

FOR CONTRACT No.: 07-253804

# **INFORMATION HANDOUT**

**AERIALY DEPOSITED LEAD  
SITE INVESTIGATION REPORT**

**PROPOSED BMP SITES AT LA-210 AND  
HUNTINGTON DRIVE, AZUSA AVENUE, AND CITRUS  
AVENUE INTERCHANGES  
LOS ANGELES COUNTY, CALIFORNIA**

**ROUTE: 07-LA-210, PM R25.8/R47.0**

**AERIALY DEPOSITED LEAD  
SITE INVESTIGATION REPORT**

**PROPOSED BMP SITES AT LA-210 AND  
HUNTINGTON DRIVE, AZUSA AVENUE, AND CITRUS  
AVENUE INTERCHANGES (PM R25.8/R47.0)  
LOS ANGELES COUNTY, CALIFORNIA**

**PREPARED FOR:**  
CALIFORNIA DEPARTMENT OF TRANSPORTATION  
DISTRICT 7  
100 SOUTH MAIN STREET  
LOS ANGELES, CALIFORNIA

**PREPARED BY:**  
GEOCON CONSULTANTS, INC.  
3303 N. SAN FERNANDO BLVD., SUITE 100  
BURBANK, CALIFORNIA

CALTRANS CONTRACT 07A2729  
TASK ORDER NO. 3  
EA No. 253801

GEOCON PROJECT NO. S9475-06-03



MAY 4, 2010



Project No. S9475-06-03  
May 4, 2010

Mr. Ali Nili  
California Department of Transportation, District 7  
Office of Environmental Engineering and Corridor Studies  
100 South Main Street, Suite 1200, 12-268  
Los Angeles, California 90012

Subject: PROPOSED BMP SITES AT LA-210 AND HUNTINGTON DRIVE, AZUSA AVENUE, AND CITRUS AVENUE INTERCHANGES (PM R25.8/R47.0) LOS ANGELES COUNTY, CALIFORNIA CONTRACT NO. 07A2729, TASK ORDER NO. 3, EA. 253801 AERIALY DEPOSITED LEAD SITE INVESTIGATION REPORT

Dear Mr. Nili:

In accordance with Caltrans Contract No. 07A2729 and Task Order No. 3 executed on March 26, 2010, Geocon Consultants, Inc. performed an aerially deposited lead investigation for six proposed best management practices (BMP) sites located at LA-210 and Huntington Drive, Azusa Avenue, and Citrus Avenue interchanges in Los Angeles County, California. The accompanying report summarizes the services performed, including the advancement of hand-auger borings, soil sampling, laboratory analyses, statistical analyses, and global positioning system surveying.

*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.*

Please contact us if there are questions concerning this report or if we may be of further service.

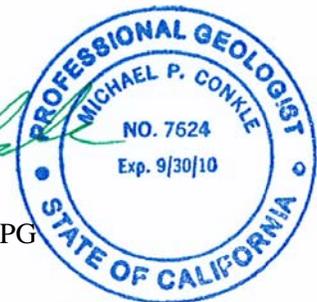
Sincerely,

GEOCON CONSULTANTS, INC.

Russell Anthony, PG, REA II  
Senior Geologist



Michael P. Conkle, PG  
Project Manager



RA:MPC:kh:kor

(6/1CD) Addressee

# TABLE OF CONTENTS

	Page
EXECUTIVE SUMMARY .....	i
1. INTRODUCTION .....	1
1.1 Project Description .....	1
1.2 Investigation Objective.....	2
2. BACKGROUND .....	2
2.1 Aerially Deposited Lead in Soil .....	2
2.2 Hazardous Waste Classification Criteria .....	2
2.3 DTSC Variance .....	3
3. SCOPE OF SERVICES .....	4
3.1 Pre-field Activities.....	4
3.2 Field Activities .....	4
3.3 GPS Surveying .....	5
3.4 Laboratory Analyses.....	5
3.5 Report Preparation.....	5
4. INVESTIGATIVE METHODS .....	5
4.1 Soil Sampling .....	5
4.2 Equipment Blank Sampling.....	6
4.3 Deviations from the Task Order .....	6
5. FIELD OBSERVATIONS and INVESTIGATIVE RESULTS .....	6
5.1 Site Conditions .....	6
5.2 Soil Sample Analytical Results .....	7
5.3 Data Validation .....	7
6. DATA EVALUATION .....	8
6.1 Statistical Evaluation for Lead .....	8
6.1.1 Calculating the UCLs for the Arithmetic Mean .....	8
6.1.2 Correlation of Total and WET Lead.....	9
6.2 Title 22 Metals.....	9
6.3 pH.....	10
7. CONCLUSIONS AND RECOMMENDATIONS.....	10
7.1 Predicted WET Lead Results.....	10
7.2 Title 22 Metals.....	11
7.3 pH.....	12
7.4 Worker Protection.....	12
8. REPORT LIMITATIONS .....	13

## TABLE OF CONTENTS (Continued)

### FIGURES

1. Vicinity Map
2. System 1 Boring Location Map
3. Systems 2-5 Boring Location Map
4. System 6 Boring Location Map

### TABLES

1. Boring Coordinates and Summary of Lead and pH Analytical Results
2. Summary of Title 22 Metals Analytical Results
3. Lead Statistical Analysis Results

### APPENDICES

- A. Caltrans Task Order No. 3
- B. DTSC Variance
- C. Laboratory Reports and Chain-of-Custody Documentation
- D. Geocon Standard Operating Procedures
- E. Lead Statistics and Regression Analysis
- F. California Human Health Screening Levels for Soil

## EXECUTIVE SUMMARY

Geocon Consultants, Inc. performed an aerially deposited lead (ADL) investigation in exposed soil at six proposed best management practices (BMP) sites (individually referenced as Systems 1 through 6 and as collectively referenced as Sites) located at LA-210 and Huntington Drive, Azusa Avenue, and Citrus Avenue interchanges (Post Mile R25.8 to Post Mile R47.0) in Los Angeles County, California. The California Department of Transportation (Caltrans) plans to construct one Infiltration Basin (at System 1) and five Treatment Earth Ditch Bioswales (at Systems 2 through 5) at the Sites. The objective of the investigation was to evaluate soil at the Sites for the potential presence of hazardous concentrations of lead suspected due to impact from vehicle exhaust emissions when leaded gasoline was used. Caltrans will use information obtained from the investigation to determine soil disposal options and identify health and safety concerns during construction activities at the Sites.

### **Predicted WET Lead Results**

Waste classifications are evaluated based on the 90% UCL of the lead content for the relevant excavation depths; this has historically been considered sufficient to satisfy a good faith effort by the EPA as discussed in SW 846. Risk assessment characterization is based on the 95% UCL of the lead content in the waste for the relevant depths; this is in accordance with the Risk Assessment Guidance for Superfund (RAGS) Volume 1 Documentation for Exposure Assessment. Per Caltrans, the 90% UCLs are to be used to evaluate onsite reuse and the 95% UCLs are to be used to evaluate offsite disposal.

The 90% and 95% UCLs for total lead and predicted WET lead concentrations for the Systems 1 through 6 are summarized in Table 3. Waste classifications based on Caltrans Type are discussed below.

### **System 1**

None of the samples collected from System 1 exhibited total lead concentrations in excess of the Total Threshold Limit Concentration (TTLC) for lead; or 10 times the Soluble Threshold Limit Concentration (STLC) for lead. Based upon the reported total lead concentrations, excavated soil from the surface to a depth of 1.5 feet would be classified as non-hazardous with respect to lead content. Accordingly, the soil is suitable for onsite reuse or disposal as non-hazardous (as Caltrans Type X) based on lead content.

### **System 2**

Based upon the predicted WET lead concentrations, excavated soil from the surface to a depth of 1.0 foot would be classified as non-hazardous since the 95% UCL-predicted WET lead concentration is less than the STLC of 5.0 mg/l. Accordingly, the soil is suitable for onsite reuse or disposal as non-hazardous (as Caltrans Type X) based on lead content.

### **System 3**

Based upon the predicted WET lead concentration, excavated soil from the surface to a depth of 1.0 foot would be classified as a hazardous waste since the 95% UCL-predicted WET lead concentration is greater than the STLC of 5.0 mg/l. The top 1.0 foot of soil will not be considered a RCRA hazardous waste based on the Toxicity Characteristic Leaching Procedure (TCLP) lead results. Based on the DI-WET lead and pH results, the top 1.0 foot of soil may be reused onsite (as Caltrans Type Y1) by placing the lead-impacted soil under at least 1.0 foot of clean soil or a pavement structure maintained by Caltrans.

### **System 4**

Based upon the predicted WET lead concentration, excavated soil from the surface to a depth of 1.0 foot would be classified as a hazardous waste since the 95% UCL-predicted WET lead concentration is greater than the STLC of 5.0 mg/l. The top 1.0 foot of soil will not be considered a RCRA hazardous waste based on the TCLP lead results. Based on the DI-WET lead and pH results, the top 1.0 foot of soil may be reused onsite (as Caltrans Type Y1) by placing the lead-impacted soil under at least 1.0 foot of clean soil or a pavement structure maintained by Caltrans.

### **System 5**

Based upon the predicted WET lead concentration, excavated soil from the surface to a depth of 1.0 foot would be classified as a hazardous waste since the 95% UCL-predicted WET lead concentration is greater than the STLC of 5.0 mg/l. The top 1.0 foot of soil will not be considered a RCRA hazardous waste based on the TCLP lead results. Based on the DI-WET lead and pH results, the top 1.0 foot of soil may be reused onsite (as Caltrans Type Y1) by placing the lead-impacted soil under at least 1.0 foot of clean soil or a pavement structure maintained by Caltrans.

### **System 6**

None of the samples collected from System 6 exhibited total lead concentrations in excess of the TTLC or 10 times the STLC. Based upon the reported total lead concentrations, excavated soil from the surface to a depth of one foot would be classified as non-hazardous with respect to lead content. Accordingly, the soil is suitable for onsite reuse or disposal as non-hazardous (as Caltrans Type X) based on lead content.

### **Title 22 Metals**

Analysis of selected soil samples for CCR Title 22 metals did not indicate the presence of heavy metal concentrations (other than lead) at or above their respective TTLCs or 10 times their respective STLCs. The concentrations of metals (other than lead) reported in the soil samples were below their respective residential land use CHHSLs. The concentrations of metals (other than lead) in the soil samples were within the reported range of background concentrations for California soils. Based on the reported concentrations, excess soil excavated from Systems 1, 2, and 6 are suitable for onsite reuse or disposal as non-hazardous with respect to lead content. Excess soil excavated from Systems 3, 4, and 5 will be classified as a California hazardous waste based on lead content.

**pH**

Analysis of selected soil samples indicate that the pH of the soil ranged from 6.6 to 7.1 and the soil is suitable for reuse under the DTSC Variance. If the soil is to be transported offsite it will not be considered as hazardous based on soil pH.

**Worker Protection**

Per Caltrans' requirements, contractor(s) should prepare a project-specific Lead Compliance Plan to prevent or minimize worker exposure to lead-impacted soil. The plan should include protocols for environmental and personnel monitoring, requirements for personal protective equipment, and other appropriate health and safety protocols and procedures for the handling of lead-impacted soil.

# AERIALY DEPOSITED LEAD SITE INVESTIGATION REPORT

## 1. INTRODUCTION

Geocon Consultants, Inc. performed an aerially deposited lead (ADL) site investigation in exposed soil at six proposed best management practices (BMP) sites (individually referenced as Systems 1 through 6 and collectively referenced as Sites) located at LA-210 and Huntington Drive, Azusa Avenue, and Citrus Avenue interchanges (Post Mile R25.8 to Post Mile R47.0) in Los Angeles County, California (Figure 1). The investigation was conducted under California Department of Transportation (Caltrans) Contract No. 07A2729, Task Order (TO) No. 3 (Appendix A), and Expense Authorization 253801. A general description of the project and the investigation objection are summarized below.

### 1.1 Project Description

Caltrans plans to construct one infiltration basin and five treatment earth ditch bioswales at the Sites. The Sites are within Caltrans right-of-way at LA-210 and Huntington Drive, Azusa Avenue, and Citrus Avenue interchanges. Site locations are depicted on the Vicinity Map (Figure 1) and Boring Location Maps (Figures 2 through 4).

The proposed construction areas range from approximately 900 to 8,800 square feet where 10 to 18 inches of exposed or asphalt-covered soil will be excavated during construction. Proposed excavation plans for the Sites are summarized below:

- **System 1 at the LA-210 and westbound Huntington Drive on-ramp (PM R32.9):** Construction of an infiltration basin at this location will include excavating an approximately 44.5- by 198-foot area of exposed soil located approximately 34 feet from the roadway to a depth of 1.5 feet.
- **System 2 at the LA-210 eastbound onramp from southbound Azusa Avenue (PM R39.5):** An earth ditch bioswale constructed at this location will include excavating an approximately 11- by 100-foot area of exposed soil located approximately 15 feet from the roadway to a depth of 10 inches.
- **System 3 at the LA-210 westbound onramp from southbound Azusa Avenue (PM R39.5):** Construction of an earth ditch bioswale at this location will include excavating an approximately 12- by 130-foot area of exposed soil located approximately 25 feet from the roadway to a depth of 12 inches.
- **System 4 at the LA-210 westbound onramp from E. First Street (PM R39.5):** An earth ditch bioswale constructed at this location will include excavating an approximately 10- by 130-foot area of exposed soil located approximately 38 feet from the roadway to a depth of 12 inches.
- **System 5 at the LA-210 westbound offramp to E. First Street (R39.5):** An earth ditch bioswale constructed at this location will include excavating an approximately 10- by 120-foot area of exposed and asphalt-covered soil located approximately 21 feet from the roadway to a depth of 12 inches.
- **System 6 at the LA-210 and eastbound Citrus Avenue on-ramp (PM 40.6):** Construction of an earth ditch bioswale at this location will include excavating an approximately 10- by 90-foot area of exposed soil located approximately 15 feet from the roadway to a depth of 12 inches.

## **1.2 Investigation Objective**

The objective of the investigation was to evaluate soil at the Sites for the potential presence of hazardous concentrations of lead suspected due to impact from vehicle exhaust emissions when leaded gasoline was used. Caltrans will use information obtained from the investigation to determine soil management options (e.g., disposal or onsite reuse) and identify health and safety concerns during proposed construction activities at the Sites.

## **2. BACKGROUND**

### **2.1 Aerially Deposited Lead in Soil**

Testing by Caltrans throughout the State has shown that ADL exists in soil along major highway routes due to vehicle exhaust containing lead from the combustion of leaded gasoline. The concentration and distribution of ADL in soil is a function of many variables, but in general, highway age and traffic volume appear to be primary factors.

### **2.2 Hazardous Waste Classification 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), §261.

For a waste containing metals, the waste is classified as “California hazardous” when: (1) the total metal content exceeds the respective Total Threshold Limit Concentration (TTLC); or (2) the soluble metal content exceeds the respective Soluble Threshold Limit Concentration (STLC) based on the standard Waste Extraction Test (WET). A waste may have the potential of exceeding the STLC when the waste’s total metal content is greater than or equal to ten times the respective STLC value, since the WET uses a 1:10 dilution ratio. Hence, when a total metal is detected at a concentration greater than or equal to ten times the respective STLC, and assuming that 100 percent of the total metals are soluble, soluble metal analysis is typically performed. A material is classified as “RCRA hazardous” when the soluble metal content exceeds the Federal Regulatory Level based on the Toxicity Characteristic Leaching Procedure (TCLP). The TTLC value for lead is 1,000 milligrams per kilogram (mg/kg). The STLC and TCLP values for lead are both 5.0 milligrams per liter (mg/l).

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

The Department of Toxic Substances Control (DTSC) regulates and interprets hazardous waste laws in California. DTSC generally considers excavated or transported materials that exhibit “hazardous waste” characteristics to be a “waste” requiring proper management, treatment and disposal. Soil that contains lead above hazardous waste thresholds and is left in-place would not be necessarily classified by DTSC as a “waste.” The DTSC has provided site-specific determinations that “movement of wastes within an area of contamination does not constitute "land disposal" and, thus, does not trigger hazardous waste disposal requirements.” Therefore, lead-impacted soil that is scarified in-place, moisture-conditioned, and re-compacted during roadway improvement activities might not be considered a “waste.” DTSC should be consulted to confirm waste classification. It is noted that in addition to DTSC regulations, health and safety requirements and other local agency requirements may also apply to the handling and disposal of lead-impacted soil.

### 2.3 DTSC Variance

Effective July 1, 2009, the DTSC issued a statewide Variance regarding the reuse of ADL-impacted soils within Caltrans right-of-way. According to the Variance, soil classified as a non-RCRA hazardous waste (based primarily on ADL content) may be suitable for reuse within Caltrans right-of-way. ADL-impacted soil 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 Z3).

ADL-impacted soil reused under the Variance must always be at least 5 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-impacted 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-impacted 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 Z2). A copy of the Variance is in Appendix B. Soil management categories are summarized below:

- **Caltrans Type Y1:** ADL-impacted soil exhibiting a total lead concentration less than or equal to 1,411 mg/kg, a DI-WET (WET using deionized water as the extractant) soluble lead concentration less than or equal to 1.5 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 Y2:** ADL-impacted 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-impacted 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 5 may be reused within the same Caltrans corridor and must be covered and protected from infiltration by a pavement structure.

ADL-impacted 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 5 may be reused within the same Caltrans corridor and must be covered and protected from infiltration by a pavement structure.

- **Caltrans Type Z2:** ADL-impacted soil exhibiting a total lead concentration greater than 3,397 mg/kg, or a DI-WET lead concentration greater than 150 mg/l, or a pH value less than or equal to 5 is not eligible for reuse under the Variance and must be disposed of as a California hazardous waste. Surplus Type Y1 and Type Y2 soil which requires offsite disposal is also classified as Type Z2.
- **Caltrans Type Z3:** ADL-impacted 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.

### 3. SCOPE OF SERVICES

We performed the scope of services summarized below as requested by Caltrans in TO No.3.

#### 3.1 Pre-field Activities

- Prepared a Health and Safety Plan (HSP) dated March 2010 to provide guidelines on the use of personal protective equipment and the health and safety procedures to be implemented by Geocon personnel during field activities. The HSP specified the safety procedures for field work, summarized chemical hazard information, and identified site safety officers, emergency contacts, and the locations of emergency medical care facilities.
- Contacted Underground Service Alert (USA) to notify utility companies of the field activities. The USA ticket numbers were A890769, A890774, A890780, A890783, A890787, and A890790.
- Retained the services of Advanced Technology Laboratories (ATL) of Signal Hill, California, a Caltrans-approved and California-licensed laboratory to perform sample analyses.

#### 3.2 Field Activities

Field activities consisted of collecting 42 soil samples from 19 hand-auger borings advanced at the Sites on April 2, 2010. As indicated on Figure 2, four borings were advanced at approximately equidistant locations within the planned excavation area for System 1. Soil samples were collected from System 1 boreholes at depth intervals of 0 to approximately 0.5 foot, approximately 0.5 to 1.0 foot, and approximately 1.0 to 1.5 feet. As indicated on Figures 3 and 4, three borings were advanced near the center and each end within the planned excavation areas for Systems 2 through 6. Soil samples were collected from Systems 2 through 6 boreholes at depth intervals of 0 to approximately 0.5 foot and from 0.5 to 1.0 foot. Soil samples were homogenized in the field and stored for subsequent laboratory analysis.

### **3.3 GPS Surveying**

Boring locations were surveyed with a Trimble GeoXT Global Positioning System (GPS) receiver using State Plane 83 coordinates and TerraSync™ software. Boring location latitude/longitude coordinates are provided in Table 1.

### **3.4 Laboratory Analyses**

Sample laboratory analyses were performed by ATL. Copies of laboratory reports and chain-of-custody (COC) documentation are in Appendix C. Based on the sample analyses requested by Caltrans in TO No.3, samples were analyzed as follows:

- All of the 42 soil samples collected from the Sites were analyzed for total lead using Environmental Protection Agency (EPA) Test Method 6010 and for soluble lead by the California Waste Extraction Test (WET) using citrate acid as the extractant.
- Eleven soil samples (collected from Systems 2 through 5) that had soluble lead concentrations greater than 5.0 mg/l were also analyzed for soluble lead using the WET with de-ionized water as the extractant (DI-WET).
- Eleven soil samples (collected from Systems 2 through 5) were also tested for soluble lead using the Toxicity Characteristic Leaching Procedure (TCLP) to provide characterization data for disposal purposes.
- Three soil samples (collected from Systems 1, 4, and 6) were analyzed for Title 22 metals according to Title 22 CCR, EPA Test Method 6010.
- Four soil samples (collected from Systems 2 through 5) were tested for pH using EPA Test Method 9045.
- Two equipment blank water samples were analyzed for total lead using EPA Test Method 6010.

### **3.5 Report Preparation**

This report was prepared to summarize the objectives, procedures, and results of the ADL investigation activities requested by Caltrans.

## **4. INVESTIGATIVE METHODS**

### **4.1 Soil Sampling**

Soil samples were collected from borings advanced with 2.5-inch-diameter stainless steel hand-augers. Surface vegetation (e.g., native grasses/forbs and landscaping plants) at the boring locations was removed prior to boring/sampling activities. Soil collected from each depth interval was placed into to a new Ziploc® re-sealable plastic bag and the soil was field homogenized within the sample bag. Homogenized soil within the bag was then transferred into a new 4-ounce, laboratory-provided, glass soil jar which was subsequently capped, labeled with the sample date/time and a unique soil sample number, placed in a chilled ice chest, and delivered to the analytical laboratory the same day the sample was collected.

Soil boring numbers were assigned based on a 4-digit unique identification number provided by Caltrans (1096) and a sequential location number (101 through 119). Soil sample numbers were designated by the boring number and the 6-inch depth interval from which the sample was collected (0.5, 1.0, or 1.5). For example, the soil sample designated 1096-104-1.0 was obtained from a depth of approximately 0.5 to 1.0 foot from boring 1096-104.

Quality Assurance/Quality Control (QA/QC) procedures conducted during field activities included decontamination of sampling equipment before each boring was advanced, single use of new re-sealable plastic bags and soil jars, and sample COC documentation. Hand-augers were cleansed between borings by washing the equipment with an Alconox™ tap water solution followed by a tap water rinse and a final rinse with de-ionized water. Sampling activities were conducted under supervision of Geocon's field manager.

The borings were backfilled with surface soil from the immediate vicinity of the boring location. Decontamination water was discharged to the ground surface away from areas potentially associated with surface water bodies or storm drain inlets.

Soil sampling and handling methods used to collect samples from the hand-auger borings are summarized in the Geocon Standard Operating Procedure (SOP) *Modified SOP No. 11 - Hand-Augering and Soil Sample Collection/Handling Procedures* that is in Appendix D.

#### **4.2 Equipment Blank Sampling**

Two equipment blank samples were collected (one before and one approximately mid-way through field activities) to verify proper cleaning of the hand-augers. The equipment blank samples were obtained by collecting de-ionized water passed over the hand-augers into unpreserved, laboratory-provided containers.

#### **4.3 Deviations from the Task Order**

The TO served as the work plan for this investigation. Geocon performed the scope of work as generally summarized in the TO without exceptions that would materially affect investigation results.

