02/17/2015	02/18/15 14:42	

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	B5B0522	02/17/2015	02/19/15 11:41	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B4-2

Lab ID: 1500572-12

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**8.4**	1.0	1	B5B0463	02/18/2015	02/19/15 11:13	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B5-0

Lab ID: 1500572-13

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**930**	1.0	1	B5B0463	02/18/2015	02/19/15 11:15	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B5-1

Lab ID: 1500572-14

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**210**	1.0	1	B5B0463	02/18/2015	02/19/15 11:16	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B5-2

Lab ID: 1500572-15

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**1.6**	1.0	1	B5B0463	02/18/2015	02/19/15 11:17	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B6-0

Lab ID: 1500572-16

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**24**	1.0	1	B5B0463	02/18/2015	02/19/15 11:18	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B6-1

Lab ID: 1500572-17

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**1.9**	1.0	1	B5B0463	02/18/2015	02/19/15 11:18	

pH by EPA 9045C **Analyst: LA**

Analyte	Result (pH Units)	PQL (pH Units)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
pH	**6.3**	0.10	1	B5B0521	02/18/2015	02/18/15 16:31	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B6-2

Lab ID: 1500572-18

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**1.8**	0.99	1	B5B0463	02/18/2015	02/19/15 11:21	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B7-0

Lab ID: 1500572-19

BTEX/MTBE by EPA 8021 **Analyst: MFR**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Benzene		ND	5.0	1	B5B0506	02/18/2015	02/18/15 16:15	
Toluene		ND	5.0	1	B5B0506	02/18/2015	02/18/15 16:15	
Ethylbenzene		ND	5.0	1	B5B0506	02/18/2015	02/18/15 16:15	
m,p-Xylene		ND	10	1	B5B0506	02/18/2015	02/18/15 16:15	
o-Xylene		ND	5.0	1	B5B0506	02/18/2015	02/18/15 16:15	
Surrogate: 4-Bromofluorobenzene	*99.7 %*		*53 - 144*		B5B0506	02/18/2015	*02/18/15 16:15*	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B7-1

Lab ID: 1500572-20

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**6.1**	0.99	1	B5B0463	02/18/2015	02/19/15 11:22	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B7-2

Lab ID: 1500572-21

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**2.7**	1.0	1	B5B0463	02/18/2015	02/19/15 11:23	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B8-0

Lab ID: 1500572-22

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**190**	1.0	1	B5B0463	02/18/2015	02/19/15 11:24	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B8-1

Lab ID: 1500572-23

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**97**	1.0	1	B5B0463	02/18/2015	02/19/15 11:24	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B8-2

Lab ID: 1500572-24

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**61**	1.0	1	B5B0464	02/18/2015	02/19/15 12:31	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B9-0

Lab ID: 1500572-25

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**60**	1.0	1	B5B0464	02/18/2015	02/19/15 12:32	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B9-1

Lab ID: 1500572-26

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	B5B0476	02/17/2015	02/18/15 14:44	
Arsenic	**1.4**	1.0	1	B5B0476	02/17/2015	02/18/15 14:44	
Barium	**45**	1.0	1	B5B0476	02/17/2015	02/18/15 14:44	
Beryllium	ND	1.0	1	B5B0476	02/17/2015	02/18/15 14:44	
Cadmium	ND	1.0	1	B5B0476	02/17/2015	02/18/15 14:44	
Chromium	**9.4**	1.0	1	B5B0476	02/17/2015	02/18/15 14:44	
Cobalt	ND	1.0	1	B5B0476	02/17/2015	02/18/15 14:44	
Copper	**2.4**	2.0	1	B5B0476	02/17/2015	02/18/15 14:44	
Lead	**1.3**	1.0	1	B5B0476	02/17/2015	02/18/15 14:44	
Molybdenum	**1.7**	1.0	1	B5B0476	02/17/2015	02/18/15 14:44	
Nickel	**3.5**	1.0	1	B5B0476	02/17/2015	02/18/15 14:44	
Selenium	ND	1.0	1	B5B0476	02/17/2015	02/18/15 14:44	
Silver	ND	1.0	1	B5B0476	02/17/2015	02/18/15 14:44	
Thallium	ND	1.0	1	B5B0476	02/17/2015	02/18/15 14:44	
Vanadium	**11**	1.0	1	B5B0476	02/17/2015	02/18/15 14:44	
Zinc	**14**	1.0	1	B5B0476	02/17/2015	02/18/15 14:44	

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	B5B0522	02/17/2015	02/19/15 11:43	

pH by EPA 9045C — **Analyst: LA**

Analyte	Result (pH Units)	PQL (pH Units)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
pH	**6.5**	0.10	1	B5B0521	02/18/2015	02/18/15 16:31	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B9-2

Lab ID: 1500572-27

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**2.0**	1.0	1	B5B0464	02/18/2015	02/19/15 13:50	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B10-0

Lab ID: 1500572-28

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**190**	1.0	1	B5B0464	02/18/2015	02/19/15 12:34	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B10-1

Lab ID: 1500572-29

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**2.1**	1.0	1	B5B0464	02/18/2015	02/19/15 12:34	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B10-2

Lab ID: 1500572-30

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	B5B0476	02/17/2015	02/18/15 14:46	
Arsenic	**4.0**	1.0	1	B5B0476	02/17/2015	02/18/15 14:46	
Barium	**57**	1.0	1	B5B0476	02/17/2015	02/18/15 14:46	
Beryllium	ND	1.0	1	B5B0476	02/17/2015	02/18/15 14:46	
Cadmium	ND	1.0	1	B5B0476	02/17/2015	02/18/15 14:46	
Chromium	**10**	1.0	1	B5B0476	02/17/2015	02/18/15 14:46	
Cobalt	**1.3**	1.0	1	B5B0476	02/17/2015	02/18/15 14:46	
Copper	**6.9**	2.0	1	B5B0476	02/17/2015	02/18/15 14:46	
Lead	**12**	1.0	1	B5B0476	02/17/2015	02/18/15 14:46	
Molybdenum	ND	1.0	1	B5B0476	02/17/2015	02/18/15 14:46	
Nickel	**4.8**	1.0	1	B5B0476	02/17/2015	02/18/15 14:46	
Selenium	ND	1.0	1	B5B0476	02/17/2015	02/18/15 14:46	
Silver	ND	1.0	1	B5B0476	02/17/2015	02/18/15 14:46	
Thallium	ND	1.0	1	B5B0476	02/17/2015	02/18/15 14:46	
Vanadium	**19**	1.0	1	B5B0476	02/17/2015	02/18/15 14:46	
Zinc	**23**	1.0	1	B5B0476	02/17/2015	02/18/15 14:46	

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	B5B0522	02/17/2015	02/19/15 11:45	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B11-0

Lab ID: 1500572-31

Lead by ICP-AES EPA 6010B — **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**390**	1.0	1	B5B0464	02/18/2015	02/19/15 12:35	

pH by EPA 9045C — **Analyst: LA**

Analyte	Result (pH Units)	PQL (pH Units)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
pH	**6.5**	0.10	1	B5B0521	02/18/2015	02/18/15 16:31	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B11-1

Lab ID: 1500572-32

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**460**	1.0	1	B5B0464	02/18/2015	02/19/15 12:36	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Client Sample ID B11-2

Lab ID: 1500572-33

Lead by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**2.4**	1.0	1	B5B0464	02/18/2015	02/19/15 12:39	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

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 Limits	RPD	RPD Limit	Notes
Batch B5B0476 - EPA 3050B_S									
Blank (B5B0476-BLK1)					Prepared: 2/17/2015 Analyzed: 2/18/2015				
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 (B5B0476-BS1)					Prepared: 2/17/2015 Analyzed: 2/18/2015				
Antimony	42.8215	2.0	50.0000		85.6	80 - 120			
Arsenic	43.4096	1.0	50.0000		86.8	80 - 120			
Barium	46.7108	1.0	50.0000		93.4	80 - 120			
Beryllium	45.0420	1.0	50.0000		90.1	80 - 120			
Cadmium	44.3556	1.0	50.0000		88.7	80 - 120			
Chromium	47.9135	1.0	50.0000		95.8	80 - 120			
Cobalt	46.6170	1.0	50.0000		93.2	80 - 120			
Copper	45.7716	2.0	50.0000		91.5	80 - 120			
Lead	45.8806	1.0	50.0000		91.8	80 - 120			
Molybdenum	47.6472	1.0	50.0000		95.3	80 - 120			
Nickel	45.7499	1.0	50.0000		91.5	80 - 120			
Selenium	40.9154	1.0	50.0000		81.8	80 - 120			
Silver	44.7180	1.0	50.0000		89.4	80 - 120			
Thallium	45.5423	1.0	50.0000		91.1	80 - 120			
Vanadium	46.1427	1.0	50.0000		92.3	80 - 120			
Zinc	43.4085	1.0	50.0000		86.8	80 - 120			
Duplicate (B5B0476-DUP1)		**Source: 1500572-01**			Prepared: 2/17/2015 Analyzed: 2/18/2015				
Antimony	ND	2.0		ND	NR			20	
Arsenic	1.75100	1.0		1.84633	NR		5.30	20	
Barium	59.2468	1.0		61.7401	NR		4.12	20	
Beryllium	0.170134	1.0		0.185642	NR		8.72	20	

