

# PRELIMINARY SITE INVESTIGATION REPORT

## SANTA BARBARA HOV LANE PROJECT STATE ROUTE 101, POST MILE 2.0-12.3 SANTA BARBARA COUNTY, CALIFORNIA

PREPARED FOR:

CALIFORNIA DEPARTMENT OF TRANSPORTATION  
DISTRICT 5  
50 HIGUERA STREET  
SAN LUIS OBISPO, CALIFORNIA



PREPARED BY:

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**GEOCON**

GEOCON PROJECT NO. S9200-06-81  
CALTRANS EA 05-0N7000

JUNE 2010



Project No. S9200-06-81  
June 30, 2010

Mr. Jim Tkach  
California Department of Transportation - District 5  
50 Higuera Street  
San Luis Obispo, California 93401

Subject: SOUTH COAST STATE ROUTE 101 HOV PROJECT  
STATE ROUTE 101 (SOUTH OF CARPINTERIA CREEK TO SYCAMORE CREEK)  
POST MILE SB-101 2.0 TO 12.3  
SANTA BARBARA COUNTY, CALIFORNIA  
CONTRACT NO. 06A1141, TASK ORDER NO. 81, EA NO. 05-0N7000  
PRELIMINARY SITE INVESTIGATION

Dear Mr. Tkach:

In accordance with California Department of Transportation (Caltrans) Contract No. 06A1141, Task Order Number 81 (TO-81), and Expense Authorization (EA) 05-0N7000, Geocon Consultants, Inc. has performed environmental engineering services for the proposed South Coast State Route 101 HOV Project located in Santa Barbara County, California. The accompanying report summarizes the services performed, including the advancement of soil borings, soil and groundwater sampling, and laboratory analysis.

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

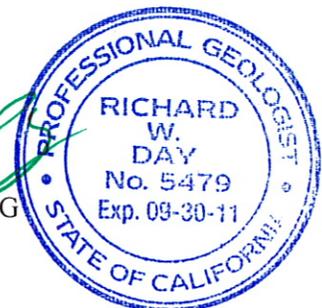
Please contact us if there are any questions concerning the contents of this report or if we may be of further service.

Sincerely,

**GEOCON CONSULTANTS, INC.**

Lauren Vigliotti  
Senior Staff Geologist

Richard Day, CEG, CHG  
Project Manager



(15 + 2 CDs)      Addressee

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# PRELIMINARY SITE INVESTIGATION REPORT

## 1.0 INTRODUCTION

This Preliminary Site Investigation Report for the South Coast State Route (SR) 101 High Occupancy Vehicle (HOV) Project was prepared by Geocon Consultants, Inc. under California Department of Transportation (Caltrans) Contract No. 06A1141, Task Order Number 81 (TO-81), and Expense Authorization (EA) 05-0N7000.

### 1.1 Project Description and Proposed Improvements

The purpose of the South Coast SR 101 HOV Project is to reduce congestion on SR 101 from the City of Carpinteria to the City of Santa Barbara. Planned highway improvements include widening the existing four-lane freeway to six lanes by adding an HOV lane in each direction between Post Miles (PM) 2.0 and 12.3. The proposed project currently includes three build alternatives and a no build alternative. Alternative 1 proposes to add the HOV lanes while balancing outside and inside (median) landscaping impacts. Alternative 2 proposes to add the HOV lanes while maximizing the amount of median planting within the project limits. Alternative 3 proposes to add the HOV lanes within the existing median with minor incidental outside widening. Each of the alternatives incorporate design options to include auxiliary lanes in short weave sections where warranted by design criteria and traffic study recommendations. SR 101 HOV Project Alternatives 1 through 3 are planned within existing State right-of-way (ROW). The project location is depicted on the Vicinity Map, Figure 1.

### 1.2 General Objectives

We previously prepared an Initial Site Assessment (ISA) for the project dated June 29, 2009, and an ISA Addendum, dated June 23, 2010. The ISA and ISA Addendum provided a summary of potential contaminated properties identified within the defined Environmental Study Area (ESA) that may impact selection of design alternatives, temporary construction easements, and planned construction activities. We recommended additional site investigations within the Caltrans ROW near identified potentially contaminated properties prior to road widening and in areas with potential soil impacts from aerially deposited lead (ADL).

Based on information obtained for the ISA Addendum provided by Caltrans, 4 of the 16 potential contaminated properties originally categorized in the ISA as medium risk were re-evaluated to low risk status. We provided revised recommendations for preliminary site investigations near the 12 potentially contaminated properties with medium and high risk impacts to the proposed Santa Barbara SR-101 HOV Project, which included the following properties:

- Former Shell Service Station, 1000 Coast Village Road, Montecito (ISA Map ID No. 1)
- Chevron Station, 1085 Coast Village Road, Montecito (ISA Map ID No. 5)
- Carpinteria Fire Station No. 2, 2375 Lillie Avenue, Montecito (ISA Map ID No. 10)
- Gallup and Stribling, 3450 Via Real, Carpinteria (ISA Map ID No. 11)
- S.B. Harley-Davidson, 3501-3508 Via Real, Carpinteria (ISA Map ID No. 12)
- Corvette Shop, 3651 Via Real, Carpinteria (ISA Map ID No. 13)
- McCormix Corporation, 3663 Via Real, Carpinteria (ISA Map ID 14)
- Sandyland Nursery, 3890 Via Real, Carpinteria (ISA Map ID No. 17)
- Ocean Breeze Int'l, 3910 Via Real, Carpinteria (ISA Map ID No. 18)
- Chevron Station 9-3005, 4290 Via Real, Carpinteria (ISA Map ID No. 19)
- Unocal Service Station, 4401 Via Real, Carpinteria (ISA Map ID No. 21)
- Iron Oil Tank and Historical Service Station "Oil and Gas", Southwest corner of State Highway (Lillie Avenue) and Beighle (Valencia Road) (ISA Map ID No. 27)

We recommended that preliminary site investigations be performed to further evaluate: 1) potential and documented environmental impairments within the selected alternative project boundaries, 2) the impact on project costs, 3) potential responsible party liability, 4) management and disposal options of potentially contaminated soil, groundwater, and materials, and 5) construction worker health and safety requirements.

Recommended options for preliminary site investigations included (but were not limited to) soil and groundwater sampling, geophysical investigations, bridge surveys, and field condition evaluations/meetings, as appropriate. Further evaluation of groundwater quality within the project ESA may be conducted to determine potential liability associated with known or identified impairments to the existing ROW, for potential cost recovery, and where groundwater extraction/dewatering may be required for deep foundation construction for planned structure improvements.

TO-81 included Asbestos Containing Materials/Lead Containing Paint (ACM/LCP) surveys of bridge structures planned for improvements at the project location. The results of the ACM/LCP surveys were provided in our report entitled, *South Coast 101 HOV Lanes Between 0.44 Mile South of Carpinteria Creek, Carpinteria, and Sycamore Creek in Santa Barbara, Santa Barbara County, California, Contract No. 06A1141, Task Order No. 81, EA No. 05-0N7000, Asbestos and Lead Containing Paint Survey Report*, dated February 26, 2010.

Caltrans will use investigative results for preliminary project scoping, and to inform project construction contractor(s) of identified and potential hazardous substance impacts within the project boundaries and for construction worker health and safety, material management, and soil/groundwater disposal option evaluation purposes.

### **1.3 Hazardous Waste Criteria**

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

For waste containing metals, the waste is classified as California hazardous when: 1) the total metal content equals or exceeds the respective Total Threshold Limit Concentration (TTLC); or 2) the soluble metal content equals or exceeds the respective Soluble Threshold Limit Concentration (STLC) based on the standard Waste Extraction Test (WET). A waste has the potential of exceeding the STLC when the waste's total metal content is greater than or equal to ten times the respective STLC value since the WET uses a 1:10 dilution ratio. Hence, when a total metal is detected at a concentration greater than or equal to ten times the respective STLC, and assuming that 100 percent of the total metals are soluble, soluble metal analysis is required. A material is classified as RCRA hazardous, or Federal hazardous, when the soluble metal content equals or exceeds the Federal regulatory level based on the Toxicity Characteristic Leaching Procedure (TCLP).

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

### **1.4 Regulatory Guidance**

The Santa Barbara County Fire Protection District (FPD) has prepared the *Leaking Underground Storage Tank and Site Mitigation Unit Manual (LUFT and SMU Manual)*, dated January 2007, "to aid responsible parties, their consultants, and others who perform environmental investigations and cleanups within Santa Barbara County." The U.S. Environmental Protection Agency (USEPA) and California Department of Health Services (DHS) have developed maximum contaminant levels (MCLs), Action Levels (ALs), and Regional Screening Levels (RSLs) [developed by EPA Regions 3, 6 and 9].

According to the *LUFT and SMU Manual*, FPD cleanup objectives for groundwater are based on the MCLs or DHS Action Levels, and cleanup objectives for soil include Preliminary Remediation Goals (PRGs) developed by USEPA Region 9 (note: USEPA replaced PRGs with RSLs in December 2009). The FPD soil cleanup objectives are divided into two criteria: those that are protective of groundwater (based on MCLs and DHS Action Levels), and those that are protective of health (based on RSLs). Cleanup to residential RSLs allows for unrestricted land use whereas cleanup to industrial RSLs will typically require some type of land use restriction. FPD investigation levels presented in Appendix F of the *LUFT and SMU Manual* are listed at the bottom of Tables 2 through 5 for comparative purposes.

## **2.0 SCOPE OF SERVICES**

We performed the following scope of services as requested by Caltrans in TO-81:

### **2.1 Pre-field Activities**

- An onsite TO meeting was conducted on April 21, 2010 (attended by Caltrans Task Order Manager, Jim Tkach, and Geocon representative, Chris Merritt). The purpose of the TO meeting was to identify and discuss the project boundaries and existing site conditions, and to review the scope of work.
- Prepared a *Health and Safety Plan* dated April 2010, to provide guidelines on the use of personal protective equipment and the health and safety procedures implemented during the field activities.
- Retained the services of Advanced Geological Services (AGS) to perform a geophysical survey at the Site.
- Retained the services of Advanced Technology Laboratories (ATL) to perform the chemical analysis of soil and groundwater samples.
- Notified Underground Service Alert (USA) at least 48 hours prior to fieldwork.

### **2.2 Field Activities**

Field activities were completed on May 11 and 12, 2010, and included the following:

- Oversaw AGS complete a geophysical survey for a suspected underground storage tank on Caltrans ROW, associated with the Iron Oil Tank and Historical Service Station (ISA Map ID No. 27).
- Advanced and collected soil samples from a total of nine direct-push and two hand auger borings along the unpaved shoulders of SR-101 (NB1, NB5, NB10 to NB12, NB17 to NB19, NB21, NB27, and SB21) to maximum depths between 3.5 feet and 15 feet.
- Collected grab-groundwater samples from 8 of the 11 borings. Grab-groundwater was not encountered in direct push borings NB1 and NB5 at the anticipated depths and refusal was encountered in both borings at greater depths. Due to access issues, boring NB27 was advanced using hand auger equipment and refusal was encountered prior to reaching the target groundwater depth.

## 3.0 INVESTIGATIVE METHODS

### 3.1 Boring Locations

Soil boring locations were designated by Caltrans and were selected based on proposed construction areas and their proximity to the 12 nearby potential contaminated properties identified in the ISA Addendum. The boring IDs correspond to the ISA Map ID Nos., provided above in Section 1.2. Specific boring locations were selected along Caltrans ROW based on the following:

- **NB1** – Evaluate soil and groundwater conditions at a proposed excavation for structure footing, located approximately 500 feet northwest of the Former Shell Service Station, 1000 Coast Village Road, Montecito (ISA Map ID No. 1 – see Figure 2a).
- **NB5** – Evaluate soil and groundwater conditions at a proposed excavation for pedestrian undercrossing, located approximately 50 feet downgradient (west) of the Chevron Station, 1085 Coast Village Road, Montecito (ISA Map ID No. 5 – see Figure 2b).
- **NB10** – Evaluate soil and groundwater conditions along a portion of a proposed excavation for soundwall footing, along SR 101 northbound, located adjacent to the Carpinteria Fire Station No. 2, 2375 Lillie Avenue, Montecito (ISA Map ID No. 10 – see Figure 2c).
- **NB11** – Evaluate soil and groundwater conditions for proposed excavation for structure widening near Gallup and Stribling, 3450 Via Real, Carpinteria (ISA Map ID No. 11 – see Figure 2d).
- **NB12** – Evaluate soil and groundwater conditions at a proposed excavation for structure footing, located near and downgradient (i.e., south) of three sites: 1) S.B. Harley-Davidson, 3501-3508 Via Real, Carpinteria (ISA Map ID No. 12), 2) Corvette Shop, 3651 Via Real, Carpinteria (ISA Map ID No. 13), and 3) McCormix Corporation, 3663 Via Real, Carpinteria (ISA Map ID 14 – see Figure 2e).
- **NB17** – Evaluate soil and groundwater conditions at a proposed excavation for drainage structure along SR 101 southbound and Sandyland Nursery, 3890 Via Real, Carpinteria (ISA Map ID No. 17 – see Figure 2f).
- **NB18** – Evaluate soil and groundwater conditions at a proposed excavation for drainage structure and soundwall footing along SR 101 northbound, located southeast of Ocean Breeze Int'l, 3910 Via Real, Carpinteria (ISA Map ID No. 18 – see Figure 2f).
- **NB19** – Evaluate soil and groundwater conditions at a proposed excavation for drainage structure and soundwall footing along SR 101 southbound and Chevron Station 9-3005, 4290 Via Real, Carpinteria (ISA Map ID No. 19 – see Figure 2g).
- **NB21 and SB21** – Evaluate soil and groundwater conditions at a proposed excavation for soundwall footings along SR 101 and Unocal Service Station, 4401 Via Real, Carpinteria (ISA Map ID No. 21 – see Figure 2g).

- **NB27** - Evaluate soil and groundwater conditions at a proposed excavation for soundwall footing along SR 101 northbound, at the location of the Iron Oil Tank and Historical Service Station "Oil and Gas", southwest corner of State Highway (Lillie Avenue) and Beighle (Valencia Road) (ISA Map ID No. 27 – see Figure 2c).

Boring coordinates were determined using a differential global positioning system (GPS). The GPS equipment was used to locate the position of each boring with an error of no more than 3.3 feet. Boring coordinates are summarized in Table 1 and boring locations are depicted on the Site Plans, Figures 2a through 2g.

### 3.2 Sampling Procedures

Soil was collected from the borings in acetate liners that were inserted into the direct-push rods; samples were cut from the liners at the desired depth interval and sealed with Teflon® tape and plastic end caps. Grab-groundwater was collected by inserting new ¾-inch diameter polyvinyl chloride (PVC) slotted screen pipe into the boring and using new Teflon® tubing fitted with a check-valve to retrieve the sample. Grab-groundwater samples were collected into laboratory-supplied containers that were pre-preserved as needed.

Sample containers were labeled, placed into chilled coolers and transported to ATL using standard chain-of-custody (COC) documentation. Shallow soil borings were backfilled to surface with soil cuttings; borings advanced to groundwater were tremie-grouted.

Geocon 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 ROW in a manner not to create runoff, away from drain inlets or potential water bodies.

### 3.3 Laboratory Analyses

The samples were analyzed under a standard seven-day turn-around-time (TAT), as follows:

#### Soil

- Eleven soil samples collected from the 3.5 to 4.0 foot and 5.0 to 5.5-foot depth intervals for CAM 17 metals using Environmental Protection Agency (EPA) Test Methods 6010B/7471A
- Thirty samples for total petroleum hydrocarbons (TPH) as gasoline (TPHg), as diesel (TPHd), and as motor oil (TPHmo) using EPA Test Method 8015B(M)
- Thirty samples for benzene, toluene, ethylbenzene, and xylenes (BTEX), and methyl-tert-butyl ether (MTBE) using EPA Test Method 8021B
- Eleven samples for volatile organic compounds (VOCs) using EPA Test Method 8260B

### Grab-Groundwater

- Eight samples for CAM 17 metals using EPA Test Method 6010B/7471A
- Eight samples for TPHg, TPHd, and TPHmo using EPA Test Method 8015B(M)
- Eight samples for BTEX and MTBE using EPA Test Method 8021B
- Eight samples for VOCs using EPA Test Method 8260B

### **3.3 Laboratory QA/QC**

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

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

Prior to submitting the soil samples to the laboratory, the COC documentation was reviewed for accuracy and completeness. Reproductions of the laboratory reports and COC documentation are presented in Appendix A.

## **4.0 INVESTIGATION RESULTS**

### **4.1 Geophysical Survey**

On May 11 and 12, 2010, AGS performed geophysical surveys to clear proposed boring locations of potential buried utility conflicts and to search for potential underground storage tanks (USTs) at the Iron Oil Tank and Historical Service Station "Oil and Gas" site (ISA Map ID No. 27). A copy of the Geophysical Investigation Report, dated June 10, 2010, is included as Appendix B. The results of the investigation are summarized as follows:

- Nine direct-push soil boring locations were cleared for potential subsurface utilities.
- Four areas of buried metal were identified at the UST investigation at the Iron Oil Tank and Historical Service Station (ISA Map ID No. 27) One buried metal area was found to contain a storm drain vault covered by a steel manhole lid and was discounted as a possible UST location. Of the three remaining areas, one exhibited a rectangular footprint possibly indicative of a 2,000-gallon UST. GPR profiles did not show any UST images; however, it is possible that a UST, if present, is too deeply buried to be imaged with GPR, which achieved signal penetration depth of approximately three feet below ground surface at this site. The other buried metal areas are smaller and more irregularly shaped and may be associated with utility substructures or metallic refuse.

## 4.2 Site Conditions

Soil encountered during the advancement of borings generally consisted of brown silty sand to the maximum depth explored of approximately 15 feet. Groundwater was encountered at depths between approximately 5 and 11 feet. Boring logs and photographs of the boring locations are included as Appendix C and D, respectively.

## 4.3 Analytical Results

The analytical results are presented in Tables 2 through 5 and are summarized below. Copies of the laboratory reports are included as Appendix A.

### Soil

- The following CAM 17 metals were reported in the soil samples at concentrations less than their respective TTLC values and less than ten times their respective STLCS: arsenic, barium, cadmium, chromium, cobalt, copper, lead, molybdenum, nickel, vanadium, and zinc. Remaining CAM 17 metals were not detected above their respective laboratory reporting limits.
- TPHg, BTEX, MTBE, and VOCs were not detected in the samples above the laboratory reporting limits.
- TPHd was reported in 21 of the 30 samples at concentrations ranging from 1.2 to 200 mg/kg.
- TPHmo was reported in 21 of the 30 samples at concentrations ranging from 1.4 to 340 mg/kg.

### Groundwater

- CAM 17 metals were detected above their respective laboratory reporting limits, with the exception of selenium, silver, and thallium.
- TPHg, TPHd, TPHmo, and VOCs were not reported above their respective laboratory reporting limits.
- Toluene was reported in sample NB12-W at a concentration of 2.0 micrograms per liter ( $\mu\text{g/l}$ ).
- MTBE was detected in samples NB19-W and NB21-W at concentrations of 1.5  $\mu\text{g/l}$  and 5.0  $\mu\text{g/l}$ , respectively.

## 4.4 Laboratory Quality Assurance/Quality Control

We reviewed the analytical laboratory QA/QC data provided with the laboratory report. These data show acceptable non-detect results and surrogate recoveries for the method blanks and acceptable recoveries and relative percent differences (RPDs) for the matrix spikes and matrix spike duplicates (MS/MSDs), with some exceptions. The RPDs for several of the analyses were outside criteria, and surrogate recoveries were outside criteria for a number of the method blanks and MS/MSDs. Surrogate

recovery was diluted out of one sample. Several samples required dilution due to sample matrix. In addition, matrix effects resulted in surrogate recoveries that were biased low for a couple of the organics analyses. However, the laboratory report indicated that the analytical batches were validated by the Laboratory Control Sample (LCS).

Based on the laboratory QA/QC results, no additional qualification of the data presented herein is necessary, and the data are of sufficient quality for the purposes of this report.

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Soil

#### 5.1.1 CAM 17 Metals

The CAM 17 metals concentrations in soil were compared to FPD Investigation Levels (*LUFT and SMU Manual*, January 2007) and with published background levels typically found 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).

All CAM 17 metals were reported in site soil at concentrations that are within their respective published background ranges and below FPD Investigation Levels, with the exception of arsenic and vanadium, which are greater than the FPD Investigation Levels. Arsenic was reported in the soil samples at concentrations ranging from <1.0 to 5.4 mg/kg, exceeding the FPD Investigation Level of 0.062 mg/kg and vanadium was reported in soil sample NB17-3.5 at 91 mg/kg, exceeding the FPD Investigation Level of 78 mg/kg.

Upper maximum arsenic and vanadium concentrations were compared with published background levels typically present in California soils as presented in *Background Concentrations of Trace and Major Elements in California Soils* (Kearney Foundation of Soil Science, Division of Agriculture and Natural Resources, University of California, March 1996). The maximum concentrations, FPD Investigation Levels, and published background concentrations are summarized in the table below:

Metal	Maximum	FPD Investigation Level	Published Background Mean <sup>1</sup>	Published Background Range <sup>1</sup>
Arsenic	5.4	0.062	3.5	0.6 to 11.0
Vanadium	91	78	112	39 to 288

Concentrations reported in milligrams per kilogram (mg/kg)

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

The CAM 17 metals (including arsenic and vanadium) were reported in soil at concentrations consistent with published background ranges, and based on the total CAM 17 metals concentrations, soil excavated from the project location would not be considered a hazardous waste.

### **5.1.2 Petroleum Hydrocarbons**

TPHd and TPHmo were reported in soil at concentrations below FPD Investigation Levels, with the exception of sample NB27-5, collected at the Iron Oil Tank and Historical Service Station located on existing Caltrans ROW. Sample NB27-5 contained TPHd (200 mg/kg) and TPHmo (340 mg/kg), exceeding the FPD investigation level of 100 mg/kg.

## **5.2 Grab-Groundwater**

### **5.2.1 CAM 17 Metals**

Grab-groundwater samples contained CAM 17 metals at concentrations exceeding their respective FPD Investigation Levels. Due to the nature of the grab-groundwater sampling method, it is likely that the reported metals concentrations are elevated due to suspended sediment contained within the samples, rather than dissolved metals concentrations of the groundwater.

Groundwater encountered during construction may require treatment to reduce sediment content and total metal concentrations prior to disposal or discharge. We recommend that construction contractors evaluate disposal options including discharge to a publically-owner treatment works (POTW) and discharge under a National Pollutant Discharge Elimination System (NPDES) permit.

### **5.2.2 Petroleum Hydrocarbons**

Toluene was reported in sample NB12-W at 2.0 µg/l, below the FPD Investigation Level and MCL of 150 µg/l. MTBE was reported at a concentration of 1.5 µg/l in sample NB19-W and 5.0 µg/l in sample NB21-W. The reported MTBE concentrations are less than the drinking water MCL of 13 µg/l; the FPD Investigation Level for MTBE is 5.0 µg/l. No other organics were detected above their respective laboratory reporting limits.

## **5.3 Recommendations**

A summary of the investigation results for each of the 12 potentially contaminated properties with initial medium and high risk impact ratings to the proposed Santa Barbara SR-101 HOV Project is provided in Summary of Preliminary Site Investigation Conclusions and Recommendations, Table 6, and are discussed below.

Based on the total CAM 17 metals and organics concentrations for both soil and groundwater, 11 of the 12 sites are now considered low risk to the project (see Table 6). Soil excavated from these project locations would not be considered a hazardous waste. No additional investigation in these areas is recommended.

Grab-groundwater samples NB19-W and NB21-W were located within the established plumes of petroleum-impacted groundwater associated with Chevron Station 9-3005 (ISA Map ID No. 19) and Unocal Service Station, 4401 Via Real, Carpinteria (ISA Map ID No. 21). The Chevron and Unocal facilities are open Leaking Underground Storage Tank (LUST) sites currently being remediated by the responsible parties. Based on the reported MTBE concentrations, coupled with non-detect results for other petroleum hydrocarbon compounds and VOCs, these properties pose a low risk to the proposed excavations to groundwater for proposed soundwalls along this portion of the construction project. No additional investigation in these areas is recommended as the responsible parties have been identified and contaminant concentrations pose a low risk to the project. However, based on the reported MTBE and metals concentrations, groundwater encountered during construction may require testing and/or treatment to reduce concentrations and sediment content and prior to discharge.

A suspect UST is present within the Caltrans ROW at the Iron Oil and Historical Service Station (Map ID 27) at the location of a proposed soundwall. We recommend that this area be further investigated with test pit excavations to determine whether a UST is present. If a UST is identified it will need to be removed and closed in accordance with Santa Barbara County regulations. Additional soil and groundwater sampling for petroleum hydrocarbons will likely be necessary in this area. Based on the results of the geophysical, soil investigations, and possible presence of a UST, this area poses a medium risk of impact to the proposed construction project. Additional investigation in this area will be used to determine potential project cost impacts relative to the UST, if present.

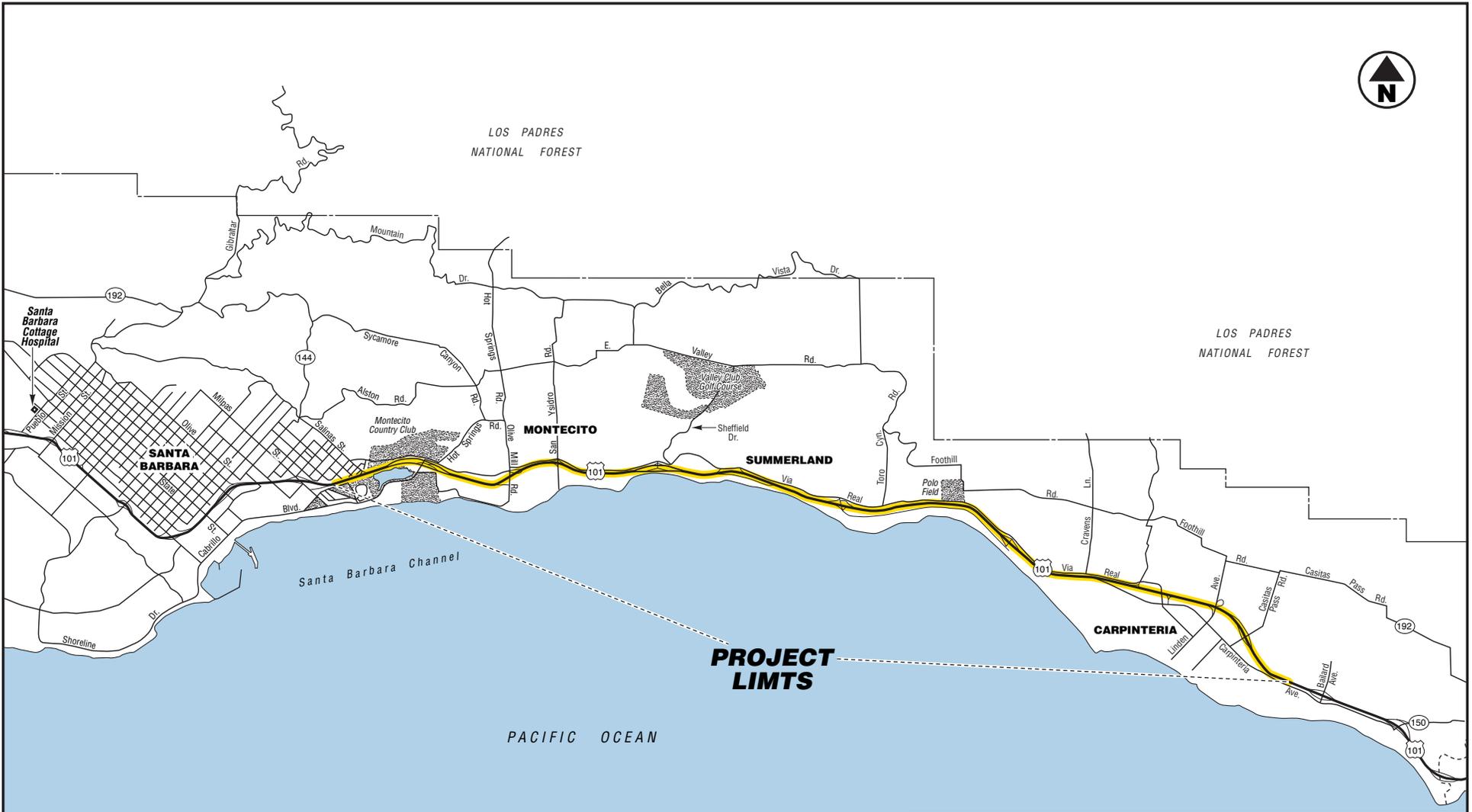
#### **5.4 Worker Protection**

Per Caltrans' requirements, the contractor(s) should prepare a project-specific lead compliance plan (CCR Title 8, Section 1532.1, the "Lead in Construction" standard) to minimize worker exposure to soil and groundwater. 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 and groundwater.

## 6.0 REPORT LIMITATIONS

This report has been prepared exclusively for Caltrans. 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. We strived to perform the services summarized herein in accordance with the local standard of care in the geographic region at the time the services were rendered.



**GEOCON**  
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**South Coast 101 HOV Lanes**

Santa Barbara County,  
California

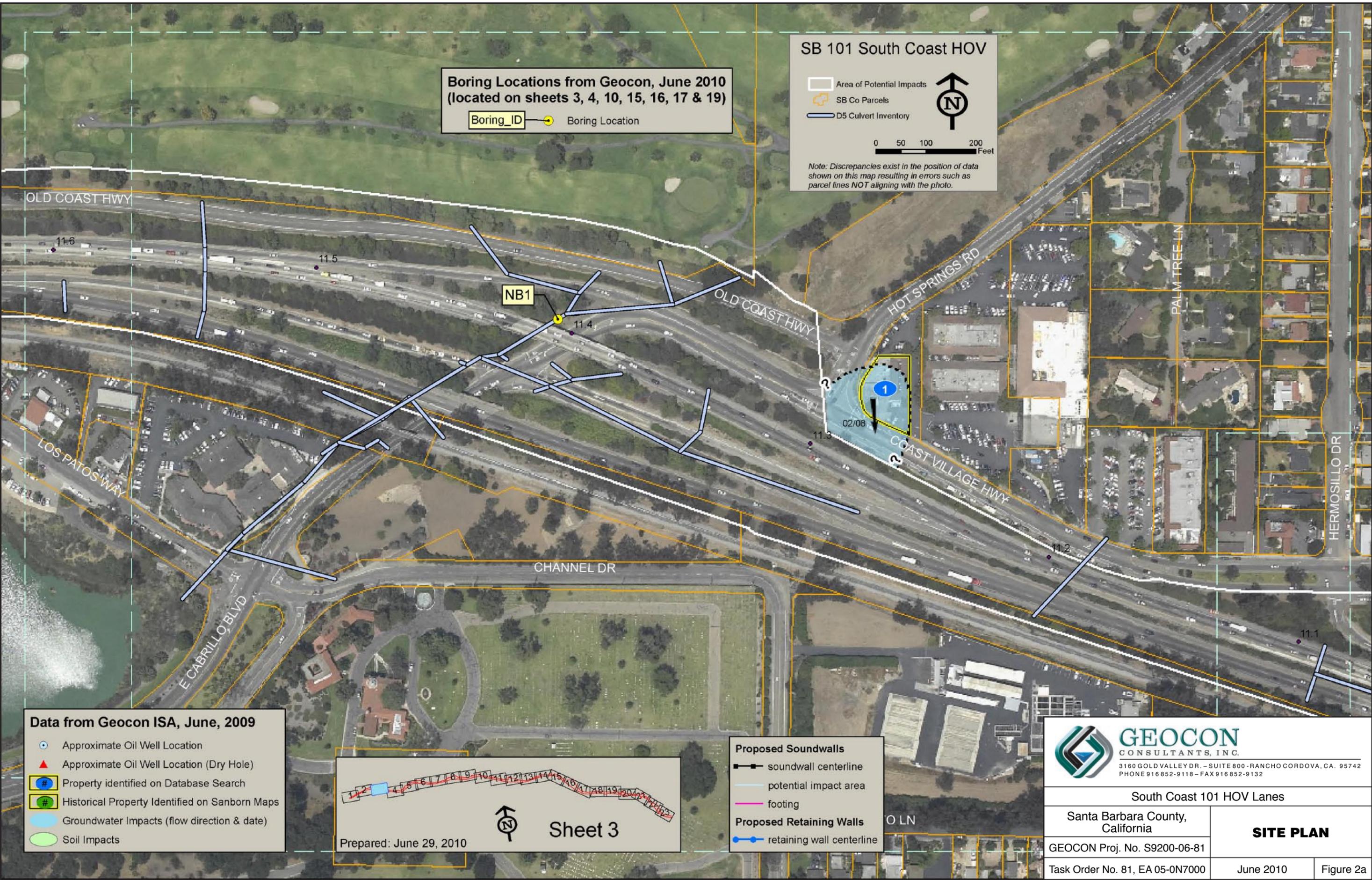
**VICINITY MAP**

GEOCON Proj. No. S9200-06-81

Task Order No. 81, EA 05-0N7000

June 2010

Figure 1



**Boring Locations from Geocon, June 2010  
(located on sheets 3, 4, 10, 15, 16, 17 & 19)**

Boring\_ID      Boring Location

**SB 101 South Coast HOV**

- Area of Potential Impacts
- SB Co Parcels
- D5 Culvert Inventory

0 50 100 200 Feet

Note: Discrepancies exist in the position of data shown on this map resulting in errors such as parcel lines NOT aligning with the photo.

**Data from Geocon ISA, June, 2009**

- Approximate Oil Well Location
- Approximate Oil Well Location (Dry Hole)
- Property identified on Database Search
- Historical Property Identified on Sanborn Maps
- Groundwater Impacts (flow direction & date)
- Soil Impacts

**Proposed Soundwalls**

- soundwall centerline
- potential impact area
- footing

**Proposed Retaining Walls**

- retaining wall centerline

Prepared: June 29, 2010

Sheet 3

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South Coast 101 HOV Lanes		
Santa Barbara County, California		<b>SITE PLAN</b>
GEOCON Proj. No. S9200-06-81		
Task Order No. 81, EA 05-0N7000	June 2010	Figure 2a



**Boring Locations from Geocon, June 2010  
(located on sheets 3, 4, 10, 15, 16, 17 & 19)**

Boring\_ID    Boring Location

**SB 101 South Coast HOV**

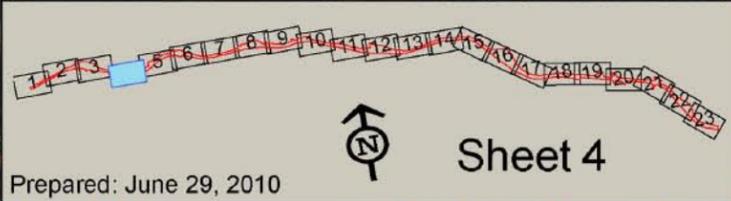
- Area of Potential Impacts
  - ▭ SB Co Parcels
  - D5 Culvert Inventory
- 0 50 100 200 Feet
- Note: Discrepancies exist in the position of data shown on this map resulting in errors such as parcel lines NOT aligning with the photo.

**Data from Geocon ISA, June, 2009**

- Approximate Oil Well Location
- ▲ Approximate Oil Well Location (Dry Hole)
- Property identified on Database Search
- Historical Property Identified on Sanborn Maps
- Groundwater Impacts (flow direction & date)
- Soil Impacts

**Proposed Soundwalls**

- soundwall centerline
  - potential impact area
  - footing
- Proposed Retaining Walls**
- retaining wall centerline



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South Coast 101 HOV Lanes		
Santa Barbara County, California		<b>SITE PLAN</b>
GEOCON Proj. No. S9200-06-81		
Task Order No. 81, EA 05-0N7000	June 2010	Figure 2b



**Boring Locations from Geocon, June 2010**  
 (located on sheets 3, 4, 10, 15, 16, 17 & 19)

Boring\_ID ● Boring Location

**SB 101 South Coast HOV**

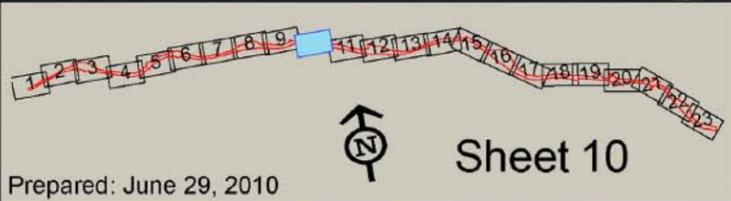
- Area of Potential Impacts
- SB Co Parcels
- D5 Culvert Inventory

0 50 100 200 Feet

Note: Discrepancies exist in the position of data shown on this map resulting in errors such as parcel lines NOT aligning with the photo.

**Data from Geocon ISA, June, 2009**

- Approximate Oil Well Location
- ▲ Approximate Oil Well Location (Dry Hole)
- Property identified on Database Search
- Historical Property Identified on Sanborn Maps
- Groundwater Impacts (flow direction & date)
- Soil Impacts



**Proposed Soundwalls**

- soundwall centerline
- potential impact area
- footing

**Proposed Retaining Walls**

- retaining wall centerline

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South Coast 101 HOV Lanes		
Santa Barbara County, California		<b>SITE PLAN</b>
GEOCON Proj. No. S9200-06-81		
Task Order No. 81, EA 05-0N7000	June 2010	Figure 2c

South Coast 101 HOV Lanes		
Santa Barbara County, California	<b>SITE PLAN</b>	
GEOCON Proj. No. S9200-06-81	June 2010	Figure 2d
Task Order No. 81, EA 05-0N7000		

**SB 101 South Coast HOV**

- Area of Potential Impacts
- SB Co Parcels
- D5 Culvert Inventory

0 50 100 200 Feet

Note: Discrepancies exist in the position of data shown on this map resulting in errors such as parcel lines NOT aligning with the photo.