### **5. FIELD OBSERVATIONS AND INVESTIGATIVE RESULTS**

#### **5.1 Site Conditions**

Soil conditions encountered at the Sites generally ranged from brown silty sand with gravel and cobbles to clayey coarse sand. Surface and groundwater was not encountered at the boring locations.

## 5.2 Soil Sample Analytical Results

Soil sample analytical results for total lead, WET lead, DI-WET lead, TCLP lead, and pH analyses are summarized in Table 1. Soil sample analytical results for Title 22 metals are summarized in Table 2. The two equipment blank samples did not contain lead concentrations above the laboratory reporting limit of 0.25 mg/l (those results are not tabulated). Copies of laboratory reports and COC documentation are in Appendix C. The following summarizes the soil sample analytical results:

- **Total lead** was reported for 36 of the 42 soil samples at concentrations ranging from 5.5 to 810 mg/kg. Total lead was not reported above the laboratory reporting limit of 5.0 mg/kg in the other six samples.
- **WET lead** was reported for 40 of the 42 samples at concentrations ranging from 0.26 to 53 mg/l. WET lead was not reported above the laboratory reporting limit of 0.25 mg/l in the other two samples. WET lead concentrations that exceed the STLC value of 5.0 mg/l were reported for eleven of the samples.
- **DI-WET lead** was reported for 3 of the 11 samples analyzed at concentrations ranging from 0.25 to 0.38 mg/l. DI-WET lead was not reported above the laboratory reporting limit of 0.25 mg/l for the other eight samples analyzed.
- **TCLP lead** was reported for 4 of the 11 samples analyzed at concentrations ranging from 0.38 to 0.66 mg/l. TCLP soluble lead was not reported above the laboratory reporting limit of 0.25 mg/l for the other 7 samples analyzed.
- **Title 22 metals** antimony, beryllium, mercury, selenium, silver, and thallium were not detected in the 3 samples analyzed at concentration above their respective laboratory reporting limits. Excluding lead, concentrations of the other reported Title 22 metals were less than ten times their respective STLCs.
- **Soil pH** values in the 4 samples tested ranged from 6.6 to 7.1.

## 5.3 Data Validation

Geocon and ATL use QA/QC measures to minimize and control errors associated with field and laboratory methods. Field QA/QC measures consist of cleaning sampling equipment between each use with a detergent solution followed by tap and de-ionized water rinses. Based on the equipment blank sample analytical results, it appears that the field investigation was free from potential cross-contamination resulting from inadequate equipment decontamination.

Laboratory QA/QC measures include the use of matrix spikes, duplicates and method blanks, in addition to calculation of percent recovery and relative percentage difference (RPD). A review of the laboratory QA/QC results indicates satisfactory data reporting, and the data are of sufficient quality for the purposes of this report.

## 6. DATA EVALUATION

### 6.1 Statistical Evaluation for Lead

The lead data for the Sites were treated as six separate sample populations (based on geographic location) for statistical evaluation, which consisted of the following groups of soil samples:

- System 1 – Borings 1096-101, -102, -103, and -104
- System 2 – Borings 1096-114, -115, and -116
- System 3 – Borings 1096-105, -106, and -107
- System 4 – Borings 1096-108, -109, and -110
- System 5 – Borings 1096-111, -112, and -113
- System 6 – Borings 1096-117, -118, and -119

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 BMP system; 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. The statistical methods used are discussed in a book entitled *Statistical Methods for Environmental Pollution Monitoring*, by Richard Gilbert; in an EPA *Technology Support Center Issue* document entitled, *The Lognormal Distribution in Environmental Applications*, by Ashok Singh et. al., dated December 1997; and in a book entitled *An Introduction to the Bootstrap*, by Bradley Efron and Robert J. Tibshirani.

#### 6.1.1 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 used to calculate the UCLs are discussed in the previously referenced EPA document and in *An Introduction to the Bootstrap*. The bootstrap test results are included in Appendix E. For those samples in which total lead was not detected at concentrations exceeding the laboratory reporting limit of 5.0 mg/kg, a value equal to one-half of the reporting limit was used in the UCL calculation or as the maximum total lead concentration.

Due to small sample population of each BMP System, UCLs could not be calculated for individual layers in each of the Systems. At the request of Caltrans, the total lead UCLs for combined soil layers were calculated.

### **6.1.2 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 UCLs calculated above in Section 6.1.1.

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 42 ( $x$ ,  $y$ ) data points (i.e., soil samples analyzed for both total lead [ $x$ ] and WET lead [ $y$ ]). The resulting *coefficient of determination* ( $r^2$ ) equaled 0.8254, which yields a corresponding *correlation coefficient* ( $r$ ) of 0.9085.

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  $y = 0.0741(x)$ , 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 maximums and UCLs calculated in for samples collected from the Site (see Section 6.1.1). Regression analysis results and a scatter plot depicting the ( $x$ ,  $y$ ) data points along with the regression line are included in Appendix E.

The calculated total lead UCLs and predicted WET lead concentrations for Systems 1 through 6 are summarized in Table 3.

## **6.2 Title 22 Metals**

Analysis of selected soil samples for CCR Title 22 metals did not indicate the presence of metals (other than lead) at or above their respective TTLCs or 10 times their respective STLCs. The concentrations of metals, other than lead, reported in the soil samples were below their respective California Human Health Screening Levels (CHHSLs) for residential land use. A copy of the CHHSLs for soil from the California Environmental Protection Agency *Use of California Human Health Screening Levels in Evaluation of Contaminated Properties*, dated January 2005 is in Appendix F.

Although arsenic was not detected in the soil samples at concentrations above the laboratory reporting limit of 1.0 mg/kg, that reporting limit is greater than the residential soil CHHSL for arsenic of 0.07 mg/kg. Based on a statistical evaluation of arsenic concentrations in 1,337 soil samples collected in the Los Angeles area, the DTSC generally considers arsenic concentrations less than 6.0 mg/kg to be

background concentrations (*Final Report, Background Metals at Los Angeles Unified School Sites – Arsenic*, California Department of Toxic Substances Control, June 6, 2005). On the basis that arsenic was not detected in the soil samples collected during the investigation at concentrations greater than or equal to the accepted background concentration for arsenic in the Los Angeles area, it is our opinion that no further assessment with respect to arsenic is warranted.

Reported metals concentrations were compared with published background levels typically present in California soils as presented in *Background Concentrations of Trace and Major Elements in California Soils* (Kearney Foundation of Soil Science, Division of Agriculture and Natural Resources, University of California, March 1996). Concentrations of metals, other than lead, reported in soil at the Site are within the published background ranges.

### **6.3 pH**

Soil with a pH of less than 5.0 is not acceptable for reuse under the DTSC Variance. Analysis of selected soil samples indicate that the pH of the soil ranged from 6.6 to 7.1 and the soil is suitable for reuse under the DTSC Variance.

Soil with a pH less than 2.0 or greater than 12.5 is classified as a hazardous waste. Based on the reported soil pH, if the soil is to be transported offsite, it will not be considered as hazardous based on soil pH.

## **7. CONCLUSIONS AND RECOMMENDATIONS**

### **7.1 Predicted WET Lead Results**

Waste classifications are evaluated based on the 90% UCL of the lead content for the relevant excavation depths; this has historically been considered sufficient to satisfy a good faith effort by the EPA as discussed in SW 846. Risk assessment characterization is based on the 95% UCL of the lead content in the waste for the relevant depths; this is in accordance with the Risk Assessment Guidance for Superfund (RAGS) Volume 1 Documentation for Exposure Assessment. Per Caltrans, the 90% UCLs are to be used to evaluate onsite reuse and the 95% UCLs are to be used to evaluate offsite disposal.

The 90% and 95% UCLs for total lead and predicated WET lead concentrations for Systems 1 through 6 are summarized in Table 3. Waste classifications based on Caltrans Type are discussed below.

#### **System 1**

None of the samples collected from System 1 exhibited total lead concentrations in excess of the TTLC or 10 times the STLC. Based upon the reported total lead concentrations, excavated soil from the surface to a depth of 1.5 feet would be classified as non-hazardous with respect to lead content. Accordingly, the soil is suitable for onsite reuse or disposal as non-hazardous (as Caltrans Type X) based on lead content.

### **System 2**

Based upon the 95% UCL-predicted WET lead concentrations, excavated soil from the surface to a depth of 1.0 foot would be classified as non-hazardous since the predicted WET lead concentration is less than the STLC of 5.0 mg/l. Accordingly, the soil is suitable for onsite reuse or disposal as non-hazardous (as Caltrans Type X) based on lead content.

### **System 3**

Based upon the 95% UCL-predicted WET lead concentration, excavated soil from the surface to a depth of 1.0 foot would be classified as a hazardous waste since the predicted WET lead concentration is greater than the STLC of 5.0 mg/l. The top 1.0 foot of soil will not be considered a RCRA hazardous waste based on the TCLP lead results. Based on the DI-WET lead and pH results, the top 1.5 feet of soil may be reused onsite (as Caltrans Type Y1) by placing the lead-impacted soil under at least 1.0 foot of clean soil or a pavement structure maintained by Caltrans.

### **System 4**

Based upon the predicted WET lead concentration, excavated soil from the surface to a depth of 1.0 foot would be classified as a hazardous waste since the 95% UCL-predicted WET lead concentration is greater than the STLC of 5.0 mg/l. The top 1.0 foot of soil will not be considered a RCRA hazardous waste based on the TCLP lead results. Based on the DI-WET lead and pH results, the top 1.0 foot of soil may be reused onsite (as Caltrans Type Y1) by placing the lead-impacted soil under at least 1.0 foot of clean soil or a pavement structure maintained by Caltrans.

### **System 5**

Based upon the predicted WET lead concentration, excavated soil from the surface to a depth of 1.0 foot would be classified as a hazardous waste since the 95% UCL-predicted WET lead concentration is greater than the STLC of 5.0 mg/l. The top 1.0 foot of soil will not be considered a RCRA hazardous waste based on the TCLP lead results. Based on the DI-WET lead and pH results, the top 1.0 foot of soil may be reused onsite (as Caltrans Type Y1) by placing the lead-impacted soil under at least one foot of clean soil or a pavement structure maintained by Caltrans.

### **System 6**

None of the samples collected from System 6 exhibited total lead concentrations in excess of the TTLC or 10 times the STLC. Based upon the reported total lead concentrations, excavated soil from the surface to a depth of one foot would be classified as non-hazardous with respect to lead content. Accordingly, the soil is suitable for onsite reuse or disposal as non-hazardous (as Caltrans Type X) based on lead content.

## **7.2 Title 22 Metals**

Analysis of selected soil samples for CCR Title 22 metals did not indicate the presence of heavy metal concentrations (other than lead) at or above their respective TTLCs or 10 times their respective STLCs.

The concentrations of metals (other than lead) reported in the soil samples were below their respective residential land use CHHSLs.

Although arsenic was not detected in the soil samples at concentrations above the laboratory reporting limit of 1.0 mg/kg, that reporting limit is greater than the residential soil CHHSL for arsenic. For the Los Angeles area, the DTSC generally considers arsenic concentrations less than 6.0 mg/kg to be background concentrations. On the basis that arsenic was not detected in the soil samples at concentrations greater than or equal to the accepted background concentration for arsenic in the Los Angeles area, it is our opinion that no further assessment with respect to arsenic is warranted.

The concentrations of metals that were detected in the soil samples are within the reported range of background concentrations for California soils. Based on the reported concentrations, excess soil excavated from Systems 1, 2, and 6 are suitable for onsite reuse or disposal as non-hazardous with respect to lead content. Excess soil excavated from Systems 3, 4, and 5 will be classified as a California hazardous waste based on lead content.

### **7.3 pH**

Soil with a pH of less than 5.0 is not acceptable for reuse under the DTSC Variance. Analysis of selected soil samples indicate that the pH of the soil ranged from 6.6 to 7.1 and the soil is suitable for reuse under the DTSC Variance.

Soil with a pH less than 2.0 or greater than 12.5 is classified as a hazardous waste. Based on the reported soil pH, if the soil is to be transported offsite, it will not be considered as hazardous based on soil pH.

### **7.4 Worker Protection**

Per Caltrans' requirements, contractor(s) should prepare a project-specific Lead Compliance Plan to prevent or minimize worker exposure to lead-impacted soil. The plan should include protocols for environmental and personnel monitoring, requirements for personal protective equipment, and other appropriate health and safety protocols and procedures for the handling of lead-impacted soil.

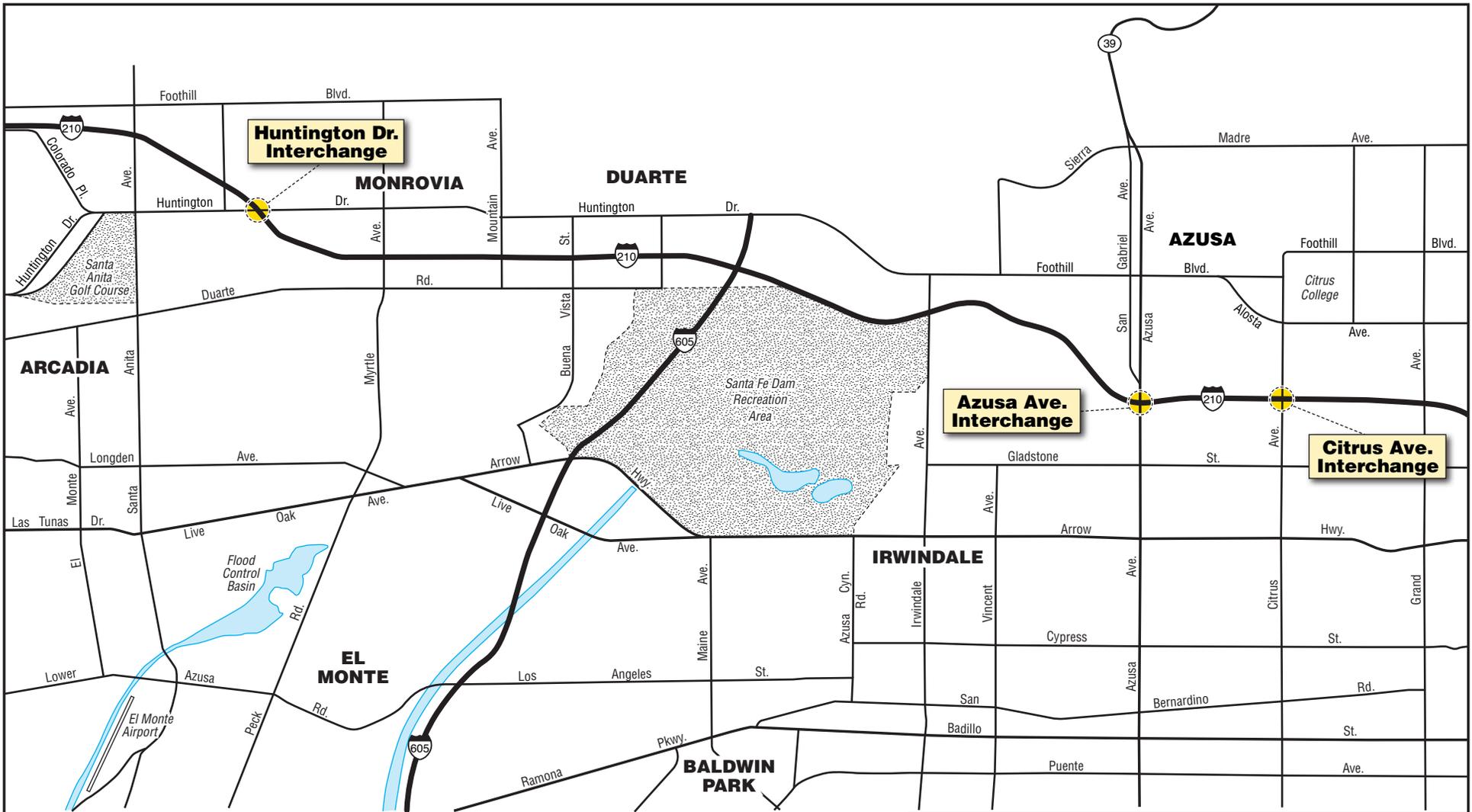
## 8. REPORT LIMITATIONS

This report has been prepared exclusively for Caltrans. The information obtained is only relevant as of the date of the latest site visit and will require an update to reflect additional information obtained.

The conclusions and recommendations presented herein are based on a limited number of samples collected from in-place soil and from widely spaced locations according to Caltrans-prescribed protocol. The purpose of these sampling and characterization activities was to reasonably predict the character of soil to be disturbed for planned construction activities within the described limits of the Caltrans right-of-way.

The Client should recognize that this report is not a comprehensive site characterization and should not be construed as such. The appropriate regulatory agency may require additional investigations. The findings and conclusions as presented in this report are predicated on the results of the limited soil sampling and laboratory analyses 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 only be deemed conclusive with respect to the information obtained. No guarantee or warranty of the results of the report is implied within the intent of this report or any subsequent reports, correspondence, or consultation, either express or implied. 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.



**GEOCON**  
CONSULTANTS, INC.

3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA. 91504  
PHONE 818.841.8388 - FAX 818.841.1704

**LA-210 BMP ADL Investigation**

SR 210 PM R25.8-R47.0  
Los Angeles County, California

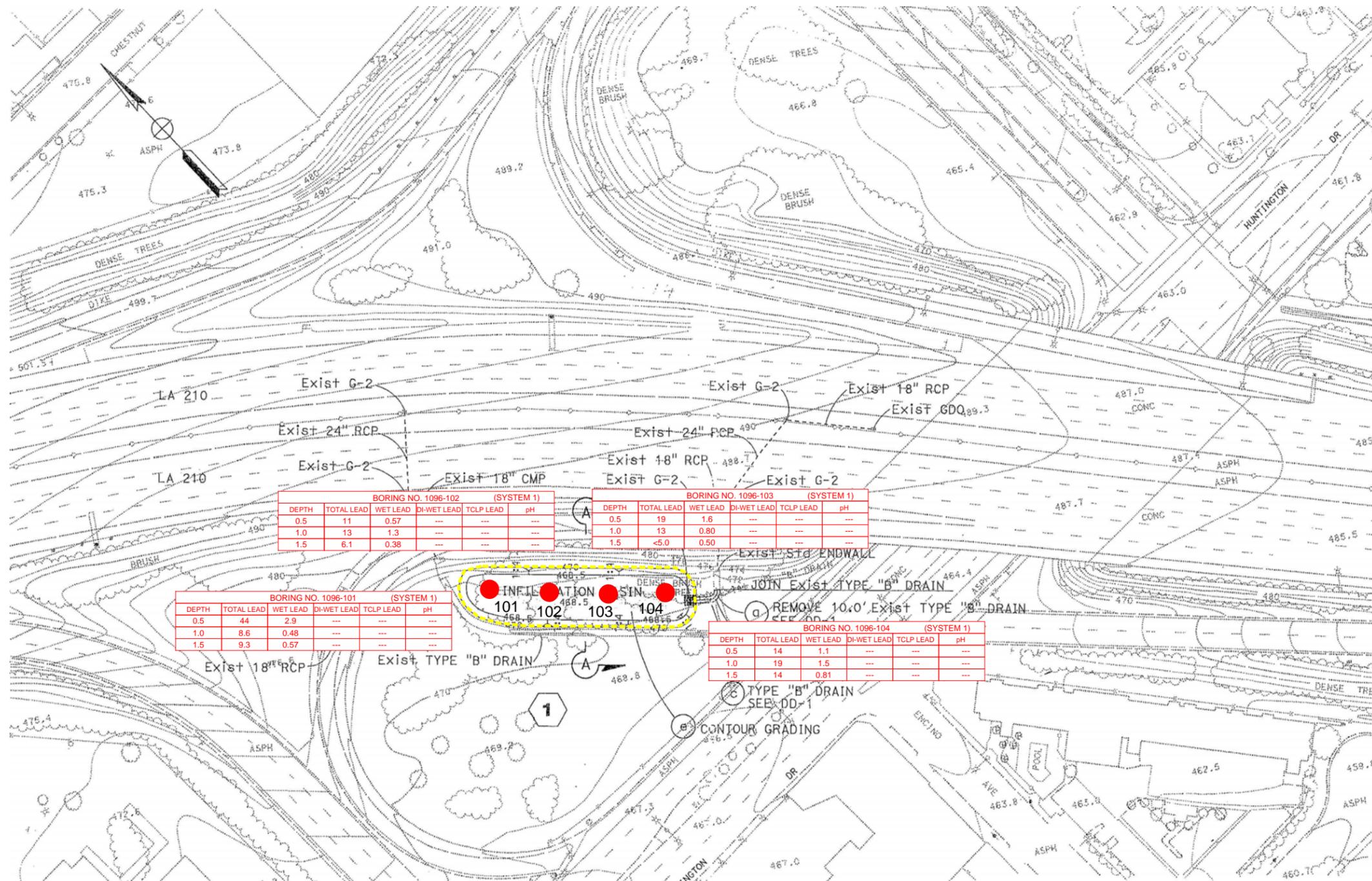
**VICINITY MAP**

GEOCON Proj. No. S9475-06-03

Task Order No. 3, EA 07-253801

May 2010

Figure 1



### LEGEND

- 104 Approximate Location Of Boring
- TOTAL LEAD - Results in milligrams / kilogram (mg/kg)
- WET, DI-WET, and TCLP - Results in milligrams/liter (mg/l)
- DEPTH - in feet
- <0.25 = Not detected at or above laboratory detection limit indicated
- = Analysis not performed.
- Limits of proposed Infiltration Basin