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

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 B5B0476 - EPA 3050B_S (continued)									
Duplicate (B5B0476-DUP1) - Continued		**Source: 1500572-01**		Prepared: 2/17/2015 Analyzed: 2/18/2015					
Cadmium	0.505044	1.0		0.553818	NR		9.21	20	
Chromium	8.40188	1.0		8.26372	NR		1.66	20	
Cobalt	2.93035	1.0		2.97764	NR		1.60	20	
Copper	19.2272	2.0		20.3999	NR		5.92	20	
Lead	96.5505	1.0		99.7458	NR		3.26	20	
Molybdenum	1.32540	1.0		1.37403	NR		3.60	20	
Nickel	6.70900	1.0		7.02121	NR		4.55	20	
Selenium	0.895201	1.0		0.757135	NR		16.7	20	
Silver	ND	1.0		ND	NR			20	
Thallium	ND	1.0		ND	NR			20	
Vanadium	11.2972	1.0		11.5300	NR		2.04	20	
Zinc	94.6128	1.0		100.263	NR		5.80	20	
Matrix Spike (B5B0476-MS1)		**Source: 1500572-01**		Prepared: 2/17/2015 Analyzed: 2/18/2015					
Antimony	88.4232	2.0	124.378	ND	71.1	28 - 106			
Arsenic	100.083	1.0	124.378	1.84633	79.0	57 - 109			
Barium	154.286	1.0	124.378	61.7401	74.4	18 - 159			
Beryllium	101.901	1.0	124.378	0.185642	81.8	61 - 107			
Cadmium	92.9316	1.0	124.378	0.553818	74.3	53 - 104			
Chromium	112.604	1.0	124.378	8.26372	83.9	53 - 121			
Cobalt	98.9125	1.0	124.378	2.97764	77.1	55 - 109			
Copper	127.150	2.0	124.378	20.3999	85.8	58 - 124			
Lead	183.662	1.0	124.378	99.7458	67.5	35 - 129			
Molybdenum	102.775	1.0	124.378	1.37403	81.5	57 - 108			
Nickel	103.581	1.0	124.378	7.02121	77.6	44 - 122			
Selenium	98.1502	1.0	124.378	0.757135	78.3	54 - 104			
Silver	98.3461	1.0	124.378	ND	79.1	60 - 112			
Thallium	94.6589	1.0	124.378	ND	76.1	50 - 103			
Vanadium	113.639	1.0	124.378	11.5300	82.1	54 - 123			
Zinc	178.912	1.0	124.378	100.263	63.2	29 - 132			
Matrix Spike Dup (B5B0476-MSD1)		**Source: 1500572-01**		Prepared: 2/17/2015 Analyzed: 2/18/2015					
Antimony	93.1443	2.0	125.628	ND	74.1	28 - 106	5.20	20	
Arsenic	106.000	1.0	125.628	1.84633	82.9	57 - 109	5.74	20	
Barium	166.157	1.0	125.628	61.7401	83.1	18 - 159	7.41	20	
Beryllium	106.999	1.0	125.628	0.185642	85.0	61 - 107	4.88	20	
Cadmium	100.270	1.0	125.628	0.553818	79.4	53 - 104	7.60	20	
Chromium	121.108	1.0	125.628	8.26372	89.8	53 - 121	7.28	20	
Cobalt	105.681	1.0	125.628	2.97764	81.8	55 - 109	6.62	20	
Copper	139.036	2.0	125.628	20.3999	94.4	58 - 124	8.93	20	
Lead	190.054	1.0	125.628	99.7458	71.9	35 - 129	3.42	20	
Molybdenum	108.667	1.0	125.628	1.37403	85.4	57 - 108	5.57	20	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

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 B5B0476 - EPA 3050B_S (continued)									
Matrix Spike Dup (B5B0476-MSD1) - Continued		**Source: 1500572-01**		Prepared: 2/17/2015 Analyzed: 2/18/2015					
Nickel	110.645	1.0	125.628	7.02121	82.5	44 - 122	6.60	20	
Selenium	103.918	1.0	125.628	0.757135	82.1	54 - 104	5.71	20	
Silver	107.839	1.0	125.628	ND	85.8	60 - 112	9.21	20	
Thallium	100.125	1.0	125.628	ND	79.7	50 - 103	5.61	20	
Vanadium	123.553	1.0	125.628	11.5300	89.2	54 - 123	8.36	20	
Zinc	194.113	1.0	125.628	100.263	74.7	29 - 132	8.15	20	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

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
Batch B5B0463 - EPA 3050 Modified_S									
Blank (B5B0463-BLK1)				Prepared: 2/18/2015 Analyzed: 2/19/2015					
Lead	ND	1.0			NR				
Blank (B5B0463-BLK2)				Prepared: 2/18/2015 Analyzed: 2/19/2015					
Lead	ND	1.0			NR				
LCS (B5B0463-BS1)				Prepared: 2/18/2015 Analyzed: 2/19/2015					
Lead	50.2734	1.0	50.0000		101	80 - 120			
Duplicate (B5B0463-DUP1)		**Source: 1500572-23**		Prepared: 2/18/2015 Analyzed: 2/19/2015					
Lead	95.3878	1.0		96.8658	NR		1.54	20	
Duplicate (B5B0463-DUP2)		**Source: 1500572-12**		Prepared: 2/18/2015 Analyzed: 2/19/2015					
Lead	7.80730	0.99		8.37002	NR		6.96	20	
Matrix Spike (B5B0463-MS1)		**Source: 1500572-23**		Prepared: 2/18/2015 Analyzed: 2/19/2015					
Lead	333.686	1.0	250.000	96.8658	94.7	35 - 129			
Matrix Spike (B5B0463-MS2)		**Source: 1500572-12**		Prepared: 2/18/2015 Analyzed: 2/19/2015					
Lead	247.646	1.0	250.000	8.37002	95.7	35 - 129			
Matrix Spike Dup (B5B0463-MSD1)		**Source: 1500572-23**		Prepared: 2/18/2015 Analyzed: 2/19/2015					
Lead	319.495	1.0	250.000	96.8658	89.1	35 - 129	4.35	20	
Batch B5B0464 - EPA 3050 Modified_S									
Blank (B5B0464-BLK1)				Prepared: 2/18/2015 Analyzed: 2/19/2015					
Lead	ND	1.0			NR				
Blank (B5B0464-BLK2)				Prepared: 2/18/2015 Analyzed: 2/19/2015					
Lead	ND	1.0			NR				
LCS (B5B0464-BS1)				Prepared: 2/18/2015 Analyzed: 2/19/2015					
Lead	50.8536	1.0	50.0000		102	80 - 120			
Duplicate (B5B0464-DUP1)		**Source: 1500587-13**		Prepared: 2/18/2015 Analyzed: 2/19/2015					
Lead	10.4245	1.0		8.94964	NR		15.2	20	
Duplicate (B5B0464-DUP2)		**Source: 1500587-03**		Prepared: 2/18/2015 Analyzed: 2/19/2015					
Lead	9.16670	1.0		10.9834	NR		18.0	20	
Matrix Spike (B5B0464-MS1)		**Source: 1500587-13**		Prepared: 2/18/2015 Analyzed: 2/19/2015					
Lead	239.166	1.0	250.000	8.94964	92.1	35 - 129			

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Lead 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 B5B0464 - EPA 3050 Modified_S (continued)									
Matrix Spike (B5B0464-MS2)		**Source: 1500587-03**		Prepared: 2/18/2015 Analyzed: 2/19/2015					
Lead	236.924	1.0	250.000	10.9834	90.4	35 - 129			
Matrix Spike Dup (B5B0464-MSD1)		**Source: 1500587-13**		Prepared: 2/18/2015 Analyzed: 2/19/2015					
Lead	238.301	1.0	252.525	8.94964	90.8	35 - 129	0.362	20	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

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

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5B0522 - EPA 7471_S									
Blank (B5B0522-BLK1)				Prepared: 2/18/2015 Analyzed: 2/19/2015					
Mercury	ND	0.10			NR				
LCS (B5B0522-BS1)				Prepared: 2/18/2015 Analyzed: 2/19/2015					
Mercury	0.804080	0.10	0.833333		96.5	80 - 120			
Duplicate (B5B0522-DUP1)		**Source: 1500572-01RE1**		Prepared: 2/18/2015 Analyzed: 2/19/2015					
Mercury	0.036242	0.10		0.034739	NR		4.23	20	
Matrix Spike (B5B0522-MS1)		**Source: 1500572-01RE1**		Prepared: 2/18/2015 Analyzed: 2/19/2015					
Mercury	0.813242	0.10	0.833333	0.034739	93.4	70 - 130			
Matrix Spike Dup (B5B0522-MSD1)		**Source: 1500572-01RE1**		Prepared: 2/18/2015 Analyzed: 2/19/2015					
Mercury	0.821049	0.10	0.833333	0.034739	94.4	70 - 130	0.955	20	
Post Spike (B5B0522-PS1)		**Source: 1500572-01RE1**		Prepared: 2/18/2015 Analyzed: 2/19/2015					
Mercury	0.005306		5.00000E-3	0.000417	97.8	85 - 115			

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

BTEX/MTBE by EPA 8021 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5B0506 - GCVOA_S									
Blank (B5B0506-BLK1)				Prepared: 2/18/2015 Analyzed: 2/18/2015					
Benzene	ND	5.0			NR				
Toluene	ND	5.0			NR				
Ethylbenzene	ND	5.0			NR				
m,p-Xylene	ND	10			NR				
o-Xylene	ND	5.0			NR				
Surrogate: 4-Bromofluorobenzene	*198.2*		*200.000*		*99.1*	*53 - 144*			

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

BTEX/MTBE by EPA 8021 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5B0506 - GCVOA_S (continued)									
LCS (B5B0506-BS2)				Prepared: 2/18/2015 Analyzed: 2/18/2015					
Benzene	87.6600	5.0	100.000		87.7	70 - 130			
Toluene	92.6500	5.0	100.000		92.6	70 - 130			
Ethylbenzene	91.4820	5.0	100.000		91.5	70 - 130			
m,p-Xylene	193.353	10	200.000		96.7	70 - 130			
o-Xylene	93.2900	5.0	100.000		93.3	70 - 130			
Surrogate: 4-Bromofluorobenzene	*207.1*		*200.000*		*104*	*53 - 144*			