**Boring Locations from Geocon, June 2010 (located on sheets 3, 4, 10, 15, 16, 17 & 19)**

Boring\_ID Boring Location

**Data from Geocon ISA, June, 2009**

- Approximate Oil Well Location
- Approximate Oil Well Location (Dry Hole)
- Property identified on Database Search
- Historical Property Identified on Sanborn Maps
- Groundwater Impacts (flow direction & date)
- Soil Impacts

**Proposed Soundwalls**

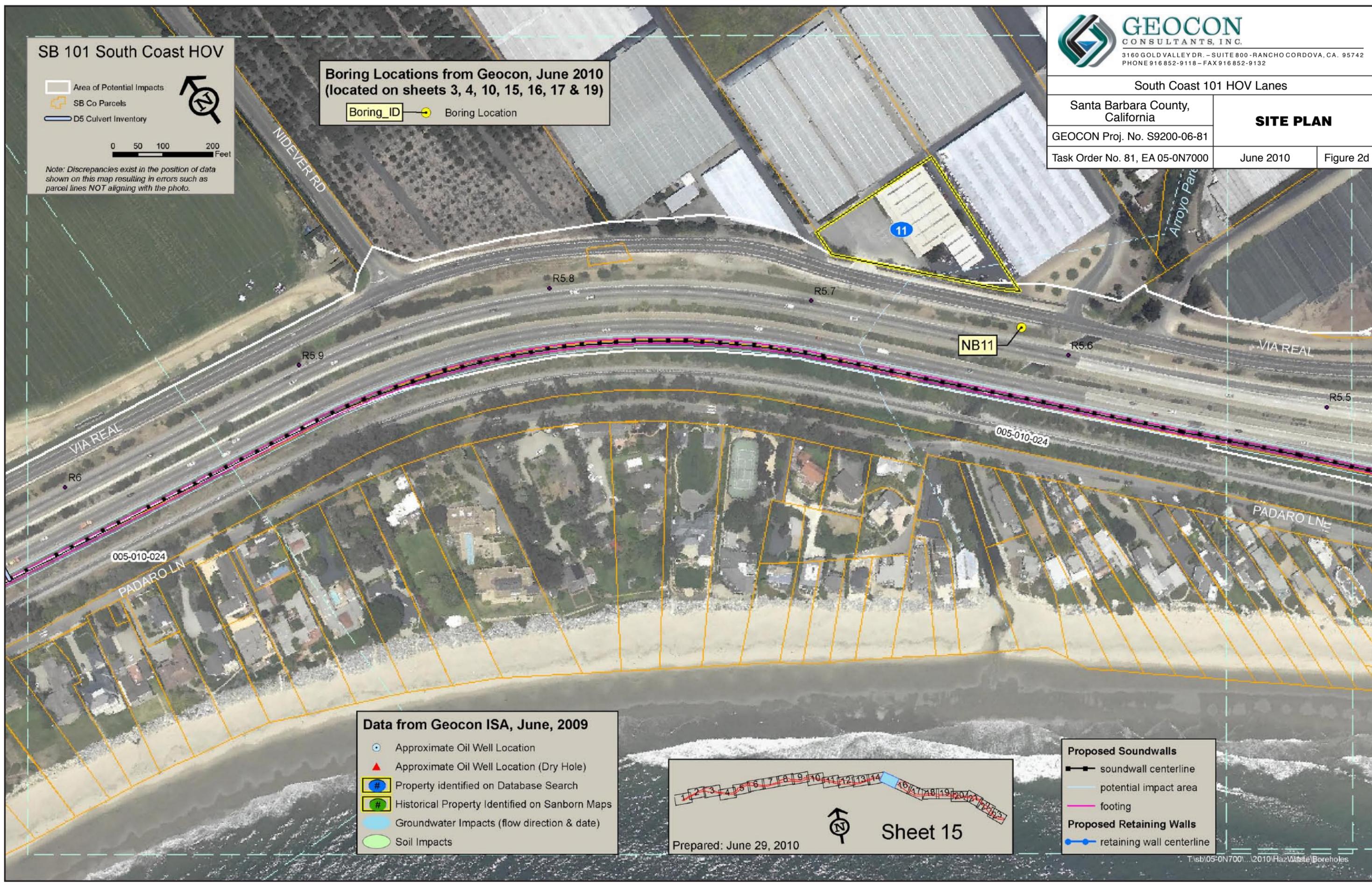
- soundwall centerline
- potential impact area
- footing

**Proposed Retaining Walls**

- retaining wall centerline

Sheet 15

Prepared: June 29, 2010



**SB 101 South Coast HOV**

Area of Potential Impacts  
 SB Co Parcels  
 D5 Culvert Inventory

  
 0 50 100 200 Feet

*Note: Discrepancies exist in the position of data shown on this map resulting in errors such as parcel lines NOT aligning with the photo.*

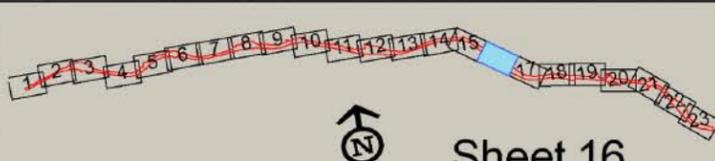
**Boring Locations from Geocon, June 2010  
(located on sheets 3, 4, 10, 15, 16, 17 & 19)**

Boring\_ID  Boring Location

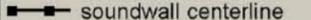
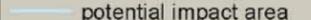
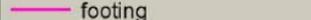
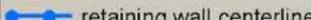


**Data from Geocon ISA, June, 2009**

-  Approximate Oil Well Location
-  Approximate Oil Well Location (Dry Hole)
-  Property identified on Database Search
-  Historical Property Identified on Sanborn Maps
-  Groundwater Impacts (flow direction & date)
-  Soil Impacts

  
 Prepared: June 29, 2010  **Sheet 16**

**Proposed Soundwalls**

-  soundwall centerline
  -  potential impact area
  -  footing
- Proposed Retaining Walls**
-  retaining wall centerline

  
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<b>South Coast 101 HOV Lanes</b>		
Santa Barbara County, California		<b>SITE PLAN</b>
GEOCON Proj. No. S9200-06-81		
Task Order No. 81, EA 05-0N7000	June 2010	Figure 2e

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Prepared: June 29, 2010

Sheet 17

**Proposed Soundwalls**

- soundwall centerline
- potential impact area
- footing

**Proposed Retaining Walls**

- retaining wall centerline

**Data from Geocon ISA, June, 2009**

- Approximate Oil Well Location
- Approximate Oil Well Location (Dry Hole)
- Property identified on Database Search
- Historical Property Identified on Sanborn Maps
- Groundwater Impacts (flow direction & date)
- Soil Impacts

**SB 101 South Coast HOV**

- Area of Potential Impacts
- SB Co Parcels
- D5 Culvert Inventory

0 50 100 200 Feet

Note: Discrepancies exist in the position of data shown on this map resulting in errors such as parcel lines NOT aligning with the photo.

**Boring Locations from Geocon, June 2010 (located on sheets 3, 4, 10, 15, 16, 17 & 19)**

Boring\_ID Boring Location



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South Coast 101 HOV Lanes	
Santa Barbara County, California	<b>SITE PLAN</b>
GEOCON Proj. No. S9200-06-81	
Task Order No. 81, EA 05-0N7000	June 2010
	Figure 2f

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Sheet 19

Prepared: June 29, 2010

**Boring Locations from Geocon, June 2010**  
(located on sheets 3, 4, 10, 15, 16, 17 & 19)

Boring\_ID —● Boring Location

**Data from Geocon ISA, June, 2009**

- Approximate Oil Well Location
- ▲ Approximate Oil Well Location (Dry Hole)
- Property identified on Database Search
- Historical Property Identified on Sanborn Maps
- Groundwater Impacts (flow direction & date)
- Soil Impacts

**SB 101 South Coast HOV**

- Area of Potential Impacts
- SB Co Parcels
- D5 Culvert Inventory

0 50 100 200 Feet

Note: Discrepancies exist in the position of data shown on this map resulting in errors such as parcel lines NOT aligning with the photo.

**Proposed Soundwalls**

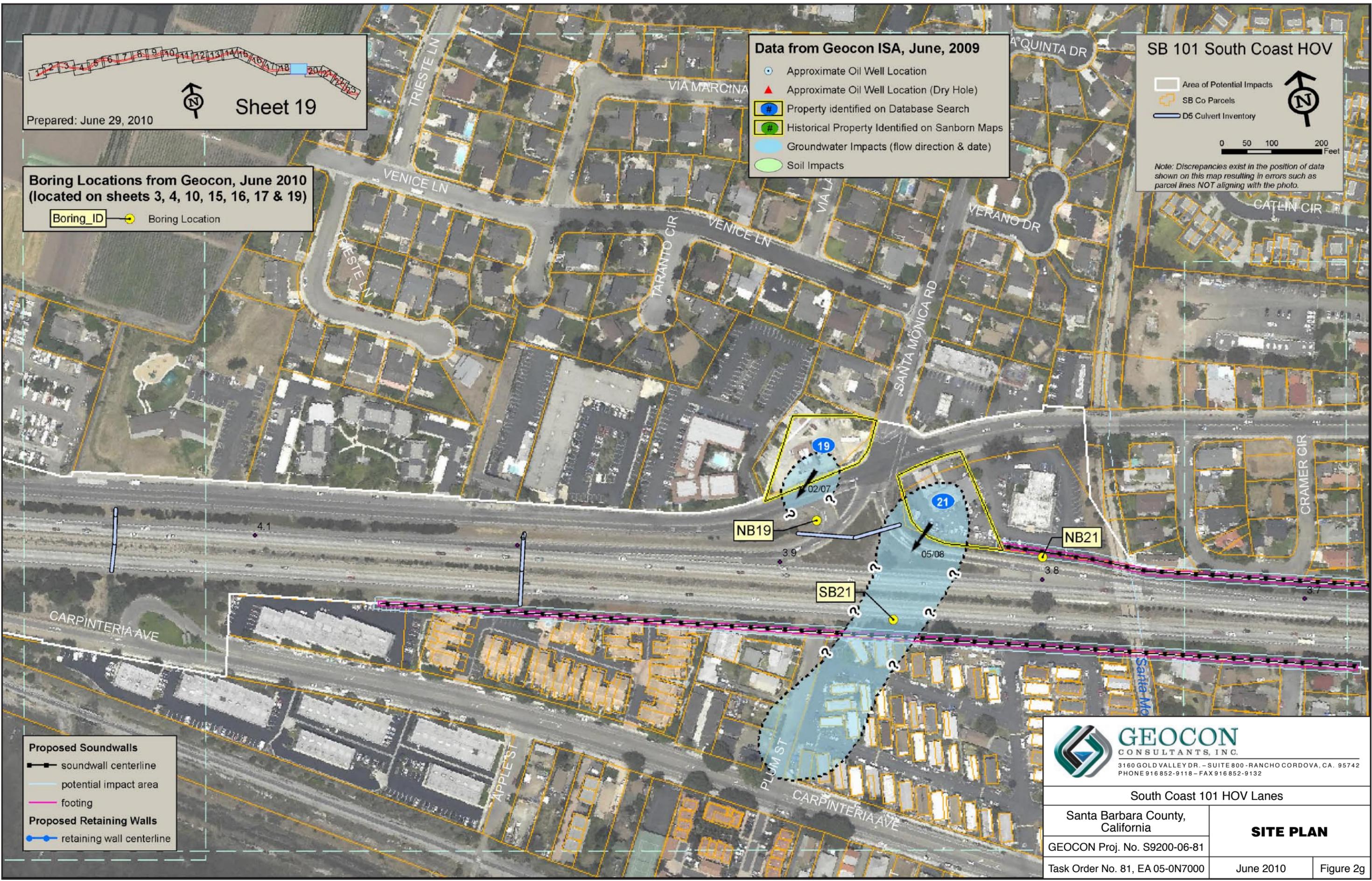
- soundwall centerline
- potential impact area
- footing

**Proposed Retaining Walls**

- retaining wall centerline

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South Coast 101 HOV Lanes		
Santa Barbara County, California		<b>SITE PLAN</b>
GEOCON Proj. No. S9200-06-81		
Task Order No. 81, EA 05-0N7000	June 2010	



**TABLE 1**  
**Boring Coordinates**  
**South Coast SR 101 HOV Project**  
**Santa Barbara County, California**

<b>Boring ID</b>	<b>Northing</b>	<b>Easting</b>	<b>Longitude</b>	<b>Latitude</b>
NB1	1,980,376.147	6,062,791.394	-119.654385472	34.422858454
NB5	1,979,628.449	6,064,704.451	-119.648002039	34.420890519
NB10	1,979,313.389	6,079,798.958	-119.597940015	34.420694570
NB11	1,976,795.925	6,092,031.190	-119.557254909	34.414305330
NB12	1,975,553.372	6,093,379.278	-119.552722046	34.410948695
NB17	1,973,809.035	6,095,641.609	-119.545133287	34.406251878
NB18	1,973,732.731	6,096,303.840	-119.542934162	34.406070183
NB19	1,973,084.792	6,099,974.554	-119.530733340	34.404444163
NB21	1,972,934.232	6,100,408.547	-119.529287123	34.404048646
NB27	1,979,276.953	6,079,907.765	-119.597577350	34.420599215
SB21	1,972,863.138	6,100,091.908	-119.530333141	34.403840072

Notes:

Coordinates are shown in NAD83, Zone 5

Universal Transverse Mercator (UTM) coordinates are shown in feet



**TABLE 3**  
**Summary of Organics Results - Soil**  
**South Coast SR 101 HOV Project**  
**Santa Barbara County, California**

Sample ID	Sample Depth (ft)	TPHg (mg/kg)	TPHd (mg/kg)	TPHmo (mg/kg)	BTEX (µg/kg)	MTBE (µg/kg)	VOCs (µg/kg)
NB1-3.5	3.5	<1.0	1.6	2.3	ND	<5.0	---
NB1-5	5.0	<1.0	2.5	2.1	ND	<5.0	---
NB1-10	10	<1.0	8.4	6.6	ND	<5.0	---
NB1-15	15	<1.0	3.9	<1.0	ND	<5.0	---
NB5-3.5	3.5	<1.0	14	29	ND	<5.0	---
NB5-5	5.0	<1.0	13	2.3	ND	<5.0	---
NB5-10	10	<1.0	11	2.2	ND	<5.0	---
NB5-15	15	<1.0	8.2	<1.0	ND	<5.0	---
NB10-5	5.0	<1.0	<1.0	<1.0	ND	<5.0	ND
NB10-10	10	<1.0	<1.0	<1.0	ND	<5.0	ND
NB11-3.5	3.5	<1.0	7.5	6.9	ND	<5.0	---
NB11-5	5.0	<1.0	3.8	<1.0	ND	<5.0	---
NB11-10	10	<1.0	7.7	1.5	ND	<5.0	---
NB12-3.5	3.5	<1.0	7.1	11	ND	<5.0	---
NB12-5	5.0	<1.0	1.3	<1.0	ND	<5.0	---
NB12-10	10	<1.0	6.1	<1.0	ND	<5.0	---
NB17-3.5	3.5	<1.0	11	9.2	ND	<5.0	---
NB17-7.5	7.5	<1.0	<1.0	3.4	ND	<5.0	ND
NB17-10	10	<1.0	<1.0	<1.0	ND	<5.0	ND
NB18-3.5	3.5	<1.0	5.1	3.3	ND	<5.0	---
NB18-5	5.0	1.0	2.4	6.6	ND	<5.0	ND
NB18-10	10	<1.0	<1.0	3.3	ND	<5.0	ND
NB19-3.5	3.5	<1.0	3.7	9.1	ND	<5.0	---
NB19-5	9.5	<1.0	<1.0	2.9	ND	<5.0	ND
NB21-5	5.0	<1.0	1.5	3.1	ND	<5.0	ND
NB21-9.5	9.5	<1.0	<1.0	1.4	ND	<5.0	ND
NB27-5	5.0	<1.0	200	340	ND	<5.0	---
NB27-7.5	7.5	<1.0	1.2	4.4	ND	<5.0	---
SB21-5	5.0	<1.0	<1.0	4.6	ND	<5.0	ND
SB21-10	10	<1.0	<1.0	<1.0	ND	<5.0	ND
<b>FPD Investigation Levels</b>		100	100	100	---	---	---

Notes:

mg/kg = Milligrams per kilogram

ug/kg = Micrograms per kilogram

MTBE = Methyl-tert-butyl ether

--- = Not analyzed or not applicable

BTEX = Benzene, toluene, ethylbenzene, and xylenes

VOCs = Volatile organic compounds

ND = Not detected above the laboratory reporting limit

< = Not detected at or above the stated laboratory reporting limit

FPD Investigation Levels = Santa Barbara County Fire Department - Fire Protection Division - LUFT and SMU Guidance

Document, Tables F-3 and F-4, November 2006. TPH values are for aggregate of all carbon chains.

**TABLE 4**  
**Summary of CAM17 Metals Results - Groundwater**  
**South Coast SR 101 HOV Project**  
**Santa Barbara County, California**

Sample ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury (ug/l)
NB10-W	0.051	0.13	4.7	0.023	0.028	3.1	0.18	0.64	0.24	0.043	1.7	<0.020	<0.0030	<0.030	2.0	2.9	3.6
NB11-W	<0.0050	0.035	1.8	0.0050	0.0031	0.27	0.089	0.17	0.11	0.016	0.28	<0.010	<0.0060	<0.015	0.34	0.46	0.23
NB12-W	0.024	0.16	9.6	0.020	0.026	1.3	0.56	0.84	0.56	0.045	1.3	<0.010	<0.0060	<0.015	1.8	2.1	3.4
NB17-W	<0.0050	<0.010	0.67	<0.0030	<0.0030	0.34	0.049	0.071	0.041	0.038	0.30	<0.010	<0.0060	<0.015	0.14	0.24	<0.20
NB18-W	0.015	0.120	8.8	0.012	0.015	0.95	0.37	0.61	0.46	0.029	1.0	<0.010	<0.0060	<0.015	1.3	2.0	0.76
NB19-W	0.016	0.080	5.2	0.0066	0.013	1.0	0.30	0.44	0.49	0.029	1.4	<0.010	<0.0060	<0.015	1.0	1.7	1.0
NB21-W	<0.0050	0.016	2.1	0.0035	0.0038	0.27	0.11	0.14	0.086	0.0053	0.40	<0.010	<0.0060	<0.015	0.35	0.45	0.40
SB21-W	0.017	0.097	6.1	0.011	0.014	1.2	0.37	0.52	0.30	0.035	1.6	<0.010	<0.0060	<0.015	1.2	1.7	1.7
<b>FPD Investigation Levels</b>	0.006	0.01	1.0	0.004	0.005	0.05	0.05	1.0	0.015	0.01	0.10	0.05	0.10	0.002	0.05	5.0	2.0

Notes:

Data are shown in units of milligrams per liter (mg/l), except for mercury, which is shown in units of microgram per liter (ug/l)

< = Not detected above the stated laboratory reporting limit

--- = Not Analyzed or Not Applicable

FPD Investigation Levels = Santa Barbara County Fire Department - Fire Protection Division - LUFT and SMU Guidance Document, Table F-5, November 2006.

**TABLE 5**  
**Summary of Organics Results - Groundwater**  
**South Coast SR 101 HOV Project**  
**Santa Barbara County, California**

Sample ID	TPHg (mg/l)	TPHd (mg/l)	TPHmo (mg/l)	BTEX (µg/l)	MTBE (µg/l)	VOCs (µg/l)
NB10-W	<0.050	<0.062	<0.062	ND	<0.50	ND
NB11-W	<0.050	<0.053	<0.053	ND	<0.50	ND
NB12-W	<0.050	<0.062	<0.062	toluene=2.0	<0.50	ND
NB17-W	<0.050	<0.062	<0.062	ND	<0.50	ND
NB18-W	<0.050	<0.083	<0.083	ND	<0.50	ND
NB19-W	<0.050	<0.056	<0.056	ND	1.5	ND
NB21-W	<0.050	<0.050	<0.050	ND	5.0	ND
SB21-W	<0.050	<0.067	<0.067	ND	<0.50	ND
<b>FPD Investigation Levels</b>	1.0	1.0	1.0	toluene=150	5.0	---

Notes:

mg/l = Milligrams per liter

µg/l = Micrograms per liter

--- = Not Analyzed or Not Applicable

< = Not detected above stated limit

TPHg = Total petroleum hydrocarbons as gasoline

TPHd = Total petroleum hydrocarbons as diesel

TPHmo = Total petroleum hydrocarbons as motor oil

MTBE = Methyl-tert-butyl ether

BTEX = Benzene, toluene, ethylbenzene, and xylenes

VOCs = Volatile organic compounds

FPD Investigation Levels = Santa Barbara County Fire Department - Fire Protection Division - LUFT and SMU Guidance Document, Tables F-3 and F-4, November 2006. TPH values are for aggregate of all carbon chains.

**TABLE 6**  
**SUMMARY OF PRELIMINARY SITE INVESTIGATION CONCLUSIONS AND RECOMMENDATIONS**  
**SOUTH COAST 101 HOV PROJECT**

<b>Proposed Construction</b>	<b>Map ID/ Boring No.</b>	<b>Locations/Address</b>	<b>Previous Potential Impact to Project</b>	<b>Environmental Impacts/ Chemicals of Concern</b>	<b>Recommended Preliminary Site Investigation for Soil Excavation Below Groundwater Level</b>	<b>Completed Preliminary Site Investigation Activities and Results</b>	<b>Revised Potential Impact to Project</b>
Excavation for Structure Footing	1/NB1 (Figure 2a)	Former Shell Service Station 1000 Coast Village Road, Montecito	High Impact Alt 1-3 ESA	Former service station with reported petroleum hydrocarbon releases to soil and groundwater.	Collect soil and groundwater samples to evaluate options for soil reuse or disposal, and management of water generated from de-watering activities due to potential petroleum hydrocarbon, VOC, and metals impacts.	Collected soil samples upgradient of facility (boring NB1); groundwater was not encountered. Soil samples contained petroleum hydrocarbons at concentrations below the FPD Investigation Level and CAM 17 metal concentrations within typical background concentration ranges.	Low Impact
Excavation for Pedestrian Undercrossing	5/NB5 (Figure 2b)	Chevron Station 1085 Coast Village Road, Montecito	High Impact Alt 1-3 ESA	Active service station with reported petroleum hydrocarbon releases to soil and groundwater.	Same as above	Collected soil samples downgradient of facility (boring NB5); groundwater was not encountered Soil samples contained petroleum hydrocarbons at concentrations below the FPD Investigation Level and CAM 17 metal concentrations within typical background concentration ranges.	Low Impact
Excavation for Soundwall Footing	10/NB10 (Figure 2c)	Carpinteria Fire Station No. 2 2375 Lillie Avenue, Montecito	Medium Impact Alt 1-3 ESA	Potential for petroleum hydrocarbon release from past UST operation.	Same as above	Collected soil and grab-groundwater samples adjacent to property (boring NB10). Soil samples were non-detect for petroleum hydrocarbons and VOCs; CAM 17 metal concentrations within typical background concentration ranges. Grab-groundwater sample was non-detect for petroleum hydrocarbons and VOCs; CAM 17 metal concentrations above FPD Investigation Levels. Groundwater encountered during construction may require treatment to reduce sediment content and metal concentrations prior to discharge.	Low Impact
Excavation for Structure Widening	11/NB11 (Figure 2d)	Gallup & Stribling 3450 Via Real, Carpinteria	Medium Impact Alt 1-3 ESA	Former fueling facility with reported petroleum hydrocarbon releases to soil from facility operations.	Same as above	Collected soil and grab-groundwater samples adjacent to property (boring NB11). Soil samples contained petroleum hydrocarbons at concentrations below the FPD Investigation Level and CAM 17 metal concentrations within typical background concentration ranges. Grab-groundwater sample was non-detect for petroleum hydrocarbons and VOCs; CAM 17 metal concentrations above FPD Investigation Levels. Groundwater encountered during construction may require treatment to reduce sediment content and metal concentrations prior to discharge.	Low Impact
Excavation for Structure Footing	12/NB12 (Figure 2e)	S.B. Harley-Davidson 3501-3508 Via Real, Carpinteria	Medium Impact Alt 1-3 ESA	Automotive repair facility with potential petroleum hydrocarbon release from facility operations.	Same as above	Collected soil and grab-groundwater samples adjacent to properties (boring NB12). Soil samples contained petroleum hydrocarbons at concentrations below the FPD Investigation Level and CAM 17 metal concentrations within typical background concentration ranges. Grab-groundwater sample contained toluene below FPD Investigation Level and was non-detect for VOCs; CAM 17 metal concentrations above FPD Investigation Levels. Groundwater encountered during construction may require treatment to reduce sediment content and metal concentrations prior to discharge.	Low Impact
	13/NB12 (Figure 2e)	Corvette Shop 3651 Via Real, Carpinteria	Medium Impact Alt 1-3 ESA	Apparent former gas station and automotive repair/service facility with potential petroleum hydrocarbons.			
	14/NB12 (Figure 2e)	McCormix Corporation 3663 Via Real, Carpinteria	Medium Impact Alt 1-3 ESA	Active service station with reported petroleum hydrocarbon releases to soil and groundwater.			

**TABLE 6**  
**SUMMARY OF PRELIMINARY SITE INVESTIGATION CONCLUSIONS AND RECOMMENDATIONS**  
**SOUTH COAST 101 HOV PROJECT**

<b>Proposed Construction</b>	<b>Map ID/ Boring No.</b>	<b>Locations/Address</b>	<b>Previous Potential Impact to Project</b>	<b>Environmental Impacts/ Chemicals of Concern</b>	<b>Recommended Preliminary Site Investigation for Soil Excavation Below Groundwater Level</b>	<b>Completed Preliminary Site Investigation Activities and Results</b>	<b>Revised Potential Impact to Project</b>
Excavation for Drainage Structure	17/NB17 (Figure 2f)	Sandyland Nursery 3890 Via Real, Carpinteria	Medium Impact Alt 1-3 ESA	Historical gasoline and diesel USTs; generator of pesticide rinse water and unspecified oil-containing waste. Potential for petroleum hydrocarbon and pesticide release from facility operations.	Same as above	Collected soil and grab-groundwater samples adjacent to property (boring NB17). Soil samples contained petroleum hydrocarbons at concentrations below the FPD Investigation Level, VOCs were non-detect, and CAM 17 metal concentrations within typical background concentration ranges.  Grab-groundwater sample was non-detect for petroleum hydrocarbons and VOCs; CAM 17 metal concentrations above FPD Investigation Levels.  Groundwater encountered during construction may require treatment to reduce sediment content and metal concentrations prior to discharge.	Low Impact
Excavation for Drainage Structure and Soundwall Footing	18/NB18 (Figure 2f)	Ocean Breeze Int'l 3910 Via Real, Carpinteria	Medium Impact Alt 1-3 ESA	Potential for petroleum hydrocarbon release from historical operation of gasoline and diesel USTs.	Same as above	Collected soil and grab-groundwater samples adjacent to property (boring NB18). Soil samples contained petroleum hydrocarbons at concentrations below the FPD Investigation Level, VOCs were non-detect, and CAM 17 metal concentrations within typical background concentration ranges.  Grab-groundwater sample was non-detect for petroleum hydrocarbons and VOCs; CAM 17 metal concentrations above FPD Investigation Levels.  Groundwater encountered during construction may require treatment to reduce sediment content and metal concentrations prior to discharge.	Low Impact
Excavation for Drainage Structure and Soundwall Footing	19/NB19 (Figure 2g)	Chevron Station 9-3005 4290 Via Real, Carpinteria	High Impact Alt 1-3 ESA	Active service station with reported petroleum hydrocarbon releases to soil and groundwater.	Same as above	Collected soil and grab-groundwater samples adjacent to property (boring NB19). Soil samples contained petroleum hydrocarbons at concentrations below the FPD Investigation Level, VOCs were non-detect, and CAM 17 metal concentrations within typical background concentration ranges.  Grab-groundwater sample contained MTBE below FPD Investigation Level and was non-detect for VOCs; CAM 17 metal concentrations above FPD Investigation Levels.  Groundwater encountered during construction may require treatment to reduce sediment content and metal and MTBE concentrations prior to discharge.	Low Impact
Excavation for Soundwall Footings	21/NB 21 and SB21 (Figure 2g)	Union Oil (aka Tosco, Conoco, Unocal, 7-11, etc.) Service Station 4401 Via Real, Carpinteria	High Impact Alt 1-3 ESA	Active service station with reported releases of TPHg, VOCs, and fuel oxygenates to soil and groundwater.	Same as above	Collected soil and grab-groundwater samples adjacent to property (borings NB21 and SB21).  Soil samples contained petroleum hydrocarbons at concentrations below the FPD Investigation Level, VOCs were non-detect, and CAM 17 metal concentrations within typical background concentration ranges.  Grab-groundwater sample(s) contained MTBE (at NB-21) equal to FPD Investigation Level and were non-detect for VOCs; CAM 17 metal concentrations above FPD Investigation Levels.  Groundwater encountered during construction may require treatment to reduce sediment content and metal and MTBE concentrations prior to discharge.	Low Impact

**TABLE 6**  
**SUMMARY OF PRELIMINARY SITE INVESTIGATION CONCLUSIONS AND RECOMMENDATIONS**  
**SOUTH COAST 101 HOV PROJECT**

<b>Proposed Construction</b>	<b>Map ID/ Boring No.</b>	<b>Locations/Address</b>	<b>Previous Potential Impact to Project</b>	<b>Environmental Impacts/ Chemicals of Concern</b>	<b>Recommended Preliminary Site Investigation for Soil Excavation Below Groundwater Level</b>	<b>Completed Preliminary Site Investigation Activities and Results</b>	<b>Revised Potential Impact to Project</b>
Excavation for Soundwall Footing	27/NB27 (Figure 2c)	Iron Oil Tank and Historical Service Station "Oil and Gas" Southwest corner of State Highway (Lillie Avenue) and Beighle (Valencia Road)	High Impact Alt 1-3 ESA	Historical service station with potential for USTs or petroleum hydrocarbon releases from UST operations.	Same as above; conduct a geophysical survey to evaluate the presence of potential USTs and subsurface features resulting from operations at the historical service station within the SR-101 ROW.	Performed geophysical survey which indicated the potential presence of an approximately 2,000-gallon UST greater than three feet below ground surface. Collected soil samples within Caltrans ROW at location of former facility (boring NB27); groundwater was not encountered. Soil sample contained petroleum hydrocarbons at concentrations above the FPD Investigation Level and CAM 17 metal concentrations within typical background concentration ranges. Additional investigation recommended for this area to determine whether a UST is present.	Medium Impact

Notes:

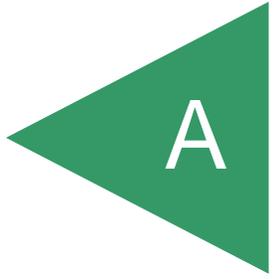
ESA – Environmental Study Area  
 UST – Underground Storage Tank  
 ADL – Aerially Deposited Lead  
 MTBE – methyl tert-butyl ether  
 HOV – High-occupancy vehicle

NA – Not Applicable  
 ROW – Right-of-way  
 HIST UST – Historical UST  
 TPH – Total petroleum hydrocarbons  
 SR – State Route

LUST – Leaking UST  
 VOCs – volatile organic compounds  
 FPD Investigation Levels - - Santa Barbara County Fire Department - Fire Protection Division - LUFT and SMU Guidance Document,

APPENDIX

A



May 20, 2010



Chris Merritt\Chris Giuntoli  
Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550  
TEL: (925) 371-5900  
FAX: (925) 371-5915

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

Workorder No.: 111709

RE: CALTRANS-SANTA BARBARA 101, S9200-

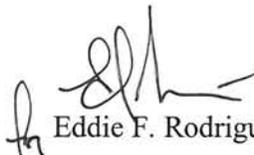
Attention: Chris Merritt\Chris Giuntoli

Enclosed are the results for sample(s) received on May 12, 2010 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

  
Eddie F. Rodriguez  
Laboratory Director

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

# CHAIN OF CUSTODY RECORD



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Laboratories**

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Signal Hill, CA 90755  
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**FOR LABORATORY USE ONLY:**

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

Client: <b>GEOCON CONSULTANTS, INC.</b>	Address: 6671 Brisa Street	TEL: (925) 371-5900
Attn: <u>CHRIS MERRITT, LIVERMORE@GEOCONSOLE.COM</u>	City: Livemore State: CA Zip Code: 94550	FAX: (925) 371-5915

Project Name: <u>CALTRANS - SANTA BARBARA 101</u>	Project #: <u>SA200-06-81</u>	Sampler: (Printed Name) <u>cm</u>	(Signature) <u>CHRIS MERRITT</u>
Relinquished by: (Signature and Printed Name) <u>CHRIS MERRITT</u>	Date: <u>5-11-10</u> Time: <u>9:00</u>	Received by: (Signature and Printed Name) <u>Mary M</u>	Date: <u>5/12/10</u> Time: <u>9:24</u>
Relinquished by: (Signature and Printed Name)	Date: _____ Time: _____	Received by: (Signature and Printed Name)	Date: _____ Time: _____
Relinquished by: (Signature and Printed Name)	Date: _____ Time: _____	Received by: (Signature and Printed Name)	Date: _____ Time: _____

I hereby authorize ATL to perform the work indicated below: Project Mgr /Submitter: <u>cm</u> <u>5-11-10</u> Print Name Date <u>cm</u> Signature	Send Report To: Attn: _____ Co: <u>SAME AS ABOVE</u> Address _____ City _____ State _____ Zip _____	Bill To: Attn: _____ Co: <u>SAME AS ABOVE</u> Address _____ City _____ State _____ Zip _____	Special Instructions/Comments:
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**Sample/Records - Archival & Disposal**  
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

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

ITEM	LAB USE ONLY:		Sample Description				SPECIFY APPROPRIATE MATRIX										PRESERVATION	REMARKS		
	Batch #:	Lab No.					Circle or Add Analysis(es) Requested												Container(s)	
			8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	8010B (Total Metal)	8015B (GRO)	8015B (DRO) / <del>8015B (DRO)</del>	8021 (BTEX)	TITLE 22 / CAM 17 (6010 / 7000)	SOIL	WATER	GROUND WATER	WASTEWATER	TAT			#	Type
			X	X	X	X	X	X	X	X	X					STND	1		H <sub>2</sub> O	C=GSD
			X	X	X	X	X	X	X	X	X						1			
			X	X	X	X	X	X	X	X		X					6	V P		
			X	X	X	X	X	X	X	X	X						1			
			X	X	X	X	X	X	X	X	X						1			
			X	X	X	X	X	X	X	X	X						1			
			X	X	X	X	X	X	X	X	X						1			
			X	X	X	X	X	X	X	X	X						6	V P		

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

# CHAIN OF CUSTODY RECORD



**Advanced Technology  
Laboratories**

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Signal Hill, CA 90755  
(562) 989-4045 • Fax (562) 989-4040

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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 CONSULTANTS, INC.** Address: **6671 Brisa Street** TEL: **(925) 371-5900**  
Attn: **SEE PAGE 1** City: **Livermore** State: **CA** Zip Code: **94550** FAX: **(925) 371-5915**

Project Name: **CALTRANS SANJABARBARA 101** Project #: **59200-06-461** Sampler: **CM** (Printed Name) **CHRIS MERRITT** (Signature)  
Relinquished by: (Signature and Printed Name) **CHRIS MERRITT** Date: **5-11-10** Time: **1900** Received by: (Signature and Printed Name) **[Signature]** Date: **5/12/10** Time: **9:24**  
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: **CM** **5-11-10**  
Print Name Date  
**CM**  
Signature  
Send Report To: Attn: \_\_\_\_\_ Co: **SAME AS ABOVE** Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Bill To: Attn: \_\_\_\_\_ Co: **SAME AS ABOVE** Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Special Instructions/Comments:

**Sample/Records - Archival & Disposal**  
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.  
**Storage Fees (applies when storage is requested):**  
• Sample : \$2.00 / sample / mo (after 45 days)  
• Records : \$1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested	SPECIFY APPROPRIATE MATRIX										TAT	Container(s) # Type	PRESERVATION	QA/QC RTNE <input type="checkbox"/> CT <input checked="" type="checkbox"/> SWRCB <input type="checkbox"/> Logcode _____ OTHER _____
	8081A (Pesticides)	8082 (PCB)	8280B (Volatile)	8270C (BVA)	8010B (Total Metal)	8015B (GRO) / <del>8015B (GRO) / <del>8015B (GRO)</del></del>	8021 (BTEX)	TITLE 22 / CAM 17 (8010 / 7000)	SOIL	WATER				

ITEM	LAB USE ONLY:		Sample Description			
	Batch #:	Lab No.	Sample I.D. / Location	Date	Time	
			NB18-3.5	5-11-10	1300	
			NB18-5		1305	
			NB18-10		1310	
			NB18-W		1335	
			NB17-3.5		1410	
			NB17-7.5		1415	
			NB17-10		1425	
			NB17-W		1425	

• 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<sub>3</sub> S=H<sub>2</sub>SO<sub>4</sub> C=4°C Z=Zn(AC)<sub>2</sub> O=NaOH T=Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>  
Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

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

Client: GEOCON CONSULTANTS, INC.	Address: 6671 Brisa Street	TEL: (925) 371-5900
Attn: <u>SEE PAGE 1</u>	City Livemore State CA Zip Code 94550	FAX: (925) 371-5915

Project Name: <u>CALTRANS SANTA BARBARA 101</u>	Project #: <u>59200-06-41</u>	Sampler: <u>cm</u> (Printed Name)	(Signature) <u>CHRIS MERRITT</u>
Relinquished by: (Signature and Printed Name) <u>CHRIS MERRITT</u>	Date: <u>5-11-10</u>	Time: <u>1900</u>	Received by: (Signature and Printed Name) <u>Mary [Signature]</u>
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)

I hereby authorize ATL to perform the work indicated below: Project Mgr /Submitter: <u>cm</u> <u>5-11-10</u> Print Name Date <u>cm</u> Signature	Send Report To: Attn: _____ Co: <u>SAME AS ABOVE</u> Address _____ City _____ State _____ Zip _____	Bill To: Attn: _____ Co: <u>SAME AS ABOVE</u> Address _____ City _____ State _____ Zip _____	Special Instructions/Comments:
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**Sample/Records - Archival & Disposal**  
 Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

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

ITEM	LAB USE ONLY:		Sample Description				Circle or Add Analysis(es) Requested	SPECIFY APPROPRIATE MATRIX				CONTAINER(S)		PRESERVATION	REMARKS	
	Batch #:	Lab No.						SOIL	WATER	GROUND WATER	WASTEWATER	TAT	#			Type
							8081A (Pesticides) 8082 (PCB) 8260B (Volatiles) 8270C (BNA) 8010B (Total Metal) 8015B (GRO) / <del>8015B (GRO) / BTEX</del> 8021 (BTEX) TITLE 22 / CAM 17 (8010 / 7000)									
			NB10-W	5-11-10	1620	X	X	X	X	X			6 1/2	P	420	

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

## Carmen Aguila

---

**From:** Rick Day [day@geoconinc.com]  
**Sent:** Wednesday, May 12, 2010 10:17 AM  
**To:** Carmen Aguila  
**Cc:** Diane Galvan  
**Subject:** RE: COC- S9200-06-81

Thanks Carmen –

Please see appended for revised COC.

**Richard Day, PG, CEG, CHG**  
**Vice President**

**Please visit our new website at** <http://www.geoconinc.com>

### **GEOCON Consultants, Inc.**

6671 Brisa Street  
Livermore, CA 94550  
925-371-5900, ext 201 (office)  
925-371-5915 (fax)  
925-872-5860 (mobile)  
day@geoconinc.com



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**From:** Carmen Aguila [mailto:Carmen@atglobal.com]  
**Sent:** Wednesday, May 12, 2010 9:34 AM  
**To:** day@geoconinc.com  
**Cc:** Diane Galvan  
**Subject:** COC- S9200-06-81

Hi Rick,

Enclosed are the cocs for the samples received today.

