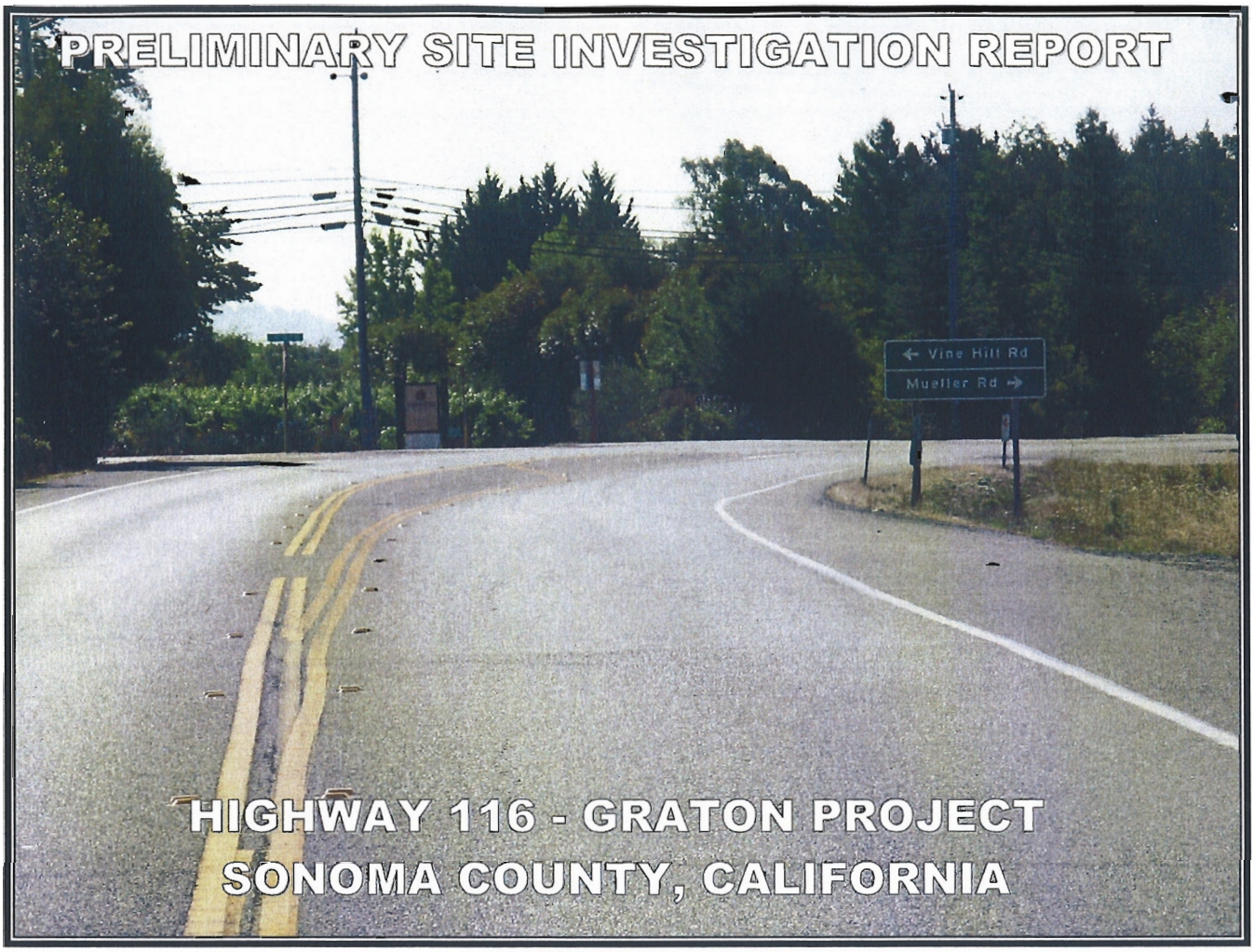

PRELIMINARY SITE INVESTIGATION REPORT

HIGHWAY 116 - GRATON PROJECT
SONOMA COUNTY, CALIFORNIA

PREPARED FOR:
CALTRANS DISTRICT 4
111 GRAND AVENUE, MS8C
OAKLAND, CALIFORNIA 94612

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GEOCON PROJECT NO. E8435-06-25
CALTRANS EA 04-2A9201

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REPORT LIMITATIONS

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

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

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

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EXECUTIVE SUMMARY

We prepared this Preliminary Site Investigation Report for the Highway 116 - Graton Project. This report documents the investigation sampling methods and laboratory analytical data. The project is located at Highway 116 at its intersection with Vine Hill Road and Mueller Road, between Post Miles 22.3/22.7 (the Site), in Sonoma County, California. The project location is depicted on the Vicinity Map, Figure 1, and the Site Plan, Figure 2.

The primary objective of our investigation was to evaluate whether impacts due to metals, including aerially deposited lead (ADL), or pesticides exist in the soil at the Site. The information obtained from this investigation will be used by Caltrans to coordinate proposed improvement activities at the Site, evaluate soil disposal options, and identify health and safety concerns during improvements.

The field investigation was performed on July 17, 2009, and consisted of advancing 15 borings and collecting a total of 42 soil samples for metals and pesticides analyses. The soil borings were advanced using direct-push drilling methods to depths ranging from 1 to 10 feet. Groundwater was not encountered during the advancement of the soil borings.

Coordinates for the boring locations are summarized on Table 1. Laboratory analytical results are presented in Tables 2 through 4. Reproductions of the laboratory reports and chain-of-custody documentation are provided as Appendix B.

Aerially Deposited Lead

Total lead was detected in 31 of the 42 soil samples at concentrations ranging from 4.3 to 73 milligrams per kilogram (mg/kg). Five of the 42 soil samples had total lead concentrations greater than 50 mg/kg (i.e., greater than ten times the lead Soluble Threshold Limit Concentration [STLC]) and were further analyzed for soluble lead using the Waste Extraction Test (WET). Soluble WET lead was detected in the five samples at concentrations ranging from 3.3 to 4.6 milligrams per liter (mg/l), below the lead STLC of 5.0 mg/l. The calculated 95% Upper Confidence Limit (UCL) for total lead is less than ten times the lead STLC.

CAM 17 Metals

The 95% UCL for arsenic in the soil samples collected at the Site is greater than the Environmental Screening Levels (ESLs) for residential and commercial/industrial land use, and within the published background range. The 95% UCL for vanadium for the soil samples collected at the Site is greater than the ESL for residential land use; however, it is less than the ESL for commercial/industrial land use and within the range for naturally occurring background concentrations.

One sample (BH-5-0) had a total chromium concentration greater than ten times the STLC of 5 mg/l. However, the calculated 95% UCLs for total chromium is less than ten times the STLC. Remaining CAM 17 metals were reported at concentrations below ten times their respective STLCs.

Offsite reuse or disposal of excavated soil may be restricted based on arsenic and vanadium content.

Pesticides

Pesticide compound 4,4'-DDD was detected at concentrations exceeding the laboratory reporting limit in five of the eight samples analyzed, at concentrations ranging from 2.2 to 14 micrograms per kilogram (μg/kg), less than the San Francisco Bay Regional Water Quality Controal Board (SFRWQCB) residential Environmental Screening Level (ESL) of 2,400 μg/kg. 4,4'-DDE was detected in seven of the eight samples analyzed at concentrations ranging from 4.6 to 200 μg/kg, less than residential ESL of 1,700 μg/kg. 4,4'-DDT was detected in seven of the eight samples analyzed, at concentrations ranging from 3.7 to 140 μg/kg, less than the residential ESL of 1,700 μg/kg. Chlordane was reported in sample BH-8-0 at a concentration of 12 μg/kg, less than the residential ESL of 440 μg/kg.

Worker Protection

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

PRELIMINARY SITE INVESTIGATION REPORT

1.0 INTRODUCTION

This Preliminary Site Investigation Report for the Highway 116 – Graton project was prepared by Geocon Consultants, Inc. under California Department of Transportation (Caltrans) Contract No. 04A2912 and Task Order (TO) 25, Expense Authorization (EA) 04-2A9201.

1.1 Project Description and Proposed Improvements

The site consists of the intersection of Highway 116 at its intersection with Vine Hill Road and Mueller Road, between Post Miles (PM) 22.3/22.7 (the Site) in Sonoma County, California. Caltrans is proposing to install traffic signals at the intersection for the purpose of improving traffic safety. The site location is depicted on the Vicinity Map, Figure 1.

1.2 General Objectives

The primary purpose of the scope of services outlined in TO-25 was to evaluate whether impacts due to metals, including aerially deposited lead (ADL), or pesticides exist in soil at the Site. The information obtained from this investigation will be used by Caltrans to coordinate proposed improvement activities at the Site, evaluate soil disposal options, and identify health and safety concerns during improvements.

2.0 BACKGROUND

2.1 Potential Lead in Soil

Ongoing testing by Caltrans throughout California has indicated that ADL exists along major freeway routes due to emissions from vehicles powered by leaded gasoline.

2.2 Hazardous Waste Determination Criteria

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

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

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 recompacted 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

The DTSC issued a statewide Variance effective July 1, 2009, regarding the reuse of ADL-impacted soils within Caltrans right-of-way. Under the Variance, soil that is classified as a non-RCRA hazardous waste, based primarily on ADL content, may be suitable for reuse within Caltrans right-of-way. ADL soil that is classified as a RCRA hazardous waste is not eligible for reuse under the Variance and must be disposed of as a RCRA hazardous waste (Caltrans Type Z3).

ADL 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 soil may not be placed in areas where it might contact groundwater or surface water (such as streams and rivers), and must be buried in locations that are protected from erosion that may result from storm water run-on and run-off.

Review of the statewide Variance indicates the following conditions regarding the reuse and management of ADL-impacted soil as fill material for construction and maintenance operations. If ADL soil meets the Variance criteria but is not intended to be reused within Caltrans right-of-way, then the excavated soil must be disposed of as a California hazardous waste (Caltrans Type Z2). A copy of the DTSC Variance is presented in Appendix A.

Caltrans Type Y1

ADL soil exhibiting a total lead concentration less than or equal to 1,411 mg/kg, a soluble lead concentration (based on a modified WET using deionized water as the extractant [DI-WET]) 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 soil exhibiting a total lead concentration less than or equal to 1,411 mg/kg, a DI-WET soluble lead concentration less than or equal to 1.5 mg/l, and a pH value greater than 5 and less than 5.5 may be reused within the same Caltrans corridor and must be covered and protected from infiltration by a pavement structure.

ADL soil exhibiting a total lead concentration less than or equal to 1,411 mg/kg, a DI-WET soluble 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 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 soluble 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 soil exhibiting a total lead concentration greater than 3,397 mg/kg, a DI-WET soluble 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.

Caltrans Type Z3

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

2.4 Environmental Screening Levels

The San Francisco Bay Regional Water Quality Control Board (SFRWQCB) has prepared a technical

report entitled *Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater, Interim Final* (November 2007, Revised May 2008), which presents Environmental Screening Levels (ESLs) for soil, groundwater, soil gas, and surface water, to assist in evaluating sites impacted by releases of hazardous chemicals The ESLs are conservative values for more than 100 commonly detected contaminants, which may be used to compare with environmental data collected at a site. ESLs are strictly risk assessment tools and "not regulatory clean up standards." The presence of a chemical at concentrations in excess of an ESL does not necessarily indicate that adverse impacts to human health or the environment are occurring; this simply indicates that a potential for adverse risk may exist and that additional evaluation is or "may be" warranted (SFRWQCB, 2008).

The most restrictive ESL table was used for this characterization: Table A – Shallow Soil (≤3 meters below ground surface) – Groundwater is a Current or Potential Source of Drinking Water. The respective ESLs for metals and pesticides are listed at the end of Tables 3 and 4 for comparative purposes.

3.0 SCOPE OF SERVICES

The following scope of services was performed in general accordance with TO-25 and as requested by the Caltrans TO Manager.

3.1 Pre-field Activities

- Conducted a Task Order meeting on July 6, 2009, with Caltrans prior to sampling activities regarding site-specific issues (i.e., determine site access and options for sample collection) and to pre-mark locations with white paint for utility clearance notification with Underground Service Alert (USA).
- Prepared a *Workplan* dated July 14, 2009, to outline the requested scope of services, the quality assurance/quality control (QA/QC) plan, and the sampling and laboratory procedures.
- Prepared a project specific *Health and Safety Plan* dated July 14, 2009, to provide guidelines on the use of personal protective equipment and the health and safety procedures to be implemented during the proposed field activities.
- Acquired a drilling permit (No. SR0008540) from Sonoma County's Environmental Health Services Division.
- Provided 48-hour notice to USA (Ticket No. 200029) prior to job site mobilization.
- Retained the services of Advanced Technology Laboratories (ATL), a California-licensed and Caltrans-approved laboratory, to perform the sample analyses.

3.2 Field Activities

The field activities consisted of collecting soil samples along the shoulder areas of SR-116. On July 17, 2009, we collected a total of 42 soil samples from 15 borings. The soil borings were advanced

using direct-push drilling techniques to a maximum depth of 10 feet. Soil samples were collected at general depths of 0 to 1.0 foot, 1.0 to 2.0 feet, 2.0 to 3.0 feet, 6.0 to 7.0 feet, and 9.5 to 10 feet. Groundwater was not encountered during advancement of the borings.

4.0 INVESTIGATIVE METHODS

4.1 Boring Location Rationale

A total of 42 soil samples were collected from 15 borings as shown on the Site Plan, Figure 2. Boring locations were surveyed by Caltrans using Differential Global Positioning System (DGPS) equipment.

We provided quality assurance/quality control (QA/QC) procedures during the field activities. These procedures included washing the sampling equipment with a Liqui-Nox® solution followed by a double rinse with deionized water. Decontamination water was disposed to the ground surface within Caltrans right-of-way in a manner not to create runoff, away from drain inlets or potential water bodies.

Soil samples were collected in acetate liners secured with Teflon tape and plastic end caps. Sample containers were sealed, labeled, and transported in chilled coolers to ATL using standard chain-of-custody documentation. Laboratory analyses were requested under routine seven-day turn-around-times.

4.2 Laboratory Analyses

Soil samples were analyzed for the following:

- Thirty-three samples for total lead following Environmental Protection Agency (EPA) Test Method 6010B.
- Nine samples for Title 22 metals following EPA Test Methods 6010B and 7471A (mercury).
- Five samples for soluble WET lead following EPA Test Method 6010B.
- One soil sample for soluble WET chromium following EPA Test Method 6010B.
- Eight samples for organochlorine pesticides following EPA Test Method 8081A.
- Seven samples for pH following EPA Test Method 9045.

4.3 Laboratory Quality Assurance/Quality Control

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

- One method blank for every ten samples, batch of samples or type of matrix, whichever was more frequent.

- One sample analyzed in duplicate for every ten samples, batch of samples or type of matrix, whichever was more frequent.
- One spiked sample for every ten samples, batch of samples or type of matrix, whichever was more frequent, with the spike made at ten times the reporting limits (RL) or at the analyte level.

Prior to submitting the soil and material samples to the laboratories, the COC documentation was reviewed for accuracy and completeness. Laboratory reports and COC documentation are presented in Appendix B.

5.0 INVESTIGATIVE RESULTS

5.1 Soil Conditions

Soil encountered during the excavation of borings was generally comprised of silty sand.

5.2 Analytical Results

Laboratory analytical results for the soil samples are presented in Tables 2 through 4. Reproductions of the laboratory reports and chain-of-custody documentation are provided as Appendix B.