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

BTEX/MTBE by EPA 8021 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5B0506 - GCVOA_S (continued)									
Duplicate (B5B0506-DUP1)		**Source: 1500572-19**		Prepared: 2/18/2015 Analyzed: 2/18/2015					
Benzene	ND	5.0		ND	NR			20	
Toluene	0.548000	5.0		ND	NR			20	
Ethylbenzene	ND	5.0		ND	NR			20	
m,p-Xylene	ND	10		ND	NR			20	
o-Xylene	ND	5.0		ND	NR			20	
Surrogate: 4-Bromofluorobenzene	*198.6*		*200.000*		*99.3*	*53 - 144*			

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

BTEX/MTBE by EPA 8021 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5B0506 - GCVOA_S (continued)									
Matrix Spike (B5B0506-MS1)		**Source: 1500572-19**		Prepared: 2/18/2015 Analyzed: 2/18/2015					
Benzene	34.0690	5.0	40.7500	ND	83.6	14 - 146			
Toluene	150.516	5.0	202.250	ND	74.4	33 - 123			
Ethylbenzene	44.7150	5.0	76.0000	ND	58.8	20 - 102			
m,p-Xylene	159.227	10	206.500	ND	77.1	39 - 120			
o-Xylene	59.6260	5.0	73.5000	ND	81.1	34 - 131			
Surrogate: 4-Bromofluorobenzene	*204.6*		*200.000*		*102*	*53 - 144*			

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

BTEX/MTBE by EPA 8021 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5B0506 - GCVOA_S (continued)									
Matrix Spike Dup (B5B0506-MSD1)		**Source: 1500572-19**		Prepared: 2/18/2015 Analyzed: 2/18/2015					
Benzene	37.9640	5.0	40.7500	ND	93.2	14 - 146	10.8	20	
Toluene	147.656	5.0	202.250	ND	73.0	33 - 123	1.92	20	
Ethylbenzene	43.3650	5.0	76.0000	ND	57.1	20 - 102	3.07	20	
m,p-Xylene	155.509	10	206.500	ND	75.3	39 - 120	2.36	20	
o-Xylene	58.2500	5.0	73.5000	ND	79.3	34 - 131	2.33	20	
Surrogate: 4-Bromofluorobenzene	*215.8*		*200.000*		*108*	*53 - 144*			

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

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 B5B0521 - Prep_WC1_S									
Duplicate (B5B0521-DUP1)		**Source: 1500572-05**		Prepared: 2/18/2015 Analyzed: 2/18/2015					
pH	4.09000	0.10		4.05000	NR		0.983	20	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-4(
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/20/2015

Notes and Definitions

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.

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____

Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FEDEX ☐ Other: _____

Sample Condition Upon Receipt
1. CHILLED 2.6 Y☑ N☐ 4. SEALED Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐
3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client: Geocon Consultants, Inc. | Address: 6671 Bolsa St | TEL: (925) 371-5900
Attn: Luann Beadle / Rick Day | City Livermore State CA Zip Code 94550 | FAX: ( )

Project Name: SR-1 and SR-17 Separation Project #: 59800-02-46 Sampler: (Printed Name) Luann Beadle (Signature)

Relinquished by: (Signature and Printed Name)	Date :	Time:	Received by: (Signature and Printed Name)	Date: 2/12/15	Time: 930
Relinquished by: (Signature and Printed Name)	Date :	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Relinquished by: (Signature and Printed Name)	Date :	Time:	Received by: (Signature and Printed Name)	Date:	Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
Luann Beadle (Print Name) 2-11-15 (Date)
(Signature)

Send Report To:
Attn: beadle@geoconinc.com
Co: day@geoconinc.com
Address _____
City _____ State _____ Zip _____

Bill To:
Attn: Same
Co: _____
Address _____
City _____ State _____ Zip _____

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested: 8081A (Pesticides); 8082 (PCB); 8260B (Volatiles); 8270C (BNA); 6010B (Total Metal) Pb only; 8015B (GRO) / 8020 (BTEX); 8015B (DRO); 8021 (BTEX); TITLE 22 / CAM 17 (6010 / 7000); pH

SPECIFY APPROPRIATE MATRIX: SOIL; WATER; GROUND WATER; WASTEWATER

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	15D572-1	B1-0	2/11/15	930	E	1	S/T	C	
	2	B1-1		934			P		
	3	B1-2		937					
	4	B2-0		930					
	5	B2-1		933			S/T		
	6	B2-2		942			P		
	7	B3-0		940					
	8	B3-1		943					
	9	B3-2		948					
	10	B4-0		1008			S/T		

Q A / Q C
RTNE ☐
CT ☒
SWRCB ☐
Logcode ____
OTHER ____

- TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr; B= Emergency Next workday; C= Critical 2 Workdays; D= Urgent 3 Workdays; E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____

Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FEDEX ☐ Other: _____

Sample Condition Upon Receipt
1. CHILLED 2.6 Y☒ N☐ 4. SEALED Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐
3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client: Geocon Consultants, Inc. | Address: 6671 Bonsa St | TEL: (925) 371-5900
Attn: Luann Beadle / Rick Day | City Livermore State CA Zip Code 94550 | FAX: ( )

Project Name: SR-1 and SR-17 Separation Project #: 59800-02-46 Sampler: (Printed Name) Luann Beadle (Signature)

Relinquished by: (Signature and Printed Name)	Date :	Time:	Received by: (Signature and Printed Name)	Date: 2/12/15	Time: 0730
Relinquished by: (Signature and Printed Name)	Date :	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Relinquished by: (Signature and Printed Name)	Date :	Time:	Received by: (Signature and Printed Name)	Date:	Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: Luann Beadle (Print Name) 2-11-15 (Date)
(Signature)

Send Report To:
Attn: beadle@geoconinc.com
Co: day@geoconinc.com
Address _____
City _____ State _____ Zip _____

Bill To:
Attn: Same
Co: _____
Address _____
City _____ State _____ Zip _____

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested: 8081A (Pesticides); 8082 (PCB); 8260B (Volatiles); 8270C (BNA); 6010B (Total Metal) Pb only; 8015B (GRO) / 8020 (BTEX); 8015B (DRO); 8021 (BTEX); TITLE 22 / CAM 17 (6010 / 7000); pH

SPECIFY APPROPRIATE MATRIX: SOIL; WATER; GROUND WATER; WASTEWATER

PRESERVATION

Q A / Q C: RTNE ☐ CT ☒ SWRCB ☐ Logcode ____ OTHER ____

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	1500972 - 11	B4-1	2/11/15	1012	E	1	S/T	C	
	12	B4-2		1016			P		
	13	B5-0		1005					
	14	B5-1		1010					
	15	B5-2		1012					
	16	B6-0		1020			V		
	17	B6-1		1023			S/T		
	18	B6-2		1026			P		
	19	B7-0		1030			S/T		
	20	B7-1		1031			P		

- TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr; B= Emergency Next workday; C= Critical 2 Workdays; D= Urgent 3 Workdays; E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____

Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FEDEX ☐ Other: _____

Sample Condition Upon Receipt
1. CHILLED 2.6 Y☑ N☐ 4. SEALED Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐
3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client: Geocon Consultants, Inc. | Address: 6671 Boisa St | TEL: (925) 371-5900
Attn: Luann Beadle / Rick Day | City Livermore State CA Zip Code 94550 | FAX: ( )

Project Name: SR-1 and SR-17 Separation Project #: 59800-02-46 Sampler: (Printed Name) Luann Beadle (Signature)

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date: 2/12/15	Time: PM
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
Luann Beadle (Print Name) 2-11-15 (Date)
(Signature)

Send Report To:
Attn: beadle@geoconinc.com
Co: day@geoconinc.com
Address _____
City _____ State _____ Zip _____

Bill To:
Attn: Same
Co: _____
Address _____
City _____ State _____ Zip _____

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested: 8081A (Pesticides); 8082 (PCB); 8260B (Volatiles); 8270C (BNA); 6010B (Total Metal) 16 only; 8015B (GRO) / 8020 (BTEX); 8015B (DRO); 8021 (BTEX); TITLE 22 / CAM 17 (6010 / 7000); pH

SPECIFY APPROPRIATE MATRIX: SOIL; WATER; GROUND WATER; WASTEWATER

PRESERVATION

Q A / Q C: RTNE ☐ CT ☑ SWRCB ☐ Logcode ____ OTHER ____

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	15NOV72-21	B7-2	2/11/15	1032	E	1	P	C	
	22	B8-0		1058					
	23	B8-1		1100					
	24	B8-2		1105					
	25	B9-0		1106					
	26	B9-1		1108			S		
	27	B9-2		1110					
	28	B10-0		1123					
	29	B10-1		1125					
	30	B10-2		1128			S		

• TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr; B= Emergency Next workday; C= Critical 2 Workdays; D= Urgent 3 Workdays; E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____

Logged By: _____ Date: _____

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FEDEX ☐ Other: _____

Sample Condition Upon Receipt
1. CHILLED 2.6 Y☑ N☐ 4. SEALED Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐
3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client: Geocon Consultants, Inc. | Address: 6671 Bonita St | TEL: (925) 371-5900
Attn: Luann Beadle / Rick Day | City Livermore State CA Zip Code 94550 | FAX: ( )

Project Name: SR-1 and SR-17 Separation Project #: 59800-02-46 Sampler: (Printed Name) Luann Beadle (Signature)

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
			U. Bynile	2/11/15	1700
				Date:	Time:
				Date:	Time:

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
Luann Beadle (Print Name) 2-11-15 (Date)
(Signature)

Send Report To:
Attn: beadle@geoconinc.com
Co: day@geoconinc.com
Address _____
City _____ State _____ Zip _____

Bill To:
Attn: Same
Co: _____
Address _____
City _____ State _____ Zip _____

Special Instructions/Comments:

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested: 8081A (Pesticides); 8082 (PCB); 8260B (Volatiles); 8270C (BNA); 6010B (Total Metal) Boron; 8015B (GRO) / 8020 (BTEX); 8015B (DRO); 8021 (BTEX); TITLE 22 / CAM 17 (6010 / 7000); pH