PLAN BY: Caltrans District 7

**GEOCON**  
CONSULTANTS, INC.

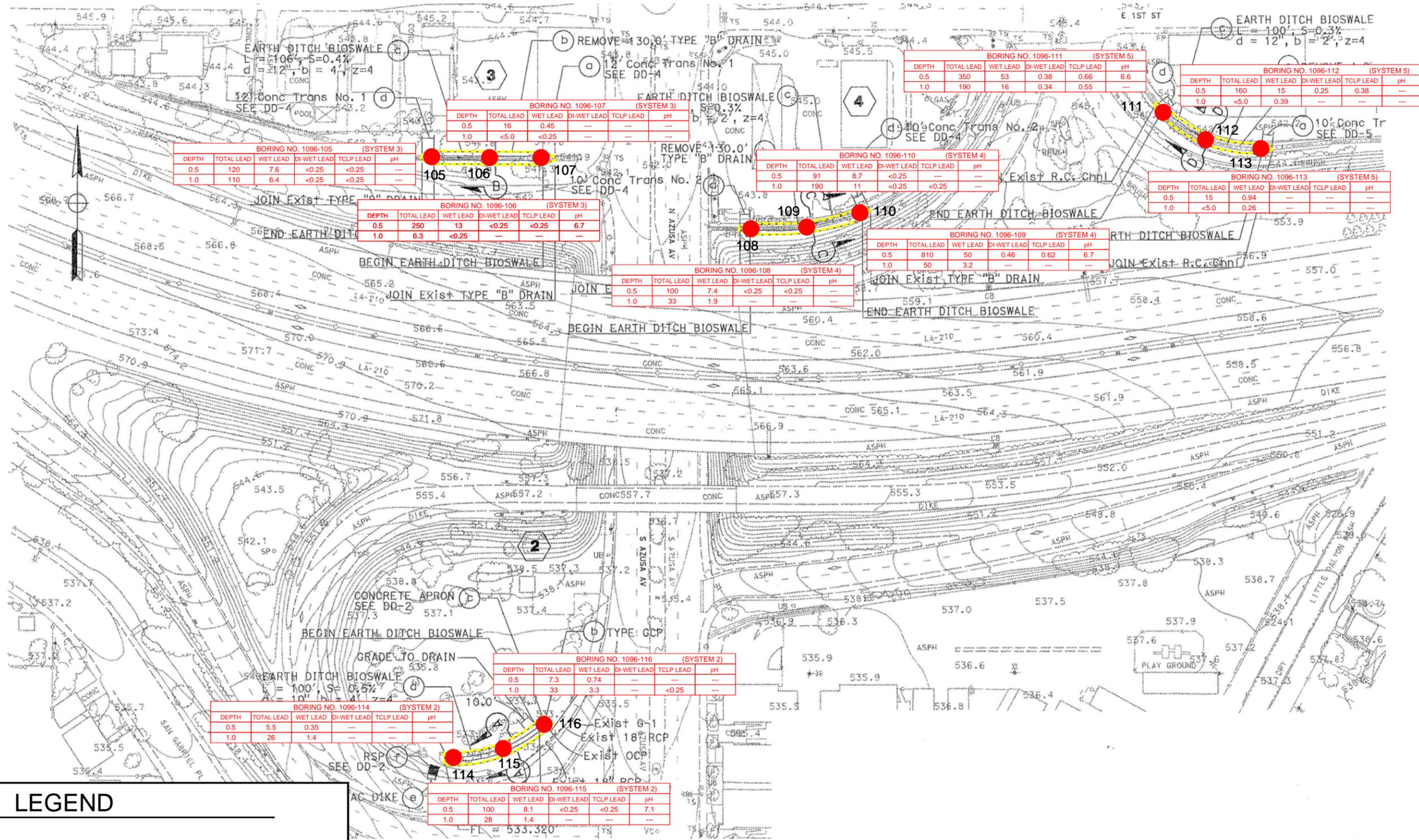
ENVIRONMENTAL GEOTECHNICAL MATERIALS  
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504  
PHONE (818) 841-8388 - FAX (818) 841-1704

CHL 8000

### SYSTEM 1 BORING LOCATION MAP

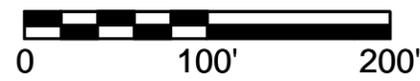
CALTRANS  
LA-210 BMP ADL INVESTIGATION  
SR 210 PM R25.8-R47.0  
LOS ANGELES COUNTY, CALIFORNIA

MAY 2010 PROJECT NO. S9475 - 06 - 03 FIG. 2



### LEGEND

- 116 Approximate Location Of Boring
- TOTAL LEAD - Results in milligrams / kilogram (mg/kg)
- WET, DI-WET, and TCLP - Results in milligrams/liter (mg/l)
- DEPTH - in feet
- <0.25 = Not detected at or above laboratory detection limit indicated
- = Analysis not performed.
- Limits of proposed Bioswale



PLAN BY: Caltrans District 7

**GEOCON**  
CONSULTANTS, INC.

ENVIRONMENTAL GEOTECHNICAL MATERIALS  
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504  
PHONE (818) 841-8388 - FAX (818) 841-1704

**SYSTEMS 2-5 BORING LOCATION MAP**

CALTRANS  
LA-210 BMP ADL INVESTIGATION  
SR 210 PM R25.8-R47.0  
LOS ANGELES COUNTY, CALIFORNIA

CHL	8000
-----	------

MAY 2010	PROJECT NO. S9475 - 06 - 03	FIG. 3
----------	-----------------------------	--------



## LEGEND

● 119 Approximate Location Of Boring

TOTAL LEAD - Results in milligrams / kilogram (mg/kg)

WET, DI-WET, and TCLP - Results in milligrams/liter (mg/l)

DEPTH - in feet

<0.25 = Not detected at or above laboratory detection limit indicated

--- = Analysis not performed

--- Limits of proposed Bioswale



PLAN BY: Caltrans District 7

**GEOCON**  
CONSULTANTS, INC.



ENVIRONMENTAL GEOTECHNICAL MATERIALS  
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504  
PHONE (818) 841-8388 - FAX (818) 841-1704

CHL

8000

## SYSTEM 6 BORING LOCATION MAP

CALTRANS

LA-210 BMP ADL INVESTIGATION

SR 210 PM R25.8-R47.0

LOS ANGELES COUNTY, CALIFORNIA

MAY 2010

PROJECT NO. S9475 - 06 - 03

FIG. 4

TABLE 1  
 BORING COORDINATES AND SUMMARY OF LEAD AND pH ANALYTICAL RESULTS  
 LA-210 BMP ADL INVESTIGATION  
 LOS ANGELES COUNTY, CALIFORNIA

Sample ID	LONGITUDE	LATITUDE	Sample Depth (feet)	Total Lead (mg/kg)	WET Lead (mg/l)	DI-WET Lead (mg/l)	TCLP Lead (mg/l)	pH
System 1								
1096-101-0.5	-118.018012726	34.140946509	0-0.5	44	2.9	---	---	---
1096-101-1.0			0.5-1.0	8.6	0.48	---	---	---
1096-101-1.5			1.0-1.5	9.3	0.57	---	---	---
1096-102-0.5	-118.017912268	34.140881251	0-0.5	11	0.57	---	---	---
1096-102-1.0			0.5-1.0	13	1.3	---	---	---
1096-102-1.5			1.0-1.5	6.1	0.38	---	---	---
1096-103-0.5	-118.017800272	34.140798679	0-0.5	19	1.6	---	---	---
1096-103-1.0			0.5-1.0	13	0.80	---	---	---
1096-103-1.5			1.0-1.5	<5.0	0.50	---	---	---
1096-104-0.5	-118.017720386	34.140725248	0-0.5	14	1.1	---	---	---
1096-104-1.0			0.5-1.0	19	1.5	---	---	---
1096-104-1.5			1.0-1.5	14	0.81	---	---	---
System 2								
1096-114-0.5	-117.908282844	34.119577001	0-0.5	5.5	0.35	---	---	---
1096-114-1.0			0.5-1.0	26	1.4	---	---	---
1096-115-0.5	-117.908130426	34.119594185	0-0.5	100	8.1	<0.25	<0.25	7.1
1096-115-1.0			0.5-1.0	28	1.4	---	---	---
1096-116-0.5	-117.907997772	34.119671521	0-0.5	7.3	0.74	---	---	---
1096-116-1.0			0.5-1.0	33	3.3	---	<0.25	---
System 3								
1096-105-0.5	-117.908326693	34.121189476	0-0.5	120	7.6	<0.25	<0.25	---
1096-105-1.0			0.5-1.0	110	6.4	<0.25	<0.25	---
1096-106-0.5	-117.908133193	34.121187044	0-0.5	250	13	<0.25	<0.25	6.7
1096-106-1.0			0.5-1.0	6.3	<0.25	---	---	---
1096-107-0.5	-117.907961088	34.121190132	0-0.5	16	0.45	---	---	---
1096-107-1.0			0.5-1.0	<5.0	<0.25	---	---	---

TABLE 1  
 BORING COORDINATES AND SUMMARY OF LEAD AND pH ANALYTICAL RESULTS  
 LA-210 BMP ADL INVESTIGATION  
 LOS ANGELES COUNTY, CALIFORNIA

Sample ID	LONGITUDE	LATITUDE	Sample Depth (feet)	Total Lead (mg/kg)	WET Lead (mg/l)	DI-WET Lead (mg/l)	TCLP Lead (mg/l)	pH
<b>System 4</b>								
1096-108-0.5	-117.907289255	34.120962681	0-0.5	100	7.4	<0.25	<0.25	---
1096-108-1.0			0.5-1.0	33	1.9	---	---	---
1096-109-0.5	-117.907129269	34.120981923	0-0.5	810	50	0.46	0.62	6.7
1096-109-1.0			0.5-1.0	50	3.2	---	---	---
1096-110-0.5	-117.906938490	34.121034408	0-0.5	91	8.7	<0.25	---	---
1096-110-1.0			0.5-1.0	190	11	<0.25	<0.25	---
<b>System 5</b>								
1096-111-0.5	-117.906026707	34.121287935	0-0.5	350	53	0.38	0.66	6.6
1096-111-1.0			0.5-1.0	190	16	0.34	0.55	---
1096-112-0.5	-117.905837563	34.121204250	0-0.5	160	15	0.25	0.38	---
1096-112-1.0			0.5-1.0	<5.0	0.39	---	---	---
1096-113-0.5	-117.905630411	34.121188037	0-0.5	15	0.94	---	---	---
1096-113-1.0			0.5-1.0	<5.0	0.26	---	---	---
<b>System 6</b>								
1096-117-0.5	-117.891185353	34.120279556	0-0.5	32	1.3	---	---	---
1096-117-1.0			0.5-1.0	<5.0	0.30	---	---	---
1096-118-0.5	-117.891104863	34.120409786	0-0.5	34	2.0	---	---	---
1096-118-1.0			0.5-1.0	<5.0	0.29	---	---	---
1096-119-0.5	-117.891038287	34.120496546	0-0.5	37	1.4	---	---	---
1096-119-1.0			0.5-1.0	36	2.5	---	---	---

**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
- < = Analyte was not detected above the laboratory reporting limit

TABLE 2  
 SUMMARY OF TITLE 22 METALS ANALYTICAL RESULTS  
 LA-210 BMP ADL INVESTIGATION  
 LOS ANGELES COUNTY, CALIFORNIA

SAMPLE ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury
104-1.0	<2.0	<1.0	64	<1.0	<1.0	9.1	6.1	15	<1.0	8.3	<1.0	<1.0	<1.0	22	47	<0.10
109-0.5	<2.0	<1.0	100	<1.0	1.0	24	6.6	29	1.5	13	<1.0	<1.0	<1.0	23	290	<0.10
119-0.5	<2.0	<1.0	110	<1.0	<1.0	14	10	20	<1.0	12	<1.0	<1.0	<1.0	38	59	<0.10
TTLC	500	500	10,000	75	100	2,500	8,000	2,500	3,500	2,000	100	500	700	2,400	5,000	20
STLC	15	5.0	100	0.75	1.0	5	80	25	350	20	1.0	5	7.0	24	250	0.2
CHHSLs Ind/Res	380/ 30	0.24/ 0.07	6,300/ 5,200	1,700/ 150	7.5/ 1.7	10,000/ 10,000	3,200/ 600	38,000/ 3,000	4,800/ 380	16,000/ 1,600	4,800/ 380	4,800/ 380	63/ 5.0	6,700/ 530	100,000/ 23,000	180/ 18
Background Concentrations																
<i>Minimum</i>	0.15	0.6	133	0.25	0.05	23	2.7	9.1	0.10	9	0.015	0.1	5.3	39	88	0.05
<i>Maximum</i>	1.95	11.0	1400	2.70	1.7	1,579	46.9	96.4	9.6	509	0.43	8.3	36.2	288	236	0.90
<i>Mean</i>	0.60	3.5	509	1.28	0.36	122	14.9	28.7	1.3	57	0.058	0.8	15.7	112	149	0.26

Notes:

Results shown in milligrams per kilogram.

< = Not detected above the laboratory reporting limit

TTLC = Total Threshold Limit Concentration

STLC = Soluble Threshold Limit Concentration

CHHSLs = California Environmental Protection Agency, California Human Health Screening Levels for industrial (Ind) and residential (Res) use

TTLC, STLC, and CHHSLs show for chromium are for chromium III.

*Background Concentrations of Trace and Major Elements in California Soils*

(Kearney Foundation of Soil Science, Division of Agriculture and Natural Resources, University of California, March 1996)

TABLE 3  
 LEAD STATISTICAL ANALYSIS RESULTS  
 LA-210 BMP ADL INVESTIGATION  
 LOS ANGELES COUNTY, CALIFORNIA

Group	Depth Interval (feet)	Boring IDs	90% UCL Total Lead (mg/kg)	90% UCL Predicted WET Lead* (mg/l)	95% UCL Total Lead (mg/kg)	95% UCL Predicted WET Lead* (mg/l)	Category
System 1	0-1.5	1096-101, -102, -103, -104	18	1.3	19	1.4	Type X
System 2	0-1.0	1096-114, -115, -116	50	3.7	54	4.0	Type X
System 3	0-1.0	1096-105, -106, -107	132	9.7	143	11	Type Y1
System 4	0-1.0	1096-108, -109, -110	353	26	399	30	Type Y1
System 5	0-1.0	1096-111, -112, -113	188	14	208	15	Type Y1
System 6	0-1.0	1096-117, -118, -119	32	2.4	34	2.5	Type X

**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,

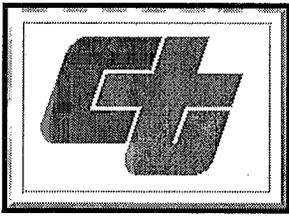
where  $y$  = predicted WET lead and  $x$  = total lead.

Regression Line Slope:  $y = 0.0741 x$

Type X = total lead is less than or equal to 50 mg/kg, and is classified as non-hazardous per the DTSC statewide Variance issued to Caltrans effective July 1, 2009 (Variance).

Type Y1 = total lead is less than or equal to 1,411 mg/kg, DI-WET is less than or equal to 1.5 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, per the Variance.

# APPENDIX A



**TASK ORDER NO. 03**

**Date: March 24, 2010**

**Contract No. 07A2729**

**EA: 253801**

**Lead Site Investigations**

**LA-210, PMR25.8/R47.0, Hazardous Waste Site Investigation of BMP  
Sites at Huntington Drive, Azusa Avenue and Citrus Avenue  
Interchanges**

**I. Task Order Description**

***A. Purpose***

The purpose for this Task Order (TO) is to conduct a Lead Site Investigation (SI) to determine Aerially Deposited Lead (ADL) contamination in exposed soils of six proposed BMP sites. These sites are within State Right of Way (R/W) lines and are located next to the onramps from Huntington Drive, Azusa Avenue and Citrus Avenue that lead to Westbound or Eastbound LA-210. Presence of ADL is suspected in the soil as a result of historical vehicle emission during the time of leaded gasoline usage.

This Lead SI will evaluate the presence of ADL-impacted soil with concentrations in excess of acceptable regulatory thresholds within the unpaved areas of the proposed six BMP Treatment sites. The soil samples for ADL testing will be collected from the unpaved areas of the proposed six BMP sites. The analytical results from the soil samples will be used to determine the re-use of ADL-impacted soil on-site and determine the proper management of excess soil in accordance with the Health and Safety Code disposal criteria. Not only will it help in evaluating the health risk of field staff when handling ADL-impacted soil during construction, but it will also evaluate the environmental conditions of the existing unpaved soil areas and to recommend the appropriate soil management procedure for excess soils generated during construction activities. This Lead SI will assist the Consultant in developing appropriate health and safety plan and training program for the field staff as required per Title 8 of the California Code of Regulations (8 CCR).

***B. Project Background***

The California Department of Transportation "Department" is currently preparing Plans, Specifications, and Estimates (PS&E) to construct five BMP Treatment Earth Ditch Bioswale and one Infiltration Basins. These basins will occupy 900 to 8112 square feet at selected areas next to the on-ramps where 10-18 inches of exposed or AC covered soil will be excavated during construction, (Attachments 1-3). The excavation plans for these BMPS Treatment sites are listed below:

System 1 at Westbound Huntington Drive On-ramp at LA-210 PM R32.9

An infiltration basin is to be excavated in this site by excavating 1.5 feet of exposed soil from surface area of 8112 square feet that is 198 feet by 44.5 feet and 34 feet from travelway.

System 2 at Eastbound Azusa Avenue On-ramp at LA-210 PM R39.5

An earth ditch bioswale is to be excavated in this site by excavating 10 inches of exposed soil from surface area of 1198 square feet that is 100 feet by 11 feet and 15 feet from travelway.

System 3 at Westbound Azusa Avenue On-ramp at LA-210 PM R39.5

An earth ditch bioswale is to be excavated in this site by excavating 1 foot of exposed soil from surface area of 1466 square feet that is 130 feet by 12 feet and 25 feet from travelway.

System 4 at Westbound Azusa Avenue On-ramp at LA-210 PM R39.5

An earth ditch bioswale is to be excavated in this site by excavating 1 foot of exposed soil from surface area of 1236 square feet that is 130 feet by 10 feet and 38 feet from travelway.

System 5 at Westbound Azusa Avenue On-ramp at LA-210 PM R39.5

An earth ditch bioswale is to be excavated in this site by excavating 1 foot of exposed and AC covered soil from a surface area of 1091 square feet that is 120 feet by 10 feet and 21 feet from travelway.

System 6 at Eastbound Citrus Avenue On-ramp at PM 40.6 LA-210

An earth ditch bioswale is to be excavated in this site by excavating 1 foot of exposed soil from surface area of 900 square feet that is 90 feet by 10 feet and 15 feet from travelway.

## **II. Scope of Services**

The scope of this TO is to determine hazardous waste (HW) conditions associated with these six BMP Treatment sites, if excavated to the planned depth due to presence of ADL impacted soil.

The Consultant shall submit the required hours and line item cost proposal for the scope of investigation works as described in this TO for review and acceptance by the Department within two (2) working days of receiving this TO request. The cost estimate of this SI should include all fieldwork, laboratory work and preparation of the draft and final reports for the six BMP System sites, with hours and line item costs in accordance with HW Contract 07A2729. After the Department provides comments, the Consultant shall prepare the final cost estimate incorporating with

the Department's comments. When the Department approves this final cost estimate and both parties sign this TO, the Consultant may proceed to Task 1.

**A. Task 1- Work plan**

This TO outlines the general scope for the work. The Department has performed a project review, and prepared a preliminary Boring Layout Plan (BLP) and the BLP is presented in Attachments 1-3. The Consultant shall review and implement the work based on the requirements stipulated in this TO and in contract 07A2729.

As BMP System 1 requires larger construction area, a total of four (4) locations are proposed for hand-augur soil borings where soil samples shall be collected and analyzed for lead. For BMP Systems 2, 3, 4, 5 and 6, a total of fifteen (15) soil borings are proposed (three per each BMP) due to their smaller construction area for soil sample collection and analysis.

In System 1 a 1.5foot deep filtration basin will be excavated out. Here, soil samples needs to be collected at its depths of 0 to 0.5 foot, 0.5 to 1.0-foot, and 1.0 to 1.5-foot depth on its estimated 198 feet long and 44 feet wide area.

In the remaining systems 2, 3, 4, 5 and 6, a total of five "Earth Ditch Bioswales" are to be carved out in the local topography. The excavation depth in this type of BMP structure is 1foot. Therefore, each BMP site needs to be sampled at their 0 to 0.5 foot, and 0.5 to 1.0 -feet depth of their estimated 90-130 feet length .

The Consultant is required to perform a site reconnaissance and verify the existing site conditions of the proposed project limits and recommend modification to the plan if deemed necessary.

**B. Task 2- Health and Safety Plan**

1. The consultant shall develop and provide a site-specific Health and Safety Plan (H&SP) for the ADL Site Investigation, based on the project area. The H&SP shall be prepared and approved by a Certified Industrial Hygienist (CIH).
2. The H&SP shall follow all applicable local, state, and federal regulations. The H&SP shall include all health and safety requirements related to the proposed scope of the project and planned fieldwork activities.
3. The H&SP shall be submitted to the Department for review. Upon receipt of comments from the Department, the Consultant shall revise and resubmit the document for final acceptance.
4. Two (2) copies of the accepted H&SP (with wet-ink signatures and seal of the CIH, the Project Manager, and training certificate of the field staff) shall be submitted to the Department as final deliverables.

**C. Task 3-Traffic Control**

The proposed investigative area is part of Caltrans Right of Way. The consultant is

required to verify the site access conditions prior to accepting this TO and provide adequate traffic control during fieldwork if necessary.

***D. Task 4 – Site Investigation***

**1. Field Sampling**

a. General Information

All cuttings shall be returned to their corresponding boreholes or properly disposed. Soil samples shall be obtained in an undisturbed state as possible using hand auger. Please refer to the US EPA SW-846 Test Methods for Evaluating Solid Wastes, Physical & Chemical Methods, Chapter Two, Choosing the Correct Method. The Chain-of-Custody documents shall be properly and legibly filled out with all the required information. All signatures shall be identified with printed names.

b. Sample Locations, Depths, and Collection

Fourteen (14) boring locations are planned in the six sites where the BMP Treatment excavations are planned. The total number of samples from the borings is 42. At System 1, soil samples are to be collected at their 0 to 0.5 foot, 0.5 to 1.0-foot, and 1.0 to 1.5-foot depth, but at the remaining, Systems 2, 3, 4, 5, and 6, soil samples will be required only at their 0 to 0.5 foot, 0.5 to 1.0-foot depth.

c. Underground Services Alert (USA)

The consultant shall obtain an inquiry identification number from USA prior to start of work. Identification number documentation shall be provided to the Department Contract Manager. In Southern California, the Consultant should call 1-800-422-4133. The USA should respond within 48 hours.

d. Hand Auger

Hand Auger can be used to collect soil samples due to the shallow 1-1.5 foot borings that are required for this project. After samples are collected, label glass jar with boring number, EA number, and sample depth. Record sample identification, time, date of sample collection, matrix type, turn-around-time, container type and other information required in the chain-of-custody. Store soil samples into a cooler to transport it to an Environmental Laboratory Accreditation Program (ELAP) certified laboratory within 24 hours.

e. Decontamination

A clean and decontaminated sampler (e.g., hand auger, split-spoon samplers, etc.) shall be used for each boring location. All sampling equipments shall be properly decontaminated between borings to prevent introduction of any foreign materials and cross contamination. Two decontamination blanks will be collected from the hand auger equipment to evaluate the effectiveness of the decontamination procedures.

f. Investigative Derived Wastes (IDW)

Disposable equipment/items such as pans, gloves, pails shall be disposed accordingly. The IDW is not considered hazardous and can be disposed of at a permitted disposal facility. Any disposable equipment/item that is to be disposed of, which can still be re-used will be rendered inoperable prior to disposal in the refuse facility.

2. GPS Data Collection

a. The location of all borings shall be recorded in the field, using the Department's GPS NAD83 datum. The Consultant will be provided an electronic Microsoft Access 2000 database file to record all investigative data for each boring, sample, and test performed. GPS data shall be recorded in accordance with the allowable format and tolerances required in the Caltrans Surveys Manual. All borings specified in this TO shall be identified by a pre-assigned unique identification number system as described below.

b. Borehole (or Boring) Naming Convention

Boreholes (or borings) shall bear names consisting of a 3-digit unique ID assigned by Caltrans, followed by a dash and the sequential boring number beginning with "101." (Example: for a set of boreholes where the assigned Unique ID is 1001, the borehole names would be 1001-101, 1001-102, 1001-103, etc.)

c. Sample Naming Convention

A sample shall bear the name of the borehole from which it was derived, followed by a dash and the depth of the sample in meters. (In the example above samples taken from borehole 1001-101 at 0.3 meters, 0.6 meters, and 1.5 meters would be named 1001-101-0.3, 1001-101-0.6, and 1001-101-1.5 respectively.)

d. The Unique ID number for this project is as follows:

EA number: <b>253801</b>	Unique ID: <b>XXXX</b>
--------------------------	------------------------

e. The sample data and analytical results shall be recorded in the appropriate tables. Note that the database tables are related such that the borehole data record must be created first followed by sample data records, and finally the analytical result records.

f. GPS data shall be collected at the completion of each borehole sample.

g. The Consultant shall submit the database file in conjunction with the draft SI report submittal. Completion of the data entry into the database is not a substitution for a complete written report. The Consultant must ensure that the information in the final SI report is consistent with the data recorded in the Database. Final electronic file of the GIS database shall be submitted in conjunction with the submittal of an electronic file of the final SI Report.