- Total lead was detected in 31 of the 42 soil samples at concentrations ranging from 4.3 to 73 mg/kg.
- Soluble WET lead was detected in the five samples analyzed at concentrations ranging from 3.3 to 4.6 mg/l, less than the lead STLC of 5.0 mg/l.
- Chromium was reported at concentrations ranging from 8.2 to 56 mg/kg, with one sample (BH-5-0) exceeding ten times the STLC of 5.0 mg/l.
- Soluble WET chromium was not detected above the laboratory reporting limit of 1.0 mg/l in sample BH-5-0.
- The following CAM 17 metals were reported at concentrations less than ten times their respective STLCs:
    - Arsenic at concentrations ranging from 1.7 to 3.0 mg/kg;
    - Barium at concentrations ranging from 15 to 110 mg/kg;
    - Cobalt at concentrations ranging from 5.4 to 9.4 mg/kg;
    - Copper at concentrations ranging from 2.4 to 31 mg/kg;
    - Mercury in one sample at 0.13 mg/kg;
    - Molybdenum in one sample at 1.1 mg/kg;
    - Nickel at concentrations ranging from 3.3 to 57 mg/kg;
    - Vanadium at concentrations ranging from 5.7 to 36 mg/kg; and
    - Zinc at concentrations ranging from 5.4 to 55 mg/kg.
- Soil pH ranged from 6.3 to 7.8.

- The following pesticides were reported in the samples:
    - 4,4'-DDD at concentrations between 2.2 and 14 micrograms per kilogram (µg/kg);
    - 4,4'-DDE at concentrations between 4.6 and 200 µg/kg;
    - 4,4'-DDT at concentrations between 3.7 and 140 µg/kg; and
    - Chlordane in one sample at 12 µg/kg.

5.3 Laboratory QA/QC

We reviewed the ATL laboratory QA/QC "Case Narratives" provided with the laboratory reports. The Case Narrative in the laboratory reports states that dilution was necessary for some samples. The relative percent differences for duplicates, and the matrix spike/matrix spike duplicates for several samples were outside criteria; however, the analytical batches were validated by the laboratory control samples. The data show acceptable surrogate recoveries and non-detect results for the method blanks. Based on this limited data review, no additional qualifications of the ATL analytical data are necessary, and the data are of sufficient quality for the purposes of this report.

5.4 Statistical Evaluation for Lead Detected in Soil Samples

Statistical methods were applied to the total lead data to evaluate the upper confidence limits (UCLs) of the arithmetic means of the total lead concentrations for each sampling depth. 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.

5.4.1 Calculating the UCLs for the Arithmetic Mean

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

Non-parametric bootstrap techniques used to calculate the UCLs are discussed in the previously referenced EPA document and in *An Introduction to the Bootstrap.* For those samples in which total lead was not detected at concentrations exceeding the laboratory reporting limit, a value equal to one-half of the reporting limit was used in the UCL calculation. The bootstrap test results are included in Appendix C. The following table presents the calculated UCLs and statistics for the ADL data set.

SAMPLE INTERVAL (feet)	90% TOTAL LEAD UCL (mg/kg)	95% TOTAL LEAD UCL (mg/kg)	TOTAL LEAD MEAN (mg/kg)	MINIMUM VALUE (mg/kg)	MAXIMUM VALUE (mg/kg)
0.0 to 1.0	34.5	36.6	26.9	2.5	73
1.0 to 2.0	22.3	23.9	17.3	2.5	52
2.0 to 3.0	14.0	15.3	9.8	2.5	32
6.0 to 7.0	Not Calculated*	Not Calculated*	5.2	5.0	5.4
9.5 to 10	Not Calculated*	Not Calculated*	2.5	2.5	2.5

* UCLs could not be calculated due to insufficient amount data from this sampling interval

6.0 CONCLUSIONS AND RECOMMENDATIONS

Waste classifications based on the 90% UCL of the lead content for the relevant excavation depths has historically been considered sufficient to satisfy a good faith effort by the EPA as discussed in SW-846. Risk assessment characterization is typically 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.

6.1 Aerially Deposited Lead

Soil excavated to the maximum sampling depth of 10 feet at the Site would not be classified as a California hazardous waste since the total and soluble WET lead concentrations are less than 50 mg/kg and 5.0 mg/l, respectively. Consequently, excavated soil could be reused or disposed of as non-hazardous with respect to lead content.

6.2 Other CAM 17 Metals

The CAM 17 metals concentrations in site soil were compared to ESLs (Table A, SFRWQCB, May 2008). Arsenic and vanadium were the only metals with reported concentrations greater than their respective ESLs in the soil samples collected at the Site. Arsenic was detected in the samples at concentrations ranging from 1.7 to 3.0 mg/kg, exceeding the ESL for residential land use of 0.39 mg/kg and commercial/industrial land use of 1.6 mg/kg for shallow soil (≤3 meters; SFRWQCB, Table A). Vanadium was detected in the soil samples at concentrations ranging from 5.7 to 36 mg/kg, exceeding the residential land use ESL of 16 mg/kg for shallow soil.

Upper one-sided 95% UCLs were calculated for the full set of arsenic and vanadium concentrations. The UCLs were compared with the ESLs for residential and commercial/industrial land use and 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). The bootstrap

results are included in Appendix C. The calculated standard bootstrap UCLs, ESLs and published background concentrations are summarized in the table below:

Metal	95% UCL	RESIDENTIAL ESL	COMMERCIAL/ INDUSTRIAL ESL	PUBLISHED BACKGROUND MEAN[1]	PUBLISHED BACKGROUND RANGE [1]
Arsenic	2.1	0.39	1.6	3.5	0.6 to 11.0
Vanadium	23.7	16	200	112	39 to 288

Concentrations reported in milligrams per kilogram (mg/kg)
[1] Kearney Foundation of Soil Science, March 1996

The 95% UCL value for arsenic in the soil samples collected at the Site is greater than the ESLs for residential and commercial/industrial land use, and within the published background range. The SFRWQCB *November 2007 Update to Environmental Screening Levels (ESLs) Technical Document* states that ambient background concentrations of arsenic typically exceed risk-based screening levels. In such instances, it may be more appropriate to compare site data to regionally specific established background levels.

The 95% UCL value for vanadium in the soil samples collected at the Site is greater than the ESL for residential land use; however, it is less than the ESL for commercial/industrial land use and published background mean.

The 90% and 95% UCL values for total chromium in soil sample BH-5-0 is less than ten times the STLC. Thus, soil excavated to the maximum sampling depth of 6.0 feet would not be classified as a California hazardous waste.

Offsite reuse or disposal of excavated soil may be restricted based on arsenic and vanadium content.

6.3 Pesticides

Pesticide compounds 4,4'-DDD, 4,4'-DDE, 4,4'-DDT and chlordane were detected in the soil samples. However, the levels of pesticide compounds detected in the soil samples are less than their respective ESLs.

6.4 Worker Protection

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

TABLE 1
Boring Coordinates
Highway 116 - Graton
Sonoma County, California

Boring	Northing	Easting
BH-1	1,924,219.209	6,314,643.311
BH-2	1,924,155.190	6,314,650.854
BH-3	1,924,178.908	6,314,750.929
BH-4	1,924,105.517	6,314,817.278
BH-5	1,924,113.549	6,314,911.253
BH-6	1,924,018.518	6,314,929.767
BH-7	1,924,091.994	6,315,016.286
BH-8	1,923,977.911	6,314,992.236
BH-9	1,923,955.646	6,315,125.813
BH-10	1,923,892.005	6,315,121.090
BH-11	1,923,886.920	6,315,200.140
BH-12	1,923,807.017	6,315,202.951
BH-13	1,923,783.833	6,315,279.280
BH-14	1,923,706.112	6,315,279.504
BH-15	1,923,696.372	6,315,345.244

Notes: *Coordinates are shown in feet (NAD 83, Zone 2)*

TABLE 2
Summary of Lead and pH Results
Highway 116 - Graton
Sonoma County, California

Sample ID	Sample Depth (feet)	Total Lead (mg/kg)	WET Lead (mg/l)	pH
BH-1-0	0	73	4.6	6.9
BH-1-1	1	8.5	---	7.6
BH-2-0	0	12	---	---
BH-2-1	1	6.7	---	---
BH-2-2	2	15	---	---
BH-3-0	0	<5.0	---	---
BH-3-1	1	<5.0	---	---
BH-4-0	0	14	---	---
BH-4-1	1	<5.0	---	---
BH-4-2	2	7.9	---	---
BH-5-0	0	54	3.3	---
BH-5-1	1	4.3	---	---
BH-6-0	0	33	---	6.3
BH-6-1	1	27	---	7.7
BH-6-2	2	32	---	7.8
BH-6-6	6	5.4	---	---
BH-6-9.5	9.5	<5.0	---	---
BH-7-0	0	<5.0	---	---
BH-7-1	1	<5.0	---	---
BH-7-2	2	<5.0	---	---
BH-7-6	6	5.0	---	---
BH-7-9.5	9.5	<5.0	---	---
BH-8-0	0	61	3.7	---
BH-8-1	1	52	4.6	---
BH-8-2	2	11	---	---
BH-9-0	0	9.6	---	---
BH-9-1	1	<5.0	---	---
BH-10-0	0	23	---	---
BH-10-1	1	5.5	---	---
BH-10-2	2	5.2	---	---

TABLE 2
Summary of Lead and pH Results
Highway 116 - Graton
Sonoma County, California

Sample ID	Sample Depth (feet)	Total Lead (mg/kg)	WET Lead (mg/l)	pH
BH-11-0	0	29	---	7.0
BH-11-1	1	34	---	7.6
BH-12-0	0	17	---	---
BH-12-1	1	35	---	---
BH-12-2	2	<5.0	---	---
BH-13-0	0	58	4.2	---
BH-13-1	1	31	---	---
BH-14-0	0	5.9	---	---
BH-14-1	1	22	---	---
BH-14-2	2	<5.0	---	---
BH-15-0	0	8.3	---	---
BH-15-1	1	24	---	---

Notes:

mg/kg = milligrams per kilogram
mg/l = milligrams per liter
WET = Waste Extraction Test using citric acid as the extraction fluid
TCLP = Toxicity Characteristic Leaching Procedure
--- = Not analyzed
< = Analyte was not detected above the laboratory reporting limit

TABLE 3
Summary of CAM-17 Metals Results
Highway 116 - Graton
Sonoma County, California

Sample ID	Sample Depth (ft)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury
BH-5-0	0	<2.0	<1.0	67	<1.0	<1.0	56 *<1.0*	9.4	18	54	<1.0	57	<1.0	<1.0	<1.0	36	45	<0.10
BH-5-1	1	<2.0	<1.0	35	<1.0	<1.0	18	9.0	2.4	4.3	<1.0	13	<1.0	<1.0	<1.0	13	8.6	0.13
BH-6-6	6	<2.0	3.0	29	<1.0	<1.0	35	<1.0	3.1	5.4	1.1	11	<1.0	<1.0	<1.0	31	7.7	<0.10
BH-7-6	6	<2.0	2.8	24	<1.0	<1.0	18	<1.0	<2.0	5.0	<1.0	5.0	<1.0	<1.0	<1.0	15	5.4	<0.10
BH-10-0	0	<2.0	<1.0	110	<1.0	<1.0	21	8.1	19	23	<1.0	24	<1.0	<1.0	<1.0	22	55	<0.10
BH-10-1	1	<2.0	2.1	15	<1.0	<1.0	22	<1.0	<2.0	5.5	<1.0	4.2	<1.0	<1.0	<1.0	14	5.5	<0.10
BH-10-2	2	<2.0	1.7	16	<1.0	<1.0	16	<1.0	<2.0	5.2	<1.0	4.4	<1.0	<1.0	<1.0	13	5.4	<0.10
BH-15-0	0	<2.0	<1.0	79	<1.0	<1.0	14	5.4	9.2	8.3	<1.0	14	<1.0	<1.0	<1.0	27	38	<0.10
BH-15-1	1	<2.0	2.1	23	<1.0	<1.0	8.2	<1.0	31	24	<1.0	3.3	<1.0	<1.0	<1.0	5.7	6.7	<0.10
ESLs																		
Residential		6.3	0.39	750	4.0	1.7	1,000	40	230	200	40	150	10	20	1.3	16	600	1.3
Commercial/Industrial		40	1.6	1,500	8.0	7.4	2,500	80	230	750	40	150	10	40	16	200	600	10
Published Background [1]		0.6	3.5	509	1.28	0.36	122	14.9	28.7	23.9	1.3	57	0.058	0.8	0.56	112	149	0.26
TTLC		500	500	10,000	75	100	2,500	8,000	2,500	1,000	3,500	2,000	100	500	700	2,400	5,000	20
STLC		150	50	1,000	7.5	10	50	800	250	50	3,500	200	10	50	70	240	2,500	2.0

Notes: Results are shown in milligrams per kilogram (mg/kg).

Result in italics is for soluble WET analysis, shown in units of milligrams per liter (mg/l).

< = Analyte was not detected above the laboratory reporting limit.

ESLs = Environmental Screening Levels, Table A Groundwater is Current/Potential Source of Drinking Water, SFRWQCB, Revised May 2008.