SPECIFY APPROPRIATE MATRIX: SOIL; WATER; GROUND WATER; WASTEWATER

PRESERVATION

Q A / Q C: RTNE ☐ CT ☒ SWRCB ☐ Logcode ____ OTHER ____

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	15NT772-31	B11-0	2-11-15	1122	E	1	P	C	
	32	B11-1	↓	1125	↓	↓	↓	↓	
	↓ 33	B11-2	↓	1135	↓	↓	↓	↓	

- TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr; B= Emergency Next workday; C= Critical 2 Workdays; D= Urgent 3 Workdays; E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

ADVANCED TECHNOLOGY LABORATORIES

February 27, 2015

Luann Beadle
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Tel: (925) 371-5900
Fax:(925) 371-5915

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

Re: ATL Work Order Number : 1500572

Client Reference : SR-1 and SR-17 Separation, S9800-02-46

Enclosed are the results for sample(s) received on February 12, 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

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-46
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/27/2015

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B1-0	1500572-01	Soil	2/11/15 9:30	2/12/15 9:30
B2-0	1500572-04	Soil	2/11/15 9:30	2/12/15 9:30
B3-0	1500572-07	Soil	2/11/15 9:40	2/12/15 9:30
B3-1	1500572-08	Soil	2/11/15 9:43	2/12/15 9:30
B4-0	1500572-10	Soil	2/11/15 10:08	2/12/15 9:30
B5-0	1500572-13	Soil	2/11/15 10:05	2/12/15 9:30
B5-1	1500572-14	Soil	2/11/15 10:10	2/12/15 9:30
B7-0	1500572-19	Soil	2/11/15 10:30	2/12/15 9:30
B7-0	1500572-19	Soil	2/11/15 10:30	2/12/15 9:30
B8-0	1500572-22	Soil	2/11/15 10:58	2/12/15 9:30
B8-1	1500572-23	Soil	2/11/15 11:00	2/12/15 9:30
B8-2	1500572-24	Soil	2/11/15 11:05	2/12/15 9:30
B9-0	1500572-25	Soil	2/11/15 11:06	2/12/15 9:30
B10-0	1500572-28	Soil	2/11/15 11:23	2/12/15 9:30
B11-0	1500572-31	Soil	2/11/15 11:22	2/12/15 9:30
B11-1	1500572-32	Soil	2/11/15 11:25	2/12/15 9:30

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-46
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/27/2015

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
1500572-01	B1-0	**4.6**	mg/L	1.0	20	B5B0707	02/26/2015	02/26/15 11:46	
1500572-04	B2-0	**4.6**	mg/L	1.0	20	B5B0707	02/26/2015	02/26/15 11:49	
1500572-07	B3-0	**7.6**	mg/L	1.0	20	B5B0707	02/26/2015	02/26/15 11:53	
1500572-08	B3-1	**3.5**	mg/L	1.0	20	B5B0707	02/26/2015	02/26/15 11:58	
1500572-10	B4-0	**55**	mg/L	1.0	20	B5B0707	02/26/2015	02/26/15 12:01	
1500572-13	B5-0	**56**	mg/L	1.0	20	B5B0707	02/26/2015	02/26/15 12:05	
1500572-14	B5-1	**14**	mg/L	1.0	20	B5B0707	02/26/2015	02/26/15 12:09	
1500572-22	B8-0	**11**	mg/L	1.0	20	B5B0707	02/26/2015	02/26/15 12:21	
1500572-23	B8-1	**3.5**	mg/L	1.0	20	B5B0707	02/26/2015	02/26/15 12:25	
1500572-24	B8-2	**1.2**	mg/L	1.0	20	B5B0707	02/26/2015	02/26/15 12:29	
1500572-25	B9-0	**2.6**	mg/L	1.0	20	B5B0707	02/26/2015	02/26/15 12:45	
1500572-28	B10-0	**11**	mg/L	1.0	20	B5B0707	02/26/2015	02/26/15 12:49	
1500572-31	B11-0	**26**	mg/L	1.0	20	B5B0707	02/26/2015	02/26/15 12:53	
1500572-32	B11-1	**9.9**	mg/L	1.0	20	B5B0707	02/26/2015	02/26/15 12:57	

Mercury by AA (Cold Vapor) EPA 7471A

Analyte: Mercury **Analyst: SB**

Laboratory ID	Client Sample ID	Result	Units	PQL	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1500572-19	B7-0	**ND**	mg/kg	0.10	1	B5B0653	02/24/2015	02/25/15 13:11	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-46
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/27/2015

Client Sample ID B7-0
Lab ID: 1500572-19

Title 22 Metals by ICP-AES EPA 6010B **Analyst: SB**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	1	B5B0659	02/25/2015	02/25/15 16:33	
Arsenic	**3.7**	1.0	1	B5B0659	02/25/2015	02/25/15 16:33	
Barium	**52**	1.0	1	B5B0659	02/25/2015	02/25/15 16:32	
Beryllium	ND	1.0	1	B5B0659	02/25/2015	02/25/15 16:31	
Cadmium	ND	1.0	1	B5B0659	02/25/2015	02/25/15 16:33	
Chromium	**7.1**	1.0	1	B5B0659	02/25/2015	02/25/15 16:32	
Cobalt	**2.1**	1.0	1	B5B0659	02/25/2015	02/25/15 16:33	
Copper	**9.5**	2.0	1	B5B0659	02/25/2015	02/25/15 16:32	
Lead	**43**	1.0	1	B5B0659	02/25/2015	02/25/15 16:33	
Molybdenum	ND	1.0	1	B5B0659	02/25/2015	02/25/15 16:33	
Nickel	**4.6**	1.0	1	B5B0659	02/25/2015	02/25/15 16:33	
Selenium	ND	1.0	1	B5B0659	02/25/2015	02/25/15 16:33	
Silver	ND	1.0	1	B5B0659	02/25/2015	02/25/15 16:32	
Thallium	ND	1.0	1	B5B0659	02/25/2015	02/25/15 16:33	
Vanadium	**11**	1.0	1	B5B0659	02/25/2015	02/25/15 16:32	
Zinc	**46**	1.0	1	B5B0659	02/25/2015	02/25/15 16:32	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-46
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/27/2015

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 Limits	RPD	RPD Limit	Notes
Batch B5B0659 - EPA 3050B_S									
Blank (B5B0659-BLK1)					Prepared: 2/25/2015 Analyzed: 2/25/2015				
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 (B5B0659-BS1)					Prepared: 2/25/2015 Analyzed: 2/25/2015				
Antimony	43.4470	2.0	50.0000		86.9	80 - 120			
Arsenic	42.3759	1.0	50.0000		84.8	80 - 120			
Barium	48.0264	1.0	50.0000		96.1	80 - 120			
Beryllium	48.9804	1.0	50.0000		98.0	80 - 120			
Cadmium	45.1754	1.0	50.0000		90.4	80 - 120			
Chromium	47.9108	1.0	50.0000		95.8	80 - 120			
Cobalt	45.9378	1.0	50.0000		91.9	80 - 120			
Copper	46.0615	2.0	50.0000		92.1	80 - 120			
Lead	47.4253	1.0	50.0000		94.9	80 - 120			
Molybdenum	45.8573	1.0	50.0000		91.7	80 - 120			
Nickel	45.6653	1.0	50.0000		91.3	80 - 120			
Selenium	41.5742	1.0	50.0000		83.1	80 - 120			
Silver	45.4356	1.0	50.0000		90.9	80 - 120			
Thallium	44.6436	1.0	50.0000		89.3	80 - 120			
Vanadium	47.3456	1.0	50.0000		94.7	80 - 120			
Zinc	44.1349	1.0	50.0000		88.3	80 - 120			
Matrix Spike (B5B0659-MS1)		**Source: 1500703-41**			Prepared: 2/25/2015 Analyzed: 2/25/2015				
Antimony	92.0946	2.0	125.000	0.659116	73.1	28 - 106			
Arsenic	99.1794	1.0	125.000	0.714688	78.8	57 - 109			
Barium	173.752	1.0	125.000	65.8579	86.3	18 - 159			
Beryllium	114.722	1.0	125.000	0.584688	91.3	61 - 107			
Cadmium	102.839	1.0	125.000	0.191416	82.1	53 - 104			
Chromium	124.264	1.0	125.000	14.1251	88.1	53 - 121			
Cobalt	110.425	1.0	125.000	6.45175	83.2	55 - 109			

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-46
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/27/2015

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 B5B0659 - EPA 3050B_S (continued)									
Matrix Spike (B5B0659-MS1) - Continued		**Source: 1500703-41**			Prepared: 2/25/2015 Analyzed: 2/25/2015				
Copper	124.280	2.0	125.000	9.33736	92.0	58 - 124			
Lead	120.315	1.0	125.000	13.4859	85.5	35 - 129			
Molybdenum	103.284	1.0	125.000	ND	82.6	57 - 108			
Nickel	111.608	1.0	125.000	7.30706	83.4	44 - 122			
Selenium	97.7642	1.0	125.000	0.575849	77.8	54 - 104			
Silver	109.028	1.0	125.000	ND	87.2	60 - 112			
Thallium	98.4374	1.0	125.000	ND	78.7	50 - 103			
Vanadium	140.666	1.0	125.000	27.0604	90.9	54 - 123			
Zinc	118.649	1.0	125.000	17.6604	80.8	29 - 132			
Matrix Spike Dup (B5B0659-MSD1)		**Source: 1500703-41**			Prepared: 2/25/2015 Analyzed: 2/25/2015				
Antimony	92.6948	2.0	125.000	0.659116	73.6	28 - 106	0.650	20	
Arsenic	97.4159	1.0	125.000	0.714688	77.4	57 - 109	1.79	20	
Barium	171.670	1.0	125.000	65.8579	84.6	18 - 159	1.21	20	
Beryllium	114.507	1.0	125.000	0.584688	91.1	61 - 107	0.188	20	
Cadmium	102.424	1.0	125.000	0.191416	81.8	53 - 104	0.404	20	
Chromium	123.952	1.0	125.000	14.1251	87.9	53 - 121	0.252	20	
Cobalt	109.290	1.0	125.000	6.45175	82.3	55 - 109	1.03	20	
Copper	122.044	2.0	125.000	9.33736	90.2	58 - 124	1.82	20	
Lead	120.469	1.0	125.000	13.4859	85.6	35 - 129	0.128	20	
Molybdenum	103.382	1.0	125.000	ND	82.7	57 - 108	0.0946	20	
Nickel	111.249	1.0	125.000	7.30706	83.2	44 - 122	0.322	20	
Selenium	96.8506	1.0	125.000	0.575849	77.0	54 - 104	0.939	20	
Silver	108.055	1.0	125.000	ND	86.4	60 - 112	0.896	20	
Thallium	96.5259	1.0	125.000	ND	77.2	50 - 103	1.96	20	
Vanadium	139.071	1.0	125.000	27.0604	89.6	54 - 123	1.14	20	
Zinc	117.162	1.0	125.000	17.6604	79.6	29 - 132	1.26	20	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-46
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/27/2015

