

FOR CONTRACT NUMBER: 04-2G8604

INFORMATION HANDOUT

ENCROACHMENT UNDER PERMIT

CITY OF SAN LEANDRO

Letter to City Manager dated 9/25/2013 informing of work to be performed on City Right of Way.

UNDERGROUND CLASSIFICATION

STATE OF CALIFORNIA

DIVISION OF OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

MINING AND TUNNELING UNIT

CLASSIFICATION NO. C051-001-14T dated 1/28/2014

with request form for mandated pre-job conference

Jurisdiction Letter dated 6/1/2010

MATERIALS INFORMATION

PRELIMINARY SITE INVESTIGATION REPORT

Including LEAD INVESTIGATION REPORT

Dated 12/2013

FOUNDATION REPORT

Dated 1/23/2014

WATER SOURCE INFORMATION

RECYCLED WATER TRUCK PROGRAM -
EAST BAY MUNICIPAL UTILITY DISTRICT

ROUTE: 04-Ala-580-R33.4

DEPARTMENT OF TRANSPORTATION

DIVISION OF RIGHT OF WAY

111 GRAND AVENUE

P. O. BOX 23440, MS -11A

OAKLAND, CA 94623-0440

PHONE (510) 622-0801

FAX (510) 286-5379

TTY (711)

*Flex your power!
Be energy efficient!*

September 25, 2013

4-Ala-580-P.M. 33.4

E.A. 2G8602

Project No. 04 1200 0009

San Leandro City Hall
Attn: Chris Zapata, City Manager
835 East 14th Street
San Leandro, CA 94577

Dear Mr. Zapata,

The California Department of Transportation (Caltrans) will be repairing the storm damage on the Interstate 580 Benedict Drive off-ramp in 2014/2015. Currently the left lane of the off-ramp has settled and is causing cracking. To repair this, the Caltrans will construct a soldier pile and wood lagging wall next to the left shoulder. The wall will be buried in place. During construction the left lane will be closed.

As part of the project the Caltrans will remove the existing traffic island at the end of the off-ramp to Benedict Drive to facilitate traffic turning during construction. The existing island lies within both State right of way and City right of way. Once construction is finished the island will be rebuilt on State right of way. The City's right of way will be filled in with mix asphalt and become part of the City's paved roadway.

The highlighted area, as shown on the attached map, will be considered as an encroachment under permit in the City's right of way.

If you have any questions, please contact Right of Way Agent Alexandra Feuchter at (510) 622-0801.

Sincerely,

A handwritten signature in cursive script that reads "Allison G. Paich".

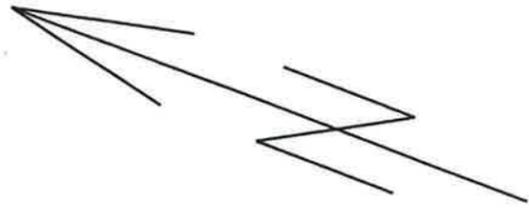
ALLISON G. PAICH

District Office Chief

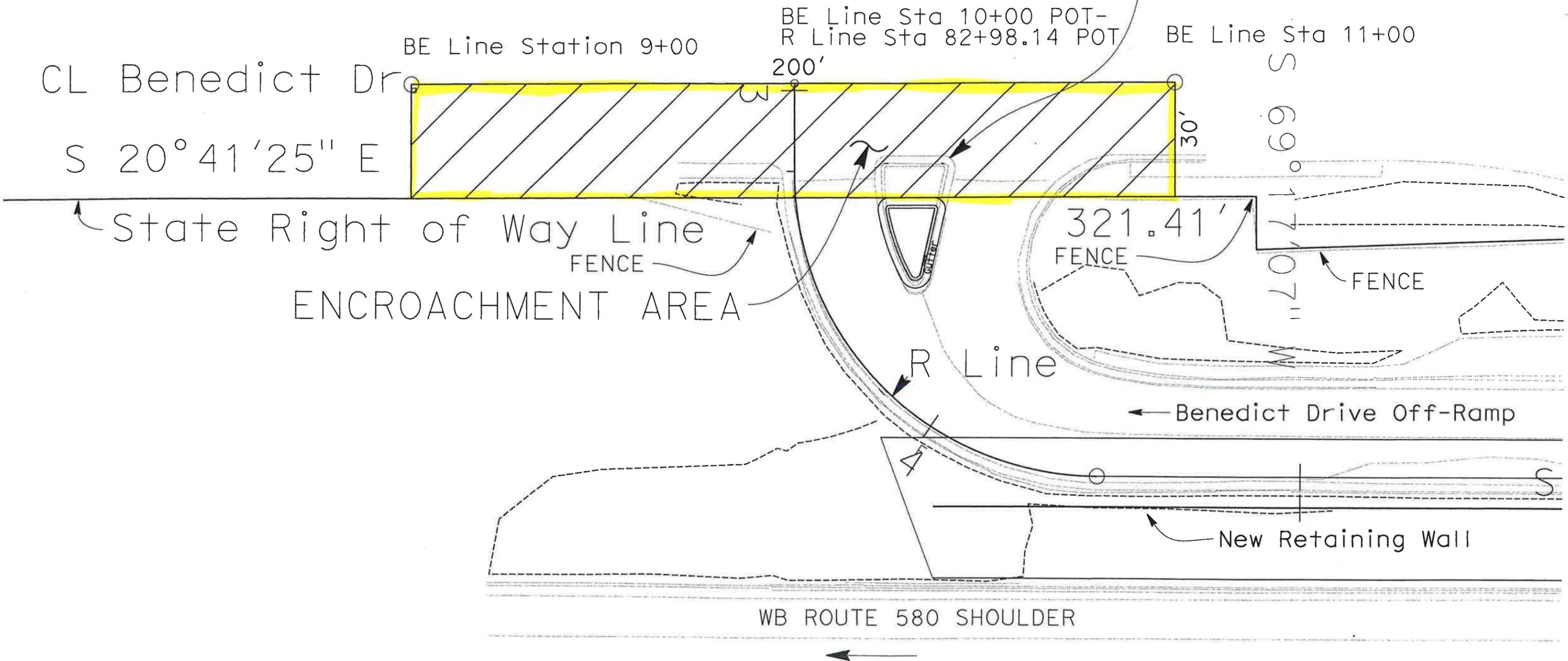
R/W Acquisition and

Project Management Services

Attachment



Remove Concrete Island and Gutter.
Pave with Hot Mix Asphalt outside
of State Right of Way.



PRELIMINARY PLANS
SUBJECT TO REVISIONS

DEPARTMENT OF INDUSTRIAL RELATIONS
DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
MINING AND TUNNELING UNIT

2424 Arden Way, Suite 125
Sacramento, California 95825
doshM&Tsac@dir.ca.gov



Telephone (916) 574-2540
FAX (916) 574-2542

January 28, 2014

California Department of Transportation
DESIGN EAST, ALAMEDA COUNTY, 11th Floor
PO Box 23660
Oakland, CA 94623

Attention: Paul Snyder, Project Engineer

Subject: Underground Classification No. C051-001-14T
Classification: Potentially Gassy With Special Conditions
Project: Benedict Drive Soldier Pile Wall, San Leandro

The information provided to this office relative to the above project has been reviewed. On the basis of this analysis, an Underground Classification of "Potentially Gassy With Special Conditions" has been assigned to the tunnel identified on your submittal. Please retain the original Classification for your records and deliver a true and correct copy of the Classification to the tunnel contractor for posting at the job site.

When the contractor who will be performing the work is selected, please advise them to notify this office to schedule the mandated Pre-Job Conference with the Division prior to commencing any activity associated with boring of the tunnel. A Pre-Job Request Form is enclosed.

Should you have another bore under construction that is not required to have an Underground Classification (i.e.: less than 30 inches in diameter), please contact the Mining and Tunneling Unit prior to any employee entry of such a space.

If you have any questions on this subject, please contact this office at your earliest convenience.

Sincerely,

A handwritten signature in blue ink, appearing to read "Douglas Patterson", written over a horizontal line.

Douglas Patterson
Senior Engineer

enc: Classification
Pre-Job Request Form

cc: Paul_Snyder@dot.ca.gov
RBrockman@dir.ca.gov



State of California

Department of Industrial Relations

DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
MINING AND TUNNELING UNIT

Underground Classification

C051-001-14T

CALIFORNIA DEPARTMENT OF TRANSPORTATION

of **DESIGN EAST, ALAMEDA COUNTY, 11TH FLOOR, PO BOX 23660; OAKLAND, CA 94623**

at **BENEDICT DRIVE SOLDIER PILE WALL**

has been classified as ***** POTENTIALLY GASSY WITH SPECIAL CONDITIONS *****

as required by the California Labor Code § 7955.

The Division shall be notified if sufficient quantities of flammable gas or vapors have been encountered underground. Classifications are based on the California Labor Code Part 9, Tunnel Safety Orders and Mine Safety Orders.

*****SPECIAL CONDITIONS*****

- 1. A Certified Gas Tester shall perform pre-entry and continuous monitoring of the underground environment to measure Oxygen and detect explosive, flammable, and toxic gasses whenever an employee is working in the underground environment.**
- 2. Mechanical ventilation shall provide for continuous exhaust of fumes and air at any time an employee is working in the underground environment. The primary ventilation fans must be located outside of the underground environment and shall be reversible by a single switch near the fan location.**
- 3. The Division shall be notified immediately if any Flammable Gas or Petroleum Vapor exceeds 5% of the Lower Explosive Limit.**
- 4. All utilities that may be in conflict with the project shall be identified and physically located (potholed) prior to the start of project operations.**

GAS MAIN, WATER LINE AND CONCRETE DRAIN

The fifty-eight 30-inch diameter 22-foot deep drilled shafts alongside Route 580, located at the intersection of Sherry Court & Benedict Drive in San Leandro, Alameda County

This classification shall be conspicuously posted at the place of employment.



Douglas Patterson, Senior Engineer

January 28, 2014

REQUEST FOR PRE-JOB (TUNNEL)

ATTACH COPY OF CLASSIFICATION AND DIESEL PERMIT

Company Name: _____

Phone _____ FAX: _____

DATE FAXED: _____

PLEASE NOTE: THE BORING CONTRACTOR SHOULD SCHEDULE THE PREJOB AS FAR IN ADVANCE AS POSSIBLE - AT LEAST 3-4 DAYS IN ADVANCE. THE DIVISION REQUIRES THE JOB TO BE SET UP WHEN THE FIELD ENGINEER ARRIVES FOR THE PREJOB. THIS MEANS THAT THE BORE PIT HAS BEEN DUG AND PROPERLY GUARDED, THE CRANE IS IN PLACE AND READY TO LIFT, THE BORING MACHINE IS IN THE PIT AND READY TO GO, AND THE CREW IS READY TO BEGIN BORING THE TUNNEL. IF THERE IS A DELAY IN SETTING UP THE JOB, THE BORING CONTRACTOR SHOULD CONTACT THE DIVISION IMMEDIATELY.

PRE-JOB REQUEST DATE & TIME: _____

ON-SITE SUPERVISOR & CELL NO.: _____

CLASSIFICATION #: _____ DIESEL PERMIT #: _____

BORE DIAMETER AND LENGTH: _____ (Diameter) _____ (Length)

IS BORE ENTRY ANTICIPATED? YES NO
(Circle One)

You MUST contact the Division if entry is planned, REGARDLESS of the bore diameter.

MANNER OF EXCAVATION: _____

JOB-SITE LOCATION AND DIRECTIONS: _____

GENERAL CONTRACTOR: _____

SUBMITTED BY: _____

REVIEWED BY: _____ DATE: _____

Mining & Tunneling Unit, District 1
2424 Arden Way, Suite 125
Sacramento, California 95825-2400
(916) 574-2540; FAX: (916) 574-2542

Mining & Tunneling Unit, District 2
6150 Van Nuys Blvd., Suite 310
Van Nuys, California 91401-3333
(818) 901-5420; FAX: (818) 901-5579

Mining & Tunneling Unit, District 3
464 West Fourth Street, Suite 354
San Bernardino, California 92401-1442
(909) 383-6782; FAX: (909) 388-7132

DEPARTMENT OF INDUSTRIAL RELATIONS
DIVISION OF OCCUPATIONAL SAFETY
AND HEALTH ADMINISTRATION
MINING AND TUNNELING UNIT HEADQUARTERS
1367 E. LASSEN AVENUE, SUITE B-4
CHICO, CA 95973
(530) 895-6938 FAX (530) 895-6941



June 1, 2010

Subject: Jurisdiction at Vertically Bored Construction Shafts

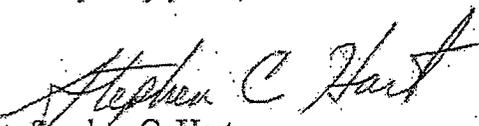
To Whom It May Concern:

In response to several California Appeals Board decisions, the Cal/OSHA Mining and Tunneling Unit has modified the application of jurisdiction which applies to vertically-bored construction shafts. Until Title 8 is permanently changed, the following interim policy shall be in effect:

1. Vertically-bored construction shafts less than 20-feet deep, whether men are inside or not, will fall under the jurisdiction of the Construction Safety Orders (CSOs) and other applicable provisions of Title 8.
2. Vertically-bored construction shafts deeper than 20-feet, where men do not enter the shaft, will fall under the jurisdiction of the CSOs (no Classification, Pre-Job, Gas Tester, or Safety Representative is required) and other applicable provisions of Title 8.
3. Vertically-bored construction shafts deeper than 20-feet, where men enter the shaft to perform work, will fall under the jurisdiction of the Tunnel Safety Orders and other applicable provisions of Title 8.

All construction shaft inspections by Cal/OSHA personnel will be performed with these jurisdictional constraints in mind. If there are any questions regarding this interim policy, please contact an M&T Senior Engineer or myself.

Very truly yours,


Stephen C. Hart
Principal Safety Engineer
DOSH Mining and Tunneling Unit

cc. All M&T Senior Engineers

PRELIMINARY SITE INVESTIGATION REPORT



BENEDICT DRIVE STORM DAMAGE REPAIR SAN LEANDRO, CALIFORNIA

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



PREPARED BY:
GEOCON CONSULTANTS, INC.
6671 BRISA STREET
LIVERMORE, CA 94550



GEOCON PROJECT NO. E8560-02-49
CALTRANS EA 04-2G8601
CALTRANS PROJECT # 04-1200-0009-1

DECEMBER 2013

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6. Summary of Lead Statistical Analysis

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- A. DTSC Variance
- B. Laboratory Reports and Chain-of-Custody Documentation
- C. Metal Statistical Analysis

REPORT LIMITATIONS

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

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

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

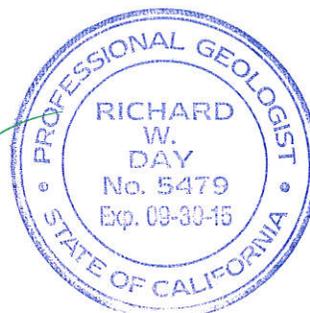
GEOCON CONSULTANTS, INC.



Luann Beadle
Senior Staff Scientist



Richard Day, CEG, CHG
Senior Geologist



CALIFORNIA DEPARTMENT OF TRANSPORTATION – DISTRICT 4 OFFICE OF ENVIRONMENTAL ENGINEERING

Reviewed By:

Recommended By:

Approved By:

Keith Fang
Task Order Manager

Chris Wilson, PE
District Branch Chief

Allen Baradar, PE
District Office Chief

PROJECT TEAM

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Richard Day, CEG, CHG Luann Beadle 925.371.5900 925.371.5915 fax livermore@geoconinc.com	Geocon Consultants, Inc. 6671 Brisa Street Livermore, CA 94550 (<i>Caltrans Consultant</i>)	Project Management Sample Collection Field QA/QC Investigation Report
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Jose Tenorio, Jr. 702.307.2659 702.307.2691 fax jojo@atl-labs.com	Advanced Technology Laboratories 3151 Post Road Las Vegas, NV 89118 (<i>Geocon Subcontractor</i>)	Soil Sample Analysis

PRELIMINARY SITE INVESTIGATION REPORT

1.0 INTRODUCTION

This Preliminary Site Investigation Report for the Benedict Drive off-ramp from westbound Interstate 580 (I-580) settlement repair project in San Leandro, Alameda County, California was prepared by Geocon Consultants, Inc. under California Department of Transportation (Caltrans) Contract No. 04A3578 and Task Order No. 49 (TO-49), EA 04-2G8601.

1.1 Project Description and Proposed Improvements

Settlement of the slope along westbound I-580 has resulted in roadway damage and proposed activities include the excavation of soil for slope stabilization work and repair of the roadway. The project includes repairing the left lane of the Benedict Drive off-ramp. Work will take place within Caltrans right-of-way. The project location is depicted on the attached Vicinity Map, Figure 1.

1.2 General Objectives

The purpose of the site investigation was to evaluate concentrations of California Assessment Manual 17 (CAM 17) metals, particularly aerially-deposited lead (ADL), total petroleum hydrocarbons as diesel (TPHd), as motor oil (TPHmo), and as gasoline (TPHg), benzene, toluene, ethylbenzene, and total xylenes (BTEX), and naturally-occurring asbestos (NOA) in soil within the project limits.

The information obtained from this investigation will be used by Caltrans to evaluate soil handling practices, worker health and safety, and soil and groundwater reuse and disposal options.

2.0 BACKGROUND

2.1 Hazardous Waste Determination Criteria

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

For waste containing metals, the waste is classified as California hazardous when: 1) the representative total metal content equals or exceeds the respective Total Threshold Limit Concentration (TTLC); or 2) the representative soluble metal content equals or exceeds the respective Soluble Threshold Limit Concentration (STLC) based on the standard Waste Extraction Test (WET). A waste has the potential of exceeding the STLC when the waste's total metal content is greater than or equal to ten times the

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

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

2.2 DTSC Variance

The DTSC issued a statewide Variance effective July 1, 2009, regarding the management of ADL-impacted soils within Caltrans right-of-way. Under the Variance, soil that originates from Caltrans right-of-way and is classified as a non-RCRA hazardous waste (i.e., California hazardous waste), based primarily on ADL content (i.e., total lead $\geq 1,000$ mg/kg and/or soluble WET lead ≥ 5 mg/l), may be suitable for reuse within Caltrans right-of-way. ADL soil that is classified as a RCRA hazardous waste is not eligible for reuse under the Variance and must be disposed of as a RCRA hazardous waste (Caltrans Type Z-3).