[1] Background: Mean Concentration - Background Concentrations of Trace and Major Elements in California Soils, U.C. Calif., March 1996

TTLC = Total Threshold Limit Concentration

STLC = Soluble Threshold Limit Concentration (mg/l)

TABLE 4
Summary of Pesticides Results
Highway 116 - Graton
Sonoma County, California

Sample ID	4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	alpha-BHC	alpha-Chlordane	beta-BHC	Chlordane	delta-BHC	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Endrin	Endrin aldehyde	Endrin ketone	gamma-BHC	gamma-Chlordane	Heptachlor	Heptachlor Epoxide	Methoxychlor	Toxaphene
BH-1-0	4.1	200	74	<1.0	<1.0	<1.0	<1.0	<8.5	<1.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<5.0	<50
BH-3-0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<8.5	<1.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<5.0	<50
BH-6-0	12	28	78	<1.0	<1.0	<1.0	<1.0	<8.5	<1.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<5.0	<50
BH-8-0	8.5	86	67	<1.0	<1.0	<1.0	<1.0	12	<1.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<5.0	<50
BH-10-0	2.2	4.6	8.5	<1.0	<1.0	<1.0	<1.0	<8.5	<1.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<5.0	<50
BH-11-0	<2.0	5.3	3.7	<1.0	<1.0	<1.0	<1.0	<8.5	<1.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<5.0	<50
BH-13-0	14	190	140	<1.0	<1.0	<1.0	<1.0	<8.5	<1.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<5.0	<50
BH-15-0	<2.0	13	7.9	<1.0	<1.0	<1.0	<1.0	<8.5	<1.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<5.0	<50
ESLs																						
Residential	2.4E-03	1.7E-03	1.7E-03	3.2E-05	---	---	---	4.4E-04	---	2.3E-06	4.6E-06	4.6E-06	---	6.5E-07	---	---	---	---	1.3E-05	---	1.9E-02	4.2E-07
Commercial/Industrial	1.0E-02	4.0E-03	4.0E-03	1.3E-04	---	---	---	1.7E-03	---	2.3E-06	4.6E-06	4.6E-06	---	6.5E-07	---	---	---	---	1.3E-05	---	1.9E-02	4.2E-07

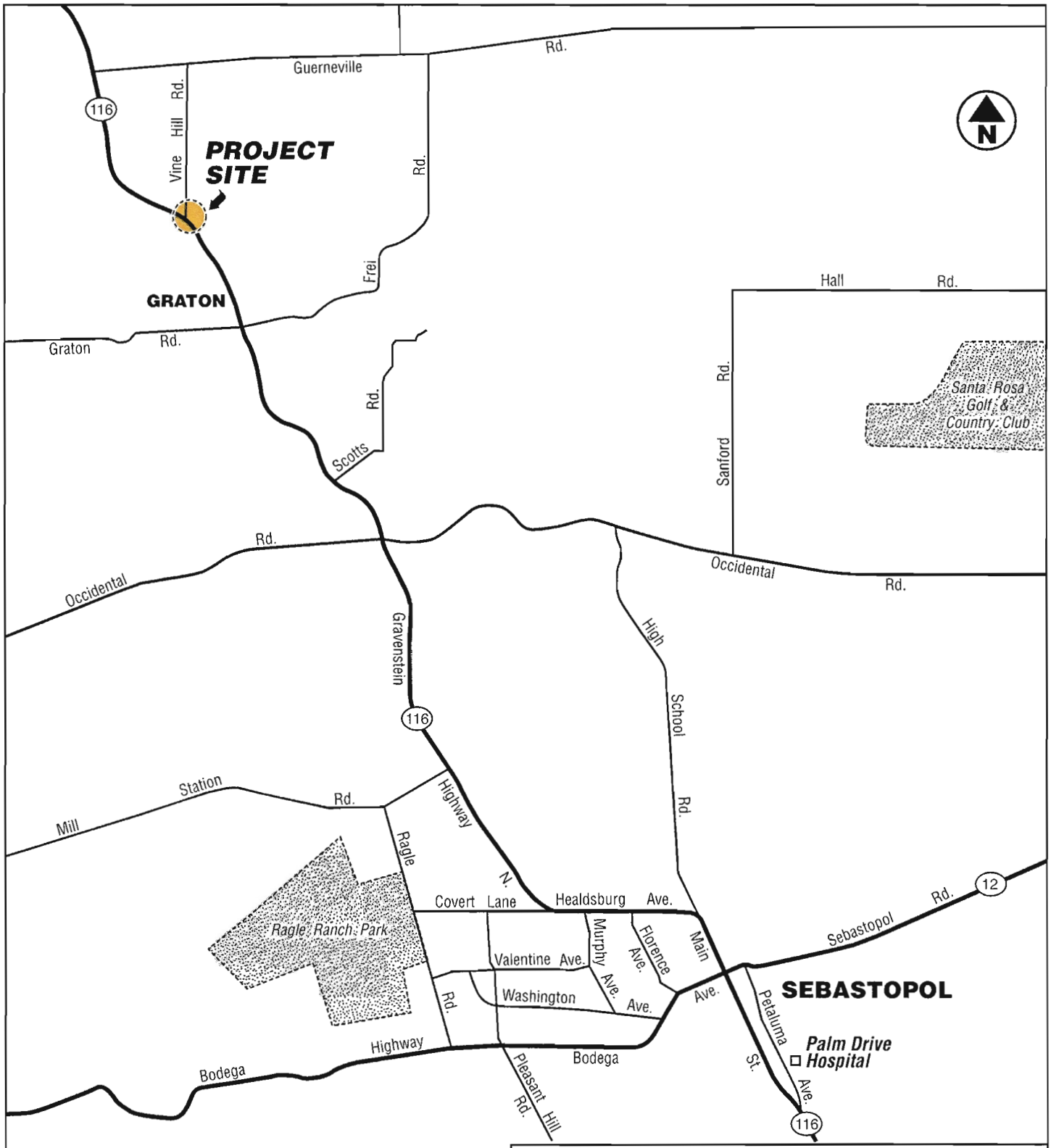
Notes:

Data are shown in units of micrograms per kilogram (ug/kg).

< Less than laboratory reporting limits

--- = Not Applicable/No Standard

ESLs = San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels for shallow soils (<3 meters below ground surface) - Groundwater is Current or Potential Source of Drinking Water, Table A, May 2008.



GEOCON CONSULTANTS, INC.
6671 BRISA St. – LIVERMORE, CA 94550
PHONE 925.371.5900 – FAX 925.371.5915

Highway 116 – Graton

Sonoma County, California

GEOCON Proj. No. E8435-06-25

Task Order No. 25, EA 04-2A9201

VICINITY MAP

December 2009

Figure 1

LEGEND:

Boring Location

N

0 40 80

SCALE: feet

GEOCON CONSULTANTS, INC.

6671 BRISA STREET, LIVERMORE, CA 94550; PHONE 925 371-5900 - FAX 925 371-5915

Highway 116 - Graton

Sonoma County, California

GEOCON Proj. No. E8435-06-25

EA No. 04-2A9201

SITE PLAN

December 2009

Figure 2

SITE0809.DWG

APPENDIX A

California Environmental Protection Agency
Department of Toxic Substances Control

VARIANCE

Applicant Names:

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

Variance No. V09HQSCD006

Effective Date: July 1, 2009

Expiration Date: July 1, 2014

Modification History:

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

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

Date: 6/30/09

1. INTRODUCTION.

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

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

2. IDENTIFYING INFORMATION.

APPLICANT/OWNER/OPERATOR

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

3. TYPE OF VARIANCE.

Generation, Manifest, Transportation, Storage and Disposal.

4. ISSUANCE AND EXPIRATION DATES.

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

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

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

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

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

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

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

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

8. PROVISIONS WAIVED.

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

9. SPECIFIC CONDITIONS, LIMITATIONS AND OTHER REQUIREMENTS.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

water run-on or run-off.

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

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

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

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

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

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

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

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

4. duration of corridor construction;

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Attn: Caltrans Lead Variance Notification Unit

10. DISCLAIMER.

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

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

APPENDIX B

July 31, 2009

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

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AUG 10 2009
By

Workorder No.: 106451

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

TEL: (925) 371-5900
FAX: (925) 371-5915

RE: Hwy 116-GRATON, E8435-06-25

Attention: Dave Watts

Enclosed are the results for sample(s) received on July 20, 2009 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: Hwy 116-GRATON, E8435-06-25
Lab Order: 106451

CASE NARRATIVE

Analytical Comments for Method 6010

Dilution was necessary for samples 106451-001A, 106451-011A, 106451-023A, 106451-024A and 106451-036A, due to sample matrix.

RPD for Duplicate (DUP) is outside criteria for sample 106451-037ADUP; however, the Laboratory Control Sample (LCS) validated the analytical batch.

Analytical Comments for Method 8081

Dilution was necessary for samples 106451-001A, 106451-013A, 106451-023A and 106451-036A, due to sample matrix.

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Advanced Technology Laboratories

Date: 7/31/2009

ANALYTICAL RESULTS

LEAD BY ICP
EPA 6010B

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	106451
Project:	Hwy 116-GRATON, E8435-06-25	**Date Received**	7/20/2009 9:30:00 AM
Project No:		**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	SRB

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
106451-001A	BH-1-0	73	mg/Kg	56820	5.0	1	7/17/2009	7/24/2009
106451-002A	BH-1-1	8.5	mg/Kg	56820	5.0	1	7/17/2009	7/24/2009
106451-003A	BH-2-0	12	mg/Kg	56820	5.0	1	7/17/2009	7/24/2009
106451-004A	BH-2-1	6.7	mg/Kg	56820	5.0	1	7/17/2009	7/24/2009
106451-005A	BH-2-2	15	mg/Kg	56820	5.0	1	7/17/2009	7/24/2009
106451-006A	BH-3-0	ND	mg/Kg	56820	5.0	1	7/17/2009	7/24/2009
106451-007A	BH-3-1	ND	mg/Kg	56820	5.0	1	7/17/2009	7/24/2009
106451-008A	BH-4-0	14	mg/Kg	56820	5.0	1	7/17/2009	7/24/2009
106451-009A	BH-4-1	ND	mg/Kg	56820	5.0	1	7/17/2009	7/24/2009
106451-010A	BH-4-2	7.9	mg/Kg	56820	5.0	1	7/17/2009	7/24/2009
106451-013A	BH-6-0	33	mg/Kg	56820	5.0	1	7/17/2009	7/24/2009
106451-014A	BH-6-1	27	mg/Kg	56820	5.0	1	7/17/2009	7/24/2009
106451-015A	BH-6-2	32	mg/Kg	56820	5.0	1	7/17/2009	7/24/2009
106451-017A	BH-6-9.5	ND	mg/Kg	56820	5.0	1	7/17/2009	7/24/2009
106451-018A	BH-7-0	ND	mg/Kg	56820	5.0	1	7/17/2009	7/24/2009
106451-019A	BH-7-1	ND	mg/Kg	56820	5.0	1	7/17/2009	7/24/2009
106451-020A	BH-7-2	ND	mg/Kg	56820	5.0	1	7/17/2009	7/24/2009
106451-022A	BH-7-9.5	ND	mg/Kg	56820	5.0	1	7/17/2009	7/24/2009

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		

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Advanced Technology Laboratories

Date: 7/31/2009

ANALYTICAL RESULTS

LEAD BY ICP
EPA 6010B

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	106451
Project:	Hwy 116-GRATON, E8435-06-25	**Date Received**	7/20/2009 9:30:00 AM
Project No:		**Matrix:**	Soil
Analyte:	Lead	**Analyst:**	SRB

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
106451-023A	BH-8-0	61	mg/Kg	56820	5.0	1	7/17/2009	7/24/2009
106451-024A	BH-8-1	52	mg/Kg	56820	5.0	1	7/17/2009	7/24/2009
106451-025A	BH-8-2	11	mg/Kg	56821	5.0	1	7/17/2009	7/24/2009
106451-026A	BH-9-0	9.6	mg/Kg	56821	5.0	1	7/17/2009	7/24/2009
106451-027A	BH-9-1	ND	mg/Kg	56821	5.0	1	7/17/2009	7/24/2009
106451-031A	BH-11-0	29	mg/Kg	56821	5.0	1	7/17/2009	7/24/2009
106451-032A	BH-11-1	34	mg/Kg	56821	5.0	1	7/17/2009	7/24/2009
106451-033A	BH-12-0	17	mg/Kg	56821	5.0	1	7/17/2009	7/24/2009
106451-034A	BH-12-1	35	mg/Kg	56821	5.0	1	7/17/2009	7/24/2009
106451-035A	BH-12-2	ND	mg/Kg	56821	5.0	1	7/17/2009	7/24/2009
106451-036A	BH-13-0	58	mg/Kg	56821	5.0	1	7/17/2009	7/24/2009
106451-037A	BH-13-1	31	mg/Kg	56821	5.0	1	7/17/2009	7/24/2009
106451-038A	BH-14-0	5.9	mg/Kg	56821	5.0	1	7/17/2009	7/24/2009
106451-039A	BH-14-1	22	mg/Kg	56821	5.0	1	7/17/2009	7/24/2009
106451-040A	BH-14-2	ND	mg/Kg	56821	5.0	1	7/17/2009	7/24/2009

Qualifiers:

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S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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Date: 7/31/2009

ANALYTICAL RESULTS

pH
EPA 9045C

CLIENT:	Geocon Consultants, Inc.	**Lab Order:**	106451
Project:	Hwy 116-GRATON, E8435-06-25	**Date Received**	7/20/2009 9:30:00 AM
Project No:		**Matrix:**	Soil
Analyte:	pH	**Analyst:**	DDL

Laboratory ID	Client Sample ID	Results	Units	QC Batch	PQL	DF	Date Collected	Date Analyzed
106451-001A	BH-1-0	6.9	pH Units	R110989	0.10	1	7/17/2009	7/21/2009
106451-002A	BH-1-1	7.6	pH Units	R110989	0.10	1	7/17/2009	7/21/2009
106451-013A	BH-6-0	6.3	pH Units	R110989	0.10	1	7/17/2009	7/21/2009
106451-014A	BH-6-1	7.7	pH Units	R110989	0.10	1	7/17/2009	7/21/2009
106451-015A	BH-6-2	7.8	pH Units	R110989	0.10	1	7/17/2009	7/21/2009
106451-031A	BH-11-0	7.0	pH Units	R110989	0.10	1	7/17/2009	7/21/2009
106451-032A	BH-11-1	7.6	pH Units	R110989	0.10	1	7/17/2009	7/21/2009

Qualifiers:

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ANALYTICAL RESULTS

Print Date: *31-Jul-09*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	BH-1-0
Lab Order:	106451	**Collection Date:**	7/17/2009 12:36:00 PM
Project:	Hwy 116-GRATON, E8435-06-25	**Matrix:**	SOIL
Lab ID:	106451-001A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
EPA 3550B				**EPA 8081A**		
RunID: GC9_090722A	QC Batch: 56787				PrepDate: 7/22/2009	Analyst: **SMH**
4,4'-DDD	4.1	2.0		µg/Kg	1	7/22/2009 09:42 PM
4,4'-DDE	200	20		µg/Kg	10	7/23/2009 12:31 PM
4,4'-DDT	74	20		µg/Kg	10	7/23/2009 12:31 PM
Aldrin	ND	1.0		µg/Kg	1	7/22/2009 09:42 PM
alpha-BHC	ND	1.0		µg/Kg	1	7/22/2009 09:42 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	7/22/2009 09:42 PM
beta-BHC	ND	1.0		µg/Kg	1	7/22/2009 09:42 PM
Chlordane	ND	8.5		µg/Kg	1	7/22/2009 09:42 PM
delta-BHC	ND	1.0		µg/Kg	1	7/22/2009 09:42 PM
Dieldrin	ND	2.0		µg/Kg	1	7/22/2009 09:42 PM
Endosulfan I	ND	1.0		µg/Kg	1	7/22/2009 09:42 PM
Endosulfan II	ND	2.0		µg/Kg	1	7/22/2009 09:42 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	7/22/2009 09:42 PM
Endrin	ND	2.0		µg/Kg	1	7/22/2009 09:42 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	7/22/2009 09:42 PM
Endrin ketone	ND	2.0		µg/Kg	1	7/22/2009 09:42 PM
gamma-BHC	ND	1.0		µg/Kg	1	7/22/2009 09:42 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	7/22/2009 09:42 PM
Heptachlor	ND	1.0		µg/Kg	1	7/22/2009 09:42 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	7/22/2009 09:42 PM
Methoxychlor	ND	5.0		µg/Kg	1	7/22/2009 09:42 PM
Toxaphene	ND	50		µg/Kg	1	7/22/2009 09:42 PM
Surr: Decachlorobiphenyl	59.6	20-142		%REC	1	7/22/2009 09:42 PM
Surr: Decachlorobiphenyl	60.3	20-142		%REC	10	7/23/2009 12:31 PM
Surr: Tetrachloro-m-xylene	60.3	25-115		%REC	10	7/23/2009 12:31 PM
Surr: Tetrachloro-m-xylene	45.0	25-115		%REC	1	7/22/2009 09:42 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		