### 3. Laboratory Analysis

As indicated in the Project Background, the construction footprint of the six BMP Systems are relatively small in area, shallow in depth and far apart. Therefore, soil analysis plan for this project needs to comply with the following alternatives for handling its excess lead impacted soil that will be excavated from the six BMP sites:

- Individual management of the excavated soil from the BMP Systems,
- Collective management of the excavated soil from selected BMP Systems that are next to each other.

#### a. Soil Samples and Analysis

Soil samples shall be *homogenized* and analyzed for total lead, Total Threshold Limit Concentration (TTLC), using EPA Method 6010 series and Soluble Threshold Limit Concentration (STLC), by the California Waste Extraction Test (WET) using Citrate Acid as the extractant. Forty-two soil samples will be analyzed for TTLC and STLC lead.

When the STLC is greater than 5.0 mg/l, the laboratory shall proceed with the soluble lead test by WET using de-ionized water (Di-WET) as the extractant. For estimating purpose it is assumed that ten (10) samples will be analyzed for STLC using Di-wet.

A minimum of twelve (12) or 30 percent of the total number of soil samples shall be tested for soluble lead using Toxicity Characteristic Leaching Procedure (TCLP), by EPA Method 1311. The TCLP shall be performed on all samples with 1,000 mg/kg or higher and the sample with the highest total lead concentration.

Three (3) selected soil samples, one from each interchange shall be tested for Title 22 metals. These samples shall be obtained from the homogenized samples exhibited the highest TTLC concentrations. This is to determine whether any concerns for heavy metals exist at the project site. This test is in anticipation of the Regional Water Quality Control Board (RWQCB) requirements for an SI involving the possibility of other metals along the highway besides ADL.

A minimum of four (4) or 10 percent of the total number of soil samples shall be tested for pH using EPA Method 9045. The samples for pH testing shall be selected from those samples exhibiting the highest total lead test results.

Two (2) equipment blank samples will be analyzed for total lead by EPA method 6010.

Additional tests will also be required for QA/QC purpose, which should be estimated by the Consultant for the purpose of preparing the estimated cost of this Task Order.

- b. The laboratory limit on the analysis should be reported as Method Detection Limit (MDL) and as Practical Quantification Limit (PQL).
- c. Please use 5-day or quicker turnaround time for testing all samples.

#### 4. *Statistical Analysis*

A statistical analysis of laboratory results shall be provided in accordance with the SW-846 and as specified in the DTSC Variance. The goals of this statistical analysis are to determine: (1) whether the soil is defined as a hazardous waste per CCR Title 22 due to the total lead concentration greater than 1,000 mg/kg and/or soluble lead concentration greater than 5.0 mg/l, (2) whether the Caltrans Variance issued by DTSC to reuse soil containing lead on-site is applicable, and under what conditions the lead contaminated soil can be reused (depends on the results of Di-WET), (3) whether the lead contaminated soil must be disposed at a Class I Landfill if total lead concentration greater than 1000 mg/kg and there is no place to be reused on-site. ***Please note that NO statistical analysis shall be performed if none of any samples show hazardous waste concern.***

The consultant shall group borings by BMP data in such a way as to divide the soil into beneficial use areas that will allow for effective site characterization during the removal, reuse, or disposal activities. The consultant shall determine grouping areas in accordance with the laboratory results, and sections of the site where stockpiling is more likely to occur.

##### a. Regression Analysis and Correlation Coefficient Calculation

- i. Perform linear regression analysis using soluble lead (STLC) and total lead (TTLC). The total lead concentrations (TTLC) shall represent the independent variable (x), and the soluble lead concentrations (STLC) shall represent the dependent variable (y). The regression analysis shall consider all analytical results as one data set. The regression analysis should have a correlation (r-value) equal or greater than 0.8 (80% tile). If the correlation coefficient is less than 0.8, this must be explained in the report or the sample procedures should be adjusted and the samples should be re-analyzed for both total lead and soluble lead concentrations. If the laboratory determines that sample(s) do not warrant the re-examination and analysis of the samples, a justification shall be documented in the report.
- ii. Perform the regression analysis for all raw data. Generate regression analysis trend line equation ( $y = m x + b$ ) for predicting the STLC with known TTLC. A maximum allowance total lead concentration,  $TTLC_m$ ,

for soil is considered as non hazardous waste material can be calculated using the STLC concentration of 5.0 mg/l ( $y = 5.0$ ).

**b. Upper Confidence Limit Calculation**

Statistical analysis shall be evaluated for one-tailed 90% and 95% upper confidence limits, (UCLs). Please note that the two-tailed 80% UCL is equivalent to the one-tailed 90% UCL as explained in SW-846 Manual, Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods. The 90% TTLC and STLC of UCLs are used to determine the DTSC Variance applicability. The 95% TTLC and STLC of UCLs are used for relinquishment to the Contractor, or to determine handling and disposal of excess soil in accordance with the total lead regulatory threshold value of 1000 (mg/kg). Recommendation and conclusion shall be based upon the statistical analysis results for the six BMP Systems. Present statistical analysis results in a Table.

**DTSC Variance**

Analyze the 90% UCL(s) is based on the DTSC variance requirements. In addition, analyze the 95% UCL to determine the applicability of the disposal limit per Health and Safety code 25157.8 and AB 414. When invoking the DTSC Variance, refer to the approved DTSC variance for District 7 on July 1, 2009. Please note that the DTSC Variance will expire on July 1, 2014 and no lead contaminated soil can be reused on-site after that date. The lead-contaminated soil must be disposed to a Class I Landfill per requirements in Title 22, CCR.

**c. Quality Control and Quality Assurance (QA/QC)**

**i. Field Quality Assurance/Quality Control (QA/QC)**

The work plan shall outline the detail field QA/QC procedure for soil sampling. One equipment rinse shall be collected for every 20 samples as field QA/QC. Equipment rinse shall be collected by passing de-ionized water in equipment sampler and collected in a laboratory container.

**ii. Laboratory Quality Assurance/Quality Control (QA/QC)**

The work plan shall outline the detail laboratory QA/QC procedure for soil samples. The Contractor shall be responsible for ensuring the laboratory fulfills QA/QC requirements of this TO per contract 07A2729. No extra cost shall be paid for laboratory QA/QC samples. Laboratory QA/QC is included in all bid prices for laboratory items. The Laboratory report shall include a holding timetable with the sample collection date, the sample received date at the laboratory, and the sample extracted and analyzed dates.

**III. Meeting and Reports**

**A. *Task Order Meeting***

The Consultant and Department staff shall meet as often as necessary to ensure that both parties share a common understanding of the task order objectives. Upon executing this task order, the following meetings may be required:

1. An initial TO meeting (when requested) shall be attended by the Consultant's project manager and a registered professional who are responsible for the implementation of this TO. The Consultant prepared work plan shall also be discussed during meeting.
2. Site investigation findings review meeting and final report discussion meeting shall be conducted, if necessary.

***B. Deliverables Reports***

1. A draft work plan including BLP for each private property shall be submitted for the Departments' review. Upon approval, two (2) copies of the final work plan for these private properties including BLP, incorporating the Departments' comments shall be submitted. The final work plans including BLP shall be available at all times during the fieldwork performed for the site investigation.
2. Copy of a Draft H&SP shall be submitted for Departments' review. Upon approval, two (2) copies of the final H&SP, incorporating the Departments' comments shall be submitted. The final H&SP shall be available at all times during the fieldwork performed for the site investigation.
3. Two (2) copies of Draft SI Report shall be submitted to the Department for review and comment. The Draft SI Report shall include all figures, data tables, location maps, conclusions, and laboratory results on soil samples. The SI Report shall indicate, if the excavated soils from the six BMP Systems 1-6 sites are contaminated. Thereby, the result of lead data shall be used to provide recommendation for soil management alternatives or disposal in accordance with the Health and Safety Code. The GIS Data shall be incorporated in the draft report and the MS Access database file shall be submitted for review as well. The Consultant shall incorporate the Department's comments for subsequent review prior to finalize the report. The report shall be prepared according to the requirements of contract 07-A2729.
4. The Consultant shall submit six (6) copies of the final report and one (1) electronic copy of the report. The electronic copy shall bear the registration, seal, and signature as shown in hard copies. The Final Report in its entirety shall be submitted in an electronic format. Text and figures shall be in PDF format including the GIS Spreadsheet results. The final electronic file shall include all appropriate documents presented in the "hard copy," including signature and engineering seal.

**IV. Period of Performance**

Work under this TO shall begin on March 29, 2010 and terminate on June 6, 2010

## V. Task Schedule

Department/ Geocon Agree on Task Order	March 29, 2010
Geocon Submit Draft H&SP	March 30, 2010
Geocon Perform Site Reconnaissance & Mark Borings	March 31, 2010
Department Review and Comment on Draft H&SP	March 31, 2010
Final H&SP	March 31, 2010
Field Sampling	April 2, 2010
Preliminary Data	April 12, 2010
Geocon Submit Draft SI Report	April 23, 2010
Department Review and Comment on Draft Report	April 29, 2010
Geocon Submit Final SI Report	May 6, 2010

## VI. Cost

The Consultant will be reimbursed for hours worked in accordance with the cost estimate provided in the approved final work plan for this Task Order 3, Contract No. 07A2729. The Consultant's billing will reference all hours worked to the Departments' WBS. In addition, the Consultant will be reimbursed for direct cost, other than salary costs, that are identified in the approved cost estimate. The total amount payable by the State under this Task Order 3 shall not exceed the amount of \$ 12,253.17

## VII. Caltrans Contract Manager

The Contract Manager for Caltrans shall be:

**Ayubur Rahman, P.E.**, Branch Chief  
Department of Transportation, District 7, Division of Planning, OEECS  
100 South Main Street, Suite 1200, 12-266, Los Angeles, CA 90012  
Tel.: (213) 897-0670, Fax: (213) 897-1634  
E-Mail: [Ayubur\\_Rahman@dot.ca.gov](mailto:Ayubur_Rahman@dot.ca.gov)

### **VIII. Task Order Manager**

The Task Order Manager for Caltrans shall be:

**Ali Nili**, Engineering Geologist  
Department of Transportation, District 7, Division of Planning, OEECS  
100 South Main Street, Suite 1200, 12-268, Los Angeles, CA 90012  
Tel.: (213) 897-3640, Fax: (213) 897-1634  
E-Mail: [Ali\\_Nili@dot.ca.gov](mailto:Ali_Nili@dot.ca.gov)

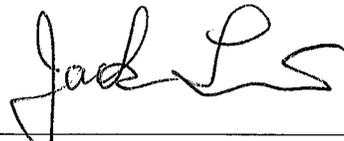
### **IX. Geocon Contract Manager**

The Contract Manager for Geocon shall be:

**Michael Conkle**  
Geocon  
3303 N. San Fernando Blvd. Suite #100, Burbank CA 91504  
Tel: (808) 841-8388, Fax: (818) 841-1704     *213-503-7841*  
E -mail: [conkle@geoconinc.com](mailto:conkle@geoconinc.com)

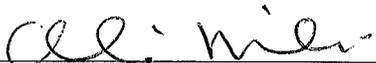
**X Signatures**

I certify that this Task Order 07A2729-2 and attachments comply with the provisions of Contract No. 07A2729, and are necessary for the satisfactory completion of the product(s) contracted for, and that sufficient funding has been encumbered to pay for this work.

for   
AYUBUR RAHMAN, P.E., Branch Chief  
CALTRANS CONTRACT MANAGER

3/25/2010  
DATE

I certify that this Task Order and any Attachments are within the scope of the project and are necessary for the successful completion of the project.

  
Ali Nili  
Caltrans Task Order Manager  
District 07 Hazardous Waste Branch-North Region  
Office of Env. Engineering and Corridor Studies

3/25/2010

I, Sam Alameddine certify by signing below that I have read the "Description of Services" for this Agreement and my expert opinion:

1. The work described in this Task Order is included in the required services and
2. The work described in this Task Order is an Architectural and Engineering (A&E) service, as defined in Government Code 4525 (d) through (f).
3. ~~This Task Order does not amend Agreement Number 08A1716.~~

IN WITNESS WHEREOF, this Task Order has been executed under the provisions of Contract No. 07A2729 between the State of California Department of Transportation and Geocon Consultant Inc. By the signatures below, the parties hereto agree that all terms and conditions of this Task Order 07-A2729-03 and Contract No. 07A2729 shall be in full force and effect.

**STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION**

**Geocon Consultants, Inc.**

By   
for Sam Alameddine, Office Chief  
Office of Env. Engineering and Corridor Studies  
Division of of Planning

By   
Michael Conkle  
Contract Manager

Date 3/26/10

Date 3/26/10

# APPENDIX B



*California Environmental Protection Agency  
Department of Toxic Substances Control*

**VARIANCE**

Applicant Names:

Variance No. V09HQSCD006

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

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.

A handwritten signature in cursive script, appearing to read "Beverly Rikala".

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

Date: 6/30/09

**VARIANCE**

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 aeriially-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  
Beverly Rikala  
Operating Facilities Team  
Department of Toxic Substances Control

# APPENDIX C

April 09, 2010



Mike Conkle  
Geocon Consultants, Inc.  
3303 N. San Fernando Blvd., Suite 100  
Burbank, CA 91504  
TEL: (818) 841-8388  
FAX: (818) 841-1704

ELAP No.: 1838  
NELAP No.: 02107CA  
NEVADA.: CA-401  
CSDLAC No.: 10196  
Workorder No.: 111063

RE: BMP Sites - 210 Fwy, S9475-06-03

Attention: Mike Conkle

Enclosed are the results for sample(s) received on April 02, 2010 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

  
Eddie F. Rodriguez  
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.



---

**CLIENT:** Geocon Consultants, Inc.  
**Project:** BMP Sites - 210 Fwy, S9475-06-03  
**Lab Order:** 111063

**CASE NARRATIVE**

---

Analytical Comments for Method 7420

Dilution was necessary for samples 111063-015A, 111063-021A, 111063-024A, 111063-025A, 111063-026A and 111063-027A, due to sample matrix.



**LEAD BY ICP  
EPA 6010B**

**ANALYTICAL RESULTS**

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Lab Order:</b>	111063
<b>Project:</b>	BMP Sites - 210 Fwy, S9475-06-03	<b>Date Received</b>	4/2/2010 4:06:00 PM
<b>Project No:</b>		<b>Matrix:</b>	Soil
<b>Analyte:</b>	Lead	<b>Analyst:</b>	SRB

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
111063-001A	101-0.5	44	mg/Kg	63130	5.0	1	4/2/2010	4/7/2010
111063-002A	101-1.0	8.6	mg/Kg	63130	5.0	1	4/2/2010	4/7/2010
111063-003A	101-1.5	9.3	mg/Kg	63130	5.0	1	4/2/2010	4/7/2010
111063-004A	102-0.5	11	mg/Kg	63130	5.0	1	4/2/2010	4/7/2010
111063-005A	102-1.0	13	mg/Kg	63130	5.0	1	4/2/2010	4/7/2010
111063-006A	102-1.5	6.1	mg/Kg	63130	5.0	1	4/2/2010	4/7/2010
111063-007A	103-0.5	19	mg/Kg	63130	5.0	1	4/2/2010	4/7/2010
111063-008A	103-1.0	13	mg/Kg	63130	5.0	1	4/2/2010	4/7/2010
111063-009A	103-1.5	ND	mg/Kg	63130	5.0	1	4/2/2010	4/7/2010
111063-010A	104-0.5	14	mg/Kg	63130	5.0	1	4/2/2010	4/7/2010
111063-011A	104-1.0	19	mg/Kg	63130	5.0	1	4/2/2010	4/7/2010
111063-012A	104-1.5	14	mg/Kg	63130	5.0	1	4/2/2010	4/7/2010
111063-013A	105-0.5	120	mg/Kg	63130	5.0	1	4/2/2010	4/7/2010
111063-014A	105-1.0	110	mg/Kg	63130	5.0	1	4/2/2010	4/7/2010
111063-015A	106-0.5	250	mg/Kg	63130	5.0	1	4/2/2010	4/7/2010
111063-016A	106-1.0	6.3	mg/Kg	63130	5.0	1	4/2/2010	4/7/2010
111063-017A	107-0.5	16	mg/Kg	63130	5.0	1	4/2/2010	4/7/2010
111063-018A	107-1.0	ND	mg/Kg	63130	5.0	1	4/2/2010	4/7/2010

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out



**LEAD BY ICP  
EPA 6010B**

**ANALYTICAL RESULTS**

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Lab Order:</b>	111063
<b>Project:</b>	BMP Sites - 210 Fwy, S9475-06-03	<b>Date Received</b>	4/2/2010 4:06:00 PM
<b>Project No:</b>		<b>Matrix:</b>	Soil
<b>Analyte:</b>	Lead	<b>Analyst:</b>	SRB

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
111063-019A	108-0.5	100	mg/Kg	63130	5.0	1	4/2/2010	4/7/2010
111063-020A	108-1.0	33	mg/Kg	63130	5.0	1	4/2/2010	4/7/2010
111063-021A	109-0.5	810	mg/Kg	63131	5.0	1	4/2/2010	4/7/2010
111063-022A	109-1.0	50	mg/Kg	63131	5.0	1	4/2/2010	4/7/2010
111063-023A	110-0.5	91	mg/Kg	63131	5.0	1	4/2/2010	4/7/2010
111063-024A	110-1.0	190	mg/Kg	63131	5.0	1	4/2/2010	4/7/2010
111063-025A	111-0.5	350	mg/Kg	63131	5.0	1	4/2/2010	4/7/2010
111063-026A	111-1.0	190	mg/Kg	63131	5.0	1	4/2/2010	4/7/2010
111063-027A	112-0.5	160	mg/Kg	63131	5.0	1	4/2/2010	4/7/2010
111063-028A	112-1.0	ND	mg/Kg	63131	5.0	1	4/2/2010	4/7/2010
111063-029A	113-0.5	15	mg/Kg	63131	5.0	1	4/2/2010	4/7/2010
111063-030A	113-1.0	ND	mg/Kg	63131	5.0	1	4/2/2010	4/7/2010
111063-032A	114-0.5	5.5	mg/Kg	63131	5.0	1	4/2/2010	4/7/2010
111063-033A	114-1.0	26	mg/Kg	63131	5.0	1	4/2/2010	4/7/2010
111063-034A	115-0.5	100	mg/Kg	63131	5.0	1	4/2/2010	4/7/2010
111063-035A	115-1.0	28	mg/Kg	63131	5.0	1	4/2/2010	4/7/2010
111063-036A	116-0.5	7.3	mg/Kg	63131	5.0	1	4/2/2010	4/7/2010
111063-037A	116-1.0	33	mg/Kg	63131	5.0	1	4/2/2010	4/7/2010

<b>Qualifiers:</b>	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



**LEAD BY ICP  
EPA 6010B**

**ANALYTICAL RESULTS**

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Lab Order:</b>	111063
<b>Project:</b>	BMP Sites - 210 Fwy, S9475-06-03	<b>Date Received</b>	4/2/2010 4:06:00 PM
<b>Project No:</b>		<b>Matrix:</b>	Soil
<b>Analyte:</b>	Lead	<b>Analyst:</b>	SRB

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
111063-038A	117-0.5	32	mg/Kg	63131	5.0	1	4/2/2010	4/7/2010
111063-039A	117-1.0	ND	mg/Kg	63131	5.0	1	4/2/2010	4/7/2010
111063-040A	118-0.5	34	mg/Kg	63131	5.0	1	4/2/2010	4/7/2010
111063-041A	118-1.0	ND	mg/Kg	63131	5.0	1	4/2/2010	4/7/2010
111063-042A	119-0.5	37	mg/Kg	63132	5.0	1	4/2/2010	4/8/2010
111063-043A	119-1.0	36	mg/Kg	63132	5.0	1	4/2/2010	4/8/2010

<b>Qualifiers:</b>	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



**ANALYTICAL RESULTS**

**LEAD BY ICP  
EPA 6010B**

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Lab Order:</b>	111063
<b>Project:</b>	BMP Sites - 210 Fwy, S9475-06-03	<b>Date Received</b>	4/2/2010 4:06:00 PM
<b>Project No:</b>		<b>Matrix:</b>	Water
<b>Analyte:</b>	Lead	<b>Analyst:</b>	SRB

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
111063-031A	EB-2	ND	mg/L	63103	0.25	1	4/2/2010	4/6/2010
111063-044A	EB-1	ND	mg/L	63103	0.25	1	4/2/2010	4/6/2010

<b>Qualifiers:</b>	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



LEAD BY ATOMIC ABSORPTION (STLC)  
WET/ EPA 7420

ANALYTICAL RESULTS

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Lab Order:</b>	111063
<b>Project:</b>	BMP Sites - 210 Fwy, S9475-06-03	<b>Date Received</b>	4/2/2010 4:06:00 PM
<b>Project No:</b>		<b>Matrix:</b>	Soil
<b>Analyte:</b>	Lead	<b>Analyst:</b>	IL

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
111063-001A	101-0.5	2.9	mg/L	63127	0.25	1	4/2/2010	4/8/2010
111063-002A	101-1.0	0.48	mg/L	63127	0.25	1	4/2/2010	4/8/2010
111063-003A	101-1.5	0.57	mg/L	63127	0.25	1	4/2/2010	4/8/2010
111063-004A	102-0.5	0.57	mg/L	63127	0.25	1	4/2/2010	4/8/2010
111063-005A	102-1.0	1.3	mg/L	63127	0.25	1	4/2/2010	4/8/2010
111063-006A	102-1.5	0.38	mg/L	63127	0.25	1	4/2/2010	4/8/2010
111063-007A	103-0.5	1.6	mg/L	63127	0.25	1	4/2/2010	4/8/2010
111063-008A	103-1.0	0.80	mg/L	63127	0.25	1	4/2/2010	4/8/2010
111063-009A	103-1.5	0.50	mg/L	63127	0.25	1	4/2/2010	4/8/2010
111063-010A	104-0.5	1.1	mg/L	63127	0.25	1	4/2/2010	4/8/2010
111063-011A	104-1.0	1.5	mg/L	63127	0.25	1	4/2/2010	4/8/2010
111063-012A	104-1.5	0.81	mg/L	63127	0.25	1	4/2/2010	4/8/2010
111063-013A	105-0.5	7.6	mg/L	63127	0.25	1	4/2/2010	4/8/2010
111063-014A	105-1.0	6.4	mg/L	63127	0.25	1	4/2/2010	4/8/2010
111063-015A	106-0.5	13	mg/L	63127	0.50	2	4/2/2010	4/8/2010
111063-016A	106-1.0	ND	mg/L	63127	0.25	1	4/2/2010	4/8/2010
111063-017A	107-0.5	0.45	mg/L	63127	0.25	1	4/2/2010	4/8/2010
111063-018A	107-1.0	ND	mg/L	63127	0.25	1	4/2/2010	4/8/2010