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

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

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

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

ADL soil exhibiting a total lead concentration less than or equal to 1,411 mg/kg, a DI-WET lead concentration greater than 1.5 mg/l and less than or equal to 150 mg/l, and a pH value greater than 5 may be reused within the same Caltrans corridor and must be covered and protected from infiltration by a pavement structure.

ADL soil exhibiting a total lead concentration greater than 1,411 mg/kg and less than or equal to 3,397 mg/kg, a DI-WET lead concentration less than or equal to 150 mg/l, and a pH value greater than 5 may be reused within the same Caltrans corridor and must be covered and protected from infiltration by a pavement structure.

Caltrans Type Z-2: ADL soil exhibiting a total lead concentration greater than 3,397 mg/kg, a DI-WET lead concentration greater than 150 mg/l, or a pH value less than or equal to 5 is not eligible for reuse under the Variance and must be disposed of as a California hazardous waste.

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

2.3 Environmental Screening Levels

The San Francisco Bay Regional Water Quality Control Board (SFRWQCB) has prepared a technical report entitled *Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater, Interim Final* (updated May 2013), which presents Environmental Screening Levels (ESLs) for soil, groundwater, soil gas, and surface water, to assist in evaluating sites impacted by releases of hazardous chemicals. The ESLs are conservative values for more than 100 commonly detected contaminants which may be used to compare with environmental data collected at a site. “The ESLs are intended to help expedite the identification and evaluation of potential environmental concerns at sites where contamination has been identified. Data collected at a site can be directly compared to the ESLs, and the need for additional actions quickly determined” (RWQCB May 2013).

ESLs are strictly risk assessment tools and “not intended to serve as a rule to determine if a waste is hazardous under the state or federal regulations (RWQCB May 2013).”

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

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

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

2.4 Naturally Occurring Asbestos

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

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

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

3.0 SCOPE OF SERVICES

The scope of services performed under TO-49, EA 04-2G8601 included the following:

3.1 Pre-field Activities

- Prepared the Preliminary Site Investigation Workplan and Health and Safety Plan, dated July 2013.
- Retained the services of Advanced Technology Laboratories, Las Vegas (ATL-LV), a Caltrans-approved and California-certified analytical laboratory, to perform the chemical analyses of soil samples.
- Retained the services of EMSL, Inc., a Caltrans-approved and California-certified analytical laboratory, to perform the asbestos analysis of soil samples.
- Notified Underground Service Alert (USA) at least 48 hours prior to field work.

3.2 Field Activities

The field investigation was performed on July 12, 2013, by Geocon staff. The following field activities were performed during the sampling efforts:

- Advanced nine soil borings at the project location using hand-auger drilling techniques. The borings were advanced to a maximum depth of 7 feet.
- Collected 45 soil samples and one equipment rinse blank.

All samples were transported to California-certified environmental laboratories for analysis under standard chain-of-custody (COC) documentation.

4.0 INVESTIGATIVE METHODS

4.1 Sampling Procedures

Soil samples were collected using hand-auger sampling techniques from nine boring locations identified by the Caltrans TO Manager. Boring coordinates are presented on Table 1 and locations are shown on the Site Plan, Figure 2.

Soil samples were transferred from the hand-auger bucket to stainless steel tubes and sealed with Teflon tape and plastic end caps prior to being stored in a chest cooled with ice.

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

Geocon provided QA/QC procedures during the field activities. These procedures included washing the sampling equipment with a Liqui-Nox® solution followed by a double rinse with deionized water. The equipment rinse blank was collected by pouring deionized water over the cleaned sampling equipment and collecting it into a sample container for laboratory analysis. Decontamination water was disposed of to the ground surface within Caltrans right-of-way in a manner not to create runoff, and away from drain inlets or potential water bodies.

4.2 Laboratory Analyses

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

The soil samples were analyzed as follows:

- 10 samples for CAM 17 metals according to Title 22 CCR, EPA Test Methods 6010 ICAP and 7471.
- 35 samples for total lead according to Title 22 CCR, EPA Test Method 6010 ICAP.
- 9 samples with total chromium concentrations equal to or exceeding 50 mg/kg (i.e., equal to or exceeding ten times the STLC of 5.0 mg/l) were further analyzed for WET chromium.
- 6 samples with total lead concentrations equal to or exceeding 50 mg/kg (i.e., equal to or exceeding ten times the STLC of 5.0 mg/l) were further analyzed for WET lead.
- 4 samples with WET lead concentrations equal to or exceeding 5.0 mg/l were further analyzed for DI-WET lead.
- 4 samples with WET lead concentrations equal to or exceeding 5.0 mg/l were further analyzed for TCLP lead.
- 2 samples with total nickel equal to or exceeding 200 mg/kg (i.e., equal to or exceeding ten times the STLC of 20 mg/l) were further analyzed for WET nickel.
- 13 samples for TPHd/mo using EPA Test Method 8015.
- 4 samples for TPHg using EPA Test Method 8015.
- 15 samples for BTEX using to EPA Test Method 8260.
- 7 samples for NOA using CARB 435.
- 4 samples for pH using EPA Test Method 9045C.

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

4.3 Laboratory QA/QC

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

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

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

5.0 INVESTIGATIVE RESULTS

5.1 Subsurface Conditions

Observations during field activities indicated that soil in the area consisted of fill material with dry clay and sandy gravel to a depth of approximately 3 feet. Dry, dense clay with serpentine was present to a depth of 7 feet. Groundwater was not encountered.

5.2 Laboratory Analytical Results

Laboratory analytical results are presented in Tables 2 through 6 and are summarized below:

- The following metals were not detected above their respective laboratory reporting limits: antimony, beryllium, cadmium, molybdenum, selenium, silver, and thallium
- Total chromium was reported at concentrations ranging from 47 to 170 mg/kg
- WET chromium was reported at concentrations ranging from 0.20 to 0.40 mg/l
- Total lead was reported at concentrations ranging from <0.99 to 510 mg/kg
- WET lead was reported at concentrations ranging from <0.050 to 32 mg/l
- DI-WET lead was reported at concentrations ranging from <0.050 to 0.35 mg/l
- TCLP lead was not detected at or above the reporting limit of 0.25 mg/l
- Total nickel was reported at concentrations ranging from 40 to 210 mg/kg
- WET nickel was reported at concentrations of 1.2 and 3.7 mg/l
- Remaining CAM 17 metals were reported in the samples at total concentrations below ten times their respective STLCs

- TPHd was reported at concentrations ranging from 1.2 to 150 mg/kg
- TPHmo was reported at concentrations ranging from 2.8 to 340 mg/kg
- TPHg was not detected at or above the reporting limit of 1.0 mg/kg
- BTEX was not detected at or above the reporting limits
- NOA was not detected in the samples at or above the target sensitivity of 0.25%

QA/QC Sample Results

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

5.3 Laboratory Quality Assurance/Quality Control

We reviewed the QA/QC results provided with the laboratory analytical reports. The data indicate non-detect results for the method blanks at or above reporting limits. The Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) were outside recovery criteria for several samples, possibly due to matrix interference; however, the associated laboratory control sample recoveries were acceptable. The relative percent differences (RPD) for MS/MSD were outside of recovery limits for several samples. Remaining samples and internal laboratory QA/QC samples showed acceptable recoveries and relative percent differences (RPDs). Based on this limited data review, no additional qualifications of the soil data are necessary, and the data are of sufficient quality for the purposes of this report.

5.4 Statistical Evaluation for Lead Detected in Soil Samples

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

5.4.1 Calculating the UCLs for the Arithmetic Mean

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

Non-parametric bootstrap techniques were used to calculate the UCLs. For those samples in which total lead was not detected, a value equal to one-half of the detection limit was used in the UCL calculation. The bootstrap test results are included in Appendix C. The following tables present the calculated UCLs and statistics for the site.

Borings B1 to B9

Sample Interval (feet)	Total Lead 90% UCL (mg/kg)	Total Lead 95% UCL (mg/kg)	Total Lead Mean (mg/kg)	Total Lead Minimum (mg/kg)	Total Lead Maximum (mg/kg)
0 to 0.5	159	179	98.6	19	510
1.0 to 1.5	18.7	19.9	14.6	2.2	33
2.0 to 2.5	32.9	37.5	17.2	0.5	120
3.0 to 3.5	3.64	3.93	2.60	0.5	6.9
4.0 to 4.5	2.95	3.16	2.25	0.5	3.6
5.0 to 5.5	NC	NC	1.87	1.4	2.4

NC – Not calculated due to insufficient data set

5.4.2 Correlation of Total and WET Lead

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

To estimate the degree of interrelation between total and corresponding WET lead values (x and y , respectively), the *correlation coefficient* [r] is used. The correlation coefficient is a ratio that ranges from +1 to -1. A *correlation coefficient* of +1 indicates a perfect direct relationship between two variables; a *correlation coefficient* of -1 indicates that one variable changes inversely with relation to the other. Between the two extremes is a spectrum of less-than-perfect relationships, including zero, which indicates the lack of any sort of linear relationship at all. The *correlation coefficient* was calculated for six (x , y) data points (i.e., soil samples analyzed for both total lead [x] and WET lead [y]) from the site. The resulting regression analysis yields an acceptable *coefficient of determination* (r^2) of 0.8892, which yields a corresponding *correlation coefficient* (r) of 0.943.

For the *correlation coefficient* that indicates a linear relationship between total and WET lead concentrations, it is possible to compute the line of dependence or a best-fit line between the two variables. A least squares method was used to find the equation of a best-fit line (regression line) by forcing the y-intercept equal to zero since that is a known point. The equation of the regression line was determined to be $y = 0.0613(x)$, where x represents total lead concentrations and y represents predicted WET lead concentrations.

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

6.0 CONCLUSIONS

6.1 Lead in Soil

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

Excavation Depth	90% UCL Total Lead (mg/kg)	90% UCL Predicted WET Lead (mg/l)	95% UCL Total Lead (mg/kg)	Waste Classification
0 to 1.0 ft	159	9.7	179	Hazardous
<i>Underlying soil (1.0 to 4.5 ft)</i>	<i>16.2</i>	<i>1.0</i>	<i>18.0</i>	<i>Non-hazardous</i>
0 to 2.0 ft	88.9	5.4	99.5	Hazardous
<i>Underlying soil (2.0 to 4.5 ft)</i>	<i>15.2</i>	<i>0.9</i>	<i>17.2</i>	<i>Non-hazardous</i>
0 to 3.0 ft	70.2	4.3	78.8	Non-hazardous
<i>Underlying soil (3.0 to 4.5 ft)</i>	<i>3.4</i>	<i>0.2</i>	<i>3.7</i>	<i>Non-hazardous</i>
0 to 4.0 ft	53.6	3.3	60.1	Non-hazardous
<i>Underlying soil (4.0 to 4.5 ft)</i>	<i>3.0</i>	<i>0.2</i>	<i>3.2</i>	<i>Non-hazardous</i>
0 to 4.5 ft	47.9	2.9	53.8	Non-hazardous

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

Based on the data presented in the above table, soil excavated to a depth of 1.0 foot would be classified as a California hazardous waste since the 90% UCL-predicted WET lead concentration is greater than the lead STLC of 5.0 mg/l. Based on the TCLP lead results, soil excavated to a depth of 1.0 foot would not be classified as a RCRA hazardous waste. Based on the reported DI-WET and pH results, soil excavated from 0 to 1.0 foot may be reused onsite (as Caltrans Type Y-1) in accordance with the DTSC Variance by placing the excavated soil under clean fill or pavement. Underlying soil would be classified as non-hazardous based on lead content.

Alternately, if excavations extend to 3.0 feet or deeper and soil is managed as a whole, excavated soil would be classified as non-hazardous.

6.2 Remaining CAM 17 Metals in Soil

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

Nine samples were reported to contain total chromium at concentrations exceeding ten times the STLC of 5 mg/l. The samples were further analyzed for WET chromium and the reported concentrations ranged from 0.20 to 0.40 mg/l, below the STLC. Accordingly, excavated soil would be classified as non-hazardous based on chromium content.

The samples analyzed from borings B1-0 and B2-4 contained total nickel at a concentration of 210 and 200 mg/kg, respectively, which equals or exceeds ten times the STLC of 20 mg/l. The samples were further analyzed for WET nickel and the reported concentrations were 1.2 and 3.7 mg/l, respectively, below the STLC. Total nickel concentrations in remaining samples were below ten times the STLC. Accordingly, excavated soil would be classified as non-hazardous based on nickel content.

The CAM 17 metal concentrations in site soil were compared to ESLs. Arsenic, cobalt, lead, and nickel were reported at concentrations greater than one or more ESL values.

Reported concentrations of arsenic, cobalt, lead, and nickel exceeded one or more ESL. Non-parametric bootstrap techniques were used to calculate the 95% UCL for each of these metals. Risk assessment characterization is based on the 95% UCL in accordance with the Risk Assessment Guidance for Superfund (RAGS) Volume 1 Documentation for Exposure Assessment.

The UCL calculation results are included in Appendix C. ESLs, UCLs, and published background concentrations for arsenic, cobalt, lead, and nickel are summarized in the following table:

Metal	Maximum	95% UCL	Shallow Soil Residential ESL	Shallow Soil Commercial/ Industrial ESL	Worker Direct Exposure ESL	Published Background Mean¹	Published Background Range ¹
Arsenic	5.8	3.40	0.39	0.96	10	3.5	0.6 to 11.0
Cobalt	30	24.9	23	80	49	14.9	2.7 to 46.9
Lead	510	46.0	80	320	320	23.9	12.4 to 97.1
Nickel	210	150	150	150	6,100	57	9 to 509

Concentrations reported in mg/kg

¹ Kearney Foundation of Soil Science, March 1996

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

The 95% UCL cobalt concentration in the soil samples exceeds the shallow soil residential land use ESL; however, it is below the commercial/industrial and construction exposure ESLs and within the published background range.

The 95% UCL lead concentration in soil is below the residential, commercial/industrial, and construction worker direct exposure ESLs and is within the reported background range.

The 95% UCL nickel concentration in the soil samples exceeds the shallow soil residential and commercial/industrial land use ESLs; however, it is below the construction exposure ESL and within the published background range.

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

Metals results for soil samples are summarized in Table 3.

6.3 Petroleum Hydrocarbons in Soil

TPHg or BTEX were not detected above the laboratory reporting limits. TPHmo was reported in soil samples at concentrations below residential land use, commercial/industrial land use, and construction exposure ESLs (SFRWQCB, May 2013, Tables A and K-3). TPHd was reported in one sample at a concentration exceeding the residential land use ESL of 100 mg/kg (B7-2, 150 mg/kg), but below the commercial/industrial land use and the construction exposure ESLs. TPHd has a calculated 95% UCL of 47.7 mg/kg, below the ESLs. A summary of petroleum hydrocarbon concentrations in site soil is presented in Table 4.

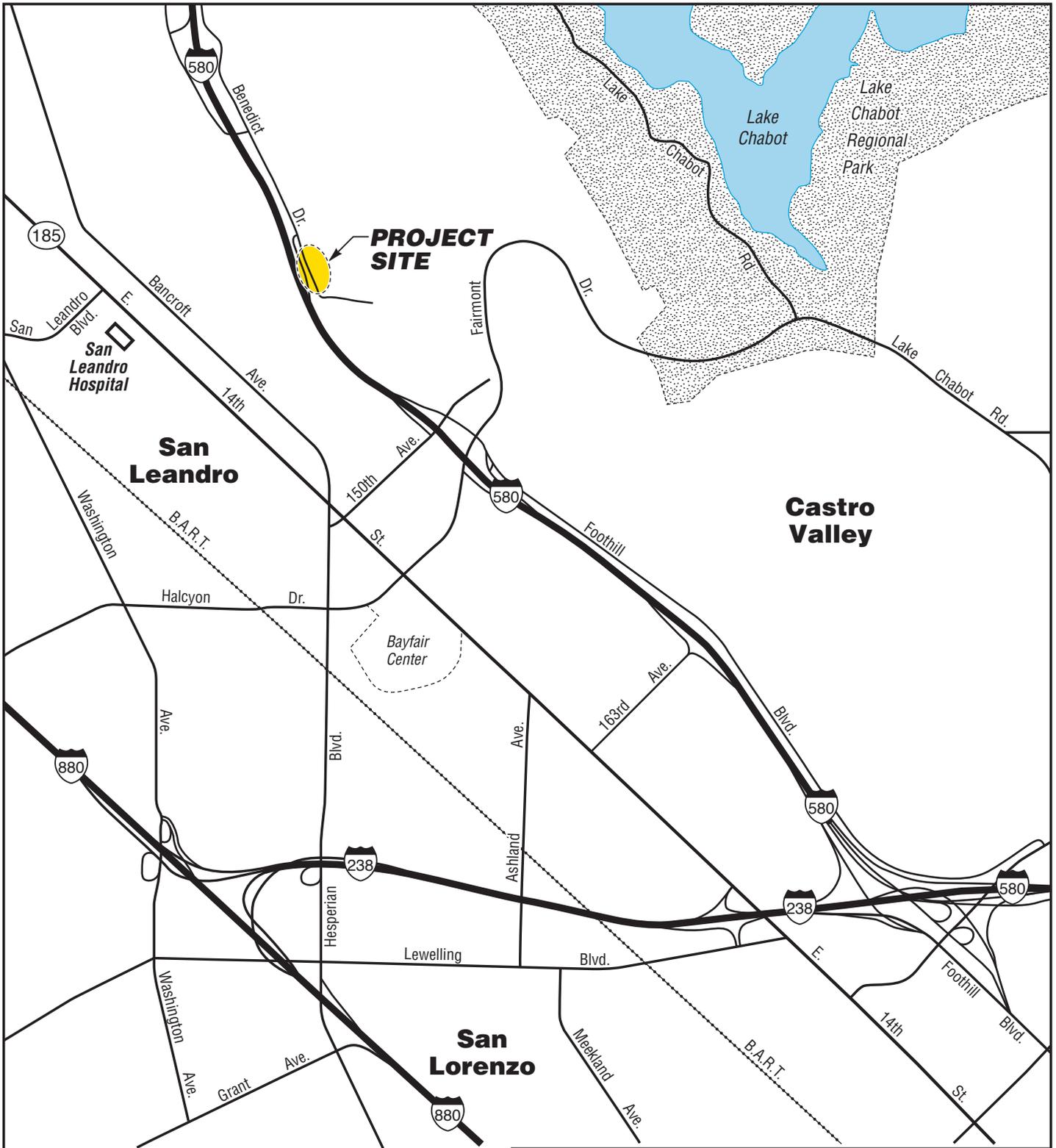
6.4 Naturally-Occurring Asbestos in Soil

Seven soil samples were collected from the site and analyzed for asbestos by CARB Test Method 435 using polarized light microscopy (PLM) with a target analytical sensitivity of 0.25% asbestos. Three samples (B3-1, B7-1, and B8-3) were reported to contain trace (<0.25% chrysotile) asbestos. Asbestos was not detected in the other four samples.