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ANALYTICAL RESULTS

Print Date: *31-Jul-09*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	BH-3-0
Lab Order:	106451	**Collection Date:**	7/17/2009 12:21:00 PM
Project:	Hwy 116-GRATON, E8435-06-25	**Matrix:**	SOIL
Lab ID:	106451-006A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
EPA 3550B				**EPA 8081A**		
RunID: GC9_090722A	QC Batch: 56787				PrepDate: 7/22/2009	Analyst: **SMH**
4,4'-DDD	ND	2.0		µg/Kg	1	7/22/2009 09:56 PM
4,4'-DDE	ND	2.0		µg/Kg	1	7/22/2009 09:56 PM
4,4'-DDT	ND	2.0		µg/Kg	1	7/22/2009 09:56 PM
Aldrin	ND	1.0		µg/Kg	1	7/22/2009 09:56 PM
alpha-BHC	ND	1.0		µg/Kg	1	7/22/2009 09:56 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	7/22/2009 09:56 PM
beta-BHC	ND	1.0		µg/Kg	1	7/22/2009 09:56 PM
Chlordane	ND	8.5		µg/Kg	1	7/22/2009 09:56 PM
delta-BHC	ND	1.0		µg/Kg	1	7/22/2009 09:56 PM
Dieldrin	ND	2.0		µg/Kg	1	7/22/2009 09:56 PM
Endosulfan I	ND	1.0		µg/Kg	1	7/22/2009 09:56 PM
Endosulfan II	ND	2.0		µg/Kg	1	7/22/2009 09:56 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	7/22/2009 09:56 PM
Endrin	ND	2.0		µg/Kg	1	7/22/2009 09:56 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	7/22/2009 09:56 PM
Endrin ketone	ND	2.0		µg/Kg	1	7/22/2009 09:56 PM
gamma-BHC	ND	1.0		µg/Kg	1	7/22/2009 09:56 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	7/22/2009 09:56 PM
Heptachlor	ND	1.0		µg/Kg	1	7/22/2009 09:56 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	7/22/2009 09:56 PM
Methoxychlor	ND	5.0		µg/Kg	1	7/22/2009 09:56 PM
Toxaphene	ND	50		µg/Kg	1	7/22/2009 09:56 PM
Surr: Decachlorobiphenyl	70.5	20-142		%REC	1	7/22/2009 09:56 PM
Surr: Tetrachloro-m-xylene	66.9	25-115		%REC	1	7/22/2009 09:56 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		

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ANALYTICAL RESULTS
Print Date: *31-Jul-09*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	BH-5-0
Lab Order:	106451	**Collection Date:**	7/17/2009 12:11:00 PM
Project:	Hwy 116-GRATON, E8435-06-25	**Matrix:**	SOIL
Lab ID:	106451-011A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_090725B	QC Batch: 56818				PrepDate: 7/23/2009	Analyst: **RQ**
Antimony	ND	2.0		mg/Kg	1	7/25/2009 12:48 PM
Arsenic	ND	1.0		mg/Kg	1	7/25/2009 12:48 PM
Barium	67	1.0		mg/Kg	1	7/25/2009 12:48 PM
Beryllium	ND	1.0		mg/Kg	1	7/25/2009 12:48 PM
Cadmium	ND	1.0		mg/Kg	1	7/25/2009 12:48 PM
Chromium	56	1.0		mg/Kg	1	7/25/2009 12:48 PM
Cobalt	9.4	1.0		mg/Kg	1	7/25/2009 12:48 PM
Copper	18	2.0		mg/Kg	1	7/25/2009 12:48 PM
Lead	54	1.0		mg/Kg	1	7/25/2009 12:48 PM
Molybdenum	ND	1.0		mg/Kg	1	7/25/2009 12:48 PM
Nickel	57	1.0		mg/Kg	1	7/25/2009 12:48 PM
Selenium	ND	1.0		mg/Kg	1	7/25/2009 12:48 PM
Silver	ND	1.0		mg/Kg	1	7/25/2009 12:48 PM
Thallium	ND	1.0		mg/Kg	1	7/25/2009 12:48 PM
Vanadium	36	1.0		mg/Kg	1	7/25/2009 12:48 PM
Zinc	45	1.0		mg/Kg	1	7/25/2009 12:48 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_090722A	QC Batch: 56773				PrepDate: 7/22/2009	Analyst: **IL**
Mercury	ND	0.10		mg/Kg	1	7/22/2009 06:27 PM

Qualifiers:

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DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS
Print Date: *31-Jul-09*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	BH-5-1
Lab Order:	106451	**Collection Date:**	7/17/2009 12:11:00 PM
Project:	Hwy 116-GRATON, E8435-06-25	**Matrix:**	SOIL
Lab ID:	106451-012A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_090725B	QC Batch: 56818			PrepDate:	7/23/2009	Analyst: **RQ**
Antimony	ND	2.0		mg/Kg	1	7/25/2009 12:52 PM
Arsenic	ND	1.0		mg/Kg	1	7/25/2009 12:52 PM
Barium	35	1.0		mg/Kg	1	7/25/2009 12:52 PM
Beryllium	ND	1.0		mg/Kg	1	7/25/2009 12:52 PM
Cadmium	ND	1.0		mg/Kg	1	7/25/2009 12:52 PM
Chromium	18	1.0		mg/Kg	1	7/25/2009 12:52 PM
Cobalt	9.0	1.0		mg/Kg	1	7/25/2009 12:52 PM
Copper	2.4	2.0		mg/Kg	1	7/25/2009 12:52 PM
Lead	4.3	1.0		mg/Kg	1	7/25/2009 12:52 PM
Molybdenum	ND	1.0		mg/Kg	1	7/25/2009 12:52 PM
Nickel	13	1.0		mg/Kg	1	7/25/2009 12:52 PM
Selenium	ND	1.0		mg/Kg	1	7/25/2009 12:52 PM
Silver	ND	1.0		mg/Kg	1	7/25/2009 12:52 PM
Thallium	ND	1.0		mg/Kg	1	7/25/2009 12:52 PM
Vanadium	13	1.0		mg/Kg	1	7/25/2009 12:52 PM
Zinc	8.6	1.0		mg/Kg	1	7/25/2009 12:52 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_090722A	QC Batch: 56773			PrepDate:	7/22/2009	Analyst: **IL**
Mercury	0.13	0.10		mg/Kg	1	7/22/2009 06:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
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DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *31-Jul-09*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	BH-6-0
Lab Order:	106451	**Collection Date:**	7/17/2009 10:31:00 AM
Project:	Hwy 116-GRATON, E8435-06-25	**Matrix:**	SOIL
Lab ID:	106451-013A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
EPA 3550B				**EPA 8081A**		
RunID: GC9_090722A	QC Batch: 56787				PrepDate: 7/22/2009	Analyst: **SMH**
4,4'-DDD	12	2.0		µg/Kg	1	7/22/2009 10:25 PM
4,4'-DDE	28	2.0		µg/Kg	1	7/22/2009 10:25 PM
4,4'-DDT	78	10		µg/Kg	5	7/23/2009 12:45 PM
Aldrin	ND	1.0		µg/Kg	1	7/22/2009 10:25 PM
alpha-BHC	ND	1.0		µg/Kg	1	7/22/2009 10:25 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	7/22/2009 10:25 PM
beta-BHC	ND	1.0		µg/Kg	1	7/22/2009 10:25 PM
Chlordane	ND	8.5		µg/Kg	1	7/22/2009 10:25 PM
delta-BHC	ND	1.0		µg/Kg	1	7/22/2009 10:25 PM
Dieldrin	ND	2.0		µg/Kg	1	7/22/2009 10:25 PM
Endosulfan I	ND	1.0		µg/Kg	1	7/22/2009 10:25 PM
Endosulfan II	ND	2.0		µg/Kg	1	7/22/2009 10:25 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	7/22/2009 10:25 PM
Endrin	ND	2.0		µg/Kg	1	7/22/2009 10:25 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	7/22/2009 10:25 PM
Endrin ketone	ND	2.0		µg/Kg	1	7/22/2009 10:25 PM
gamma-BHC	ND	1.0		µg/Kg	1	7/22/2009 10:25 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	7/22/2009 10:25 PM
Heptachlor	ND	1.0		µg/Kg	1	7/22/2009 10:25 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	7/22/2009 10:25 PM
Methoxychlor	ND	5.0		µg/Kg	1	7/22/2009 10:25 PM
Toxaphene	ND	50		µg/Kg	1	7/22/2009 10:25 PM
Surr: Decachlorobiphenyl	76.2	20-142		%REC	1	7/22/2009 10:25 PM
Surr: Decachlorobiphenyl	70.7	20-142		%REC	5	7/23/2009 12:45 PM
Surr: Tetrachloro-m-xylene	61.8	25-115		%REC	5	7/23/2009 12:45 PM
Surr: Tetrachloro-m-xylene	54.1	25-115		%REC	1	7/22/2009 10:25 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		

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ANALYTICAL RESULTS

Print Date: *31-Jul-09*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	BH-6-6
Lab Order:	106451	**Collection Date:**	7/17/2009 10:41:00 AM
Project:	Hwy 116-GRATON, E8435-06-25	**Matrix:**	SOIL
Lab ID:	106451-016A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_090725B	QC Batch: 56818			PrepDate:	7/23/2009	Analyst: **RQ**
Antimony	ND	2.0		mg/Kg	1	7/25/2009 12:55 PM
Arsenic	3.0	1.0		mg/Kg	1	7/25/2009 12:55 PM
Barium	29	1.0		mg/Kg	1	7/25/2009 12:55 PM
Beryllium	ND	1.0		mg/Kg	1	7/25/2009 12:55 PM
Cadmium	ND	1.0		mg/Kg	1	7/25/2009 12:55 PM
Chromium	35	1.0		mg/Kg	1	7/25/2009 12:55 PM
Cobalt	ND	1.0		mg/Kg	1	7/25/2009 12:55 PM
Copper	3.1	2.0		mg/Kg	1	7/25/2009 12:55 PM
Lead	5.4	1.0		mg/Kg	1	7/25/2009 12:55 PM
Molybdenum	1.1	1.0		mg/Kg	1	7/25/2009 12:55 PM
Nickel	11	1.0		mg/Kg	1	7/25/2009 12:55 PM
Selenium	ND	1.0		mg/Kg	1	7/25/2009 12:55 PM
Silver	ND	1.0		mg/Kg	1	7/25/2009 12:55 PM
Thallium	ND	1.0		mg/Kg	1	7/25/2009 12:55 PM
Vanadium	31	1.0		mg/Kg	1	7/25/2009 12:55 PM
Zinc	7.7	1.0		mg/Kg	1	7/25/2009 12:55 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_090722A	QC Batch: 56773			PrepDate:	7/22/2009	Analyst: **IL**
Mercury	ND	0.10		mg/Kg	1	7/22/2009 06:31 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		

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ANALYTICAL RESULTS

Print Date: *31-Jul-09*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	BH-7-6
Lab Order:	106451	**Collection Date:**	7/17/2009 10:00:00 AM
Project:	Hwy 116-GRATON, E8435-06-25	**Matrix:**	SOIL
Lab ID:	106451-021A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_090725B	QC Batch: 56818			PrepDate:	7/23/2009	Analyst: **RQ**
Antimony	ND	2.0		mg/Kg	1	7/27/2009 08:09 AM
Arsenic	2.8	1.0		mg/Kg	1	7/27/2009 08:09 AM
Barium	24	1.0		mg/Kg	1	7/27/2009 08:09 AM
Beryllium	ND	1.0		mg/Kg	1	7/27/2009 08:09 AM
Cadmium	ND	1.0		mg/Kg	1	7/27/2009 08:09 AM
Chromium	18	1.0		mg/Kg	1	7/27/2009 08:09 AM
Cobalt	ND	1.0		mg/Kg	1	7/27/2009 08:09 AM
Copper	ND	2.0		mg/Kg	1	7/27/2009 08:09 AM
Lead	5.0	1.0		mg/Kg	1	7/27/2009 08:09 AM
Molybdenum	ND	1.0		mg/Kg	1	7/27/2009 08:09 AM
Nickel	5.0	1.0		mg/Kg	1	7/27/2009 08:09 AM
Selenium	ND	1.0		mg/Kg	1	7/27/2009 08:09 AM
Silver	ND	1.0		mg/Kg	1	7/27/2009 08:09 AM
Thallium	ND	1.0		mg/Kg	1	7/27/2009 08:09 AM
Vanadium	15	1.0		mg/Kg	1	7/27/2009 08:09 AM
Zinc	5.4	1.0		mg/Kg	1	7/27/2009 08:09 AM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_090722A	QC Batch: 56773			PrepDate:	7/22/2009	Analyst: **IL**
Mercury	ND	0.10		mg/Kg	1	7/22/2009 06:37 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		

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ANALYTICAL RESULTS

Print Date: *31-Jul-09*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	BH-8-0
Lab Order:	106451	**Collection Date:**	7/17/2009 10:51:00 AM
Project:	Hwy 116-GRATON, E8435-06-25	**Matrix:**	SOIL
Lab ID:	106451-023A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_090722A	QC Batch: 56787				PrepDate: 7/22/2009	Analyst: **SMH**
4,4´-DDD	8.5	2.0		µg/Kg	1	7/22/2009 10:39 PM
4,4´-DDE	86	10		µg/Kg	5	7/23/2009 01:00 PM
4,4´-DDT	67	10		µg/Kg	5	7/23/2009 01:00 PM
Aldrin	ND	1.0		µg/Kg	1	7/22/2009 10:39 PM
alpha-BHC	ND	1.0		µg/Kg	1	7/22/2009 10:39 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	7/22/2009 10:39 PM
beta-BHC	ND	1.0		µg/Kg	1	7/22/2009 10:39 PM
Chlordane	12	8.5		µg/Kg	1	7/22/2009 10:39 PM
delta-BHC	ND	1.0		µg/Kg	1	7/22/2009 10:39 PM
Dieldrin	ND	2.0		µg/Kg	1	7/22/2009 10:39 PM
Endosulfan I	ND	1.0		µg/Kg	1	7/22/2009 10:39 PM
Endosulfan II	ND	2.0		µg/Kg	1	7/22/2009 10:39 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	7/22/2009 10:39 PM
Endrin	ND	2.0		µg/Kg	1	7/22/2009 10:39 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	7/22/2009 10:39 PM
Endrin ketone	ND	2.0		µg/Kg	1	7/22/2009 10:39 PM
gamma-BHC	ND	1.0		µg/Kg	1	7/22/2009 10:39 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	7/22/2009 10:39 PM
Heptachlor	ND	1.0		µg/Kg	1	7/22/2009 10:39 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	7/22/2009 10:39 PM
Methoxychlor	ND	5.0		µg/Kg	1	7/22/2009 10:39 PM
Toxaphene	ND	50		µg/Kg	1	7/22/2009 10:39 PM
Surr: Decachlorobiphenyl	74.2	20-142		%REC	1	7/22/2009 10:39 PM
Surr: Decachlorobiphenyl	68.7	20-142		%REC	5	7/23/2009 01:00 PM
Surr: Tetrachloro-m-xylene	53.9	25-115		%REC	5	7/23/2009 01:00 PM
Surr: Tetrachloro-m-xylene	49.9	25-115		%REC	1	7/22/2009 10:39 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		