5/12/2010

Thank you,  
Carmen Aguila  
Sample Control Manager



**Advanced Technology Laboratories**

www.atlglobal.com  
Tel: (562) 989-4045 ext. 245  
Fax: (562) 989-4040

Advanced Technology Laboratories is a full-service environmental lab providing organic and inorganic analyses of soil, water, wastewater, storm water and hazardous waste samples. ATL is accredited by the State of California, NELAP and State of Nevada and holds various SBE, DBE and MBE certificates and a USDA soil permit. ATL takes pride in providing our customers with quick turnaround time, excellent customer service and defensible data while offering very competitive rates. *Advanced Technology Labs - Your Partner for Quality Environmental Testing*

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5/12/2010

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## FOR LABORATORY USE ONLY:

P.O.# _____	Method of Transport Client <input type="checkbox"/> ATL <input type="checkbox"/> CA OverN <input type="checkbox"/> FEDEX <input type="checkbox"/> Other: <u>950</u>	Sample Condition Upon Receipt 1 CHILLED <input checked="" type="checkbox"/> N <input type="checkbox"/> 4 SEALED <input type="checkbox"/> N <input type="checkbox"/> 2 HEADSPACE (VOA) <input checked="" type="checkbox"/> N <input type="checkbox"/> 5 # OF SPLS MATCH COC <input checked="" type="checkbox"/> N <input type="checkbox"/> 3 CONTAINER INTACT <input checked="" type="checkbox"/> N <input type="checkbox"/> 6 PRESERVED <input checked="" type="checkbox"/> N <input type="checkbox"/>
Logged By: <u>[Signature]</u>	Date: <u>5/12/10</u>	

Client: <u>GEOCON CONSULTANTS, INC.</u> <u>CHRIS MERRITT</u> Attn: <u>CHRIS MERRITT, LIVERMORE@GEOCONINC.COM</u>	Address: <u>6671 Brisa Street</u> City: <u>Livermore</u> State: <u>CA</u> Zip Code: <u>94550</u>	TEL: <u>(925) 371-5900</u> FAX: <u>(925) 371-5915</u>
--	---	--

Project Name: <u>CALTRANS - SANTA BARBARA 101</u>	Project #: <u>SA200-06-81</u>	Sampler: <u>cm</u> (Printed Name)	(Signature) <u>CHRIS MERRITT</u>
Relinquished by: (Signature and Printed Name) <u>CHRIS MERRITT</u>	Date: <u>5-11-10</u>	Time: <u>9:00</u>	Received by: (Signature and Printed Name) <u>Mary [Signature]</u>
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)

I hereby authorize ATL to perform the work indicated below: Project Mgr /Submitter: <u>cm</u> <u>5-11-10</u> Print Name Date <u>cm</u> Signature	Send Report To: Attn: _____ Co: <u>SAME AS ABOVE</u> Address: _____ City: _____ State: _____ Zip: _____	Bill To: Attn: _____ Co: <u>SAME AS ABOVE</u> Address: _____ City: _____ State: _____ Zip: _____	Special Instructions/Comments:
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**Sample/Records - Archival & Disposal**  
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**Storage Fees (applies when storage is requested):**  
• Sample : \$2.00 / sample / mo (after 45 days)  
• Records : \$1.00 / ATL workorder / mo (after 1 year)

I T E M	LAB USE ONLY:		Sample Description				SPECIFY APPROPRIATE MATRIX										PRESERVATION	Q A / Q C												
	Batch #:	Lab No.	Sample I.D. / Location	Date	Time	8091A (Pesticides)	8092 (PCBs)	8098 (Volatiles)	8270C (BVA)	80108 (Total Nitrogen)	80158 (Total Phosphorus)	8021 (BTEX)	TITLE 22 / CAN 17 (6010 / 7000)	TP Hg / BTEX / PCBs	VOG / FOAs	SOIL			WATER	GROUND WATER	WASTEWATER	TAT	#	Type	RTNE <input type="checkbox"/>	CT <input type="checkbox"/>	SWRCB <input type="checkbox"/>	Logcode _____	OTHER _____	REMARKS
	111709 - 001		SB21-5	5-11-10	0910	X	X	X	X	X	X	X	X	X	X	X	X	X	X	STND	1									
	- 2		SB21-10		0925	X	X	X	X	X	X	X	X	X	X	X	X	X	X		1									
	- 3		SB21-W		0930	X	X	X	X	X	X	X	X	X	X	X	X	X	X		6	V	P							
	- 4		NB21-0		1045	X	X	X	X	X	X	X	X	X	X	X	X	X	X		1									
	- 5		6-5		1050	X	X	X	X	X	X	X	X	X	X	X	X	X	X		1									
	- 6		2-10		1055	X	X	X	X	X	X	X	X	X	X	X	X	X	X		1									
	- 7		NB21-W			X	X	X	X	X	X	X	X	X	X	X	X	X	X		6	V	P							
	- 8		NA-3.5		1140	X	X	X	X	X	X	X	X	X	X	X	X	X	X		1									
	- 9		NB19-6		1150	X	X	X	X	X	X	X	X	X	X	X	X	X	X		1									
	- 10		NB19-W			X	X	X	X	X	X	X	X	X	X	X	X	X	X		6	V	P							

• TAT starts 8 a.m. following day if samples received after 3 p.m.	TAT: A= <u>Overnight ≤ 24 hr</u>	B= <u>Emergency Next workday</u>	C= <u>Critical 2 Workdays</u>	D= <u>Urgent 3 Workdays</u>	E= <u>Routine 7 Workdays</u>	Preservatives: H=Hcl N=HNO <sub>3</sub> S=H <sub>2</sub> SO <sub>4</sub> C=4°C Z=Zn(AC) O=NaOH T=Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>
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# CHAIN OF CUSTODY RECORD



**Advanced Technology  
Laboratories**

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

## FOR LABORATORY USE ONLY:

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

Client: <b>GEOCON CONSULTANTS, INC.</b>	Address: 6671 Brisa Street	TEL: (925) 371-5900
Attn: <b>SEE PAGE 1</b>	City: Livemore State: CA Zip Code: 94550	FAX: (925) 371-5915

Project Name: <b>CALTRANS SANTA BARBARA 101</b>	Project #: <b>59200-06-461</b>	Sampler: <b>CM</b> (Printed Name)	(Signature) <b>CHRIS MERRETT</b>
Relinquished by: (Signature and Printed Name) <b>CHRIS MERRETT</b>	Date: <b>5-11-10</b>	Time: <b>1900</b>	Received by: (Signature and Printed Name) <b>[Signature]</b>
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)

I hereby authorize ATL to perform the work indicated below:	Send Report To:	Bill To:	Special Instructions/Comments:
Project Mgr /Submitter:	Attn: _____	Attn: _____	
<b>CM</b> <b>5-11-10</b>	Co: <b>SAME AS ABOVE</b>	Co: <b>SAME AS ABOVE</b>	
Print Name Date	Address _____	Address _____	
Signature <b>CM</b>	City _____ State _____ Zip _____	City _____ State _____ Zip _____	

**Sample/Records - Archival & Disposal**  
 Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.  
**Storage Fees (applies when storage is requested):**  
 • Sample : \$2.00 / sample / mo (after 45 days)  
 • Records : \$1.00 / ATL workorder / mo (after 1 year)

ITEM	LAB USE ONLY:		Sample Description				SPECIFY APPROPRIATE MATRIX										PRESERVATION	QA/QC									
	Batch #:	Lab No.	Sample I.D. / Location	Date	Time	MATRIX										TAT		#	Type	RTNE	CT						
						8091A (Pesticides)	8092 (PCB)	8209 (Volatile)	8270C (BNA)	80108 (Total Metal)	80158 (DR)	801 (BTX)	TITLE 22 / C/M 17 (6010 / 700)	7/113/184/M/D	VOL/FOG					SOIL	WATER	GROUND WATER	WASTEWATER	OTHER	Logcode		
	111709-11		NB18-3.5	5-11-10	1300	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1	P	T	H <sub>2</sub> O (SEA)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	-12		NB18-5		1505	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1	S			<input type="checkbox"/>	<input type="checkbox"/>
	-13		NB18-10		1310	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1	S			<input type="checkbox"/>	<input type="checkbox"/>
	-14		NB18-W		1335	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	6	E	U		<input type="checkbox"/>	<input type="checkbox"/>
	-15		NB17-3.5		1410	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1	P	T		<input type="checkbox"/>	<input type="checkbox"/>
	-16		NB17-7.5		1415	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1	S			<input type="checkbox"/>	<input type="checkbox"/>
	-17		NB17-10		1425	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1	S			<input type="checkbox"/>	<input type="checkbox"/>
	-18		NB17-W		1425	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	6	E	U		<input type="checkbox"/>	<input type="checkbox"/>

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



## Carmen Aguila

---

**From:** Carmen Aguila  
**Sent:** Wednesday, May 12, 2010 2:04 PM  
**To:** 'merritt@geoconinc.com'; 'giuntoli@geoconinc.com'  
**Cc:** Diane Galvan; Fernando Diwa  
**Subject:** FW: CALTRANS - SANTA BARBARA 101, SA200-06-81

Hi Chris,

Per our conversation the following will be done on the noted issues:

1. Received 2 extra soil samples not listed in COC labeled as NB10-5 and NB10-10, collected on 5/11/10 @ 1600 and 1610, respectively.  
NB10-5 - test for TPHg/ BTEX/MTBE, VOC and 8015 DM and CAM 17  
NB10-10- test for TPHg/ BTEX/MTBE, VOC and 8015 DM
2. Sample for NB21-10 was labeled as NB21-9.5, collection time matched 1055.  
Change sample ID to NB21-9.5 as indicated on the sample
3. Sample volume received for 8015 DRO/MO for NB18-W is less than half-full (approx. 400 ml.)  
Ok to proceed with increase in detection limit
4. Headspace >5-6 mm noted on SB21-W (all vials) and NB10-W (3 vials).  
Ok to proceed.

Please reply to confirm.

Thank you,  
Carmen

-----Original Message-----

**From:** Fernando Diwa  
**Sent:** Wednesday, May 12, 2010 1:00 PM  
**To:** 'merritt@geoconinc.com'  
**Cc:** Carmen Aguila; Diane Galvan  
**Subject:** CALTRANS - SANTA BARBARA 101, SA200-06-81

Hi Chris,

This is to inform you on the following issues:

1. Received 2 extra soil samples not listed in COC labeled as NB10-5 and NB10-10, collected on 5/11/10 @ 1600 and 1610, respectively.
2. Sample for NB21-10 was labeled as NB21-9.5, collection time matched 1055.
3. Sample volume received for 8015 DRO/MO for NB18-W is less than half-full (approx. 400 ml.)
4. Headspace >5-6 mm noted on SB21-W (all vials) and NB10-W (3 vials)

5/13/2010

Please advise.

Regards,

Fernando Diwa

Sample Control



Advanced Technology Laboratories

[www.atlglobal.com](http://www.atlglobal.com)

Tel: (562) 989-4045 ext. 236

Fax: (562) 989-4040

Advanced Technology Laboratories is a full-service environmental lab providing organic and inorganic analyses of soil, water, wastewater, storm water and hazardous waste samples. ATL is accredited by the State of California, NELAP and State of Nevada and holds various SBE, DBE and MBE certificates and a USDA soil permit. ATL takes pride in providing our customers with quick turnaround time, excellent customer service and defensible data while offering very competitive rates. *Advanced Technology Labs - Your Partner for Quality Environmental Testing*

This message is intended for the use of the individual or entity to which it is addressed. This may contain information that is privileged, confidential, and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and delete the original message. Thank you.

5/13/2010

May 21, 2010



Chris Merritt\Chris Giuntoli  
Geocon Consultants, Inc.  
6671 Brisa Street  
Livermore, CA 94550  
TEL: (925) 371-5900  
FAX: (925) 371-5915

ELAP No.: 1838  
NELAP No.: 02107CA  
NEVADA.: CA-401  
CSDLAC No.: 10196  
Workorder No.: 111761

RE: Santa Barbara 101, S9200-06-81

Attention: Chris Merritt\Chris Giuntoli

Enclosed are the results for sample(s) received on May 14, 2010 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

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

Eddie F. Rodriguez  
Laboratory Director

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



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**CLIENT:** Geocon Consultants, Inc.  
**Project:** Santa Barbara 101, S9200-06-81  
**Lab Order:** 111761

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**CASE NARRATIVE**

Analytical Comments for Method 8015 (DRO/ORO)

Surrogate recovery was diluted out for sample 111761-015A.

RPD for Duplicate (DUP) and/or Matrix Spike (MS)/Matrix Spike Duplicate (MSD) is outside criteria for samples 111761-001ADUP, 111761-012AMSD and 111761-013ADUP; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

Analytical Comments for Method 8015/8021

Surrogate recovery biased low for sample 111761-005A, possibly due to matrix interferences. The sample was reanalyzed and demonstrated the same low recovery.

Matrix Spike (MS) and /or Matrix Spike Duplicate (MSD) are/is outside recovery criteria for samples 111761-010AMS, 111761-010AMSD, 111761-016AMS, 111761-016AMSD, 111769-033AMS, 111769-033AMSD, 111789-001AMS and 111789-001AMSD; however, the analytical batch was validated by the Laboratory Control Sample (LCS).



**Advanced Technology Laboratories**

**ANALYTICAL RESULTS**

Print Date: 21-May-10

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81  
**Lab ID:** 111761-001A

**Client Sample ID:** NB12-3.5  
**Collection Date:** 5/12/2010 9:00:00 AM  
**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**ICP METALS**

**EPA 3050B**

**EPA 6010B**

RunID:	ICP8_100519G	QC Batch:	64200	PrepDate:	5/19/2010	Analyst:	SRB
Antimony	ND	2.0	mg/Kg	1	5/19/2010 05:49 PM		
Arsenic	3.0	1.0	mg/Kg	1	5/19/2010 05:49 PM		
Barium	160	1.0	mg/Kg	1	5/19/2010 05:49 PM		
Beryllium	ND	1.0	mg/Kg	1	5/19/2010 05:49 PM		
Cadmium	2.1	1.0	mg/Kg	1	5/19/2010 05:49 PM		
Chromium	43	1.0	mg/Kg	1	5/19/2010 05:49 PM		
Cobalt	3.0	1.0	mg/Kg	1	5/19/2010 05:49 PM		
Copper	25	2.0	mg/Kg	1	5/19/2010 05:49 PM		
Lead	16	1.0	mg/Kg	1	5/19/2010 05:49 PM		
Molybdenum	5.9	1.0	mg/Kg	1	5/19/2010 05:49 PM		
Nickel	28	1.0	mg/Kg	1	5/19/2010 05:49 PM		
Selenium	ND	1.0	mg/Kg	1	5/19/2010 05:49 PM		
Silver	ND	1.0	mg/Kg	1	5/19/2010 05:49 PM		
Thallium	ND	1.0	mg/Kg	1	5/19/2010 05:49 PM		
Vanadium	91	1.0	mg/Kg	1	5/19/2010 05:49 PM		
Zinc	44	1.0	mg/Kg	1	5/19/2010 05:49 PM		

**DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID**

**EPA 3550B**

**EPA 8015B(M)**

RunID:	GC16_100519E	QC Batch:	64216	PrepDate:	5/19/2010	Analyst:	CBR
DRO	7.1	1.0	mg/Kg	1	5/20/2010 06:05 AM		
ORO	11	1.0	mg/Kg	1	5/20/2010 06:05 AM		
Surr: p-Terphenyl	61.3	30-128	%REC	1	5/20/2010 06:05 AM		

**GASOLINE RANGE ORGANICS BY GC/FID**

**EPA 8015B(M)**

RunID:	GC2_100518A	QC Batch:	E10VS125	PrepDate:		Analyst:	DDL
GRO	ND	1.0	mg/Kg	1	5/18/2010 01:40 PM		
Surr: Bromofluorobenzene (FID)	89.7	56-137	%REC	1	5/18/2010 01:40 PM		

**VOLATILE ORGANIC COMPOUNDS BY GC/PID**

**EPA 8021B**

RunID:	GC2_100518A	QC Batch:	E10VS125	PrepDate:		Analyst:	DDL
Benzene	ND	5.0	µg/Kg	1	5/18/2010 01:40 PM		
Ethylbenzene	ND	5.0	µg/Kg	1	5/18/2010 01:40 PM		
m,p-Xylene	ND	10	µg/Kg	1	5/18/2010 01:40 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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# Advanced Technology Laboratories

# ANALYTICAL RESULTS

Print Date: 21-May-10

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81  
**Lab ID:** 111761-001A

**Client Sample ID:** NB12-3.5  
**Collection Date:** 5/12/2010 9:00:00 AM  
**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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## VOLATILE ORGANIC COMPOUNDS BY GC/PID

### EPA 8021B

RunID: GC2_100518A	QC Batch: E10VS125				PrepDate:	Analyst: DDL
Methyl tert-butyl ether	ND	5.0		µg/Kg	1	5/18/2010 01:40 PM
o-Xylene	ND	5.0		µg/Kg	1	5/18/2010 01:40 PM
Toluene	ND	5.0		µg/Kg	1	5/18/2010 01:40 PM
Surr: Bromofluorobenzene (PID)	90.1	64-116		%REC	1	5/18/2010 01:40 PM

## MERCURY BY COLD VAPOR TECHNIQUE

### EPA 7471A

RunID: AA1_100519B	QC Batch: 64203				PrepDate: 5/19/2010	Analyst: IL
Mercury	ND	0.10		mg/Kg	1	5/19/2010 03:42 PM

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



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**Advanced Technology Laboratories**

**ANALYTICAL RESULTS**

Print Date: 21-May-10

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81  
**Lab ID:** 111761-002A

**Client Sample ID:** NB12-5  
**Collection Date:** 5/12/2010 9:10:00 AM  
**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID**

**EPA 3550B**

**EPA 8015B(M)**

RunID: GC16_100519E	QC Batch: 64216				PrepDate: 5/19/2010	Analyst: CBR
DRO	1.3	1.0		mg/Kg	1	5/20/2010 05:01 AM
ORO	ND	1.0		mg/Kg	1	5/20/2010 05:01 AM
Surr: p-Terphenyl	70.6	30-128		%REC	1	5/20/2010 05:01 AM

**GASOLINE RANGE ORGANICS BY GC/FID**

**EPA 8015B(M)**

RunID: GC2_100518A	QC Batch: E10VS125				PrepDate:	Analyst: DDL
GRO	ND	1.0		mg/Kg	1	5/18/2010 01:55 PM
Surr: Bromofluorobenzene (FID)	86.4	56-137		%REC	1	5/18/2010 01:55 PM

**VOLATILE ORGANIC COMPOUNDS BY GC/PID**

**EPA 8021B**

RunID: GC2_100518A	QC Batch: E10VS125				PrepDate:	Analyst: DDL
Benzene	ND	5.0		µg/Kg	1	5/18/2010 01:55 PM
Ethylbenzene	ND	5.0		µg/Kg	1	5/18/2010 01:55 PM
m,p-Xylene	ND	10		µg/Kg	1	5/18/2010 01:55 PM
Methyl tert-butyl ether	ND	5.0		µg/Kg	1	5/18/2010 01:55 PM
o-Xylene	ND	5.0		µg/Kg	1	5/18/2010 01:55 PM
Toluene	ND	5.0		µg/Kg	1	5/18/2010 01:55 PM
Surr: Bromofluorobenzene (PID)	86.7	64-116		%REC	1	5/18/2010 01:55 PM

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



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**Advanced Technology Laboratories**

**ANALYTICAL RESULTS**

Print Date: 21-May-10

**CLIENT:** Geocon Consultants, Inc.

**Client Sample ID:** NB12-10

**Lab Order:** 111761

**Collection Date:** 5/12/2010 9:15:00 AM

**Project:** Santa Barbara 101, S9200-06-81

**Matrix:** SOIL

**Lab ID:** 111761-003A

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID**

**EPA 3550B**

**EPA 8015B(M)**

RunID: GC16_100519E	QC Batch: 64216				PrepDate: 5/19/2010	Analyst: CBR
DRO	6.1	1.0		mg/Kg	1	5/20/2010 05:37 AM
ORO	ND	1.0		mg/Kg	1	5/20/2010 05:37 AM
Surr: p-Terphenyl	78.3	30-128		%REC	1	5/20/2010 05:37 AM

**GASOLINE RANGE ORGANICS BY GC/FID**

**EPA 8015B(M)**

RunID: GC2_100518B	QC Batch: E10VS126				PrepDate:	Analyst: DDL
GRO	ND	1.0		mg/Kg	1	5/18/2010 06:41 PM
Surr: Bromofluorobenzene (FID)	93.1	56-137		%REC	1	5/18/2010 06:41 PM

**VOLATILE ORGANIC COMPOUNDS BY GC/PID**

**EPA 8021B**

RunID: GC2_100518B	QC Batch: E10VS126				PrepDate:	Analyst: DDL
Benzene	ND	5.0		µg/Kg	1	5/18/2010 06:41 PM
Ethylbenzene	ND	5.0		µg/Kg	1	5/18/2010 06:41 PM
m,p-Xylene	ND	10		µg/Kg	1	5/18/2010 06:41 PM
Methyl tert-butyl ether	ND	5.0		µg/Kg	1	5/18/2010 06:41 PM
o-Xylene	ND	5.0		µg/Kg	1	5/18/2010 06:41 PM
Toluene	ND	5.0		µg/Kg	1	5/18/2010 06:41 PM
Surr: Bromofluorobenzene (PID)	93.8	64-116		%REC	1	5/18/2010 06:41 PM

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



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# ANALYTICAL RESULTS

Print Date: 21-May-10

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81  
**Lab ID:** 111761-004A

**Client Sample ID:** NB11-3.5  
**Collection Date:** 5/12/2010 10:05:00 AM  
**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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## ICP METALS

### EPA 3050B

### EPA 6010B

RunID:	ICP8_100519G	QC Batch:	64200	PrepDate:	5/19/2010	Analyst:	SRB
Antimony	ND	2.0	mg/Kg	1	5/19/2010 05:52 PM		
Arsenic	5.4	1.0	mg/Kg	1	5/19/2010 05:52 PM		
Barium	100	1.0	mg/Kg	1	5/19/2010 05:52 PM		
Beryllium	ND	1.0	mg/Kg	1	5/19/2010 05:52 PM		
Cadmium	ND	1.0	mg/Kg	1	5/19/2010 05:52 PM		
Chromium	18	1.0	mg/Kg	1	5/19/2010 05:52 PM		
Cobalt	5.1	1.0	mg/Kg	1	5/19/2010 05:52 PM		
Copper	10	2.0	mg/Kg	1	5/19/2010 05:52 PM		
Lead	6.4	1.0	mg/Kg	1	5/19/2010 05:52 PM		
Molybdenum	4.0	1.0	mg/Kg	1	5/19/2010 05:52 PM		
Nickel	33	1.0	mg/Kg	1	5/19/2010 05:52 PM		
Selenium	ND	1.0	mg/Kg	1	5/19/2010 05:52 PM		
Silver	ND	1.0	mg/Kg	1	5/19/2010 05:52 PM		
Thallium	ND	1.0	mg/Kg	1	5/19/2010 05:52 PM		
Vanadium	25	1.0	mg/Kg	1	5/19/2010 05:52 PM		
Zinc	38	1.0	mg/Kg	1	5/19/2010 05:52 PM		

## DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID

### EPA 3550B

### EPA 8015B(M)

RunID:	GC16_100519E	QC Batch:	64216	PrepDate:	5/19/2010	Analyst:	CBR
DRO	7.5	1.0	mg/Kg	1	5/20/2010 05:47 AM		
ORO	6.9	1.0	mg/Kg	1	5/20/2010 05:47 AM		
Surr: p-Terphenyl	55.7	30-128	%REC	1	5/20/2010 05:47 AM		

## GASOLINE RANGE ORGANICS BY GC/FID

### EPA 8015B(M)

RunID:	GC2_100518B	QC Batch:	E10VS126	PrepDate:	Analyst:	DDL
GRO	ND	1.0	mg/Kg	1	5/18/2010 06:55 PM	
Surr: Bromofluorobenzene (FID)	96.2	56-137	%REC	1	5/18/2010 06:55 PM	

## VOLATILE ORGANIC COMPOUNDS BY GC/PID

### EPA 8021B

RunID:	GC2_100518B	QC Batch:	E10VS126	PrepDate:	Analyst:	DDL
Benzene	ND	5.0	µg/Kg	1	5/18/2010 06:55 PM	
Ethylbenzene	ND	5.0	µg/Kg	1	5/18/2010 06:55 PM	
m,p-Xylene	ND	10	µg/Kg	1	5/18/2010 06:55 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: 21-May-10

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81  
**Lab ID:** 111761-004A

**Client Sample ID:** NB11-3.5  
**Collection Date:** 5/12/2010 10:05:00 AM  
**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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## VOLATILE ORGANIC COMPOUNDS BY GC/PID

### EPA 8021B

RunID: GC2_100518B	QC Batch: E10VS126	PrepDate:	Analyst: DDL		
Methyl tert-butyl ether	ND	5.0	µg/Kg	1	5/18/2010 06:55 PM
o-Xylene	ND	5.0	µg/Kg	1	5/18/2010 06:55 PM
Toluene	ND	5.0	µg/Kg	1	5/18/2010 06:55 PM
Surr: Bromofluorobenzene (PID)	96.8	64-116	%REC	1	5/18/2010 06:55 PM

## MERCURY BY COLD VAPOR TECHNIQUE

### EPA 7471A

RunID: AA1_100519B	QC Batch: 64203	PrepDate: 5/19/2010	Analyst: IL		
Mercury	ND	0.10	mg/Kg	1	5/19/2010 03:44 PM

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



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**ANALYTICAL RESULTS**

Print Date: 21-May-10

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	NB11-5
<b>Lab Order:</b>	111761	<b>Collection Date:</b>	5/12/2010 10:15:00 AM
<b>Project:</b>	Santa Barbara 101, S9200-06-81	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	111761-005A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID**

**EPA 3550B**

**EPA 8015B(M)**

RunID: GC16_100519E	QC Batch: 64216				PrepDate: 5/19/2010	Analyst: CBR
DRO	3.8	1.0		mg/Kg	1	5/20/2010 04:51 AM
ORO	ND	1.0		mg/Kg	1	5/20/2010 04:51 AM
Surr: p-Terphenyl	70.2	30-128		%REC	1	5/20/2010 04:51 AM

**GASOLINE RANGE ORGANICS BY GC/FID**

**EPA 8015B(M)**

RunID: GC2_100519A	QC Batch: E10VS128				PrepDate:	Analyst: DDL
GRO	ND	1.0		mg/Kg	1	5/19/2010 01:08 PM
Surr: Bromofluorobenzene (FID)	35.9	56-137	S	%REC	1	5/19/2010 01:08 PM

**VOLATILE ORGANIC COMPOUNDS BY GC/PID**

**EPA 8021B**

RunID: GC2_100519A	QC Batch: E10VS128				PrepDate:	Analyst: DDL
Benzene	ND	5.0		µg/Kg	1	5/19/2010 01:08 PM
Ethylbenzene	ND	5.0		µg/Kg	1	5/19/2010 01:08 PM
m,p-Xylene	ND	10		µg/Kg	1	5/19/2010 01:08 PM
Methyl tert-butyl ether	ND	5.0		µg/Kg	1	5/19/2010 01:08 PM
o-Xylene	ND	5.0		µg/Kg	1	5/19/2010 01:08 PM
Toluene	ND	5.0		µg/Kg	1	5/19/2010 01:08 PM
Surr: Bromofluorobenzene (PID)	37.3	64-116	S	%REC	1	5/19/2010 01:08 PM

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



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**ANALYTICAL RESULTS**

Print Date: 21-May-10

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	NB11-10
<b>Lab Order:</b>	111761	<b>Collection Date:</b>	5/12/2010 10:25:00 AM
<b>Project:</b>	Santa Barbara 101, S9200-06-81	<b>Matrix:</b>	SOIL
<b>Lab ID:</b>	111761-006A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID**

**EPA 3550B**

**EPA 8015B(M)**

RunID: GC16_100519E	QC Batch: 64216				PrepDate: 5/19/2010	Analyst: CBR
DRO	7.7	1.0		mg/Kg	1	5/20/2010 08:42 AM
ORO	1.5	1.0		mg/Kg	1	5/20/2010 08:42 AM
Surr: p-Terphenyl	90.7	30-128		%REC	1	5/20/2010 08:42 AM

**GASOLINE RANGE ORGANICS BY GC/FID**

**EPA 8015B(M)**

RunID: GC2_100519A	QC Batch: E10VS128				PrepDate:	Analyst: DDL
GRO	ND	1.0		mg/Kg	1	5/19/2010 01:23 PM
Surr: Bromofluorobenzene (FID)	89.5	56-137		%REC	1	5/19/2010 01:23 PM

**VOLATILE ORGANIC COMPOUNDS BY GC/PID**

**EPA 8021B**

RunID: GC2_100519A	QC Batch: E10VS128				PrepDate:	Analyst: DDL
Benzene	ND	5.0		µg/Kg	1	5/19/2010 01:23 PM
Ethylbenzene	ND	5.0		µg/Kg	1	5/19/2010 01:23 PM
m,p-Xylene	ND	10		µg/Kg	1	5/19/2010 01:23 PM
Methyl tert-butyl ether	ND	5.0		µg/Kg	1	5/19/2010 01:23 PM
o-Xylene	ND	5.0		µg/Kg	1	5/19/2010 01:23 PM
Toluene	ND	5.0		µg/Kg	1	5/19/2010 01:23 PM
Surr: Bromofluorobenzene (PID)	89.6	64-116		%REC	1	5/19/2010 01:23 PM

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



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**ANALYTICAL RESULTS**

Print Date: 21-May-10

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81  
**Lab ID:** 111761-007A

**Client Sample ID:** NB5-3.5  
**Collection Date:** 5/12/2010 12:00:00 PM  
**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**ICP METALS**

**EPA 3050B**

**EPA 6010B**

RunID:	ICP8_100519G	QC Batch:	64200	PrepDate:	5/19/2010	Analyst:	SRB
Antimony	ND	2.0	mg/Kg	1	5/19/2010 05:55 PM		
Arsenic	1.9	1.0	mg/Kg	1	5/19/2010 05:55 PM		
Barium	100	1.0	mg/Kg	1	5/19/2010 05:55 PM		
Beryllium	ND	1.0	mg/Kg	1	5/19/2010 05:55 PM		
Cadmium	ND	1.0	mg/Kg	1	5/19/2010 05:55 PM		
Chromium	12	1.0	mg/Kg	1	5/19/2010 05:55 PM		
Cobalt	6.8	1.0	mg/Kg	1	5/19/2010 05:55 PM		
Copper	6.8	2.0	mg/Kg	1	5/19/2010 05:55 PM		
Lead	9.1	1.0	mg/Kg	1	5/19/2010 05:55 PM		
Molybdenum	ND	1.0	mg/Kg	1	5/19/2010 05:55 PM		
Nickel	10	1.0	mg/Kg	1	5/19/2010 05:55 PM		
Selenium	ND	1.0	mg/Kg	1	5/19/2010 05:55 PM		
Silver	ND	1.0	mg/Kg	1	5/19/2010 05:55 PM		
Thallium	ND	1.0	mg/Kg	1	5/19/2010 05:55 PM		
Vanadium	19	1.0	mg/Kg	1	5/19/2010 05:55 PM		
Zinc	21	1.0	mg/Kg	1	5/19/2010 05:55 PM		

**DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID**

**EPA 3550B**

**EPA 8015B(M)**

RunID:	GC16_100519E	QC Batch:	64216	PrepDate:	5/19/2010	Analyst:	CBR
DRO	14	1.0	mg/Kg	1	5/20/2010 06:24 AM		
ORO	29	1.0	mg/Kg	1	5/20/2010 06:24 AM		
Surr: p-Terphenyl	71.0	30-128	%REC	1	5/20/2010 06:24 AM		

**GASOLINE RANGE ORGANICS BY GC/FID**

**EPA 8015B(M)**

RunID:	GC2_100518B	QC Batch:	E10VS126	PrepDate:	Analyst:	DDL
GRO	ND	1.0	mg/Kg	1	5/18/2010 07:39 PM	
Surr: Bromofluorobenzene (FID)	85.8	56-137	%REC	1	5/18/2010 07:39 PM	

**VOLATILE ORGANIC COMPOUNDS BY GC/PID**

**EPA 8021B**

RunID:	GC2_100518B	QC Batch:	E10VS126	PrepDate:	Analyst:	DDL
Benzene	ND	5.0	µg/Kg	1	5/18/2010 07:39 PM	
Ethylbenzene	ND	5.0	µg/Kg	1	5/18/2010 07:39 PM	
m,p-Xylene	ND	10	µg/Kg	1	5/18/2010 07:39 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: 21-May-10

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81  
**Lab ID:** 111761-007A

**Client Sample ID:** NB5-3.5  
**Collection Date:** 5/12/2010 12:00:00 PM  
**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**VOLATILE ORGANIC COMPOUNDS BY GC/PID**

**EPA 8021B**

RunID: GC2_100518B	QC Batch: E10VS126				PrepDate:	Analyst: DDL
Methyl tert-butyl ether	ND	5.0		µg/Kg	1	5/18/2010 07:39 PM
o-Xylene	ND	5.0		µg/Kg	1	5/18/2010 07:39 PM
Toluene	ND	5.0		µg/Kg	1	5/18/2010 07:39 PM
Surr: Bromofluorobenzene (PID)	86.9	64-116		%REC	1	5/18/2010 07:39 PM

**MERCURY BY COLD VAPOR TECHNIQUE**

**EPA 7471A**

RunID: AA1_100519B	QC Batch: 64203				PrepDate: 5/19/2010	Analyst: IL
Mercury	ND	0.10		mg/Kg	1	5/19/2010 03:46 PM

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



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**ANALYTICAL RESULTS**

Print Date: 21-May-10

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81  
**Lab ID:** 111761-008A

**Client Sample ID:** NB5-5  
**Collection Date:** 5/12/2010 12:05:00 PM  
**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID**

**EPA 3550B**

**EPA 8015B(M)**

RunID: GC16_100519E	QC Batch: 64216				PrepDate: 5/19/2010	Analyst: CBR
DRO	13	1.0		mg/Kg	1	5/20/2010 08:51 AM
ORO	2.3	1.0		mg/Kg	1	5/20/2010 08:51 AM
Surr: p-Terphenyl	73.2	30-128		%REC	1	5/20/2010 08:51 AM

**GASOLINE RANGE ORGANICS BY GC/FID**

**EPA 8015B(M)**

RunID: GC2_100518B	QC Batch: E10VS126				PrepDate:	Analyst: DDL
GRO	ND	1.0		mg/Kg	1	5/18/2010 07:54 PM
Surr: Bromofluorobenzene (FID)	87.5	56-137		%REC	1	5/18/2010 07:54 PM

**VOLATILE ORGANIC COMPOUNDS BY GC/PID**

**EPA 8021B**

RunID: GC2_100518B	QC Batch: E10VS126				PrepDate:	Analyst: DDL
Benzene	ND	5.0		µg/Kg	1	5/18/2010 07:54 PM
Ethylbenzene	ND	5.0		µg/Kg	1	5/18/2010 07:54 PM
m,p-Xylene	ND	10		µg/Kg	1	5/18/2010 07:54 PM
Methyl tert-butyl ether	ND	5.0		µg/Kg	1	5/18/2010 07:54 PM
o-Xylene	ND	5.0		µg/Kg	1	5/18/2010 07:54 PM
Toluene	ND	5.0		µg/Kg	1	5/18/2010 07:54 PM
Surr: Bromofluorobenzene (PID)	89.2	64-116		%REC	1	5/18/2010 07:54 PM

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



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**ANALYTICAL RESULTS**

Print Date: 21-May-10

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81  
**Lab ID:** 111761-009A

**Client Sample ID:** NB5-10  
**Collection Date:** 5/12/2010 12:30:00 PM  
**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID**

**EPA 3550B**

**EPA 8015B(M)**

RunID: GC16_100519E	QC Batch: 64216				PrepDate: 5/19/2010	Analyst: CBR
DRO	11	1.0		mg/Kg	1	5/20/2010 04:33 AM
ORO	2.2	1.0		mg/Kg	1	5/20/2010 04:33 AM
Surr: p-Terphenyl	71.7	30-128		%REC	1	5/20/2010 04:33 AM

**GASOLINE RANGE ORGANICS BY GC/FID**

**EPA 8015B(M)**

RunID: GC2_100518B	QC Batch: E10VS126				PrepDate:	Analyst: DDL
GRO	ND	1.0		mg/Kg	1	5/18/2010 08:08 PM
Surr: Bromofluorobenzene (FID)	85.6	56-137		%REC	1	5/18/2010 08:08 PM

**VOLATILE ORGANIC COMPOUNDS BY GC/PID**

**EPA 8021B**

RunID: GC2_100518B	QC Batch: E10VS126				PrepDate:	Analyst: DDL
Benzene	ND	5.0		µg/Kg	1	5/18/2010 08:08 PM
Ethylbenzene	ND	5.0		µg/Kg	1	5/18/2010 08:08 PM
m,p-Xylene	ND	10		µg/Kg	1	5/18/2010 08:08 PM
Methyl tert-butyl ether	ND	5.0		µg/Kg	1	5/18/2010 08:08 PM
o-Xylene	ND	5.0		µg/Kg	1	5/18/2010 08:08 PM
Toluene	ND	5.0		µg/Kg	1	5/18/2010 08:08 PM
Surr: Bromofluorobenzene (PID)	87.3	64-116		%REC	1	5/18/2010 08:08 PM

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



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**ANALYTICAL RESULTS**

Print Date: 21-May-10

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81  
**Lab ID:** 111761-010A

**Client Sample ID:** NB5-15  
**Collection Date:** 5/12/2010 12:45:00 PM  
**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID**

**EPA 3550B**

**EPA 8015B(M)**

RunID: GC16_100519E	QC Batch: 64216				PrepDate: 5/19/2010	Analyst: CBR
DRO	8.2	1.0		mg/Kg	1	5/20/2010 03:36 AM
ORO	ND	1.0		mg/Kg	1	5/20/2010 03:36 AM
Surr: p-Terphenyl	75.6	30-128		%REC	1	5/20/2010 03:36 AM

**GASOLINE RANGE ORGANICS BY GC/FID**

**EPA 8015B(M)**

RunID: GC2_100518B	QC Batch: E10VS126				PrepDate:	Analyst: DDL
GRO	ND	1.0		mg/Kg	1	5/18/2010 06:12 PM
Surr: Bromofluorobenzene (FID)	83.0	56-137		%REC	1	5/18/2010 06:12 PM

**VOLATILE ORGANIC COMPOUNDS BY GC/PID**

**EPA 8021B**

RunID: GC2_100518B	QC Batch: E10VS126				PrepDate:	Analyst: DDL
Benzene	ND	5.0		µg/Kg	1	5/18/2010 06:12 PM
Ethylbenzene	ND	5.0		µg/Kg	1	5/18/2010 06:12 PM
m,p-Xylene	ND	10		µg/Kg	1	5/18/2010 06:12 PM
Methyl tert-butyl ether	ND	5.0		µg/Kg	1	5/18/2010 06:12 PM
o-Xylene	ND	5.0		µg/Kg	1	5/18/2010 06:12 PM
Toluene	ND	5.0		µg/Kg	1	5/18/2010 06:12 PM
Surr: Bromofluorobenzene (PID)	83.0	64-116		%REC	1	5/18/2010 06:12 PM

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



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# ANALYTICAL RESULTS

Print Date: 21-May-10

**CLIENT:** Geocon Consultants, Inc.

**Client Sample ID:** NB1-3.5

**Lab Order:** 111761

**Collection Date:** 5/12/2010 2:25:00 PM

**Project:** Santa Barbara 101, S9200-06-81

**Matrix:** SOIL

**Lab ID:** 111761-011A

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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## ICP METALS

### EPA 3050B

### EPA 6010B

RunID:	ICP8_100519G	QC Batch:	64200	PrepDate:	5/19/2010	Analyst:	SRB
Antimony	ND	2.0	mg/Kg	1	5/19/2010 06:00 PM		
Arsenic	ND	1.0	mg/Kg	1	5/19/2010 06:00 PM		
Barium	31	1.0	mg/Kg	1	5/19/2010 06:00 PM		
Beryllium	ND	1.0	mg/Kg	1	5/19/2010 06:00 PM		
Cadmium	ND	1.0	mg/Kg	1	5/19/2010 06:00 PM		
Chromium	7.3	1.0	mg/Kg	1	5/19/2010 06:00 PM		
Cobalt	1.8	1.0	mg/Kg	1	5/19/2010 06:00 PM		
Copper	5.4	2.0	mg/Kg	1	5/19/2010 06:00 PM		
Lead	7.9	1.0	mg/Kg	1	5/19/2010 06:00 PM		
Molybdenum	ND	1.0	mg/Kg	1	5/19/2010 06:00 PM		
Nickel	4.7	1.0	mg/Kg	1	5/19/2010 06:00 PM		
Selenium	ND	1.0	mg/Kg	1	5/19/2010 06:00 PM		
Silver	ND	1.0	mg/Kg	1	5/19/2010 06:00 PM		
Thallium	ND	1.0	mg/Kg	1	5/19/2010 06:00 PM		
Vanadium	11	1.0	mg/Kg	1	5/19/2010 06:00 PM		
Zinc	11	1.0	mg/Kg	1	5/19/2010 06:00 PM		

## DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID

### EPA 3550B

### EPA 8015B(M)

RunID:	GC16_100519D	QC Batch:	64217	PrepDate:	5/19/2010	Analyst:	CBR
DRO	1.6	1.0	mg/Kg	1	5/20/2010 01:53 AM		
ORO	2.3	1.0	mg/Kg	1	5/20/2010 01:53 AM		
Surr: p-Terphenyl	69.6	30-128	%REC	1	5/20/2010 01:53 AM		

## GASOLINE RANGE ORGANICS BY GC/FID

### EPA 8015B(M)

RunID:	GC2_100518B	QC Batch:	E10VS126	PrepDate:	Analyst:	DDL
GRO	ND	1.0	mg/Kg	1	5/18/2010 08:23 PM	
Surr: Bromofluorobenzene (FID)	85.9	56-137	%REC	1	5/18/2010 08:23 PM	