<b>Qualifiers:</b>	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



LEAD BY ATOMIC ABSORPTION (STLC)  
WET/ EPA 7420

ANALYTICAL RESULTS

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Lab Order:</b>	111063
<b>Project:</b>	BMP Sites - 210 Fwy, S9475-06-03	<b>Date Received</b>	4/2/2010 4:06:00 PM
<b>Project No:</b>		<b>Matrix:</b>	Soil
<b>Analyte:</b>	Lead	<b>Analyst:</b>	IL

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
111063-019A	108-0.5	7.4	mg/L	63127	0.25	1	4/2/2010	4/8/2010
111063-020A	108-1.0	1.9	mg/L	63127	0.25	1	4/2/2010	4/8/2010
111063-021A	109-0.5	50	mg/L	63128	2.5	10	4/2/2010	4/8/2010
111063-022A	109-1.0	3.2	mg/L	63128	0.25	1	4/2/2010	4/8/2010
111063-023A	110-0.5	8.7	mg/L	63128	0.25	1	4/2/2010	4/8/2010
111063-024A	110-1.0	11	mg/L	63128	0.50	2	4/2/2010	4/8/2010
111063-025A	111-0.5	53	mg/L	63128	2.5	10	4/2/2010	4/8/2010
111063-026A	111-1.0	16	mg/L	63128	0.50	2	4/2/2010	4/8/2010
111063-027A	112-0.5	15	mg/L	63128	0.50	2	4/2/2010	4/8/2010
111063-028A	112-1.0	0.39	mg/L	63128	0.25	1	4/2/2010	4/8/2010
111063-029A	113-0.5	0.94	mg/L	63128	0.25	1	4/2/2010	4/8/2010
111063-030A	113-1.0	0.26	mg/L	63128	0.25	1	4/2/2010	4/8/2010
111063-032A	114-0.5	0.35	mg/L	63128	0.25	1	4/2/2010	4/8/2010
111063-033A	114-1.0	1.4	mg/L	63128	0.25	1	4/2/2010	4/8/2010
111063-034A	115-0.5	8.1	mg/L	63128	0.25	1	4/2/2010	4/8/2010
111063-035A	115-1.0	1.4	mg/L	63128	0.25	1	4/2/2010	4/8/2010
111063-036A	116-0.5	0.74	mg/L	63128	0.25	1	4/2/2010	4/8/2010
111063-037A	116-1.0	3.3	mg/L	63128	0.25	1	4/2/2010	4/8/2010

<b>Qualifiers:</b>	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



LEAD BY ATOMIC ABSORPTION (STLC)  
WET/ EPA 7420

ANALYTICAL RESULTS

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Lab Order:</b>	111063
<b>Project:</b>	BMP Sites - 210 Fwy, S9475-06-03	<b>Date Received</b>	4/2/2010 4:06:00 PM
<b>Project No:</b>		<b>Matrix:</b>	Soil
<b>Analyte:</b>	Lead	<b>Analyst:</b>	IL

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
111063-038A	117-0.5	1.3	mg/L	63128	0.25	1	4/2/2010	4/8/2010
111063-039A	117-1.0	0.30	mg/L	63128	0.25	1	4/2/2010	4/8/2010
111063-040A	118-0.5	2.0	mg/L	63128	0.25	1	4/2/2010	4/8/2010
111063-041A	118-1.0	0.29	mg/L	63128	0.25	1	4/2/2010	4/8/2010
111063-042A	119-0.5	1.4	mg/L	63129	0.25	1	4/2/2010	4/8/2010
111063-043A	119-1.0	2.5	mg/L	63129	0.25	1	4/2/2010	4/8/2010

<b>Qualifiers:</b>	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111063  
**Project:** BMP Sites - 210 Fwy, S9475-06-03

**ANALYTICAL QC SUMMARY REPORT**

**TestCode: 6010\_SPB**

Sample ID: <b>MB-63130A</b>	SampType: <b>MBLK</b>	TestCode: <b>6010_SPB</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119937</b>
Client ID: <b>PBS</b>	Batch ID: <b>63130</b>	TestNo: <b>EPA 6010B EPA 3050M</b>		Analysis Date: <b>4/7/2010</b>	SeqNo: <b>1911846</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Lead 0.376 5.0

Sample ID: <b>LCS-63130</b>	SampType: <b>LCS</b>	TestCode: <b>6010_SPB</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119937</b>
Client ID: <b>LCSS</b>	Batch ID: <b>63130</b>	TestNo: <b>EPA 6010B EPA 3050M</b>		Analysis Date: <b>4/7/2010</b>	SeqNo: <b>1911847</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Lead 286.718 5.0 250.0 0.3758 115 80 120

Sample ID: <b>111063-010A-DUP</b>	SampType: <b>DUP</b>	TestCode: <b>6010_SPB</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119937</b>
Client ID: <b>104-0.5</b>	Batch ID: <b>63130</b>	TestNo: <b>EPA 6010B EPA 3050M</b>		Analysis Date: <b>4/7/2010</b>	SeqNo: <b>1911858</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Lead 16.121 5.0 13.86 15.1 20

Sample ID: <b>111063-010A-MS</b>	SampType: <b>MS</b>	TestCode: <b>6010_SPB</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119937</b>
Client ID: <b>104-0.5</b>	Batch ID: <b>63130</b>	TestNo: <b>EPA 6010B EPA 3050M</b>		Analysis Date: <b>4/7/2010</b>	SeqNo: <b>1911859</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

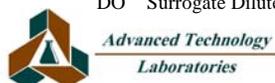
Lead 244.601 5.0 250.0 13.86 92.3 34 126

Sample ID: <b>MB-63130B</b>	SampType: <b>MBLK</b>	TestCode: <b>6010_SPB</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119937</b>
Client ID: <b>PBS</b>	Batch ID: <b>63130</b>	TestNo: <b>EPA 6010B EPA 3050M</b>		Analysis Date: <b>4/7/2010</b>	SeqNo: <b>1911860</b>
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Lead 0.271 5.0

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111063  
**Project:** BMP Sites - 210 Fwy, S9475-06-03

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 6010\_SPB**

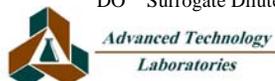
Sample ID: <b>111063-020A-DUP</b>	SampType: <b>DUP</b>	TestCode: <b>6010_SPB</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119937</b>						
Client ID: <b>108-1.0</b>	Batch ID: <b>63130</b>	TestNo: <b>EPA 6010B EPA 3050M</b>		Analysis Date: <b>4/7/2010</b>	SeqNo: <b>1911871</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	33.850	5.0						32.62	3.69	20	

Sample ID: <b>111063-020A-MS</b>	SampType: <b>MS</b>	TestCode: <b>6010_SPB</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119937</b>						
Client ID: <b>108-1.0</b>	Batch ID: <b>63130</b>	TestNo: <b>EPA 6010B EPA 3050M</b>		Analysis Date: <b>4/7/2010</b>	SeqNo: <b>1911872</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	278.859	5.0	250.0	32.62	98.5	34	126				

Sample ID: <b>111063-020A-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>6010_SPB</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119937</b>						
Client ID: <b>108-1.0</b>	Batch ID: <b>63130</b>	TestNo: <b>EPA 6010B EPA 3050M</b>		Analysis Date: <b>4/7/2010</b>	SeqNo: <b>1911873</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	279.051	5.0	250.0	32.62	98.6	34	126	278.9	0.0689	20	

**Qualifiers:**

- |   |  |  |
|---|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range       | H Holding times for preparation or analysis exceeded           |
| ND Not Detected at the Reporting Limit            | R RPD outside accepted recovery limits | S Spike/Surrogate outside of limits due to matrix interference |
| DO Surrogate Diluted Out                          | Calculations are based on raw values   |  |





**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111063  
**Project:** BMP Sites - 210 Fwy, S9475-06-03

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 6010\_SPB**

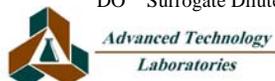
Sample ID: <b>111063-041A-DUP</b>	SampType: <b>DUP</b>	TestCode: <b>6010_SPB</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119938</b>						
Client ID: <b>118-1.0</b>	Batch ID: <b>63131</b>	TestNo: <b>EPA 6010B EPA 3050M</b>		Analysis Date: <b>4/7/2010</b>	SeqNo: <b>1911899</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	2.548	5.0						3.033	0	20	

Sample ID: <b>111063-041A-MS</b>	SampType: <b>MS</b>	TestCode: <b>6010_SPB</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119938</b>						
Client ID: <b>118-1.0</b>	Batch ID: <b>63131</b>	TestNo: <b>EPA 6010B EPA 3050M</b>		Analysis Date: <b>4/7/2010</b>	SeqNo: <b>1911900</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	213.087	5.0	250.0	3.033	84.0	34	126				

Sample ID: <b>111063-041A-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>6010_SPB</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119938</b>						
Client ID: <b>118-1.0</b>	Batch ID: <b>63131</b>	TestNo: <b>EPA 6010B EPA 3050M</b>		Analysis Date: <b>4/7/2010</b>	SeqNo: <b>1911901</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	226.942	5.0	250.0	3.033	89.6	34	126	213.1	6.30	20	

**Qualifiers:**

- |   |  |  |
|---|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range       | H Holding times for preparation or analysis exceeded           |
| ND Not Detected at the Reporting Limit            | R RPD outside accepted recovery limits | S Spike/Surrogate outside of limits due to matrix interference |
| DO Surrogate Diluted Out                          | Calculations are based on raw values   |  |





**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111063  
**Project:** BMP Sites - 210 Fwy, S9475-06-03

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 6010\_SPB**

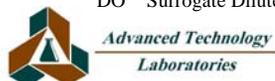
Sample ID: <b>111069-017A-DUP</b>	SampType: <b>DUP</b>	TestCode: <b>6010_SPB</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119955</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>63132</b>	TestNo: <b>EPA 6010B EPA 3050M</b>		Analysis Date: <b>4/8/2010</b>	SeqNo: <b>1912229</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	9.388	5.0						8.291	12.4	20	

Sample ID: <b>111069-017A-MS</b>	SampType: <b>MS</b>	TestCode: <b>6010_SPB</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119955</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>63132</b>	TestNo: <b>EPA 6010B EPA 3050M</b>		Analysis Date: <b>4/8/2010</b>	SeqNo: <b>1912230</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	236.638	5.0	250.0	8.291	91.3	34	126				

Sample ID: <b>111069-017A-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>6010_SPB</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119955</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>63132</b>	TestNo: <b>EPA 6010B EPA 3050M</b>		Analysis Date: <b>4/8/2010</b>	SeqNo: <b>1912231</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	206.006	5.0	250.0	8.291	79.1	34	126	236.6	13.8	20	

**Qualifiers:**

- |   |  |  |
|---|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range       | H Holding times for preparation or analysis exceeded           |
| ND Not Detected at the Reporting Limit            | R RPD outside accepted recovery limits | S Spike/Surrogate outside of limits due to matrix interference |
| DO Surrogate Diluted Out                          | Calculations are based on raw values   |  |



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111063  
**Project:** BMP Sites - 210 Fwy, S9475-06-03

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 6010\_WPB**

Sample ID: <b>MB-63103</b>	SampType: <b>MBLK</b>	TestCode: <b>6010_WPB</b>	Units: <b>mg/L</b>	Prep Date: <b>4/5/2010</b>	RunNo: <b>119855</b>						
Client ID: <b>PBW</b>	Batch ID: <b>63103</b>	TestNo: <b>EPA 6010B EPA 3010A</b>		Analysis Date: <b>4/6/2010</b>	SeqNo: <b>1910618</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	ND	0.25									
------	----	------	--	--	--	--	--	--	--	--	--

Sample ID: <b>LCS-63103</b>	SampType: <b>LCS</b>	TestCode: <b>6010_WPB</b>	Units: <b>mg/L</b>	Prep Date: <b>4/5/2010</b>	RunNo: <b>119855</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>63103</b>	TestNo: <b>EPA 6010B EPA 3010A</b>		Analysis Date: <b>4/6/2010</b>	SeqNo: <b>1910619</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	1.003	0.25	1.000	0	100	85	115				
------	-------	------	-------	---	-----	----	-----	--	--	--	--

Sample ID: <b>111063-044A-DUP</b>	SampType: <b>DUP</b>	TestCode: <b>6010_WPB</b>	Units: <b>mg/L</b>	Prep Date: <b>4/5/2010</b>	RunNo: <b>119855</b>						
Client ID: <b>EB-1</b>	Batch ID: <b>63103</b>	TestNo: <b>EPA 6010B EPA 3010A</b>		Analysis Date: <b>4/6/2010</b>	SeqNo: <b>1910622</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	ND	0.25						0	0	20	
------	----	------	--	--	--	--	--	---	---	----	--

Sample ID: <b>111063-044A-MS</b>	SampType: <b>MS</b>	TestCode: <b>6010_WPB</b>	Units: <b>mg/L</b>	Prep Date: <b>4/5/2010</b>	RunNo: <b>119855</b>						
Client ID: <b>EB-1</b>	Batch ID: <b>63103</b>	TestNo: <b>EPA 6010B EPA 3010A</b>		Analysis Date: <b>4/6/2010</b>	SeqNo: <b>1910623</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

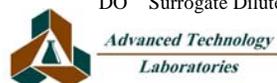
Lead	2.470	0.25	2.500	0	98.8	80	118				
------	-------	------	-------	---	------	----	-----	--	--	--	--

Sample ID: <b>111063-044A-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>6010_WPB</b>	Units: <b>mg/L</b>	Prep Date: <b>4/5/2010</b>	RunNo: <b>119855</b>						
Client ID: <b>EB-1</b>	Batch ID: <b>63103</b>	TestNo: <b>EPA 6010B EPA 3010A</b>		Analysis Date: <b>4/6/2010</b>	SeqNo: <b>1910624</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	2.461	0.25	2.500	0	98.4	80	118	2.470	0.392	20	
------	-------	------	-------	---	------	----	-----	-------	-------	----	--

**Qualifiers:**

- |   |  |  |
|---|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range       | H Holding times for preparation or analysis exceeded           |
| ND Not Detected at the Reporting Limit            | R RPD outside accepted recovery limits | S Spike/Surrogate outside of limits due to matrix interference |
| DO Surrogate Diluted Out                          | Calculations are based on raw values   |  |



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111063  
**Project:** BMP Sites - 210 Fwy, S9475-06-03

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 7420\_ST**

Sample ID: <b>MB-63127A</b>	SampType: <b>MBLK</b>	TestCode: <b>7420_ST</b>	Units: <b>mg/L</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119960</b>						
Client ID: <b>PBS</b>	Batch ID: <b>63127</b>	TestNo: <b>WET/ EPA 74 WET</b>		Analysis Date: <b>4/8/2010</b>	SeqNo: <b>1912312</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	ND	0.25									
------	----	------	--	--	--	--	--	--	--	--	--

Sample ID: <b>LCS-63127</b>	SampType: <b>LCS</b>	TestCode: <b>7420_ST</b>	Units: <b>mg/L</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119960</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>63127</b>	TestNo: <b>WET/ EPA 74 WET</b>		Analysis Date: <b>4/8/2010</b>	SeqNo: <b>1912313</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	4.768	0.25	5.000	0	95.4	80	120				
------	-------	------	-------	---	------	----	-----	--	--	--	--

Sample ID: <b>111063-010A-DUP</b>	SampType: <b>DUP</b>	TestCode: <b>7420_ST</b>	Units: <b>mg/L</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119960</b>						
Client ID: <b>104-0.5</b>	Batch ID: <b>63127</b>	TestNo: <b>WET/ EPA 74 WET</b>		Analysis Date: <b>4/8/2010</b>	SeqNo: <b>1912324</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	1.125	0.25						1.100	2.31	20	
------	-------	------	--	--	--	--	--	-------	------	----	--

Sample ID: <b>111063-010A-MS</b>	SampType: <b>MS</b>	TestCode: <b>7420_ST</b>	Units: <b>mg/L</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119960</b>						
Client ID: <b>104-0.5</b>	Batch ID: <b>63127</b>	TestNo: <b>WET/ EPA 74 WET</b>		Analysis Date: <b>4/8/2010</b>	SeqNo: <b>1912325</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

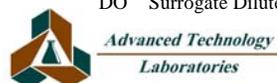
Lead	6.187	0.25	5.000	1.100	102	80	120				
------	-------	------	-------	-------	-----	----	-----	--	--	--	--

Sample ID: <b>MB-63127B</b>	SampType: <b>MBLK</b>	TestCode: <b>7420_ST</b>	Units: <b>mg/L</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119960</b>						
Client ID: <b>PBS</b>	Batch ID: <b>63127</b>	TestNo: <b>WET/ EPA 74 WET</b>		Analysis Date: <b>4/8/2010</b>	SeqNo: <b>1912326</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	ND	0.25									
------	----	------	--	--	--	--	--	--	--	--	--

**Qualifiers:**

- |   |  |  |
|---|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range       | H Holding times for preparation or analysis exceeded           |
| ND Not Detected at the Reporting Limit            | R RPD outside accepted recovery limits | S Spike/Surrogate outside of limits due to matrix interference |
| DO Surrogate Diluted Out                          | Calculations are based on raw values   |  |



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111063  
**Project:** BMP Sites - 210 Fwy, S9475-06-03

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 7420\_ST**

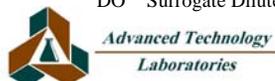
Sample ID: <b>111063-020A-DUP</b>	SampType: <b>DUP</b>	TestCode: <b>7420_ST</b>	Units: <b>mg/L</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119960</b>						
Client ID: <b>108-1.0</b>	Batch ID: <b>63127</b>	TestNo: <b>WET/ EPA 74 WET</b>		Analysis Date: <b>4/8/2010</b>	SeqNo: <b>1912337</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	1.895	0.25						1.917	1.12	20	

Sample ID: <b>111063-020A-MS</b>	SampType: <b>MS</b>	TestCode: <b>7420_ST</b>	Units: <b>mg/L</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119960</b>						
Client ID: <b>108-1.0</b>	Batch ID: <b>63127</b>	TestNo: <b>WET/ EPA 74 WET</b>		Analysis Date: <b>4/8/2010</b>	SeqNo: <b>1912338</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	7.086	0.25	5.000	1.917	103	80	120				

Sample ID: <b>111063-020A-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>7420_ST</b>	Units: <b>mg/L</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119960</b>						
Client ID: <b>108-1.0</b>	Batch ID: <b>63127</b>	TestNo: <b>WET/ EPA 74 WET</b>		Analysis Date: <b>4/8/2010</b>	SeqNo: <b>1912339</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	7.114	0.25	5.000	1.917	104	80	120	7.086	0.388	20	

**Qualifiers:**

- |   |  |  |
|---|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range       | H Holding times for preparation or analysis exceeded           |
| ND Not Detected at the Reporting Limit            | R RPD outside accepted recovery limits | S Spike/Surrogate outside of limits due to matrix interference |
| DO Surrogate Diluted Out                          | Calculations are based on raw values   |  |





**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111063  
**Project:** BMP Sites - 210 Fwy, S9475-06-03

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 7420\_ST**

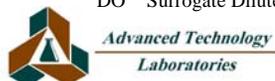
Sample ID: <b>111063-041A-DUP</b>	SampType: <b>DUP</b>	TestCode: <b>7420_ST</b>	Units: <b>mg/L</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119961</b>						
Client ID: <b>118-1.0</b>	Batch ID: <b>63128</b>	TestNo: <b>WET/ EPA 74 WET</b>		Analysis Date: <b>4/8/2010</b>	SeqNo: <b>1912365</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.263	0.25						0.2911	9.99	20	

Sample ID: <b>111063-041A-MS</b>	SampType: <b>MS</b>	TestCode: <b>7420_ST</b>	Units: <b>mg/L</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119961</b>						
Client ID: <b>118-1.0</b>	Batch ID: <b>63128</b>	TestNo: <b>WET/ EPA 74 WET</b>		Analysis Date: <b>4/8/2010</b>	SeqNo: <b>1912366</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	5.636	0.25	5.000	0.2911	107	80	120				

Sample ID: <b>111063-041A-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>7420_ST</b>	Units: <b>mg/L</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119961</b>						
Client ID: <b>118-1.0</b>	Batch ID: <b>63128</b>	TestNo: <b>WET/ EPA 74 WET</b>		Analysis Date: <b>4/8/2010</b>	SeqNo: <b>1912367</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	5.670	0.25	5.000	0.2911	108	80	120	5.636	0.608	20	

**Qualifiers:**

- |   |  |  |
|---|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range       | H Holding times for preparation or analysis exceeded           |
| ND Not Detected at the Reporting Limit            | R RPD outside accepted recovery limits | S Spike/Surrogate outside of limits due to matrix interference |
| DO Surrogate Diluted Out                          | Calculations are based on raw values   |  |



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111063  
**Project:** BMP Sites - 210 Fwy, S9475-06-03

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 7420\_ST**

Sample ID: <b>MB-63129A</b>	SampType: <b>MBLK</b>	TestCode: <b>7420_ST</b>	Units: <b>mg/L</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119962</b>						
Client ID: <b>PBS</b>	Batch ID: <b>63129</b>	TestNo: <b>WET/ EPA 74 WET</b>		Analysis Date: <b>4/8/2010</b>	SeqNo: <b>1912368</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	ND	0.25									
------	----	------	--	--	--	--	--	--	--	--	--

Sample ID: <b>LCS-63129</b>	SampType: <b>LCS</b>	TestCode: <b>7420_ST</b>	Units: <b>mg/L</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119962</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>63129</b>	TestNo: <b>WET/ EPA 74 WET</b>		Analysis Date: <b>4/8/2010</b>	SeqNo: <b>1912369</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	4.967	0.25	5.000	0	99.3	80	120				
------	-------	------	-------	---	------	----	-----	--	--	--	--

Sample ID: <b>111063-043A-DUP</b>	SampType: <b>DUP</b>	TestCode: <b>7420_ST</b>	Units: <b>mg/L</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119962</b>						
Client ID: <b>119-1.0</b>	Batch ID: <b>63129</b>	TestNo: <b>WET/ EPA 74 WET</b>		Analysis Date: <b>4/8/2010</b>	SeqNo: <b>1912372</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	2.422	0.25						2.488	2.68	20	
------	-------	------	--	--	--	--	--	-------	------	----	--

Sample ID: <b>111063-043A-MS</b>	SampType: <b>MS</b>	TestCode: <b>7420_ST</b>	Units: <b>mg/L</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119962</b>						
Client ID: <b>119-1.0</b>	Batch ID: <b>63129</b>	TestNo: <b>WET/ EPA 74 WET</b>		Analysis Date: <b>4/8/2010</b>	SeqNo: <b>1912373</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

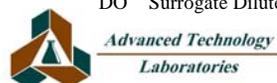
Lead	7.660	0.25	5.000	2.488	103	80	120				
------	-------	------	-------	-------	-----	----	-----	--	--	--	--

Sample ID: <b>111063-043A-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>7420_ST</b>	Units: <b>mg/L</b>	Prep Date: <b>4/6/2010</b>	RunNo: <b>119962</b>						
Client ID: <b>119-1.0</b>	Batch ID: <b>63129</b>	TestNo: <b>WET/ EPA 74 WET</b>		Analysis Date: <b>4/8/2010</b>	SeqNo: <b>1912374</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	7.743	0.25	5.000	2.488	105	80	120	7.660	1.08	20	
------	-------	------	-------	-------	-----	----	-----	-------	------	----	--