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ANALYTICAL RESULTS

Print Date: *31-Jul-09*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	BH-10-0
Lab Order:	106451	**Collection Date:**	7/17/2009 11:11:00 AM
Project:	Hwy 116-GRATON, E8435-06-25	**Matrix:**	SOIL
Lab ID:	106451-028A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_090725B	QC Batch: 56818			PrepDate:	7/23/2009	Analyst: **RQ**
Antimony	ND	2.0		mg/Kg	1	7/25/2009 01:03 PM
Arsenic	ND	1.0		mg/Kg	1	7/25/2009 01:03 PM
Barium	110	1.0		mg/Kg	1	7/25/2009 01:03 PM
Beryllium	ND	1.0		mg/Kg	1	7/25/2009 01:03 PM
Cadmium	ND	1.0		mg/Kg	1	7/25/2009 01:03 PM
Chromium	21	1.0		mg/Kg	1	7/25/2009 01:03 PM
Cobalt	8.1	1.0		mg/Kg	1	7/25/2009 01:03 PM
Copper	19	2.0		mg/Kg	1	7/25/2009 01:03 PM
Lead	23	1.0		mg/Kg	1	7/25/2009 01:03 PM
Molybdenum	ND	1.0		mg/Kg	1	7/25/2009 01:03 PM
Nickel	24	1.0		mg/Kg	1	7/25/2009 01:03 PM
Selenium	ND	1.0		mg/Kg	1	7/25/2009 01:03 PM
Silver	ND	1.0		mg/Kg	1	7/25/2009 01:03 PM
Thallium	ND	1.0		mg/Kg	1	7/25/2009 01:03 PM
Vanadium	22	1.0		mg/Kg	1	7/25/2009 01:03 PM
Zinc	55	1.0		mg/Kg	1	7/25/2009 01:03 PM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_090722A	QC Batch: 56787			PrepDate:	7/22/2009	Analyst: **SMH**
4,4'-DDD	2.2	2.0		µg/Kg	1	7/22/2009 10:53 PM
4,4'-DDE	4.6	2.0		µg/Kg	1	7/22/2009 10:53 PM
4,4'-DDT	8.5	2.0		µg/Kg	1	7/22/2009 10:53 PM
Aldrin	ND	1.0		µg/Kg	1	7/22/2009 10:53 PM
alpha-BHC	ND	1.0		µg/Kg	1	7/22/2009 10:53 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	7/22/2009 10:53 PM
beta-BHC	ND	1.0		µg/Kg	1	7/22/2009 10:53 PM
Chlordane	ND	8.5		µg/Kg	1	7/22/2009 10:53 PM
delta-BHC	ND	1.0		µg/Kg	1	7/22/2009 10:53 PM
Dieldrin	ND	2.0		µg/Kg	1	7/22/2009 10:53 PM
Endosulfan I	ND	1.0		µg/Kg	1	7/22/2009 10:53 PM
Endosulfan II	ND	2.0		µg/Kg	1	7/22/2009 10:53 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	7/22/2009 10:53 PM
Endrin	ND	2.0		µg/Kg	1	7/22/2009 10:53 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	7/22/2009 10:53 PM
Endrin ketone	ND	2.0		µg/Kg	1	7/22/2009 10:53 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		

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ANALYTICAL RESULTS

Print Date: *31-Jul-09*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	BH-10-0
Lab Order:	106451	**Collection Date:**	7/17/2009 11:11:00 AM
Project:	Hwy 116-GRATON, E8435-06-25	**Matrix:**	SOIL
Lab ID:	106451-028A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
EPA 3550B				**EPA 8081A**		
RunID: GC9_090722A	QC Batch: 56787			PrepDate:	7/22/2009	Analyst: **SMH**
gamma-BHC	ND	1.0		µg/Kg	1	7/22/2009 10:53 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	7/22/2009 10:53 PM
Heptachlor	ND	1.0		µg/Kg	1	7/22/2009 10:53 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	7/22/2009 10:53 PM
Methoxychlor	ND	5.0		µg/Kg	1	7/22/2009 10:53 PM
Toxaphene	ND	50		µg/Kg	1	7/22/2009 10:53 PM
Surr: Decachlorobiphenyl	92.5	20-142		%REC	1	7/22/2009 10:53 PM
Surr: Tetrachloro-m-xylene	64.4	25-115		%REC	1	7/22/2009 10:53 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_090722A	QC Batch: 56773			PrepDate:	7/22/2009	Analyst: **IL**
Mercury	ND	0.10		mg/Kg	1	7/22/2009 06:39 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		

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ANALYTICAL RESULTS

Print Date: *31-Jul-09*

CLIENT: Geocon Consultants, Inc.
Lab Order: 106451
Project: Hwy 116-GRATON, E8435-06-25
Lab ID: 106451-029A

Client Sample ID: BH-10-1
Collection Date: 7/17/2009 11:11:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_090725B	QC Batch: 56818			PrepDate:	7/23/2009	Analyst: **RQ**
Antimony	ND	2.0		mg/Kg	1	7/25/2009 01:07 PM
Arsenic	2.1	1.0		mg/Kg	1	7/25/2009 01:07 PM
Barium	15	1.0		mg/Kg	1	7/25/2009 01:07 PM
Beryllium	ND	1.0		mg/Kg	1	7/25/2009 01:07 PM
Cadmium	ND	1.0		mg/Kg	1	7/25/2009 01:07 PM
Chromium	22	1.0		mg/Kg	1	7/25/2009 01:07 PM
Cobalt	ND	1.0		mg/Kg	1	7/25/2009 01:07 PM
Copper	ND	2.0		mg/Kg	1	7/25/2009 01:07 PM
Lead	5.5	1.0		mg/Kg	1	7/25/2009 01:07 PM
Molybdenum	ND	1.0		mg/Kg	1	7/25/2009 01:07 PM
Nickel	4.2	1.0		mg/Kg	1	7/25/2009 01:07 PM
Selenium	ND	1.0		mg/Kg	1	7/25/2009 01:07 PM
Silver	ND	1.0		mg/Kg	1	7/25/2009 01:07 PM
Thallium	ND	1.0		mg/Kg	1	7/25/2009 01:07 PM
Vanadium	14	1.0		mg/Kg	1	7/25/2009 01:07 PM
Zinc	5.5	1.0		mg/Kg	1	7/25/2009 01:07 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_090722A	QC Batch: 56773			PrepDate:	7/22/2009	Analyst: **IL**
Mercury	ND	0.10		mg/Kg	1	7/22/2009 06:41 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		

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ANALYTICAL RESULTS

Print Date: *31-Jul-09*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	BH-10-2
Lab Order:	106451	**Collection Date:**	7/17/2009 11:14:00 AM
Project:	Hwy 116-GRATON, E8435-06-25	**Matrix:**	SOIL
Lab ID:	106451-030A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_090725B	QC Batch: 56818			PrepDate:	7/23/2009	Analyst: **RQ**
Antimony	ND	2.0		mg/Kg	1	7/25/2009 01:18 PM
Arsenic	1.7	1.0		mg/Kg	1	7/25/2009 01:18 PM
Barium	16	1.0		mg/Kg	1	7/25/2009 01:18 PM
Beryllium	ND	1.0		mg/Kg	1	7/25/2009 01:18 PM
Cadmium	ND	1.0		mg/Kg	1	7/25/2009 01:18 PM
Chromium	16	1.0		mg/Kg	1	7/25/2009 01:18 PM
Cobalt	ND	1.0		mg/Kg	1	7/25/2009 01:18 PM
Copper	ND	2.0		mg/Kg	1	7/25/2009 01:18 PM
Lead	5.2	1.0		mg/Kg	1	7/25/2009 01:18 PM
Molybdenum	ND	1.0		mg/Kg	1	7/25/2009 01:18 PM
Nickel	4.4	1.0		mg/Kg	1	7/25/2009 01:18 PM
Selenium	ND	1.0		mg/Kg	1	7/25/2009 01:18 PM
Silver	ND	1.0		mg/Kg	1	7/25/2009 01:18 PM
Thallium	ND	1.0		mg/Kg	1	7/25/2009 01:18 PM
Vanadium	13	1.0		mg/Kg	1	7/25/2009 01:18 PM
Zinc	5.4	1.0		mg/Kg	1	7/25/2009 01:18 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_090722A	QC Batch: 56773			PrepDate:	7/22/2009	Analyst: **IL**
Mercury	ND	0.10		mg/Kg	1	7/22/2009 06:43 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		

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ANALYTICAL RESULTS

Print Date: *31-Jul-09*

CLIENT: Geocon Consultants, Inc.
Lab Order: 106451
Project: Hwy 116-GRATON, E8435-06-25
Lab ID: 106451-031A

Client Sample ID: BH-11-0
Collection Date: 7/17/2009 12:01:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
EPA 3550B				**EPA 8081A**		
RunID: GC9_090722A	QC Batch: 56787				PrepDate: 7/22/2009	Analyst: **SMH**
4,4'-DDD	ND	2.0		µg/Kg	1	7/22/2009 11:07 PM
4,4'-DDE	5.3	2.0		µg/Kg	1	7/22/2009 11:07 PM
4,4'-DDT	3.7	2.0		µg/Kg	1	7/22/2009 11:07 PM
Aldrin	ND	1.0		µg/Kg	1	7/22/2009 11:07 PM
alpha-BHC	ND	1.0		µg/Kg	1	7/22/2009 11:07 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	7/22/2009 11:07 PM
beta-BHC	ND	1.0		µg/Kg	1	7/22/2009 11:07 PM
Chlordane	ND	8.5		µg/Kg	1	7/22/2009 11:07 PM
delta-BHC	ND	1.0		µg/Kg	1	7/22/2009 11:07 PM
Dieldrin	ND	2.0		µg/Kg	1	7/22/2009 11:07 PM
Endosulfan I	ND	1.0		µg/Kg	1	7/22/2009 11:07 PM
Endosulfan II	ND	2.0		µg/Kg	1	7/22/2009 11:07 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	7/22/2009 11:07 PM
Endrin	ND	2.0		µg/Kg	1	7/22/2009 11:07 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	7/22/2009 11:07 PM
Endrin ketone	ND	2.0		µg/Kg	1	7/22/2009 11:07 PM
gamma-BHC	ND	1.0		µg/Kg	1	7/22/2009 11:07 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	7/22/2009 11:07 PM
Heptachlor	ND	1.0		µg/Kg	1	7/22/2009 11:07 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	7/22/2009 11:07 PM
Methoxychlor	ND	5.0		µg/Kg	1	7/22/2009 11:07 PM
Toxaphene	ND	50		µg/Kg	1	7/22/2009 11:07 PM
Surr: Decachlorobiphenyl	71.6	20-142		%REC	1	7/22/2009 11:07 PM
Surr: Tetrachloro-m-xylene	56.3	25-115		%REC	1	7/22/2009 11:07 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		

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ANALYTICAL RESULTS

Print Date: *31-Jul-09*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	BH-13-0
Lab Order:	106451	**Collection Date:**	7/17/2009 11:54:00 AM
Project:	Hwy 116-GRATON, E8435-06-25	**Matrix:**	SOIL
Lab ID:	106451-036A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_090722A	QC Batch: 56787				PrepDate: 7/22/2009	Analyst: **SMH**
4,4'-DDD	14	2.0		µg/Kg	1	7/22/2009 11:21 PM
4,4'-DDE	190	20		µg/Kg	10	7/23/2009 01:14 PM
4,4'-DDT	140	20		µg/Kg	10	7/23/2009 01:14 PM
Aldrin	ND	1.0		µg/Kg	1	7/22/2009 11:21 PM
alpha-BHC	ND	1.0		µg/Kg	1	7/22/2009 11:21 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	7/22/2009 11:21 PM
beta-BHC	ND	1.0		µg/Kg	1	7/22/2009 11:21 PM
Chlordane	ND	8.5		µg/Kg	1	7/22/2009 11:21 PM
delta-BHC	ND	1.0		µg/Kg	1	7/22/2009 11:21 PM
Dieldrin	ND	2.0		µg/Kg	1	7/22/2009 11:21 PM
Endosulfan I	ND	1.0		µg/Kg	1	7/22/2009 11:21 PM
Endosulfan II	ND	2.0		µg/Kg	1	7/22/2009 11:21 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	7/22/2009 11:21 PM
Endrin	ND	2.0		µg/Kg	1	7/22/2009 11:21 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	7/22/2009 11:21 PM
Endrin ketone	ND	2.0		µg/Kg	1	7/22/2009 11:21 PM
gamma-BHC	ND	1.0		µg/Kg	1	7/22/2009 11:21 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	7/22/2009 11:21 PM
Heptachlor	ND	1.0		µg/Kg	1	7/22/2009 11:21 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	7/22/2009 11:21 PM
Methoxychlor	ND	5.0		µg/Kg	1	7/22/2009 11:21 PM
Toxaphene	ND	50		µg/Kg	1	7/22/2009 11:21 PM
Surr: Decachlorobiphenyl	52.1	20-142		%REC	1	7/22/2009 11:21 PM
Surr: Decachlorobiphenyl	95.8	20-142		%REC	10	7/23/2009 01:14 PM
Surr: Tetrachloro-m-xylene	56.3	25-115		%REC	10	7/23/2009 01:14 PM
Surr: Tetrachloro-m-xylene	47.3	25-115		%REC	1	7/22/2009 11:21 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		

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ANALYTICAL RESULTS

Print Date: *31-Jul-09*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	BH-15-0
Lab Order:	106451	**Collection Date:**	7/17/2009 11:47:00 AM
Project:	Hwy 116-GRATON, E8435-06-25	**Matrix:**	SOIL
Lab ID:	106451-041A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_090725B	QC Batch: 56818				PrepDate: 7/23/2009	Analyst: **RQ**
Antimony	ND	2.0		mg/Kg	1	7/25/2009 01:21 PM
Arsenic	ND	1.0		mg/Kg	1	7/25/2009 01:21 PM
Barium	79	1.0		mg/Kg	1	7/25/2009 01:21 PM
Beryllium	ND	1.0		mg/Kg	1	7/25/2009 01:21 PM
Cadmium	ND	1.0		mg/Kg	1	7/25/2009 01:21 PM
Chromium	14	1.0		mg/Kg	1	7/25/2009 01:21 PM
Cobalt	5.4	1.0		mg/Kg	1	7/25/2009 01:21 PM
Copper	9.2	2.0		mg/Kg	1	7/25/2009 01:21 PM
Lead	8.3	1.0		mg/Kg	1	7/25/2009 01:21 PM
Molybdenum	ND	1.0		mg/Kg	1	7/25/2009 01:21 PM
Nickel	14	1.0		mg/Kg	1	7/25/2009 01:21 PM
Selenium	ND	1.0		mg/Kg	1	7/25/2009 01:21 PM
Silver	ND	1.0		mg/Kg	1	7/25/2009 01:21 PM
Thallium	ND	1.0		mg/Kg	1	7/25/2009 01:21 PM
Vanadium	27	1.0		mg/Kg	1	7/25/2009 01:21 PM
Zinc	38	1.0		mg/Kg	1	7/25/2009 01:21 PM
ORGANOCHLORINE PESTICIDES BY GC/ECD						
	EPA 3550B			**EPA 8081A**		
RunID: GC9_090722A	QC Batch: 56787				PrepDate: 7/22/2009	Analyst: **SMH**
4,4'-DDD	ND	2.0		µg/Kg	1	7/22/2009 11:35 PM
4,4'-DDE	13	2.0		µg/Kg	1	7/22/2009 11:35 PM
4,4'-DDT	7.9	2.0		µg/Kg	1	7/22/2009 11:35 PM
Aldrin	ND	1.0		µg/Kg	1	7/22/2009 11:35 PM
alpha-BHC	ND	1.0		µg/Kg	1	7/22/2009 11:35 PM
alpha-Chlordane	ND	1.0		µg/Kg	1	7/22/2009 11:35 PM
beta-BHC	ND	1.0		µg/Kg	1	7/22/2009 11:35 PM
Chlordane	ND	8.5		µg/Kg	1	7/22/2009 11:35 PM
delta-BHC	ND	1.0		µg/Kg	1	7/22/2009 11:35 PM
Dieldrin	ND	2.0		µg/Kg	1	7/22/2009 11:35 PM
Endosulfan I	ND	1.0		µg/Kg	1	7/22/2009 11:35 PM
Endosulfan II	ND	2.0		µg/Kg	1	7/22/2009 11:35 PM
Endosulfan sulfate	ND	2.0		µg/Kg	1	7/22/2009 11:35 PM
Endrin	ND	2.0		µg/Kg	1	7/22/2009 11:35 PM
Endrin aldehyde	ND	2.0		µg/Kg	1	7/22/2009 11:35 PM
Endrin ketone	ND	2.0		µg/Kg	1	7/22/2009 11:35 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		