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

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5B0707 - STLC_S Extraction									
Blank (B5B0707-BLK1)					Prepared: 2/26/2015 Analyzed: 2/26/2015				
Lead	ND	1.0			NR				
Blank (B5B0707-BLK2)					Prepared: 2/26/2015 Analyzed: 2/26/2015				
Lead	ND	1.0			NR				
LCS (B5B0707-BS1)					Prepared: 2/26/2015 Analyzed: 2/26/2015				
Lead	2.01514		2.00000		101	80 - 120			
Duplicate (B5B0707-DUP1)		**Source: 1500572-24**			Prepared: 2/26/2015 Analyzed: 2/26/2015				
Lead	1.32232	1.0		1.18711	NR		10.8	20	
Duplicate (B5B0707-DUP2)		**Source: 1500572-32**			Prepared: 2/26/2015 Analyzed: 2/26/2015				
Lead	18.8099	1.0		9.92903	NR		61.8	20	R
Matrix Spike (B5B0707-MS1)		**Source: 1500572-24**			Prepared: 2/26/2015 Analyzed: 2/26/2015				
Lead	3.58479		2.50000	1.18711	95.9	44 - 130			
Matrix Spike (B5B0707-MS2)		**Source: 1500572-32**			Prepared: 2/26/2015 Analyzed: 2/26/2015				
Lead	12.9471		2.50000	9.92903	121	44 - 130			
Matrix Spike Dup (B5B0707-MSD1)		**Source: 1500572-24**			Prepared: 2/26/2015 Analyzed: 2/26/2015				
Lead	3.53812		2.50000	1.18711	94.0	44 - 130	1.31	20	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-46
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/27/2015

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

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5B0653 - EPA 7471_S									
Blank (B5B0653-BLK1)					Prepared: 2/24/2015 Analyzed: 2/25/2015				
Mercury	ND	0.10			NR				
LCS (B5B0653-BS1)					Prepared: 2/24/2015 Analyzed: 2/25/2015				
Mercury	0.953949	0.10	0.833333		114	80 - 120			
Duplicate (B5B0653-DUP1)		**Source: 1500703-44**			Prepared: 2/24/2015 Analyzed: 2/25/2015				
Mercury	0.024151	0.10		0.015358	NR		44.5	20	R
Matrix Spike (B5B0653-MS1)		**Source: 1500703-44**			Prepared: 2/24/2015 Analyzed: 2/25/2015				
Mercury	0.923473	0.10	0.833333	0.015358	109	70 - 130			
Matrix Spike Dup (B5B0653-MSD1)		**Source: 1500703-44**			Prepared: 2/24/2015 Analyzed: 2/25/2015				
Mercury	0.909101	0.10	0.833333	0.015358	107	70 - 130	1.57	20	
Post Spike (B5B0653-PS1)		**Source: 1500703-44**			Prepared: 2/24/2015 Analyzed: 2/25/2015				
Mercury	0.006290		5.00000E-3	0.000184	122	85 - 115			M1

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-46
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 02/27/2015

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: Friday, February 20, 2015 3:00 PM
To: Diane Galvan
Subject: Lab Order 1500572 SR-1/17 Separation

Hi Diane and thank you for the results,

Could you please run sample B7-0 for CAM 17 Metals and the following samples for WET lead:

1500572-25	B9-0	60
1500572-24	B8-2	61
1500572-08	B3-1	64
1500572-04	B2-0	97
1500572-23	B8-1	97
1500572-01	B1-0	100
1500572-07	B3-0	180
1500572-22	B8-0	190
1500572-28	B10-0	190
1500572-14	B5-1	210
1500572-31	B11-0	390
1500572-32	B11-1	460
1500572-10	B4-0	880
1500572-13	B5-0	930

All on a regular TAT.

Thanks,
Luann

Luann Beadle | *Senior Staff Scientist*
Geocon Consultants, Inc.
6671 Brisa Street, Livermore, California 94550
P| 925.371.5900 M| 925.395.1669
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Bay Area / Fairfield / Sacramento / Bakersfield / Los Angeles / Orange County / Riverside County / Palm Desert / San Diego

March 09, 2015

Luann Beadle
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Tel: (925) 371-5900
Fax:(925) 371-5915

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

Re: ATL Work Order Number : 1500572

Client Reference : SR-1 and SR-17 Separation, S9800-02-46

Enclosed are the results for sample(s) received on February 12, 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

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-46
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 03/09/2015

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B3-0	1500572-07	Soil	2/11/15 9:40	2/12/15 9:30
B4-0	1500572-10	Soil	2/11/15 10:08	2/12/15 9:30
B5-0	1500572-13	Soil	2/11/15 10:05	2/12/15 9:30
B5-1	1500572-14	Soil	2/11/15 10:10	2/12/15 9:30
B8-0	1500572-22	Soil	2/11/15 10:58	2/12/15 9:30
B10-0	1500572-28	Soil	2/11/15 11:23	2/12/15 9:30
B11-0	1500572-31	Soil	2/11/15 11:22	2/12/15 9:30
B11-1	1500572-32	Soil	2/11/15 11:25	2/12/15 9:30

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-46
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 03/09/2015

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
1500572-07	B3-0	**ND**	mg/L	0.050	1	B5C0176	03/06/2015	03/09/15 10:58	
1500572-10	B4-0	**0.57**	mg/L	0.050	1	B5C0176	03/06/2015	03/09/15 11:01	
1500572-13	B5-0	**0.29**	mg/L	0.050	1	B5C0176	03/06/2015	03/09/15 11:03	
1500572-14	B5-1	**0.18**	mg/L	0.050	1	B5C0176	03/06/2015	03/09/15 11:06	
1500572-22	B8-0	**0.13**	mg/L	0.050	1	B5C0176	03/06/2015	03/09/15 11:08	
1500572-28	B10-0	**0.075**	mg/L	0.050	1	B5C0176	03/06/2015	03/09/15 11:11	
1500572-31	B11-0	**0.11**	mg/L	0.050	1	B5C0176	03/06/2015	03/09/15 11:13	
1500572-32	B11-1	**0.21**	mg/L	0.050	1	B5C0176	03/06/2015	03/09/15 11:16	

STLC DI 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
1500572-07	B3-0	**ND**	mg/L	1.0	20	B5C0192	03/06/2015	03/09/15 10:24	
1500572-10	B4-0	**3.1**	mg/L	1.0	20	B5C0192	03/06/2015	03/09/15 10:39	
1500572-13	B5-0	**1.2**	mg/L	1.0	20	B5C0192	03/06/2015	03/09/15 10:43	
1500572-14	B5-1	**ND**	mg/L	1.0	20	B5C0192	03/06/2015	03/09/15 10:47	
1500572-22	B8-0	**ND**	mg/L	1.0	20	B5C0192	03/06/2015	03/09/15 10:50	
1500572-28	B10-0	**ND**	mg/L	1.0	20	B5C0192	03/06/2015	03/09/15 11:01	
1500572-31	B11-0	**ND**	mg/L	1.0	20	B5C0192	03/06/2015	03/09/15 11:05	
1500572-32	B11-1	**ND**	mg/L	1.0	20	B5C0192	03/06/2015	03/09/15 11:09	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-46
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 03/09/2015

pH by EPA 9045C

Analyte: pH **Analyst: LA**

Laboratory ID	Client Sample ID	Result	Units	PQL	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1500572-07	B3-0	**7.5**	pH Units	0.10	1	B5C0190	03/06/2015	03/06/15 13:58	
1500572-14	B5-1	**5.9**	pH Units	0.10	1	B5C0190	03/06/2015	03/06/15 13:58	
1500572-22	B8-0	**5.4**	pH Units	0.10	1	B5C0190	03/06/2015	03/06/15 13:58	
1500572-28	B10-0	**6.4**	pH Units	0.10	1	B5C0190	03/06/2015	03/06/15 13:58	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-46
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 03/09/2015

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 Limits	RPD	RPD Limit	Notes
Batch B5C0176 - EPA 3010A_S									
Blank (B5C0176-BLK1)					Prepared: 3/6/2015 Analyzed: 3/9/2015				
Lead	ND	0.050			NR				
LCS (B5C0176-BS1)					Prepared: 3/6/2015 Analyzed: 3/9/2015				
Lead	0.941673	0.050	1.00000		94.2	80 - 120			
Duplicate (B5C0176-DUP1)		**Source: 1500634-11**			Prepared: 3/6/2015 Analyzed: 3/9/2015				
Lead	1.59868	0.050		0.915912	NR		54.3	20	R
Matrix Spike (B5C0176-MS1)		**Source: 1500634-11**			Prepared: 3/6/2015 Analyzed: 3/9/2015				
Lead	3.05196	0.050	2.50000	0.915912	85.4	77 - 121			
Matrix Spike Dup (B5C0176-MSD1)		**Source: 1500634-11**			Prepared: 3/6/2015 Analyzed: 3/9/2015				
Lead	3.00172	0.050	2.50000	0.915912	83.4	77 - 121	1.66	20	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-46
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 03/09/2015