There are no restrictions on the reuse of soil containing NOA at less than 0.25% asbestos if it stays on the site. If soil known to contain NOA at less than 0.25% is disposed of offsite, we recommend that the receiver be notified that the material contains NOA at less than 0.25%. Additionally, it is Caltrans policy that a contractor have an asbestos compliance plan in place on projects where personnel may be in contact with materials known to contain NOA and that wet methods be employed to minimize the potential for airborne asbestos. A summary of NOA results is included in Table 5.

6.5 Worker Protection

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



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ALA-580 Benedict Drive

Alameda County,
California

VICINITY MAP

GEOCON Proj. No. E8560-02-49

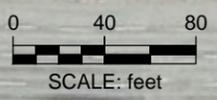
Task Order No. 49

November 2013

Figure 1



LEGEND:
 ● Boring Location



 <p>6671 BRISA STREET, LIVERMORE, CA 94550; PHONE 925 371-5900 - FAX 925 371-5915</p>		
<p>ALA-580 Benedict Drive</p>		
<p>San Leandro, California</p>		<p>SITE PLAN</p>
<p>GEOCON Proj. No. E8560-02-49</p>		
<p>EA No. 04-2G8601</p>	<p>November 2013</p>	<p>Figure 2</p>

TABLE 1
Boring Coordinates
Benedict Drive
San Leandro, California

Boring	Northing	Easting
B1	2,087,993.074	6,089,498.559
B2	2,087,896.334	6,089,515.529
B3	2,087,865.689	6,089,518.047
B4	2,087,799.688	6,089,556.380
B5	2,087,731.953	6,089,580.124
B6	2,087,692.211	6,089,595.355
B7	2,087,620.290	6,089,604.092
B8	2,087,589.199	6,089,629.718
B9	2,087,536.423	6,089,643.727

Coordinates shown in feet, NAD 83, Zone 3

TABLE 2
Summary of Lead and pH Results
Benedict Drive
San Leandro, California

Sample ID	Sample Depth (feet)	Total Lead (mg/kg)	WET Lead (mg/l)	DI-WET Lead (mg/l)	TCLP Lead (mg/l)	pH
B1-0	0 to 0.5	19	---	---	---	---
B1-1	1 to 1.5	2.5	---	---	---	---
B1-2	2 to 2.5	1.8	---	---	---	---
B1-3	3 to 3.5	1.1	---	---	---	---
B2-0	0 to 0.5	54	4.6	---	---	---
B2-1	1 to 1.5	2.2	---	---	---	---
B2-2	2 to 2.5	<1.0	---	---	---	---
B2-3	3 to 3.5	2.1	---	---	---	---
B2-4	4 to 4.5	3.4	---	---	---	8.2
B2-5	5 to 5.5	1.8	---	---	---	---
B3-0	0 to 0.5	27	---	---	---	---
B3-1	1 to 1.5	25	---	---	---	---
B3-2	2 to 2.5	<1.0	---	---	---	---
B4-0	0 to 0.5	51	5.7	0.33	<0.25	---
B4-1	1 to 1.5	16	---	---	---	---
B4-2	2 to 2.5	<1.0	---	---	---	---
B4-3	3 to 3.5	1.3	---	---	---	---
B4-4	4 to 4.5	<1.0	---	---	---	---
B5-0	0 to 0.5	83	8.1	0.35	<0.25	---
B5-1	1 to 1.5	33	---	---	---	---
B5-2	2 to 2.5	<1.0	---	---	---	7.8
B5-3	3 to 3.5	6.9	---	---	---	---
B5-4	4 to 4.5	3.6	---	---	---	---
B5-5	5 to 5.5	1.4	---	---	---	---
B5-6.5	6.5 to 7	6.4	---	---	---	---
B6-0	0 to 0.5	42	---	---	---	---
B6-1	1 to 1.5	11	---	---	---	---
B6-2	2 to 2.5	2.4	---	---	---	---
B6-3	3 to 3.5	4.5	---	---	---	---
B6-4	4 to 4.5	3.5	---	---	---	---

TABLE 2
Summary of Lead and pH Results
Benedict Drive
San Leandro, California

Sample ID	Sample Depth (feet)	Total Lead (mg/kg)	WET Lead (mg/l)	DI-WET Lead (mg/l)	TCLP Lead (mg/l)	pH
B7-0*	0 to 0.5	460/510	32	<0.050	<0.25	---
B7-1	1.0 to 1.5	20	---	---	---	---
B7-2	2 to 2.5	27	---	---	---	---
B8-0	0 to 0.5	67	5.1	<0.050	<0.25	---
B8-1	1 to 1.5	14	---	---	---	7.0
B8-2	2 to 2.5	1.5	---	---	---	---
B8-3	3 to 3.5	1.8	---	---	---	---
B8-4	4 to 4.5	2.0	---	---	---	---
B8-5	5 to 5.5	2.4	---	---	---	---
B8-6.5	6.5 to 7	<0.99	---	---	---	---
B9-0	0 to 0.5	34	---	---	---	---
B9-1	1 to 1.5	7.6	---	---	---	---
B9-2	2 to 2.5	120	<0.050	---	---	8.2
B9-3	3 to 3.5	<1.0	---	---	---	---
B9-4	4 to 4.5	<1.0	---	---	---	---
Equipment Blank		<0.0050 mg/l	---			---
Hazardous Waste Criteria						
	TTLC (mg/kg)	1,000	---	---	---	---
	STLC (mg/l)	---	5.0	---	---	---
	TCLP (mg/l)	---	---	---	5.0	---

Notes:

- mg/kg = Milligrams per kilogram
- mg/l = Milligrams per liter
- WET = Waste Extraction Test using citric acid as the extraction fluid
- DI-WET = Waste Extraction Test using deionized water as the extraction fluid
- TTLC = Total Threshold Limit Concentration
- STLC = Soluble Threshold Limit Concentration
- TCLP = Toxicity characteristic leaching procedure
- 460/510 = Primary/Replicate analyses performed for confirmation purposes. The greater result (510 mg/kg) was used in statistical calculations.

TABLE 3
Summary of CAM 17 Metals Results
Benedict Drive
San Leandro, California

Sample ID	Sample Depth (ft)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	
B1-0	0 to 0.5	<2.0	5.4	28	<1.0	<1.0	150 <i>0.22</i>	30	64	19	0.10	<1.0	210 <i>1.2</i>	<1.0	<1.0	<1.0	40	23	
B2-4	4 to 4.5	<2.0	5.8	130	<1.0	<1.0	140 <i>0.25</i>	24	49	3.4	<0.10	<1.0	200 <i>3.7</i>	<1.0	<1.0	<1.0	67	35	
B3-2	2 to 2.5	<2.0	2.0	38	<1.0	<1.0	110 <i>0.25</i>	20	62	<1.0	<0.099	<1.0	100	<1.0	<1.0	<1.0	44	15	
B4-1	1 to 1.5	<2.0	1.2	7.1	<1.0	<1.0	47	15	74	16	<0.10	<1.0	40	<1.0	<1.0	<1.0	29	38	
B4-4	4 to 4.5	<2.0	1.9	41	<1.0	<1.0	120 <i>0.21</i>	23	61	<1.0	<0.10	<1.0	82	<1.0	<1.0	<1.0	37	14	
B5-6.5	6.5 to 7	<2.0	1.9	32	<1.0	<1.0	140 <i>0.20</i>	25	61	6.4	<0.10	<1.0	140	<1.0	<1.0	<1.0	44	20	
B6-3	3 to 3.5	<2.0	2.4	43	<1.0	<1.0	150 <i>0.22</i>	25	61	4.5	<0.10	<1.0	140	<1.0	<1.0	<1.0	49	26	
B7-2	2 to 2.5	<2.0	2.0	46	<1.0	<1.0	140 <i>0.27</i>	21	53	27	<0.10	<1.0	130	<1.0	<1.0	<1.0	48	29	
B8-5	5 to 5.5	<2.0	1.3	46	<1.0	<1.0	140 <i>0.25</i>	25	48	2.4	<0.099	<1.0	110	<1.0	<1.0	<1.0	27	13	
B9-1	1 to 1.5	<2.0	1.7	44	<1.0	<1.0	170 <i>0.40</i>	22	47	7.6	<0.099	<1.0	100	<1.0	<1.0	<1.0	32	15	
<u>ESLs</u>																			
Residential Land Use		20	0.39	750	4.0	12	750	23	230	80	6.7	40	150	10	20	0.78	200	600	
Commercial/Industrial Land Use		40	0.96	1,500	8.0	12	750	80	230	320	10	40	150	10	40	10	200	600	
Construction Worker Exposure		120	10	61,000	180	110	460,000	49	12,000	320	27	1,500	6,100	1,500	1,500	3.1	1,500	93,000	
<u>Hazardous Waste Criteria</u>																			
TTLIC (mg/kg)		500	500	10,000	75	100	2,500	8,000	2,500	1,000	20	3,500	2,000	100	500	700	2,400	5,000	
STLC (mg/l)		15	5.0	100	0.75	1.0	5.0	80	25	5.0	0.2	350	20	1.0	5.0	7.0	24	250	
TCLP (mg/l)		---	5.0	100	---	1.0	6.0	---	---	5.0	0.2	---	---	1.0	5.0	---	---	---	

Notes:

Total metal results are shown in milligrams per kilogram (mg/kg).
ESL, STLC and TTLIC values listed for chromium are for Chromium III, as there is no standard for total chromium.
< = Analyte was not detected above the laboratory reporting limit.
ESLs = Environmental Screening Levels, Tables A and K-3, SFRWQCB, Revised May 2013.
TTLIC = total threshold limit concentration
STLC = soluble threshold limit concentration
TCLP = toxicity characteristic leaching procedure
WET results shown in italics in milligrams per liter (mg/l)

TABLE 4
Summary of Organics Results
Benedict Drive
San Leandro, California

Sample ID	Sample Depth (ft)	TPHd (mg/kg)	TPHmo (mg/kg)	TPHg (mg/kg)	BTEX (ug/kg)
B2-0	0 to 0.5	40	140	---	ND
B2-2	2 to 2.5	1.4	2.8	---	ND
B2-4	4 to 4.5	1.2	2.8	<1.0	ND
B4-0	0 to 0.5	24	71	---	ND
B4-1	1 to 1.5	4.2	10	---	ND
B4-3	3 to 3.5	2.3	6.8	<1.0	ND
B5-0	0 to 0.5	24	70	---	ND
B5-2	2 to 2.5	1.6	2.0	---	ND
B5-5	5 to 5.5	2.5	6.9	---	ND
B6-4	4 to 4.5	---	---	<1.0	ND
B7-0	0 to 0.5	92	260	---	ND
B7-2	2 to 2.5	150	340	---	ND
B9-0	0 to 0.5	28	58	---	ND
B9-3	3 to 3.5	2.5	3.1	---	ND
B9-4	4 to 4.5	---	---	<1.0	ND
	ESLs				
	Residential	100	500	100	---
	Commercial/Industrial	500	2,500	500	---
	Construction Exposure	900	28,000	1,800	---

Notes:

mg/kg = milligrams per kilogram

µg/kg = micrograms per kilogram

TPHd = Total petroleum hydrocarbons as diesel

TPHmo = Total petroleum hydrocarbons as motor oil

TPHg = Total petroleum hydrocarbons as gasoline

BTEX = Benzene, toluene, ethylbenzene, and xylenes

--- = Not analyzed or no standard for this compound

< = Not detected above the stated laboratory reporting limit

ND = None detected

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

TABLE 5
Summary of NOA Results
Benedict Drive
San Leandro, California

Sample ID	Sample Depth (feet)	Asbestos Content (% dry weight)
B1-1	1 to 1.5	ND
B3-1	1 to 1.5	<0.25% Chrysotile
B4-2	2 to 2.5	ND
B5-4	4 to 4.5	ND
B6-0	0 to 0.5	ND
B7-1	1 to 1.5	<0.25% Chrysotile
B8-3	3 to 3.5	<0.25% Chrysotile

ND = None detected at 0.25% target analytical sensitivity.

TABLE 6
Summary of Lead Statistical Analysis
Benedict Drive
San Leandro, CA

Borings B1 to B9

TOTAL LEAD

	90% UCL	95% UCL
0 to 0.5 ft	159	179
1 to 1.5 ft	18.7	19.9
2 to 2.5 ft	32.9	37.5
3 to 3.5 ft	3.64	3.93
4 to 4.5 ft	2.95	3.16

EXCAVATION SCENARIOS

Excavation Depth	Weighted Averages		95% UCL Total Lead (mg/kg)
	90% UCL Total Lead (mg/kg)	WET Lead* (mg/l)	
0 to 1 ft <i>Underlying Soil (1 to 4.5 ft)</i>	159 <i>16.2</i>	9.7 <i>1.0</i>	179 <i>18.0</i>
0 to 2 ft <i>Underlying Soil (2 to 4.5 ft)</i>	88.9 <i>15.2</i>	5.4 <i>0.9</i>	99.5 <i>17.2</i>
0 to 3 ft <i>Underlying Soil (3 to 4.5 ft)</i>	70.2 <i>3.4</i>	4.3 <i>0.2</i>	78.8 <i>3.7</i>
0 to 4 ft <i>Underlying Soil (4 to 4.5 ft)</i>	53.6 <i>3.0</i>	3.3 <i>0.2</i>	60.1 <i>3.2</i>
0 to 4.5 ft	47.9	2.9	53.8

Notes:

UCL = Upper Confidence Limit (90% UCL is applicable for waste classification; 95% UCL applicable for risk assessment)

mg/kg = milligrams per kilogram

mg/l = milligrams per liter

* = WET lead concentrations are predicted using slope of regression line,
where y = predicted WET lead and x = total lead.

Regression Line Slope: $y = 0.0613 x$

APPENDIX

A



*California Environmental Protection Agency
Department of Toxic Substances Control*

VARIANCE

Applicant Names:

Variance No. V09HQSCD006

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

Effective Date: July 1, 2009

Expiration Date: July 1, 2014

Modification History:

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

A handwritten signature in black ink, appearing to read "Beverly Rikala".

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

Date: 6/30/09

VARIANCE

1. INTRODUCTION.

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

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

2. IDENTIFYING INFORMATION.

APPLICANT/OWNER/OPERATOR

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

3. TYPE OF VARIANCE.

Generation, Manifest, Transportation, Storage and Disposal.

4. ISSUANCE AND EXPIRATION DATES.

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

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

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

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

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

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

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

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

8. PROVISIONS WAIVED.

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

9. SPECIFIC CONDITIONS, LIMITATIONS AND OTHER REQUIREMENTS.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

water run-on or run-off.

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

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

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

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

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

1. plan drawing designating the boundaries of the corridor where lead-contaminated soils will be excavated, stockpiled, buried and covered;
2. a list of the Caltrans projects that the corridor encompasses;
3. a list of Caltrans contractors that will be conducting any phase of work on any project affected by this variance;
4. duration of corridor construction;
5. location where sampling and analytical data used to make lead concentration level determinations are kept (e.g. a particular Caltrans project file);
6. name and phone number (including area code) of project resident engineer and project manager;
7. location where Caltrans and contractor health and safety plan and records are kept;

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

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

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

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

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

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

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

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

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

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

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

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

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

1. maintain current fact sheets at all Caltrans resident engineer offices and the Caltrans District office. Caltrans shall make the fact sheets available to anyone expressing an interest in variance-related work.
2. maintain a binder(s) containing copies of all reports submitted to DTSC at the District office. Caltrans shall ensure that the binders are readily accessible to the public.
3. carry out the following actions when it identifies additional projects:
 - (A) notify the public via a display advertisement in a newspaper of general circulation in that area.
 - (B) update and distribute the fact sheet to the mailing list and repository locations.

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

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

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

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

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

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

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

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

Attn: Caltrans Lead Variance Notification Unit

10. DISCLAIMER.

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

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

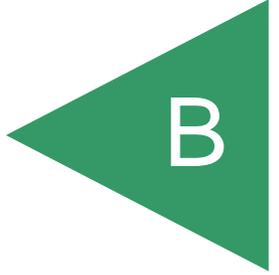
11. VARIANCE MODIFICATION OR REVOCATION. This variance is subject to review at the discretion of DTSC and may be modified or revoked by DTSC upon change of ownership and at any other time pursuant to Health and Safety Code, section 25143.
12. CEQA DETERMINATION. DTSC adopted a Negative Declaration on June 30, 2009.