## VOLATILE ORGANIC COMPOUNDS BY GC/PID

### EPA 8021B

RunID:	GC2_100518B	QC Batch:	E10VS126	PrepDate:	Analyst:	DDL
Benzene	ND	5.0	µg/Kg	1	5/18/2010 08:23 PM	
Ethylbenzene	ND	5.0	µg/Kg	1	5/18/2010 08:23 PM	
m,p-Xylene	ND	10	µg/Kg	1	5/18/2010 08:23 PM	

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



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# ANALYTICAL RESULTS

Print Date: 21-May-10

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81  
**Lab ID:** 111761-011A

**Client Sample ID:** NB1-3.5  
**Collection Date:** 5/12/2010 2:25:00 PM  
**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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## VOLATILE ORGANIC COMPOUNDS BY GC/PID

### EPA 8021B

RunID:	QC Batch:	E10VS126	PrepDate:	Analyst:	
GC2_100518B	E10VS126			DDL	
Methyl tert-butyl ether	ND	5.0	µg/Kg	1	5/18/2010 08:23 PM
o-Xylene	ND	5.0	µg/Kg	1	5/18/2010 08:23 PM
Toluene	ND	5.0	µg/Kg	1	5/18/2010 08:23 PM
Surr: Bromofluorobenzene (PID)	87.6	64-116	%REC	1	5/18/2010 08:23 PM

## MERCURY BY COLD VAPOR TECHNIQUE

### EPA 7471A

RunID:	QC Batch:	64203	PrepDate:	Analyst:	
AA1_100519B	64203		5/19/2010	IL	
Mercury	ND	0.10	mg/Kg	1	5/19/2010 03:53 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: 21-May-10

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81  
**Lab ID:** 111761-012A

**Client Sample ID:** NB1-5  
**Collection Date:** 5/12/2010 2:30:00 PM  
**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID**

**EPA 3550B**

**EPA 8015B(M)**

RunID: GC16_100519D	QC Batch: 64217				PrepDate: 5/19/2010	Analyst: CBR
DRO	2.5	1.0		mg/Kg	1	5/20/2010 01:34 AM
ORO	2.1	1.0		mg/Kg	1	5/20/2010 01:34 AM
Surr: p-Terphenyl	75.6	30-128		%REC	1	5/20/2010 01:34 AM

**GASOLINE RANGE ORGANICS BY GC/FID**

**EPA 8015B(M)**

RunID: GC2_100518B	QC Batch: E10VS126				PrepDate:	Analyst: DDL
GRO	ND	1.0		mg/Kg	1	5/18/2010 08:38 PM
Surr: Bromofluorobenzene (FID)	82.5	56-137		%REC	1	5/18/2010 08:38 PM

**VOLATILE ORGANIC COMPOUNDS BY GC/PID**

**EPA 8021B**

RunID: GC2_100518B	QC Batch: E10VS126				PrepDate:	Analyst: DDL
Benzene	ND	5.0		µg/Kg	1	5/18/2010 08:38 PM
Ethylbenzene	ND	5.0		µg/Kg	1	5/18/2010 08:38 PM
m,p-Xylene	ND	10		µg/Kg	1	5/18/2010 08:38 PM
Methyl tert-butyl ether	ND	5.0		µg/Kg	1	5/18/2010 08:38 PM
o-Xylene	ND	5.0		µg/Kg	1	5/18/2010 08:38 PM
Toluene	ND	5.0		µg/Kg	1	5/18/2010 08:38 PM
Surr: Bromofluorobenzene (PID)	83.7	64-116		%REC	1	5/18/2010 08:38 PM

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



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**Advanced Technology Laboratories**

**ANALYTICAL RESULTS**

Print Date: 21-May-10

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81  
**Lab ID:** 111761-013A

**Client Sample ID:** NB1-10  
**Collection Date:** 5/12/2010 2:40:00 PM  
**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID**

**EPA 3550B**

**EPA 8015B(M)**

RunID: GC16_100519D	QC Batch: 64217				PrepDate: 5/19/2010	Analyst: CBR
DRO	8.4	1.0		mg/Kg	1	5/20/2010 02:29 AM
ORO	6.6	1.0		mg/Kg	1	5/20/2010 02:29 AM
Surr: p-Terphenyl	77.3	30-128		%REC	1	5/20/2010 02:29 AM

**GASOLINE RANGE ORGANICS BY GC/FID**

**EPA 8015B(M)**

RunID: GC2_100518C	QC Batch: E10VS127				PrepDate:	Analyst: DDL
GRO	ND	1.0		mg/Kg	1	5/19/2010 02:43 AM
Surr: Bromofluorobenzene (FID)	86.5	56-137		%REC	1	5/19/2010 02:43 AM

**VOLATILE ORGANIC COMPOUNDS BY GC/PID**

**EPA 8021B**

RunID: GC2_100518C	QC Batch: E10VS127				PrepDate:	Analyst: DDL
Benzene	ND	5.0		µg/Kg	1	5/19/2010 02:43 AM
Ethylbenzene	ND	5.0		µg/Kg	1	5/19/2010 02:43 AM
m,p-Xylene	ND	10		µg/Kg	1	5/19/2010 02:43 AM
Methyl tert-butyl ether	ND	5.0		µg/Kg	1	5/19/2010 02:43 AM
o-Xylene	ND	5.0		µg/Kg	1	5/19/2010 02:43 AM
Toluene	ND	5.0		µg/Kg	1	5/19/2010 02:43 AM
Surr: Bromofluorobenzene (PID)	87.9	64-116		%REC	1	5/19/2010 02:43 AM

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



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**ANALYTICAL RESULTS**

Print Date: 21-May-10

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81  
**Lab ID:** 111761-014A

**Client Sample ID:** NB1-15  
**Collection Date:** 5/12/2010 3:00:00 PM  
**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID**

**EPA 3550B**

**EPA 8015B(M)**

RunID: GC16_100519D	QC Batch: 64217				PrepDate: 5/19/2010	Analyst: CBR
DRO	3.9	1.0		mg/Kg	1	5/20/2010 12:48 AM
ORO	ND	1.0		mg/Kg	1	5/20/2010 12:48 AM
Surr: p-Terphenyl	69.6	30-128		%REC	1	5/20/2010 12:48 AM

**GASOLINE RANGE ORGANICS BY GC/FID**

**EPA 8015B(M)**

RunID: GC2_100518C	QC Batch: E10VS127				PrepDate:	Analyst: DDL
GRO	ND	1.0		mg/Kg	1	5/19/2010 02:58 AM
Surr: Bromofluorobenzene (FID)	83.9	56-137		%REC	1	5/19/2010 02:58 AM

**VOLATILE ORGANIC COMPOUNDS BY GC/PID**

**EPA 8021B**

RunID: GC2_100518C	QC Batch: E10VS127				PrepDate:	Analyst: DDL
Benzene	ND	5.0		µg/Kg	1	5/19/2010 02:58 AM
Ethylbenzene	ND	5.0		µg/Kg	1	5/19/2010 02:58 AM
m,p-Xylene	ND	10		µg/Kg	1	5/19/2010 02:58 AM
Methyl tert-butyl ether	ND	5.0		µg/Kg	1	5/19/2010 02:58 AM
o-Xylene	ND	5.0		µg/Kg	1	5/19/2010 02:58 AM
Toluene	ND	5.0		µg/Kg	1	5/19/2010 02:58 AM
Surr: Bromofluorobenzene (PID)	85.2	64-116		%REC	1	5/19/2010 02:58 AM

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



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# ANALYTICAL RESULTS

Print Date: 21-May-10

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81  
**Lab ID:** 111761-015A

**Client Sample ID:** NB27-5  
**Collection Date:** 5/12/2010 4:41:00 PM  
**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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## ICP METALS

### EPA 3050B

### EPA 6010B

RunID:	ICP8_100519G	QC Batch:	64200	PrepDate:	5/19/2010	Analyst:	SRB
Antimony	ND	2.0	mg/Kg	1	5/19/2010 06:04 PM		
Arsenic	3.3	1.0	mg/Kg	1	5/19/2010 06:04 PM		
Barium	88	1.0	mg/Kg	1	5/19/2010 06:04 PM		
Beryllium	ND	1.0	mg/Kg	1	5/19/2010 06:04 PM		
Cadmium	ND	1.0	mg/Kg	1	5/19/2010 06:04 PM		
Chromium	16	1.0	mg/Kg	1	5/19/2010 06:04 PM		
Cobalt	4.5	1.0	mg/Kg	1	5/19/2010 06:04 PM		
Copper	10	2.0	mg/Kg	1	5/19/2010 06:04 PM		
Lead	13	1.0	mg/Kg	1	5/19/2010 06:04 PM		
Molybdenum	ND	1.0	mg/Kg	1	5/19/2010 06:04 PM		
Nickel	20	1.0	mg/Kg	1	5/19/2010 06:04 PM		
Selenium	ND	1.0	mg/Kg	1	5/19/2010 06:04 PM		
Silver	ND	1.0	mg/Kg	1	5/19/2010 06:04 PM		
Thallium	ND	1.0	mg/Kg	1	5/19/2010 06:04 PM		
Vanadium	17	1.0	mg/Kg	1	5/19/2010 06:04 PM		
Zinc	43	1.0	mg/Kg	1	5/19/2010 06:04 PM		

## DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID

### EPA 3550B

### EPA 8015B(M)

RunID:	GC16_100519D	QC Batch:	64217	PrepDate:	5/19/2010	Analyst:	CBR
DRO	200	10	mg/Kg	10	5/20/2010 10:38 AM		
ORO	340	10	mg/Kg	10	5/20/2010 10:38 AM		
Surr: p-Terphenyl	0	30-128	SDO %REC	10	5/20/2010 10:38 AM		

## GASOLINE RANGE ORGANICS BY GC/FID

### EPA 8015B(M)

RunID:	GC2_100518C	QC Batch:	E10VS127	PrepDate:	Analyst:	DDL
GRO	ND	1.0	mg/Kg	1	5/19/2010 03:13 AM	
Surr: Bromofluorobenzene (FID)	89.3	56-137	%REC	1	5/19/2010 03:13 AM	

## VOLATILE ORGANIC COMPOUNDS BY GC/PID

### EPA 8021B

RunID:	GC2_100518C	QC Batch:	E10VS127	PrepDate:	Analyst:	DDL
Benzene	ND	5.0	µg/Kg	1	5/19/2010 03:13 AM	
Ethylbenzene	ND	5.0	µg/Kg	1	5/19/2010 03:13 AM	
m,p-Xylene	ND	10	µg/Kg	1	5/19/2010 03:13 AM	

**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: 21-May-10

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81  
**Lab ID:** 111761-015A

**Client Sample ID:** NB27-5  
**Collection Date:** 5/12/2010 4:41:00 PM  
**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**VOLATILE ORGANIC COMPOUNDS BY GC/PID**

**EPA 8021B**

RunID: GC2_100518C	QC Batch: E10VS127				PrepDate:	Analyst: DDL
Methyl tert-butyl ether	ND	5.0		µg/Kg	1	5/19/2010 03:13 AM
o-Xylene	ND	5.0		µg/Kg	1	5/19/2010 03:13 AM
Toluene	ND	5.0		µg/Kg	1	5/19/2010 03:13 AM
Surr: Bromofluorobenzene (PID)	89.8	64-116		%REC	1	5/19/2010 03:13 AM

**MERCURY BY COLD VAPOR TECHNIQUE**

**EPA 7471A**

RunID: AA1_100519B	QC Batch: 64203				PrepDate: 5/19/2010	Analyst: IL
Mercury	ND	0.10		mg/Kg	1	5/19/2010 03:55 PM

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



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**ANALYTICAL RESULTS**

Print Date: 21-May-10

**CLIENT:** Geocon Consultants, Inc.

**Client Sample ID:** NB27-7.5

**Lab Order:** 111761

**Collection Date:** 5/12/2010 5:50:00 PM

**Project:** Santa Barbara 101, S9200-06-81

**Matrix:** SOIL

**Lab ID:** 111761-016A

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID**

**EPA 3550B**

**EPA 8015B(M)**

RunID: GC16_100519D	QC Batch: 64217				PrepDate: 5/19/2010	Analyst: CBR
DRO	1.2	1.0		mg/Kg	1	5/20/2010 02:39 AM
ORO	4.4	1.0		mg/Kg	1	5/20/2010 02:39 AM
Surr: p-Terphenyl	59.7	30-128		%REC	1	5/20/2010 02:39 AM

**GASOLINE RANGE ORGANICS BY GC/FID**

**EPA 8015B(M)**

RunID: GC2_100518C	QC Batch: E10VS127				PrepDate:	Analyst: DDL
GRO	ND	1.0		mg/Kg	1	5/19/2010 03:27 AM
Surr: Bromofluorobenzene (FID)	93.5	56-137		%REC	1	5/19/2010 03:27 AM

**VOLATILE ORGANIC COMPOUNDS BY GC/PID**

**EPA 8021B**

RunID: GC2_100518C	QC Batch: E10VS127				PrepDate:	Analyst: DDL
Benzene	ND	5.0		µg/Kg	1	5/19/2010 03:27 AM
Ethylbenzene	ND	5.0		µg/Kg	1	5/19/2010 03:27 AM
m,p-Xylene	ND	10		µg/Kg	1	5/19/2010 03:27 AM
Methyl tert-butyl ether	ND	5.0		µg/Kg	1	5/19/2010 03:27 AM
o-Xylene	ND	5.0		µg/Kg	1	5/19/2010 03:27 AM
Toluene	ND	5.0		µg/Kg	1	5/19/2010 03:27 AM
Surr: Bromofluorobenzene (PID)	94.1	64-116		%REC	1	5/19/2010 03:27 AM

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



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**ANALYTICAL RESULTS**

Print Date: 21-May-10

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	NB11-W
<b>Lab Order:</b>	111761	<b>Collection Date:</b>	5/12/2010 10:30:00 AM
<b>Project:</b>	Santa Barbara 101, S9200-06-81	<b>Matrix:</b>	GROUNDWATER
<b>Lab ID:</b>	111761-017A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**VOLATILE ORGANIC COMPOUNDS BY GC/MS**

**EPA 8260B**

RunID: MS2_100517A	QC Batch: Q10VW103	PrepDate:	Analyst: SLL		
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1	5/17/2010 02:36 PM
1,1,1-Trichloroethane	ND	0.50	µg/L	1	5/17/2010 02:36 PM
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1	5/17/2010 02:36 PM
1,1,2-Trichloroethane	ND	0.50	µg/L	1	5/17/2010 02:36 PM
1,1-Dichloroethane	ND	0.50	µg/L	1	5/17/2010 02:36 PM
1,1-Dichloroethene	ND	0.50	µg/L	1	5/17/2010 02:36 PM
1,1-Dichloropropene	ND	0.50	µg/L	1	5/17/2010 02:36 PM
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1	5/17/2010 02:36 PM
1,2,3-Trichloropropane	ND	0.50	µg/L	1	5/17/2010 02:36 PM
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1	5/17/2010 02:36 PM
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1	5/17/2010 02:36 PM
1,2-Dibromo-3-chloropropane	ND	0.50	µg/L	1	5/17/2010 02:36 PM
1,2-Dibromoethane	ND	0.50	µg/L	1	5/17/2010 02:36 PM
1,2-Dichlorobenzene	ND	0.50	µg/L	1	5/17/2010 02:36 PM
1,2-Dichloroethane	ND	0.50	µg/L	1	5/17/2010 02:36 PM
1,2-Dichloropropane	ND	0.50	µg/L	1	5/17/2010 02:36 PM
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1	5/17/2010 02:36 PM
1,3-Dichlorobenzene	ND	0.50	µg/L	1	5/17/2010 02:36 PM
1,3-Dichloropropane	ND	0.50	µg/L	1	5/17/2010 02:36 PM
1,4-Dichlorobenzene	ND	0.50	µg/L	1	5/17/2010 02:36 PM
2,2-Dichloropropane	ND	0.50	µg/L	1	5/17/2010 02:36 PM
2-Chlorotoluene	ND	0.50	µg/L	1	5/17/2010 02:36 PM
4-Chlorotoluene	ND	0.50	µg/L	1	5/17/2010 02:36 PM
4-Isopropyltoluene	ND	0.50	µg/L	1	5/17/2010 02:36 PM
Benzene	ND	0.50	µg/L	1	5/17/2010 02:36 PM
Bromobenzene	ND	0.50	µg/L	1	5/17/2010 02:36 PM
Bromodichloromethane	ND	0.50	µg/L	1	5/17/2010 02:36 PM
Bromoform	ND	0.50	µg/L	1	5/17/2010 02:36 PM
Bromomethane	ND	0.50	µg/L	1	5/17/2010 02:36 PM
Carbon tetrachloride	ND	0.50	µg/L	1	5/17/2010 02:36 PM
Chlorobenzene	ND	0.50	µg/L	1	5/17/2010 02:36 PM
Chloroethane	ND	0.50	µg/L	1	5/17/2010 02:36 PM
Chloroform	ND	0.50	µg/L	1	5/17/2010 02:36 PM
Chloromethane	ND	0.50	µg/L	1	5/17/2010 02:36 PM
cis-1,2-Dichloroethene	ND	0.50	µg/L	1	5/17/2010 02:36 PM

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



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**Advanced Technology Laboratories**

**ANALYTICAL RESULTS**

Print Date: 21-May-10

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81  
**Lab ID:** 111761-017A

**Client Sample ID:** NB11-W  
**Collection Date:** 5/12/2010 10:30:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**VOLATILE ORGANIC COMPOUNDS BY GC/MS**

**EPA 8260B**

RunID:	MS2_100517A	QC Batch:	Q10VW103	PrepDate:	Analyst:	SLL
cis-1,3-Dichloropropene	ND	0.50	µg/L	1	5/17/2010 02:36 PM	
Di-isopropyl ether	ND	0.50	µg/L	1	5/17/2010 02:36 PM	
Dibromochloromethane	ND	0.50	µg/L	1	5/17/2010 02:36 PM	
Dibromomethane	ND	0.50	µg/L	1	5/17/2010 02:36 PM	
Dichlorodifluoromethane	ND	0.50	µg/L	1	5/17/2010 02:36 PM	
Ethyl tert-butyl ether	ND	0.50	µg/L	1	5/17/2010 02:36 PM	
Ethylbenzene	ND	0.50	µg/L	1	5/17/2010 02:36 PM	
Hexachlorobutadiene	ND	0.50	µg/L	1	5/17/2010 02:36 PM	
Isopropylbenzene	ND	0.50	µg/L	1	5/17/2010 02:36 PM	
m,p-Xylene	ND	1.0	µg/L	1	5/17/2010 02:36 PM	
Methylene chloride	ND	1.0	µg/L	1	5/17/2010 02:36 PM	
MTBE	ND	0.50	µg/L	1	5/17/2010 02:36 PM	
n-Butylbenzene	ND	0.50	µg/L	1	5/17/2010 02:36 PM	
n-Propylbenzene	ND	0.50	µg/L	1	5/17/2010 02:36 PM	
Naphthalene	ND	0.50	µg/L	1	5/17/2010 02:36 PM	
o-Xylene	ND	0.50	µg/L	1	5/17/2010 02:36 PM	
sec-Butylbenzene	ND	0.50	µg/L	1	5/17/2010 02:36 PM	
Styrene	ND	0.50	µg/L	1	5/17/2010 02:36 PM	
Tert-amyl methyl ether	ND	0.50	µg/L	1	5/17/2010 02:36 PM	
Tert-Butanol	ND	10	µg/L	1	5/17/2010 02:36 PM	
tert-Butylbenzene	ND	0.50	µg/L	1	5/17/2010 02:36 PM	
Tetrachloroethene	ND	0.50	µg/L	1	5/17/2010 02:36 PM	
Toluene	ND	0.50	µg/L	1	5/17/2010 02:36 PM	
trans-1,2-Dichloroethene	ND	0.50	µg/L	1	5/17/2010 02:36 PM	
Trichloroethene	ND	0.50	µg/L	1	5/17/2010 02:36 PM	
Trichlorofluoromethane	ND	0.50	µg/L	1	5/17/2010 02:36 PM	
Vinyl chloride	ND	0.50	µg/L	1	5/17/2010 02:36 PM	
Surr: 1,2-Dichloroethane-d4	96.0	70-130	%REC	1	5/17/2010 02:36 PM	
Surr: 4-Bromofluorobenzene	88.6	70-130	%REC	1	5/17/2010 02:36 PM	
Surr: Dibromofluoromethane	97.5	70-130	%REC	1	5/17/2010 02:36 PM	
Surr: Toluene-d8	88.0	70-130	%REC	1	5/17/2010 02:36 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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**Advanced Technology Laboratories**

**ANALYTICAL RESULTS**

Print Date: 21-May-10

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81  
**Lab ID:** 111761-017B

**Client Sample ID:** NB11-W  
**Collection Date:** 5/12/2010 10:30:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**GASOLINE RANGE ORGANICS BY GC/FID**

**EPA 8015B(M)**

RunID: GC19_100517B	QC Batch: M10VW019				PrepDate:	Analyst: CL
GRO	ND	0.050		mg/L	1	5/18/2010 08:31 AM
Surr: Bromofluorobenzene (FID)	105	70-130		%REC	1	5/18/2010 08:31 AM

**VOLATILE ORGANIC COMPOUNDS BY GC/PID**

**EPA 8021B**

RunID: GC19_100517B	QC Batch: M10VW019				PrepDate:	Analyst: CL
Benzene	ND	0.50		µg/L	1	5/18/2010 08:31 AM
Ethylbenzene	ND	0.50		µg/L	1	5/18/2010 08:31 AM
m,p-Xylene	ND	1.0		µg/L	1	5/18/2010 08:31 AM
Methyl tert-butyl ether	ND	0.50		µg/L	1	5/18/2010 08:31 AM
o-Xylene	ND	0.50		µg/L	1	5/18/2010 08:31 AM
Toluene	ND	0.50		µg/L	1	5/18/2010 08:31 AM
Surr: Bromofluorobenzene (PID)	111	70-130		%REC	1	5/18/2010 08:31 AM

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



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

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**ANALYTICAL RESULTS**

Print Date: 21-May-10

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81  
**Lab ID:** 111761-017C

**Client Sample ID:** NB11-W  
**Collection Date:** 5/12/2010 10:30:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**ICP METALS**

**EPA 3010A**

**EPA 6010B**

RunID:	ICP8_100520B	QC Batch:	64191	PrepDate:	5/19/2010	Analyst:	SRB
Antimony	ND	0.0050	mg/L	1	5/20/2010 12:49 PM		
Arsenic	0.035	0.010	mg/L	1	5/20/2010 12:49 PM		
Barium	1.8	0.0030	mg/L	1	5/20/2010 12:49 PM		
Beryllium	0.0050	0.0030	mg/L	1	5/20/2010 12:49 PM		
Cadmium	0.0031	0.0030	mg/L	1	5/20/2010 12:49 PM		
Chromium	0.27	0.0030	mg/L	1	5/20/2010 12:49 PM		
Cobalt	0.089	0.0030	mg/L	1	5/20/2010 12:49 PM		
Copper	0.17	0.0050	mg/L	1	5/20/2010 12:49 PM		
Lead	0.11	0.0050	mg/L	1	5/20/2010 12:49 PM		
Molybdenum	0.016	0.0050	mg/L	1	5/20/2010 12:49 PM		
Nickel	0.28	0.0050	mg/L	1	5/20/2010 12:49 PM		
Selenium	ND	0.010	mg/L	1	5/20/2010 12:49 PM		
Silver	ND	0.0030	mg/L	1	5/20/2010 12:49 PM		
Thallium	ND	0.015	mg/L	1	5/20/2010 12:49 PM		
Vanadium	0.34	0.0030	mg/L	1	5/20/2010 12:49 PM		
Zinc	0.46	0.010	mg/L	1	5/20/2010 12:49 PM		

**MERCURY BY COLD VAPOR TECHNIQUE**

**EPA 7470A**

RunID:	AA1_100520A	QC Batch:	64190	PrepDate:	5/19/2010	Analyst:	IL
Mercury	0.23	0.20	µg/L	1	5/20/2010 11:09 AM		

**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: 21-May-10

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81  
**Lab ID:** 111761-017D

**Client Sample ID:** NB11-W  
**Collection Date:** 5/12/2010 10:30:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID**

**EPA 3510C**

**EPA 8015B(M)**

RunID: GC16_100519B	QC Batch: 64185				PrepDate: 5/18/2010	Analyst: CBR
DRO	ND	0.053		mg/L	1	5/19/2010 05:23 PM
ORO	ND	0.053		mg/L	1	5/19/2010 05:23 PM
Surr: p-Terphenyl	94.0	36-126		%REC	1	5/19/2010 05:23 PM

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



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# ANALYTICAL RESULTS

Print Date: 21-May-10

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	NB12-W
<b>Lab Order:</b>	111761	<b>Collection Date:</b>	5/12/2010 9:20:00 AM
<b>Project:</b>	Santa Barbara 101, S9200-06-81	<b>Matrix:</b>	GROUNDWATER
<b>Lab ID:</b>	111761-018A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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## VOLATILE ORGANIC COMPOUNDS BY GC/MS

### EPA 8260B

RunID: MS2_100517A	QC Batch: Q10VW103	PrepDate:	Analyst: SLL		
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1	5/17/2010 03:18 PM
1,1,1-Trichloroethane	ND	0.50	µg/L	1	5/17/2010 03:18 PM
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1	5/17/2010 03:18 PM
1,1,2-Trichloroethane	ND	0.50	µg/L	1	5/17/2010 03:18 PM
1,1-Dichloroethane	ND	0.50	µg/L	1	5/17/2010 03:18 PM
1,1-Dichloroethene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
1,1-Dichloropropene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
1,2,3-Trichloropropane	ND	0.50	µg/L	1	5/17/2010 03:18 PM
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
1,2-Dibromo-3-chloropropane	ND	0.50	µg/L	1	5/17/2010 03:18 PM
1,2-Dibromoethane	ND	0.50	µg/L	1	5/17/2010 03:18 PM
1,2-Dichlorobenzene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
1,2-Dichloroethane	ND	0.50	µg/L	1	5/17/2010 03:18 PM
1,2-Dichloropropane	ND	0.50	µg/L	1	5/17/2010 03:18 PM
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
1,3-Dichlorobenzene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
1,3-Dichloropropane	ND	0.50	µg/L	1	5/17/2010 03:18 PM
1,4-Dichlorobenzene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
2,2-Dichloropropane	ND	0.50	µg/L	1	5/17/2010 03:18 PM
2-Chlorotoluene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
4-Chlorotoluene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
4-Isopropyltoluene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Benzene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Bromobenzene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Bromodichloromethane	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Bromoform	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Bromomethane	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Carbon tetrachloride	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Chlorobenzene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Chloroethane	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Chloroform	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Chloromethane	ND	0.50	µg/L	1	5/17/2010 03:18 PM
cis-1,2-Dichloroethene	ND	0.50	µg/L	1	5/17/2010 03:18 PM

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



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# ANALYTICAL RESULTS

Print Date: 21-May-10

<b>CLIENT:</b>	Geocon Consultants, Inc.	<b>Client Sample ID:</b>	NB12-W
<b>Lab Order:</b>	111761	<b>Collection Date:</b>	5/12/2010 9:20:00 AM
<b>Project:</b>	Santa Barbara 101, S9200-06-81	<b>Matrix:</b>	GROUNDWATER
<b>Lab ID:</b>	111761-018A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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## VOLATILE ORGANIC COMPOUNDS BY GC/MS

### EPA 8260B

RunID: MS2_100517A	QC Batch: Q10VW103	PrepDate:	Analyst: SLL		
cis-1,3-Dichloropropene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Di-isopropyl ether	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Dibromochloromethane	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Dibromomethane	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Dichlorodifluoromethane	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Ethyl tert-butyl ether	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Ethylbenzene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Hexachlorobutadiene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Isopropylbenzene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
m,p-Xylene	ND	1.0	µg/L	1	5/17/2010 03:18 PM
Methylene chloride	ND	1.0	µg/L	1	5/17/2010 03:18 PM
MTBE	ND	0.50	µg/L	1	5/17/2010 03:18 PM
n-Butylbenzene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
n-Propylbenzene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Naphthalene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
o-Xylene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
sec-Butylbenzene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Styrene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Tert-amyl methyl ether	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Tert-Butanol	ND	10	µg/L	1	5/17/2010 03:18 PM
tert-Butylbenzene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Tetrachloroethene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Toluene	2.0	0.50	µg/L	1	5/17/2010 03:18 PM
trans-1,2-Dichloroethene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Trichloroethene	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Trichlorofluoromethane	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Vinyl chloride	ND	0.50	µg/L	1	5/17/2010 03:18 PM
Surr: 1,2-Dichloroethane-d4	93.1	70-130	%REC	1	5/17/2010 03:18 PM
Surr: 4-Bromofluorobenzene	91.1	70-130	%REC	1	5/17/2010 03:18 PM
Surr: Dibromofluoromethane	94.2	70-130	%REC	1	5/17/2010 03:18 PM
Surr: Toluene-d8	89.8	70-130	%REC	1	5/17/2010 03:18 PM

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



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**Advanced Technology Laboratories**

**ANALYTICAL RESULTS**

Print Date: 21-May-10

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81  
**Lab ID:** 111761-018B

**Client Sample ID:** NB12-W  
**Collection Date:** 5/12/2010 9:20:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**GASOLINE RANGE ORGANICS BY GC/FID**

**EPA 8015B(M)**

RunID: GC19_100517B	QC Batch: M10VW019				PrepDate:	Analyst: CL
GRO	ND	0.050		mg/L	1	5/18/2010 08:50 AM
Surr: Bromofluorobenzene (FID)	107	70-130		%REC	1	5/18/2010 08:50 AM

**VOLATILE ORGANIC COMPOUNDS BY GC/PID**

**EPA 8021B**

RunID: GC19_100517B	QC Batch: M10VW019				PrepDate:	Analyst: CL
Benzene	ND	0.50		µg/L	1	5/18/2010 08:50 AM
Ethylbenzene	ND	0.50		µg/L	1	5/18/2010 08:50 AM
m,p-Xylene	ND	1.0		µg/L	1	5/18/2010 08:50 AM
Methyl tert-butyl ether	ND	0.50		µg/L	1	5/18/2010 08:50 AM
o-Xylene	ND	0.50		µg/L	1	5/18/2010 08:50 AM
Toluene	1.7	0.50		µg/L	1	5/18/2010 08:50 AM
Surr: Bromofluorobenzene (PID)	111	70-130		%REC	1	5/18/2010 08:50 AM

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



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**Advanced Technology Laboratories**

**ANALYTICAL RESULTS**

Print Date: 21-May-10

**CLIENT:** Geocon Consultants, Inc.  
**Lab Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81  
**Lab ID:** 111761-018C

**Client Sample ID:** NB12-W  
**Collection Date:** 5/12/2010 9:20:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**ICP METALS**

**EPA 3010A**

**EPA 6010B**

RunID:	QC Batch:			PrepDate:		Analyst:
ICP8_100520B	64191			5/19/2010		SRB
Antimony	0.024	0.0050		mg/L	1	5/20/2010 12:55 PM
Arsenic	0.16	0.010		mg/L	1	5/20/2010 12:55 PM
Barium	9.6	0.0030		mg/L	1	5/20/2010 12:55 PM
Beryllium	0.020	0.0030		mg/L	1	5/20/2010 12:55 PM
Cadmium	0.026	0.0030		mg/L	1	5/20/2010 12:55 PM
Chromium	1.3	0.0030		mg/L	1	5/20/2010 12:55 PM
Cobalt	0.56	0.0030		mg/L	1	5/20/2010 12:55 PM
Copper	0.84	0.0050		mg/L	1	5/20/2010 12:55 PM
Lead	0.56	0.0050		mg/L	1	5/20/2010 12:55 PM
Molybdenum	0.045	0.0050		mg/L	1	5/20/2010 12:55 PM
Nickel	1.3	0.0050		mg/L	1	5/20/2010 12:55 PM
Selenium	ND	0.010		mg/L	1	5/20/2010 12:55 PM
Silver	ND	0.0030		mg/L	1	5/20/2010 12:55 PM
Thallium	ND	0.015		mg/L	1	5/20/2010 12:55 PM
Vanadium	1.8	0.0030		mg/L	1	5/20/2010 12:55 PM
Zinc	2.1	0.010		mg/L	1	5/20/2010 12:55 PM

**MERCURY BY COLD VAPOR TECHNIQUE**

**EPA 7470A**

RunID:	QC Batch:			PrepDate:		Analyst:
AA1_100520A	64190			5/19/2010		IL
Mercury	3.4	0.20		µg/L	1	5/20/2010 11:12 AM

**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: 21-May-10

**CLIENT:** Geocon Consultants, Inc.

**Client Sample ID:** NB12-W

**Lab Order:** 111761

**Collection Date:** 5/12/2010 9:20:00 AM

**Project:** Santa Barbara 101, S9200-06-81

**Matrix:** GROUNDWATER

**Lab ID:** 111761-018D

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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**DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID**

**EPA 3510C**

**EPA 8015B(M)**

RunID: GC16_100519B	QC Batch: 64185				PrepDate: 5/18/2010	Analyst: CBR
DRO	ND	0.062		mg/L	1	5/19/2010 05:33 PM
ORO	ND	0.062		mg/L	1	5/19/2010 05:33 PM
Surr: p-Terphenyl	99.5	36-126		%REC	1	5/19/2010 05:33 PM

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



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**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

**ANALYTICAL QC SUMMARY REPORT**

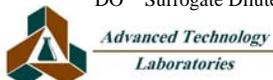
**TestCode: 6010\_S**

Sample ID: <b>MB-64200</b>	SampType: <b>MBLK</b>	TestCode: <b>6010_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121331</b>						
Client ID: <b>PBS</b>	Batch ID: <b>64200</b>	TestNo: <b>EPA 6010B EPA 3050B</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1938915</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0									
Arsenic	ND	1.0									
Barium	ND	1.0									
Beryllium	ND	1.0									
Cadmium	ND	1.0									
Chromium	ND	1.0									
Cobalt	ND	1.0									
Copper	ND	2.0									
Lead	ND	1.0									
Molybdenum	ND	1.0									
Nickel	ND	1.0									
Selenium	ND	1.0									
Silver	ND	1.0									
Thallium	ND	1.0									
Vanadium	ND	1.0									
Zinc	ND	1.0									

Sample ID: <b>LCS-64200</b>	SampType: <b>LCS</b>	TestCode: <b>6010_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121331</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>64200</b>	TestNo: <b>EPA 6010B EPA 3050B</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1938916</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	45.543	2.0	50.00	0	91.1	80	120				
Arsenic	42.949	1.0	50.00	0	85.9	80	120				
Barium	47.753	1.0	50.00	0	95.5	80	120				
Beryllium	46.933	1.0	50.00	0	93.9	80	120				
Cadmium	45.345	1.0	50.00	0	90.7	80	120				
Chromium	46.438	1.0	50.00	0	92.9	80	120				
Cobalt	47.367	1.0	50.00	0	94.7	80	120				

**Qualifiers:**

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



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

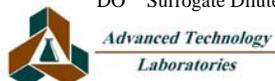
**TestCode: 6010\_S**

Sample ID: <b>LCS-64200</b>	SampType: <b>LCS</b>	TestCode: <b>6010_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121331</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>64200</b>	TestNo: <b>EPA 6010B</b>	<b>EPA 3050B</b>	Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1938916</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	47.731	2.0	50.00	0	95.5	80	120				
Lead	45.421	1.0	50.00	0	90.8	80	120				
Molybdenum	47.352	1.0	50.00	0	94.7	80	120				
Nickel	44.531	1.0	50.00	0	89.1	80	120				
Selenium	40.303	1.0	50.00	0	80.6	80	120				
Silver	45.805	1.0	50.00	0	91.6	80	120				
Thallium	46.243	1.0	50.00	0	92.5	80	120				
Vanadium	47.351	1.0	50.00	0	94.7	80	120				
Zinc	46.277	1.0	50.00	0	92.6	80	120				

Sample ID: <b>111777-005A-DUP</b>	SampType: <b>DUP</b>	TestCode: <b>6010_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121331</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>64200</b>	TestNo: <b>EPA 6010B</b>	<b>EPA 3050B</b>	Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1938925</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.535	2.0						0.5599	0	20	
Arsenic	ND	1.0						0	0	20	
Barium	146.442	1.0						156.5	6.63	20	
Beryllium	ND	1.0						0	0	20	
Cadmium	0.356	1.0						0.4206	0	20	
Chromium	27.840	1.0						30.79	10.1	20	
Cobalt	9.962	1.0						10.25	2.85	20	
Copper	23.441	2.0						26.43	12.0	20	
Lead	10.551	1.0						12.05	13.2	20	
Molybdenum	0.273	1.0						0.4067	0	20	
Nickel	26.259	1.0						27.95	6.26	20	
Selenium	ND	1.0						0	0	20	
Silver	ND	1.0						0	0	20	
Thallium	ND	1.0						0	0	20	
Vanadium	38.953	1.0						43.14	10.2	20	
Zinc	59.126	1.0						61.34	3.67	20	

**Qualifiers:**

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



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

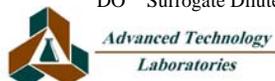
**TestCode: 6010\_S**

Sample ID: <b>111777-005A-MS</b>		SampType: <b>MS</b>		TestCode: <b>6010_S</b>		Units: <b>mg/Kg</b>		Prep Date: <b>5/19/2010</b>		RunNo: <b>121331</b>	
Client ID: <b>ZZZZZZ</b>		Batch ID: <b>64200</b>		TestNo: <b>EPA 6010B EPA 3050B</b>		Analysis Date: <b>5/19/2010</b>		SeqNo: <b>1938926</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	75.284	2.0	125.0	0.5599	59.8	32	105				
Arsenic	81.565	1.0	125.0	0	65.3	49	106				
Barium	274.697	1.0	125.0	156.5	94.6	31	133				
Beryllium	92.330	1.0	125.0	0	73.9	56	106				
Cadmium	84.784	1.0	125.0	0.4206	67.5	51	103				
Chromium	128.123	1.0	125.0	30.79	77.9	45	114				
Cobalt	97.235	1.0	125.0	10.25	69.6	52	106				
Copper	136.885	2.0	125.0	26.43	88.4	54	125				
Lead	100.805	1.0	125.0	12.05	71.0	34	126				
Molybdenum	87.433	1.0	125.0	0.4067	69.6	54	106				
Nickel	113.162	1.0	125.0	27.95	68.2	45	111				
Selenium	79.386	1.0	125.0	0	63.5	47	104				
Silver	98.539	1.0	125.0	0	78.8	56	112				
Thallium	85.433	1.0	125.0	0	68.3	46	101				
Vanadium	144.962	1.0	125.0	43.14	81.5	54	114				
Zinc	152.755	1.0	125.0	61.34	73.1	28	125				

Sample ID: <b>111777-005A-MSD</b>		SampType: <b>MSD</b>		TestCode: <b>6010_S</b>		Units: <b>mg/Kg</b>		Prep Date: <b>5/19/2010</b>		RunNo: <b>121331</b>	
Client ID: <b>ZZZZZZ</b>		Batch ID: <b>64200</b>		TestNo: <b>EPA 6010B EPA 3050B</b>		Analysis Date: <b>5/19/2010</b>		SeqNo: <b>1938927</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	81.223	2.0	125.0	0.5599	64.5	32	105	75.28	7.59	20	
Arsenic	84.078	1.0	125.0	0	67.3	49	106	81.57	3.03	20	
Barium	254.115	1.0	125.0	156.5	78.1	31	133	274.7	7.78	20	
Beryllium	94.032	1.0	125.0	0	75.2	56	106	92.33	1.83	20	
Cadmium	87.387	1.0	125.0	0.4206	69.6	51	103	84.78	3.02	20	
Chromium	127.035	1.0	125.0	30.79	77.0	45	114	128.1	0.853	20	
Cobalt	99.997	1.0	125.0	10.25	71.8	52	106	97.23	2.80	20	
Copper	132.871	2.0	125.0	26.43	85.2	54	125	136.9	2.98	20	
Lead	100.950	1.0	125.0	12.05	71.1	34	126	100.8	0.144	20	