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ANALYTICAL RESULTS

Print Date: *31-Jul-09*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	BH-15-0
Lab Order:	106451	**Collection Date:**	7/17/2009 11:47:00 AM
Project:	Hwy 116-GRATON, E8435-06-25	**Matrix:**	SOIL
Lab ID:	106451-041A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD						
EPA 3550B				**EPA 8081A**		
RunID: GC9_090722A	QC Batch: 56787			PrepDate:	7/22/2009	Analyst: **SMH**
gamma-BHC	ND	1.0		µg/Kg	1	7/22/2009 11:35 PM
gamma-Chlordane	ND	1.0		µg/Kg	1	7/22/2009 11:35 PM
Heptachlor	ND	1.0		µg/Kg	1	7/22/2009 11:35 PM
Heptachlor epoxide	ND	1.0		µg/Kg	1	7/22/2009 11:35 PM
Methoxychlor	ND	5.0		µg/Kg	1	7/22/2009 11:35 PM
Toxaphene	ND	50		µg/Kg	1	7/22/2009 11:35 PM
Surr: Decachlorobiphenyl	41.7	20-142		%REC	1	7/22/2009 11:35 PM
Surr: Tetrachloro-m-xylene	32.8	25-115		%REC	1	7/22/2009 11:35 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_090722A	QC Batch: 56773			PrepDate:	7/22/2009	Analyst: **IL**
Mercury	ND	0.10		mg/Kg	1	7/22/2009 06:44 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		

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ANALYTICAL RESULTS

Print Date: *31-Jul-09*

CLIENT:	Geocon Consultants, Inc.	**Client Sample ID:**	BH-15-1
Lab Order:	106451	**Collection Date:**	7/17/2009 11:47:00 AM
Project:	Hwy 116-GRATON, E8435-06-25	**Matrix:**	SOIL
Lab ID:	106451-042A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			**EPA 6010B**		
RunID: ICP8_090725B	QC Batch: 56818				PrepDate: 7/23/2009	Analyst: **RQ**
Antimony	ND	2.0		mg/Kg	1	7/25/2009 01:25 PM
Arsenic	2.1	1.0		mg/Kg	1	7/25/2009 01:25 PM
Barium	23	1.0		mg/Kg	1	7/25/2009 01:25 PM
Beryllium	ND	1.0		mg/Kg	1	7/25/2009 01:25 PM
Cadmium	ND	1.0		mg/Kg	1	7/25/2009 01:25 PM
Chromium	8.2	1.0		mg/Kg	1	7/25/2009 01:25 PM
Cobalt	ND	1.0		mg/Kg	1	7/25/2009 01:25 PM
Copper	31	2.0		mg/Kg	1	7/25/2009 01:25 PM
Lead	24	1.0		mg/Kg	1	7/25/2009 01:25 PM
Molybdenum	ND	1.0		mg/Kg	1	7/25/2009 01:25 PM
Nickel	3.3	1.0		mg/Kg	1	7/25/2009 01:25 PM
Selenium	ND	1.0		mg/Kg	1	7/25/2009 01:25 PM
Silver	ND	1.0		mg/Kg	1	7/25/2009 01:25 PM
Thallium	ND	1.0		mg/Kg	1	7/25/2009 01:25 PM
Vanadium	5.7	1.0		mg/Kg	1	7/25/2009 01:25 PM
Zinc	6.7	1.0		mg/Kg	1	7/25/2009 01:25 PM
MERCURY BY COLD VAPOR TECHNIQUE						
				EPA 7471A		
RunID: AA5_090722A	QC Batch: 56773				PrepDate: 7/22/2009	Analyst: **IL**
Mercury	ND	0.10		mg/Kg	1	7/22/2009 06:46 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		

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ANALYTICAL RESULTS

Print Date: *31-Jul-09*

CLIENT: Geocon Consultants, Inc. **Lab Order:** 106451
Project: Hwy 116-GRATON, E8435-06-25

Lab ID: 106451-001 **Collection Date:** 7/17/2009 12:36:00 PM
Client Sample ID: BH-1-0 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS BY STLC						
			WET/ EPA 6010B			
RunID: ICP8_090730D	QC Batch: R111297			PrepDate:		Analyst: **CL**
Lead	4.6	1.0		mg/L	20	7/30/2009 04:08 PM

Lab ID: 106451-011 **Collection Date:** 7/17/2009 12:11:00 PM
Client Sample ID: BH-5-0 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS BY STLC						
			WET/ EPA 6010B			
RunID: ICP8_090730D	QC Batch: R111297			PrepDate:		Analyst: **CL**
Chromium	ND	1.0		mg/L	20	7/30/2009 04:11 PM
Lead	3.3	1.0		mg/L	20	7/30/2009 04:11 PM

Lab ID: 106451-023 **Collection Date:** 7/17/2009 10:51:00 AM
Client Sample ID: BH-8-0 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS BY STLC						
			WET/ EPA 6010B			
RunID: ICP8_090730D	QC Batch: R111297			PrepDate:		Analyst: **CL**
Lead	3.7	1.0		mg/L	20	7/30/2009 04:15 PM

Lab ID: 106451-024 **Collection Date:** 7/17/2009 10:51:00 AM
Client Sample ID: BH-8-1 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS BY STLC						
			WET/ EPA 6010B			
RunID: ICP8_090730D	QC Batch: R111297			PrepDate:		Analyst: **CL**
Lead	4.6	1.0		mg/L	20	7/30/2009 04:18 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		

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ANALYTICAL RESULTS

Print Date: *31-Jul-09*

CLIENT: Geocon Consultants, Inc.
Project: Hwy 116-GRATON, E8435-06-25

Lab Order: 106451

Lab ID: 106451-036
Client Sample ID: BH-13-0

Collection Date: 7/17/2009 11:54:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS BY STLC						
WET/ EPA 6010B						
RunID: ICP8_090730D	QC Batch: R111297			PrepDate:		Analyst: **CL**
Lead	4.2	1.0		mg/L	20	7/30/2009 04:21 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		

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Date: *31-Jul-09*

CLIENT: Geocon Consultants, Inc.
Work Order: 106451
Project: Hwy 116-GRATON, E8435-06-25

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **MB-56818** SampType: **MBLK** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **7/23/2009** RunNo: **111144**
Client ID: **PBS** Batch ID: **56818** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **7/25/2009** SeqNo: **1751101**

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									
Lead	ND	1.0									
Molybdenum	ND	1.0									
Nickel	ND	1.0									
Selenium	ND	1.0									
Silver	0.031	1.0									
Thallium	ND	1.0									
Vanadium	ND	1.0									
Zinc	ND	1.0									

Sample ID: **LCS-56818** SampType: **LCS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **7/23/2009** RunNo: **111144**
Client ID: **LCSS** Batch ID: **56818** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **7/25/2009** SeqNo: **1751102**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	43.259	2.0	50.00	0	86.5	80	120				
Arsenic	44.280	1.0	50.00	0	88.6	80	120				
Barium	48.396	1.0	50.00	0	96.8	80	120				
Beryllium	46.302	1.0	50.00	0	92.6	80	120				
Cadmium	46.451	1.0	50.00	0	92.9	80	120				
Chromium	45.941	1.0	50.00	0	91.9	80	120				
Cobalt	46.435	1.0	50.00	0	92.9	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

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CLIENT: Geocon Consultants, Inc.
Work Order: 106451
Project: Hwy 116-GRATON, E8435-06-25

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **LCS-56818** SampType: **LCS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **7/23/2009** RunNo: **111144**
Client ID: **LCSS** Batch ID: **56818** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **7/25/2009** SeqNo: **1751102**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	47.766	2.0	50.00	0	95.5	80	120				
Lead	49.111	1.0	50.00	0	98.2	80	120				
Molybdenum	47.268	1.0	50.00	0	94.5	80	120				
Nickel	45.527	1.0	50.00	0	91.1	80	120				
Selenium	43.774	1.0	50.00	0	87.5	80	120				
Silver	44.920	1.0	50.00	0.03107	89.8	80	120				
Thallium	44.245	1.0	50.00	0	88.5	80	120				
Vanadium	47.929	1.0	50.00	0	95.9	80	120				
Zinc	46.059	1.0	50.00	0	92.1	80	120				

Sample ID: **106451-042ADUP** SampType: **DUP** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **7/23/2009** RunNo: **111144**
Client ID: **BH-15-1** Batch ID: **56818** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **7/25/2009** SeqNo: **1751112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0						0	0	20	
Arsenic	2.420	1.0						2.143	12.1	20	
Barium	21.283	1.0						23.44	9.65	20	
Beryllium	ND	1.0						0	0	20	
Cadmium	0.074	1.0						0.05618	0	20	
Chromium	8.399	1.0						8.172	2.73	20	
Cobalt	0.919	1.0						0.9251	0	20	
Copper	29.151	2.0						30.70	5.16	20	
Lead	20.252	1.0						24.04	17.1	20	
Molybdenum	0.047	1.0						0	0	20	
Nickel	3.427	1.0						3.327	2.95	20	
Selenium	ND	1.0						0	0	20	
Silver	ND	1.0						0	0	20	
Thallium	ND	1.0						0	0	20	
Vanadium	6.088	1.0						5.739	5.90	20	
Zinc	6.380	1.0						6.681	4.60	20	

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

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CLIENT: Geocon Consultants, Inc.
Work Order: 106451
Project: Hwy 116-GRATON, E8435-06-25

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **106451-042AMS** SampType: **MS** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **7/23/2009** RunNo: **111144**
Client ID: **BH-15-1** Batch ID: **56818** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **7/25/2009** SeqNo: **1751113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	100.816	2.0	125.0	0	80.7	25	106				
Arsenic	106.926	1.0	125.0	2.143	83.8	42	113				
Barium	129.578	1.0	125.0	23.44	84.9	19	140				
Beryllium	107.891	1.0	125.0	0	86.3	50	109				
Cadmium	105.926	1.0	125.0	0.05618	84.7	48	106				
Chromium	120.997	1.0	125.0	8.172	90.3	44	116				
Cobalt	108.609	1.0	125.0	0.9251	86.1	47	107				
Copper	140.965	2.0	125.0	30.70	88.2	49	124				
Lead	129.157	1.0	125.0	24.04	84.1	33	120				
Molybdenum	106.888	1.0	125.0	0	85.5	46	111				
Nickel	110.056	1.0	125.0	3.327	85.4	43	111				
Selenium	103.236	1.0	125.0	0	82.6	43	104				
Silver	105.200	1.0	125.0	0	84.2	53	114				
Thallium	102.584	1.0	125.0	0	82.1	41	107				
Vanadium	116.826	1.0	125.0	5.739	88.9	48	116				
Zinc	112.096	1.0	125.0	6.681	84.3	24	129				

Sample ID: **106451-042AMSD** SampType: **MSD** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **7/23/2009** RunNo: **111144**
Client ID: **BH-15-1** Batch ID: **56818** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **7/25/2009** SeqNo: **1751114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	104.675	2.0	125.0	0	83.7	25	106	100.8	3.76	20	
Arsenic	113.922	1.0	125.0	2.143	89.4	42	113	106.9	6.34	20	
Barium	134.084	1.0	125.0	23.44	88.5	19	140	129.6	3.42	20	
Beryllium	111.793	1.0	125.0	0	89.4	50	109	107.9	3.55	20	
Cadmium	110.373	1.0	125.0	0.05618	88.3	48	106	105.9	4.11	20	
Chromium	131.667	1.0	125.0	8.172	98.8	44	116	121.0	8.45	20	
Cobalt	112.711	1.0	125.0	0.9251	89.4	47	107	108.6	3.71	20	
Copper	146.774	2.0	125.0	30.70	92.9	49	124	141.0	4.04	20	
Lead	139.092	1.0	125.0	24.04	92.0	33	120	129.2	7.41	20	

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

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CLIENT: Geocon Consultants, Inc.
Work Order: 106451
Project: Hwy 116-GRATON, E8435-06-25

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **106451-042AMSD** SampType: **MSD** TestCode: **6010_S** Units: **mg/Kg** Prep Date: **7/23/2009** RunNo: **111144**
Client ID: **BH-15-1** Batch ID: **56818** TestNo: **EPA 6010B** **EPA 3050B** Analysis Date: **7/25/2009** SeqNo: **1751114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	111.583	1.0	125.0	0	89.3	46	111	106.9	4.30	20	
Nickel	114.027	1.0	125.0	3.327	88.6	43	111	110.1	3.54	20	
Selenium	108.055	1.0	125.0	0	86.4	43	104	103.2	4.56	20	
Silver	109.616	1.0	125.0	0	87.7	53	114	105.2	4.11	20	
Thallium	107.111	1.0	125.0	0	85.7	41	107	102.6	4.32	20	
Vanadium	123.892	1.0	125.0	5.739	94.5	48	116	116.8	5.87	20	
Zinc	116.421	1.0	125.0	6.681	87.8	24	129	112.1	3.79	20	

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

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Work Order: 106451
Project: Hwy 116-GRATON, E8435-06-25

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **MB-56820A** SampType: **MBLK** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **7/24/2009** RunNo: **111138**
Client ID: **PBS** Batch ID: **56820** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **7/24/2009** SeqNo: **1750969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.121	5.0									

Sample ID: **LCS-56820** SampType: **LCS** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **7/24/2009** RunNo: **111138**
Client ID: **LCSS** Batch ID: **56820** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **7/24/2009** SeqNo: **1750970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	259.444	5.0	250.0	0.1210	104	80	120				

Sample ID: **106451-010A-DUP** SampType: **DUP** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **7/24/2009** RunNo: **111138**
Client ID: **BH-4-2** Batch ID: **56820** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **7/24/2009** SeqNo: **1750981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	8.318	5.0						7.939	4.66	20	

Sample ID: **106451-010A-MS** SampType: **MS** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **7/24/2009** RunNo: **111138**
Client ID: **BH-4-2** Batch ID: **56820** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **7/24/2009** SeqNo: **1750982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	247.105	5.0	250.0	7.939	95.7	33	120				

Sample ID: **MB-56820B** SampType: **MBLK** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **7/24/2009** RunNo: **111138**
Client ID: **PBS** Batch ID: **56820** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **7/24/2009** SeqNo: **1750983**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	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

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ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: **106451-024A-DUP** SampType: **DUP** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **7/24/2009** RunNo: **111138**
Client ID: **BH-8-1** Batch ID: **56820** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **7/24/2009** SeqNo: **1750994**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	55.907	5.0						51.78	7.67	20	

Sample ID: **106451-024A-MS** SampType: **MS** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **7/24/2009** RunNo: **111138**
Client ID: **BH-8-1** Batch ID: **56820** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **7/24/2009** SeqNo: **1750995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	299.842	5.0	250.0	51.78	99.2	33	120				