Approved:

6/30/09
Date

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

APPENDIX



July 23, 2013

Rick Day
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

CA-ELAP No.:2676
NV Cert. No.:NV-009222007A

Workorder No.: N010581

RE: I 580 STORM REPAIR, E8560-02-49

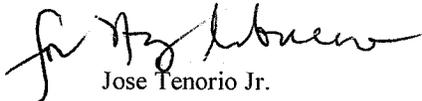
Attention: Rick Day

Enclosed are the results for sample(s) received on July 13, 2013 by Advanced Technology Laboratories, Inc. . 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 (702) 307-2659 if I can be of further assistance to your company.

Sincerely,



Jose Tenorio Jr.
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 - Las Vegas.



**Advanced Technology
Laboratories, Inc.**

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Project: I 580 STORM REPAIR, E8560-02-49
Lab Order: N010581

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Analytical Comments for EPA 6010B_Soil:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 8015B_DRO/ORO:

RPD for Sample and Sample Duplicate is outside criteria ; however, the analytical batch was validated by the Laboratory Control Sample (LCS).



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B1-0
Lab Order:	N010581	Collection Date:	7/12/2013 9:10:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-001		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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MERCURY BY COLD VAPOR TECHNIQUE

EPA 7471

EPA 7471A

RunID: AA1_130715B	QC Batch: 43424			PrepDate: 7/15/2013	Analyst: LCC
Mercury	0.10	0.10	mg/Kg	1	7/15/2013

ICP METALS

EPA 3050B

EPA 6010B

RunID: ICP2_130718B	QC Batch: 43421			PrepDate: 7/16/2013	Analyst: CEI
Antimony	ND	2.0	mg/Kg	1	7/18/2013 09:53 AM
Arsenic	5.4	1.0	mg/Kg	1	7/18/2013 09:53 AM
Barium	28	1.0	mg/Kg	1	7/18/2013 09:53 AM
Beryllium	ND	1.0	mg/Kg	1	7/18/2013 09:53 AM
Cadmium	ND	1.0	mg/Kg	1	7/18/2013 09:53 AM
Chromium	150	1.0	mg/Kg	1	7/18/2013 09:53 AM
Cobalt	30	1.0	mg/Kg	1	7/18/2013 09:53 AM
Copper	64	2.0	mg/Kg	1	7/18/2013 09:53 AM
Lead	19	1.0	mg/Kg	1	7/18/2013 09:53 AM
Molybdenum	ND	1.0	mg/Kg	1	7/18/2013 09:53 AM
Nickel	210	1.0	mg/Kg	1	7/18/2013 09:53 AM
Selenium	ND	1.0	mg/Kg	1	7/18/2013 09:53 AM
Silver	ND	1.0	mg/Kg	1	7/18/2013 09:53 AM
Thallium	ND	1.0	mg/Kg	1	7/18/2013 09:53 AM
Vanadium	40	1.0	mg/Kg	1	7/18/2013 09:53 AM
Zinc	23	1.0	mg/Kg	1	7/18/2013 09:53 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	



CLIENT: Geocon Consultants, Inc.
Lab Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49
Lab ID: N010581-002

Client Sample ID: B1-1
Collection Date: 7/12/2013 9:21:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B		EPA 6010B			
RunID: ICP2_130716C	QC Batch: 43427				PrepDate: 7/16/2013	Analyst: CEI
Lead	2.5	1.0		mg/Kg	1	7/16/2013 08:28 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



CLIENT: Geocon Consultants, Inc.
Lab Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49
Lab ID: N010581-003

Client Sample ID: B1-2
Collection Date: 7/12/2013 9:40:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B		EPA 6010B			
RunID: ICP2_130716C	QC Batch: 43427				PrepDate: 7/16/2013	Analyst: CEI
Lead	1.8	1.0		mg/Kg	1	7/16/2013 09:03 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



CLIENT: Geocon Consultants, Inc.
Lab Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49
Lab ID: N010581-004

Client Sample ID: B1-3
Collection Date: 7/12/2013 9:46:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B		EPA 6010B			
RunID: ICP2_130716C	QC Batch: 43427				PrepDate: 7/16/2013	Analyst: CEI
Lead	1.1	1.0		mg/Kg	1	7/16/2013 09:07 PM

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



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B2-0
Lab Order:	N010581	Collection Date:	7/12/2013 10:20:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-005		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
EPA 3550B			EPA 8015B			
RunID: GC1_130715B	QC Batch: 43434				PrepDate: 7/15/2013	Analyst: MDM
DRO	40	1.0		mg/Kg	1	7/16/2013 01:10 AM
ORO	140	10		mg/Kg	10	7/15/2013 04:57 PM
Surr: p-Terphenyl	98.2	59-127		%REC	1	7/16/2013 01:10 AM
ICP METALS						
EPA 3050B			EPA 6010B			
RunID: ICP2_130716C	QC Batch: 43427				PrepDate: 7/16/2013	Analyst: CEI
Lead	54	1.0		mg/Kg	1	7/16/2013 09:12 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		



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B2-1
Lab Order:	N010581	Collection Date:	7/12/2013 10:25:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-006		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B		EPA 6010B			
RunID: ICP2_130716C	QC Batch: 43427			PrepDate: 7/16/2013		Analyst: CEI
Lead	2.2	1.0		mg/Kg	1	7/16/2013 09:17 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		



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B2-2
Lab Order:	N010581	Collection Date:	7/12/2013 10:26:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-007		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
EPA 3550B			EPA 8015B			
RunID: GC1_130715B	QC Batch: 43434			PrepDate: 7/15/2013		Analyst: MDM
DRO	1.4	1.0		mg/Kg	1	7/15/2013 05:49 PM
ORO	2.8	1.0		mg/Kg	1	7/15/2013 05:49 PM
Surr: p-Terphenyl	96.6	59-127		%REC	1	7/15/2013 05:49 PM
ICP METALS						
EPA 3050B			EPA 6010B			
RunID: ICP2_130716C	QC Batch: 43427			PrepDate: 7/16/2013		Analyst: CEI
Lead	ND	1.0		mg/Kg	1	7/16/2013 09:21 PM

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



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B2-3
Lab Order:	N010581	Collection Date:	7/12/2013 10:30:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-008		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B		EPA 6010B			
RunID: ICP2_130716C	QC Batch: 43427			PrepDate: 7/16/2013		Analyst: CEI
Lead	2.1	1.0		mg/Kg	1	7/16/2013 09:26 PM

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



Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: 23-Jul-13

CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B2-4
Lab Order:	N010581	Collection Date:	7/12/2013 10:35:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-009		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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PH

EPA 9045C

RunID: WETCHEM_130715C	QC Batch: R89579	PrepDate:	Analyst: LCC
pH	8.2	0.10	pH Units 1 7/15/2013
Temp. at time of pH Analysis	25	0	pH Units 1 7/15/2013

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS1_130715A	QC Batch: D13VS043	PrepDate:	Analyst: QBM
Benzene	ND	5.0	µg/Kg 1 7/15/2013 01:16 PM
Ethylbenzene	ND	5.0	µg/Kg 1 7/15/2013 01:16 PM
m,p-Xylene	ND	10	µg/Kg 1 7/15/2013 01:16 PM
o-Xylene	ND	5.0	µg/Kg 1 7/15/2013 01:16 PM
Toluene	ND	5.0	µg/Kg 1 7/15/2013 01:16 PM
Surr: 1,2-Dichloroethane-d4	91.0	63-139	%REC 1 7/15/2013 01:16 PM
Surr: 4-Bromofluorobenzene	90.7	75-124	%REC 1 7/15/2013 01:16 PM
Surr: Dibromofluoromethane	100	70-133	%REC 1 7/15/2013 01:16 PM
Surr: Toluene-d8	98.0	80-123	%REC 1 7/15/2013 01:16 PM

DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID

EPA 3550B

EPA 8015B

RunID: GC1_130715B	QC Batch: 43434	PrepDate:	7/15/2013	Analyst: MDM
DRO	1.2	1.0	mg/Kg 1	7/15/2013 06:15 PM
ORO	2.8	1.0	mg/Kg 1	7/15/2013 06:15 PM
Surr: p-Terphenyl	103	59-127	%REC 1	7/15/2013 06:15 PM

GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B

RunID: GC4_130716A	QC Batch: E13VS074	PrepDate:	Analyst: QBM
GRO	ND	1.0	mg/Kg 1 7/16/2013 06:50 PM
Surr: Chlorobenzene - d5	79.5	51-136	%REC 1 7/16/2013 06:50 PM

MERCURY BY COLD VAPOR TECHNIQUE

EPA 7471

EPA 7471A

RunID: AA1_130715B	QC Batch: 43424	PrepDate:	7/15/2013	Analyst: LCC
Mercury	ND	0.10	mg/Kg 1	7/15/2013

ICP METALS

EPA 3050B

EPA 6010B

RunID: ICP2_130718B	QC Batch: 43421	PrepDate:	7/16/2013	Analyst: CEI
Antimony	ND	2.0	mg/Kg 1	7/18/2013 10:57 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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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: 23-Jul-13

CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B2-4
Lab Order:	N010581	Collection Date:	7/12/2013 10:35:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-009		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B	EPA 6010B				
RunID: ICP2_130718B	QC Batch: 43421			PrepDate:	7/16/2013	Analyst: CEI
Arsenic	5.8	1.0		mg/Kg	1	7/18/2013 10:57 AM
Barium	130	1.0		mg/Kg	1	7/18/2013 10:57 AM
Beryllium	ND	1.0		mg/Kg	1	7/18/2013 10:57 AM
Cadmium	ND	1.0		mg/Kg	1	7/18/2013 10:57 AM
Chromium	140	1.0		mg/Kg	1	7/18/2013 10:57 AM
Cobalt	24	1.0		mg/Kg	1	7/18/2013 10:57 AM
Copper	49	2.0		mg/Kg	1	7/18/2013 10:57 AM
Lead	3.4	1.0		mg/Kg	1	7/18/2013 10:57 AM
Molybdenum	ND	1.0		mg/Kg	1	7/18/2013 10:57 AM
Nickel	200	1.0		mg/Kg	1	7/18/2013 10:57 AM
Selenium	ND	1.0		mg/Kg	1	7/18/2013 10:57 AM
Silver	ND	1.0		mg/Kg	1	7/18/2013 10:57 AM
Thallium	ND	1.0		mg/Kg	1	7/18/2013 10:57 AM
Vanadium	67	1.0		mg/Kg	1	7/18/2013 10:57 AM
Zinc	35	1.0		mg/Kg	1	7/18/2013 10:57 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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CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B2-5
Lab Order:	N010581	Collection Date:	7/12/2013 10:40:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-010		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B		EPA 6010B			
RunID: ICP2_130716C	QC Batch: 43427			PrepDate: 7/16/2013		Analyst: CEI
Lead	1.8	1.0		mg/Kg	1	7/16/2013 09:30 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		



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B3-0
Lab Order:	N010581	Collection Date:	7/12/2013 11:09:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-011		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			EPA 6010B		
RunID: ICP2_130716C	QC Batch: 43427			PrepDate: 7/16/2013		Analyst: CEI
Lead	27	1.0		mg/Kg	1	7/16/2013 09:35 PM

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



CLIENT: Geocon Consultants, Inc.
Lab Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49
Lab ID: N010581-012

Client Sample ID: B3-1
Collection Date: 7/12/2013 11:22:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B					
	EPA 6010B					
RunID: ICP2_130716C	QC Batch: 43427				PrepDate: 7/16/2013	Analyst: CEI
Lead	25	0.99		mg/Kg	1	7/16/2013 09:39 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



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B3-2
Lab Order:	N010581	Collection Date:	7/12/2013 11:27:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-013		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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MERCURY BY COLD VAPOR TECHNIQUE

EPA 7471

EPA 7471A

RunID: AA1_130715B	QC Batch: 43424			PrepDate: 7/15/2013	Analyst: LCC
Mercury	ND	0.099	mg/Kg	1	7/15/2013

ICP METALS

EPA 3050B

EPA 6010B

RunID: ICP2_130718B	QC Batch: 43421			PrepDate: 7/16/2013	Analyst: CEI
Antimony	ND	2.0	mg/Kg	1	7/18/2013 11:04 AM
Arsenic	2.0	1.0	mg/Kg	1	7/18/2013 11:04 AM
Barium	38	1.0	mg/Kg	1	7/18/2013 11:04 AM
Beryllium	ND	1.0	mg/Kg	1	7/18/2013 11:04 AM
Cadmium	ND	1.0	mg/Kg	1	7/18/2013 11:04 AM
Chromium	110	1.0	mg/Kg	1	7/18/2013 11:04 AM
Cobalt	20	1.0	mg/Kg	1	7/18/2013 11:04 AM
Copper	62	2.0	mg/Kg	1	7/18/2013 11:04 AM
Lead	ND	1.0	mg/Kg	1	7/18/2013 11:04 AM
Molybdenum	ND	1.0	mg/Kg	1	7/18/2013 11:04 AM
Nickel	100	1.0	mg/Kg	1	7/18/2013 11:04 AM
Selenium	ND	1.0	mg/Kg	1	7/18/2013 11:04 AM
Silver	ND	1.0	mg/Kg	1	7/18/2013 11:04 AM
Thallium	ND	1.0	mg/Kg	1	7/18/2013 11:04 AM
Vanadium	44	1.0	mg/Kg	1	7/18/2013 11:04 AM
Zinc	15	1.0	mg/Kg	1	7/18/2013 11:04 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	



CLIENT: Geocon Consultants, Inc.
Lab Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49
Lab ID: N010581-014

Client Sample ID: B4-0
Collection Date: 7/12/2013 11:30:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
EPA 3550B			EPA 8015B			
RunID: GC1_130715B	QC Batch: 43434				PrepDate: 7/15/2013	Analyst: MDM
DRO	24	1.0		mg/Kg	1	7/15/2013 06:46 PM
ORO	71	1.0		mg/Kg	1	7/15/2013 06:46 PM
Surr: p-Terphenyl	95.3	59-127		%REC	1	7/15/2013 06:46 PM
ICP METALS						
EPA 3050B			EPA 6010B			
RunID: ICP2_130716C	QC Batch: 43427				PrepDate: 7/16/2013	Analyst: CEI
Lead	51	1.0		mg/Kg	1	7/16/2013 09:52 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



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B4-1
Lab Order:	N010581	Collection Date:	7/12/2013 11:35:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-015		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
EPA 3550B			EPA 8015B			
RunID: GC1_130715B	QC Batch: 43434			PrepDate: 7/15/2013		Analyst: MDM
DRO	4.2	1.0		mg/Kg	1	7/15/2013 07:11 PM
ORO	10	1.0		mg/Kg	1	7/15/2013 07:11 PM
Surr: p-Terphenyl	100	59-127		%REC	1	7/15/2013 07:11 PM
MERCURY BY COLD VAPOR TECHNIQUE						
EPA 7471			EPA 7471A			
RunID: AA1_130715B	QC Batch: 43424			PrepDate: 7/15/2013		Analyst: LCC
Mercury	ND	0.10		mg/Kg	1	7/15/2013
ICP METALS						
EPA 3050B			EPA 6010B			
RunID: ICP2_130718B	QC Batch: 43421			PrepDate: 7/16/2013		Analyst: CEI
Antimony	ND	2.0		mg/Kg	1	7/18/2013 11:12 AM
Arsenic	1.2	1.0		mg/Kg	1	7/18/2013 11:12 AM
Barium	7.1	1.0		mg/Kg	1	7/18/2013 11:12 AM
Beryllium	ND	1.0		mg/Kg	1	7/18/2013 11:12 AM
Cadmium	ND	1.0		mg/Kg	1	7/18/2013 11:12 AM
Chromium	47	1.0		mg/Kg	1	7/18/2013 11:12 AM
Cobalt	15	1.0		mg/Kg	1	7/18/2013 11:12 AM
Copper	74	2.0		mg/Kg	1	7/18/2013 11:12 AM
Lead	16	1.0		mg/Kg	1	7/18/2013 11:12 AM
Molybdenum	ND	1.0		mg/Kg	1	7/18/2013 11:12 AM
Nickel	40	1.0		mg/Kg	1	7/18/2013 11:12 AM
Selenium	ND	1.0		mg/Kg	1	7/18/2013 11:12 AM
Silver	ND	1.0		mg/Kg	1	7/18/2013 11:12 AM
Thallium	ND	1.0		mg/Kg	1	7/18/2013 11:12 AM
Vanadium	29	1.0		mg/Kg	1	7/18/2013 11:12 AM
Zinc	38	1.0		mg/Kg	1	7/18/2013 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		



Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: 23-Jul-13

CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B4-2
Lab Order:	N010581	Collection Date:	7/12/2013 11:40:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-016		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B		EPA 6010B			
RunID: ICP2_130716C	QC Batch: 43427				PrepDate: 7/16/2013	Analyst: CEI
Lead	ND	1.0		mg/Kg	1	7/16/2013 10:07 PM

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



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CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B4-3
Lab Order:	N010581	Collection Date:	7/12/2013 11:45:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-017		

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

EPA 8260B

RunID: MS1_130715A	QC Batch: D13VS043	PrepDate:	Analyst: QBM		
Benzene	ND	5.0	µg/Kg	1	7/15/2013 02:00 PM
Ethylbenzene	ND	5.0	µg/Kg	1	7/15/2013 02:00 PM
m,p-Xylene	ND	10	µg/Kg	1	7/15/2013 02:00 PM
o-Xylene	ND	5.0	µg/Kg	1	7/15/2013 02:00 PM
Toluene	ND	5.0	µg/Kg	1	7/15/2013 02:00 PM
Surr: 1,2-Dichloroethane-d4	82.6	63-139	%REC	1	7/15/2013 02:00 PM
Surr: 4-Bromofluorobenzene	84.4	75-124	%REC	1	7/15/2013 02:00 PM
Surr: Dibromofluoromethane	87.7	70-133	%REC	1	7/15/2013 02:00 PM
Surr: Toluene-d8	89.7	80-123	%REC	1	7/15/2013 02:00 PM

DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID

EPA 3550B

EPA 8015B

RunID: GC1_130715B	QC Batch: 43434	PrepDate: 7/15/2013	Analyst: MDM		
DRO	2.3	1.0	mg/Kg	1	7/15/2013 07:37 PM
ORO	6.8	1.0	mg/Kg	1	7/15/2013 07:37 PM
Surr: p-Terphenyl	104	59-127	%REC	1	7/15/2013 07:37 PM

GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B

RunID: GC4_130716A	QC Batch: E13VS074	PrepDate:	Analyst: QBM		
GRO	ND	1.0	mg/Kg	1	7/16/2013 05:18 PM
Surr: Chlorobenzene - d5	104	51-136	%REC	1	7/16/2013 05:18 PM

ICP METALS

EPA 3050B

EPA 6010B

RunID: ICP2_130716C	QC Batch: 43427	PrepDate: 7/16/2013	Analyst: CEI		
Lead	1.3	0.99	mg/Kg	1	7/16/2013 10:12 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	



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B4-4
Lab Order:	N010581	Collection Date:	7/12/2013 11:50:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-018		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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MERCURY BY COLD VAPOR TECHNIQUE

EPA 7471

EPA 7471A

RunID: AA1_130715B	QC Batch: 43424	PrepDate: 7/15/2013	Analyst: LCC
Mercury	ND	0.10	mg/Kg
		1	7/15/2013

ICP METALS

EPA 3050B

EPA 6010B

RunID: ICP2_130718B	QC Batch: 43421	PrepDate: 7/16/2013	Analyst: CEI
Antimony	ND	2.0	mg/Kg
Arsenic	1.9	1.0	mg/Kg
Barium	41	1.0	mg/Kg
Beryllium	ND	1.0	mg/Kg
Cadmium	ND	1.0	mg/Kg
Chromium	120	1.0	mg/Kg
Cobalt	23	1.0	mg/Kg
Copper	61	2.0	mg/Kg
Lead	ND	1.0	mg/Kg
Molybdenum	ND	1.0	mg/Kg
Nickel	82	1.0	mg/Kg
Selenium	ND	1.0	mg/Kg
Silver	ND	1.0	mg/Kg
Thallium	ND	1.0	mg/Kg
Vanadium	37	1.0	mg/Kg
Zinc	14	1.0	mg/Kg

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



Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: 23-Jul-13

CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B5-0
Lab Order:	N010581	Collection Date:	7/12/2013 1:34:00 PM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-019		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
EPA 3550B			EPA 8015B			
RunID: GC1_130715B	QC Batch: 43434				PrepDate: 7/15/2013	Analyst: MDM
DRO	24	1.0		mg/Kg	1	7/15/2013 08:03 PM
ORO	70	1.0		mg/Kg	1	7/15/2013 08:03 PM
Surr: p-Terphenyl	92.4	59-127		%REC	1	7/15/2013 08:03 PM
ICP METALS						
EPA 3050B			EPA 6010B			
RunID: ICP2_130716C	QC Batch: 43427				PrepDate: 7/16/2013	Analyst: CEI
Lead	83	1.0		mg/Kg	1	7/16/2013 10:16 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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CLIENT: Geocon Consultants, Inc.
Lab Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49
Lab ID: N010581-020

Client Sample ID: B5-1
Collection Date: 7/12/2013 1:36:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B					
	EPA 6010B					
RunID: ICP2_130716C	QC Batch: 43427				PrepDate: 7/16/2013	Analyst: CEI
Lead	33	0.99		mg/Kg	1	7/16/2013 10:21 PM

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



Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: 23-Jul-13

CLIENT: Geocon Consultants, Inc.
Lab Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49
Lab ID: N010581-021

Client Sample ID: B5-2
Collection Date: 7/12/2013 1:44:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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PH

EPA 9045C

RunID: WETCHEM_130715C	QC Batch: R89579				PrepDate:	Analyst: LCC
pH	7.8	0.10		pH Units	1	7/15/2013
Temp. at time of pH Analysis	25	0		pH Units	1	7/15/2013

DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID

EPA 3550B

EPA 8015B

RunID: GC1_130715B	QC Batch: 43434				PrepDate: 7/15/2013	Analyst: MDM
DRO	1.6	1.0		mg/Kg	1	7/15/2013 08:29 PM
ORO	2.0	1.0		mg/Kg	1	7/15/2013 08:29 PM
Surr: p-Terphenyl	115	59-127		%REC	1	7/15/2013 08:29 PM

ICP METALS

EPA 3050B

EPA 6010B

RunID: ICP2_130716C	QC Batch: 43427				PrepDate: 7/16/2013	Analyst: CEI
Lead	ND	1.0		mg/Kg	1	7/16/2013 10:26 PM

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



Advanced Technology Laboratories, Inc.

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Lab Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49
Lab ID: N010581-022

Client Sample ID: B5-3
Collection Date: 7/12/2013 1:47:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B		EPA 6010B			
RunID: ICP2_130716C	QC Batch: 43427				PrepDate: 7/16/2013	Analyst: CEI
Lead	6.9	1.0		mg/Kg	1	7/16/2013 10:30 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



CLIENT: Geocon Consultants, Inc.
Lab Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49
Lab ID: N010581-023

Client Sample ID: B5-4
Collection Date: 7/12/2013 1:53:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B		EPA 6010B			
RunID: ICP2_130716C	QC Batch: 43427				PrepDate: 7/16/2013	Analyst: CEI
Lead	3.6	1.0		mg/Kg	1	7/16/2013 10:34 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: 23-Jul-13

CLIENT: Geocon Consultants, Inc.
Lab Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49
Lab ID: N010581-024

Client Sample ID: B5-5
Collection Date: 7/12/2013 2:00:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
EPA 3550B			EPA 8015B			
RunID: GC1_130715B	QC Batch: 43434				PrepDate: 7/15/2013	Analyst: MDM
DRO	2.5	1.0		mg/Kg	1	7/15/2013 08:54 PM
ORO	6.9	1.0		mg/Kg	1	7/15/2013 08:54 PM
Surr: p-Terphenyl	102	59-127		%REC	1	7/15/2013 08:54 PM
ICP METALS						
EPA 3050B			EPA 6010B			
RunID: ICP2_130716C	QC Batch: 43427				PrepDate: 7/16/2013	Analyst: CEI
Lead	1.4	1.0		mg/Kg	1	7/16/2013 10:57 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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CLIENT: Geocon Consultants, Inc.
Lab Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49
Lab ID: N010581-025

Client Sample ID: B5-6.5
Collection Date: 7/12/2013 2:05:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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MERCURY BY COLD VAPOR TECHNIQUE

EPA 7471

EPA 7471A

RunID: AA1_130715B	QC Batch: 43424				PrepDate: 7/15/2013	Analyst: LCC
Mercury	ND	0.10		mg/Kg	1	7/15/2013

ICP METALS

EPA 3050B

EPA 6010B

RunID: ICP2_130718B	QC Batch: 43421				PrepDate: 7/16/2013	Analyst: CEI
Antimony	ND	2.0		mg/Kg	1	7/18/2013 11:27 AM
Arsenic	1.9	1.0		mg/Kg	1	7/18/2013 11:27 AM
Barium	32	1.0		mg/Kg	1	7/18/2013 11:27 AM
Beryllium	ND	1.0		mg/Kg	1	7/18/2013 11:27 AM
Cadmium	ND	1.0		mg/Kg	1	7/18/2013 11:27 AM
Chromium	140	1.0		mg/Kg	1	7/18/2013 11:27 AM
Cobalt	25	1.0		mg/Kg	1	7/18/2013 11:27 AM
Copper	61	2.0		mg/Kg	1	7/18/2013 11:27 AM
Lead	6.4	1.0		mg/Kg	1	7/18/2013 11:27 AM
Molybdenum	ND	1.0		mg/Kg	1	7/18/2013 11:27 AM
Nickel	140	1.0		mg/Kg	1	7/18/2013 11:27 AM
Selenium	ND	1.0		mg/Kg	1	7/18/2013 11:27 AM
Silver	ND	1.0		mg/Kg	1	7/18/2013 11:27 AM
Thallium	ND	1.0		mg/Kg	1	7/18/2013 11:27 AM
Vanadium	44	1.0		mg/Kg	1	7/18/2013 11:27 AM
Zinc	20	1.0		mg/Kg	1	7/18/2013 11:27 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



CLIENT: Geocon Consultants, Inc.
Lab Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49
Lab ID: N010581-026

Client Sample ID: B6-0
Collection Date: 7/12/2013 1:35:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B					
	EPA 6010B					
RunID: ICP2_130716C	QC Batch: 43427				PrepDate: 7/16/2013	Analyst: CEI
Lead	42	1.0		mg/Kg	1	7/16/2013 11:01 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



CLIENT: Geocon Consultants, Inc.
Lab Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49
Lab ID: N010581-027

Client Sample ID: B6-1
Collection Date: 7/12/2013 1:40:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B		EPA 6010B			
RunID: ICP2_130716C	QC Batch: 43428				PrepDate: 7/16/2013	Analyst: CEI
Lead	11	0.93		mg/Kg	1	7/16/2013 11:20 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



CLIENT: Geocon Consultants, Inc.
Lab Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49
Lab ID: N010581-028

Client Sample ID: B6-2
Collection Date: 7/12/2013 1:45:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B		EPA 6010B			
RunID: ICP2_130716C	QC Batch: 43428				PrepDate: 7/16/2013	Analyst: CEI
Lead	2.4	1.0		mg/Kg	1	7/16/2013 11:56 PM

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



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ANALYTICAL RESULTS

Print Date: 23-Jul-13

CLIENT: Geocon Consultants, Inc.
Lab Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49
Lab ID: N010581-029

Client Sample ID: B6-3
Collection Date: 7/12/2013 1:50:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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MERCURY BY COLD VAPOR TECHNIQUE

EPA 7471

EPA 7471A

RunID: AA1_130715B	QC Batch: 43424				PrepDate: 7/15/2013	Analyst: LCC
Mercury	ND	0.10		mg/Kg	1	7/15/2013

ICP METALS

EPA 3050B

EPA 6010B

RunID: ICP2_130718B	QC Batch: 43421				PrepDate: 7/16/2013	Analyst: CEI
Antimony	ND	2.0		mg/Kg	1	7/18/2013 12:26 PM
Arsenic	2.4	1.0		mg/Kg	1	7/18/2013 12:26 PM
Barium	43	1.0		mg/Kg	1	7/18/2013 12:26 PM
Beryllium	ND	1.0		mg/Kg	1	7/18/2013 12:26 PM
Cadmium	ND	1.0		mg/Kg	1	7/18/2013 12:26 PM
Chromium	150	1.0		mg/Kg	1	7/18/2013 12:26 PM
Cobalt	25	1.0		mg/Kg	1	7/18/2013 12:26 PM
Copper	61	2.0		mg/Kg	1	7/18/2013 12:26 PM
Lead	4.5	1.0		mg/Kg	1	7/18/2013 12:26 PM
Molybdenum	ND	1.0		mg/Kg	1	7/18/2013 12:26 PM
Nickel	140	1.0		mg/Kg	1	7/18/2013 12:26 PM
Selenium	ND	1.0		mg/Kg	1	7/18/2013 12:26 PM
Silver	ND	1.0		mg/Kg	1	7/18/2013 12:26 PM
Thallium	ND	1.0		mg/Kg	1	7/18/2013 12:26 PM
Vanadium	49	1.0		mg/Kg	1	7/18/2013 12:26 PM
Zinc	26	1.0		mg/Kg	1	7/18/2013 12:26 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: 23-Jul-13

CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B6-4
Lab Order:	N010581	Collection Date:	7/12/2013 1:55:00 PM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-030		

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

EPA 8260B

RunID: MS1_130715A	QC Batch: D13VS043				PrepDate:	Analyst: QBM
Benzene	ND	5.0		µg/Kg	1	7/15/2013 03:06 PM
Ethylbenzene	ND	5.0		µg/Kg	1	7/15/2013 03:06 PM
m,p-Xylene	ND	10		µg/Kg	1	7/15/2013 03:06 PM
o-Xylene	ND	5.0		µg/Kg	1	7/15/2013 03:06 PM
Toluene	ND	5.0		µg/Kg	1	7/15/2013 03:06 PM
Surr: 1,2-Dichloroethane-d4	83.1	63-139		%REC	1	7/15/2013 03:06 PM
Surr: 4-Bromofluorobenzene	84.1	75-124		%REC	1	7/15/2013 03:06 PM
Surr: Dibromofluoromethane	89.5	70-133		%REC	1	7/15/2013 03:06 PM
Surr: Toluene-d8	90.6	80-123		%REC	1	7/15/2013 03:06 PM

GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B

RunID: GC4_130716A	QC Batch: E13VS074				PrepDate:	Analyst: QBM
GRO	ND	1.0		mg/Kg	1	7/16/2013 04:47 PM
Surr: Chlorobenzene - d5	108	51-136		%REC	1	7/16/2013 04:47 PM

ICP METALS

EPA 3050B

EPA 6010B

RunID: ICP2_130716C	QC Batch: 43428				PrepDate: 7/16/2013	Analyst: CEI
Lead	3.5	1.0		mg/Kg	1	7/17/2013 12:00 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	



Advanced Technology Laboratories, Inc.

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CLIENT: Geocon Consultants, Inc.
Lab Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49
Lab ID: N010581-031

Client Sample ID: B7-0
Collection Date: 7/12/2013 12:48:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
EPA 3550B			EPA 8015B			
RunID: GC1_130715B	QC Batch: 43434				PrepDate: 7/15/2013	Analyst: MDM
DRO	92	1.0		mg/Kg	1	7/15/2013 11:02 PM
ORO	260	1.0		mg/Kg	1	7/15/2013 11:02 PM
Surr: p-Terphenyl	102	59-127		%REC	1	7/15/2013 11:02 PM
ICP METALS						
EPA 3050B			EPA 6010B			
RunID: ICP2_130716C	QC Batch: 43428				PrepDate: 7/16/2013	Analyst: CEI
Lead	460	0.99		mg/Kg	1	7/17/2013 12:04 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



CLIENT: Geocon Consultants, Inc.
Lab Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49
Lab ID: N010581-032

Client Sample ID: B7-1
Collection Date: 7/12/2013 12:50:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			EPA 6010B		
RunID: ICP2_130716C	QC Batch: 43428			PrepDate: 7/16/2013		Analyst: CEI
Lead	20	1.0		mg/Kg	1	7/17/2013 12:10 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: 23-Jul-13

CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B7-2
Lab Order:	N010581	Collection Date:	7/12/2013 12:57:00 PM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-033		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
EPA 3550B			EPA 8015B			
RunID: GC1_130715B	QC Batch: 43434			PrepDate: 7/15/2013		Analyst: MDM
DRO	150	1.0		mg/Kg	1	7/15/2013 11:54 PM
ORO	340	1.0		mg/Kg	1	7/15/2013 11:54 PM
Surr: p-Terphenyl	108	59-127		%REC	1	7/15/2013 11:54 PM
MERCURY BY COLD VAPOR TECHNIQUE						
EPA 7471			EPA 7471A			
RunID: AA1_130715B	QC Batch: 43424			PrepDate: 7/15/2013		Analyst: LCC
Mercury	ND	0.10		mg/Kg	1	7/15/2013
ICP METALS						
EPA 3050B			EPA 6010B			
RunID: ICP2_130718B	QC Batch: 43421			PrepDate: 7/16/2013		Analyst: CEI
Antimony	ND	2.0		mg/Kg	1	7/18/2013 12:31 PM
Arsenic	2.0	1.0		mg/Kg	1	7/18/2013 12:31 PM
Barium	46	1.0		mg/Kg	1	7/18/2013 12:31 PM
Beryllium	ND	1.0		mg/Kg	1	7/18/2013 12:31 PM
Cadmium	ND	1.0		mg/Kg	1	7/18/2013 12:31 PM
Chromium	140	1.0		mg/Kg	1	7/18/2013 12:31 PM
Cobalt	21	1.0		mg/Kg	1	7/18/2013 12:31 PM
Copper	53	2.0		mg/Kg	1	7/18/2013 12:31 PM
Lead	27	1.0		mg/Kg	1	7/18/2013 12:31 PM
Molybdenum	ND	1.0		mg/Kg	1	7/18/2013 12:31 PM
Nickel	130	1.0		mg/Kg	1	7/18/2013 12:31 PM
Selenium	ND	1.0		mg/Kg	1	7/18/2013 12:31 PM
Silver	ND	1.0		mg/Kg	1	7/18/2013 12:31 PM
Thallium	ND	1.0		mg/Kg	1	7/18/2013 12:31 PM
Vanadium	48	1.0		mg/Kg	1	7/18/2013 12:31 PM
Zinc	29	1.0		mg/Kg	1	7/18/2013 12:31 PM

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



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CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B8-0
Lab Order:	N010581	Collection Date:	7/12/2013 12:10:00 PM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-034		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			EPA 6010B		
RunID: ICP2_130716C	QC Batch: 43428			PrepDate: 7/16/2013		Analyst: CEI
Lead	67	1.0		mg/Kg	1	7/17/2013 12:14 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		



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B8-2
Lab Order:	N010581	Collection Date:	7/12/2013 12:30:00 PM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-036		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B		EPA 6010B			
RunID: ICP2_130716C	QC Batch: 43428			PrepDate: 7/16/2013		Analyst: CEI
Lead	1.5	1.0		mg/Kg	1	7/17/2013 12:24 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		



CLIENT: Geocon Consultants, Inc.
Lab Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49
Lab ID: N010581-037

Client Sample ID: B8-3
Collection Date: 7/12/2013 12:40:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B		EPA 6010B			
RunID: ICP2_130716C	QC Batch: 43428				PrepDate: 7/16/2013	Analyst: CEI
Lead	1.8	1.0		mg/Kg	1	7/17/2013 12:28 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



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B8-4
Lab Order:	N010581	Collection Date:	7/12/2013 12:45:00 PM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-038		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B		EPA 6010B			
RunID: ICP2_130716C	QC Batch: 43428			PrepDate: 7/16/2013		Analyst: CEI
Lead	2.0	1.0		mg/Kg	1	7/17/2013 12:32 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		



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B8-5
Lab Order:	N010581	Collection Date:	7/12/2013 12:55:00 PM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-039		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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MERCURY BY COLD VAPOR TECHNIQUE

EPA 7471

EPA 7471A

RunID: AA1_130715B	QC Batch: 43424	PrepDate: 7/15/2013	Analyst: LCC
Mercury	ND	0.099	mg/Kg
		1	7/15/2013

ICP METALS

EPA 3050B

EPA 6010B

RunID: ICP2_130718B	QC Batch: 43421	PrepDate: 7/16/2013	Analyst: CEI
Antimony	ND	2.0	mg/Kg
Arsenic	1.3	1.0	mg/Kg
Barium	46	1.0	mg/Kg
Beryllium	ND	1.0	mg/Kg
Cadmium	ND	1.0	mg/Kg
Chromium	140	1.0	mg/Kg
Cobalt	25	1.0	mg/Kg
Copper	48	2.0	mg/Kg
Lead	2.4	1.0	mg/Kg
Molybdenum	ND	1.0	mg/Kg
Nickel	110	1.0	mg/Kg
Selenium	ND	1.0	mg/Kg
Silver	ND	1.0	mg/Kg
Thallium	ND	1.0	mg/Kg
Vanadium	27	1.0	mg/Kg
Zinc	13	1.0	mg/Kg

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	



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B8-6.5
Lab Order:	N010581	Collection Date:	7/12/2013 1:00:00 PM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-040		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B		EPA 6010B			
RunID: ICP2_130716C	QC Batch: 43428			PrepDate: 7/16/2013		Analyst: CEI
Lead	ND	0.99		mg/Kg	1	7/17/2013 12:46 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		



Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: 23-Jul-13

CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B9-0
Lab Order:	N010581	Collection Date:	7/12/2013 9:20:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-041		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
EPA 3550B			EPA 8015B			
RunID: GC1_130715B	QC Batch: 43434			PrepDate: 7/15/2013		Analyst: MDM
DRO	28	1.0		mg/Kg	1	7/16/2013 12:19 AM
ORO	58	1.0		mg/Kg	1	7/16/2013 12:19 AM
Surr: p-Terphenyl	112	59-127		%REC	1	7/16/2013 12:19 AM
ICP METALS						
EPA 3050B			EPA 6010B			
RunID: ICP2_130716C	QC Batch: 43428			PrepDate: 7/16/2013		Analyst: CEI
Lead	34	1.0		mg/Kg	1	7/17/2013 12:59 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		



Advanced Technology Laboratories, Inc.