**Qualifiers:**

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



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 6010\_S**

Sample ID: <b>111777-005A-MSD</b>		SampType: <b>MSD</b>		TestCode: <b>6010_S</b>		Units: <b>mg/Kg</b>		Prep Date: <b>5/19/2010</b>		RunNo: <b>121331</b>	
Client ID: <b>ZZZZZZ</b>		Batch ID: <b>64200</b>		TestNo: <b>EPA 6010B EPA 3050B</b>		Analysis Date: <b>5/19/2010</b>		SeqNo: <b>1938927</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	90.655	1.0	125.0	0.4067	72.2	54	106	87.43	3.62	20	
Nickel	114.755	1.0	125.0	27.95	69.4	45	111	113.2	1.40	20	
Selenium	82.244	1.0	125.0	0	65.8	47	104	79.39	3.54	20	
Silver	100.834	1.0	125.0	0	80.7	56	112	98.54	2.30	20	
Thallium	89.610	1.0	125.0	0	71.7	46	101	85.43	4.77	20	
Vanadium	141.410	1.0	125.0	43.14	78.6	54	114	145.0	2.48	20	
Zinc	146.161	1.0	125.0	61.34	67.9	28	125	152.8	4.41	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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**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

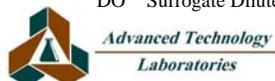
**TestCode: 6010\_W**

Sample ID: <b>MB-64191</b>	SampType: <b>MBLK</b>	TestCode: <b>6010_W</b>	Units: <b>mg/L</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121349</b>						
Client ID: <b>PBW</b>	Batch ID: <b>64191</b>	TestNo: <b>EPA 6010B EPA 3010A</b>		Analysis Date: <b>5/20/2010</b>	SeqNo: <b>1939278</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.0050									
Arsenic	ND	0.010									
Barium	ND	0.0030									
Beryllium	ND	0.0030									
Cadmium	ND	0.0030									
Chromium	ND	0.0030									
Cobalt	ND	0.0030									
Copper	ND	0.0050									
Lead	ND	0.0050									
Molybdenum	ND	0.0050									
Nickel	ND	0.0050									
Selenium	ND	0.010									
Silver	ND	0.0030									
Thallium	ND	0.015									
Vanadium	ND	0.0030									
Zinc	ND	0.010									

Sample ID: <b>LCS-64191</b>	SampType: <b>LCS</b>	TestCode: <b>6010_W</b>	Units: <b>mg/L</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121349</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>64191</b>	TestNo: <b>EPA 6010B EPA 3010A</b>		Analysis Date: <b>5/20/2010</b>	SeqNo: <b>1939279</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.987	0.0050	1.000	0	98.7	85	115				
Arsenic	0.952	0.010	1.000	0	95.2	85	115				
Barium	0.992	0.0030	1.000	0	99.2	85	115				
Beryllium	0.924	0.0030	1.000	0	92.4	85	115				
Cadmium	0.975	0.0030	1.000	0	97.5	85	115				
Chromium	0.960	0.0030	1.000	0	96.0	85	115				
Cobalt	0.995	0.0030	1.000	0	99.5	85	115				
Copper	0.973	0.0050	1.000	0	97.3	85	115				
Lead	0.982	0.0050	1.000	0	98.2	85	115				

**Qualifiers:**

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



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

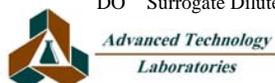
**TestCode: 6010\_W**

Sample ID: <b>LCS-64191</b>	SampType: <b>LCS</b>	TestCode: <b>6010_W</b>	Units: <b>mg/L</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121349</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>64191</b>	TestNo: <b>EPA 6010B EPA 3010A</b>		Analysis Date: <b>5/20/2010</b>	SeqNo: <b>1939279</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.982	0.0050	1.000	0	98.2	85	115				
Nickel	0.946	0.0050	1.000	0	94.6	85	115				
Selenium	0.918	0.010	1.000	0	91.8	85	115				
Silver	0.930	0.0030	1.000	0	93.0	85	115				
Thallium	0.991	0.015	1.000	0	99.1	85	115				
Vanadium	0.975	0.0030	1.000	0	97.5	85	115				
Zinc	0.972	0.010	1.000	0	97.2	85	115				

Sample ID: <b>111778-021C-DUP</b>	SampType: <b>DUP</b>	TestCode: <b>6010_W</b>	Units: <b>mg/L</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121349</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>64191</b>	TestNo: <b>EPA 6010B EPA 3010A</b>		Analysis Date: <b>5/20/2010</b>	SeqNo: <b>1939290</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.0050						0	0	20	
Arsenic	ND	0.010						0	0	20	
Barium	ND	0.0030						0	0	20	
Beryllium	ND	0.0030						0	0	20	
Cadmium	ND	0.0030						0	0	20	
Chromium	0.002	0.0030						0.001833	0	20	
Cobalt	ND	0.0030						0	0	20	
Copper	ND	0.0050						0	0	20	
Lead	ND	0.0050						0	0	20	
Molybdenum	ND	0.0050						0	0	20	
Nickel	ND	0.0050						0	0	20	
Selenium	ND	0.010						0	0	20	
Silver	ND	0.0030						0	0	20	
Thallium	ND	0.015						0	0	20	
Vanadium	ND	0.0030						0	0	20	
Zinc	ND	0.010						0	0	20	

**Qualifiers:**

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



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**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

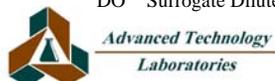
**TestCode: 6010\_W**

Sample ID: <b>111778-021C-MS</b>		SampType: <b>MS</b>		TestCode: <b>6010_W</b>		Units: <b>mg/L</b>		Prep Date: <b>5/19/2010</b>		RunNo: <b>121349</b>	
Client ID: <b>ZZZZZZ</b>		Batch ID: <b>64191</b>		TestNo: <b>EPA 6010B EPA 3010A</b>		Analysis Date: <b>5/20/2010</b>		SeqNo: <b>1939291</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	2.383	0.0050	2.500	0	95.3	73	128				
Arsenic	2.236	0.010	2.500	0	89.4	79	121				
Barium	2.409	0.0030	2.500	0	96.4	82	118				
Beryllium	2.402	0.0030	2.500	0	96.1	84	119				
Cadmium	2.321	0.0030	2.500	0	92.9	79	117				
Chromium	2.387	0.0030	2.500	0.001833	95.4	78	115				
Cobalt	2.345	0.0030	2.500	0	93.8	80	118				
Copper	2.405	0.0050	2.500	0	96.2	81	127				
Lead	2.332	0.0050	2.500	0	93.3	80	118				
Molybdenum	2.322	0.0050	2.500	0	92.9	81	118				
Nickel	2.327	0.0050	2.500	0	93.1	78	120				
Selenium	2.191	0.010	2.500	0	87.6	78	120				
Silver	2.452	0.0030	2.500	0	98.1	79	125				
Thallium	2.352	0.015	2.500	0	94.1	74	115				
Vanadium	2.388	0.0030	2.500	0	95.5	84	119				
Zinc	2.251	0.010	2.500	0	90.1	75	122				

Sample ID: <b>111778-021C-MSD</b>		SampType: <b>MSD</b>		TestCode: <b>6010_W</b>		Units: <b>mg/L</b>		Prep Date: <b>5/19/2010</b>		RunNo: <b>121349</b>	
Client ID: <b>ZZZZZZ</b>		Batch ID: <b>64191</b>		TestNo: <b>EPA 6010B EPA 3010A</b>		Analysis Date: <b>5/20/2010</b>		SeqNo: <b>1939292</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	2.467	0.0050	2.500	0	98.7	73	128	2.383	3.47	20	
Arsenic	2.300	0.010	2.500	0	92.0	79	121	2.236	2.83	20	
Barium	2.462	0.0030	2.500	0	98.5	82	118	2.409	2.16	20	
Beryllium	2.453	0.0030	2.500	0	98.1	84	119	2.402	2.10	20	
Cadmium	2.368	0.0030	2.500	0	94.7	79	117	2.321	1.99	20	
Chromium	2.441	0.0030	2.500	0.001833	97.6	78	115	2.387	2.22	20	
Cobalt	2.395	0.0030	2.500	0	95.8	80	118	2.345	2.12	20	
Copper	2.457	0.0050	2.500	0	98.3	81	127	2.405	2.15	20	
Lead	2.345	0.0050	2.500	0	93.8	80	118	2.332	0.533	20	

**Qualifiers:**

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



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 6010\_W**

Sample ID: <b>111778-021C-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>6010_W</b>	Units: <b>mg/L</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121349</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>64191</b>	TestNo: <b>EPA 6010B EPA 3010A</b>	Analysis Date: <b>5/20/2010</b>	SeqNo: <b>1939292</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	2.372	0.0050	2.500	0	94.9	81	118	2.322	2.15	20	
Nickel	2.372	0.0050	2.500	0	94.9	78	120	2.327	1.90	20	
Selenium	2.252	0.010	2.500	0	90.1	78	120	2.191	2.76	20	
Silver	2.513	0.0030	2.500	0	101	79	125	2.452	2.43	20	
Thallium	2.425	0.015	2.500	0	97.0	74	115	2.352	3.04	20	
Vanadium	2.446	0.0030	2.500	0	97.9	84	119	2.388	2.43	20	
Zinc	2.291	0.010	2.500	0	91.7	75	122	2.251	1.76	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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**CLIENT:** Geocon Consultants, Inc.  
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**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 7470\_W**

Sample ID: <b>MB-64190</b>	SampType: <b>MBLK</b>	TestCode: <b>7470_W</b>	Units: <b>µg/L</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121339</b>						
Client ID: <b>PBW</b>	Batch ID: <b>64190</b>	TestNo: <b>EPA 7470A</b>		Analysis Date: <b>5/20/2010</b>	SeqNo: <b>1939101</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	ND	0.20									
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Sample ID: <b>LCS-64190</b>	SampType: <b>LCS</b>	TestCode: <b>7470_W</b>	Units: <b>µg/L</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121339</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>64190</b>	TestNo: <b>EPA 7470A</b>		Analysis Date: <b>5/20/2010</b>	SeqNo: <b>1939102</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	10.401	0.20	10.00	0	104	85	115				
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Sample ID: <b>111795-004C-MS</b>	SampType: <b>MS</b>	TestCode: <b>7470_W</b>	Units: <b>µg/L</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121339</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>64190</b>	TestNo: <b>EPA 7470A</b>		Analysis Date: <b>5/20/2010</b>	SeqNo: <b>1939103</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	10.171	0.20	10.00	0	102	70	130				
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Sample ID: <b>111795-004C-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>7470_W</b>	Units: <b>µg/L</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121339</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>64190</b>	TestNo: <b>EPA 7470A</b>		Analysis Date: <b>5/20/2010</b>	SeqNo: <b>1939104</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

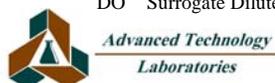
Mercury	10.180	0.20	10.00	0	102	70	130	10.17	0.0807	20	
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Sample ID: <b>111795-004C-DUP</b>	SampType: <b>DUP</b>	TestCode: <b>7470_W</b>	Units: <b>µg/L</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121339</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>64190</b>	TestNo: <b>EPA 7470A</b>		Analysis Date: <b>5/20/2010</b>	SeqNo: <b>1939106</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	ND	0.20						0	0	20	
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**Qualifiers:**

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



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 7471\_S**

Sample ID: <b>MB-64203</b>	SampType: <b>MBLK</b>	TestCode: <b>7471_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121310</b>						
Client ID: <b>PBS</b>	Batch ID: <b>64203</b>	TestNo: <b>EPA 7471A</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1938615</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	ND	0.10									
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Sample ID: <b>LCS-64203</b>	SampType: <b>LCS</b>	TestCode: <b>7471_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121310</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>64203</b>	TestNo: <b>EPA 7471A</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1938616</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	0.846	0.10	0.8300	0	102	80	120				
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Sample ID: <b>111799-001A-MS</b>	SampType: <b>MS</b>	TestCode: <b>7471_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121310</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>64203</b>	TestNo: <b>EPA 7471A</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1938617</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	1.067	0.10	0.8300	0	129	70	130				
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Sample ID: <b>111799-001A-MSD</b>	SampType: <b>MSD</b>	TestCode: <b>7471_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121310</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>64203</b>	TestNo: <b>EPA 7471A</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1938618</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

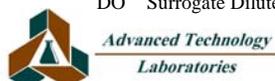
Mercury	1.053	0.10	0.8300	0	127	70	130	1.067	1.37	20	
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Sample ID: <b>111799-001A-DUP</b>	SampType: <b>DUP</b>	TestCode: <b>7471_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121310</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>64203</b>	TestNo: <b>EPA 7471A</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1938620</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	ND	0.10						0	0	20	
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**Qualifiers:**

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



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 8015\_S\_DM LL**

Sample ID: <b>LCS-64216</b>	SampType: <b>LCS</b>	TestCode: <b>8015_S_DM L</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121352</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>64216</b>	TestNo: <b>EPA 8015B(M EPA 3550B</b>		Analysis Date: <b>5/20/2010</b>	SeqNo: <b>1939299</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	28.377	1.0	33.00	0	86.0	35	118				
Surr: p-Terphenyl	2.039		2.670		76.4	30	128				

Sample ID: <b>111761-005AMS</b>	SampType: <b>MS</b>	TestCode: <b>8015_S_DM L</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121352</b>						
Client ID: <b>NB11-5</b>	Batch ID: <b>64216</b>	TestNo: <b>EPA 8015B(M EPA 3550B</b>		Analysis Date: <b>5/20/2010</b>	SeqNo: <b>1939313</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	23.389	1.0	33.00	3.781	59.4	25	129				
Surr: p-Terphenyl	1.857		2.670		69.5	30	128				

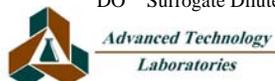
Sample ID: <b>111761-005AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>8015_S_DM L</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121352</b>						
Client ID: <b>NB11-5</b>	Batch ID: <b>64216</b>	TestNo: <b>EPA 8015B(M EPA 3550B</b>		Analysis Date: <b>5/20/2010</b>	SeqNo: <b>1939314</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	24.413	1.0	33.00	3.781	62.5	25	129	23.39	4.29	20	
Surr: p-Terphenyl	2.005		2.670		75.1	30	128		0	0	

Sample ID: <b>111761-001ADUP</b>	SampType: <b>DUP</b>	TestCode: <b>8015_S_DM L</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121352</b>						
Client ID: <b>NB12-3.5</b>	Batch ID: <b>64216</b>	TestNo: <b>EPA 8015B(M EPA 3550B</b>		Analysis Date: <b>5/20/2010</b>	SeqNo: <b>1939319</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	8.899	1.0						7.056	23.1	20	R
ORO	15.550	1.0						10.82	35.9	20	R
Surr: p-Terphenyl	1.819		2.670		68.1	30	128		0	0	

Sample ID: <b>MB-64216</b>	SampType: <b>MBLK</b>	TestCode: <b>8015_S_DM L</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121352</b>						
Client ID: <b>PBS</b>	Batch ID: <b>64216</b>	TestNo: <b>EPA 8015B(M EPA 3550B</b>		Analysis Date: <b>5/20/2010</b>	SeqNo: <b>1939323</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

**Qualifiers:**

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



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 8015\_S\_DM LL

Sample ID: <b>MB-64216</b>	SampType: <b>MBLK</b>	TestCode: <b>8015_S_DM L</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121352</b>						
Client ID: <b>PBS</b>	Batch ID: <b>64216</b>	TestNo: <b>EPA 8015B(M EPA 3550B</b>		Analysis Date: <b>5/20/2010</b>	SeqNo: <b>1939323</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	ND	1.0									
ORO	ND	1.0									
Surr: p-Terphenyl	1.724		2.670		64.6	30	128				

### 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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**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 8015\_S\_DM LL**

Sample ID: <b>MB-64217</b>	SampType: <b>MBLK</b>	TestCode: <b>8015_S_DM L</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121346</b>						
Client ID: <b>PBS</b>	Batch ID: <b>64217</b>	TestNo: <b>EPA 8015B(M EPA 3550B</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1939214</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	ND	1.0									
ORO	ND	1.0									
Surr: p-Terphenyl	1.094		2.670		41.0	30	128				

Sample ID: <b>LCS-64217</b>	SampType: <b>LCS</b>	TestCode: <b>8015_S_DM L</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121346</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>64217</b>	TestNo: <b>EPA 8015B(M EPA 3550B</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1939215</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	27.723	1.0	33.00	0	84.0	35	118				
Surr: p-Terphenyl	2.417		2.670		90.5	30	128				

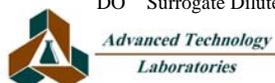
Sample ID: <b>111761-012AMS</b>	SampType: <b>MS</b>	TestCode: <b>8015_S_DM L</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121346</b>						
Client ID: <b>NB1-5</b>	Batch ID: <b>64217</b>	TestNo: <b>EPA 8015B(M EPA 3550B</b>		Analysis Date: <b>5/20/2010</b>	SeqNo: <b>1939230</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	25.410	1.0	33.00	2.487	69.5	25	129				
Surr: p-Terphenyl	2.043		2.670		76.5	30	128				

Sample ID: <b>111761-012AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>8015_S_DM L</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121346</b>						
Client ID: <b>NB1-5</b>	Batch ID: <b>64217</b>	TestNo: <b>EPA 8015B(M EPA 3550B</b>		Analysis Date: <b>5/20/2010</b>	SeqNo: <b>1939231</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	19.137	1.0	33.00	2.487	50.5	25	129	25.41	28.2	20	R
Surr: p-Terphenyl	1.601		2.670		60.0	30	128		0	0	

Sample ID: <b>111761-013ADUP</b>	SampType: <b>DUP</b>	TestCode: <b>8015_S_DM L</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121346</b>						
Client ID: <b>NB1-10</b>	Batch ID: <b>64217</b>	TestNo: <b>EPA 8015B(M EPA 3550B</b>		Analysis Date: <b>5/20/2010</b>	SeqNo: <b>1939232</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

**Qualifiers:**

- |   |  |  |
|---|--|--|
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| 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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**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 8015\_S\_DM LL**

Sample ID: <b>111761-013ADUP</b>	SampType: <b>DUP</b>	TestCode: <b>8015_S_DM L</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/19/2010</b>	RunNo: <b>121346</b>						
Client ID: <b>NB1-10</b>	Batch ID: <b>64217</b>	TestNo: <b>EPA 8015B(M EPA 3550B</b>		Analysis Date: <b>5/20/2010</b>	SeqNo: <b>1939232</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	5.751	1.0						8.353	36.9	20	R
ORO	6.834	1.0						6.614	3.27	20	
Surr: p-Terphenyl	1.912		2.670		71.6	30	128		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   |  |



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## ANALYTICAL QC SUMMARY REPORT

**TestCode: 8015\_S\_GAS**

Sample ID: <b>E100518LCS2</b>	SampType: <b>LCS</b>	TestCode: <b>8015_S_GAS</b>	Units: <b>mg/Kg</b>	Prep Date:	RunNo: <b>121268</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>E10VS125</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1937413</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

GRO	5.049	1.0	5.000	0	101	70	130				
Surr: Bromofluorobenzene (FID)	90.974		100.0		91.0	56	137				

Sample ID: <b>E100518MB1</b>	SampType: <b>MBLK</b>	TestCode: <b>8015_S_GAS</b>	Units: <b>mg/Kg</b>	Prep Date:	RunNo: <b>121268</b>						
Client ID: <b>PBS</b>	Batch ID: <b>E10VS125</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1937414</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

GRO	ND	1.0									
Surr: Bromofluorobenzene (FID)	87.690		100.0		87.7	56	137				

Sample ID: <b>111789-001ADUP</b>	SampType: <b>DUP</b>	TestCode: <b>8015_S_GAS</b>	Units: <b>mg/Kg</b>	Prep Date:	RunNo: <b>121268</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>E10VS125</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1937416</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

GRO	ND	1.0						0	0	20	
Surr: Bromofluorobenzene (FID)	90.639		100.0		90.6	56	137		0	0	

Sample ID: <b>111789-001AMS</b>	SampType: <b>MS</b>	TestCode: <b>8015_S_GAS</b>	Units: <b>mg/Kg</b>	Prep Date:	RunNo: <b>121268</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>E10VS125</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1937433</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

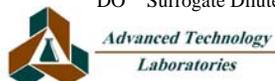
GRO	5.061	1.0	5.000	0	101	40	121				
Surr: Bromofluorobenzene (FID)	101.883		100.0		102	56	137				

Sample ID: <b>111789-001AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>8015_S_GAS</b>	Units: <b>mg/Kg</b>	Prep Date:	RunNo: <b>121268</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>E10VS125</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1937434</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

GRO	4.907	1.0	5.000	0	98.1	40	121	5.061	3.09	20	
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**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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**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 8015\_S\_GAS

Sample ID: <b>111789-001AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>8015_S_GAS</b>	Units: <b>mg/Kg</b>	Prep Date:	RunNo: <b>121268</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>E10VS125</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1937434</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Bromofluorobenzene (FID)	99.672		100.0		99.7	56	137		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		



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**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 8015\_S\_GAS**

Sample ID: <b>E100518MB2</b>	SampType: <b>MBLK</b>	TestCode: <b>8015_S_GAS</b>	Units: <b>mg/Kg</b>	Prep Date:	RunNo: <b>121287</b>						
Client ID: <b>PBS</b>	Batch ID: <b>E10VS126</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1938050</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

GRO	ND	1.0									
Surr: Bromofluorobenzene (FID)	84.784		100.0		84.8	56	137				

Sample ID: <b>111761-010ADUP</b>	SampType: <b>DUP</b>	TestCode: <b>8015_S_GAS</b>	Units: <b>mg/Kg</b>	Prep Date:	RunNo: <b>121287</b>						
Client ID: <b>NB5-15</b>	Batch ID: <b>E10VS126</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1938052</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

GRO	0.168	1.0						0	0	20	
Surr: Bromofluorobenzene (FID)	91.756		100.0		91.8	56	137		0	0	

Sample ID: <b>111761-010AMS</b>	SampType: <b>MS</b>	TestCode: <b>8015_S_GAS</b>	Units: <b>mg/Kg</b>	Prep Date:	RunNo: <b>121287</b>						
Client ID: <b>NB5-15</b>	Batch ID: <b>E10VS126</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1938060</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

GRO	4.837	1.0	5.000	0	96.7	40	121				
Surr: Bromofluorobenzene (FID)	92.243		100.0		92.2	56	137				

Sample ID: <b>111761-010AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>8015_S_GAS</b>	Units: <b>mg/Kg</b>	Prep Date:	RunNo: <b>121287</b>						
Client ID: <b>NB5-15</b>	Batch ID: <b>E10VS126</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1938061</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

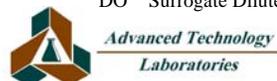
GRO	4.672	1.0	5.000	0	93.4	40	121	4.837	3.47	20	
Surr: Bromofluorobenzene (FID)	93.954		100.0		94.0	56	137		0	0	

Sample ID: <b>E100518LCS4</b>	SampType: <b>LCS</b>	TestCode: <b>8015_S_GAS</b>	Units: <b>mg/Kg</b>	Prep Date:	RunNo: <b>121287</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>E10VS126</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1938063</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

GRO	4.976	1.0	5.000	0	99.5	70	130				
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**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: 8015\_S\_GAS**

Sample ID: <b>E100518LCS4</b>	SampType: <b>LCS</b>	TestCode: <b>8015_S_GAS</b>	Units: <b>mg/Kg</b>	Prep Date:	RunNo: <b>121287</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>E10VS126</b>	TestNo: <b>EPA 8015B(M)</b>	Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1938063</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Bromofluorobenzene (FID)	97.057		100.0		97.1	56	137				

Sample ID: <b>E100518LCS4D</b>	SampType: <b>LCSD</b>	TestCode: <b>8015_S_GAS</b>	Units: <b>mg/Kg</b>	Prep Date:	RunNo: <b>121287</b>						
Client ID: <b>LCSS02</b>	Batch ID: <b>E10VS126</b>	TestNo: <b>EPA 8015B(M)</b>	Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1938065</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.923	1.0	5.000	0	98.5	70	130	4.976	1.07	20	
Surr: Bromofluorobenzene (FID)	88.041		100.0		88.0	56	137		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   |  |



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**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 8015\_S\_GAS**

Sample ID: <b>E100518MB2</b>	SampType: <b>MBLK</b>	TestCode: <b>8015_S_GAS</b>	Units: <b>mg/Kg</b>	Prep Date:	RunNo: <b>121295</b>						
Client ID: <b>PBS</b>	Batch ID: <b>E10VS127</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1938276</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

GRO	ND	1.0									
Surr: Bromofluorobenzene (FID)	84.312		100.0		84.3	56	137				

Sample ID: <b>111761-016ADUP</b>	SampType: <b>DUP</b>	TestCode: <b>8015_S_GAS</b>	Units: <b>mg/Kg</b>	Prep Date:	RunNo: <b>121295</b>						
Client ID: <b>NB27-7.5</b>	Batch ID: <b>E10VS127</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1938281</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

GRO	ND	1.0						0	0	20	
Surr: Bromofluorobenzene (FID)	88.342		100.0		88.3	56	137		0	0	

Sample ID: <b>111761-016AMS</b>	SampType: <b>MS</b>	TestCode: <b>8015_S_GAS</b>	Units: <b>mg/Kg</b>	Prep Date:	RunNo: <b>121295</b>						
Client ID: <b>NB27-7.5</b>	Batch ID: <b>E10VS127</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1938297</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

GRO	3.860	1.0	5.000	0	77.2	40	121				
Surr: Bromofluorobenzene (FID)	96.782		100.0		96.8	56	137				

Sample ID: <b>111761-016AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>8015_S_GAS</b>	Units: <b>mg/Kg</b>	Prep Date:	RunNo: <b>121295</b>						
Client ID: <b>NB27-7.5</b>	Batch ID: <b>E10VS127</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1938298</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

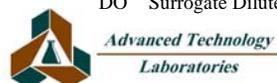
GRO	4.031	1.0	5.000	0	80.6	40	121	3.860	4.33	20	
Surr: Bromofluorobenzene (FID)	93.658		100.0		93.7	56	137		0	0	

Sample ID: <b>E100518LCS6</b>	SampType: <b>LCS</b>	TestCode: <b>8015_S_GAS</b>	Units: <b>mg/Kg</b>	Prep Date:	RunNo: <b>121295</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>E10VS127</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1938299</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

GRO	4.712	1.0	5.000	0	94.2	70	130				
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**Qualifiers:**

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



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 8015\_S\_GAS

Sample ID: <b>E100518LCS6</b>	SampType: <b>LCS</b>	TestCode: <b>8015_S_GAS</b>	Units: <b>mg/Kg</b>	Prep Date:	RunNo: <b>121295</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>E10VS127</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1938299</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Bromofluorobenzene (FID)	87.143		100.0		87.1	56	137				

### 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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**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 8015\_S\_GAS**

Sample ID: <b>E100518LCS2</b>	SampType: <b>LCS</b>	TestCode: <b>8015_S_GAS</b>	Units: <b>mg/Kg</b>	Prep Date:	RunNo: <b>121334</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>E10VS128</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1939004</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	5.258	1.0	5.000	0	105	70	130				
Surr: Bromofluorobenzene (FID)	93.965		100.0		94.0	56	137				

Sample ID: <b>E100519MB1</b>	SampType: <b>MBLK</b>	TestCode: <b>8015_S_GAS</b>	Units: <b>mg/Kg</b>	Prep Date:	RunNo: <b>121334</b>						
Client ID: <b>PBS</b>	Batch ID: <b>E10VS128</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1939005</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	ND	1.0									
Surr: Bromofluorobenzene (FID)	88.029		100.0		88.0	56	137				

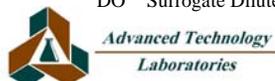
Sample ID: <b>111763-018ADUP</b>	SampType: <b>DUP</b>	TestCode: <b>8015_S_GAS</b>	Units: <b>mg/Kg</b>	Prep Date:	RunNo: <b>121334</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>E10VS128</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1939010</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	ND	1.0						0	0	20	
Surr: Bromofluorobenzene (FID)	92.156		100.0		92.2	56	137		0	0	

Sample ID: <b>111763-033AMS</b>	SampType: <b>MS</b>	TestCode: <b>8015_S_GAS</b>	Units: <b>mg/Kg</b>	Prep Date:	RunNo: <b>121334</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>E10VS128</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1939020</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.263	1.0	5.000	0	85.3	40	121				
Surr: Bromofluorobenzene (FID)	104.196		100.0		104	56	137				

Sample ID: <b>111763-033AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>8015_S_GAS</b>	Units: <b>mg/Kg</b>	Prep Date:	RunNo: <b>121334</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>E10VS128</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1939021</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.015	1.0	5.000	0	80.3	40	121	4.263	5.99	20	

**Qualifiers:**

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



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 8015\_S\_GAS

Sample ID: <b>111763-033AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>8015_S_GAS</b>	Units: <b>mg/Kg</b>	Prep Date:	RunNo: <b>121334</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>E10VS128</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1939021</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Bromofluorobenzene (FID)	95.093		100.0		95.1	56	137		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		



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**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 8015\_W\_DM\_LL**

Sample ID: <b>MB-64185</b>	SampType: <b>MBLK</b>	TestCode: <b>8015_W_DM_</b> Units: <b>mg/L</b>	Prep Date: <b>5/18/2010</b>	RunNo: <b>121318</b>							
Client ID: <b>PBW</b>	Batch ID: <b>64185</b>	TestNo: <b>EPA 8015B(M EPA 3510C</b>	Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1938714</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

DRO	ND	0.050									
ORO	ND	0.050									
Surr: p-Terphenyl	0.059		0.08000		74.3	36	126				

Sample ID: <b>LCS-64185</b>	SampType: <b>LCS</b>	TestCode: <b>8015_W_DM_</b> Units: <b>mg/L</b>	Prep Date: <b>5/18/2010</b>	RunNo: <b>121318</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>64185</b>	TestNo: <b>EPA 8015B(M EPA 3510C</b>	Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1938715</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

DRO	0.764	0.050	1.000	0	76.4	52	128				
Surr: p-Terphenyl	0.059		0.08000		73.6	36	126				

Sample ID: <b>MB-64185MS</b>	SampType: <b>MS</b>	TestCode: <b>8015_W_DM_</b> Units: <b>mg/L</b>	Prep Date: <b>5/18/2010</b>	RunNo: <b>121318</b>							
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>64185</b>	TestNo: <b>EPA 8015B(M EPA 3510C</b>	Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1938716</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

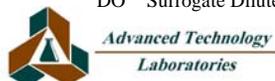
DRO	0.816	0.050	1.000	0	81.6	52	128				
Surr: p-Terphenyl	0.062		0.08000		77.4	36	126				

Sample ID: <b>MB-64185MSD</b>	SampType: <b>MSD</b>	TestCode: <b>8015_W_DM_</b> Units: <b>mg/L</b>	Prep Date: <b>5/18/2010</b>	RunNo: <b>121318</b>							
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>64185</b>	TestNo: <b>EPA 8015B(M EPA 3510C</b>	Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1938717</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

DRO	0.871	0.050	1.000	0	87.1	52	128	0.8160	6.57	20	
Surr: p-Terphenyl	0.067		0.08000		84.1	36	126		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 |   |  |



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 8015\_W\_GP LL**

Sample ID: <b>M100517LCS6</b>	SampType: <b>LCS</b>	TestCode: <b>8015_W_GP</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>121271</b>						
Client ID: <b>LCSW</b>	Batch ID: <b>M10VW019</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1937625</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.946	0.050	1.000	0	94.6	70	130				
Surr: Bromofluorobenzene (FID)	111.629		100.0		112	70	130				

Sample ID: <b>M100517MB2MS</b>	SampType: <b>MS</b>	TestCode: <b>8015_W_GP</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>121271</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>M10VW019</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1937627</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.918	0.050	1.000	0	91.8	70	130				
Surr: Bromofluorobenzene (FID)	109.733		100.0		110	70	130				

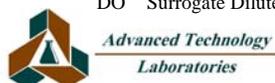
Sample ID: <b>M100517MB2MSD</b>	SampType: <b>MSD</b>	TestCode: <b>8015_W_GP</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>121271</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>M10VW019</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1937628</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.875	0.050	1.000	0	87.5	70	130	0.9180	4.80	20	
Surr: Bromofluorobenzene (FID)	110.784		100.0		111	70	130		0	0	

Sample ID: <b>M100517MB2</b>	SampType: <b>MBLK</b>	TestCode: <b>8015_W_GP</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>121271</b>						
Client ID: <b>PBW</b>	Batch ID: <b>M10VW019</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1937629</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	ND	0.050									
Surr: Bromofluorobenzene (FID)	105.864		100.0		106	70	130				

Sample ID: <b>111753-001BDUP</b>	SampType: <b>DUP</b>	TestCode: <b>8015_W_GP</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>121271</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>M10VW019</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1937631</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	ND	0.050						0	0	20	

**Qualifiers:**

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



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## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 8015\_W\_GP LL

Sample ID: <b>111753-001BDUP</b>	SampType: <b>DUP</b>	TestCode: <b>8015_W_GP</b>	Units: <b>mg/L</b>	Prep Date:	RunNo: <b>121271</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>M10VW019</b>	TestNo: <b>EPA 8015B(M)</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1937631</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Bromofluorobenzene (FID)	106.812		100.0		107	70	130		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		



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**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 8021\_S\_BTEX**

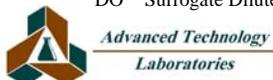
Sample ID: <b>E100518LCS1</b>	SampType: <b>LCS</b>	TestCode: <b>8021_S_BTE</b>	Units: <b>µg/Kg</b>	Prep Date:	RunNo: <b>121268</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>E10VS125</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1937465</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	98.076	5.0	100.0	0	98.1	70	130				
Ethylbenzene	99.959	5.0	100.0	0	100	70	130				
m,p-Xylene	204.012	10	200.0	0	102	70	130				
Methyl tert-butyl ether	96.900	5.0	100.0	0	96.9	70	130				
o-Xylene	101.466	5.0	100.0	0	101	70	130				
Toluene	100.264	5.0	100.0	0	100	70	130				
Surr: Bromofluorobenzene (PID)	90.349		100.0		90.3	64	116				

Sample ID: <b>E100518MB1</b>	SampType: <b>MBLK</b>	TestCode: <b>8021_S_BTE</b>	Units: <b>µg/Kg</b>	Prep Date:	RunNo: <b>121268</b>						
Client ID: <b>PBS</b>	Batch ID: <b>E10VS125</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1937467</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	5.0									
Ethylbenzene	ND	5.0									
m,p-Xylene	ND	10									
Methyl tert-butyl ether	ND	5.0									
o-Xylene	ND	5.0									
Toluene	ND	5.0									
Surr: Bromofluorobenzene (PID)	88.828		100.0		88.8	64	116				

Sample ID: <b>111789-001ADUP</b>	SampType: <b>DUP</b>	TestCode: <b>8021_S_BTE</b>	Units: <b>µg/Kg</b>	Prep Date:	RunNo: <b>121268</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>E10VS125</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1937469</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	5.0						0	0	20	
Ethylbenzene	ND	5.0						0	0	20	
m,p-Xylene	ND	10						0	0	20	
Methyl tert-butyl ether	ND	5.0						0	0	20	
o-Xylene	ND	5.0						0	0	20	
Toluene	ND	5.0						0	0	20	

**Qualifiers:**

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



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**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 8021\_S\_BTEX**

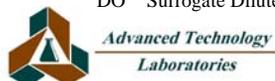
Sample ID: <b>111789-001ADUP</b>	SampType: <b>DUP</b>	TestCode: <b>8021_S_BTE</b>	Units: <b>µg/Kg</b>	Prep Date:	RunNo: <b>121268</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>E10VS125</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1937469</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Bromofluorobenzene (PID)	91.487		100.0		91.5	64	116		0	0	

Sample ID: <b>111789-001AMS</b>	SampType: <b>MS</b>	TestCode: <b>8021_S_BTE</b>	Units: <b>µg/Kg</b>	Prep Date:	RunNo: <b>121268</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>E10VS125</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1937486</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	49.688	5.0	22.15	0	224	41	112				S
Ethylbenzene	54.252	5.0	42.30	0	128	26	100				S
m,p-Xylene	205.192	10	180.2	0	114	32	106				S
Methyl tert-butyl ether	541.212	5.0	578.9	0	93.5	44	124				
o-Xylene	76.330	5.0	64.80	0	118	30	100				S
Toluene	197.559	5.0	172.6	0	114	38	112				S
Surr: Bromofluorobenzene (PID)	93.186		100.0		93.2	64	116				

Sample ID: <b>111789-001AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>8021_S_BTE</b>	Units: <b>µg/Kg</b>	Prep Date:	RunNo: <b>121268</b>						
Client ID: <b>ZZZZZZ</b>	Batch ID: <b>E10VS125</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1937487</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	48.777	5.0	22.15	0	220	41	112	49.69	1.85	20	S
Ethylbenzene	53.248	5.0	42.30	0	126	26	100	54.25	1.87	20	S
m,p-Xylene	201.593	10	180.2	0	112	32	106	205.2	1.77	20	S
Methyl tert-butyl ether	510.517	5.0	578.9	0	88.2	44	124	541.2	5.84	20	
o-Xylene	74.870	5.0	64.80	0	116	30	100	76.33	1.93	20	S
Toluene	195.423	5.0	172.6	0	113	38	112	197.6	1.09	20	S
Surr: Bromofluorobenzene (PID)	91.213		100.0		91.2	64	116		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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**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 8021\_S\_BTEX**

Sample ID: <b>E100518MB2</b>	SampType: <b>MBLK</b>	TestCode: <b>8021_S_BTE</b>	Units: <b>µg/Kg</b>	Prep Date:	RunNo: <b>121287</b>						
Client ID: <b>PBS</b>	Batch ID: <b>E10VS126</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1938073</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	ND	5.0									
Ethylbenzene	ND	5.0									
m,p-Xylene	ND	10									
Methyl tert-butyl ether	ND	5.0									
o-Xylene	ND	5.0									
Toluene	ND	5.0									
Surr: Bromofluorobenzene (PID)	85.758		100.0		85.8	64	116				

Sample ID: <b>111761-010ADUP</b>	SampType: <b>DUP</b>	TestCode: <b>8021_S_BTE</b>	Units: <b>µg/Kg</b>	Prep Date:	RunNo: <b>121287</b>						
Client ID: <b>NB5-15</b>	Batch ID: <b>E10VS126</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1938075</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

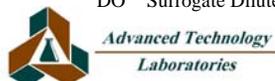
Benzene	ND	5.0						0	0	20	
Ethylbenzene	ND	5.0						0	0	20	
m,p-Xylene	ND	10						0	0	20	
Methyl tert-butyl ether	ND	5.0						0	0	20	
o-Xylene	ND	5.0						0	0	20	
Toluene	ND	5.0						0	0	20	
Surr: Bromofluorobenzene (PID)	92.302		100.0		92.3	64	116		0	0	

Sample ID: <b>111761-010AMS</b>	SampType: <b>MS</b>	TestCode: <b>8021_S_BTE</b>	Units: <b>µg/Kg</b>	Prep Date:	RunNo: <b>121287</b>						
Client ID: <b>NB5-15</b>	Batch ID: <b>E10VS126</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1938083</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	46.436	5.0	22.15	0	210	41	112				S
Ethylbenzene	44.368	5.0	42.30	0	105	26	100				S
m,p-Xylene	181.993	10	180.2	0	101	32	106				
Methyl tert-butyl ether	505.862	5.0	578.9	0	87.4	44	124				
o-Xylene	71.485	5.0	64.80	0	110	30	100				S
Toluene	185.235	5.0	172.6	0	107	38	112				

**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: 8021\_S\_BTEX**

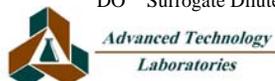
Sample ID: <b>111761-010AMS</b>	SampType: <b>MS</b>	TestCode: <b>8021_S_BTE</b>	Units: <b>µg/Kg</b>	Prep Date:	RunNo: <b>121287</b>						
Client ID: <b>NB5-15</b>	Batch ID: <b>E10VS126</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1938083</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Bromofluorobenzene (PID)	92.008		100.0		92.0	64	116				