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

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5C0192 - STLC DI_S Extraction									
Blank (B5C0192-BLK1)					Prepared: 3/6/2015 Analyzed: 3/9/2015				
Lead	ND	1.0			NR				
LCS (B5C0192-BS1)					Prepared: 3/6/2015 Analyzed: 3/9/2015				
Lead	2.04640		2.00000		102	80 - 120			
Duplicate (B5C0192-DUP1)		**Source: 1500572-07**			Prepared: 3/6/2015 Analyzed: 3/9/2015				
Lead	0.095267	1.0		0.087538	NR		8.46	20	
Matrix Spike (B5C0192-MS1)		**Source: 1500572-07**			Prepared: 3/6/2015 Analyzed: 3/9/2015				
Lead	2.64582		2.50000	0.087538	102	70 - 130			
Matrix Spike Dup (B5C0192-MSD1)		**Source: 1500572-07**			Prepared: 3/6/2015 Analyzed: 3/9/2015				
Lead	2.62389		2.50000	0.087538	101	70 - 130	0.832	20	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-46
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 03/09/2015

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 B5C0190 - Prep_WC1_S									
Duplicate (B5C0190-DUP1)		**Source: 1500572-07**			Prepared: 3/6/2015 Analyzed: 3/6/2015				
pH	6.55000	0.10		7.46000	NR		13.0	20	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : SR-1 and SR-17 Separation, S9800-02-46
6671 Brisa Street	Report To : Luann Beadle
Livermore , CA 94550	Reported : 03/09/2015

Notes and Definitions

R	RPD value outside acceptance criteria. Calculation is based on raw values.
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: Monday, March 02, 2015 9:36 AM
To: Diane Galvan
Subject: Lab Order 1500572 1/17 Separation Santa Cruz

Hi Diane,

Could you please run DI-WET and TCLP lead on the following samples:

B3-0
B11-1
B8-0
B10-0
B5-1
B11-0
B4-0
B5-0

Also, please run pH on samples:

B3-0
B5-1
B8-0
B10-0

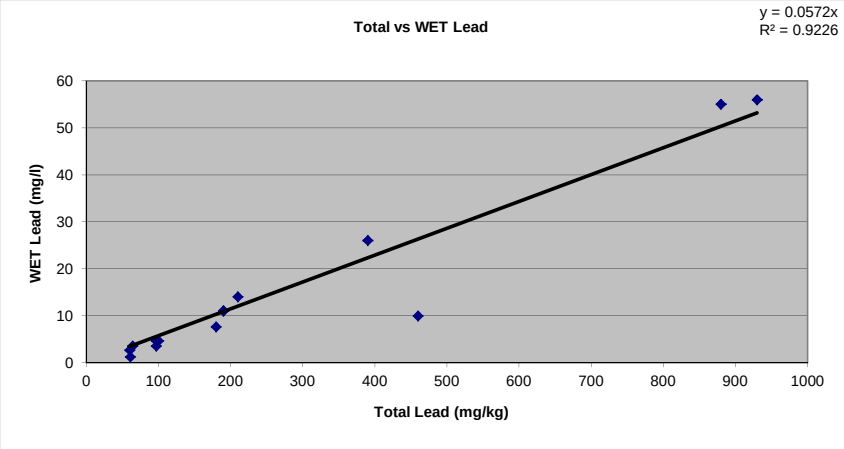
All on a regular TAT, please.

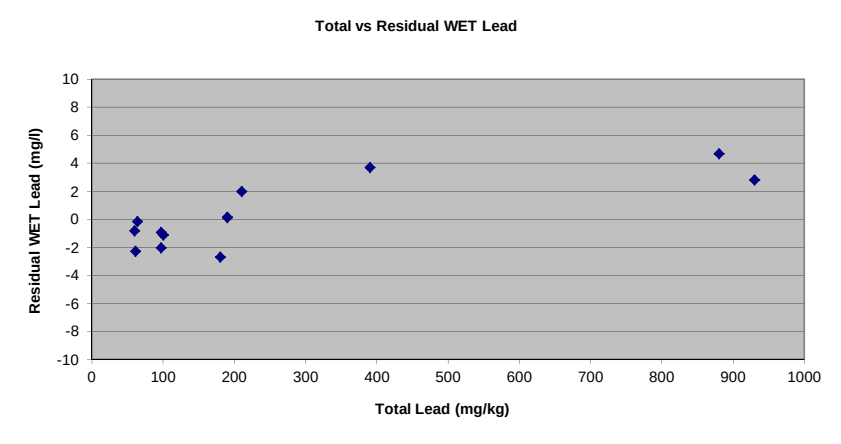
Thank you,
Luann

Luann Beadle | *Senior Staff Scientist*
Geocon Consultants, Inc.
6671 Brisa Street, Livermore, California 94550
P| 925.371.5900 M| 925.395.1669

APPENDIX C

Sample ID	Sample Depth (feet)	Total Lead (mg/kg)	WET Lead (mg/l)	Residual WET Lead (mg/l)	Squared Residual WET Lead (mg/l)
B8-0	0 to 0.5	190	11	0.13	0.02
B10-0	0 to 0.5	190	11	0.13	0.02
B3-1	1 to 1.5	64	3.5	-0.16	0.03
B9-0	0 to 0.5	60	2.6	-0.83	0.69
B2-0	0 to 0.5	97	4.6	-0.95	0.90
B1-0	0 to 0.5	100	4.6	-1.12	1.25
B5-1	1 to 1.5	210	14	1.99	3.96
B8-1	1 to 1.5	97	3.5	-2.05	4.19
B8-2.5	2 to 2.5	61	1.2	-2.29	5.24
B3-0	0 to 0.5	180	7.6	-2.69	7.26
B5-0	0 to 0.5	930	56	2.81	7.90
B11-0	0 to 0.5	390	26	3.70	13.65
B4-0	0 to 0.5	880	55	4.67	21.82
B11-1	1 to 1.5	460	9.9	-16.41	269.23





Pb: B1 to B7 - 0 ft

Number of Valid Observations	7
Number of Distinct Observations	7
Minimum	24
Maximum	930
Mean	322
Median	100
SD	401.6
Variance	161291
Coefficient of Variation	1.247
Skewness	1.171
Mean of log data	4.99
SD of log data	1.4
90% Standard Bootstrap UCL	**503**
95% Standard Bootstrap UCL	**554**

Pb: B1 to B7 - 1 ft

Number of Valid Observations	7
Number of Distinct Observations	7
Minimum	1.9
Maximum	210
Mean	42.3
Median	5.7
SD	77.25
Variance	5968
Coefficient of Variation	1.828
Skewness	2.256
Mean of log data	2.339
SD of log data	1.738
90% Standard Bootstrap UCL	**77.1**
95% Standard Bootstrap UCL	**86.5**

Pb: B1 to B7 - 2 ft

Number of Valid Observations	7
Number of Distinct Observations	7
Minimum	1.6
Maximum	8.4
Mean	3.57
Median	2.8
SD	2.344
Variance	5.496
Coefficient of Variation	0.656
Skewness	1.797
Mean of log data	1.124
SD of log data	0.564
90% Standard Bootstrap UCL	**4.62**
95% Standard Bootstrap UCL	**4.95**

Pb: B8 to B11 - 0 ft

Number of Valid Observations	4
Number of Distinct Observations	3
Minimum	60
Maximum	390
Mean	208

Pb: B8 to B11 - 1 ft

Number of Valid Observations	4
Number of Distinct Observations	4
Minimum	1.3
Maximum	460
Mean	140

Pb: B8 to B11 - 2 ft

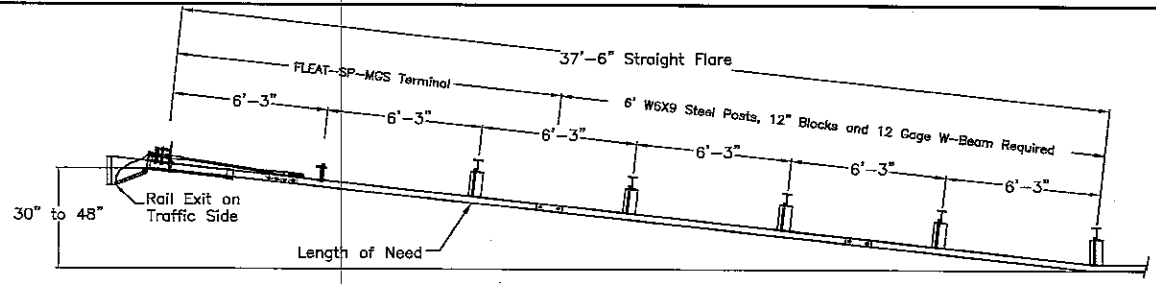
Number of Valid Observations	4
Number of Distinct Observations	4
Minimum	2.0
Maximum	61
Mean	19.4

As

Number of Valid Observations	5
Number of Distinct Observations	4
Minimum	1.4
Maximum	4.0
Mean	2.98
Median	3.7
SD	1.274
Variance	1.622
Coefficient of Variation	0.427
Skewness	-0.624
Mean of log data	1.001
SD of log data	0.501
95% Standard Bootstrap UCL	**3.82**