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: 23-Jul-13

CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B9-1
Lab Order:	N010581	Collection Date:	7/12/2013 9:30:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-042		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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MERCURY BY COLD VAPOR TECHNIQUE

EPA 7471

EPA 7471A

RunID: AA1_130715B	QC Batch: 43424			PrepDate: 7/15/2013	Analyst: LCC
Mercury	ND	0.099	mg/Kg	1	7/15/2013

ICP METALS

EPA 3050B

EPA 6010B

RunID: ICP2_130718B	QC Batch: 43421			PrepDate: 7/16/2013	Analyst: CEI
Antimony	ND	2.0	mg/Kg	1	7/18/2013 12:46 PM
Arsenic	1.7	1.0	mg/Kg	1	7/18/2013 12:46 PM
Barium	44	1.0	mg/Kg	1	7/18/2013 12:46 PM
Beryllium	ND	1.0	mg/Kg	1	7/18/2013 12:46 PM
Cadmium	ND	1.0	mg/Kg	1	7/18/2013 12:46 PM
Chromium	170	1.0	mg/Kg	1	7/18/2013 12:46 PM
Cobalt	22	1.0	mg/Kg	1	7/18/2013 12:46 PM
Copper	47	2.0	mg/Kg	1	7/18/2013 12:46 PM
Lead	7.6	1.0	mg/Kg	1	7/18/2013 12:46 PM
Molybdenum	ND	1.0	mg/Kg	1	7/18/2013 12:46 PM
Nickel	100	1.0	mg/Kg	1	7/18/2013 12:46 PM
Selenium	ND	1.0	mg/Kg	1	7/18/2013 12:46 PM
Silver	ND	1.0	mg/Kg	1	7/18/2013 12:46 PM
Thallium	ND	1.0	mg/Kg	1	7/18/2013 12:46 PM
Vanadium	32	1.0	mg/Kg	1	7/18/2013 12:46 PM
Zinc	15	1.0	mg/Kg	1	7/18/2013 12:46 PM

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



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Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: 23-Jul-13

CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B9-3
Lab Order:	N010581	Collection Date:	7/12/2013 9:40:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-044		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL & MOTOR OIL RANGE ORGANICS BY GC/FID						
EPA 3550B			EPA 8015B			
RunID: GC1_130715B	QC Batch: 43434			PrepDate: 7/15/2013		Analyst: MDM
DRO	2.5	1.0		mg/Kg	1	7/16/2013 12:44 AM
ORO	3.1	1.0		mg/Kg	1	7/16/2013 12:44 AM
Surr: p-Terphenyl	122	59-127		%REC	1	7/16/2013 12:44 AM
ICP METALS						
EPA 3050B			EPA 6010B			
RunID: ICP2_130716C	QC Batch: 43428			PrepDate: 7/16/2013		Analyst: CEI
Lead	ND	1.0		mg/Kg	1	7/17/2013 01:09 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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CLIENT: Geocon Consultants, Inc.
Lab Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49
Lab ID: N010581-045

Client Sample ID: B9-4
Collection Date: 7/12/2013 9:45:00 AM
Matrix: SOIL

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

EPA 8260B

RunID:	MS1_130715A	QC Batch:	D13VS043	PrepDate:	Analyst:	QBM
Benzene	ND	5.0	µg/Kg	1	7/15/2013 03:28 PM	
Ethylbenzene	ND	5.0	µg/Kg	1	7/15/2013 03:28 PM	
m,p-Xylene	ND	10	µg/Kg	1	7/15/2013 03:28 PM	
o-Xylene	ND	5.0	µg/Kg	1	7/15/2013 03:28 PM	
Toluene	ND	5.0	µg/Kg	1	7/15/2013 03:28 PM	
Surr: 1,2-Dichloroethane-d4	81.6	63-139	%REC	1	7/15/2013 03:28 PM	
Surr: 4-Bromofluorobenzene	80.7	75-124	%REC	1	7/15/2013 03:28 PM	
Surr: Dibromofluoromethane	83.6	70-133	%REC	1	7/15/2013 03:28 PM	
Surr: Toluene-d8	84.8	80-123	%REC	1	7/15/2013 03:28 PM	

GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B

RunID:	GC4_130716A	QC Batch:	E13VS074	PrepDate:	Analyst:	QBM
GRO	ND	1.0	mg/Kg	1	7/16/2013 11:05 AM	
Surr: Chlorobenzene - d5	110	51-136	%REC	1	7/16/2013 11:05 AM	

ICP METALS

EPA 3050B

EPA 6010B

RunID:	ICP2_130716C	QC Batch:	43428	PrepDate:	Analyst:	CEI
Lead	ND	1.0	mg/Kg	1	7/17/2013 01:13 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



CLIENT: Geocon Consultants, Inc.
Lab Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49
Lab ID: N010581-046

Client Sample ID: EQUIP BLANK
Collection Date: 7/12/2013 3:30:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3010A				EPA 6010B	
RunID: ICP2_130719C	QC Batch: 43453				PrepDate: 7/17/2013	Analyst: WLS
Lead	ND	0.0050		mg/L	1	7/19/2013 06:43 PM

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



CLIENT: Geocon Consultants, Inc.
Work Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: MB1-43421	SampType: MBLK	TestCode: 6010_S	Units: mg/Kg	Prep Date: 7/16/2013	RunNo: 89654						
Client ID: PBS	Batch ID: 43421	TestNo: EPA 6010B EPA 3050B		Analysis Date: 7/18/2013	SeqNo: 1616961						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0									
Arsenic	0.174	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: MB2-43421	SampType: MBLK	TestCode: 6010_S	Units: mg/Kg	Prep Date: 7/16/2013	RunNo: 89654						
Client ID: PBS	Batch ID: 43421	TestNo: EPA 6010B EPA 3050B		Analysis Date: 7/18/2013	SeqNo: 1616962						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0									
Arsenic	0.174	1.0									
Barium	ND	1.0									
Beryllium	ND	1.0									
Cadmium	ND	1.0									
Chromium	ND	1.0									
Cobalt	ND	1.0									

Qualifiers:

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



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CLIENT: Geocon Consultants, Inc.
Work Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: MB2-43421	SampType: MBLK	TestCode: 6010_S	Units: mg/Kg	Prep Date: 7/16/2013	RunNo: 89654						
Client ID: PBS	Batch ID: 43421	TestNo: EPA 6010B EPA 3050B		Analysis Date: 7/18/2013	SeqNo: 1616962						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
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	0.161	1.0									
Vanadium	ND	1.0									
Zinc	ND	1.0									

Sample ID: LCS-43421	SampType: LCS	TestCode: 6010_S	Units: mg/Kg	Prep Date: 7/16/2013	RunNo: 89654						
Client ID: LCSS	Batch ID: 43421	TestNo: EPA 6010B EPA 3050B		Analysis Date: 7/18/2013	SeqNo: 1616963						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	49.962	2.0	49.78	0	100	80	120				
Arsenic	48.952	1.0	49.78	0	98.3	80	120				
Barium	50.492	1.0	49.78	0	101	80	120				
Beryllium	50.121	1.0	49.78	0	101	80	120				
Cadmium	48.657	1.0	49.78	0	97.8	80	120				
Chromium	49.782	1.0	49.78	0	100	80	120				
Cobalt	48.471	1.0	49.78	0	97.4	80	120				
Copper	51.661	2.0	49.78	0	104	80	120				
Lead	49.464	1.0	49.78	0	99.4	80	120				
Molybdenum	49.292	1.0	49.78	0	99.0	80	120				
Nickel	48.132	1.0	49.78	0	96.7	80	120				
Selenium	45.140	1.0	49.78	0	90.7	80	120				
Silver	50.060	1.0	49.78	0	101	80	120				
Thallium	47.578	1.0	49.78	0	95.6	80	120				
Vanadium	51.201	1.0	49.78	0	103	80	120				
Zinc	49.988	1.0	49.78	0	100	80	120				

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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CLIENT: Geocon Consultants, Inc.
Work Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: N010571-001C-DUP		SampType: DUP		TestCode: 6010_S		Units: mg/Kg		Prep Date: 7/16/2013		RunNo: 89654	
Client ID: ZZZZZZ		Batch ID: 43421		TestNo: EPA 6010B EPA 3050B		Analysis Date: 7/18/2013		SeqNo: 1616965			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0						0	0	20	
Arsenic	3.532	1.0						3.800	7.30	20	
Barium	132.501	1.0						122.6	7.80	20	
Beryllium	0.328	1.0						0.3386	0	20	
Cadmium	ND	1.0						0	0	20	
Chromium	8.440	1.0						8.511	0.836	20	
Cobalt	4.766	1.0						5.329	11.1	20	
Copper	9.628	2.0						10.66	10.2	20	
Lead	4.517	1.0						5.423	18.2	20	
Molybdenum	ND	1.0						0	0	20	
Nickel	8.910	1.0						10.42	15.6	20	
Selenium	ND	1.0						0	0	20	
Silver	ND	1.0						0	0	20	
Thallium	ND	1.0						0	0	20	
Vanadium	22.359	1.0						23.66	5.64	20	
Zinc	19.962	1.0						22.07	10.0	20	

Sample ID: N010571-001C-MS		SampType: MS		TestCode: 6010_S		Units: mg/Kg		Prep Date: 7/16/2013		RunNo: 89654	
Client ID: ZZZZZZ		Batch ID: 43421		TestNo: EPA 6010B EPA 3050B		Analysis Date: 7/18/2013		SeqNo: 1616966			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	27.355	2.0	49.83	0	54.9	75	125				S
Arsenic	43.205	1.0	49.83	3.800	79.1	75	125				
Barium	184.299	1.0	49.83	122.6	124	75	125				
Beryllium	39.123	1.0	49.83	0.3386	77.8	75	125				
Cadmium	35.968	1.0	49.83	0	72.2	75	125				S
Chromium	47.739	1.0	49.83	8.511	78.7	75	125				
Cobalt	41.372	1.0	49.83	5.329	72.3	75	125				S
Copper	53.007	2.0	49.83	10.66	85.0	75	125				
Lead	42.937	1.0	49.83	5.423	75.3	75	125				

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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CLIENT: Geocon Consultants, Inc.
Work Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: N010571-001C-MS	SampType: MS	TestCode: 6010_S	Units: mg/Kg	Prep Date: 7/16/2013	RunNo: 89654						
Client ID: ZZZZZZ	Batch ID: 43421	TestNo: EPA 6010B	EPA 3050B	Analysis Date: 7/18/2013	SeqNo: 1616966						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	35.714	1.0	49.83	0	71.7	75	125				S
Nickel	46.034	1.0	49.83	10.42	71.5	75	125				S
Selenium	35.342	1.0	49.83	0	70.9	75	125				S
Silver	38.941	1.0	49.83	0	78.2	75	125				S
Thallium	33.034	1.0	49.83	0	66.3	75	125				S
Vanadium	68.048	1.0	49.83	23.66	89.1	75	125				S
Zinc	58.036	1.0	49.83	22.07	72.2	75	125				S

Sample ID: N010581-001A-DUP	SampType: DUP	TestCode: 6010_S	Units: mg/Kg	Prep Date: 7/16/2013	RunNo: 89654						
Client ID: ZZZZZZ	Batch ID: 43421	TestNo: EPA 6010B	EPA 3050B	Analysis Date: 7/18/2013	SeqNo: 1616969						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0						0	0	20	
Arsenic	5.653	1.0						5.372	5.10	20	
Barium	28.653	1.0						27.68	3.46	20	
Beryllium	ND	1.0						0	0	20	
Cadmium	ND	1.0						0	0	20	
Chromium	176.285	1.0						148.0	17.4	20	
Cobalt	32.054	1.0						30.43	5.21	20	
Copper	77.527	2.0						64.07	19.0	20	
Lead	25.152	1.0						19.31	26.3	20	R
Molybdenum	ND	1.0						0	0	20	
Nickel	213.433	1.0						210.4	1.45	20	
Selenium	ND	1.0						0	0	20	
Silver	ND	1.0						0	0	20	
Thallium	ND	1.0						0	0	20	
Vanadium	40.231	1.0						39.60	1.58	20	
Zinc	21.903	1.0						23.17	5.64	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: N010581
 Project: I 580 STORM REPAIR, E8560-02-49

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: N010581-001A-MSD		SampType: MSD		TestCode: 6010_S		Units: mg/Kg		Prep Date: 7/16/2013		RunNo: 89654	
Client ID: ZZZZZZ		Batch ID: 43421		TestNo: EPA 6010B EPA 3050B		Analysis Date: 7/18/2013		SeqNo: 1616975			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	14.506	2.0	49.78	0	29.1	75	125	15.01	3.44	20	S
Arsenic	48.440	1.0	49.78	5.372	86.5	75	125	49.32	1.79	20	
Barium	68.684	1.0	49.78	27.68	82.4	75	125	69.77	1.57	20	
Beryllium	43.553	1.0	49.78	0	87.5	75	125	44.13	1.32	20	
Cadmium	36.009	1.0	49.78	0	72.3	75	125	36.53	1.42	20	S
Chromium	234.343	1.0	49.78	148.0	173	75	125	238.0	1.57	20	S
Cobalt	65.349	1.0	49.78	30.43	70.2	75	125	66.37	1.55	20	S
Copper	121.219	2.0	49.78	64.07	115	75	125	122.4	0.939	20	
Lead	57.485	1.0	49.78	19.31	76.7	75	125	58.25	1.32	20	
Molybdenum	36.123	1.0	49.78	0	72.6	75	125	36.47	0.964	20	S
Nickel	237.758	1.0	49.78	210.4	55.0	75	125	240.9	1.31	20	S
Selenium	38.578	1.0	49.78	0	77.5	75	125	38.95	0.954	20	
Silver	45.288	1.0	49.78	0	91.0	75	125	45.98	1.52	20	
Thallium	31.264	1.0	49.78	0	62.8	75	125	31.68	1.33	20	S
Vanadium	87.867	1.0	49.78	39.60	97.0	75	125	89.26	1.57	20	
Zinc	56.330	1.0	49.78	23.17	66.6	75	125	57.11	1.38	20	S

Sample ID: N010581-001A-MS		SampType: MS		TestCode: 6010_S		Units: mg/Kg		Prep Date: 7/16/2013		RunNo: 89654	
Client ID: ZZZZZZ		Batch ID: 43421		TestNo: EPA 6010B EPA 3050B		Analysis Date: 7/18/2013		SeqNo: 1616975			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	15.014	2.0	50.15	0	29.9	75	125				S
Arsenic	49.317	1.0	50.15	5.372	87.6	75	125				
Barium	69.770	1.0	50.15	27.68	83.9	75	125				
Beryllium	44.132	1.0	50.15	0	88.0	75	125				
Cadmium	36.526	1.0	50.15	0	72.8	75	125				S
Chromium	238.046	1.0	50.15	148.0	180	75	125				S
Cobalt	66.372	1.0	50.15	30.43	71.7	75	125				S
Copper	122.362	2.0	50.15	64.07	116	75	125				
Lead	58.248	1.0	50.15	19.31	77.6	75	125				

Qualifiers:

- | | | |
|---------------------------------------------------|----------------------------------------|----------------------------------------------------------------|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
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| DO Surrogate Diluted Out | Calculations are based on raw values | |