Sample ID: <b>111761-010AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>8021_S_BTE</b>	Units: <b>µg/Kg</b>	Prep Date:	RunNo: <b>121287</b>						
Client ID: <b>NB5-15</b>	Batch ID: <b>E10VS126</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1938084</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	44.261	5.0	22.15	0	200	41	112	46.44	4.80	20	S
Ethylbenzene	42.516	5.0	42.30	0	101	26	100	44.37	4.26	20	S
m,p-Xylene	173.459	10	180.2	0	96.3	32	106	182.0	4.80	20	
Methyl tert-butyl ether	481.009	5.0	578.9	0	83.1	44	124	505.9	5.04	20	
o-Xylene	68.414	5.0	64.80	0	106	30	100	71.48	4.39	20	S
Toluene	176.312	5.0	172.6	0	102	38	112	185.2	4.94	20	
Surr: Bromofluorobenzene (PID)	93.998		100.0		94.0	64	116		0	20	

Sample ID: <b>E100518LCS3</b>	SampType: <b>LCS</b>	TestCode: <b>8021_S_BTE</b>	Units: <b>µg/Kg</b>	Prep Date:	RunNo: <b>121287</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>E10VS126</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1938085</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	96.928	5.0	100.0	0	96.9	70	130				
Ethylbenzene	98.325	5.0	100.0	0	98.3	70	130				
m,p-Xylene	200.741	10	200.0	0	100	70	130				
Methyl tert-butyl ether	97.821	5.0	100.0	0	97.8	70	130				
o-Xylene	101.158	5.0	100.0	0	101	70	130				
Toluene	98.596	5.0	100.0	0	98.6	70	130				
Surr: Bromofluorobenzene (PID)	89.357		100.0		89.4	64	116				

**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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**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 8021\_S\_BTEX**

Sample ID: <b>E100518LCS3D</b>	SampType: <b>LCSD</b>	TestCode: <b>8021_S_BTE</b>	Units: <b>µg/Kg</b>	Prep Date:	RunNo: <b>121287</b>						
Client ID: <b>LCSS02</b>	Batch ID: <b>E10VS126</b>	TestNo: <b>EPA 8021B</b>	Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1938087</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	97.536	5.0	100.0	0	97.5	70	130	96.93	0.625	20	
Ethylbenzene	99.987	5.0	100.0	0	100	70	130	98.32	1.68	20	
m,p-Xylene	203.798	10	200.0	0	102	70	130	200.7	1.51	20	
Methyl tert-butyl ether	95.024	5.0	100.0	0	95.0	70	130	97.82	2.90	20	
o-Xylene	102.003	5.0	100.0	0	102	70	130	101.2	0.832	20	
Toluene	100.565	5.0	100.0	0	101	70	130	98.60	1.98	20	
Surr: Bromofluorobenzene (PID)	86.387		100.0		86.4	64	116		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   |  |



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**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 8021\_S\_BTEX**

Sample ID: <b>E100518MB2</b>	SampType: <b>MBLK</b>	TestCode: <b>8021_S_BTE</b>	Units: <b>µg/Kg</b>	Prep Date:	RunNo: <b>121295</b>						
Client ID: <b>PBS</b>	Batch ID: <b>E10VS127</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1938320</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	ND	5.0									
Ethylbenzene	ND	5.0									
m,p-Xylene	ND	10									
Methyl tert-butyl ether	ND	5.0									
o-Xylene	ND	5.0									
Toluene	ND	5.0									
Surr: Bromofluorobenzene (PID)	85.169		100.0		85.2	64	116				

Sample ID: <b>111761-016ADUP</b>	SampType: <b>DUP</b>	TestCode: <b>8021_S_BTE</b>	Units: <b>µg/Kg</b>	Prep Date:	RunNo: <b>121295</b>						
Client ID: <b>NB27-7.5</b>	Batch ID: <b>E10VS127</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1938325</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

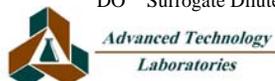
Benzene	ND	5.0						0	0	20	
Ethylbenzene	ND	5.0						0	0	20	
m,p-Xylene	ND	10						0	0	20	
Methyl tert-butyl ether	ND	5.0						0	0	20	
o-Xylene	ND	5.0						0	0	20	
Toluene	ND	5.0						0	0	20	
Surr: Bromofluorobenzene (PID)	89.105		100.0		89.1	64	116		0	0	

Sample ID: <b>111761-016AMS</b>	SampType: <b>MS</b>	TestCode: <b>8021_S_BTE</b>	Units: <b>µg/Kg</b>	Prep Date:	RunNo: <b>121295</b>						
Client ID: <b>NB27-7.5</b>	Batch ID: <b>E10VS127</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1938341</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	30.020	5.0	22.15	0	136	41	112				S
Ethylbenzene	33.742	5.0	42.30	0	79.8	26	100				
m,p-Xylene	132.923	10	180.2	0	73.8	32	106				
Methyl tert-butyl ether	357.928	5.0	578.9	0	61.8	44	124				
o-Xylene	50.976	5.0	64.80	0	78.7	30	100				
Toluene	117.519	5.0	172.6	0	68.1	38	112				

**Qualifiers:**

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



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 8021\_S\_BTEX**

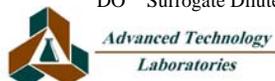
Sample ID: <b>111761-016AMS</b>	SampType: <b>MS</b>	TestCode: <b>8021_S_BTE</b>	Units: <b>µg/Kg</b>	Prep Date:	RunNo: <b>121295</b>						
Client ID: <b>NB27-7.5</b>	Batch ID: <b>E10VS127</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1938341</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Bromofluorobenzene (PID)	90.094		100.0		90.1	64	116				

Sample ID: <b>111761-016AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>8021_S_BTE</b>	Units: <b>µg/Kg</b>	Prep Date:	RunNo: <b>121295</b>						
Client ID: <b>NB27-7.5</b>	Batch ID: <b>E10VS127</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1938342</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	33.260	5.0	22.15	0	150	41	112	30.02	10.2	20	S
Ethylbenzene	35.397	5.0	42.30	0	83.7	26	100	33.74	4.79	20	
m,p-Xylene	139.856	10	180.2	0	77.6	32	106	132.9	5.08	20	
Methyl tert-butyl ether	401.797	5.0	578.9	0	69.4	44	124	357.9	11.5	20	
o-Xylene	53.869	5.0	64.80	0	83.1	30	100	50.98	5.52	20	
Toluene	130.393	5.0	172.6	0	75.5	38	112	117.5	10.4	20	
Surr: Bromofluorobenzene (PID)	94.141		100.0		94.1	64	116		0	20	

Sample ID: <b>E100518LCSS5</b>	SampType: <b>LCS</b>	TestCode: <b>8021_S_BTE</b>	Units: <b>µg/Kg</b>	Prep Date:	RunNo: <b>121295</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>E10VS127</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1938343</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	95.495	5.0	100.0	0	95.5	70	130				
Ethylbenzene	95.769	5.0	100.0	0	95.8	70	130				
m,p-Xylene	194.596	10	200.0	0	97.3	70	130				
Methyl tert-butyl ether	94.862	5.0	100.0	0	94.9	70	130				
o-Xylene	99.393	5.0	100.0	0	99.4	70	130				
Toluene	97.425	5.0	100.0	0	97.4	70	130				
Surr: Bromofluorobenzene (PID)	90.218		100.0		90.2	64	116				

**Qualifiers:**

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



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 8021\_S\_BTEX**

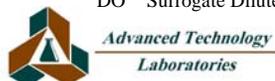
Sample ID: <b>E100518LCS1</b>	SampType: <b>LCS</b>	TestCode: <b>8021_S_BTE</b>	Units: <b>µg/Kg</b>	Prep Date:	RunNo: <b>121334</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>E10VS128</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1939022</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	101.606	5.0	100.0	0	102	70	130				
Ethylbenzene	104.950	5.0	100.0	0	105	70	130				
m,p-Xylene	213.629	10	200.0	0	107	70	130				
Methyl tert-butyl ether	97.905	5.0	100.0	0	97.9	70	130				
o-Xylene	105.597	5.0	100.0	0	106	70	130				
Toluene	104.764	5.0	100.0	0	105	70	130				
Surr: Bromofluorobenzene (PID)	92.278		100.0		92.3	64	116				

Sample ID: <b>E100519MB1</b>	SampType: <b>MBLK</b>	TestCode: <b>8021_S_BTE</b>	Units: <b>µg/Kg</b>	Prep Date:	RunNo: <b>121334</b>						
Client ID: <b>PBS</b>	Batch ID: <b>E10VS128</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1939024</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	5.0									
Ethylbenzene	ND	5.0									
m,p-Xylene	ND	10									
Methyl tert-butyl ether	ND	5.0									
o-Xylene	ND	5.0									
Toluene	ND	5.0									
Surr: Bromofluorobenzene (PID)	88.924		100.0		88.9	64	116				

Sample ID: <b>111763-018ADUP</b>	SampType: <b>DUP</b>	TestCode: <b>8021_S_BTE</b>	Units: <b>µg/Kg</b>	Prep Date:	RunNo: <b>121334</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>E10VS128</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1939029</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	5.0						0	0	20	
Ethylbenzene	ND	5.0						0	0	20	
m,p-Xylene	ND	10						0	0	20	
Methyl tert-butyl ether	ND	5.0						0	0	20	
o-Xylene	ND	5.0						0	0	20	
Toluene	ND	5.0						0	0	20	

**Qualifiers:**

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



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 8021\_S\_BTEX**

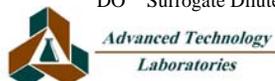
Sample ID: <b>111763-018ADUP</b>	SampType: <b>DUP</b>	TestCode: <b>8021_S_BTE</b>	Units: <b>µg/Kg</b>	Prep Date:	RunNo: <b>121334</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>E10VS128</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1939029</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Bromofluorobenzene (PID)	91.670		100.0		91.7	64	116		0	0	

Sample ID: <b>111763-033AMS</b>	SampType: <b>MS</b>	TestCode: <b>8021_S_BTE</b>	Units: <b>µg/Kg</b>	Prep Date:	RunNo: <b>121334</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>E10VS128</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1939039</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	41.721	5.0	22.15	0	188	41	112				S
Ethylbenzene	47.817	5.0	42.30	0	113	26	100				S
m,p-Xylene	180.077	10	180.2	0	99.9	32	106				
Methyl tert-butyl ether	481.951	5.0	578.9	0	83.3	44	124				
o-Xylene	67.975	5.0	64.80	0	105	30	100				S
Toluene	169.895	5.0	172.6	0	98.4	38	112				
Surr: Bromofluorobenzene (PID)	97.900		100.0		97.9	64	116				

Sample ID: <b>111763-033AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>8021_S_BTE</b>	Units: <b>µg/Kg</b>	Prep Date:	RunNo: <b>121334</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>E10VS128</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/19/2010</b>	SeqNo: <b>1939040</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	39.589	5.0	22.15	0	179	41	112	41.72	5.24	20	S
Ethylbenzene	44.266	5.0	42.30	0	105	26	100	47.82	7.71	20	S
m,p-Xylene	166.794	10	180.2	0	92.6	32	106	180.1	7.66	20	
Methyl tert-butyl ether	413.768	5.0	578.9	0	71.5	44	124	482.0	15.2	20	
o-Xylene	61.855	5.0	64.80	0	95.5	30	100	67.98	9.43	20	
Toluene	160.631	5.0	172.6	0	93.0	38	112	169.9	5.61	20	
Surr: Bromofluorobenzene (PID)	88.805		100.0		88.8	64	116		0	20	

**Qualifiers:**

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



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 8021\_WP\_BTEX**

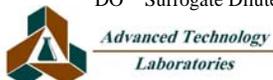
Sample ID: <b>M100517LCS5</b>		SampType: <b>LCS</b>		TestCode: <b>8021_WP_BT</b>		Units: <b>µg/L</b>		Prep Date:		RunNo: <b>121271</b>	
Client ID: <b>LCSW</b>		Batch ID: <b>M10VW019</b>		TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/18/2010</b>				SeqNo: <b>1937642</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	96.356	0.50	100.0	0	96.4	70	130				
Toluene	95.161	0.50	100.0	0	95.2	70	130				
Ethylbenzene	98.179	0.50	100.0	0	98.2	70	130				
m,p-Xylene	197.696	1.0	200.0	0	98.8	70	130				
o-Xylene	99.889	0.50	100.0	0	99.9	70	130				
Methyl tert-butyl ether	90.137	0.50	100.0	0	90.1	70	130				
Surr: Bromofluorobenzene (PID)	108.820		100.0		109	70	130				

Sample ID: <b>M100517LCS5D</b>		SampType: <b>LCS5D</b>		TestCode: <b>8021_WP_BT</b>		Units: <b>µg/L</b>		Prep Date:		RunNo: <b>121271</b>	
Client ID: <b>LCSS02</b>		Batch ID: <b>M10VW019</b>		TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/18/2010</b>				SeqNo: <b>1937644</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	102.530	0.50	100.0	0	103	70	130	96.36	6.21	20	
Toluene	100.596	0.50	100.0	0	101	70	130	95.16	5.55	20	
Ethylbenzene	103.799	0.50	100.0	0	104	70	130	98.18	5.56	20	
m,p-Xylene	208.780	1.0	200.0	0	104	70	130	197.7	5.45	20	
o-Xylene	105.086	0.50	100.0	0	105	70	130	99.89	5.07	20	
Methyl tert-butyl ether	93.373	0.50	100.0	0	93.4	70	130	90.14	3.53	20	
Surr: Bromofluorobenzene (PID)	110.096		100.0		110	70	130		0	0	

Sample ID: <b>M100517MB2</b>		SampType: <b>MBLK</b>		TestCode: <b>8021_WP_BT</b>		Units: <b>µg/L</b>		Prep Date:		RunNo: <b>121271</b>	
Client ID: <b>PBW</b>		Batch ID: <b>M10VW019</b>		TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/18/2010</b>				SeqNo: <b>1937647</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.50									
Toluene	ND	0.50									
Ethylbenzene	ND	0.50									
m,p-Xylene	ND	1.0									
o-Xylene	ND	0.50									
Methyl tert-butyl ether	ND	0.50									

**Qualifiers:**

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



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

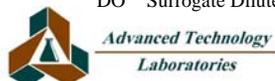
**TestCode: 8021\_WP\_BTEX**

Sample ID: <b>M100517MB2</b>	SampType: <b>MBLK</b>	TestCode: <b>8021_WP_BT</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>121271</b>						
Client ID: <b>PBW</b>	Batch ID: <b>M10VW019</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1937647</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Bromofluorobenzene (PID)	111.057		100.0		111	70	130				

Sample ID: <b>111753-001BDUP</b>	SampType: <b>DUP</b>	TestCode: <b>8021_WP_BT</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>121271</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>M10VW019</b>	TestNo: <b>EPA 8021B</b>		Analysis Date: <b>5/18/2010</b>	SeqNo: <b>1937649</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.50						0	0	20	
Toluene	0.281	0.50						0.3020	0	20	
Ethylbenzene	ND	0.50						0	0	20	
m,p-Xylene	ND	1.0						0	0	20	
o-Xylene	ND	0.50						0	0	20	
Methyl tert-butyl ether	ND	0.50						0	0	20	
Surr: Bromofluorobenzene (PID)	111.197		100.0		111	70	130		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   |  |



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

**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 8260\_WP\_LL**

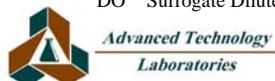
Sample ID: <b>Q100517LCS1</b>		SampType: <b>LCS</b>		TestCode: <b>8260_WP_LL</b>		Units: <b>µg/L</b>		Prep Date:		RunNo: <b>121282</b>	
Client ID: <b>LCSW</b>		Batch ID: <b>Q10VW103</b>		TestNo: <b>EPA 8260B</b>		Analysis Date: <b>5/17/2010</b>				SeqNo: <b>1937987</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	20.630	0.50	20.00	0	103	70	130				
Benzene	39.510	0.50	40.00	0	98.8	70	130				
Chlorobenzene	21.570	0.50	20.00	0	108	70	130				
MTBE	23.550	0.50	20.00	0	118	70	130				
Toluene	41.640	0.50	40.00	0	104	70	130				
Trichloroethene	19.180	0.50	20.00	0	95.9	70	130				
Surr: 1,2-Dichloroethane-d4	23.380		25.00		93.5	70	130				
Surr: 4-Bromofluorobenzene	23.490		25.00		94.0	70	130				
Surr: Dibromofluoromethane	23.280		25.00		93.1	70	130				
Surr: Toluene-d8	23.440		25.00		93.8	70	130				

Sample ID: <b>Q100517MB2MS</b>		SampType: <b>MS</b>		TestCode: <b>8260_WP_LL</b>		Units: <b>µg/L</b>		Prep Date:		RunNo: <b>121282</b>	
Client ID: <b>ZZZZZ</b>		Batch ID: <b>Q10VW103</b>		TestNo: <b>EPA 8260B</b>		Analysis Date: <b>5/17/2010</b>				SeqNo: <b>1937988</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	18.530	0.50	20.00	0	92.6	70	130				
Benzene	35.120	0.50	40.00	0	87.8	70	130				
Chlorobenzene	19.300	0.50	20.00	0	96.5	70	130				
MTBE	20.670	0.50	20.00	0	103	70	130				
Toluene	35.620	0.50	40.00	0	89.0	70	130				
Trichloroethene	16.900	0.50	20.00	0	84.5	70	130				
Surr: 1,2-Dichloroethane-d4	22.590		25.00		90.4	70	130				
Surr: 4-Bromofluorobenzene	23.380		25.00		93.5	70	130				
Surr: Dibromofluoromethane	22.630		25.00		90.5	70	130				
Surr: Toluene-d8	22.250		25.00		89.0	70	130				

Sample ID: <b>Q100517MB2MSD</b>		SampType: <b>MSD</b>		TestCode: <b>8260_WP_LL</b>		Units: <b>µg/L</b>		Prep Date:		RunNo: <b>121282</b>	
Client ID: <b>ZZZZZ</b>		Batch ID: <b>Q10VW103</b>		TestNo: <b>EPA 8260B</b>		Analysis Date: <b>5/17/2010</b>				SeqNo: <b>1937989</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

**Qualifiers:**

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



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 8260\_WP\_LL**

Sample ID: <b>Q100517MB2MSD</b>		SampType: <b>MSD</b>		TestCode: <b>8260_WP_LL</b>		Units: <b>µg/L</b>		Prep Date:		RunNo: <b>121282</b>	
Client ID: <b>ZZZZZZ</b>		Batch ID: <b>Q10VW103</b>		TestNo: <b>EPA 8260B</b>		Analysis Date: <b>5/17/2010</b>				SeqNo: <b>1937989</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	20.090	0.50	20.00	0	100	70	130	18.53	8.08	20	
Benzene	37.740	0.50	40.00	0	94.4	70	130	35.12	7.19	20	
Chlorobenzene	20.110	0.50	20.00	0	101	70	130	19.30	4.11	20	
MTBE	20.930	0.50	20.00	0	105	70	130	20.67	1.25	20	
Toluene	38.760	0.50	40.00	0	96.9	70	130	35.62	8.44	20	
Trichloroethene	18.160	0.50	20.00	0	90.8	70	130	16.90	7.19	20	
Surr: 1,2-Dichloroethane-d4	21.750		25.00		87.0	70	130		0	0	
Surr: 4-Bromofluorobenzene	22.680		25.00		90.7	70	130		0	0	
Surr: Dibromofluoromethane	22.250		25.00		89.0	70	130		0	0	
Surr: Toluene-d8	22.870		25.00		91.5	70	130		0	0	

Sample ID: <b>Q100517MB2</b>		SampType: <b>MBLK</b>		TestCode: <b>8260_WP_LL</b>		Units: <b>µg/L</b>		Prep Date:		RunNo: <b>121282</b>	
Client ID: <b>PBW</b>		Batch ID: <b>Q10VW103</b>		TestNo: <b>EPA 8260B</b>		Analysis Date: <b>5/17/2010</b>				SeqNo: <b>1937990</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	0.50									
1,1,1-Trichloroethane	ND	0.50									
1,1,2,2-Tetrachloroethane	ND	0.50									
1,1,2-Trichloroethane	ND	0.50									
1,1-Dichloroethane	ND	0.50									
1,1-Dichloroethene	ND	0.50									
1,1-Dichloropropene	ND	0.50									
1,2,3-Trichlorobenzene	ND	0.50									
1,2,3-Trichloropropane	ND	0.50									
1,2,4-Trichlorobenzene	ND	0.50									
1,2,4-Trimethylbenzene	ND	0.50									
1,2-Dibromo-3-chloropropane	ND	0.50									
1,2-Dibromoethane	ND	0.50									
1,2-Dichlorobenzene	ND	0.50									
1,2-Dichloroethane	ND	0.50									

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

**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

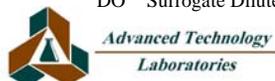
**TestCode: 8260\_WP\_LL**

Sample ID: <b>Q100517MB2</b>	SampType: <b>MBLK</b>	TestCode: <b>8260_WP_LL</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>121282</b>
Client ID: <b>PBW</b>	Batch ID: <b>Q10VW103</b>	TestNo: <b>EPA 8260B</b>		Analysis Date: <b>5/17/2010</b>	SeqNo: <b>1937990</b>

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichloropropane	ND	0.50									
1,3,5-Trimethylbenzene	ND	0.50									
1,3-Dichlorobenzene	ND	0.50									
1,3-Dichloropropane	ND	0.50									
1,4-Dichlorobenzene	ND	0.50									
2,2-Dichloropropane	ND	0.50									
2-Chlorotoluene	ND	0.50									
4-Chlorotoluene	ND	0.50									
4-Isopropyltoluene	ND	0.50									
Benzene	ND	0.50									
Bromobenzene	ND	0.50									
Bromodichloromethane	ND	0.50									
Bromoform	ND	0.50									
Bromomethane	ND	0.50									
Carbon tetrachloride	ND	0.50									
Chlorobenzene	ND	0.50									
Chloroethane	ND	0.50									
Chloroform	ND	0.50									
Chloromethane	ND	0.50									
cis-1,2-Dichloroethene	ND	0.50									
cis-1,3-Dichloropropene	ND	0.50									
Di-isopropyl ether	ND	0.50									
Dibromochloromethane	ND	0.50									
Dibromomethane	ND	0.50									
Dichlorodifluoromethane	ND	0.50									
Ethyl tert-butyl ether	ND	0.50									
Ethylbenzene	ND	0.50									
Hexachlorobutadiene	ND	0.50									
Isopropylbenzene	ND	0.50									
m,p-Xylene	ND	1.0									

**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   |  |



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

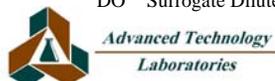
**TestCode: 8260\_WP\_LL**

Sample ID: <b>Q100517MB2</b>	SampType: <b>MBLK</b>	TestCode: <b>8260_WP_LL</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>121282</b>						
Client ID: <b>PBW</b>	Batch ID: <b>Q10VW103</b>	TestNo: <b>EPA 8260B</b>	Analysis Date: <b>5/17/2010</b>	SeqNo: <b>1937990</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methylene chloride	ND	1.0									
MTBE	ND	0.50									
n-Butylbenzene	ND	0.50									
n-Propylbenzene	ND	0.50									
Naphthalene	ND	0.50									
o-Xylene	ND	0.50									
sec-Butylbenzene	ND	0.50									
Styrene	ND	0.50									
Tert-amyl methyl ether	ND	0.50									
Tert-Butanol	ND	10									
tert-Butylbenzene	ND	0.50									
Tetrachloroethene	ND	0.50									
Toluene	ND	0.50									
trans-1,2-Dichloroethene	ND	0.50									
Trichloroethene	ND	0.50									
Trichlorofluoromethane	ND	0.50									
Vinyl chloride	ND	0.50									
Surr: 1,2-Dichloroethane-d4	24.000		25.00		96.0	70	130				
Surr: 4-Bromofluorobenzene	24.510		25.00		98.0	70	130				
Surr: Dibromofluoromethane	24.200		25.00		96.8	70	130				
Surr: Toluene-d8	22.610		25.00		90.4	70	130				

Sample ID: <b>111761-017A</b>	SampType: <b>DUP</b>	TestCode: <b>8260_WP_LL</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>121282</b>						
Client ID: <b>NB11-W</b>	Batch ID: <b>Q10VW103</b>	TestNo: <b>EPA 8260B</b>	Analysis Date: <b>5/17/2010</b>	SeqNo: <b>1937993</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	0.50						0	0	20	
1,1,1-Trichloroethane	ND	0.50						0	0	20	
1,1,2,2-Tetrachloroethane	ND	0.50						0	0	20	
1,1,2-Trichloroethane	ND	0.50						0	0	20	

**Qualifiers:**

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



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

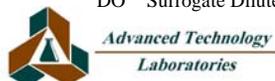
**TestCode: 8260\_WP\_LL**

Sample ID: <b>111761-017A</b>	SampType: <b>DUP</b>	TestCode: <b>8260_WP_LL</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>121282</b>
Client ID: <b>NB11-W</b>	Batch ID: <b>Q10VW103</b>	TestNo: <b>EPA 8260B</b>		Analysis Date: <b>5/17/2010</b>	SeqNo: <b>1937993</b>

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	ND	0.50						0	0	20	
1,1-Dichloroethene	ND	0.50						0	0	20	
1,1-Dichloropropene	ND	0.50						0	0	20	
1,2,3-Trichlorobenzene	ND	0.50						0	0	20	
1,2,3-Trichloropropane	ND	0.50						0	0	20	
1,2,4-Trichlorobenzene	ND	0.50						0	0	20	
1,2,4-Trimethylbenzene	ND	0.50						0	0	20	
1,2-Dibromo-3-chloropropane	ND	0.50						0	0	20	
1,2-Dibromoethane	ND	0.50						0	0	20	
1,2-Dichlorobenzene	ND	0.50						0	0	20	
1,2-Dichloroethane	ND	0.50						0	0	20	
1,2-Dichloropropane	ND	0.50						0	0	20	
1,3,5-Trimethylbenzene	ND	0.50						0	0	20	
1,3-Dichlorobenzene	ND	0.50						0	0	20	
1,3-Dichloropropane	ND	0.50						0	0	20	
1,4-Dichlorobenzene	ND	0.50						0	0	20	
2,2-Dichloropropane	ND	0.50						0	0	20	
2-Chlorotoluene	ND	0.50						0	0	20	
4-Chlorotoluene	ND	0.50						0	0	20	
4-Isopropyltoluene	ND	0.50						0	0	20	
Benzene	ND	0.50						0	0	20	
Bromobenzene	ND	0.50						0	0	20	
Bromodichloromethane	ND	0.50						0	0	20	
Bromoform	ND	0.50						0	0	20	
Bromomethane	ND	0.50						0	0	20	
Carbon tetrachloride	ND	0.50						0	0	20	
Chlorobenzene	ND	0.50						0	0	20	
Chloroethane	ND	0.50						0	0	20	
Chloroform	ND	0.50						0	0	20	
Chloromethane	ND	0.50						0	0	20	

**Qualifiers:**

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



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

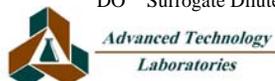
## ANALYTICAL QC SUMMARY REPORT

**TestCode: 8260\_WP\_LL**

Sample ID: <b>111761-017A</b>	SampType: <b>DUP</b>	TestCode: <b>8260_WP_LL</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>121282</b>						
Client ID: <b>NB11-W</b>	Batch ID: <b>Q10VW103</b>	TestNo: <b>EPA 8260B</b>		Analysis Date: <b>5/17/2010</b>	SeqNo: <b>1937993</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
cis-1,2-Dichloroethene	ND	0.50						0	0	20	
cis-1,3-Dichloropropene	ND	0.50						0	0	20	
Di-isopropyl ether	ND	0.50						0	0	20	
Dibromochloromethane	ND	0.50						0	0	20	
Dibromomethane	ND	0.50						0	0	20	
Dichlorodifluoromethane	ND	0.50						0	0	20	
Ethyl tert-butyl ether	ND	0.50						0	0	20	
Ethylbenzene	ND	0.50						0	0	20	
Hexachlorobutadiene	ND	0.50						0	0	20	
Isopropylbenzene	ND	0.50						0	0	20	
m,p-Xylene	ND	1.0						0	0	20	
Methylene chloride	ND	1.0						0	0	20	
MTBE	ND	0.50						0	0	20	
n-Butylbenzene	ND	0.50						0	0	20	
n-Propylbenzene	ND	0.50						0	0	20	
Naphthalene	ND	0.50						0	0	20	
o-Xylene	ND	0.50						0	0	20	
sec-Butylbenzene	ND	0.50						0	0	20	
Styrene	ND	0.50						0	0	20	
Tert-amyl methyl ether	ND	0.50						0	0	20	
Tert-Butanol	ND	10						0	0	20	
tert-Butylbenzene	ND	0.50						0	0	20	
Tetrachloroethene	ND	0.50						0	0	20	
Toluene	ND	0.50						0	0	20	
trans-1,2-Dichloroethene	ND	0.50						0	0	20	
Trichloroethene	ND	0.50						0	0	20	
Trichlorofluoromethane	ND	0.50						0	0	20	
Vinyl chloride	ND	0.50						0	0	20	
Surr: 1,2-Dichloroethane-d4	23.740		25.00		95.0	70	130		0	20	
Surr: 4-Bromofluorobenzene	22.920		25.00		91.7	70	130		0	20	

**Qualifiers:**

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



**CLIENT:** Geocon Consultants, Inc.  
**Work Order:** 111761  
**Project:** Santa Barbara 101, S9200-06-81

## ANALYTICAL QC SUMMARY REPORT

**TestCode: 8260\_WP\_LL**

Sample ID: <b>111761-017A</b>	SampType: <b>DUP</b>	TestCode: <b>8260_WP_LL</b>	Units: <b>µg/L</b>	Prep Date:	RunNo: <b>121282</b>						
Client ID: <b>NB11-W</b>	Batch ID: <b>Q10VW103</b>	TestNo: <b>EPA 8260B</b>		Analysis Date: <b>5/17/2010</b>	SeqNo: <b>1937993</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	24.010		25.00		96.0	70	130		0	20	
Surr: Toluene-d8	22.360		25.00		89.4	70	130		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   |  |



*Advanced Technology  
Laboratories*

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

# CHAIN OF CUSTODY RECORD

P 1 of 2



**Advanced Technology  
Laboratories**

3275 Walnut Avenue  
Signal Hill, CA 90755  
Tel: (562) 989-4045 • Fax: (562) 989-4040

## FOR LABORATORY USE ONLY

P.O. #: \_\_\_\_\_

Method of Transport: Client  ATL  CA OverN  FedEx  Other: GSD

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 Consultants, Inc. Address: 6671 Brisa Street Tel: 925-371-5900  
 Attention: Chris Merritt/Chris Giuntoli City: Livermore State: CA Zip Code: 94550 Fax: 925-371-5915

Project Name: Santa Barbara 101 Project #: S9200-06-81 Sampler: C. MERRITT (Signature) CHRIS MERRITT (Signature)  
 Relinquished by: CHRIS MERRITT Date: 5-13-10 Time: 1645 Received by: [Signature] Date: 5/14/10 Time: 1110  
 Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

I hereby authorize ATL to perform the work indicated below: Project Mgr /Submitter: Chris Merritt 5/13/2010  
 Send Report To: Attn: Same as above Co: \_\_\_\_\_ Addr: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
 Bill To: Attn: Same as above Co: \_\_\_\_\_ Addr: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
 Special Instructions/Comments: \_\_\_\_\_

**Sample/Records - Archival & Disposal**  
 Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.  
**Storage Fees (applies when storage is requested):**  
 ■ Sample: \$2.00 / sample /mo (after 45 days)  
 ■ Records: \$1 /ATL workorder /mo (after 1 year)

Circle or Add Analysis(es) Requested	SPECIFY APPROPRIATE MATRIX										PRESERVATION							
	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	8010B (Total Metal)	8015B (GRO) / 8020 (BTEX)	8019B (DRO)	8021 (BTEX)	Total Lead / CAM 17 (8010 / 7000)	8019B (EPA 6010)		TPHg/BTEX/MTBE	VOCs/FOCs	SOIL	WATER	GROUND WATER	WASTEWATER	Container(s)
																		RTNE <input type="checkbox"/>
																		CT <input checked="" type="checkbox"/>
																		SWRCB <input type="checkbox"/>
																		Logcode _____
																		OTHER _____
																		REMARKS

LAB USE ONLY:	Sample Description			
	Batch #:	Sample ID / Location	Date	Time
11761-007	NB12-3.5	5/12/2010	0900	
2	↳ - 5	5/12/2010	0910	
3	↳ - 10	5/12/2010	0915	
4	NB11-3.5	5/12/2010	1005	
5	↳ - 5	5/12/2010	1015	
6	↳ - 10	5/12/2010	1025	
7	NB5-3.5	5/12/2010	1200	
8	↳ - 5	5/12/2010	1205	
9	↳ - 10	5/12/2010	1230	
10	↳ - 15	5/12/2010	1245	

■ TAT starts 8AM the following day if samples received after 3 PM

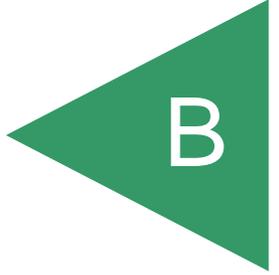
TAT: A = Overnight ≤ 24 hrs    B = Emergency Next Workday    C = Critical 2 Workdays    D = Urgent 3 Workdays    E = Routine 7 Workdays

Preservatives: H=HCl N=HNO<sub>3</sub> S=H<sub>2</sub>SO<sub>4</sub> C=4°C  
 Z=Zn(AC)<sub>2</sub> O=NaOH T=Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>

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



APPENDIX



June 29, 2010

Chris Merritt  
Project Geologist  
GEOCON Consultants, Inc.  
6671 Brisa Street  
Livermore, California 94550-2505

**Geophysical Investigation Report  
U.S. Route 101 Improvement Project  
East Cabrillo Blvd to Santa Monica Road  
Santa Barbara County, California**

Mr. Merritt-

This report presents the results of Advanced Geological Services, Inc. (AGS) geophysical investigation along U.S. 101 between the cities of Santa Barbara and Carpinteria in Santa Barbara County, California (Figure 1).

The objective was to search for a suspected underground storage tank (UST) so its presence and whereabouts would be known prior to upcoming construction activities. In addition, AGS scanned nine (9) locations for underground utilities so they could be avoided during subsequent direct-push sampling activities. The investigation was performed on May 11 and 12, 2010 by AGS geophysicist Roark Smith, with oversight by Mr. Chris Merritt of GEOCON and a representative from the California Department of Transportation (Caltrans). A second Caltrans representative provided traffic control in the form of signs, traffic cones, and a large arrow truck outfitted with a crash cushion (attenuation) device. Traffic control was especially vital during this project because some of the work areas were directly on the shoulder of the U.S. 101 freeway.



Mr. Smith scanned the subsurface using ground penetrating radar (GPR), an electromagnetic (EM) metal detector, and a utility locating system. Briefly, GPR produces images of soil layering and buried objects while EM detects buried metal. For the UST investigation, GPR was used to look for UST images and EM was used to scan for metal USTs that might be buried deeper than the GPR signal penetration depth, which can be as shallow as two feet at some sites. Utility locating systems are used to detect buried metallic utilities.

## 1.0 RESULTS SUMMARY

- Four areas of buried metal were identified at the UST investigation site at an historical service station (currently Caltrans right-of-way) in Summerland, California (Figure 2). One buried metal area was found to contain a storm drain vault covered by a steel manhole lid, so it was discounted as a possible UST location. Of the three remaining areas, one exhibited a rectangular footprint indicative of a 2,000-gallon UST. The other buried metal areas are smaller and more irregularly shaped and may be associated with utility substructures or metallic refuse.

GPR profiles did not show any UST images; however, it is possible that a UST, if present, is too deeply buried to be imaged with GPR, which achieved signal penetration depth of approximately three feet below ground surface at this site.

- The nine direct-push sample locations were selected clear of subsurface utilities, and soil and groundwater samples were obtained without incident. Copies of AGS' Utility Clearance Records documenting the utility location survey findings are presented as an Appendix to this Report.

## 2.0 INVESTIGATION AREA DESCRIPTION

The ten locations (nine direct-push sample locations and one suspected UST location) were distributed along an approximately eight mile stretch of U.S. High 101 between the towns of Santa Barbara and Carpinteria (Figure 1). Five of the direct-push points were located directly on the shoulder of the U.S. 101 freeway; four points were on or near freeway off-ramps. At these locations, Caltrans provided traffic control in the form of large arrow truck outfitted with a crash cushion (attenuation) device. The UST site was approximately 50 feet north of a freeway off ramp, on a vegetated fill terrace at the foot of Valencia Road in the town of Summerland, California. Although no utility clearance was performed at the UST site, AGS understands that GEOCON obtained soil samples there using hand-auger equipment.

## 3.0 GEOPHYSICAL METHODS AND EQUIPMENT

The geophysical investigation was performed using the following geophysical methods:

- Time-domain Electromagnetics (EM), using a Geonics EM61
- Ground Penetrating Radar (GPR) using a GSSI SIR-2 connected to a 400-MHz antenna
- Radio-frequency utility locating (RF), using a RadioDetection RD-4000 system
- Electromagnetic metal detection (MD), using a Fisher TW-6 M-Scope

Additionally, AGS used a Trimble Pro-XR global positioning system (GPS) to provide positioning data for the EM survey and to map certain site features (e.g., chain-link fences, metal grates) that may affect the geophysical data. The GPS data were used to prepare a geo-referenced site map upon which the investigation findings are presented (Figure 2).

### **Time-domain Electromagnetic Metal Detection (TDEM)**

The TDEM is a method commonly used to detect buried metallic objects at developed sites where surface metal objects, which can interfere with the geophysical measurements, are likely to be present. The TDEM instrument transmits a pulsed magnetic field, which causes (induces) small electrical currents (eddy currents) to flow through metallic objects near (below) the instrument. The strength of these eddy currents is measured by the TDEM receiver coil at a relatively long time after the magnetic field pulse subsides. This delayed measurement technique produces a reading that responds strongly to metal but very weakly to the electrical properties of the surrounding soil, thus making the EM61 a high-sensitivity metal detector. The EM61's sensitivity is enhanced by the use of two receiver coils; the second coil response can be used to reduce interference caused by nearby power lines and cultural objects such as buildings, vehicles, and chain-link fences.

### **Ground Penetrating Radar (GPR)**

GPR uses radar technology to produce a graphical profile of the subsurface that shows soil layering and images of buried objects. GPR systems typically use a single transceiving antenna (one that both transmits and receives the radar signal) that is dragged along the ground surface. The antenna emits a radar pulse into the ground; some of the radar energy reflects off of interfaces between materials with different electrical properties (e.g., soil and a UST) and returns to the surface where it is detected by the antenna and sent via the cable to a separate control unit where it is amplified and displayed on a computer screen as a vertical "wobble trace," which is a plot of the strength (amplitude) of the received GPR signal (i.e., the reflection) over time. Although the vertical scale of a GPR profile is usually considered as depth, it actually measures the travel time of the radar pulse from the surface to a reflecting interface and back to the surface.

A subsurface profile is built as the antenna is pulled along the survey line and successive wobble traces are recorded. GPR data are usually displayed as an array of closely-spaced traces; this procedure produces an image of the subsurface as the reflections (wobbles) on adjacent traces merge into coherent patterns. Soil layer boundaries appear as laterally continuous horizontal bands across a GPR profile. Buried objects appear as localized, high-amplitude (dark) reflection patterns. Buried pipes and USTs often exhibit a characteristic "upside down U" hyperbolic pattern, which allows them to be readily identified on a GPR record. Buried refuse often appears as zones of chaotic reflection patterns that disrupt the horizontal layering on a GPR profile. Although GPR can be subject to significant investigation depth limitations, it is used for utility locating because it has the potential to detect non-metallic utilities, whereas RF and EM locating methods will detect only metallic utilities. Burial depths are determined by using calibrating GPR profiles with images objects buried at known depths. Culverts and storm drain pipelines observed in drop inlets are often used for this purpose.