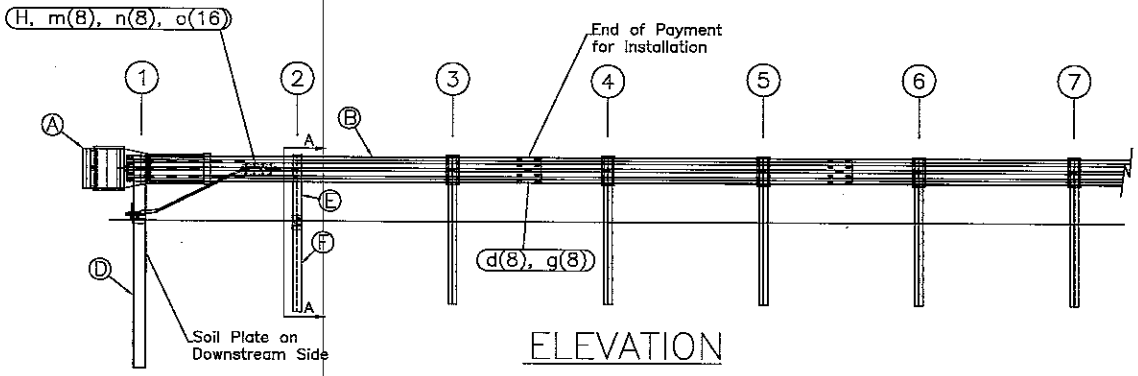
Pb

Number of Valid Observations	33
Number of Distinct Observations	30
Minimum	1.3
Maximum	930
Mean	123
Median	12
SD	230.5
Variance	53110
Coefficient of Variation	1.881
Skewness	2.69
Mean of log data	3.018
SD of log data	2.118
95% Standard Bootstrap UCL	**187**

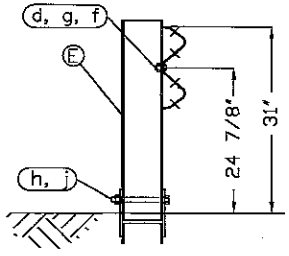


PLAN

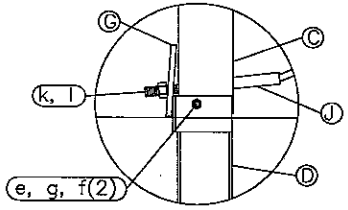
TRAFFIC



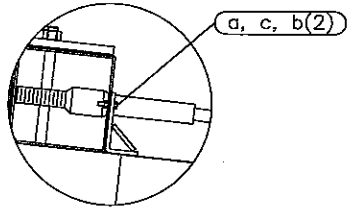
ELEVATION



SECTION A–A
Post #2



Post #1 Connection Detail



Impact Head Connection Detail

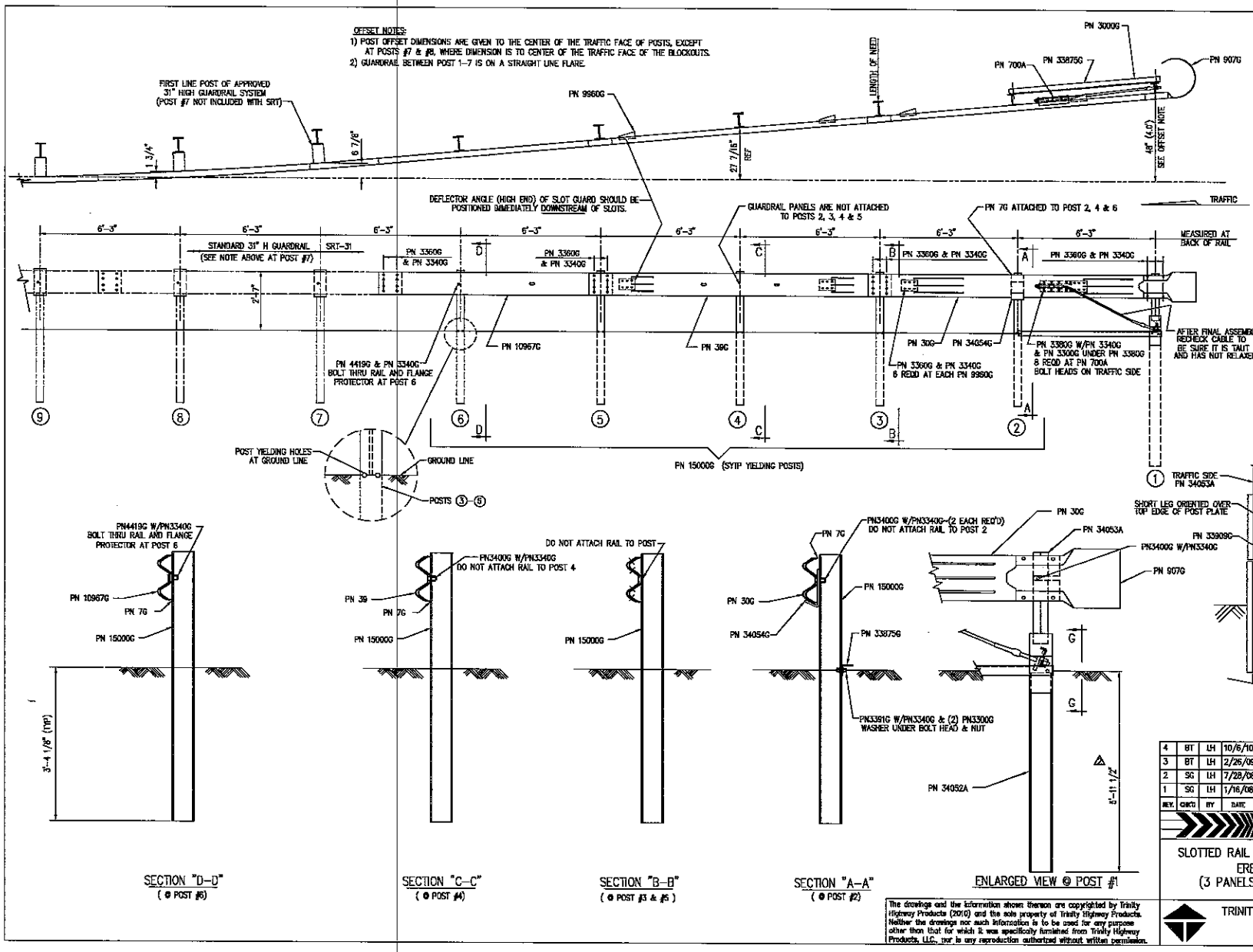
ITEM	QTY	BILL OF MATERIALS	ITEM NO.
A	1	IMPACT HEAD	F3000
B	1	W-BEAM GUARDRAIL END SECTION, 12 Ga.	MGS-SF1303
C	1	FIRST POST TOP (6X6X¼" Tube)	TPHP1A
D	1	FIRST POST BOTTOM (6' W6X15)	TPHP1B
E	1	SECOND POST ASSEMBLY TOP	UHP2A
F	1	SECOND POST ASSEMBLY BOTTOM	HP3B
G	1	BEARING PLATE	E750
H	1	CABLE ANCHOR BOX	S760
J	1	BCT CABLE ANCHOR ASSEMBLY	E770
		HARDWARE (ALL DIMENSIONS IN INCHES)	
a	2	5/16 x 1 HEX BOLT GRD 5	B5160104A
b	4	5/16 WASHER	W0516
c	2	5/16 HEX NUT	N0516
d	9	5/8 Dia. x 1 1/4 SPLICE BOLT (POST #2)	B580122
e	1	5/8 Dia. x 9 HEX BOLT GRD 5	B580904A
f	3	5/8 WASHER	W050
g	10	5/8 Dia. H.G.R NUT	N050
h	1	3/4 Dia. x 8 1/2 HEX BOLT GRD A449	B340854A
j	1	3/4 Dia. HEX NUT	N030
k	2	1 ANCHOR CABLE HEX NUT	N100
l	2	1 ANCHOR CABLE WASHER	W100
m	8	CABLE ANCHOR BOX SHOULDER BOLT	SB58A
n	8	1/2 A325 STRUCTURAL NUT	N055A
o	16	1 1/16 OD x 9/16 ID A325 STR. WASHER	W050A

GENERAL NOTES:
1. All bolts, nuts, cable assemblies, cable anchors and bearing plates shall be galvanized.
2. The lower sections of the Posts 1&2 shall not protrude more than 4 in above the ground (measured along a 5' cord). Site grading may be necessary to meet this requirement.
3. The lower sections of the hinged posts should not be driven with the upper post attached. If the post is placed in a drilled hole, the backfill material must be satisfactorily compacted to prevent settlement.
4. When competent rock is encountered, a 12" Ø post hole, 20 in. deep cored into the rock surface may be used if approved by the engineer for post 1. Granular material will be placed in the bottom of the hole, approximately 2.5" deep to provide drainage. The first post can be field cut to length, placed in the hole and backfilled with suitable backfill. The soil plate may be trimmed if required.
5. The breakaway cable assembly must be taut. A locking device (vice grips or channel lock pliers) should be used to prevent the cable from twisting when tightening nuts.