**Qualifiers:**

- |   |  |  |
|---|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range       | H Holding times for preparation or analysis exceeded           |
| ND Not Detected at the Reporting Limit            | R RPD outside accepted recovery limits | S Spike/Surrogate outside of limits due to matrix interference |
| DO Surrogate Diluted Out                          | Calculations are based on raw values   |  |





# 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.#: <u>59475-06-03</u>	Method of Transport Client <input type="checkbox"/> ATL <input type="checkbox"/> CA OverN <input type="checkbox"/> FEDEX <input type="checkbox"/> Other: _____	Sample Condition Upon Receipt 1. CHILLED Y <input type="checkbox"/> N <input type="checkbox"/> 4. SEALED Y <input type="checkbox"/> N <input type="checkbox"/> 2. HEADSPACE (VOA) Y <input type="checkbox"/> N <input type="checkbox"/> 5. # OF SPLS MATCH COC Y <input type="checkbox"/> N <input type="checkbox"/> 3. CONTAINER INTACT Y <input type="checkbox"/> N <input type="checkbox"/> 6. PRESERVED Y <input type="checkbox"/> N <input type="checkbox"/>
Logged By: <u>RDA / CHL</u> Date: <u>4/2/10</u>		

Client: <u>Geocon</u> Attn: <u>Mike Conkle</u>	Address: <u>3303 San Fernando Blvd, Suite 100</u> City: <u>Burbank</u> State: <u>CA</u> Zip Code: <u>91504</u>	TEL: (818) <u>841-8388</u> FAX: (818) <u>841-1704</u>
---	---	--

Project Name: <u>BMP sites - 210 Fwy</u>	Project #: <u>59475-06-03</u>	Sampler: <u>Cesar Larios</u> (Printed Name)	(Signature) <u>[Signature]</u>
Relinquished by: (Signature and Printed Name) <u>[Signature]</u>	Date: <u>4/2/10</u> Time: <u>4:05p</u>	Received by: (Signature and Printed Name) <u>[Signature]</u>	Date: <u>4/2/10</u> Time: <u>1606</u>
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: <u>Cesar Larios</u> <u>4/2/10</u> Print Name Date <u>[Signature]</u> Signature	Send Report To: Attn: <u>Mike Conkle</u> Co: <u>Geocon</u> Address: <u>3303 San Fernando Blvd</u> City: <u>Burbank</u> State: <u>CA</u> Zip: <u>91504</u>	Bill To: Attn: _____ Co: _____ Address: _____ City: _____ State: _____ Zip: _____	Special Instructions/Comments: <u>Caltrans Contract 07A2729</u> <u>Caltrans QA/QC</u>
---	---	---	---

**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)

ITEM	LAB USE ONLY:				Circle or Add Analysis(es) Requested	SPECIFY APPROPRIATE MATRIX								PRESERVATION	REMARKS				
	Batch #:		Sample Description			MATRIX													
	Lab No.	Sample I.D. / Location	Date	Time		8061A (Pesticides)	8062 (PCB)	8200B (Volatiles)	8270C (BNA)	8010B (Total Metal)	8015B (GRO) / 8020 (BTEX)	8021 (BTX)	TITLE 22 / CAM 17 (8010 / 7000)			SOIL	WATER	GROUND WATER	WASTEWATER
	<u>111063-</u>	<u>11</u>	<u>104 - 1.0</u>	<u>4/2/10</u>	<u>0828</u>														
		<u>12</u>	<u>104 - 1.5</u>		<u>0840</u>														
		<u>13</u>	<u>105 - 0.5</u>		<u>0916</u>														
		<u>14</u>	<u>105 - 1.0</u>		<u>0919</u>														
		<u>15</u>	<u>106 - 0.5</u>		<u>0918</u>														
		<u>16</u>	<u>106 - 1.0</u>		<u>0923</u>														
		<u>17</u>	<u>107 - 0.5</u>		<u>0926</u>														
		<u>18</u>	<u>107 - 1.0</u>		<u>0929</u>														
		<u>19</u>	<u>108 - 0.5</u>		<u>0955</u>														
		<u>20</u>	<u>108 - 1.0</u>		<u>0958</u>														

• TAT starts 8 a.m. following day if samples received after 3 p.m.	TAT: A= <u>Overnight</u> <input type="checkbox"/> <u>≤ 24 hr</u>	B= <u>Emergency</u> <input type="checkbox"/> <u>Next workday</u>	C= <u>Critical</u> <input type="checkbox"/> <u>2 Workdays</u>	D= <u>Urgent</u> <input type="checkbox"/> <u>3 Workdays</u>	E= <u>Routine</u> <input type="checkbox"/> <u>7 Workdays</u>	Preservatives: H=Hcl N=HNO <sub>3</sub> S=H <sub>2</sub> SO <sub>4</sub> C=4°C Z=Zn(AC) <sub>2</sub> O=NaOH T=Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>
Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal						

# 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.#: _____	Method of Transport Client <input type="checkbox"/> ATL <input type="checkbox"/> CA OverN <input type="checkbox"/> FEDEX <input type="checkbox"/> Other: _____	Sample Condition Upon Receipt 1. CHILLED Y <input type="checkbox"/> N <input type="checkbox"/> 4. SEALED Y <input type="checkbox"/> N <input type="checkbox"/> 2. HEADSPACE (VOA) Y <input type="checkbox"/> N <input type="checkbox"/> 5. # OF SPLS MATCH COC Y <input type="checkbox"/> N <input type="checkbox"/> 3. CONTAINER INTACT Y <input type="checkbox"/> N <input type="checkbox"/> 6. PRESERVED Y <input type="checkbox"/> N <input type="checkbox"/>
Logged By: <u>RDA/CHL</u>	Date: <u>4/2/10</u>	

Client: <u>Geocon</u>	Address: <u>3303 San Fernando Blvd, Suite 100</u>	TEL: <u>(818) 841-8388</u>
Attn: <u>Mike Conkle</u>	City: <u>Burbank</u> State: <u>CA</u> Zip Code: <u>91504</u>	FAX: <u>(818) 841-1704</u>

Project Name: <u>BMP - sites 210 fwy</u>	Project #: <u>59475-06-03</u>	Sampler: <u>Cesar Larios</u> (Printed Name)	(Signature)
Relinquished by: <u>[Signature]</u>	Date: <u>4/2/10</u> Time: <u>4:05p</u>	Received by: <u>[Signature]</u>	Date: <u>4/2/10</u> Time: <u>16:06</u>
Relinquished by: _____	Date: _____ Time: _____	Received by: _____	Date: _____ Time: _____
Relinquished by: _____	Date: _____ Time: _____	Received by: _____	Date: _____ Time: _____

I hereby authorize ATL to perform the work indicated below: Project Mgr /Submitter: <u>Cesar Larios</u> <u>4/2/10</u> Print Name Date <u>[Signature]</u> Signature	Send Report To: Attn: <u>Mike Conkle</u> Co: <u>Geocon</u> Address: <u>3303 San Fernando Blvd Suite 100</u> City: <u>Burbank</u> State: <u>CA</u> Zip: <u>91504</u>	Bill To: Attn: _____ Co: _____ Address: _____ City: _____ State: _____ Zip: _____	Special Instructions/Comments: <u>Caltrans Contract 07A2729</u> <u>Caltrans QA/QC</u>
---	---	---	---

**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)

I T E M	LAB USE ONLY:		Sample Description				Circle or Add Analysis(es) Requested	SPECIFY APPROPRIATE MATRIX				TAT	Container(s) # Type	PRESERVATION	REMARKS
	Batch #:	Lab No.	Sample I.D. / Location	Date	Time	MATRIX									
						SOIL		WATER	GROUND WATER	WASTEWATER					
	<u>111063-</u>	<u>21</u>	<u>109-0.5</u>	<u>4/2/10</u>	<u>0958</u>	<u>8015B (GRO) / 8020 (BTEX)</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>E</u>	<u>1</u>	<u>5</u>	<u>G</u>		
		<u>22</u>	<u>109-1.0</u>		<u>1001</u>										
		<u>23</u>	<u>110-0.5</u>		<u>1007</u>										
		<u>24</u>	<u>110-1.0</u>		<u>1011</u>										
		<u>25</u>	<u>111-0.5</u>		<u>1015</u>										
		<u>26</u>	<u>111-1.0</u>		<u>1018</u>										
		<u>27</u>	<u>112-0.5</u>		<u>1026</u>										
		<u>28</u>	<u>112-1.0</u>		<u>1030</u>										
		<u>29</u>	<u>113-0.5</u>		<u>1034</u>										
		<u>30</u>	<u>113-1.0</u>		<u>1038</u>										

• TAT starts 8 a.m. following day if samples received after 3 p.m.	TAT: A= <u>Overnight ≤ 24 hr</u>	B= <u>Emergency Next workday</u>	C= <u>Critical 2 Workdays</u>	D= <u>Urgent 3 Workdays</u>	E= <u>Routine 7 Workdays</u>	Preservatives: H=HCl N=HNO <sub>3</sub> S=H <sub>2</sub> SO <sub>4</sub> C=4°C Z=Zn(AC) <sub>2</sub> O=NaOH T=Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>
Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal						



# CHAIN OF CUSTODY RECORD

<p><b>Advanced Technology Laboratories</b> 3275 Walnut Avenue Signal Hill, CA 90755 (562) 989-4045 • Fax (562) 989-4040</p>	<b>FOR LABORATORY USE ONLY:</b>	
	P.O.#: _____ Logged By: <u>RDA/CHL</u> Date: <u>4/2/10</u>	Method of Transport Client <input type="checkbox"/> ATL <input type="checkbox"/> CA OverN <input type="checkbox"/> FEDEX <input type="checkbox"/> Other: _____

Client: <u>Gecon</u>	Address: <u>3303 San Fernando Blvd, Suite 100</u>	TEL: <u>(818) 841-8388</u>
Attn: <u>Mike Conkle</u>	City: <u>Burbank</u> State: <u>CA</u> Zip Code: <u>91504</u>	FAX: <u>(818) 841-1704</u>

Project Name: <u>BMP Sides - 210 fwy</u> Project #: <u>59475-06-03</u> Sampler: <u>Cesar Larios</u> (Printed Name) _____ (Signature)	
Relinquished by: (Signature and Printed Name) <u>[Signature]</u> Date: <u>4/2/10</u> Time: <u>4:05P</u>	Received by: (Signature and Printed Name) <u>[Signature]</u> Date: <u>4/2/10</u> Time: <u>10:06</u>
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: <u>Cesar Larios</u> <u>4/2/10</u> Print Name Date <u>[Signature]</u> Signature	Send Report To: Attn: <u>Mike Conkle</u> Co: <u>Gecon</u> Address: <u>3303 San Fernando Blvd, Suite 100</u> City: <u>Burbank</u> State: <u>CA</u> Zip: <u>91504</u>	Bill To: Attn: _____ Co: _____ Address: _____ City: _____ State: _____ Zip: _____	Special Instructions/Comments: <u>Caltrans Contract 07A 27 29</u> <u>Caltrans QA/QC</u>
--	---	---	---

**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)

ITEM	LAB USE ONLY:		Sample Description		Circle or Add Analysis(es) Requested	SPECIFY APPROPRIATE MATRIX				Container(s) # Type	PRESERVATION	REMARKS	
	Batch #:	Lab No.	Sample I.D. / Location	Date		Time	SOIL	WATER	GROUND WATER				WASTEWATER
	<u>111063</u>	<u>41</u>	<u>118-1.0</u>	<u>4/2/10</u>	<u>1156</u>								
		<u>42</u>	<u>119-0.5</u>		<u>1260</u>								
		<u>43</u>	<u>119-0.5 1.0 (40)</u>		<u>1263</u>								
		<u>44</u>	<u>EB-1</u>	<u>4/2/10</u>	<u>0740</u>								

• TAT starts 8 a.m. following day if samples received after 3 p.m.	TAT: A= <u>Overnight</u> <input type="checkbox"/> <u>≤ 24 hr</u> B= <u>Emergency</u> <input type="checkbox"/> <u>Next workday</u> C= <u>Critical</u> <input type="checkbox"/> <u>2 Workdays</u> D= <u>Urgent</u> <input type="checkbox"/> <u>3 Workdays</u> E= <u>Routine</u> <input type="checkbox"/> <u>7 Workdays</u>	Preservatives: H=Hcl N=HNO <sub>3</sub> S=H <sub>2</sub> SO <sub>4</sub> C=4'C Z=Zn(AC) <sub>2</sub> O=NaOH T=Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>
Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Teclar G=Glass P=Plastic M=Metal		

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

ATK/07/2010/TK1 03:44 PM Gecon West, INC FAX NO. 18188411704 P. 001

# CHAIN OF CUSTODY RECORD

<p><b>Advanced Technology Laboratories</b></p> <p>3275 Walnut Avenue Signal Hill, CA 90755 (562) 989-4045 • Fax (562) 989-4040</p>	<b>FOR LABORATORY USE ONLY:</b>		
	P.O.#: _____  Logged By: <u>RDA / CHL</u> Date: <u>4/2/10</u>	Method of Transport Client <input type="checkbox"/> ATL <input type="checkbox"/> CA OverN <input type="checkbox"/> FEDEX <input type="checkbox"/> Other: _____	Sample Condition Upon Receipt 1. CHILLED Y <input type="checkbox"/> N <input type="checkbox"/> 4. SEALED Y <input type="checkbox"/> N <input type="checkbox"/> 2. HEADSPACE (VOA) Y <input type="checkbox"/> N <input type="checkbox"/> 5. # OF SPLS MATCH COC Y <input type="checkbox"/> N <input type="checkbox"/> 3. CONTAINER INTACT Y <input type="checkbox"/> N <input type="checkbox"/> 6. PRESERVED Y <input type="checkbox"/> N <input type="checkbox"/>

Client: <u>Geocon</u>	Address: <u>3303 San Fernando Blvd, Suite 100</u>	TEL: <u>(818) 841-8388</u>
Attn: <u>Mike Conkle</u>	City: <u>Burbank</u> State: <u>CA</u> Zip Code: <u>91504</u>	FAX: <u>(818) 841-1704</u>

Project Name: <u>BMP Sites - 210 Fwy</u>	Project #: <u>59475-06-03</u>	Sampler: <u>Cesar Larios</u> (Signature)
Relinquished by: (Signature and Printed Name) <u>[Signature]</u>	Date: <u>4/2/10</u> Time: <u>4:05p</u>	Received by: (Signature and Printed Name) <u>Mary [Signature]</u> Date: <u>4/2/10</u> Time: <u>16:06</u>
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: <u>Cesar Larios</u> <u>4/2/10</u> Print Name Date <u>[Signature]</u> Signature	Send Report To: Attn: <u>Mike Conkle</u> Co: <u>Geocon</u> Address: <u>3303 San Fernando Blvd, Suite 100</u> City: <u>Burbank</u> State: <u>CA</u> Zip: <u>91504</u>	Bill To: Attn: _____ Co: _____ Address: _____ City: _____ State: _____ Zip: _____	Special Instructions/Comments: <u>Caltrans Contract 07A Z729</u> <u>Caltrans QA/QC</u>
---	--	---	--

Sample/Records - Archival & Disposal					SPECIFY APPROPRIATE MATRIX										PRESERVATION		
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. <b>Storage Fees (applies when storage is requested):</b> • 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) 8092 (PCB) 8200B (Volatiles) 8270C (BVA) 8010B (Total Metal) 8015B (GRO) / 8020 (BTEX) 8021 (BTEX) TITLE 22 / CAM 17 (8010 / 7000) <u>Total Lead</u> <u>Wet Lead (STLU)</u> SOIL WATER GROUND WATER WASTEWATER										Q A / Q C RTNE <input type="checkbox"/> CT <input type="checkbox"/> SWRCB <input type="checkbox"/> Logcode _____ OTHER _____ REMARKS		
ITEM	LAB USE ONLY:		Sample Description		TAT	#	Type	Container(s)			TAT	#	Type	PRESERVATION			
	Batch #:	Lab No.	Sample I.D. / Location	Date				Time	#	Type					#	Type	
	<u>111063-</u>	<u>41</u>	<u>118-1.0</u>	<u>4/2/10</u>	<u>1156</u>												
		<u>42</u>	<u>119-0.5</u>		<u>1200</u>												
		<u>43</u>	<u>119-0.5</u>		<u>1203</u>												
		<u>44</u>	<u>EB-1</u>	<u>4/2/10</u>	<u>0740</u>												

• TAT starts 8 a.m. following day if samples received after 3 p.m.	TAT: A= <input type="checkbox"/> Overnight ≤ 24 hr B= <input type="checkbox"/> Emergency Next workday C= <input type="checkbox"/> Critical 2 Workdays D= <input type="checkbox"/> Urgent 3 Workdays E= <input type="checkbox"/> Routine 7 Workdays	Preservatives: H=Hcl N=HNO <sub>3</sub> S=H <sub>2</sub> SO <sub>4</sub> C=4°C Z=Zn(AC) <sub>2</sub> O=NaOH T=Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal
--	--	---	---

April 15, 2010



Mike Conkle  
Geocon Consultants, Inc.  
3303 N. San Fernando Blvd., Suite 100  
Burbank, CA 91504  
TEL: (818) 841-8388  
FAX: (818) 841-1704

ELAP No.: 1838  
NELAP No.: 02107CA  
NEVADA.: CA-401  
CSDLAC No.: 10196

Workorder No.: 111063

RE: BMP Sites - 210 Fwy, S9475-06-03

Attention: Mike Conkle

Enclosed are the results for sample(s) received on April 02, 2010 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an addendum report. Please incorporate with documentation previously submitted.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

A handwritten signature in black ink, appearing to read "Eddie F. Rodriguez".

Eddie F. Rodriguez  
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.



---

**CLIENT:** Geocon Consultants, Inc.  
**Project:** BMP Sites - 210 Fwy, S9475-06-03  
**Lab Order:** 111063

---

**CASE NARRATIVE**

Analytical Comments for Method 6010

RPD for Duplicate (DUP) and/or Matrix Spike (MS)/Matrix Spike Duplicate (MSD) is outside criteria for samples 111138-031ADUP and 111138-031AMSD; however, the analytical batch was validated by the Laboratory Control Sample (LCS).



**LEAD BY ATOMIC ABSORPTION  
WET DI/ EPA 7420**

**ANALYTICAL RESULTS**

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Lab Order:</b>	111063
<b>Project:</b>	BMP Sites - 210 Fwy, S9475-06-03	<b>Date Received</b>	4/2/2010 4:06:00 PM
<b>Project No:</b>		<b>Matrix:</b>	Soil
<b>Analyte:</b>	Lead	<b>Analyst:</b>	IL

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
111063-013A	105-0.5	ND	mg/L	63258	0.25	1	4/2/2010	4/14/2010
111063-014A	105-1.0	ND	mg/L	63258	0.25	1	4/2/2010	4/14/2010
111063-015A	106-0.5	ND	mg/L	63258	0.25	1	4/2/2010	4/14/2010
111063-019A	108-0.5	ND	mg/L	63258	0.25	1	4/2/2010	4/14/2010
111063-021A	109-0.5	0.46	mg/L	63258	0.25	1	4/2/2010	4/14/2010
111063-023A	110-0.5	ND	mg/L	63258	0.25	1	4/2/2010	4/14/2010
111063-024A	110-1.0	ND	mg/L	63258	0.25	1	4/2/2010	4/14/2010
111063-025A	111-0.5	0.38	mg/L	63258	0.25	1	4/2/2010	4/14/2010
111063-026A	111-1.0	0.34	mg/L	63258	0.25	1	4/2/2010	4/14/2010
111063-027A	112-0.5	0.25	mg/L	63258	0.25	1	4/2/2010	4/14/2010
111063-034A	115-0.5	ND	mg/L	63258	0.25	1	4/2/2010	4/14/2010

<b>Qualifiers:</b>	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



LEAD BY ATOMIC ABSORPTION (TCLP)  
EPA 1311/ 7420

ANALYTICAL RESULTS

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Lab Order:</b>	111063
<b>Project:</b>	BMP Sites - 210 Fwy, S9475-06-03	<b>Date Received</b>	4/2/2010 4:06:00 PM
<b>Project No:</b>		<b>Matrix:</b>	Soil
<b>Analyte:</b>	Lead	<b>Analyst:</b>	IL

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
111063-013A	105-0.5	ND	mg/L	63296	0.25	1	4/2/2010	4/14/2010
111063-014A	105-1.0	ND	mg/L	63296	0.25	1	4/2/2010	4/14/2010
111063-015A	106-0.5	ND	mg/L	63296	0.25	1	4/2/2010	4/14/2010
111063-019A	108-0.5	ND	mg/L	63296	0.25	1	4/2/2010	4/14/2010
111063-021A	109-0.5	0.62	mg/L	63296	0.25	1	4/2/2010	4/14/2010
111063-024A	110-1.0	ND	mg/L	63296	0.25	1	4/2/2010	4/14/2010
111063-025A	111-0.5	0.66	mg/L	63296	0.25	1	4/2/2010	4/14/2010
111063-026A	111-1.0	0.55	mg/L	63296	0.25	1	4/2/2010	4/14/2010
111063-027A	112-0.5	0.38	mg/L	63297	0.25	1	4/2/2010	4/14/2010
111063-034A	115-0.5	ND	mg/L	63297	0.25	1	4/2/2010	4/14/2010
111063-037A	116-1.0	ND	mg/L	63297	0.25	1	4/2/2010	4/14/2010

<b>Qualifiers:</b>	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



**ANALYTICAL RESULTS**

**pH  
EPA 9045C**

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Lab Order:</b>	111063
<b>Project:</b>	BMP Sites - 210 Fwy, S9475-06-03	<b>Date Received</b>	4/2/2010 4:06:00 PM
<b>Project No:</b>		<b>Matrix:</b>	Soil
<b>Analyte:</b>	pH	<b>Analyst:</b>	CBB

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
111063-015A	106-0.5	6.7	pH Units	R120108	0.10	1	4/2/2010	4/13/2010
111063-021A	109-0.5	6.7	pH Units	R120108	0.10	1	4/2/2010	4/13/2010
111063-025A	111-0.5	6.6	pH Units	R120108	0.10	1	4/2/2010	4/13/2010
111063-034A	115-0.5	7.1	pH Units	R120107	0.10	1	4/2/2010	4/13/2010

<b>Qualifiers:</b>	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



**Advanced Technology Laboratories**

**ANALYTICAL RESULTS**

Print Date: 15-Apr-10

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 111063  
**Project:** BMP Sites - 210 Fwy, S9475-06-03  
**Lab ID:** 111063-011A

**Client Sample ID:** 104-1.0  
**Collection Date:** 4/2/2010  
**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	------	-------	----	---------------

**ICP METALS**

**EPA 3050B**

**EPA 6010B**

RunID:	ICP8_100413A	QC Batch:	63272	PrepDate:	4/12/2010	Analyst:	SRB
Antimony	ND	2.0	mg/Kg	1	4/13/2010 11:29 AM		
Arsenic	ND	1.0	mg/Kg	1	4/13/2010 11:29 AM		
Barium	64	1.0	mg/Kg	1	4/13/2010 11:29 AM		
Beryllium	ND	1.0	mg/Kg	1	4/13/2010 11:29 AM		
Cadmium	ND	1.0	mg/Kg	1	4/13/2010 11:29 AM		
Chromium	9.1	1.0	mg/Kg	1	4/13/2010 11:29 AM		
Cobalt	6.1	1.0	mg/Kg	1	4/13/2010 11:29 AM		
Copper	15	2.0	mg/Kg	1	4/13/2010 11:29 AM		
Molybdenum	ND	1.0	mg/Kg	1	4/13/2010 11:29 AM		
Nickel	8.3	1.0	mg/Kg	1	4/13/2010 11:29 AM		
Selenium	ND	1.0	mg/Kg	1	4/13/2010 11:29 AM		
Silver	ND	1.0	mg/Kg	1	4/13/2010 11:29 AM		
Thallium	ND	1.0	mg/Kg	1	4/13/2010 11:29 AM		
Vanadium	22	1.0	mg/Kg	1	4/13/2010 11:29 AM		
Zinc	47	1.0	mg/Kg	1	4/13/2010 11:29 AM		