### **RF Utility Locating**

Briefly, the RD-4000 system locates energized electrical power lines by detecting the magnetic field associated with flowing electrical current. High-voltage cables, especially, are readily detected with RF locating systems. Additionally, the RD-4000 locates metal pipes and unenergized cables by detecting radio signals traveling within them; the radio signals can be ambient signals from distant sources (e.g., a radio station transmitter) that are captured naturally by the utility (which acts as a buried radio antenna),

or they can be generated locally by the RD-4000 transmitter. The RD-4000 receiver has various modes of operation for detecting utilities as they radiate signals from electrical current, ambient radio waves, and/or the specific tracing frequencies applied with the RD-4000 transmitter.

Using the RD-4000 transmitter to broadcast tracing signals of a specific known frequency is the best way to detect unenergized underground utilities (e.g., metal pipes) because this approach produces the strongest tracing signal within the utility. The tracing signals can be applied in two ways: either directly or indirectly. The RD transmitter can be directly connected via a jumper wire to a daylighting portion of a target utility (a metal ground stake is used to complete the circuit). In areas without exposed utilities a signal can be applied indirectly-- the RD-4000 transmitter placed on the ground surface within the search area, which enables a tracing signal to be transferred to nearby utilities via natural electromagnetic induction. A third approach uses an inductive clamp to apply tracing signals to insulated wires or wires running inside a non-metallic conduit.

### **Electromagnetic Metal Detecting**

Electromagnetic metal detection (MD) is used to find localized metal masses (e.g., a buried manhole cover) that cannot be readily detected by RF locating systems. MD locating systems have a pair of wire coils (transmitter and receiver coils); the receiver coil is first “tuned” to a null position with respect to the magnetic field emanating from the transmitter coil. When the MD locator is held near a metal object, the magnetic field becomes distorted and the system is thrown “out of tune.” MD devices are designed to emit an audible tone when they are out of tune, thus signaling the presence of a nearby metal object.

## **4.0 FIELD PROCEDURES**

The utility clearance work was performed in the following manner: First, AGS scanned the proposed sample location with the RD-4000 to look for buried metal utilities and energized electric lines. Next, AGS used the M-Scope metal detector to search for localized buried metal masses that may not be detected with the RD-4000. Finally, AGS scanned each location with GPR; AGS obtained GPR data along two 20-foot long mutually perpendicular lines centered on the proposed location, and additional GPR profiles were obtained as necessary to fully delineate any anomalous reflections indicative of a buried object(s). AGS marked the locations of detected utilities on the ground surface with spray paint and also prepared hand-drawn maps of the site features and detected utilities to document the investigation findings at each boring location. When underground utilities or other types of anomalous responses were detected at the original proposed location, AGS selected another location nearby and repeated the scanning process using all three instruments at the new location.

To perform the UST investigation AGS first installed a 5- by 5-foot survey grid over an approximately 35- by 80-foot area indicated by the Caltrans representative (Figure 2). The grid was marked with red pin flags, which were removed after the investigation was completed. Next, AGS obtained GPR data by hand-pulling the GPR antenna back-and-forth along parallel survey line spaced five feet apart. Distance marks were placed at 5-foot intervals on the GPR profiles as the antenna was moved alongside the pin flag markers. The GPR data were examined in the field for UST images. Next, AGS performed the EM survey by wheeling the EM61 instrument along north-south parallel lines spaced five feet apart. EM

measurements were obtained every 2.5 feet along each survey line. Horizontal positioning data for the EM survey were obtained using the installed survey grid for reference. When the geophysical data acquisition was completed, AGS mapped the survey area using a Trimble Pro-XR Global Positioning System (GPS). AGS took special care to GPS-map the survey grid, too, so the GPR and EM data and findings could be accurately placed on the site map. Combined, AGS obtained approximately 1,200 line-feet of EM and GPR data at the UST site.

It is worth noting that AGS processed the EM data in the field to produce contour maps, which were analyzed to look for buried metal areas indicative of a UST. Such areas were targeted by GEOCON for soil sampling.

## **5.0 DATA PROCESSING AND ANALYSIS**

The EM61 data were downloaded to a laptop computer and processed in the field using GEOSOFT OASIS montaj earth science software to produce color-filled contour maps showing EM response variations (in millivolts) across the sites. As a further aid to the analysis, data profiles for each survey transect were prepared and inspected. The profiles are especially useful for identifying bad data caused by, say, a loose connection within the EM system or other type of equipment malfunction. High amplitude EM response variations that are not readily attributable to known site features are referred to as “anomalies” and are attributed subsurface source bodies, which may include USTs, buried utilities, reinforced concrete foundations, and miscellaneous metallic debris. On the color contour maps, EM anomalies are indicated by “hot” (red and pink) colors representing areas with elevated EM measurements indicative of metallic objects. On the data profiles, anomalies are indicated by large deflections in the data trace; the width and amplitude of these deflections can provide an indication of the size and burial depth of the anomaly source body.

AGS inspected the EM61 contour maps for anomalous responses indicative of a UST. In general, because the EM61 was designed to produce a positive signal peak at the center of the metallic source body, it tends to produce an anomaly with a shape and extent that approximates the footprint of the metal source object. Accordingly, AGS looked for rectangular anomalies with a footprint corresponding to the dimensions of the suspected UST(s); however, it is worth noting that anomaly footprints are usually larger than that of the anomaly source body. Anomaly amplitudes associated with USTs depend on burial depth but are typically 200 millivolts or greater.

AGS inspected the GPR data in the field, examining each profile as it was obtained for the distinctive “upside-down U” image indicative of a UST. AGS then re-examined the GPR profiles in the office, looking in particular for faint UST images in the deeper portions of the profiles, as such images may have gone unnoticed when the GPR data were first inspected outdoors.

## **6.0 RESULTS**

The UST investigation results are presented on Figure 2, which shows a color-filled contour map of the EM61 data with three buried metal areas highlighted. A fourth buried metal area was also identified and

was targeted for soil sampling; however, after further data analysis indicated a very shallow metallic source body, the vegetation and soil in that area was removed to expose a metal manhole lid, which was lifted to reveal an empty vault and a storm drain pipe running north-south through the site. Accordingly, this area was no longer considered a possible UST location.

The most likely UST location is shown by the rectangular-shaped, approximately 10- by 17-foot, 550-millivolt buried metal anomaly southwest of the manhole lid. Remembering that the anomaly footprint is usually larger than the metallic source body, this anomaly could represent a 2,000-gallon UST. The two other buried metal anomalies are smaller and more irregularly shaped and may be associated with utility substructures or metallic refuse.

GPR profiles did not show any UST images; however, it is possible that a UST, if present, is too deeply buried to be imaged with GPR, which achieved signal penetration depth of approximately three feet below ground surface at this site.

The nine direct-push sample locations were selected clear of subsurface utilities, and soil and groundwater samples were obtained without incident. Copies of AGS' Utility Clearance Records documenting the utility location survey findings are presented as an Appendix to this Report.

## **7.0 LIMITATIONS of GEOPHYSICAL LOCATING METHODS**

In general, a geophysical method's limitations for detecting a particular target are related to the target's size, burial depth, the amount of contrast in material properties between the target and surrounding material, and finally, the amount of interference from surrounding site features. For a target to be detected it must have sufficient size to reflect or otherwise disturb some the incoming energy used for detection. It also must have enough contrast with the surrounding material to reflect or otherwise disturb enough of the incoming energy so as to be detected. And, finally, it can't be buried so deeply that the reflected/disturbed energy is so dissipated that it is too weak to be detected when it returns to the surface.

Weak energy returns during geophysical investigations are further exacerbated by ambient noise like that produced by natural and cultural features, such as utilities, fences, parked vehicles, vegetative cover, and debris.

## **8.0 CLOSING**

All geophysical data and field notes collected as a part of this investigation will be archived at the AGS office. The data collection and interpretation methods used in this investigation are consistent with standard practices applied to similar geophysical investigations. The correlation of geophysical responses with probable subsurface features is based on the past results of similar surveys although it is possible that some variation could exist at this site. Due to the nature of geophysical data, no guarantees can be made or implied regarding the targets identified or the presence or absence of additional objects or targets.

We appreciated working for you on this project and hope to work with you again. If you have any questions, I can be reached at (925) 808-8965 or [Rsmith@Advancedgeo.com](mailto:Rsmith@Advancedgeo.com).

Respectfully,



Roark W. Smith, GP 987

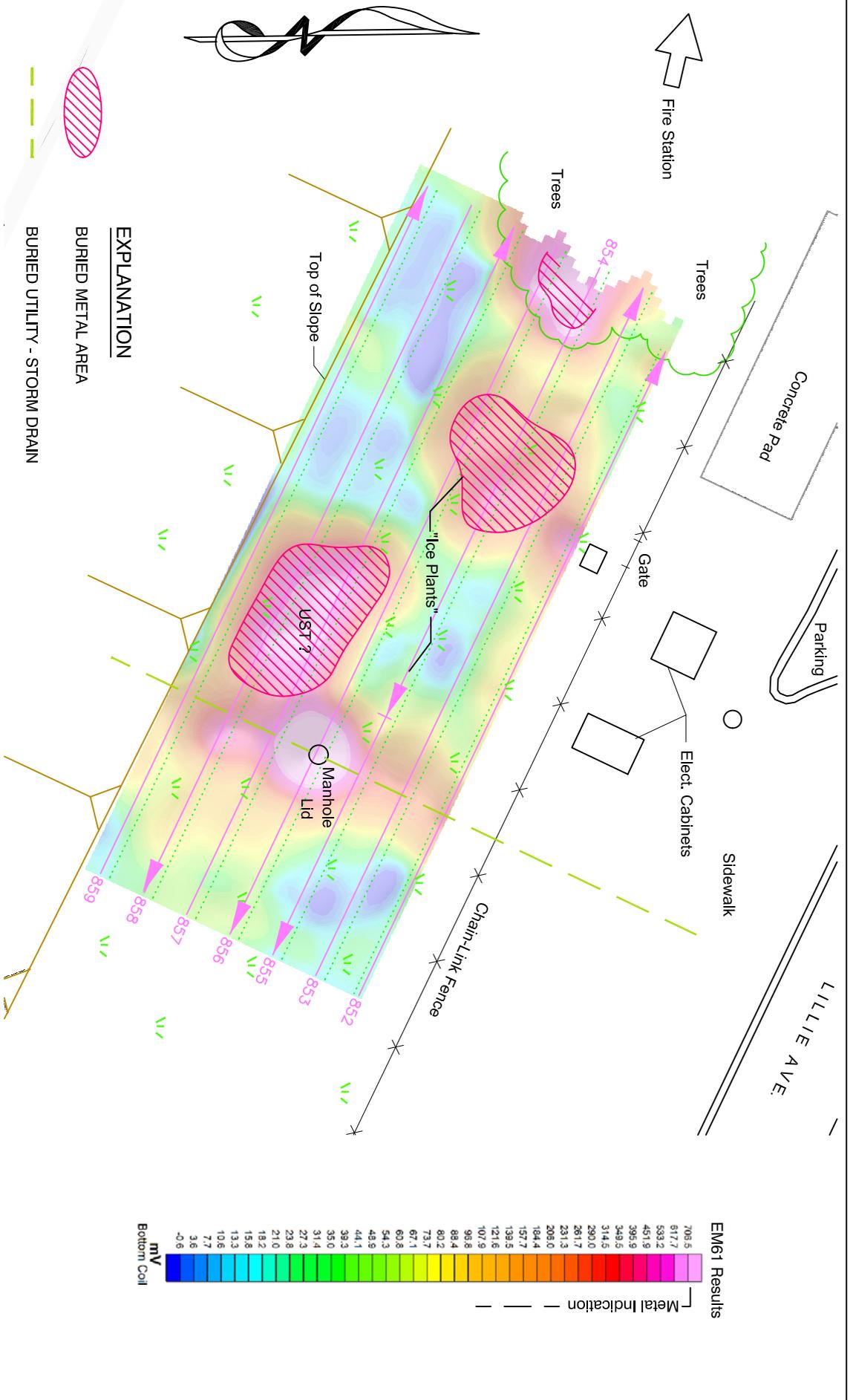
Senior Geophysicist  
Advanced Geological Services

Figures:

Figure 1 Site Location Map (imbedded in Report text)  
Figure 2 Geophysical Survey Coverage and Results, UST Site

Appendix:

Utility Clearance Records



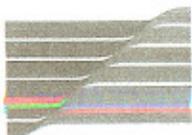
**EXPLANATION**

-  BURIED METAL AREA
-  BURIED UTILITY - STORM DRAIN
-  EM SURVEY LINE
-  GPR SURVEY LINE (no UST imaged)



	<b>ADVANCED GEOLOGICAL SERVICES</b>	
	1605 School Street Suite 4 94556 Moraga, CA (925) 631-1989	
<b>Geophysical Investigation Results</b> <b>Suspected UST Site</b>		
Historical Service Station (Currently Caltrans Right-of-Way)		
LOCATION: Summerland, Santa Barbara County, California	CLIENT: GEOCON Consultants, Inc.	FIGURE <b>2</b>
PROJECT #: 10-024-1CA	DATE: June 29, 2010	
DRAWN BY: R. SMITH		

APPENDIX-  
UTILITY CLEARANCE RECORDS



# UTILITY CLEARANCE RECORD

(Note: not all underground utilities can be detected by geophysical methods)

Client GEOCON

Project No. TRBA

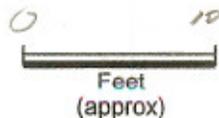
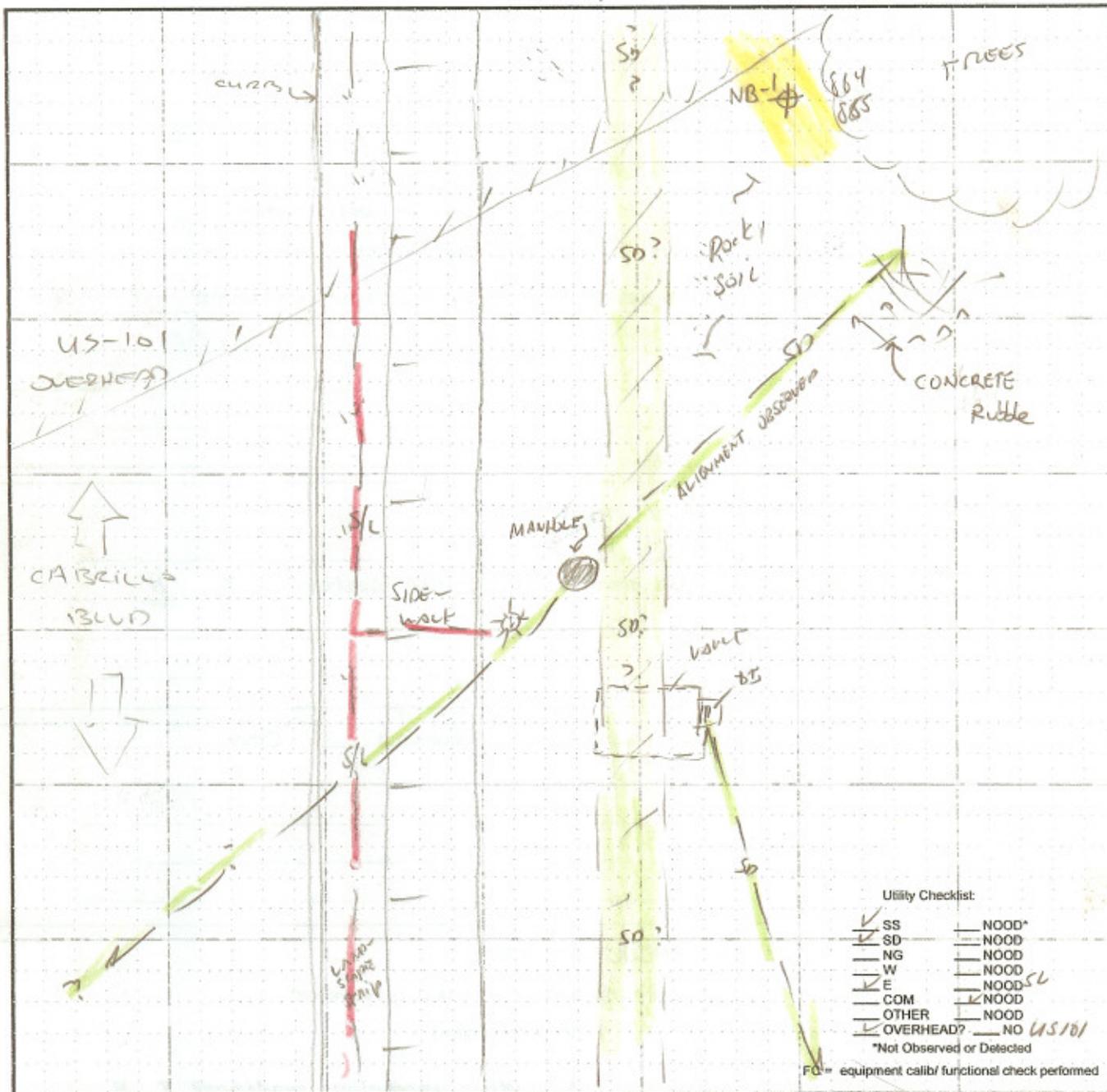
Location MONTEZITO CA

Date 5/12/10 Time 1400

Point I.D. NB-1

Operator RWS

Sketch Map





GROUND PENETRATING RADAR (GPR):  SIR-2      Other \_\_\_\_\_

Antenna  400 MHz      Other \_\_\_\_\_

Range  60 ns      Other \_\_\_\_\_ ns

File Name(s) 884, F65

Results Buried objects imaged? Y  Other anomalous reflections? Y

SD ALIGNMENTS OBSERVED IN DEPT. & M BY

LIFTING MN LIP - PIPES TOO DEEP FOR GPR

Estimated Signal Penetration Depth (ft): 3

RF PIPE & CABLE LOCATAOR: RD-4000  Other \_\_\_\_\_

Applied Signal, Direct Connect  No Surface Utility Features for Connection \_\_\_\_\_

Other Scanning Modes: P  R  Applied Signal, Induced

Results Underground utilities detected near boring/trench location? Y

SL IN LANDSCAPE STRIP - NO BURIED UTILITIES

DETECTED @ MARKED DP LOCATION

EM PIPE & CABLE LOCATAOR: Fisher TW-6 M-Scope

Results Buried metal detected? Y

Underground utilities detected near boring/trench location? Y

MAGNETOMETER (for use in Military Training Areas) Schonstedt \_\_\_\_\_ Other \_\_\_\_\_

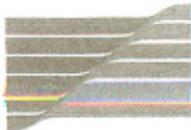
Results Buried metal detected? Y  N

ELECTROMAGNETIC TERRAIN CONDUCTIVITY (EM31)

\_\_\_\_ Not used due to proximity of surface metal objects (e.g., vehicles)

Background Conductivity: \_\_\_\_\_ mS/m (mmhos/m)

Results Buried metal detected? Y  N  Other anomalous readings? Y  N



# UTILITY CLEARANCE RECORD

(Note: not all underground utilities can be detected by geophysical methods)

Client GEDCON

Project No. TBA

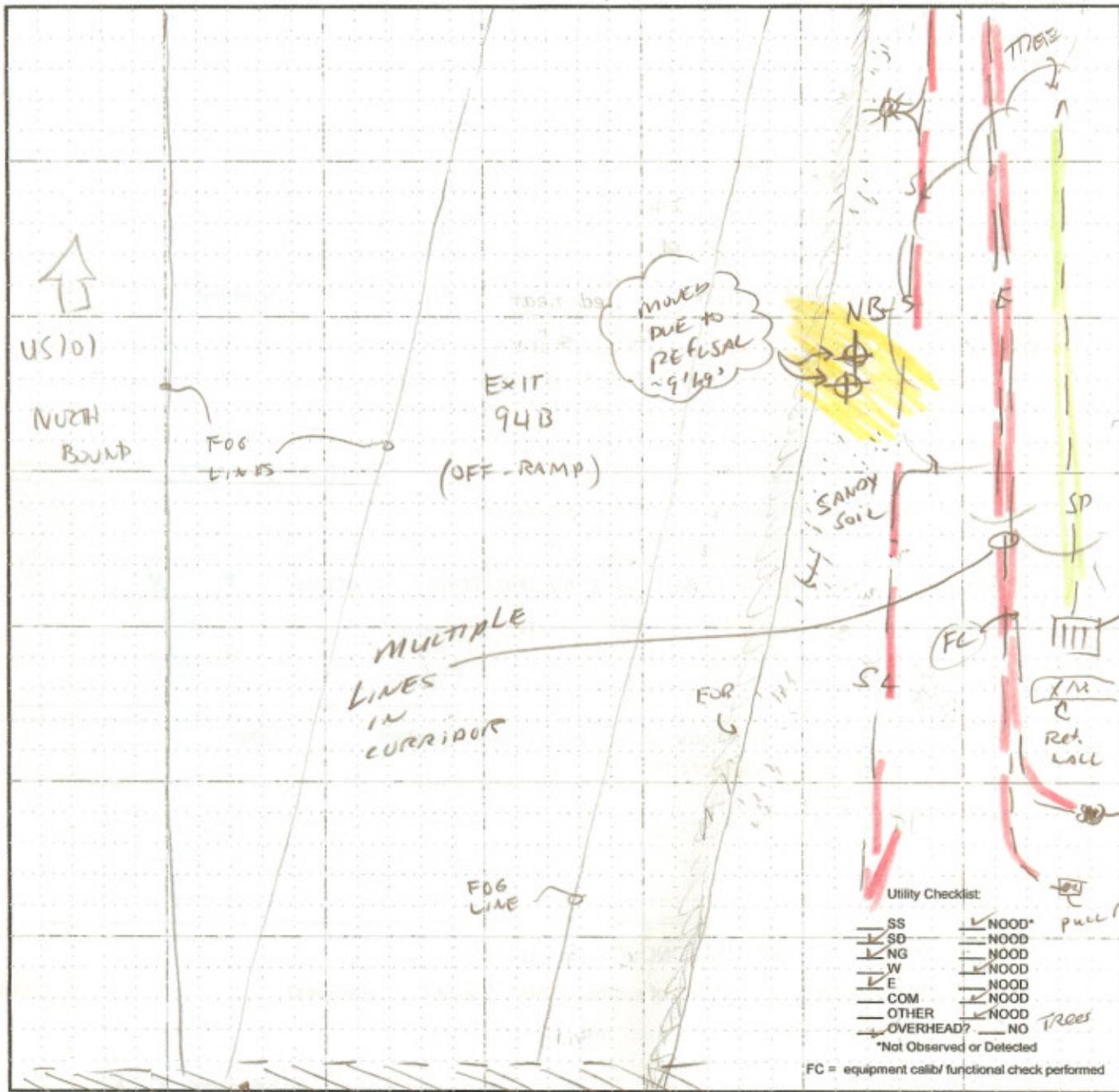
Location MONTECITO CA

Date 5/12/10 Time 1200

Point I.D. N13-5

Operator RWS

Sketch Map



PED. UNDER XING



N →

← HP GAS →



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## RESULTS AND INSTRUMENTATION

GROUND PENETRATING RADAR (GPR):  SIR-2 Other \_\_\_\_\_

Antenna  400 MHz Other \_\_\_\_\_

Range  60 ns Other \_\_\_\_\_ ns

File Name(s) 365-369

Results Buried objects imaged?  Y  N Other anomalous reflections?  Y  N

LINES IN ELECT CONDUIT CORRIDOR(?) IMAGED AS SHOWN

NO BURIED OBJECTS IMAGED @ MARKED DP LOCATION NBS

Estimated Signal Penetration Depth (ft): 3

RF PIPE & CABLE LOCATOR: RD-4000  Other \_\_\_\_\_  
Applied Signal, Direct Connect  <sup>pull wires, conduit and utility pole, SL</sup> No Surface Utility Features for Connection \_\_\_\_\_

Other Scanning Modes: P  R  Applied Signal, Induced \_\_\_\_\_

Results Underground utilities detected near boring/trench location?  Y  N

MULTIPLE ELECT LINES DETECTED IN NARROW CORRIDOR

AS SHOWN; SL ALSO DETECTED AS SHOWN NO BURIED

UTILS DETECTED @ MARKED DP LOCATION NBS

EM PIPE & CABLE LOCATOR: Fisher TW-6 M-Scope

Results Buried metal detected?  Y  N

Underground utilities detected near boring/trench location?  Y  N

ELECT CONDUIT DETECTED AS SHOWN, ALSO METAL

ALIGNMENT (RCP?) ASSOC. W/ DI DETECTED

MAGNETOMETER (for use in Military Training Areas) Schonstedt \_\_\_\_\_ Other \_\_\_\_\_

Results Buried metal detected? Y N

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

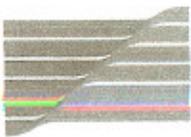
ELECTROMAGNETIC TERRAIN CONDUCTIVITY (EM31)

Not used due to proximity of surface metal objects (e.g., vehicles)

Background Conductivity: \_\_\_\_\_ mS/m (mmhos/m)

Results Buried metal detected? Y N Other anomalous readings? Y N

\_\_\_\_\_  
\_\_\_\_\_



# UTILITY CLEARANCE RECORD

(Note: not all underground utilities can be detected by geophysical methods)

Client Geocon

Project No. TBA

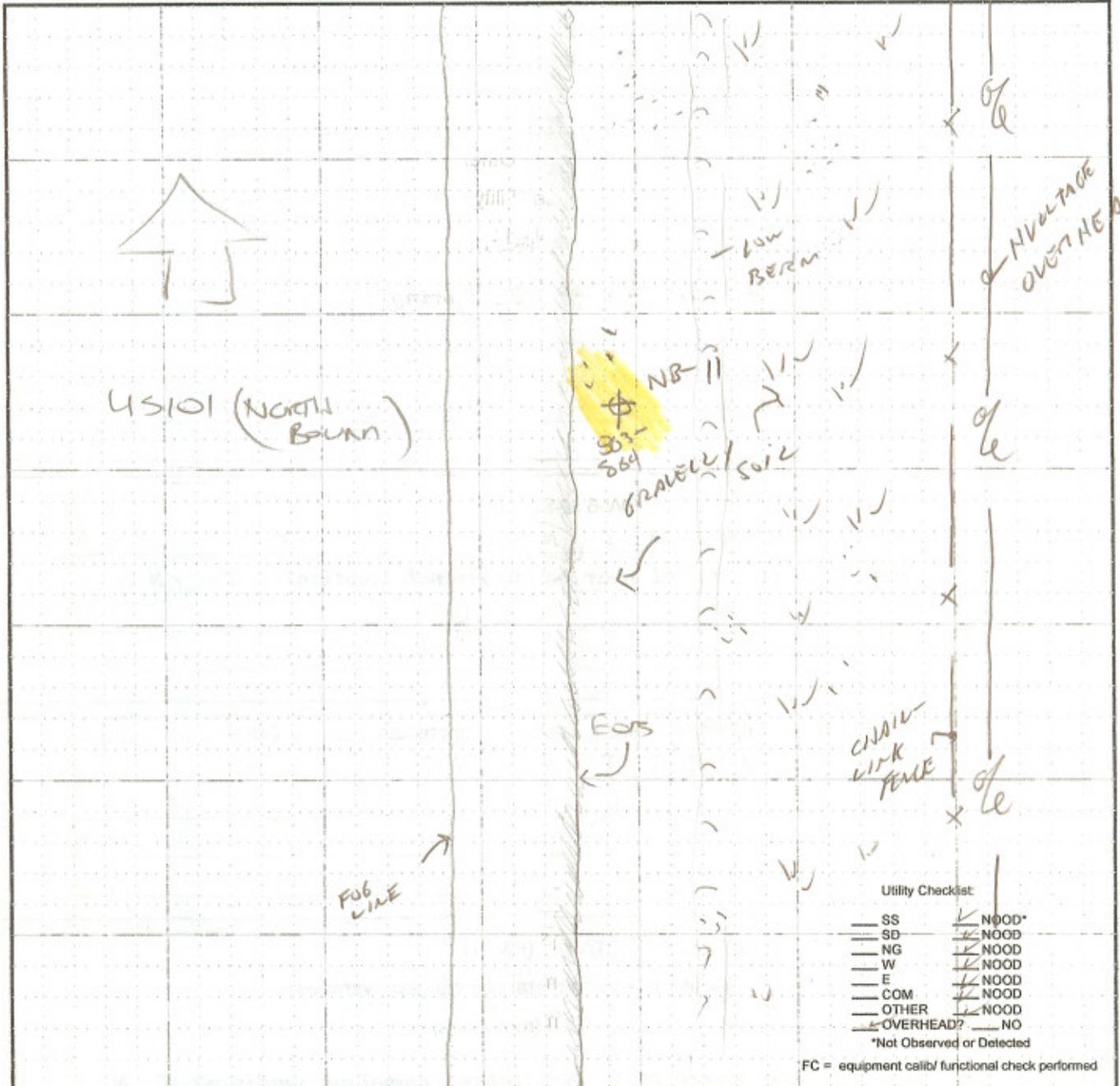
Location MONTICELLO CA

Date 5/12/10 Time 1015

Point I.D. NB-11

Operator TWS

Sketch Map



N →



# RESULTS AND INSTRUMENTATION

GROUND PENETRATING RADAR (GPR):  SIR-2      Other \_\_\_\_\_

Antenna  400 MHz      Other \_\_\_\_\_

Range  60 ns      Other \_\_\_\_\_ ns

File Name(s) 363, 864

Results *Buried objects imaged?* Y  N      *Other anomalous reflections?* Y  N

Estimated Signal Penetration Depth (ft): 3

RF PIPE & CABLE LOCATAOR: RD-4000  Other \_\_\_\_\_

Applied Signal, Direct Connect \_\_\_\_\_ No Surface Utility Features for Connection

Other Scanning Modes: P  R  Applied Signal, Induced

Results *Underground utilities detected near boring/trench location?* Y  N

EM PIPE & CABLE LOCATAOR: Fisher TW-6 M-Scope

Results *Buried metal detected?* Y  N

*Underground utilities detected near boring/trench location?* Y  N

MAGNETOMETER (for use in Military Training Areas) Schonstedt \_\_\_\_\_ Other \_\_\_\_\_

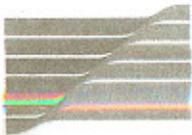
Results *Buried metal detected?* Y  N

ELECTROMAGNETIC TERRAIN CONDUCTIVITY (EM31)

Not used due to proximity of surface metal objects (e.g., vehicles)

Background Conductivity: \_\_\_\_\_ mS/m (mmhos/m)

Results *Buried metal detected?* Y  N      *Other anomalous readings?* Y  N



# UTILITY CLEARANCE RECORD

(Note: not all underground utilities can be detected by geophysical methods)

Client GEOCON

Project No. TBA

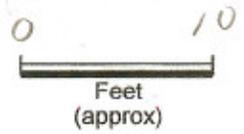
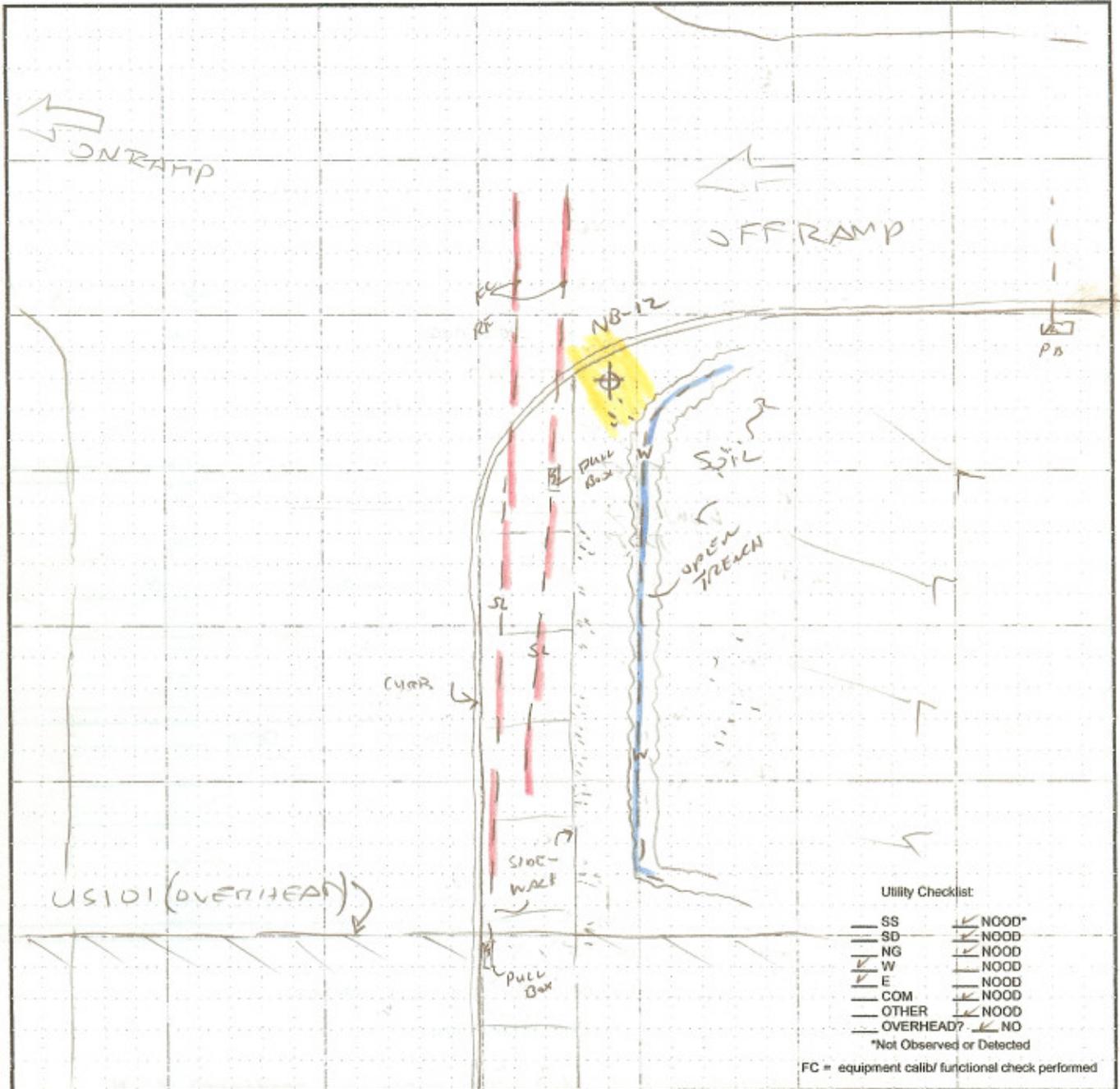
Location MONTECITO CA

Date 5/12/10 Time 0345

Point I.D. NB-12

Operator TWS

Sketch Map





# RESULTS AND INSTRUMENTATION

GROUND PENETRATING RADAR (GPR):  SIR-2 Other \_\_\_\_\_

Antenna  400 MHz Other \_\_\_\_\_

Range  60 ns Other \_\_\_\_\_ ns

File Name(s) 360-362

Results Buried objects imaged? Y  N Other anomalous reflections? Y  N

WL OBSERVED IN OPEN TRENCH, & TRACED USING CABLES IN TRENCH

Estimated Signal Penetration Depth (ft): 3

RF PIPE & CABLE LOCATOR: RD-4000  Other \_\_\_\_\_

Applied Signal, Direct Connect  No Surface Utility Features for Connection \_\_\_\_\_

Other Scanning Modes: P  R  Applied Signal, Induced

Results Underground utilities detected near boring/trench location? Y  N

BURIED CABLES (SL) & TRENCH TRACER LINES DETECTED AS SHOWN. NO BURIED UTILITIES DETECTED @ MARKED GP LOCATION

EM PIPE & CABLE LOCATOR: Fisher TW-6 M-Scope

Results Buried metal detected? Y  N

Underground utilities detected near boring/trench location? Y  N

MAGNETOMETER (for use in Military Training Areas) Schonstedt \_\_\_\_\_ Other \_\_\_\_\_

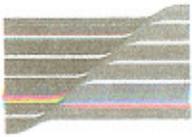
Results Buried metal detected? Y  N

ELECTROMAGNETIC TERRAIN CONDUCTIVITY (EM31)

Not used due to proximity of surface metal objects (e.g., vehicles)

Background Conductivity: \_\_\_\_\_ mS/m (mmhos/m)

Results Buried metal detected? Y  N Other anomalous readings? Y  N



# UTILITY CLEARANCE RECORD

(Note: not all underground utilities can be detected by geophysical methods)

Client GEOCON

Project No. TBA

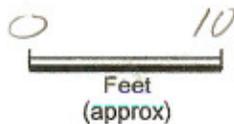
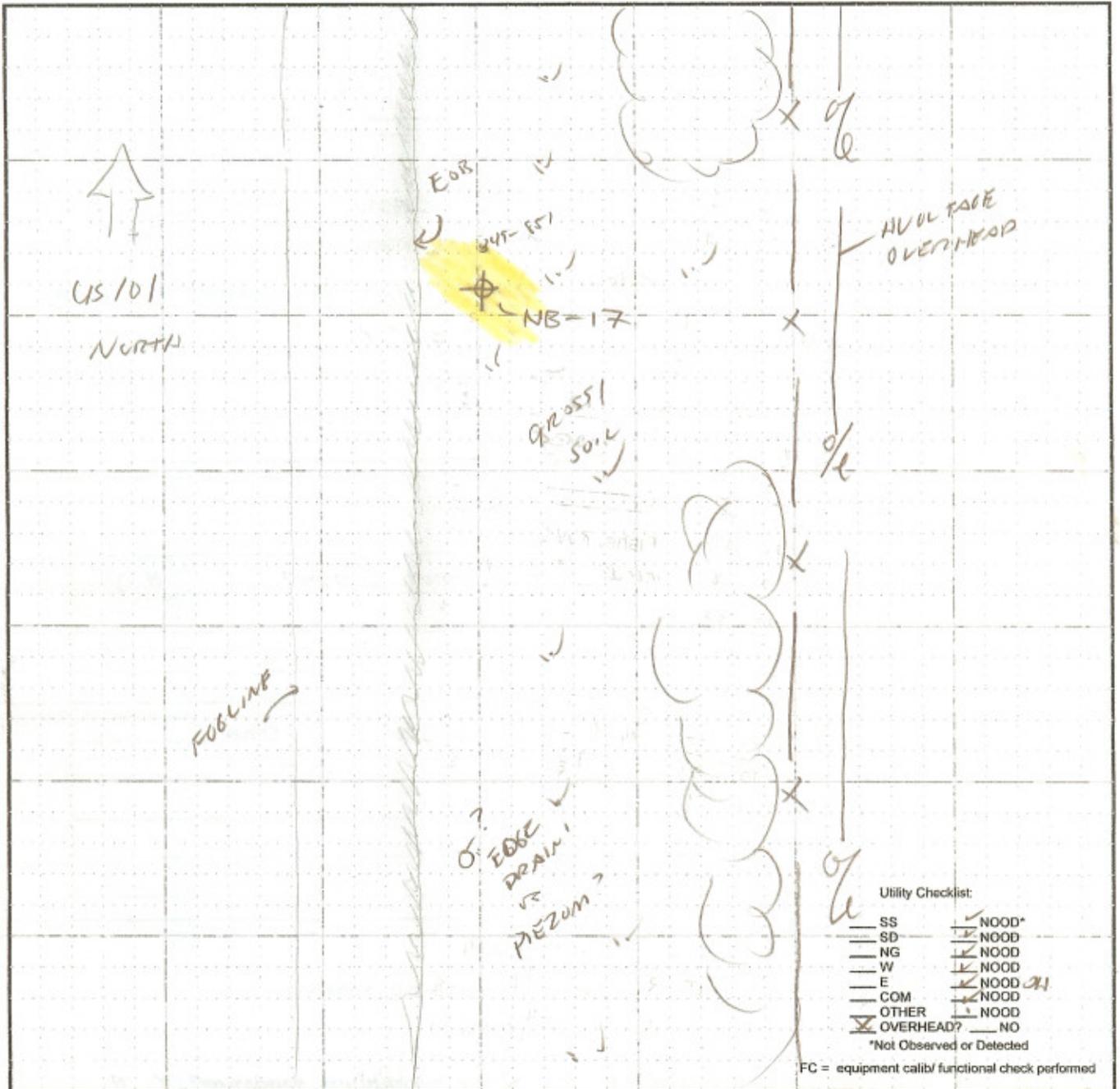
Location MONTECITO CA