RSI
Road Systems, Inc.
Big Spring, TX
Phone: 432-263-2435
or Phone: 330-346-0721

FLEAT-SP-MGS Terminal
Midwest Guardrail System
31" Top of Rail

Sheet: 1
Date: 02/24/10
By: JRR
Drawing Name: FLT-SP-S-MGS
Scale: None
Rev: 0



BILL OF MATERIAL

	PN	QTY	DESCRIPTION
	7G	3	12/6"/FLG PROTECTOR (AT POST 2, 4 & 6)
	30G	1	12/12'6/S SRT-1 (GUARDRAIL)
	39G	1	12/12'6/S SRT-2 (GUARDRAIL)
	700A	1	CABLE ANCHOR BRACKET
	907G	1	12/BUFFER/ROLLED (TERMINAL)
	3000G	1	3/4 x 6'-6" CABLE
HARDWARE	3240G	2	5/16" WASHER (AT POST 1)
	3245G	2	5/16" HEX NUT (AT POST 1)
⚠	3300G	12	5/8" WASHER
⚠	3340G	67	5/8" HEX HGR NUT
	3360G	52	5/8"ø x 1 1/4" HGR SPLICE BOLT
	3380G	8	5/8"ø x 1 1/2" HEX HD BOLT
⚠	3400G	4	5/8"ø x 2" HGR POST BOLT (AT POSTS 1, 2 & 4)
	3391G	2	5/8"ø x 1 3/4" HEX BOLT (A325) (AT STRUT)
	3900G	2	1" WASHER (AT CABLE)
	3910G	2	1" HEX NUT (AT CABLE)
	4211G	2	5/16"ø x 1 3/4" HEX BOLT (AT POST 1)
	4419G	1	5/8"ø x 1 3/4" COUNTERSUNK HD BOLT (AT POST 6)
	9960G	4	SLOT GUARD BRACKET
	10967G	1	12/6'4.5/31.5/S SRT-3 (GUARDRAIL)
	15000G	5	6'-0" SYT POST (W6 X 8.5)
	33909G	1	CABLE ANCHOR BRACKET (AT POST 1)
	33875G	1	ANGLE STRUT 3 x 3 x 1/4
	34052A	1	CR POST 1 BOT (W6 x 15)
	34053A	1	CR POST 1 TOP (W6 x 8.5)
	34054G	1	POST SHELF ANGLE (AT POST 2)

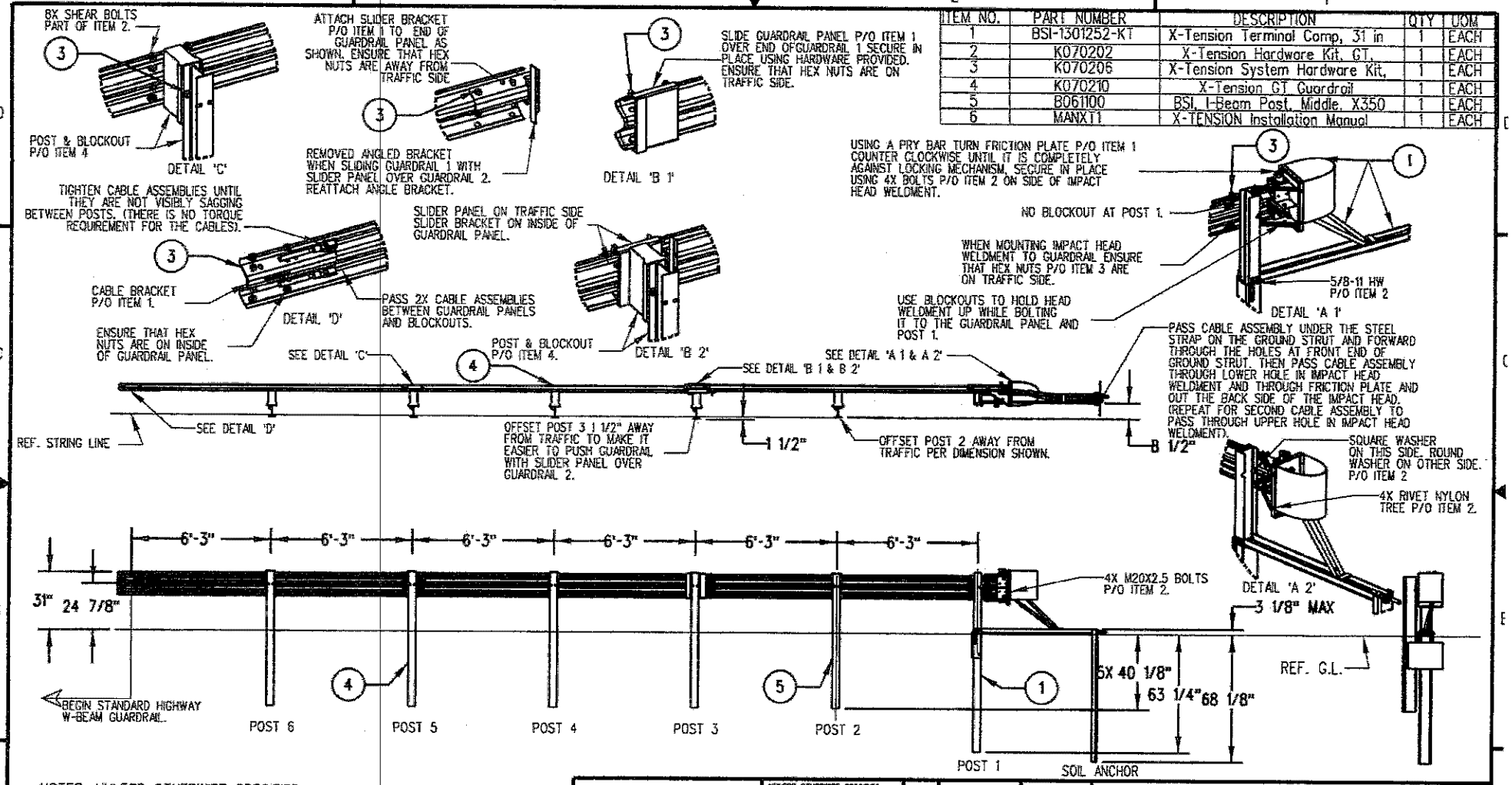
REV.	CHKD	BY	DATE	REMARKS
4	BT	LH	10/6/10	OFFSET POSTS #7 & #8
3	BT	LH	2/26/09	REVISED HARDWARE
2	SG	LH	7/28/08	REVISED POST #1 LENGTH IN GROUND
1	SG	LH	1/16/08	REVISED HARDWARE QUANTITY IN BILL OF MATERIAL

SRT-31

SLOTTED RAIL TERMINAL SRT-31 (31" H) ERECTION DETAILS (3 PANELS, CR AND SYT POSTS)

TRINITY HIGHWAY PRODUCTS, LLC.
2525 STEMMONS FREEWAY
DALLAS, TX 75207

DRAWN	BT
CHECKED	SG
SCALE	NTS
DATE	10/30/07
ENG. FILE #	SS436-01E
SHEET#	1 OF 1
DRAWING NO.	SS 436
REV.	4



ITEM NO.	PART NUMBER	DESCRIPTION	QTY	UOM
1	BSI-1301252-KT	X-Tension Terminal Comp, 31 in	1	EACH
2	K070202	X-Tension Hardware Kit, GT,	1	EACH
3	K070206	X-Tension System Hardware Kit,	1	EACH
4	K070210	X-Tension GT Guardrail	1	EACH
5	B061100	BSI, I-Beam Post, Middle, X350	1	EACH
6	MANXTI	X-TENSION Installation Manual	1	EACH

NOTES: UNLESS OTHERWISE SPECIFIED.

1. SYSTEM TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS.
2. ONLY TIGHTEN THE CABLE ASSEMBLIES USING THE NUTS AT THE CABLE BRACKET (SEE DETAIL 'D'). DO NOT TIGHTEN THE CABLES AT THE FRONT OF THE GROUND ANCHOR.
3. WHEN DRIVING STEEL POST, ENSURE THAT A DRIVING CAP WITH TIMBER OR PLASTIC INSERT IS USED TO PREVENT DAMAGE TO THE GALVANIZING TO THE TOP OF THE POST.

APPROVALS

DRAWN BY:	NMV
DRAWN DATE:	2/08/13
APPR'D BY:	JMT
APPR'D DATE:	2/08/13

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE: FRACTIONS ±1/16, DECIMAL .XX ±.03 .XXX ±.010, ANGLES ±1/2°. INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5-1994. THIRD ANGLE PROJECTION. DO NOT SCALE DRAWING.

REV	ECN#	DATE
B	2067	05/02/13
A	2022	2/08/13

LINDSAY TRANSPORTATION SOLUTIONS

BARRIER SYSTEMS INC.
3333 Vaca Valley Parkway Ste 800
Vacaville, CA 95688
Tel 888-900-3681
www.barriersystemsinc.com

TITLE: X-TENSION GUARDRAIL TERMINAL SYSTEM STEEL POST WITH COMPOSITE BLOCKOUT 31" RAIL HEIGHT

SIZE	DWG NO.	REV.
B	XTGTSS5	B

SCALE 1:50 SHEET 1 OF 1

Doc. B100108

Phatharanavik, Pat@DOT

From: Abdalla, Atif M@DOT
Sent: Monday, March 23, 2015 9:01 AM
To: Phatharanavik, Pat@DOT
Subject: FW: contact us

Pat,

For your records.

From: Adrian Valmonte [mailto:avalmonte@cityofsantacruz.com]
Sent: Wednesday, March 18, 2015 2:36 PM
To: Abdalla, Atif M@DOT
Subject: RE: contact us

Hello Atif,

As it currently stands, water should be available for the project starting in October. However, we cannot be sure what the situation will be at the end of the summer. But for now, the answer is yes.

Your options for sources are:

1. The existing CalTRANS irrigation service at the end of Highway 17/Ocean Street. I can't find the name of the maintenance but I think her name was Mirtha Padilla.
2. Nearby fire hydrants (with the use of an SCWD hydrant meter; deposit will be around $2,500.00)

Adrian Valmonte

Santa Cruz Water Department

(831) 420-5318

From: Abdalla, Atif M@DOT [mailto:atif.abdalla@dot.ca.gov]
Sent: Wednesday, March 18, 2015 1:22 PM
To: Adrian Valmonte
Subject: contact us

Good afternoon Adrian,

My name is Atif Abdalla, I am a project engineer with the California Department of Transportation (Caltrans). We have a project in Santa Cruz County, Route 1/17 at the Fishhook. The project proposes to widen shoulders and re-stripe from 3-lanes to 4-lanes. Construction start date is 10/1/2015 and it will end by 12/1/2015. We estimated the amount of water that would be needed for this project at 130, 300 gallon. We need your help in providing water for this project. Please let me know if there are any water sources near our project area that we could use.

avalmonte@cityofsantacruz.com