**MERCURY BY COLD VAPOR TECHNIQUE**

**EPA 7471A**

RunID:	AA1_100412B	QC Batch:	63276	PrepDate:	4/12/2010	Analyst:	IL
Mercury	ND	0.10	mg/Kg	1	4/12/2010 02:14 PM		

**Qualifiers:** B Analyte detected in the associated Method Blank E Value above quantitation range  
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit  
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified  
DO Surrogate Diluted Out



*Advanced Technology  
Laboratories*

3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562.989.4045 Fax: 562.989.4040

**Advanced Technology Laboratories**

**ANALYTICAL RESULTS**

Print Date: 15-Apr-10

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	109-0.5
<b>Lab Order:</b>	111063	<b>Collection Date:</b>	4/2/2010
<b>Project:</b>	BMP Sites - 210 Fwy, S9475-06-03	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	111063-021A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	------	-------	----	---------------

**ICP METALS**

**EPA 3050B**

**EPA 6010B**

RunID: ICP8_100413A	QC Batch: 63272				PrepDate: 4/12/2010	Analyst: <b>SRB</b>
Antimony	ND	2.0		mg/Kg	1	4/13/2010 11:42 AM
Arsenic	ND	1.0		mg/Kg	1	4/13/2010 11:42 AM
Barium	100	1.0		mg/Kg	1	4/13/2010 11:42 AM
Beryllium	ND	1.0		mg/Kg	1	4/13/2010 11:42 AM
Cadmium	1.0	1.0		mg/Kg	1	4/13/2010 11:42 AM
Chromium	24	1.0		mg/Kg	1	4/13/2010 11:42 AM
Cobalt	6.6	1.0		mg/Kg	1	4/13/2010 11:42 AM
Copper	29	2.0		mg/Kg	1	4/13/2010 11:42 AM
Molybdenum	1.5	1.0		mg/Kg	1	4/13/2010 11:42 AM
Nickel	13	1.0		mg/Kg	1	4/13/2010 11:42 AM
Selenium	ND	1.0		mg/Kg	1	4/13/2010 11:42 AM
Silver	ND	1.0		mg/Kg	1	4/13/2010 11:42 AM
Thallium	ND	1.0		mg/Kg	1	4/13/2010 11:42 AM
Vanadium	23	1.0		mg/Kg	1	4/13/2010 11:42 AM
Zinc	290	1.0		mg/Kg	1	4/13/2010 11:42 AM

**MERCURY BY COLD VAPOR TECHNIQUE**

**EPA 7471A**

RunID: AA1_100412B	QC Batch: 63276				PrepDate: 4/12/2010	Analyst: <b>IL</b>
Mercury	ND	0.10		mg/Kg	1	4/12/2010 02:17 PM

<b>Qualifiers:</b>	B Analyte detected in the associated Method Blank	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	ND Not Detected at the Reporting Limit
	S Spike/Surrogate outside of limits due to matrix interference	Results are wet unless otherwise specified
	DO Surrogate Diluted Out	



*Advanced Technology  
Laboratories*

3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562.989.4045 Fax: 562.989.4040

**Advanced Technology Laboratories**

**ANALYTICAL RESULTS**

Print Date: 15-Apr-10

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	119-0.5
<b>Lab Order:</b>	111063	<b>Collection Date:</b>	4/2/2010
<b>Project:</b>	BMP Sites - 210 Fwy, S9475-06-03	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	111063-042A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
----------	--------	-----	------	-------	----	---------------

**ICP METALS**

**EPA 3050B**

**EPA 6010B**

RunID: ICP8_100413A	QC Batch: 63272				PrepDate: 4/12/2010	Analyst: SRB
Antimony	ND	2.0		mg/Kg	1	4/13/2010 11:47 AM
Arsenic	ND	1.0		mg/Kg	1	4/13/2010 11:47 AM
Barium	110	1.0		mg/Kg	1	4/13/2010 11:47 AM
Beryllium	ND	1.0		mg/Kg	1	4/13/2010 11:47 AM
Cadmium	ND	1.0		mg/Kg	1	4/13/2010 11:47 AM
Chromium	14	1.0		mg/Kg	1	4/13/2010 11:47 AM
Cobalt	10	1.0		mg/Kg	1	4/13/2010 11:47 AM
Copper	20	2.0		mg/Kg	1	4/13/2010 11:47 AM
Molybdenum	ND	1.0		mg/Kg	1	4/13/2010 11:47 AM
Nickel	12	1.0		mg/Kg	1	4/13/2010 11:47 AM
Selenium	ND	1.0		mg/Kg	1	4/13/2010 11:47 AM
Silver	ND	1.0		mg/Kg	1	4/13/2010 11:47 AM
Thallium	ND	1.0		mg/Kg	1	4/13/2010 11:47 AM
Vanadium	38	1.0		mg/Kg	1	4/13/2010 11:47 AM
Zinc	59	1.0		mg/Kg	1	4/13/2010 11:47 AM

**MERCURY BY COLD VAPOR TECHNIQUE**

**EPA 7471A**

RunID: AA1_100412B	QC Batch: 63276				PrepDate: 4/12/2010	Analyst: IL
Mercury	ND	0.10		mg/Kg	1	4/12/2010 02:19 PM

<b>Qualifiers:</b>	B Analyte detected in the associated Method Blank	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	ND Not Detected at the Reporting Limit
	S Spike/Surrogate outside of limits due to matrix interference	Results are wet unless otherwise specified
	DO Surrogate Diluted Out	



Advanced Technology  
Laboratories

3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562.989.4045 Fax: 562.989.4040

**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111063  
**Project:** BMP Sites - 210 Fwy, S9475-06-03

**ANALYTICAL QC SUMMARY REPORT**

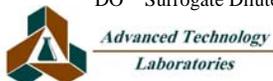
**TestCode: 6010\_S**

Sample ID: <b>MB-63272</b>	SampType: <b>MBLK</b>	TestCode: <b>6010_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/12/2010</b>	RunNo: <b>120091</b>						
Client ID: <b>PBS</b>	Batch ID: <b>63272</b>	TestNo: <b>EPA 6010B EPA 3050B</b>		Analysis Date: <b>4/13/2010</b>	SeqNo: <b>1914518</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0									
Arsenic	ND	1.0									
Barium	ND	1.0									
Beryllium	ND	1.0									
Cadmium	ND	1.0									
Chromium	ND	1.0									
Cobalt	ND	1.0									
Copper	ND	2.0									
Molybdenum	ND	1.0									
Nickel	0.051	1.0									
Selenium	ND	1.0									
Silver	ND	1.0									
Thallium	ND	1.0									
Vanadium	ND	1.0									
Zinc	0.231	1.0									

Sample ID: <b>LCS-63272</b>	SampType: <b>LCS</b>	TestCode: <b>6010_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/12/2010</b>	RunNo: <b>120091</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>63272</b>	TestNo: <b>EPA 6010B EPA 3050B</b>		Analysis Date: <b>4/13/2010</b>	SeqNo: <b>1914519</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	48.346	2.0	50.00	0	96.7	80	120				
Arsenic	46.636	1.0	50.00	0	93.3	80	120				
Barium	48.952	1.0	50.00	0	97.9	80	120				
Beryllium	46.362	1.0	50.00	0	92.7	80	120				
Cadmium	47.220	1.0	50.00	0	94.4	80	120				
Chromium	47.856	1.0	50.00	0	95.7	80	120				
Cobalt	49.105	1.0	50.00	0	98.2	80	120				
Copper	48.173	2.0	50.00	0	96.3	80	120				

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111063  
**Project:** BMP Sites - 210 Fwy, S9475-06-03

## ANALYTICAL QC SUMMARY REPORT

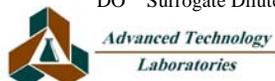
**TestCode: 6010\_S**

Sample ID: <b>LCS-63272</b>	SampType: <b>LCS</b>	TestCode: <b>6010_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/12/2010</b>	RunNo: <b>120091</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>63272</b>	TestNo: <b>EPA 6010B EPA 3050B</b>		Analysis Date: <b>4/13/2010</b>	SeqNo: <b>1914519</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	50.445	1.0	50.00	0	101	80	120				
Nickel	47.116	1.0	50.00	0.05095	94.1	80	120				
Selenium	45.200	1.0	50.00	0	90.4	80	120				
Silver	47.919	1.0	50.00	0	95.8	80	120				
Thallium	48.416	1.0	50.00	0	96.8	80	120				
Vanadium	48.470	1.0	50.00	0	96.9	80	120				
Zinc	49.084	1.0	50.00	0.2308	97.7	80	120				

Sample ID: <b>111138-031A-DUP</b>	SampType: <b>DUP</b>	TestCode: <b>6010_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/12/2010</b>	RunNo: <b>120091</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>63272</b>	TestNo: <b>EPA 6010B EPA 3050B</b>		Analysis Date: <b>4/13/2010</b>	SeqNo: <b>1914530</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.315	2.0						0.3310	0	20	
Arsenic	1.962	1.0						2.791	34.9	20	R
Barium	184.143	1.0						154.1	17.8	20	
Beryllium	ND	1.0						0.09248	0	20	
Cadmium	0.289	1.0						0.3062	0	20	
Chromium	25.719	1.0						28.51	10.3	20	
Cobalt	8.492	1.0						9.083	6.73	20	
Copper	12.530	2.0						14.60	15.2	20	
Molybdenum	0.625	1.0						0.6730	0	20	
Nickel	42.156	1.0						44.08	4.46	20	
Selenium	ND	1.0						0	0	20	
Silver	ND	1.0						0	0	20	
Thallium	ND	1.0						0	0	20	
Vanadium	29.128	1.0						30.65	5.11	20	
Zinc	37.371	1.0						38.54	3.07	20	

**Qualifiers:**

- |   |  |  |
|---|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range       | H Holding times for preparation or analysis exceeded           |
| ND Not Detected at the Reporting Limit            | R RPD outside accepted recovery limits | S Spike/Surrogate outside of limits due to matrix interference |
| DO Surrogate Diluted Out                          | Calculations are based on raw values   |  |



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111063  
**Project:** BMP Sites - 210 Fwy, S9475-06-03

## ANALYTICAL QC SUMMARY REPORT

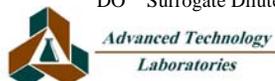
**TestCode: 6010\_S**

Sample ID: <b>111138-031A-MS</b>		SampType: <b>MS</b>		TestCode: <b>6010_S</b>		Units: <b>mg/Kg</b>		Prep Date: <b>4/12/2010</b>		RunNo: <b>120091</b>	
Client ID: <b>ZZZZZZ</b>		Batch ID: <b>63272</b>		TestNo: <b>EPA 6010B EPA 3050B</b>		Analysis Date: <b>4/13/2010</b>		SeqNo: <b>1914531</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	101.719	2.0	125.0	0.3310	81.1	32	105				
Arsenic	105.560	1.0	125.0	2.791	82.2	49	106				
Barium	318.482	1.0	125.0	154.1	131	31	133				
Beryllium	105.198	1.0	125.0	0.09248	84.1	56	106				
Cadmium	100.671	1.0	125.0	0.3062	80.3	51	103				
Chromium	125.250	1.0	125.0	28.51	77.4	45	114				
Cobalt	107.293	1.0	125.0	9.083	78.6	52	106				
Copper	123.510	2.0	125.0	14.60	87.1	54	125				
Molybdenum	106.718	1.0	125.0	0.6730	84.8	54	106				
Nickel	127.672	1.0	125.0	44.08	66.9	45	111				
Selenium	105.458	1.0	125.0	0	84.4	47	104				
Silver	109.896	1.0	125.0	0	87.9	56	112				
Thallium	101.748	1.0	125.0	0	81.4	46	101				
Vanadium	136.494	1.0	125.0	30.65	84.7	54	114				
Zinc	126.574	1.0	125.0	38.54	70.4	28	125				

Sample ID: <b>111138-031A-MSD</b>		SampType: <b>MSD</b>		TestCode: <b>6010_S</b>		Units: <b>mg/Kg</b>		Prep Date: <b>4/12/2010</b>		RunNo: <b>120091</b>	
Client ID: <b>ZZZZZZ</b>		Batch ID: <b>63272</b>		TestNo: <b>EPA 6010B EPA 3050B</b>		Analysis Date: <b>4/13/2010</b>		SeqNo: <b>1914532</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	98.985	2.0	125.0	0.3310	78.9	32	105	101.7	2.72	20	
Arsenic	102.018	1.0	125.0	2.791	79.4	49	106	105.6	3.41	20	
Barium	238.151	1.0	125.0	154.1	67.2	31	133	318.5	28.9	20	R
Beryllium	99.725	1.0	125.0	0.09248	79.7	56	106	105.2	5.34	20	
Cadmium	96.344	1.0	125.0	0.3062	76.8	51	103	100.7	4.39	20	
Chromium	126.792	1.0	125.0	28.51	78.6	45	114	125.3	1.22	20	
Cobalt	104.793	1.0	125.0	9.083	76.6	52	106	107.3	2.36	20	
Copper	120.356	2.0	125.0	14.60	84.6	54	125	123.5	2.59	20	
Molybdenum	104.286	1.0	125.0	0.6730	82.9	54	106	106.7	2.30	20	
Nickel	138.919	1.0	125.0	44.08	75.9	45	111	127.7	8.44	20	

**Qualifiers:**

- |   |  |  |
|---|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range       | H Holding times for preparation or analysis exceeded           |
| ND Not Detected at the Reporting Limit            | R RPD outside accepted recovery limits | S Spike/Surrogate outside of limits due to matrix interference |
| DO Surrogate Diluted Out                          | Calculations are based on raw values   |  |



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111063  
**Project:** BMP Sites - 210 Fwy, S9475-06-03

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 6010\_S**

Sample ID: <b>111138-031A-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>6010_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/12/2010</b>	RunNo: <b>120091</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>63272</b>	TestNo: <b>EPA 6010B EPA 3050B</b>	Analysis Date: <b>4/13/2010</b>	SeqNo: <b>1914532</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	99.521	1.0	125.0	0	79.6	47	104	105.5	5.79	20	
Silver	102.858	1.0	125.0	0	82.3	56	112	109.9	6.62	20	
Thallium	98.601	1.0	125.0	0	78.9	46	101	101.7	3.14	20	
Vanadium	129.500	1.0	125.0	30.65	79.1	54	114	136.5	5.26	20	
Zinc	126.641	1.0	125.0	38.54	70.5	28	125	126.6	0.0526	20	

**Qualifiers:**

- |   |  |  |
|---|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range       | H Holding times for preparation or analysis exceeded           |
| ND Not Detected at the Reporting Limit            | R RPD outside accepted recovery limits | S Spike/Surrogate outside of limits due to matrix interference |
| DO Surrogate Diluted Out                          | Calculations are based on raw values   |  |



*Advanced Technology  
Laboratories*

3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562.989.4045 Fax: 562.989.4040

**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111063  
**Project:** BMP Sites - 210 Fwy, S9475-06-03

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 7420\_DI\_GEOCON**

Sample ID: <b>MB-63258A</b>	SampType: <b>MBLK</b>	TestCode: <b>7420_DI_GE</b>	Units: <b>mg/L</b>	Prep Date: <b>4/12/2010</b>	RunNo: <b>120139</b>						
Client ID: <b>PBS</b>	Batch ID: <b>63258</b>	TestNo: <b>WET DI/ EPA WET</b>		Analysis Date: <b>4/14/2010</b>	SeqNo: <b>1915318</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead ND 0.25

Sample ID: <b>LCS-63258</b>	SampType: <b>LCS</b>	TestCode: <b>7420_DI_GE</b>	Units: <b>mg/L</b>	Prep Date: <b>4/12/2010</b>	RunNo: <b>120139</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>63258</b>	TestNo: <b>WET DI/ EPA WET</b>		Analysis Date: <b>4/14/2010</b>	SeqNo: <b>1915319</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 5.037 0.25 5.000 0 101 80 120

Sample ID: <b>111063-027A-DUP</b>	SampType: <b>DUP</b>	TestCode: <b>7420_DI_GE</b>	Units: <b>mg/L</b>	Prep Date: <b>4/12/2010</b>	RunNo: <b>120139</b>						
Client ID: <b>112-0.5</b>	Batch ID: <b>63258</b>	TestNo: <b>WET DI/ EPA WET</b>		Analysis Date: <b>4/14/2010</b>	SeqNo: <b>1915330</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 0.286 0.25 0.2534 12.0 20

Sample ID: <b>111063-027A-MS</b>	SampType: <b>MS</b>	TestCode: <b>7420_DI_GE</b>	Units: <b>mg/L</b>	Prep Date: <b>4/12/2010</b>	RunNo: <b>120139</b>						
Client ID: <b>112-0.5</b>	Batch ID: <b>63258</b>	TestNo: <b>WET DI/ EPA WET</b>		Analysis Date: <b>4/14/2010</b>	SeqNo: <b>1915331</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

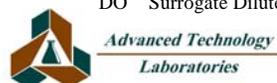
Lead 5.058 0.25 5.000 0.2534 96.1 70 130

Sample ID: <b>MB-63258B</b>	SampType: <b>MBLK</b>	TestCode: <b>7420_DI_GE</b>	Units: <b>mg/L</b>	Prep Date: <b>4/12/2010</b>	RunNo: <b>120139</b>						
Client ID: <b>PBS</b>	Batch ID: <b>63258</b>	TestNo: <b>WET DI/ EPA WET</b>		Analysis Date: <b>4/14/2010</b>	SeqNo: <b>1915332</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead ND 0.25

**Qualifiers:**

- |   |  |  |
|---|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range       | H Holding times for preparation or analysis exceeded           |
| ND Not Detected at the Reporting Limit            | R RPD outside accepted recovery limits | S Spike/Surrogate outside of limits due to matrix interference |
| DO Surrogate Diluted Out                          | Calculations are based on raw values   |  |



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111063  
**Project:** BMP Sites - 210 Fwy, S9475-06-03

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 7420\_DI\_GEOCON**

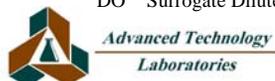
Sample ID: <b>111063-034A-DUP</b>	SampType: <b>DUP</b>	TestCode: <b>7420_DI_GE</b>	Units: <b>mg/L</b>	Prep Date: <b>4/12/2010</b>	RunNo: <b>120139</b>						
Client ID: <b>115-0.5</b>	Batch ID: <b>63258</b>	TestNo: <b>WET DI/ EPA WET</b>		Analysis Date: <b>4/14/2010</b>	SeqNo: <b>1915334</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.25						0	0	20	

Sample ID: <b>111063-034A-MS</b>	SampType: <b>MS</b>	TestCode: <b>7420_DI_GE</b>	Units: <b>mg/L</b>	Prep Date: <b>4/12/2010</b>	RunNo: <b>120139</b>						
Client ID: <b>115-0.5</b>	Batch ID: <b>63258</b>	TestNo: <b>WET DI/ EPA WET</b>		Analysis Date: <b>4/14/2010</b>	SeqNo: <b>1915335</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	5.066	0.25	5.000	0	101	70	130				

Sample ID: <b>111063-034A-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>7420_DI_GE</b>	Units: <b>mg/L</b>	Prep Date: <b>4/12/2010</b>	RunNo: <b>120139</b>						
Client ID: <b>115-0.5</b>	Batch ID: <b>63258</b>	TestNo: <b>WET DI/ EPA WET</b>		Analysis Date: <b>4/14/2010</b>	SeqNo: <b>1915336</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	5.081	0.25	5.000	0	102	70	130	5.066	0.307	20	

**Qualifiers:**

- |   |  |  |
|---|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range       | H Holding times for preparation or analysis exceeded           |
| ND Not Detected at the Reporting Limit            | R RPD outside accepted recovery limits | S Spike/Surrogate outside of limits due to matrix interference |
| DO Surrogate Diluted Out                          | Calculations are based on raw values   |  |





**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111063  
**Project:** BMP Sites - 210 Fwy, S9475-06-03

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 7420\_TC

Sample ID: <b>111063-026A-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>7420_TC</b>	Units: <b>mg/L</b>	Prep Date: <b>4/13/2010</b>	RunNo: <b>120137</b>						
Client ID: <b>111-1.0</b>	Batch ID: <b>63296</b>	TestNo: <b>EPA 1311/ 74 EPA3010A</b>		Analysis Date: <b>4/14/2010</b>	SeqNo: <b>1915308</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	2.853	0.25	2.500	0.5456	92.3	70	130	2.825	0.997	20	

### Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		



*Advanced Technology  
Laboratories*

3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562.989.4045 Fax: 562.989.4040



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111063  
**Project:** BMP Sites - 210 Fwy, S9475-06-03

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 7420\_TC

Sample ID: <b>111063-037A-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>7420_TC</b>	Units: <b>mg/L</b>	Prep Date: <b>4/13/2010</b>	RunNo: <b>120138</b>						
Client ID: <b>116-1.0</b>	Batch ID: <b>63297</b>	TestNo: <b>EPA 1311/ 74 EPA3010A</b>		Analysis Date: <b>4/14/2010</b>	SeqNo: <b>1915317</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	2.604	0.25	2.500	0	104	70	130	2.566	1.46	20	

### Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		



*Advanced Technology  
Laboratories*

3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562.989.4045 Fax: 562.989.4040

**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111063  
**Project:** BMP Sites - 210 Fwy, S9475-06-03

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 7471\_S**

Sample ID: <b>MB-63276</b>	SampType: <b>MBLK</b>	TestCode: <b>7471_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/12/2010</b>	RunNo: <b>120048</b>						
Client ID: <b>PBS</b>	Batch ID: <b>63276</b>	TestNo: <b>EPA 7471A</b>		Analysis Date: <b>4/12/2010</b>	SeqNo: <b>1913628</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	ND	0.10									
---------	----	------	--	--	--	--	--	--	--	--	--

Sample ID: <b>LCS-63276</b>	SampType: <b>LCS</b>	TestCode: <b>7471_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/12/2010</b>	RunNo: <b>120048</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>63276</b>	TestNo: <b>EPA 7471A</b>		Analysis Date: <b>4/12/2010</b>	SeqNo: <b>1913629</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	0.848	0.10	0.8300	0	102	80	120				
---------	-------	------	--------	---	-----	----	-----	--	--	--	--

Sample ID: <b>111138-031A-MS</b>	SampType: <b>MS</b>	TestCode: <b>7471_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/12/2010</b>	RunNo: <b>120048</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>63276</b>	TestNo: <b>EPA 7471A</b>		Analysis Date: <b>4/12/2010</b>	SeqNo: <b>1913630</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	0.836	0.10	0.8300	0	101	70	130				
---------	-------	------	--------	---	-----	----	-----	--	--	--	--

Sample ID: <b>111138-031A-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>7471_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/12/2010</b>	RunNo: <b>120048</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>63276</b>	TestNo: <b>EPA 7471A</b>		Analysis Date: <b>4/12/2010</b>	SeqNo: <b>1913631</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

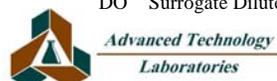
Mercury	0.836	0.10	0.8300	0	101	70	130	0.8357	0.0235	20	
---------	-------	------	--------	---	-----	----	-----	--------	--------	----	--

Sample ID: <b>111138-031A-DUP</b>	SampType: <b>DUP</b>	TestCode: <b>7471_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/12/2010</b>	RunNo: <b>120048</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>63276</b>	TestNo: <b>EPA 7471A</b>		Analysis Date: <b>4/12/2010</b>	SeqNo: <b>1913633</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	ND	0.10						0	0	20	
---------	----	------	--	--	--	--	--	---	---	----	--

**Qualifiers:**

- |   |  |  |
|---|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range       | H Holding times for preparation or analysis exceeded           |
| ND Not Detected at the Reporting Limit            | R RPD outside accepted recovery limits | S Spike/Surrogate outside of limits due to matrix interference |
| DO Surrogate Diluted Out                          | Calculations are based on raw values   |  |



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111063  
**Project:** BMP Sites - 210 Fwy, S9475-06-03

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 9045\_S

Sample ID: <b>111063-034ADUP</b>	SampType: <b>DUP</b>	TestCode: <b>9045_S</b>	Units: <b>pH Units</b>	Prep Date:	RunNo: <b>120107</b>						
Client ID: <b>115-0.5</b>	Batch ID: <b>R120107</b>	TestNo: <b>EPA 9045C</b>		Analysis Date: <b>4/13/2010</b>	SeqNo: <b>1914748</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.980	0.10						7.140	2.27	20	

### Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		



*Advanced Technology  
Laboratories*

3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562.989.4045 Fax: 562.989.4040

**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111063  
**Project:** BMP Sites - 210 Fwy, S9475-06-03

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 9045\_S

Sample ID: <b>111063-025ADUP</b>	SampType: <b>DUP</b>	TestCode: <b>9045_S</b>	Units: <b>pH Units</b>	Prep Date:	RunNo: <b>120108</b>						
Client ID: <b>111-0.5</b>	Batch ID: <b>R120108</b>	TestNo: <b>EPA 9045C</b>		Analysis Date: <b>4/13/2010</b>	SeqNo: <b>1914752</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.720	0.10						6.570	2.26	20	

### Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		



*Advanced Technology  
Laboratories*

3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562.989.4045 Fax: 562.989.4040

# APPENDIX D

## APPENDIX D

### GEOCON CONSULTANTS, INC. MODIFIED STANDARD OPERATING PROCEDURE (SOP) NO. 11 HAND-AUGERING AND SOIL SAMPLE COLLECTION/HANDLING

#### Purpose

The purpose of this SOP is to outline procedures and methods to be used to advance hand-augers and collect soil samples for chemical analyses.