Date 5/11/10 Time 1415

Point I.D. NB-17

Operator JMS

Sketch Map



N →



# RESULTS AND INSTRUMENTATION

GROUND PENETRATING RADAR (GPR):  SIR-2      Other \_\_\_\_\_

Antenna  400 MHz      Other \_\_\_\_\_

Range  60 ns      Other \_\_\_\_\_ ns

File Name(s) 349-951

Results *Buried objects imaged?* Y  N      *Other anomalous reflections?*  Y N

Estimated Signal Penetration Depth (ft): 3

RF PIPE & CABLE LOCATAOR: RD-4000  Other \_\_\_\_\_

Applied Signal, Direct Connect \_\_\_\_\_ No Surface Utility Features for Connection

Other Scanning Modes: P  R  Applied Signal, Induced

Results *Underground utilities detected near boring/trench location?* Y  N

EM PIPE & CABLE LOCATAOR: Fisher TW-6 M-Scope

Results *Buried metal detected?* Y  N

*Underground utilities detected near boring/trench location?* Y  N

MAGNETOMETER (for use in Military Training Areas) Schonstedt \_\_\_\_\_ Other \_\_\_\_\_

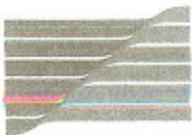
Results *Buried metal detected?* Y N

ELECTROMAGNETIC TERRAIN CONDUCTIVITY (EM31)

\_\_\_\_\_ Not used due to proximity of surface metal objects (e.g., vehicles)

Background Conductivity: \_\_\_\_\_ mS/m (mmhos/m)

Results *Buried metal detected?* Y N      *Other anomalous readings?* Y N



(Note: not all underground utilities can be detected by geophysical methods)

Client GEOCON

Project No. TBA

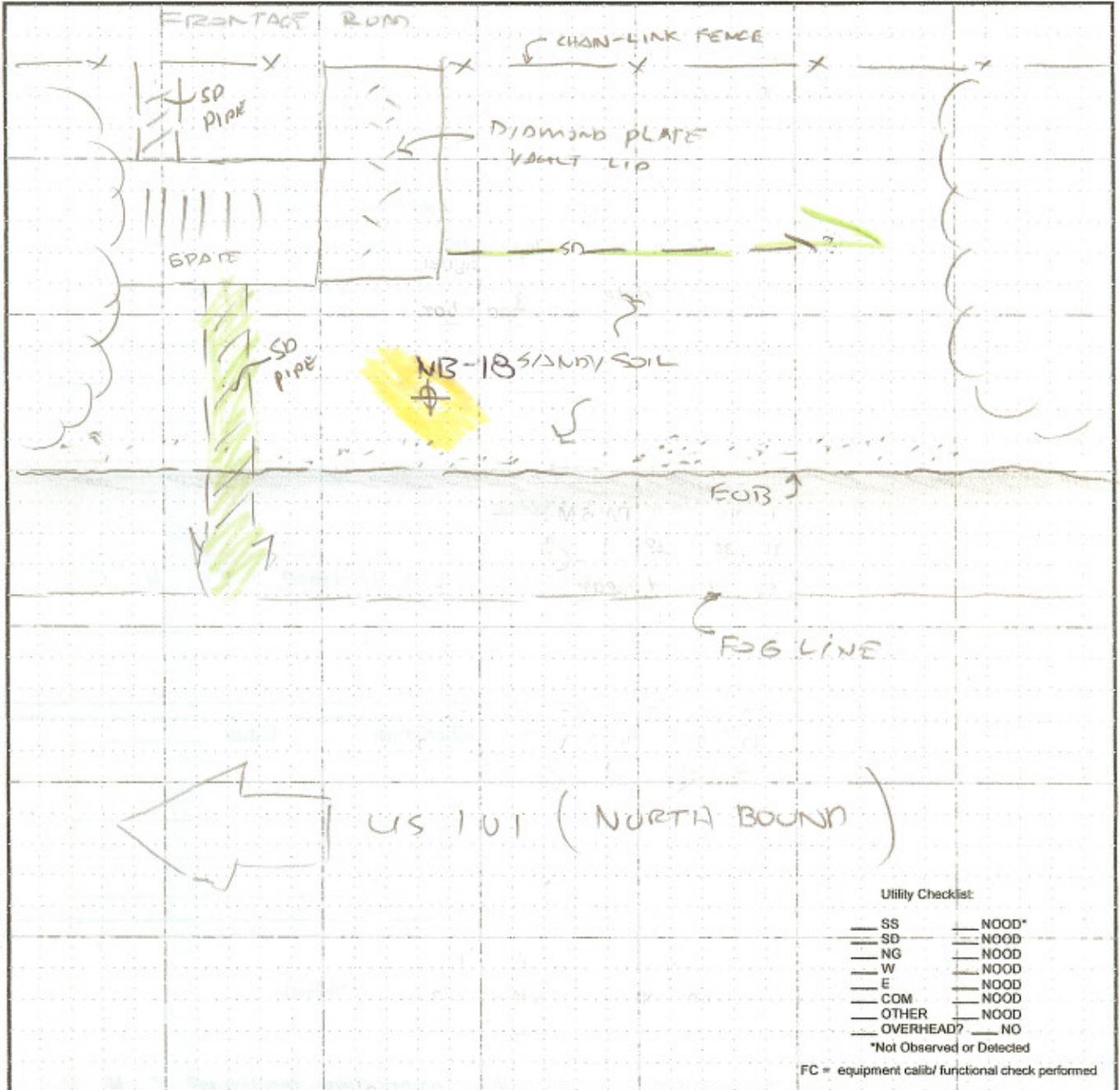
Location MONTECITO CA

Date 5/11/10 Time 1300

Point I.D. NB-18

Operator BWS

### Sketch Map





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## RESULTS AND INSTRUMENTATION

GROUND PENETRATING RADAR (GPR):  SIR-2      Other \_\_\_\_\_

Antenna  400 MHz      Other \_\_\_\_\_

Range  60 ns      Other \_\_\_\_\_ ns

File Name(s) 946-848

Results Buried objects imaged?  Y  N      Other anomalous reflections?  Y  N

Storm PIPES IMAGED AS SHOWN - NO

BURIED OBJECTS IMAGED & MARKED GP LOCATION

Estimated Signal Penetration Depth (ft): 3

RF PIPE & CABLE LOCATAOR: RD-4000  Other \_\_\_\_\_

Applied Signal, Direct Connect \_\_\_\_\_ No Surface Utility Features for Connection

Other Scanning Modes: P  R  Applied Signal, Induced

Results Underground utilities detected near boring/trench location?  Y  N

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

EM PIPE & CABLE LOCATAOR: Fisher TW-6 M-Scope

Results Buried metal detected?  Y  N

Underground utilities detected near boring/trench location?  Y  N

\_\_\_\_\_  
\_\_\_\_\_

MAGNETOMETER (for use in Military Training Areas) Schonstedt \_\_\_\_\_ Other \_\_\_\_\_

Results Buried metal detected?  Y  N

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

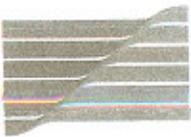
ELECTROMAGNETIC TERRAIN CONDUCTIVITY (EM31)

\_\_\_\_ Not used due to proximity of surface metal objects (e.g., vehicles)

Background Conductivity: \_\_\_\_\_ mS/m (mmhos/m)

Results Buried metal detected?  Y  N      Other anomalous readings?  Y  N

\_\_\_\_\_  
\_\_\_\_\_



# UTILITY CLEARANCE RECORD

(Note: not all underground utilities can be detected by geophysical methods)

Client GEOCON

Project No. TBA

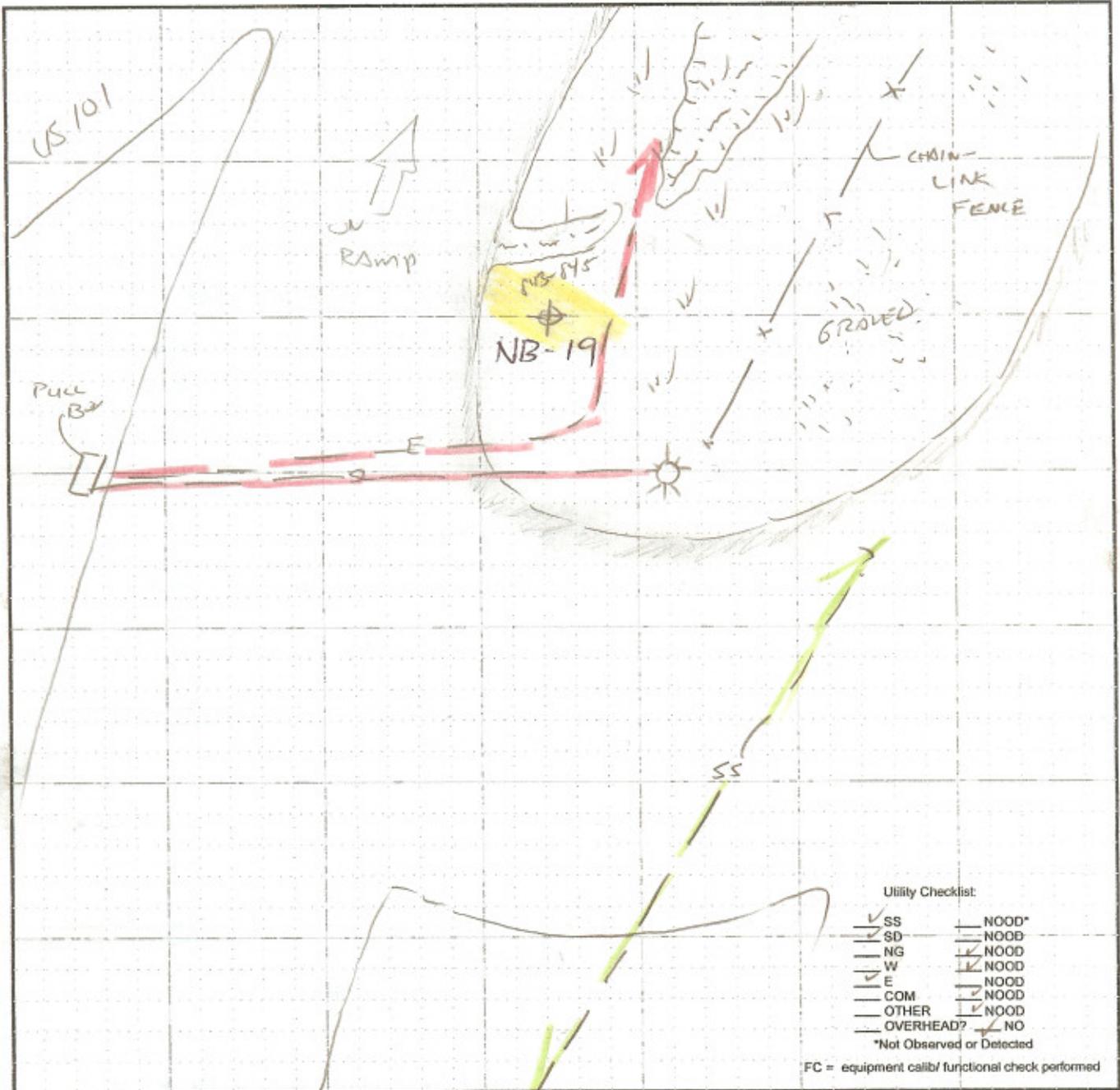
Location MONTECITO CA

Date 5/11/10 Time 1145

Point I.D. NB-19

Operator PNWS

Sketch Map



0 10  
Feet  
(approx)





**ADVANCED  
GEOLOGICAL  
SERVICES**

## RESULTS AND INSTRUMENTATION

GROUND PENETRATING RADAR (GPR):  SIR-2      Other \_\_\_\_\_

Antenna  400 MHz      Other \_\_\_\_\_

Range  60 ns      Other \_\_\_\_\_ ns

File Name(s) \_\_\_\_\_

Results Buried objects imaged? Y  N      Other anomalous reflections? Y  N

Estimated Signal Penetration Depth (ft): 3

RF PIPE & CABLE LOCATOR: RD-4000  Other \_\_\_\_\_

Applied Signal, Direct Connect  No Surface Utility Features for Connection \_\_\_\_\_

Other Scanning Modes: P  R  Applied Signal, Induced

Results Underground utilities detected near boring/trench location?  Y  N

SL & ELET AS SHOWN ON SKETCH MAP  
NO BURIED UTILS MARKED BY LOCATION

EM PIPE & CABLE LOCATOR: Fisher TW-6 M-Scope

Results Buried metal detected?  Y  N

Underground utilities detected near boring/trench location?  Y  N

ELET AS SHOWN

MAGNETOMETER (for use in Military Training Areas) Schonstedt \_\_\_\_\_ Other \_\_\_\_\_

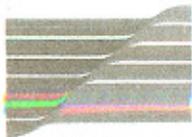
Results Buried metal detected? Y N

### ELECTROMAGNETIC TERRAIN CONDUCTIVITY (EM31)

\_\_\_\_ Not used due to proximity of surface metal objects (e.g., vehicles)

Background Conductivity: \_\_\_\_\_ mS/m (mmhos/m)

Results Buried metal detected? Y N      Other anomalous readings? Y N



# UTILITY CLEARANCE RECORD

(Note: not all underground utilities can be detected by geophysical methods)

Client GECON

Project No. TRBA

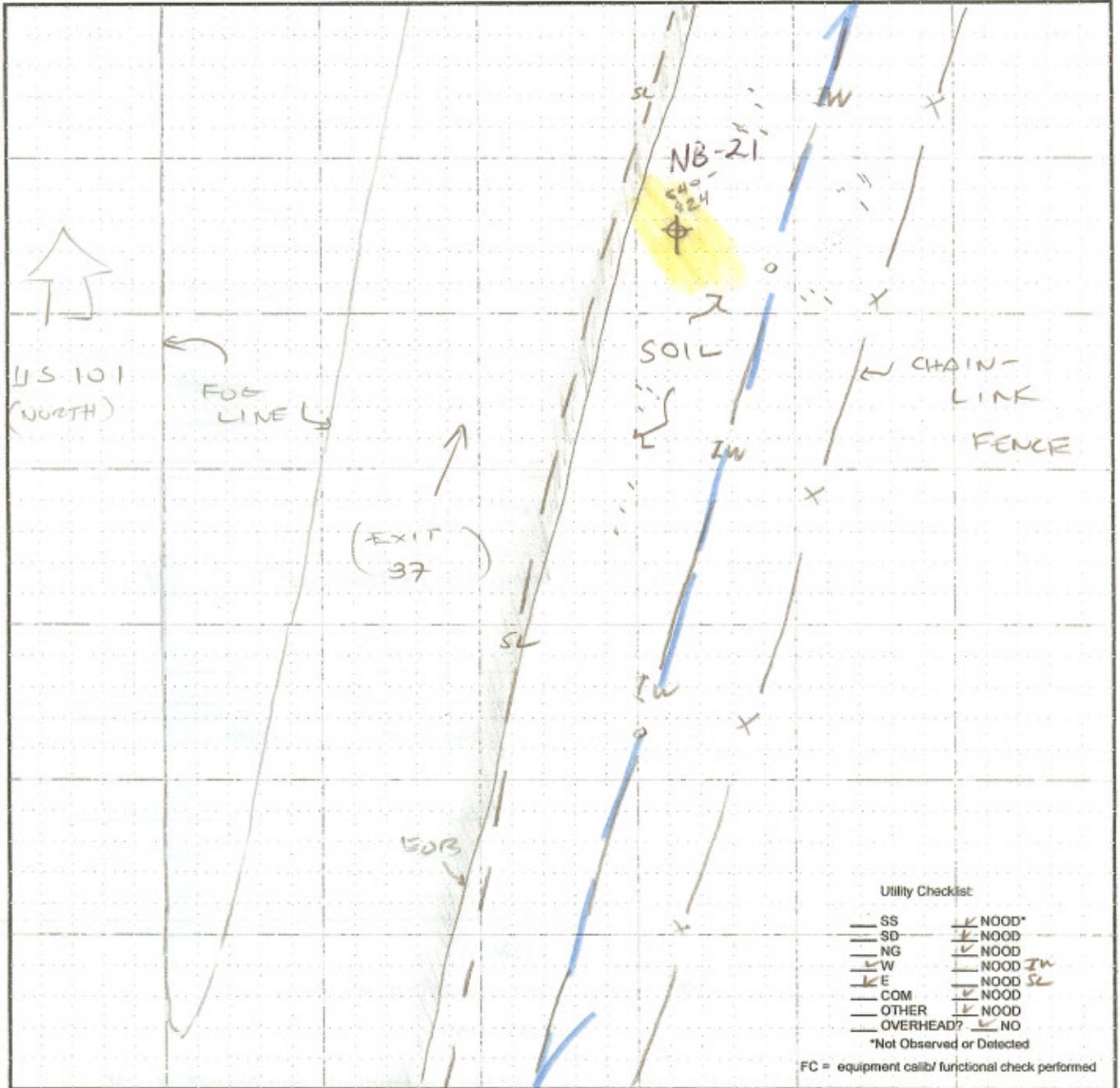
Location MONTECITO CA

Date 5/11/10 Time 1045

Point I.D. NB 21

Operator RWS

Sketch Map





# RESULTS AND INSTRUMENTATION

GROUND PENETRATING RADAR (GPR):  SIR-2      Other \_\_\_\_\_

Antenna  400 MHz      Other \_\_\_\_\_

Range  60 ns      Other \_\_\_\_\_ ns

File Name(s) 310-42

Results Buried objects imaged? Y  N      Other anomalous reflections? Y  N

ANUM IMAGE (POINT SOURCE) @ 0216 LOC →  
MOVED 2' EAST TO 0210 - NO BURIED OBJECTS

Estimated Signal Penetration Depth (ft): 3      IMAGED AT FINAL MARKED GP LOCATION

RF PIPE & CABLE LOCATOR: RD-4000       Other \_\_\_\_\_

Applied Signal, Direct Connect       No Surface Utility Features for Connection \_\_\_\_\_

Other Scanning Modes: P  R  Applied Signal, Induced

Results Underground utilities detected near boring/trench location? Y  N

S/L 45 ft WEST - NO BURIED UTILITIES  
DETECTED @ GP LOCATION

EM PIPE & CABLE LOCATOR: Fisher TW-6 M-Scope

Results Buried metal detected? Y  N

Underground utilities detected near boring/trench location? Y  N

MAGNETOMETER (for use in Military Training Areas) Schonstedt \_\_\_\_\_ Other \_\_\_\_\_

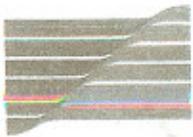
Results Buried metal detected? Y  N

## ELECTROMAGNETIC TERRAIN CONDUCTIVITY (EM31)

\_\_\_\_ Not used due to proximity of surface metal objects (e.g., vehicles)

Background Conductivity: \_\_\_\_\_ mS/m (mmhos/m)

Results Buried metal detected? Y  N      Other anomalous readings? Y  N



# UTILITY CLEARANCE RECORD

(Note: not all underground utilities can be detected by geophysical methods)

Client PROCON

Project No. TBA

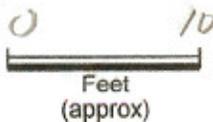
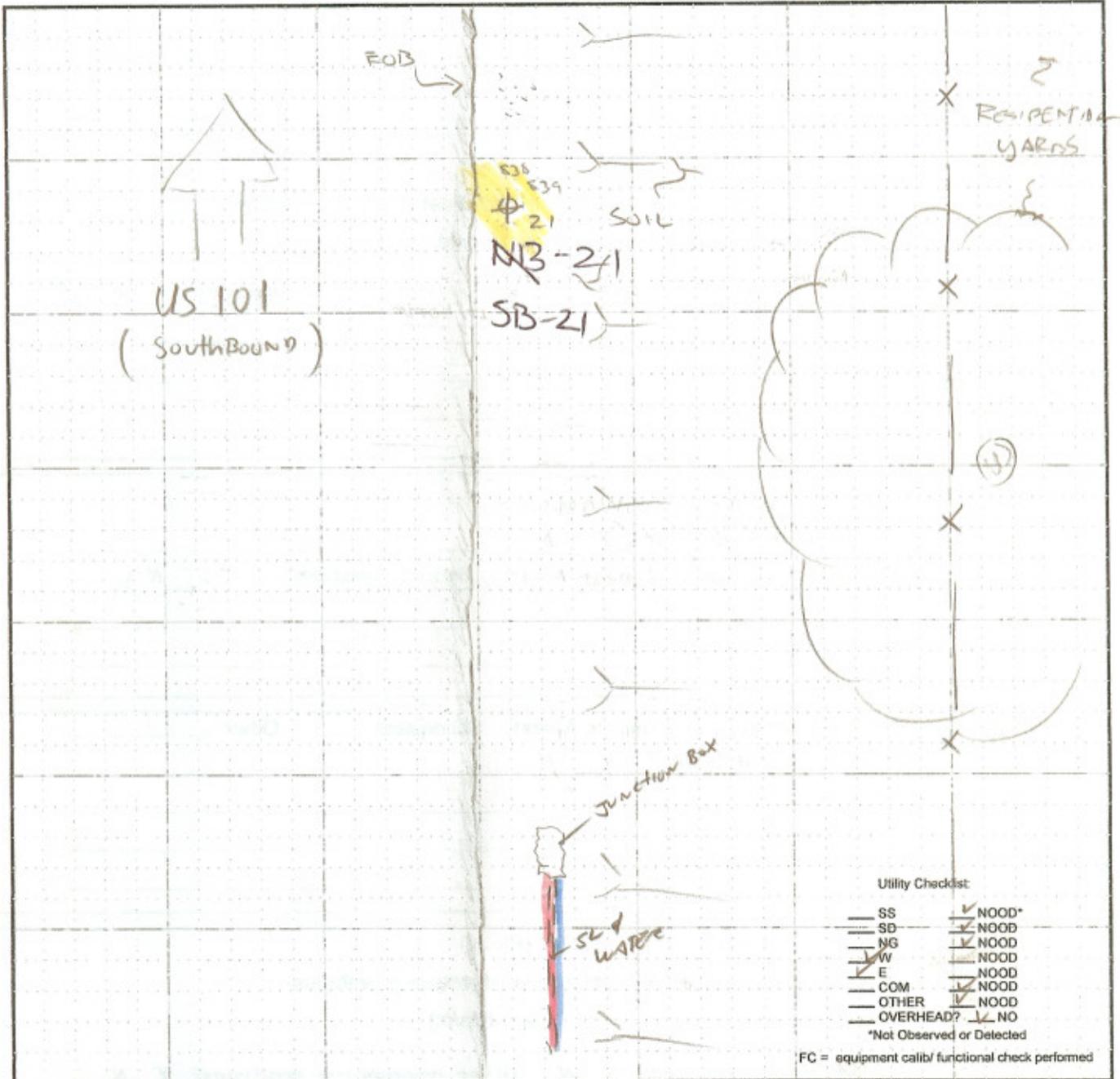
Location Montecito CA

Date 5/11/2010 Time 0930

Point I.D. SB-21

Operator TWS

Sketch Map





GROUND PENETRATING RADAR (GPR):  SIR-2      Other \_\_\_\_\_

Antenna  400 MHz      Other \_\_\_\_\_

Range  60 ns      Other \_\_\_\_\_ ns

File Name(s) 338, 639

Results *Buried objects imaged?*  Y  N      *Other anomalous reflections?*  Y  N

Estimated Signal Penetration Depth (ft): 3

RF PIPE & CABLE LOCATAOR: RD-4000       Other \_\_\_\_\_

Applied Signal, Direct Connect       No Surface Utility Features for Connection

Other Scanning Modes: P  R  Applied Signal, Induced

Results *Underground utilities detected near boring/trench location?* Y  N

EM PIPE & CABLE LOCATAOR: Fisher TW-6 M-Scope

Results *Buried metal detected?* Y  N

*Underground utilities detected near boring/trench location?* Y  N

MAGNETOMETER (for use in Military Training Areas) Schonstedt \_\_\_\_\_ Other \_\_\_\_\_

Results *Buried metal detected?* Y  N

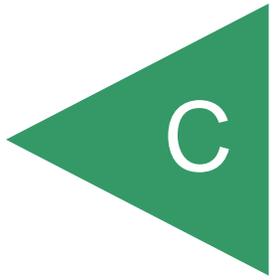
ELECTROMAGNETIC TERRAIN CONDUCTIVITY (EM31)

Not used due to proximity of surface metal objects (e.g., vehicles)

Background Conductivity: \_\_\_\_\_ mS/m (mmhos/m)

Results *Buried metal detected?* Y  N      *Other anomalous readings?* Y  N

APPENDIX



PROJECT NO. **S9200-06-81**

DEPTH IN FEET	PENETRAT. RESIST. BLOWS/FT.	SAMPLE NO.	LITHOLOGY	<b>BORING NO. NB1</b>		SOIL (USCS)	HEADSPACE (PPM)
				DATE DRILLED <u>5/12/10</u>	WATER LEVEL (ATD) <u>NA</u>		
				EQUIPMENT <u>DIRECT-PUSH</u> DRILLER <u>GEOCON</u>			
SOIL DESCRIPTION							
1				Hard, dry, Silty fine to medium SAND		SM	
2				Hard, light brown to brown SAND		SP	
3				- harder with increasing depth and less fines			
4		NB1-3.5					
5		NB1-5					
6							
7							
8							
9							
10		NB1-10					
11							
12							
13							
14							
15		NB1-15					
16							
17				REFUSAL - BORING TERMINATED AT 17 FEET NO GROUNDWATER ENCOUNTERED, GROUTED WITH NEAT CEMENT AT COMPLETION			

Log of Boring NB1, page 1 of 1

ENV\_NO\_WELL HWY 101 HOV BORINGS.GPJ 06/29/10

BORING ELEVATION:	ENGINEER/GEOLOGIST: <b>CHRIS MERRITT</b>
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NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **S9200-06-81**

DEPTH IN FEET	PENETRAT. RESIST. BLOWS/FT.	SAMPLE NO.	LITHOLOGY	<b>BORING NO. NB10</b>		SOIL (USCS)	HEADSPACE (PPM)
				DATE DRILLED <u>5/11/10</u>	WATER LEVEL (ATD) <u>9.0'</u>		
				EQUIPMENT <u>HAND-AUGER</u> DRILLER <u>GEOCON</u>			
<b>SOIL DESCRIPTION</b>							
1				Stiff to very stiff, dark brown to black, Sandy CLAY          Firm to soft, wet, Clayey SAND with some gravel  BORING TERMINATED AT 10.5 FEET TEMPORARY CASING FOR WATER, GROUTED WITH NEAT CEMENT AT COMPLETION		CL          SC	
2							
3							
4							
5							
6							
7							
8							
9							
10							

Log of Boring NB10, page 1 of 1

ENV\_NO\_WELL HWY 101 HOV BORINGS.GPJ 06/29/10

BORING ELEVATION:	ENGINEER/GEOLOGIST: <b>CHRIS MERRITT</b>
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NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **S9200-06-81**

DEPTH IN FEET	PENETRAT. RESIST. BLOWS/FT.	SAMPLE NO.	LITHOLOGY	<b>BORING NO. NB11</b>		SOIL (USCS)	HEADSPACE (PPM)
				DATE DRILLED <u>5/12/10</u>	WATER LEVEL (ATD) <u>10.3'</u>		
				EQUIPMENT <u>DIRECT-PUSH</u> DRILLER <u>GEOCON</u>			
SOIL DESCRIPTION							
1				<b>ASPHALT CONCRETE DEBRIS</b>		SM	
2				Hard, dry, dark brown, Silty SAND, some clay			
3				- increasing sand		SM	
4		NB11-3.5					
5				Firm, moist, brown to light brown, Silty SAND		SM	
6		NB11-5					
7				▼			
8							
9				BORING TERMINATED AT 12 FEET TEMPORARY CASING FOR WATER, GROUTED WITH NEAT CEMENT AT COMPLETION			
10		NB11-10					
11							
12							

Log of Boring NB11, page 1 of 1

ENV\_NO\_WELL HWY 101 HOV BORINGS.GPJ 06/29/10

BORING ELEVATION:	ENGINEER/GEOLOGIST: <b>CHRIS MERRITT</b>
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NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. S9200-06-81

DEPTH IN FEET	PENETRAT. RESIST. BLOWS/FT.	SAMPLE NO.	LITHOLOGY	BORING NO. NB12		SOIL (USCS)	HEADSPACE (PPM)
				DATE DRILLED 5/12/10	WATER LEVEL (ATD) 4.5'		
				EQUIPMENT _____ DRILLER GEOCON			
SOIL DESCRIPTION							
1				Loose to moderately dense, dry to moist, light brown, Silty SAND		SM	
2							
3							
4		NB12-3.5					
5		NB12-5					
6							
7							
8				Moderately dense, moist, fine to medium SAND, some fines		SP	
9							
10		NB12-10					
11							
12							
				BORING TERMINATED AT 12 FEET TEMPORARY CASING FOR WATER, GROUTED WITH NEAT CEMENT AT COMPLETION			

Log of Boring NB12, page 1 of 1

ENV\_NO\_WELL HWY 101 HOV BORINGS.GPJ 06/29/10

BORING ELEVATION:	ENGINEER/GEOLOGIST: <b>CHRIS MERRITT</b>
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NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **S9200-06-81**

DEPTH IN FEET	PENETRAT. RESIST. BLOWS/FT.	SAMPLE NO.	LITHOLOGY	<b>BORING NO. NB17</b>		SOIL (USCS)	HEADSPACE (PPM)
				DATE DRILLED <u>5/11/10</u>	WATER LEVEL (ATD) <u>3.5'</u>		
				EQUIPMENT <u>DIRECT-PUSH</u> DRILLER <u>GEOCON</u>			
<b>SOIL DESCRIPTION</b>							
1				<p><b>SOME ASPHALT CONCRETE</b>                      Loose to moderately dense, dry to moist, light brown grading to brown, Silty fine to medium SAND</p>		SM	
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
				<p>BORING TERMINATED AT 12 FEET                      TEMPORARY CASING FOR WATER, GROUTED WITH                      NEAT CEMENT AT COMPLETION</p>			

Log of Boring NB17, page 1 of 1

ENV\_NO\_WELL HWY 101 HOV BORINGS.GPJ 06/29/10

BORING ELEVATION:	ENGINEER/GEOLOGIST: <b>CHRIS MERRITT</b>
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NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. S9200-06-81

DEPTH IN FEET	PENETRAT. RESIST. BLOWS/FT.	SAMPLE NO.	LITHOLOGY	BORING NO. NB18		SOIL (USCS)	HEADSPACE (PPM)
				DATE DRILLED 5/11/10	WATER LEVEL (ATD) 6.4'		
				EQUIPMENT DIRECT-PUSH DRILLER GEOCON			
				SOIL DESCRIPTION			
1				<b>SOME CRUSHED ASPHALT CONCRETE</b>		SM	
2				Loose to moderately dense, brown, Silty fine to medium SAND			
3							
4		NB18-3.5 1300					
5							
6		NB18-5 1305					
7							
8							
9							
10		NB18-10					
11							
12				BORING TERMINATED AT 12 FEET TEMPORARY CASING FOR WATER, GROUTED WITH NEAT CEMENT AT COMPLETION			

Log of Boring NB18, page 1 of 1

ENV\_NO\_WELL HWY 101 HOV BORINGS.GPJ 06/29/10

BORING ELEVATION:	ENGINEER/GEOLOGIST: <b>CHRIS MERRITT</b>
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NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. S9200-06-81

DEPTH IN FEET	PENETRAT. RESIST. BLOWS/FT.	SAMPLE NO.	LITHOLOGY	BORING NO. NB19		SOIL (USCS)	HEADSPACE (PPM)
				DATE DRILLED 5/11/10	WATER LEVEL (ATD) 3.8'		
				EQUIPMENT DIRECT-PUSH DRILLER GEOCON			
SOIL DESCRIPTION							
1				<b>DEBRIS</b> <b>Silty SAND</b> Loose to moderately dense, dry grading to moist/wet, light brown to dark brown, fine to medium SAND with silt		SM	
2							
3							
4		NB19-3.5	▼				
5		NB19-5					
6							
7							
8				BORING TERMINATED AT 8 FEET TEMPORARY CASING FOR WATER, GROUTED WITH NEAT CEMENT AT COMPLETION			

Log of Boring NB19, page 1 of 1

ENV\_NO\_WELL HWY 101 HOV BORINGS.GPJ 06/29/10

BORING ELEVATION:	ENGINEER/GEOLOGIST: <b>CHRIS MERRITT</b>
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NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **S9200-06-81**

DEPTH IN FEET	PENETRAT. RESIST. BLOWS/FT.	SAMPLE NO.	LITHOLOGY	<b>BORING NO. NB21</b>		SOIL (USCS)	HEADSPACE (PPM)
				DATE DRILLED <u>5/11/10</u>	WATER LEVEL (ATD) <u>7.9'</u>		
				EQUIPMENT <u>DIRECT-PUSH</u>	DRILLER <u>GEOCON</u>		
<b>SOIL DESCRIPTION</b>							
1		NB21-0 1045		Loose, dry, light brown, Silty SAND, trace gravel		SM	
2				Moderately dense, dry to moist, light brown to brown, fine to medium SAND with silt, some zones with little fines		SM	
3							
4							
5		NB21-5 1050					
6							
7							
8				▼			
9							
10		NB21-10 1055					
11							
12					<b>BORING TERMINATED AT 12 FEET            TEMPORARY CASING FOR WATER, GROUTED WITH            NEAT CEMENT AT COMPLETION</b>		

Log of Boring NB21, page 1 of 1

ENV\_NO\_WELL HWY 101 HOV BORINGS.GPJ 06/29/10

BORING ELEVATION:	ENGINEER/GEOLOGIST: <b>CHRIS MERRITT</b>
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NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **S9200-06-81**

DEPTH IN FEET	PENETRAT. RESIST. BLOWS/FT.	SAMPLE NO.	LITHOLOGY	<b>BORING NO. NB27</b>		SOIL (USCS)	HEADSPACE (PPM)
				DATE DRILLED <u>5/12/10</u>	WATER LEVEL (ATD) <u>NA</u>		
				EQUIPMENT <u>HAND-AUGER</u> DRILLER <u>GEOCON</u>			
				SOIL DESCRIPTION			
1				Dry to moist, dark brown to black, Sandy CLAY		SC	
2							
3							
4							
5							
6	NB27-5						
7	NB27-7.5						
				REFUSAL - BORING TERMINATED AT 7.5 FEET			

Log of Boring NB27, page 1 of 1

ENV\_NO\_WELL HWY 101 HOV BORINGS.GPJ 06/29/10

BORING ELEVATION:	ENGINEER/GEOLOGIST: <b>CHRIS MERRITT</b>
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NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. S9200-06-81

DEPTH IN FEET	PENETRAT. RESIST. BLOWS/FT.	SAMPLE NO.	LITHOLOGY	BORING NO. NB5		SOIL (USCS)	HEADSPACE (PPM)
				DATE DRILLED 5/12/10	WATER LEVEL (ATD) NA		
				EQUIPMENT DIRECT-PUSH DRILLER GEOCON			
SOIL DESCRIPTION							
1				Hard, dry, Silty fine to medium SAND		SM	
2				Hard, light brown to brown SAND		SP	
3				- harder with increasing depth and less fines			
4		NB5-3.5					
5		NB5-5					
6							
7							
8							
9							
10		NB5-10					
11							
12							
13							
14							
15		NB5-15					
16				REFUSAL - BORING TERMINATED AT 16 FEET NO GROUNDWATER ENCOUNTERED, GROUTED WITH NEAT CEMENT AT COMPLETION			

Log of Boring NB5, page 1 of 1

ENV\_NO\_WELL HWY 101 HOV BORINGS.GPJ 06/29/10

BORING ELEVATION:	ENGINEER/GEOLOGIST: <b>CHRIS MERRITT</b>
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NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. S9200-06-81

DEPTH IN FEET	PENETRAT. RESIST. BLOWS/FT.	SAMPLE NO.	LITHOLOGY	<b>BORING NO. SB21</b>		SOIL (USCS)	HEADSPACE (PPM)	
				DATE DRILLED <u>5/11/10</u>	WATER LEVEL (ATD) <u>8.2'</u>			
				EQUIPMENT <u>DIRECT-PUSH</u> DRILLER <u>GEOCON</u>				
				SOIL DESCRIPTION				
1				Loose, dry to moist, light brown, Gravelly Silty SAND		SM		
2				Moderately dense, moist, light brown to brown, fine to medium SAND, some silty zones		SP		
3								
4								
5								
6		SB21-5 0910						
7								
8							▼	
9								
10								
11		SB21-10 0925						
12								
				BORING TERMINATED AT 12 FEET TEMPORARY CASING, GROUTED WITH NEAT CEMENT AT COMPLETION				

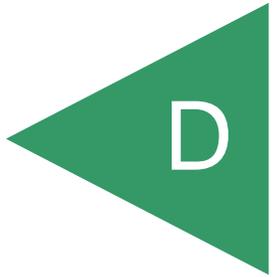
Log of Boring SB21, page 1 of 1

ENV\_NO\_WELL HWY 101 HOV BORINGS.GPJ 06/29/10

BORING ELEVATION:	ENGINEER/GEOLOGIST: <b>CHRIS MERRITT</b>
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NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

APPENDIX





**Photos 1a & 1b – NB1**



**Photo 2 – NB5**



**Photo 3 – NB10**



**GEOCON**  
CONSULTANTS, INC.

6671 BRISA STREET – LIVERMORE, CA 94550  
PHONE 925.371.5900 – FAX 925.371.5915

**PHOTOGRAPHS 1, 2, & 3**

Santa Barbara HOV Project  
Santa Barbara County, California

S9200-06-81

EA No. 05-0N7000

June 2010



**Photo 4 – NB11**



**Photos 5a & 5b – NB12**



**Photo 6 – NB17**



**GEOCON**  
CONSULTANTS, INC.

6671 BRISA STREET – LIVERMORE, CA 94550  
PHONE 925.371.5900 – FAX 925.371.5915

**PHOTOGRAPHS 4, 5, & 6**

Santa Barbara HOV Project  
Santa Barbara County, California

S9200-06-81

EA No. 05-0N7000

June 2010



**Photo 7 – NB18**



**Photo 8 – NB19**



**Photos 9a & 9b – NB21**



**GEOCON**  
CONSULTANTS, INC.

6671 BRISA STREET – LIVERMORE, CA 94550  
PHONE 925.371.5900 – FAX 925.371.5915

**PHOTOGRAPHS 7, 8, & 9**

Santa Barbara HOV Project  
Santa Barbara County, California

S9200-06-81

EA No. 05-0N7000

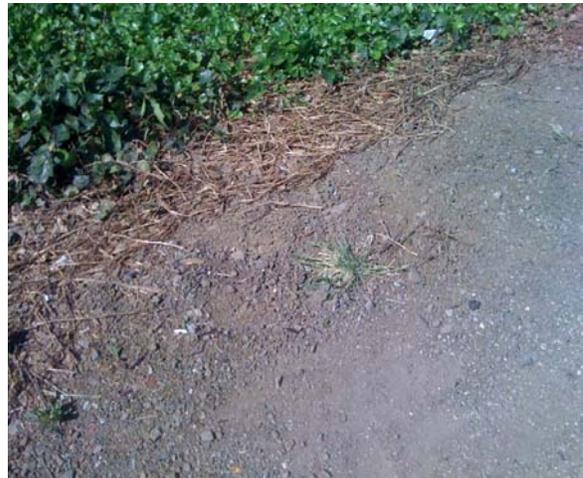
June 2010



**Photo 10 – NB27**



**Photo 11 – Manhole adjacent to NB27**



**Photos 12a & 12b – SB21**