**Advanced Technology
Laboratories, Inc.**

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: N010581-001A-MS	SampType: MS	TestCode: 6010_S	Units: mg/Kg	Prep Date: 7/16/2013	RunNo: 89654						
Client ID: ZZZZZZ	Batch ID: 43421	TestNo: EPA 6010B EPA 3050B	Analysis Date: 7/18/2013	SeqNo: 1616976							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	36.473	1.0	50.15	0	72.7	75	125				S
Nickel	240.895	1.0	50.15	210.4	60.9	75	125				S
Selenium	38.948	1.0	50.15	0	77.7	75	125				
Silver	45.981	1.0	50.15	0	91.7	75	125				
Thallium	31.683	1.0	50.15	0	63.2	75	125				S
Vanadium	89.257	1.0	50.15	39.60	99.0	75	125				
Zinc	57.111	1.0	50.15	23.17	67.7	75	125				S

Qualifiers:

- | | | |
|---------------------------------------------------|----------------------------------------|----------------------------------------------------------------|
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ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: N010581-002A-MSD	SampType: MSD	TestCode: 6010_S	Units: mg/Kg	Prep Date: 7/16/2013	RunNo: 89605						
Client ID: ZZZZZZ	Batch ID: 43427	TestNo: EPA 6010B EPA 3050B		Analysis Date: 7/16/2013	SeqNo: 1613845						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	36.340	0.99	49.55	2.534	68.2	75	125	41.37	12.9	20	S

Sample ID: N010581-014A-DUP	SampType: DUP	TestCode: 6010_S	Units: mg/Kg	Prep Date: 7/16/2013	RunNo: 89605						
Client ID: ZZZZZZ	Batch ID: 43427	TestNo: EPA 6010B EPA 3050B		Analysis Date: 7/16/2013	SeqNo: 1613858						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	46.821	0.99						51.14	8.81	20	

Sample ID: N010581-014A-MS	SampType: MS	TestCode: 6010_S	Units: mg/Kg	Prep Date: 7/16/2013	RunNo: 89605						
Client ID: ZZZZZZ	Batch ID: 43427	TestNo: EPA 6010B EPA 3050B		Analysis Date: 7/16/2013	SeqNo: 1613859						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	85.464	1.0	49.85	51.14	68.9	75	125				S

Qualifiers:

- | | | |
|---------------------------------------------------|----------------------------------------|----------------------------------------------------------------|
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Work Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: MB1-43428	SampType: MBLK	TestCode: 6010_S	Units: mg/Kg	Prep Date: 7/16/2013	RunNo: 89605						
Client ID: PBS	Batch ID: 43428	TestNo: EPA 6010B EPA 3050B		Analysis Date: 7/16/2013	SeqNo: 1613873						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID: MB2-43428	SampType: MBLK	TestCode: 6010_S	Units: mg/Kg	Prep Date: 7/16/2013	RunNo: 89605						
Client ID: PBS	Batch ID: 43428	TestNo: EPA 6010B EPA 3050B		Analysis Date: 7/16/2013	SeqNo: 1613874						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID: LCS-43428	SampType: LCS	TestCode: 6010_S	Units: mg/Kg	Prep Date: 7/16/2013	RunNo: 89605						
Client ID: LCSS	Batch ID: 43428	TestNo: EPA 6010B EPA 3050B		Analysis Date: 7/16/2013	SeqNo: 1613875						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	50.585	1.0	50.51	0	100	80	120				

Sample ID: N010581-027A-DUP	SampType: DUP	TestCode: 6010_S	Units: mg/Kg	Prep Date: 7/16/2013	RunNo: 89605						
Client ID: ZZZZZ	Batch ID: 43428	TestNo: EPA 6010B EPA 3050B		Analysis Date: 7/16/2013	SeqNo: 1613877						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	13.638	1.0						10.82	23.0	20	R

Sample ID: N010581-027A-MS	SampType: MS	TestCode: 6010_S	Units: mg/Kg	Prep Date: 7/16/2013	RunNo: 89605						
Client ID: ZZZZZ	Batch ID: 43428	TestNo: EPA 6010B EPA 3050B		Analysis Date: 7/16/2013	SeqNo: 1613880						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	41.894	1.0	49.85	10.82	62.3	75	125				S

Qualifiers:

- | | | |
|---------------------------------------------------|----------------------------------------|----------------------------------------------------------------|
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Work Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: N010581-027A-MSD	SampType: MSD	TestCode: 6010_S	Units: mg/Kg	Prep Date: 7/16/2013	RunNo: 89605						
Client ID: ZZZZZ	Batch ID: 43428	TestNo: EPA 6010B EPA 3050B	Analysis Date: 7/16/2013	SeqNo: 1613883							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	43.148	1.0	50.51	10.82	64.0	75	125	41.89	2.95	20	S

Sample ID: N010581-040A-DUP	SampType: DUP	TestCode: 6010_S	Units: mg/Kg	Prep Date: 7/16/2013	RunNo: 89605						
Client ID: ZZZZZ	Batch ID: 43428	TestNo: EPA 6010B EPA 3050B	Analysis Date: 7/17/2013	SeqNo: 1613897							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.292	1.0						0.2065	0	20	

Qualifiers:

- | | | |
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ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_W

Sample ID: MB-43453	SampType: MBLK	TestCode: 6010_W	Units: mg/L	Prep Date: 7/17/2013	RunNo: 89673						
Client ID: PBW	Batch ID: 43453	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 7/19/2013	SeqNo: 1617997						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead ND 0.0050

Sample ID: LCS-43453	SampType: LCS	TestCode: 6010_W	Units: mg/L	Prep Date: 7/17/2013	RunNo: 89673						
Client ID: LCSW	Batch ID: 43453	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 7/19/2013	SeqNo: 1617998						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 0.474 0.0050 0.5000 0 94.8 85 115

Sample ID: N010581-046A-DUP	SampType: DUP	TestCode: 6010_W	Units: mg/L	Prep Date: 7/17/2013	RunNo: 89673						
Client ID: ZZZZZ	Batch ID: 43453	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 7/19/2013	SeqNo: 1618002						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead ND 0.0050 0 0 20

Sample ID: N010581-046A-MS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 7/17/2013	RunNo: 89673						
Client ID: ZZZZZ	Batch ID: 43453	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 7/19/2013	SeqNo: 1618005						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

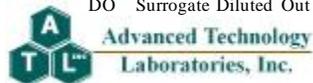
Lead 0.476 0.0050 0.5000 0 95.3 75 125

Sample ID: N010581-046A-MSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 7/17/2013	RunNo: 89673						
Client ID: ZZZZZ	Batch ID: 43453	TestNo: EPA 6010B	EPA 3010A	Analysis Date: 7/19/2013	SeqNo: 1618006						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 0.478 0.0050 0.5000 0 95.7 75 125 0.4764 0.397 20

Qualifiers:

- | | | |
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Work Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49

ANALYTICAL QC SUMMARY REPORT

TestCode: 7471_S

Sample ID: LCS-43424	SampType: LCS	TestCode: 7471_S	Units: mg/Kg	Prep Date: 7/15/2013	RunNo: 89581						
Client ID: LCSS	Batch ID: 43424	TestNo: EPA 7471A	EPA 7471	Analysis Date: 7/15/2013	SeqNo: 1612602						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.380	0.10	0.4209	0	90.2	80	120				

Sample ID: MB1-43424	SampType: MBLK	TestCode: 7471_S	Units: mg/Kg	Prep Date: 7/15/2013	RunNo: 89581						
Client ID: PBS	Batch ID: 43424	TestNo: EPA 7471A	EPA 7471	Analysis Date: 7/15/2013	SeqNo: 1612604						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.10									

Sample ID: MB2-43424	SampType: MBLK	TestCode: 7471_S	Units: mg/Kg	Prep Date: 7/15/2013	RunNo: 89581						
Client ID: PBS	Batch ID: 43424	TestNo: EPA 7471A	EPA 7471	Analysis Date: 7/15/2013	SeqNo: 1612606						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.10									

Sample ID: N010581-001A-DUP	SampType: DUP	TestCode: 7471_S	Units: mg/Kg	Prep Date: 7/15/2013	RunNo: 89581						
Client ID: ZZZZZ	Batch ID: 43424	TestNo: EPA 7471A	EPA 7471	Analysis Date: 7/15/2013	SeqNo: 1612609						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.063	0.10						0.1020	0	20	

Sample ID: N010581-001A-MS	SampType: MS	TestCode: 7471_S	Units: mg/Kg	Prep Date: 7/15/2013	RunNo: 89581						
Client ID: ZZZZZ	Batch ID: 43424	TestNo: EPA 7471A	EPA 7471	Analysis Date: 7/15/2013	SeqNo: 1612610						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.447	0.10	0.4223	0.1020	81.6	75	125				

Qualifiers:

- | | | |
|---------------------------------------------------|----------------------------------------|----------------------------------------------------------------|
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Project: I 580 STORM REPAIR, E8560-02-49

ANALYTICAL QC SUMMARY REPORT

TestCode: 7471_S

Sample ID: N010581-001A-MSD	SampType: MSD	TestCode: 7471_S	Units: mg/Kg	Prep Date: 7/15/2013	RunNo: 89581						
Client ID: ZZZZZZ	Batch ID: 43424	TestNo: EPA 7471A EPA 7471		Analysis Date: 7/15/2013	SeqNo: 1612611						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.474	0.098	0.4099	0.1020	90.9	75	125	0.4467	6.03	20	

Sample ID: N010581-042A-DUP	SampType: DUP	TestCode: 7471_S	Units: mg/Kg	Prep Date: 7/15/2013	RunNo: 89581						
Client ID: ZZZZZZ	Batch ID: 43424	TestNo: EPA 7471A EPA 7471		Analysis Date: 7/15/2013	SeqNo: 1612621						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.10						0	0	20	

Sample ID: N010581-042A-MS	SampType: MS	TestCode: 7471_S	Units: mg/Kg	Prep Date: 7/15/2013	RunNo: 89581						
Client ID: ZZZZZZ	Batch ID: 43424	TestNo: EPA 7471A EPA 7471		Analysis Date: 7/15/2013	SeqNo: 1612622						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.436	0.10	0.4209	0	103	75	125				

Qualifiers:

- | | | |
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ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_DM LL

Sample ID: LCS-43434	SampType: LCS	TestCode: 8015_S_DM L	Units: mg/Kg	Prep Date: 7/15/2013	RunNo: 89578						
Client ID: LCSS	Batch ID: 43434	TestNo: EPA 8015B EPA 3550B		Analysis Date: 7/15/2013	SeqNo: 1612479						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	71.795	1.0	83.30	0	86.2	52	126				
Surr: p-Terphenyl	6.933		6.670		104	59	127				

Sample ID: MB1-43434	SampType: MBLK	TestCode: 8015_S_DM L	Units: mg/Kg	Prep Date: 7/15/2013	RunNo: 89578						
Client ID: PBS	Batch ID: 43434	TestNo: EPA 8015B EPA 3550B		Analysis Date: 7/15/2013	SeqNo: 1612480						
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	6.506		6.670		97.5	59	127				

Sample ID: N010581-005A-DUP	SampType: DUP	TestCode: 8015_S_DM L	Units: mg/Kg	Prep Date: 7/15/2013	RunNo: 89578						
Client ID: ZZZZZ	Batch ID: 43434	TestNo: EPA 8015B EPA 3550B		Analysis Date: 7/15/2013	SeqNo: 1612483						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
ORO	735.839	10						142.6	135	20	R

Sample ID: MB2-43434	SampType: MBLK	TestCode: 8015_S_DM L	Units: mg/Kg	Prep Date: 7/15/2013	RunNo: 89578						
Client ID: PBS	Batch ID: 43434	TestNo: EPA 8015B EPA 3550B		Analysis Date: 7/15/2013	SeqNo: 1612492						
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	7.983		6.670		120	59	127				

Sample ID: N010581-031A-DUP	SampType: DUP	TestCode: 8015_S_DM L	Units: mg/Kg	Prep Date: 7/15/2013	RunNo: 89578						
Client ID: ZZZZZ	Batch ID: 43434	TestNo: EPA 8015B EPA 3550B		Analysis Date: 7/15/2013	SeqNo: 1612494						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

- | | | |
|---------------------------------------------------|----------------------------------------|----------------------------------------------------------------|
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Work Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_DM LL

Sample ID: N010581-031A-DUP		SampType: DUP		TestCode: 8015_S_DM L Units: mg/Kg				Prep Date: 7/15/2013		RunNo: 89578	
Client ID: ZZZZZ		Batch ID: 43434		TestNo: EPA 8015B EPA 3550B		Analysis Date: 7/15/2013		SeqNo: 1612494			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	87.240	1.0						92.28	5.61	20	
ORO	239.650	1.0						260.5	8.33	20	
Surr: p-Terphenyl	7.024		6.679		105	59	127		0		

Sample ID: N010581-005A-DUP		SampType: DUP		TestCode: 8015_S_DM L Units: mg/Kg				Prep Date: 7/15/2013		RunNo: 89578	
Client ID: ZZZZZ		Batch ID: 43434		TestNo: EPA 8015B EPA 3550B		Analysis Date: 7/16/2013		SeqNo: 1612499			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	199.309	1.0						39.86	133	20	R
Surr: p-Terphenyl	4.776		6.657		71.7	59	127		0		

Sample ID: N010581-014A-MS		SampType: MS		TestCode: 8015_S_DM L Units: mg/Kg				Prep Date: 7/15/2013		RunNo: 89578	
Client ID: ZZZZZ		Batch ID: 43434		TestNo: EPA 8015B EPA 3550B		Analysis Date: 7/16/2013		SeqNo: 1612500			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	92.962	1.0	83.27	23.74	83.1	13	129				
Surr: p-Terphenyl	6.545		6.668		98.2	59	127				

Sample ID: N010581-014A-MSD		SampType: MSD		TestCode: 8015_S_DM L Units: mg/Kg				Prep Date: 7/15/2013		RunNo: 89578	
Client ID: ZZZZZ		Batch ID: 43434		TestNo: EPA 8015B EPA 3550B		Analysis Date: 7/16/2013		SeqNo: 1612501			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	93.970	1.0	83.36	23.74	84.2	13	129	92.96	1.08	20	
Surr: p-Terphenyl	6.738		6.674		101	59	127		0		

Sample ID: N010581-044A-MS		SampType: MS		TestCode: 8015_S_DM L Units: mg/Kg				Prep Date: 7/15/2013		RunNo: 89578	
Client ID: ZZZZZ		Batch ID: 43434		TestNo: EPA 8015B EPA 3550B		Analysis Date: 7/16/2013		SeqNo: 1612502			
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 |
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ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_S_DM LL

Sample ID: N010581-044A-MS	SampType: MS	TestCode: 8015_S_DM L	Units: mg/Kg	Prep Date: 7/15/2013	RunNo: 89578						
Client ID: ZZZZZ	Batch ID: 43434	TestNo: EPA 8015B EPA 3550B		Analysis Date: 7/16/2013	SeqNo: 1612502						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	82.271	1.0	83.13	2.482	96.0	13	129				
Surr: p-Terphenyl	7.896		6.657		119	59	127				

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, Inc.**

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_S

Sample ID: E130716LCS	SampType: LCS	TestCode: 8015GAS_S	Units: mg/Kg	Prep Date:	RunNo: 89597						
Client ID: LCSS	Batch ID: E13VS074	TestNo: EPA 8015B		Analysis Date: 7/16/2013	SeqNo: 1613476						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	5.126	1.0	5.000	0	103	77	122				
Surr: Chlorobenzene - d5	112.520		100.0		113	51	136				

Sample ID: E130716MB1	SampType: MBLK	TestCode: 8015GAS_S	Units: mg/Kg	Prep Date:	RunNo: 89597						
Client ID: PBS	Batch ID: E13VS074	TestNo: EPA 8015B		Analysis Date: 7/16/2013	SeqNo: 1613477						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.073	1.0									
Surr: Chlorobenzene - d5	116.421		100.0		116	51	136				

Sample ID: N010582-041ADUP	SampType: DUP	TestCode: 8015GAS_S	Units: mg/Kg	Prep Date:	RunNo: 89597						
Client ID: ZZZZZ	Batch ID: E13VS074	TestNo: EPA 8015B		Analysis Date: 7/16/2013	SeqNo: 1613480						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.052	1.0						0.06200	0	20	
Surr: Chlorobenzene - d5	117.207		100.0		117	51	136		0		

Sample ID: N010581-045AMS	SampType: MS	TestCode: 8015GAS_S	Units: mg/Kg	Prep Date:	RunNo: 89597						
Client ID: ZZZZZ	Batch ID: E13VS074	TestNo: EPA 8015B		Analysis Date: 7/16/2013	SeqNo: 1613481						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.812	1.0	5.000	0.05100	95.2	41	132				
Surr: Chlorobenzene - d5	97.336		100.0		97.3	51	136				

Sample ID: N010581-045AMSD	SampType: MSD	TestCode: 8015GAS_S	Units: mg/Kg	Prep Date:	RunNo: 89597						
Client ID: ZZZZZ	Batch ID: E13VS074	TestNo: EPA 8015B		Analysis Date: 7/16/2013	SeqNo: 1613482						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	5.017	1.0	5.000	0.05100	99.3	41	132	4.812	4.17	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, Inc.**

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_S

Sample ID: N010581-045AMSD	SampType: MSD	TestCode: 8015GAS_S	Units: mg/Kg	Prep Date:	RunNo: 89597						
Client ID: ZZZZZ	Batch ID: E13VS074	TestNo: EPA 8015B		Analysis Date: 7/16/2013	SeqNo: 1613482						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Chlorobenzene - d5	104.586		100.0		105	51	136		0		

Sample ID: E130716MB2	SampType: MBLK	TestCode: 8015GAS_S	Units: mg/Kg	Prep Date:	RunNo: 89597						
Client ID: PBS	Batch ID: E13VS074	TestNo: EPA 8015B		Analysis Date: 7/16/2013	SeqNo: 1613491						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.051	1.0									
Surr: Chlorobenzene - d5	119.789		100.0		120	51	136				