Sample ID: **106451-024A-MSD** SampType: **MSD** TestCode: **6010_SPB** Units: **mg/Kg** Prep Date: **7/24/2009** RunNo: **111138**
Client ID: **BH-8-1** Batch ID: **56820** TestNo: **EPA 6010B** **EPA 3050M** Analysis Date: **7/24/2009** SeqNo: **1750996**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	289.708	5.0	250.0	51.78	95.2	33	120	299.8	3.44	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		

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ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: MB-56821A	SampType: MBLK	TestCode: 6010_SPB	Units: mg/Kg	Prep Date: 7/24/2009	RunNo: 111139
Client ID: PBS	Batch ID: 56821	TestNo: EPA 6010B	EPA 3050M	Analysis Date: 7/24/2009	SeqNo: 1750997

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Sample ID: LCS-56821	SampType: LCS	TestCode: 6010_SPB	Units: mg/Kg	Prep Date: 7/24/2009	RunNo: 111139
Client ID: LCSS	Batch ID: 56821	TestNo: EPA 6010B	EPA 3050M	Analysis Date: 7/24/2009	SeqNo: 1750998

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	269.101	5.0	250.0	0	108	80	120				

Sample ID: 106451-037A-DUP	SampType: DUP	TestCode: 6010_SPB	Units: mg/Kg	Prep Date: 7/24/2009	RunNo: 111139
Client ID: BH-13-1	Batch ID: 56821	TestNo: EPA 6010B	EPA 3050M	Analysis Date: 7/24/2009	SeqNo: 1751009

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	50.999	5.0						31.20	48.2	20	R

Sample ID: 106451-037A-MS	SampType: MS	TestCode: 6010_SPB	Units: mg/Kg	Prep Date: 7/24/2009	RunNo: 111139
Client ID: BH-13-1	Batch ID: 56821	TestNo: EPA 6010B	EPA 3050M	Analysis Date: 7/24/2009	SeqNo: 1751010

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	235.481	5.0	250.0	31.20	81.7	33	120				

Sample ID: MB-56821B	SampType: MBLK	TestCode: 6010_SPB	Units: mg/Kg	Prep Date: 7/24/2009	RunNo: 111139
Client ID: PBS	Batch ID: 56821	TestNo: EPA 6010B	EPA 3050M	Analysis Date: 7/24/2009	SeqNo: 1751011

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	5.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
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ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPB

Sample ID: 106451-040A-DUP	SampType: DUP	TestCode: 6010_SPB	Units: mg/Kg	Prep Date: 7/24/2009	RunNo: 111139
Client ID: BH-14-2	Batch ID: 56821	TestNo: EPA 6010B	EPA 3050M	Analysis Date: 7/24/2009	SeqNo: 1751015

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	4.277	5.0						4.294	0	20	

Sample ID: 106451-040A-MS	SampType: MS	TestCode: 6010_SPB	Units: mg/Kg	Prep Date: 7/24/2009	RunNo: 111139
Client ID: BH-14-2	Batch ID: 56821	TestNo: EPA 6010B	EPA 3050M	Analysis Date: 7/24/2009	SeqNo: 1751016

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	231.601	5.0	250.0	4.294	90.9	33	120				

Sample ID: 106451-040A-MSD	SampType: MSD	TestCode: 6010_SPB	Units: mg/Kg	Prep Date: 7/24/2009	RunNo: 111139
Client ID: BH-14-2	Batch ID: 56821	TestNo: EPA 6010B	EPA 3050M	Analysis Date: 7/24/2009	SeqNo: 1751017

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	224.876	5.0	250.0	4.294	88.2	33	120	231.6	2.95	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		

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ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_ST

Sample ID: **MB-56899** SampType: **MBLK** TestCode: **6010_ST** Units: **mg/L** Prep Date: RunNo: **111297**
Client ID: **PBS** Batch ID: **R111297** TestNo: **WET/ EPA 60** Analysis Date: **7/30/2009** SeqNo: **1753871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	0.050									
Lead	ND	0.050									

Sample ID: **LCS-56899** SampType: **LCS** TestCode: **6010_ST** Units: **mg/L** Prep Date: RunNo: **111297**
Client ID: **LCSS** Batch ID: **R111297** TestNo: **WET/ EPA 60** Analysis Date: **7/30/2009** SeqNo: **1753872**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.937	0.050	1.000	0	93.7	85	115				
Lead	1.007	0.050	1.000	0	101	85	115				

Sample ID: **106451-036ADUP** SampType: **DUP** TestCode: **6010_ST** Units: **mg/L** Prep Date: RunNo: **111297**
Client ID: **BH-13-0** Batch ID: **R111297** TestNo: **WET/ EPA 60** Analysis Date: **7/30/2009** SeqNo: **1753882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.136	1.0						0.1327	0	20	
Lead	4.270	1.0						4.167	2.44	20	

Sample ID: **106451-036AMS** SampType: **MS** TestCode: **6010_ST** Units: **mg/L** Prep Date: RunNo: **111297**
Client ID: **BH-13-0** Batch ID: **R111297** TestNo: **WET/ EPA 60** Analysis Date: **7/30/2009** SeqNo: **1753883**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2.467	1.0	2.500	0.1327	93.4	77	116				
Lead	6.097	1.0	2.500	4.167	77.2	71	121				

Sample ID: **106451-036AMSD** SampType: **MSD** TestCode: **6010_ST** Units: **mg/L** Prep Date: RunNo: **111297**
Client ID: **BH-13-0** Batch ID: **R111297** TestNo: **WET/ EPA 60** Analysis Date: **7/30/2009** SeqNo: **1753884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2.555	1.0	2.500	0.1327	96.9	77	116	2.467	3.50	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		

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ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_ST

Sample ID: **106451-036AMSD** SampType: **MSD** TestCode: **6010_ST** Units: **mg/L** Prep Date: RunNo: **111297**
Client ID: **BH-13-0** Batch ID: **R111297** TestNo: **WET/ EPA 60** Analysis Date: **7/30/2009** SeqNo: **1753884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	6.678	1.0	2.500	4.167	100	71	121	6.097	9.10	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		

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ANALYTICAL QC SUMMARY REPORT

TestCode: 7471_S

Sample ID: **MB-56773** SampType: **MBLK** TestCode: **7471_S** Units: **mg/Kg** Prep Date: **7/22/2009** RunNo: **111055**
Client ID: **PBS** Batch ID: **56773** TestNo: **EPA 7471A** Analysis Date: **7/22/2009** SeqNo: **1749030**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.10									

Sample ID: **LCS-56773** SampType: **LCS** TestCode: **7471_S** Units: **mg/Kg** Prep Date: **7/22/2009** RunNo: **111055**
Client ID: **LCSS** Batch ID: **56773** TestNo: **EPA 7471A** Analysis Date: **7/22/2009** SeqNo: **1749031**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.861	0.10	0.8300	0	104	80	120				

Sample ID: **106478-042A-MS** SampType: **MS** TestCode: **7471_S** Units: **mg/Kg** Prep Date: **7/22/2009** RunNo: **111055**
Client ID: **ZZZZZZ** Batch ID: **56773** TestNo: **EPA 7471A** Analysis Date: **7/22/2009** SeqNo: **1749032**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.845	0.10	0.8300	0.04994	95.7	70	130				

Sample ID: **106478-042A-MSD** SampType: **MSD** TestCode: **7471_S** Units: **mg/Kg** Prep Date: **7/22/2009** RunNo: **111055**
Client ID: **ZZZZZZ** Batch ID: **56773** TestNo: **EPA 7471A** Analysis Date: **7/22/2009** SeqNo: **1749033**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.816	0.10	0.8300	0.04994	92.3	70	130	0.8446	3.49	20	

Sample ID: **106478-042A-DUP** SampType: **DUP** TestCode: **7471_S** Units: **mg/Kg** Prep Date: **7/22/2009** RunNo: **111055**
Client ID: **ZZZZZZ** Batch ID: **56773** TestNo: **EPA 7471A** Analysis Date: **7/22/2009** SeqNo: **1749035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.048	0.10						0.04994	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		

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ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: MB-56787	SampType: MBLK	TestCode: 8081_S	Units: µg/Kg	Prep Date: 7/22/2009	RunNo: 111072
Client ID: PBS	Batch ID: 56787	TestNo: EPA 8081A	EPA 3550B	Analysis Date: 7/22/2009	SeqNo: 1749363

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDD	ND	2.0									
4,4'-DDE	ND	2.0									
4,4'-DDT	ND	2.0									
Aldrin	ND	1.0									
alpha-BHC	ND	1.0									
alpha-Chlordane	ND	1.0									
beta-BHC	ND	1.0									
Chlordane	ND	8.5									
delta-BHC	ND	1.0									
Dieldrin	ND	2.0									
Endosulfan I	ND	1.0									
Endosulfan II	ND	2.0									
Endosulfan sulfate	ND	2.0									
Endrin	ND	2.0									
Endrin aldehyde	ND	2.0									
Endrin ketone	ND	2.0									
gamma-BHC	ND	1.0									
gamma-Chlordane	ND	1.0									
Heptachlor	ND	1.0									
Heptachlor epoxide	ND	1.0									
Methoxychlor	ND	5.0									
Toxaphene	ND	50									
Surr: Tetrachloro-m-xylene	15.663		16.67		94.0	25	115				
Surr: Decachlorobiphenyl	16.562		16.67		99.4	20	142				

Sample ID: LCS-56787	SampType: LCS	TestCode: 8081_S	Units: µg/Kg	Prep Date: 7/22/2009	RunNo: 111072
Client ID: LCSS	Batch ID: 56787	TestNo: EPA 8081A	EPA 3550B	Analysis Date: 7/22/2009	SeqNo: 1749364

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aldrin	14.566	1.0	16.67	0	87.4	59	113				

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		

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Project: Hwy 116-GRATON, E8435-06-25

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: **LCS-56787** SampType: **LCS** TestCode: **8081_S** Units: **µg/Kg** Prep Date: **7/22/2009** RunNo: **111072**
Client ID: **LCSS** Batch ID: **56787** TestNo: **EPA 8081A** **EPA 3550B** Analysis Date: **7/22/2009** SeqNo: **1749364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dieldrin	14.558	2.0	16.67	0	87.3	59	108				
Endrin	14.284	2.0	16.67	0	85.7	41	132				
gamma-BHC	14.675	1.0	16.67	0	88.0	60	111				
Heptachlor	13.614	1.0	16.67	0	81.7	62	108				
Surr: Tetrachloro-m-xylene	13.838		16.67		83.0	25	115				
Surr: Decachlorobiphenyl	13.705		16.67		82.2	20	142				

Sample ID: **106447-065AMS** SampType: **MS** TestCode: **8081_S** Units: **µg/Kg** Prep Date: **7/22/2009** RunNo: **111072**
Client ID: **ZZZZZZ** Batch ID: **56787** TestNo: **EPA 8081A** **EPA 3550B** Analysis Date: **7/22/2009** SeqNo: **1749365**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDT	14.136	2.0	16.67	0.7403	80.4	29	143				
Aldrin	13.053	1.0	16.67	0	78.3	44	131				
Dieldrin	15.092	2.0	16.67	0	90.5	40	136				
Endrin	14.867	2.0	16.67	0	89.2	41	146				
gamma-BHC	12.179	1.0	16.67	0	73.1	45	129				
Heptachlor	12.673	1.0	16.67	0	76.0	48	126				
Surr: Tetrachloro-m-xylene	10.931		16.67		65.6	25	115				
Surr: Decachlorobiphenyl	14.086		16.67		84.5	20	142				

Sample ID: **106447-065AMSD** SampType: **MSD** TestCode: **8081_S** Units: **µg/Kg** Prep Date: **7/22/2009** RunNo: **111072**
Client ID: **ZZZZZZ** Batch ID: **56787** TestNo: **EPA 8081A** **EPA 3550B** Analysis Date: **7/22/2009** SeqNo: **1749366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDT	12.463	2.0	16.67	0.7403	70.3	29	143	14.14	12.6	20	
Aldrin	11.261	1.0	16.67	0	67.6	44	131	13.05	14.7	20	
Dieldrin	13.651	2.0	16.67	0	81.9	40	136	15.09	10.0	20	
Endrin	13.658	2.0	16.67	0	81.9	41	146	14.87	8.48	20	
gamma-BHC	11.265	1.0	16.67	0	67.6	45	129	12.18	7.79	20	
Heptachlor	11.352	1.0	16.67	0	68.1	48	126	12.67	11.0	20	

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

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Work Order: 106451
Project: Hwy 116-GRATON, E8435-06-25

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: **106447-065AMSD** SampType: **MSD** TestCode: **8081_S** Units: **µg/Kg** Prep Date: **7/22/2009** RunNo: **111072**
Client ID: **ZZZZZZ** Batch ID: **56787** TestNo: **EPA 8081A** **EPA 3550B** Analysis Date: **7/22/2009** SeqNo: **1749366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Tetrachloro-m-xylene	10.256		16.67		61.5	25	115		0	0	
Surr: Decachlorobiphenyl	13.761		16.67		82.5	20	142		0	0	

Sample ID: **106447-066ADUP** SampType: **DUP** TestCode: **8081_S** Units: **µg/Kg** Prep Date: **7/22/2009** RunNo: **111072**
Client ID: **ZZZZZZ** Batch ID: **56787** TestNo: **EPA 8081A** **EPA 3550B** Analysis Date: **7/22/2009** SeqNo: **1749373**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDD	ND	2.0						0	0	20	
4,4'-DDE	ND	2.0						0	0	20	
4,4'-DDT	1.139	2.0						1.042	0	20	
Aldrin	ND	1.0						0	0	20	
alpha-BHC	ND	1.0						0	0	20	
alpha-Chlordane	ND	1.0						0	0	20	
beta-BHC	ND	1.0						0	0	20	
Chlordane	ND	8.5						0	0	20	
delta-BHC	ND	1.0						0	0	20	
Dieldrin	ND	2.0						0	0	20	
Endosulfan I	ND	1.0						0	0	20	
Endosulfan II	ND	2.0						0	0	20	
Endosulfan sulfate	ND	2.0						0	0	20	
Endrin	ND	2.0						0	0	20	
Endrin aldehyde	ND	2.0						0	0	20	
Endrin ketone	ND	2.0						0	0	20	
gamma-BHC	ND	1.0						0	0	20	
gamma-Chlordane	ND	1.0						0	0	20	
Heptachlor	ND	1.0						0	0	20	
Heptachlor epoxide	ND	1.0						0	0	20	
Methoxychlor	ND	5.0						0	0	20	
Toxaphene	ND	50						0	0	20	
Surr: Tetrachloro-m-xylene	10.390		16.67		62.3	25	115		0	0	

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: 106451
Project: Hwy 116-GRATON, E8435-06-25

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_S

Sample ID: **106447-066ADUP** SampType: **DUP** TestCode: **8081_S** Units: **µg/Kg** Prep Date: **7/22/2009** RunNo: **111072**
Client ID: **ZZZZZZ** Batch ID: **56787** TestNo: **EPA 8081A** **EPA 3550B** Analysis Date: **7/22/2009** SeqNo: **1749373**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Decachlorobiphenyl	15.042		16.67		90.2	20	142		0	0	