#### Hand-Augering and Soil Sample Collection/Handling Procedures

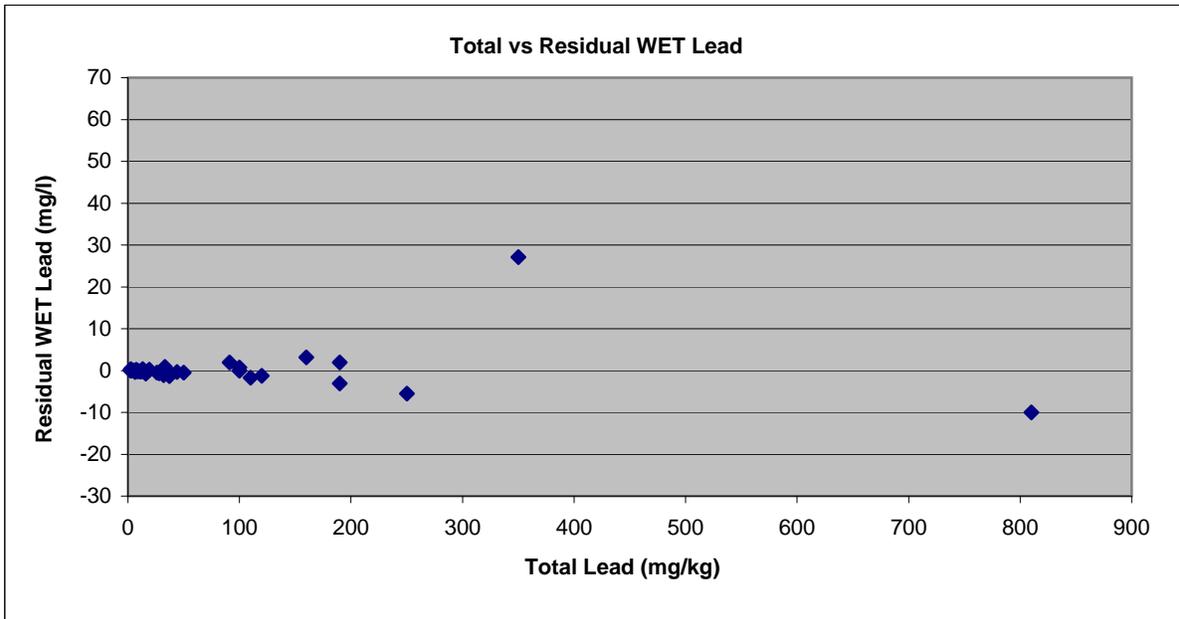
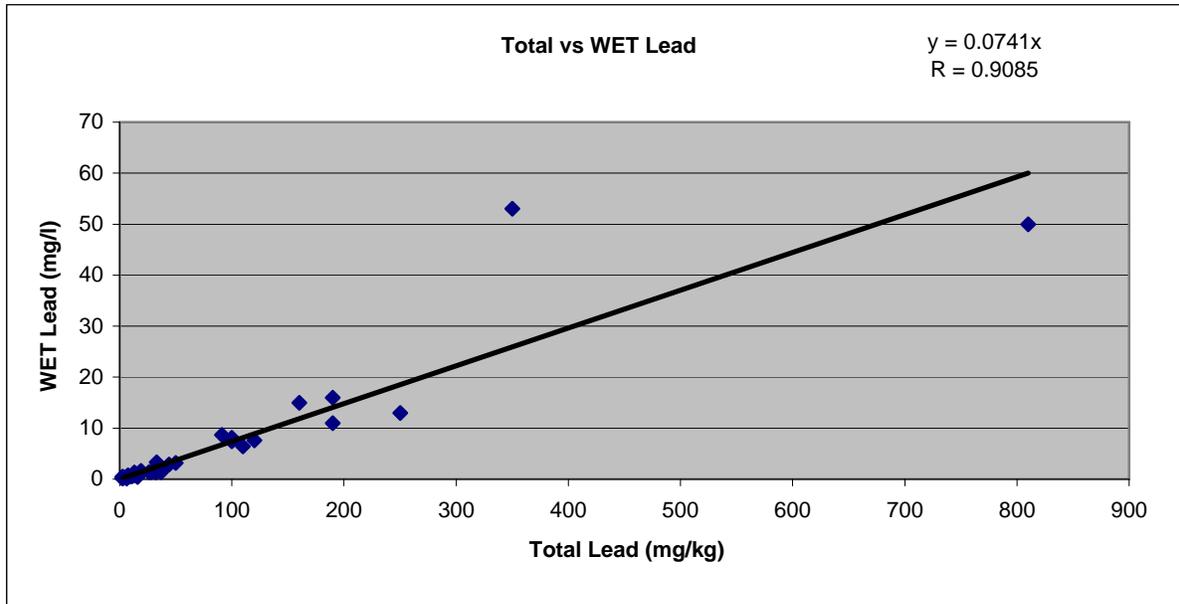
1. Initiate boring using a hand-held 2.5-inch centimeter diameter stainless steel auger.
2. Advance boring to initial sample depth of approximately 0 to 0.5 feet below the ground surface.
3. Transfer the soil sample from the hand auger into a plastic bag to homogenize the sample, transfer the sample from the plastic bag to a glass jar supplied by the laboratory. Label glass jar with the boring number, EA number, and sample depth.
4. Record the sample identification, time and date of sample collection, sample matrix type, turn-around time, and container type on the laboratory chain of custody.
5. Each prepared sample jar will be placed into a cooler for transport to Advanced Technology Laboratories.
6. Repeat the procedure and collect soil samples at subsequent depths as specified in the Task Order, if possible.
7. Backfill the borings to surface grade with soil cuttings generated.
8. Clean and rinse sampling equipment prior to the collection of each soil sample by washing the equipment with a trisodium phosphate solution followed by subsequent tap water and deionized water rinses.
9. Transport all samples to Advance Technology Laboratories under chain of custody control.

# APPENDIX E

APPENDIX E - Lead Regression Analysis

<b>Sample ID</b>	<b>Sample Depth (feet)</b>	<b>Total Lead (mg/kg)</b>	<b>WET Lead (mg/l)</b>	<b>Residual WET Lead (mg/l)</b>	<b>Squared Residual WET Lead (mg/l)</b>
101-0.5	0.5	44	2.9	-0.36	0.1290
102-0.5	0.5	11	0.57	-0.24	0.0599
103-0.5	0.5	19	1.6	0.19	0.037
104-0.5	0.5	14	1.1	0.06	0.00
101-1.0	1.0	8.6	0.48	-0.16	0.02
102-1.0	1.0	13	1.3	0.34	0.11
103-1.0	1.0	13	0.8	-0.16	0.03
104-1.0	1.0	19	1.5	0.09	0.01
101-1.5	1.5	9.3	0.57	-0.12	0.01
102-1.5	1.5	6.1	0.38	-0.07	0.01
103-1.5	1.5	2.5	0.50	0.31	0.10
104-1.5	1.5	14	0.81	-0.23	0.05
114-0.5	0.5	5.5	0.35	-0.06	0.00
115-0.5	0.5	100	8.1	0.69	0.48
116-0.5	0.5	7.3	0.74	0.20	0.04
114-1.0	1.0	26	1.4	-0.53	0.28
115-1.0	1.0	28	1.4	-0.67	0.45
116-1.0	1.0	33	3.3	0.86	0.73
105-0.5	0.5	120	7.6	-1.29	1.66
106-0.5	0.5	250	13	-5.52	30
107-0.5	0.5	16	0.45	-0.74	0.54
105-1.0	1.0	110	6.4	-1.75	3.1
106-1.0	1.0	6.3	0.13	-0.34	0.12
107-1.0	1.0	2.5	0.13	-0.06	0.0036
108-0.5	0.5	100	7.4	-0.01	0.00
109-0.5	0.5	810	50	-10.00	100
110-0.5	0.5	91	8.7	1.96	3.8
108-1.0	1.0	33	1.9	-0.54	0.30
109-1.0	1.0	50	3.2	-0.50	0.254
110-1.0	1.0	190	11	-3.07	9.4
111-0.5	0.5	350	53	27.08	733
112-0.5	0.5	160	15	3.15	10
113-0.5	0.5	15	0.94	-0.17	0.029
111-1.0	1.0	190	16	1.93	3.7
112-1.0	1.0	2.5	0.39	0.20	0.042
113-1.0	1.0	2.5	0.26	0.07	0.0056
117-0.5	0.5	32	1.3	-1.07	1.15
118-0.5	0.5	34	2.0	-0.52	0.27
119-0.5	0.5	37	1.4	-1.34	1.8
117-1.0	1.0	2.5	0.30	0.11	0.013
118-1.0	1.0	2.5	0.29	0.10	0.011
119-1.0	1.0	36	2.5	-0.17	0.02775

## APPENDIX E - Lead Regression Analysis



### Notes:

The Total vs. WET Lead graph is a linear regression scatter plot with a best-fit line using the least squares method and forcing the y-intercept through zero. The least squares method minimizes the sum of squared distances between the observed points in the dataset and the points predicted by the linear approximation. A test for data correlation is used to verify the quality of the equation used to predict soluble lead concentrations. There should be a correlation coefficient ("r") of 0.8 or greater between total and soluble lead (WET) analytical results. The correlation coefficient for these results is 0.9085. The slope of the line obtained from this graph is used to calculate the predicted soluble lead concentration (as shown on Table 3).

The Total vs. Residual WET lead graph depicts the error, or residual variation, after fitting the regression line. The residual value is the difference (or left over) between the observed value of the variable and the value suggested by the regression line. The squared residual is the standardized error value. This plot is used to assist in identifying anomalous outliers in the data set.

Appendix E- Lead UCLs

System 1	
Number of Valid Observations	12
Number of Distinct Observations	9
Minimum	2.5
Maximum	44
Mean	14.46
Median	13
SD	10.46
Variance	109.5
Coefficient of Variation	0.724
Skewness	2.218
Mean of log data	2.465
SD of log data	0.692
90% Standard Bootstrap UCL	18.13
95% Standard Bootstrap UCL	19.21

System 4	
Number of Valid Observations	6
Number of Distinct Observations	6
Minimum	33
Maximum	810
Mean	212.3
Median	95.5
SD	297.8
Variance	88711
Coefficient of Variation	1.403
Skewness	2.273
Mean of log data	4.745
SD of log data	1.13
95% Standard Bootstrap UCL	398.6
90% Standard Bootstrap UCL	353.3

System 2	
Number of Valid Observations	6
Number of Distinct Observations	6
Minimum	5.5
Maximum	100
Mean	33.3
Median	27
SD	34.58
Variance	1196
Coefficient of Variation	1.038
Skewness	1.865
Mean of log data	3.064
SD of log data	1.066
95% Standard Bootstrap UCL	54.38
90% Standard Bootstrap UCL	49.85

System 5	
Number of Valid Observations	6
Number of Distinct Observations	5
Minimum	2.5
Maximum	350
Mean	120
Median	87.5
SD	140
Variance	19608
Coefficient of Variation	1.167
Skewness	0.893
Mean of log data	3.453
SD of log data	2.239
95% Standard Bootstrap UCL	207.6
90% Standard Bootstrap UCL	187.8

System 3	
Number of Valid Observations	6
Number of Distinct Observations	6
Minimum	2.5
Maximum	250
Mean	84.13
Median	63
SD	96.78
Variance	9366
Coefficient of Variation	1.15
Skewness	1.09
Mean of log data	3.423
SD of log data	1.85
95% Standard Bootstrap UCL	143
90% Standard Bootstrap UCL	131.6

System 6	
Number of Valid Observations	6
Number of Distinct Observations	5
Minimum	2.5
Maximum	37
Mean	24
Median	33
SD	16.74
Variance	280.3
Coefficient of Variation	0.698
Skewness	-0.923
Mean of log data	2.67
SD of log data	1.359
90% Standard Bootstrap UCL	32.15
95% Standard Bootstrap UCL	34.05

# APPENDIX F

Table 1. California Human Health Screening Levels for Soil And Comparison To Other Potential Environmental Concerns

Chemical	<sup>1</sup> Soil Human Health Screening Levels (mg/kg of dry soil)		<sup>2</sup> Other Potential Environmental Concerns Posed By Contaminated Soil			
	Residential Land Use	Commercial/Industrial Land Use Only	<sup>3</sup> Leaching	<sup>4</sup> Ecotoxicity	<sup>5</sup> Nuisance/Aesthetic Concerns	<sup>6</sup> Other
<b>Organic Acidic Chemicals</b>						
2,4-D	6.9E+02	7.7E+03	X	X	0	
2,4,5-T	5.5E+02	6.1E+03	X	X	0	
Pentachlorophenol	4.4E+00	1.3E+01	X	X	0	
<b>Organic Neutral Chemicals</b>						
Aldrin	3.3E-02	1.3E-01	0	X	0	
Benzo(a)pyrene	3.8E-02	1.3E-01	0	X	0	TPH
Chlordane	4.3E-01	1.7E+00	0	X	0	
DDD	2.3E+00	9.0E+00	0	X	0	
DDE	1.6E+00	6.3E+00	0	X	0	
DDT	1.6E+00	6.3E+00	0	X	0	
Dieldrin	3.5E-02	1.3E-01	X	X	0	
1,4 Dioxane	1.8E+01	6.4E+01	X	0	0	
Dioxin (2,3,7,8-TCDD)	4.6E-06	1.9E-05	0	0	0	
Endrin	2.1E+01	2.3E+02	X	X	0	
Heptachlor	1.3E-01	5.2E-01	X	X	0	
Lindane	5.0E-01	2.0E+00	X	X	0	
Kepon	3.5E-02	1.3E-01	X	0	0	
Methoxychlor	3.4E+02	3.8E+03	0	X	0	
Mirex	3.1E-02	1.2E-01	X	X	0	
PCBs	8.9E-02	3.0E-01	0	X	0	
Toxaphene	4.6E-01	1.8E+00	X	X	0	

Table 1. California Human Health Screening Levels for Soil And Comparison To Other Potential Environmental Concerns

Chemical	<sup>1</sup> Soil Human Health Screening Levels (mg/kg of dry soil)		<sup>2</sup> Other Potential Environmental Concerns Posed By Contaminated Soil					
	Residential Land Use	Commercial/Industrial Land Use Only	<sup>3</sup> Leaching	<sup>4</sup> Ecotoxicity	<sup>5</sup> Nuisance/Aesthetic Concerns	<sup>6</sup> Other		
	<b>Inorganic Chemicals</b>							
Antimony and compounds	3.0E+01	3.8E+02	site specific	o	o			
Arsenic	7.0E-02	2.4E-01	site specific	X	o	Ambient background		
Barium and compounds	5.2E+03	6.3E+04	site specific	X	o	Construction workers		
Beryllium and compounds	1.5E+02	1.7E+03	site specific	X	o			
Beryllium oxide <sup>7</sup>	9.1E-02	4.1E-01	o	o	o	Construction workers		
Beryllium sulfate <sup>7</sup>	2.1E-04	9.5E-04	o	o	o			
Cadmium and compounds	1.7E+00	7.5E+00	site specific	X	o	Ambient background		
Chromium III	1.0E+05	1.0E+05	site specific	X	X			
Chromium VI	1.7E+01	3.7E+01	site specific	X	o	Construction workers		
Cobalt	6.6E+02	3.2E+03	site specific	X	o	Construction workers		
Copper and compounds	3.0E+03	3.8E+04	site specific	X	X			
Fluoride	4.6E+03	5.7E+04	site specific	o	o			
Lead and lead compounds	1.5E+02	3.5E+03 <sup>9</sup>	site specific	X	o	Uptake in fruits and vegetables		
Lead acetate <sup>7</sup>	2.3E+00	1.0E+01	X	o	o			
Mercury and compounds	1.8E+01	1.8E+02	site specific	X	o			
Molybdenum	3.8E+02	4.8E+03	site specific	X	X			
Nickel and compounds	1.6E+03	1.6E+04	site specific	X	X	Construction workers		
Nickel subsulfide <sup>7</sup>	3.8E-01	1.1E+04	site specific	o	o			
Perchlorate <sup>8</sup>	pp <sup>8</sup>	pp <sup>8</sup>	X	o	o			
Selenium	3.8E+02	4.8E+03	site specific	X	X			
Silver and compounds	3.8E+02	4.8E+03	site specific	X	X			
Thallium and compounds	5.0E+00	6.3E+01	site specific	o	o	Ambient background		
Vanadium and compounds	5.3E+02	6.7E+03	site specific	X	X			

Table 1. California Human Health Screening Levels for Soil And Comparison To Other Potential Environmental Concerns

Chemical	<sup>1</sup> Soil Human Health Screening Levels (mg/kg of dry soil)		<sup>2</sup> Other Potential Environmental Concerns Posed By Contaminated Soil			
	Residential Land Use	Commercial/Industrial Land Use Only	<sup>3</sup> Leaching	<sup>4</sup> Ecotoxicity	<sup>5</sup> Nuisance/Aesthetic Concerns	<sup>6</sup> Other
Zinc	2.3E+04	1.0E+05	site specific	X	X	

**Notes:**

- Direct-exposure screening levels address human exposure to chemicals in soil via incidental ingestion, dermal absorption and inhalation of vapors and particulates emitted to outdoor air (refer to Appendix 1). Assumes impacted soil is situated at or near the ground surface or could be at some time in the future. Volatile chemicals not included at this time (refer to Section 2.5).  
 "Residential Land Use" screening levels generally considered appropriate for other sensitive uses (e.g., day-care centers, hospitals, etc.). Commercial/Industrial properties should be evaluated using both residential and commercial/Industrial CHHSLs. A deed restriction that prohibits use of the property for sensitive purposes may be required at sites that are evaluated and/or remediated under a commercial/Industrial land use scenario only.  
 Carcinogens: CHHSLs based on target cancer risk of 10<sup>-6</sup>. Cal/EPA cancer slope factors used when available.  
 Noncarcinogens: CHHSLs based on target hazard quotient of 1.0.  
 Calculation of cumulative risk may be required at sites where multiple contaminants with similar health effects are present (see Section 2.8).  
 Residential and C/I soil CHHSLs for arsenic below background for most sites in California (0.07 mg/kg and 0.24 mg/kg, respectively - see Appendix 1). Use identified or anticipated background as screening level (see Section 2.7).  
 Environmental concerns in addition to direct exposure that may need to be considered in evaluation of contaminated soil. Based on a comparison of soil CHHSLs to soil screening levels for noted concerns compiled by the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB 2003). The need to address other environmental concerns must be evaluated separately in coordination with the lead regulatory agency (See Sections 1.4, 2.2 and Chapter 4).  
 "X": Noted concern may outweigh direct-exposure risks at many sites and drive decisions for cleanup actions.  
 "o": Potential concern but generally will be addressed if cleanup of contaminated soils to meet direct-exposure CHHSLs is carried out.  
 "site specific": Potential concern, but evaluation as to whether this factor is a potential concern must be done on a site specific basis.  
 Leaching of chemicals from soil and subsequent impacts to groundwater. Soil ESLs consider impacts to drinking water resources, re-emission of volatile chemicals from groundwater into overlying buildings and discharges of contaminated groundwater to surface water. Leaching of metals from soil should be evaluated on a site-specific basis, depending on the potential mobility of the metal species present. Laboratory-based leaching studies are generally preferred over model-derived screening levels.  
 Toxicity to terrestrial flora and fauna. Need to consider ecotoxicity concerns generally determined on a site-by-site basis.  
 Nuisance and gross contamination concerns address odors and aesthetic concerns as well as general resource degradation and presence of potentially mobile free product.  
 Other pertinent environmental concerns and considerations as determined on a site-specific basis.  
 Health risk to construction workers may outweigh risk to residents or commercial/Industrial workers for chemicals that are carcinogenic due to increased exposure to airborne dust particles and incidental ingestion of soil. Uptake of chemicals in edible fruits and vegetables from soil may need to be considered in some cases for noted chemicals.  
 These metal salts are significantly (greater than 10-fold) more toxic than the values for the metals in general. If it is known that this chemical was used at the site, the screening number for this chemical should be used instead of the screening number for the metal and its compounds.  
 Calculation of a screening number for the chemical has been postponed (pp) until the toxicity criterion currently being developed by OEHHA is published as a final document.  
 This screening number is above the Total Threshold Limit Concentration for lead of 1000 mg/kg, as defined in Title 22, California Code of Regulations. It is also above the US EPA Region IX PRG of 800 mg/kg.