Sample ID: **106451-006ADUP** SampType: **DUP** TestCode: **8081_S** Units: **µg/Kg** Prep Date: **7/22/2009** RunNo: **111072**
Client ID: **BH-3-0** Batch ID: **56787** TestNo: **EPA 8081A** **EPA 3550B** Analysis Date: **7/22/2009** SeqNo: **1749377**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4'-DDD	ND	2.0						0	0	20	
4,4'-DDE	ND	2.0						0	0	20	
4,4'-DDT	ND	2.0						0	0	20	
Aldrin	ND	1.0						0	0	20	
alpha-BHC	ND	1.0						0	0	20	
alpha-Chlordane	ND	1.0						0	0	20	
beta-BHC	ND	1.0						0	0	20	
Chlordane	ND	8.5						0	0	20	
delta-BHC	ND	1.0						0	0	20	
Dieldrin	ND	2.0						0	0	20	
Endosulfan I	ND	1.0						0	0	20	
Endosulfan II	ND	2.0						0	0	20	
Endosulfan sulfate	ND	2.0						0	0	20	
Endrin	ND	2.0						0	0	20	
Endrin aldehyde	ND	2.0						0	0	20	
Endrin ketone	ND	2.0						0	0	20	
gamma-BHC	ND	1.0						0	0	20	
gamma-Chlordane	ND	1.0						0	0	20	
Heptachlor	ND	1.0						0	0	20	
Heptachlor epoxide	ND	1.0						0	0	20	
Methoxychlor	ND	5.0						0	0	20	
Toxaphene	ND	50						0	0	20	
Surr: Tetrachloro-m-xylene	10.853		16.67		65.1	25	115		0	0	
Surr: Decachlorobiphenyl	11.363		16.67		68.2	20	142		0	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

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

CLIENT: Geocon Consultants, Inc.
Work Order: 106451
Project: Hwy 116-GRATON, E8435-06-25

ANALYTICAL QC SUMMARY REPORT

TestCode: 9045_S

Sample ID: **106451-014ADUP**	SampType: **DUP**	TestCode: **9045_S**	Units: **pH Units**	Prep Date:	RunNo: **110989**							
Client ID: **BH-6-1**	Batch ID: **R110989**	TestNo: **EPA 9045C**		Analysis Date: **7/21/2009**	SeqNo: **1747280**							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
pH	7.740	0.10						7.710	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		

CHAIN OF CUSTODY RECORD

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

FOR LABORATORY USE ONLY:

P.O.#:
Logged By: Date: 07/20/09

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

Sample Condition Upon Receipt
1. CHILLED 2.9.7 Y☐ N☒ 4. SEALED Y☐ N☐
2. HEADSPACE (VOA) N/A Y☐ N☐ 5. # OF SPLS MATCH COC Y☐ N☐
3. CONTAINER INTACT Y☐ N☐ 6. PRESERVED Y☐ N☐

Client: GEOCON
Attn: D. WATTS
Address: 6671 BRISA St
City LIVERMORE State CA Zip Code 94550
TEL: (925) 371-5900
FAX: (") " 5915

Project Name: Hwy 116 - GRATON Project #: E8435-06-25 Sampler: (Printed Name) D. WATTS (Signature) [signature]

Relinquished by: (Signature and Printed Name) [signature] Date: 17 July 2009 Time: 1530 Received by: (Signature and Printed Name) UPS Date: 17 July 2009 Time: 1530
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) [signature] Date: 07/20/09 Time: 9:30
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: D. WATTS 17 July 09
Print Name Date
Signature

Send Report To:
Attn:
Co: SEE "CLIENT"
Address
City State Zip

Bill To:
Attn:
Co: →
Address
City State Zip

Special Instructions/Comments:
Run WETS on all samples with potential to fail CA STLC

PLEASE RETURN ALL GEOCON COOLERS

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

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

Circle or Add Analysis(es) Requested

ITEM	LAB USE ONLY: Batch #: Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal) - Pb	8015B (GRO) / 8020 (BTEX)	8015B (DRO)	8021 (BTEX)	TITLE 22 / CAM 17 (6010 / 7000)	pH (9045)	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	106451-001	BH - 1 - 0	7/17/09	1236	X			X	X				X	X	X				E	1	T P	C	
	002	- 1 - 1		↓				X	X				X	X									
	003	- 2 - 0		1246				X	X				X	X									
	004	- 2 - 1		↓				X	X				X	X									
	005	- 2 - 2		↓				X	X				X	X									
	006	- 3 - 0		1221	X			X	X				X	X									
	007	- 3 - 1		↓				X	X				X	X									
	008	- 4 - 0		1301				X	X				X	X									
	009	- 4 - 1		↓				X	X				X	X									
	010	- 4 - 2		↓				X	X				X	X									

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

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

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

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

QA/QC: RTNE ☐ CT ☒ SWRCB ☐ Logcode ____ OTHER ____

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

CHAIN OF CUSTODY RECORD

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

FOR LABORATORY USE ONLY:

P.O.#: _____

Logged By: _____ Date: _____

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

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

Client: GEOCON
Attn: D. WATTS
Address: 6671 BRISA St
City LIVERMORE State CA Zip Code 94550
TEL: (925) 371-5900
FAX: (") " 5915

Project Name: Hwy 116 - GRATON Project #: E8435-06-25 Sampler: (Printed Name) D. WATTS (Signature)

Relinquished by: (Signature and Printed Name) WATTS Date: 17 July 2009 Time: 1530 Received by: (Signature and Printed Name) UPS Date: 17 July 2009 Time: 1530
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: D. WATTS 17 July 09
Print Name Date
Signature

Send Report To: Attn: _____ Co: SEE "CLIENT" Address _____ City _____ State _____ Zip _____

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

Special Instructions/Comments: PLEASE RETURN ALL GEOCON COOLERS

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

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

Circle or Add Analysis(es) Requested: 8081A (Pesticides), 8082 (PCB), 8260B (Volatiles), 8270C (BNA), 6010B (Total Metal) - Pb, 8015B (GRO) / 8020 (BTEX), 8015B (DRO), 8021 (BTEX), TITLE 22 / CAM 17 (6010 / 7000), pH (9045)

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

QA/QC: RTNE ☐ CT ☒ SWRCB ☐ Logcode ____ OTHER ____

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal) - Pb	8015B (GRO) / 8020 (BTEX)	8015B (DRO)	8021 (BTEX)	TITLE 22 / CAM 17 (6010 / 7000)	pH (9045)	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	10645-011	BH - 5 - 0	7/17/09	1211								X			X				E	1	T P	C	
	012	- 5 - 1		↓								X											
	013	- 6 - 0		1031	X			X					X										
	014	- 6 - 1		1034				X					X										
	015	- 6 - 2		1036				X					X										
	016	- 6 - 6		1041								X											
	017	- 6 - 9.5		1046				X															
	018	- 7 - 0		0940				X															
	019	- 7 - 1		0940				X															
	020	- 7 - 2		0955				X															

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

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

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

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.#: _____

Logged By: _____ Date: _____

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

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

Client: GEOCON
Attn: D. WATTS
Address: 6671 BRISA ST
City LIVERMORE State CA Zip Code 94550
TEL: (925) 371-5900
FAX: (") " 5915

Project Name: Hwy 116 – GRATON Project #: E8435-06-25 Sampler: (Printed Name) D. WATTS (Signature)

Relinquished by: (Signature and Printed Name) WATT Date: 17 July 2009 Time: 1530 Received by: (Signature and Printed Name) UPS Date: 17 July 2009 Time: 1530
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: D. WATTS 17 July 09
Print Name Date
Signature

Send Report To: Attn: _____ Co: SEE "CLIENT" Address _____ City _____ State _____ Zip _____

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

Special Instructions/Comments: PLEASE RETURN ALL GEOCON COOLERS

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

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

Circle or Add Analysis(es) Requested

ITEM	LAB USE ONLY: Batch #: Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal) -Pb	8015B (GRO) / 8020 (BTEX)	8015B (DRO)	8021 (BTEX)	TITLE 22 / CAM 17 (6010 / 7000)	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	106451-021	BH – 7 – 6	9/7/09	1000								X		X				E	1	T/P	C	
	022	– 7 – 9.5		1005				X														
	023	– 8 – 0		1051	X			X														
	024	– 8 – 1						X														
	025	– 8 – 2						X														
	026	– 9 – 0		1207				X														
	027	– 9 – 1						X														
	028	– 10 – 0		1111	X							X										
	029	– 10 – 1		1111								X										
	030	– 10 – 2		11:4								X										

QA/QC: RTNE ☐ CT ☒ SWRCB ☐ Logcode _____ OTHER _____

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

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

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

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

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

CHAIN OF CUSTODY RECORD

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

FOR LABORATORY USE ONLY:

P.O.#: _____

Logged By: _____ Date: _____

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

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

Client: GEOCON
Attn: D. WATTS
Address: 6671 BRISA ST
City: LIVERMORE State: CA Zip Code: 94550
TEL: (925) 371-5900
FAX: (") " 5915

Project Name: Hwy 116 - GRATON Project #: E8435-06-25 Sampler: (Printed Name) D. WATTS (Signature)

Relinquished by: (Signature and Printed Name) WATTS Date: 17 July 2009 Time: 1530 Received by: (Signature and Printed Name) UPS Date: 17 July 2009 Time: 1530

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: D. WATTS 17 July 09
Print Name Date
Signature

Send Report To:
Attn: _____
Co: SEE "CLIENT"
Address _____
City _____ State _____ Zip _____

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

Special Instructions/Comments:
PLEASE RETURN ALL GEOCON COOLERS

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

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

Circle or Add Analysis(es) Requested

QA/QC: RTNE ☐ CT ☒ SWRCB ☐ Logcode _____ OTHER _____

ITEM	LAB USE ONLY: Batch #: Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal) - Pb	8015B (GRO) / 8020 (BTEX)	8015B (DRO)	8021 (BTEX)	TITLE 22 / CAM 17 (6010 / 7000)	pH (9045)	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	106451-031	BH - 11 - 0	7/17/09	1201	X			X					X		X				E	1	TP	C	
	032	- 11 - 1		↓				X															
	033	- 12 - 0		1120				X															
	034	- 12 - 1		1120				X															
	035	- 12 - 2		1122				X															
	036	- 13 - 0		1154	X			X															
	037	- 13 - 1		1156				X															
	038	- 14 - 0		1134				X															
	039	- 14 - 1						X															
	040	- 14 - 2						X															

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

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

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

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

[illegible] th re[illegible] Yellow [illegible] der, [illegible] o sub[illegible]

CHAIN OF CUSTODY RECORD

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

FOR LABORATORY USE ONLY:

P.O.#: _____

Logged By: _____ Date: _____

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

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

Client: GEOCON
Attn: D. WATTS
Address: 6671 BRISA ST
City: LIVERMORE State: CA Zip Code: 94550
TEL: (925) 371-5900
FAX: (") " 5915

Project Name: Hwy 116 - Graton Project #: E8435-06-25 Sampler: (Printed Name) D. WATTS (Signature)

Relinquished by: (Signature and Printed Name) [signature] Date: 17 July 2009 Time: 1530 Received by: (Signature and Printed Name) [signature] Date: 17 July 2009 Time: 1530

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:
D. WATTS — Print Name
17 July 09 — Date
Signature

Send Report To:
Attn: _____
Co: SEE "CLIENT"
Address _____
City _____ State _____ Zip _____

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

Special Instructions/Comments:
PLEASE RETURN ALL GEOCON LOGERS

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

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

Circle or Add Analysis(es) Requested

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal)	8015B (GRO) / 8020 (BTEX)	8015B (DRO)	8021 (BTEX)	TITLE 22 / CAM 17 (6010 / 7000)	SPECIFY APPROPRIATE MATRIX: SOIL	WATER	GROUND WATER	WASTEWATER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	10645-041	BH-15-0	7/17/09	1147	X							X		X				E	1	T P	C	
	042	BH-15-1	↓	↓								X		X				E	1	↓	C	

QA/QC: RTNE ☐ CT ☒ SWRCB ☐ Logcode _____ OTHER _____

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

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

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

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

Yellow to folder, Pink to submitter

APPENDIX C

DESCRIPTION OF DATA SET

Project Name:	Highway 116 Graton
Project No.:	E8435-06-25
Sample Interval:	0.0 to 1.0 ft
	ADL

DATA SET STATISTICS

Number of Valid Samples	15
Number of Distinct Samples	14
Minimum	2.5
Maximum	73
Mean	26.85333333
Median	17
Standard Deviation	23.61875365
Variance	557.8455238
Coefficient of Variation	0.879546437
Skewness	0.828984956
Mean of log data	2.826185848
Standard Deviation of log data	1.09812881
90% Non-parametric UCLs	
Standard Bootstrap UCL	34.45695214
95% Non-parametric UCLs	
Standard Bootstrap UCL	36.59510056

DESCRIPTION OF DATA SET

Project Name:	Highway 116 Graton
Project No.:	E8435-06-25
Sample Interval:	1.0 to 2.0 ft
	ADL

DATA SET STATISTICS

Number of Valid Samples	15
Number of Distinct Samples	12
Minimum	2.5
Maximum	52
Mean	17.33333333
Median	8.5
Standard Deviation	15.854727
Variance	251.372381
Coefficient of Variation	0.914696
Skewness	0.761872
Mean of log data	2.326838
Standard Deviation of log data	1.145636
90% Non-parametric UCLs	
Standard Bootstrap UCL	22.32798925
95% Non-parametric UCLs	
Standard Bootstrap UCL	23.89253031

APPENDIX C

Sample ID	Arsenic	Vanadium	Chromium	Lead
BH-5-0	0.5	36	56	54
BH-5-1	0.5	13	18	4.3
BH-6-6	3.0	31	35	5.4
BH-7-6	2.8	15	18	5.0
BH-10-0	0.5	22	21	23
BH-10-1	2.1	14	22	5.5
BH-10-2	1.7	13	16	5.2
BH-15-0	0.5	27	14	8.3
BH-15-1	2.1	5.7	8.2	24

Arsenic	
Number of Valid Observations	9
Number of Distinct Observations	5
Minimum	0.5
Maximum	3
Mean	1.52
Median	1.7
Standard Deviation	1.043
Variance	1.087
Coefficient of Variation	0.685
Skewness	0.203
Mean of log data	0.152
Standard Deviation of log data	0.819
90% Standard Bootstrap UCL	1.944
95% Standard Bootstrap UCL	2.059

Vanadium	
Number of Valid Observations	9
Number of Distinct Observations	8
Minimum	5.7
Maximum	36
Mean	19.63
Median	15
Standard Deviation	9.952
Variance	99.035
Coefficient of Variation	0.507
Skewness	0.440
Mean of log data	2.847
Standard Deviation of log data	0.569
90% Standard Bootstrap UCL	23.673
95% Standard Bootstrap UCL	24.718

Chromium	
Number of Valid Observations	9
Number of Distinct Observations	8
Minimum	8.2
Maximum	56
Mean	23.13
Median	18
Standard Deviation	14.304
Variance	204.610
Coefficient of Variation	0.618
Skewness	1.781
Mean of log data	3.001
Standard Deviation of log data	0.545
90% Standard Bootstrap UCL	28.787
95% Standard Bootstrap UCL	30.503

Lead	
Number of Valid Observations	9
Number of Distinct Observations	9
Minimum	4.3
Maximum	54
Mean	14.97
Median	5.5
Standard Deviation	16.598
Variance	275.478
Coefficient of Variation	1.109
Skewness	1.953
Mean of log data	2.281
Standard Deviation of log data	0.915
90% Standard Bootstrap UCL	21.745
95% Standard Bootstrap UCL	23.801