Sample ID: N010592-002ADUP	SampType: DUP	TestCode: 8015GAS_S	Units: mg/Kg	Prep Date:	RunNo: 89597						
Client ID: ZZZZZ	Batch ID: E13VS074	TestNo: EPA 8015B		Analysis Date: 7/16/2013	SeqNo: 1613494						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	0.054	1.0						0.05500	0	20	
Surr: Chlorobenzene - d5	108.747		100.0		109	51	136		0		

Sample ID: N010592-005AMS	SampType: MS	TestCode: 8015GAS_S	Units: mg/Kg	Prep Date:	RunNo: 89597						
Client ID: ZZZZZ	Batch ID: E13VS074	TestNo: EPA 8015B		Analysis Date: 7/16/2013	SeqNo: 1613496						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
GRO	4.665	1.0	5.000	0.05900	92.1	41	132				
Surr: Chlorobenzene - d5	96.305		100.0		96.3	51	136				

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, Inc.**

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260SOIL

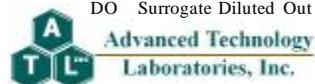
Sample ID: D130715LCS	SampType: LCS	TestCode: 8260SOIL	Units: µg/Kg	Prep Date:	RunNo: 89569						
Client ID: LCSS	Batch ID: D13VS043	TestNo: EPA 8260B		Analysis Date: 7/15/2013	SeqNo: 1612967						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	41.840	5.0	40.00	0	105	80	120				
Ethylbenzene	38.300	5.0	40.00	0	95.8	80	120				
m,p-Xylene	78.560	10	80.00	0	98.2	80	121				
o-Xylene	40.380	5.0	40.00	0	101	80	120				
Toluene	40.680	5.0	40.00	0	102	80	120				
Surr: 1,2-Dichloroethane-d4	46.080		50.00		92.2	63	139				
Surr: 4-Bromofluorobenzene	48.930		50.00		97.9	75	124				
Surr: Dibromofluoromethane	50.480		50.00		101	70	133				
Surr: Toluene-d8	49.600		50.00		99.2	80	123				

Sample ID: D130715MB3	SampType: MBLK	TestCode: 8260SOIL	Units: µg/Kg	Prep Date:	RunNo: 89569						
Client ID: PBS	Batch ID: D13VS043	TestNo: EPA 8260B		Analysis Date: 7/15/2013	SeqNo: 1612970						
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									
o-Xylene	ND	5.0									
Toluene	ND	5.0									
Surr: 1,2-Dichloroethane-d4	40.070		50.00		80.1	63	139				
Surr: 4-Bromofluorobenzene	41.060		50.00		82.1	75	124				
Surr: Dibromofluoromethane	43.680		50.00		87.4	70	133				
Surr: Toluene-d8	45.640		50.00		91.3	80	123				

Sample ID: N010581-009ADUP	SampType: DUP	TestCode: 8260SOIL	Units: µg/Kg	Prep Date:	RunNo: 89569						
Client ID: ZZZZZ	Batch ID: D13VS043	TestNo: EPA 8260B		Analysis Date: 7/15/2013	SeqNo: 1612972						
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	

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 | |



3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260SOIL

Sample ID: N010581-009ADUP		SampType: DUP		TestCode: 8260SOIL		Units: µg/Kg		Prep Date:		RunNo: 89569	
Client ID: ZZZZZ		Batch ID: D13VS043		TestNo: EPA 8260B		Analysis Date: 7/15/2013				SeqNo: 1612972	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
m,p-Xylene	ND	10						0	0	20	
o-Xylene	ND	5.0						0	0	20	
Toluene	ND	5.0						0	0	20	
Surr: 1,2-Dichloroethane-d4	39.930		50.00		79.9	63	139		0		
Surr: 4-Bromofluorobenzene	40.440		50.00		80.9	75	124		0		
Surr: Dibromofluoromethane	42.760		50.00		85.5	70	133		0		
Surr: Toluene-d8	43.890		50.00		87.8	80	123		0		

Sample ID: N010581-017AMS		SampType: MS		TestCode: 8260SOIL		Units: µg/Kg		Prep Date:		RunNo: 89569	
Client ID: ZZZZZ		Batch ID: D13VS043		TestNo: EPA 8260B		Analysis Date: 7/15/2013				SeqNo: 1612974	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	39.590	5.0	40.00	0	99.0	72	122				
Ethylbenzene	36.220	5.0	40.00	0	90.6	65	120				
m,p-Xylene	74.530	10	80.00	0	93.2	65	120				
o-Xylene	37.730	5.0	40.00	0	94.3	67	118				
Toluene	38.030	5.0	40.00	0	95.1	68	120				
Surr: 1,2-Dichloroethane-d4	44.510		50.00		89.0	63	139				
Surr: 4-Bromofluorobenzene	45.680		50.00		91.4	75	124				
Surr: Dibromofluoromethane	48.890		50.00		97.8	70	133				
Surr: Toluene-d8	47.000		50.00		94.0	80	123				

Sample ID: N010581-017AMSD		SampType: MSD		TestCode: 8260SOIL		Units: µg/Kg		Prep Date:		RunNo: 89569	
Client ID: ZZZZZ		Batch ID: D13VS043		TestNo: EPA 8260B		Analysis Date: 7/15/2013				SeqNo: 1612975	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	40.460	5.0	40.00	0	101	72	122	39.59	2.17	20	
Ethylbenzene	37.640	5.0	40.00	0	94.1	65	120	36.22	3.85	20	
m,p-Xylene	77.130	10	80.00	0	96.4	65	120	74.53	3.43	20	
o-Xylene	39.000	5.0	40.00	0	97.5	67	118	37.73	3.31	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, Inc.**

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260SOIL

Sample ID: N010581-017AMSD	SampType: MSD	TestCode: 8260SOIL	Units: µg/Kg	Prep Date:	RunNo: 89569						
Client ID: ZZZZZ	Batch ID: D13VS043	TestNo: EPA 8260B		Analysis Date: 7/15/2013	SeqNo: 1612975						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene	38.740	5.0	40.00	0	96.9	68	120	38.03	1.85	20	
Surr: 1,2-Dichloroethane-d4	41.480		50.00		83.0	63	139		0		
Surr: 4-Bromofluorobenzene	44.100		50.00		88.2	75	124		0		
Surr: Dibromofluoromethane	44.300		50.00		88.6	70	133		0		
Surr: Toluene-d8	43.870		50.00		87.7	80	123		0		

Qualifiers:

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



**Advanced Technology
Laboratories, Inc.**

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49

ANALYTICAL QC SUMMARY REPORT

TestCode: 9045_S

Sample ID: N010581-021ADUP	SampType: DUP	TestCode: 9045_S	Units: pH Units	Prep Date:	RunNo: 89579						
Client ID: ZZZZZ	Batch ID: R89579	TestNo: EPA 9045C		Analysis Date: 7/15/2013	SeqNo: 1612505						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.830	0.10						7.850	0.255	20	
Temp. at time of pH Analysis	25.000	0						25.00	0	0	

Qualifiers:

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



**Advanced Technology
Laboratories, Inc.**

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CHAIN OF CUSTODY RECORD

ADVANCED TECHNOLOGY LABORATORIES
 3275 Walnut Ave., Signal Hill, CA 90755
 Tel: (562) 989-4045 • Fax: (562) 989-4040

FOR LABORATORY USE ONLY:

Method of Transport: Client ATL OnTrac
 FedEx GSO Other: _____

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

1. CHILLED 2. HEADSPACE (VOA) 3. CONTAINER INTACT 4. CUSTODY SEAL 5. # OF SPLS MATCH COC 6. PRESERVED

Client: **Geocon Consultants, Inc.** Address: 6671 Brisa Street, City: Livemore, State: CA, Zip Code: 94550, TEL: (925) 371-5900, FAX: (925) 371-5915

Attn: **L. DAY, L. BEADLE** Project #: **E5560-02-49** Sampler: **C. McFARRETT, L. CARAVARO** (Signature) **Charles McFarrett**

Relinquished by: (Signature and Printed Name) **Charles McFarrett** Date: **7-12-13** Time: **1700**

Relinquished by: (Signature and Printed Name) _____ Date: _____ Time: _____

Relinquished by: (Signature and Printed Name) _____ Date: _____ Time: _____

I hereby authorize ATL to perform the work indicated below:

Project Mgr /Submitter: **AM** Date: **7-12-13**

Send Report To: Attn: **A/A** Co: _____ Addr: _____ City: _____ State: _____ Zip: _____

Bill To: Attn: **A/A** Co: _____ Addr: _____ City: _____ State: _____ Zip: _____

Received by: (Signature and Printed Name) _____ Date: _____ Time: _____

Received by: (Signature and Printed Name) _____ Date: _____ Time: _____

Received by: (Signature and Printed Name) _____ Date: _____ Time: _____

Special Instructions/Comments: **GAS PACKAGE**

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)

LAB USE ONLY: Batch # / Lab No.	Sample Description	Sample I.D. / Location	Date	Time	SPECIFY APPROPRIATE MATRIX		PRESERVATION	QA/QC
					Container(s)	Type		
N010561-1	B1-0		7-12-13	0910				
2	-1			0921				
3	-2			40				
4	-3			46				
5	B2-0			1020				
6	-1			25				
7	-2			26				
8	-3			30				
9	-4			35				
10	-5			40				

Circle or Add Analysis(es) Requested: **8015B (DRO) + MO**, **8015B (GRO) / 8021 (BTEX)**, **8010B (Total Metals)**, **8270C (BNA)**, **8280B (Volatiles)**, **8082 (PCB)**, **8091A (Pesticides)**

Container Types: T=Tube V=VOA L=Liter

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=HNO₃ S=H₂SO₄ C=-4°C Z=Zn(AC)₂ O=NaOH T=Na₂S₂O₃

CHAIN OF CUSTODY RECORD

ADVANCED TECHNOLOGY LABORATORIES
 3275 Walnut Ave., Signal Hill, CA 90755
 Tel: (562) 989-4045 • Fax: (562) 989-4040

FOR LABORATORY USE ONLY:
 Sample Condition Upon Receipt
 1. CHILLED 13.20°C Y N 4. CUSTODY SEAL Y N
 2. HEADSPACE (VOA) Y N 5. # OF SPLS MATCH COC Y N
 3. CONTAINER INTACT Y N 6. PRESERVED Y N

P.O.#: _____ Quote #: _____
 Logged By: _____ Date: _____
 NOTE: Please include your Quote No. to ensure proper pricing of your project.

Client: **Geocon Consultants, Inc.** Address: 6671 Brisa Street
 City: Livemore State: CA Zip Code: 94550
 Attn: **R. DAY, L. BEADLE** Project #: **ES860-02-49** Sampler: **C.M., L.C.**
 Project Name: **F580 STORM REPAIR** Date: **7-12-13** Time: **1700** Received by: **CHRIS MERRETT** Date: **7/13/13** Time: **0815**

Relinquished by: (Signature and Printed Name) _____ Date: _____
 Relinquished by: (Signature and Printed Name) _____ Date: _____
 Relinquished by: (Signature and Printed Name) _____ Date: _____

I hereby authorize ATL to perform the work indicated below:
 Project Mgr /Submitter: **CM** Date: **7-12-13**
 Print Name: **CM** Signature: _____
 Attn: **A/A** Send Report To: _____
 Co: **A/A** City: _____ State: _____ Zip: _____
 Addr: _____

Special Instructions/Comments:
GAS PACKAGE

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)

LAB USE ONLY: Batch #:	Lab No.	Sample I.D. / Location	Date	Time	Sample Description
N010581-11	B3-0		7-12-13	10 9	
12	G-1			122	
13	G-2			127	
14	B4-0			1130	
15	G-1			135	
16	G-2			40	
17	G-3			145	
18	G-4			650	
19	B5-0			1334	
20	11-1			1130	

Circle or Add Analysis(es) Requested:
 8091A (Pesticides) 8092 (PCB) 8290B (Nitrates) 8270C (BNA) 8010B (Total Metal) 8015B (GRO) / 8021 (BTEX) 8015B (DRO) / 8021 (BTEX) TITLE 22 / CAM 17 (6010 / 7000) TITM 22 / CAM 17 (6010 / 7000) TITM 22 / CAM 17 (6010 / 7000) TITM 22 / CAM 17 (6010 / 7000)

Container(s) Type: Top

RESERVATION: _____

GA/QC: RTNE CT Legal SWRCB Logcode OTHER: _____

Preservatives: H=Hcl N=HNO₃ S=H₂SO₄ C=4°C
 H=Hcl N=HNO₃ S=H₂SO₄ C=4°C
 Z=Zn(Ac)₂ O=NaOH T=Na₂S₂O₃

Container Types: T=Tube V=VOA L=Liter P=Plint J=Jar B=Tecljar G=Glass P=Plastic M=Metal
 TAT: A= Overnight ≤ 24 hrs B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

• TAT starts 8 a.m. following day if samples received after 5 p.m.

CHAIN OF CUSTODY RECORD

ADVANCED TECHNOLOGY LABORATORIES
 3275 Walnut Ave., Signal Hill, CA 90755
 Tel: (562) 989-4045 • Fax: (562) 989-4040

P.O.#: _____ Quote #: _____
 Logged By: _____ Date: _____

NOTE: Please include your Quote No. to ensure proper pricing of your project.

Client: **Geocon Consultants, Inc.**
 Attn: **R. DAY, L. BEAULIE**
 Project Name: **7-550 Storm Repair** Project #: **E5560-02-49** Sampler: **C.M., LL.**

Address: **6671 Brisa Street** City: **Livermore** State: **CA** Zip Code: **94550**
 TEL: (925) 371-5900 FAX: (925) 371-5915

Method of Transport: Client ATL FedEx OnTrac GSO Other: _____

Sample Condition Upon Receipt: 1. CHILLED 2. 20°C 3. Y 4. CUSTODY SEAL Y N 5. # OF SPLS MATCH COC Y N 6. CONTAINER INTACT Y N 7. PRESERVED Y N

Relinquished by: (Signature and Printed Name) **CHRIS MEARITT** Date: **7-12-13** Time: **1700**
 Received by: (Signature and Printed Name) **CHRIS MEARITT** Date: **7-12-13** Time: **0915**

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: _____

Special Instructions/Comments: **GAS PACKAGE**

Bill To: _____
 Attn: **A/A**
 Co: _____
 Addr: _____
 City: _____ State: _____ Zip: _____

Send Report To: _____
 Attn: **A/A**
 Co: _____
 Addr: _____
 City: _____ State: _____ Zip: _____

Circle or Add Analysis(es) Requested: **PH, EPA, GHS, TITLE 22 / CAM 17 (6010 / 7000), 8015B (DRO) / 8021 (BTEX), 8010B (Total Metal), 8270C (BNA), 8280B (Nitrates), 8082 (PCB), 8081A (Pesticides)**

LAB USE ONLY:

LAB Batch #:	Lab No.	Sample I.D. / Location	Date	Time
NO 10581-21	B5-2		7-12-13	1344
22	B5-3			147
23	-4			53
24	-5			1400
25	-6.5			1105
26	B6-0			1335
27	-1			140
28	-2			145
29	-3			150
30	-4			155

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)

FOR LABORATORY USE ONLY:

Method of Transport: Client ATL FedEx OnTrac GSO Other: _____

Sample Condition Upon Receipt: 1. CHILLED 2. 20°C 3. Y 4. CUSTODY SEAL Y N 5. # OF SPLS MATCH COC Y N 6. CONTAINER INTACT Y N 7. PRESERVED Y N

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: _____

Special Instructions/Comments: **GAS PACKAGE**

Bill To: _____
 Attn: **A/A**
 Co: _____
 Addr: _____
 City: _____ State: _____ Zip: _____

Specify Appropriate Matrix

Matrix	Container(s)	TAT #	Type	REMARKS
SEDIMENT				
SOIL				
DRINKING WATER				
GROUND WATER				
WASTEWATER				
STORMWATER				
AQUEOUS				

QA/QC: RTNE CT Legal SWRCB Logcode OTHER

Preservatives: H=Hcl N=HNO₃ S=H₂SO₄ C=4°C Z=Zn(Ac)₂ O=NaOH T=Na₂S₂O₃

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

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

• TAT starts 8 a.m. following day if samples received after 5 p.m.

ADVANCED TECHNOLOGY LABORATORIES
 3275 Walnut Ave., Signal Hill, CA 90755
 Tel: (562) 989-4045 • Fax: (562) 989-4040

FOR LABORATORY USE ONLY:

Method of Transport: Client ATL OnTrac FedEx GSO Other: _____

Sample Condition Upon Receipt: 1. CHILLED 12.26°C Y N 4. CUSTODY SEAL Y N 2. HEADSPACE (VOA) Y N 5. # OF SPLS MATCH COC Y N 3. CONTAINER INTACT Y N 6. PRESERVED Y N

P.O.#: _____ Quote #: _____
 Logged By: _____ Date: _____

NOTE: Please include your Quote No. to ensure proper pricing of your project.

Geocon Consultants, Inc.
 Address: 6671 Brisa Street, City: Livmore, State: CA, Zip Code: 94550
 TEL: (925) 371-5900 FAX: (925) 371-5915

Attn: R. DAY, L. BEADLE Project #: E5560-02-49 Sampler: OM, LC
 Relinquished by: (Signature and Printed Name) CHRIS MERRITT Date: 7-12-13 Time: 1700
 Relinquished by: (Signature and Printed Name) CHRIS MERRITT Date: 7-12-13 Time: 1700
 Relinquished by: (Signature and Printed Name) _____ Date: _____ Time: _____

Special Instructions/Comments: GAS PACKAGE

Bill To: _____
 Attn: AJA
 Co: AJA
 Addr: _____
 City: _____ State: _____ Zip: _____

Send Report To: _____
 Attn: AJA
 Co: _____
 Addr: _____
 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)

LAB USE ONLY: Batch #:	Lab No.	Sample I.D. / Location	Date	Time	SPECIFY APPROPRIATE MATRIX		Container(s)	Type	TAT #	PRESERVATION	REMARKS
					SOIL	SEDIMENT					
NO10581-41	42	B9-0	7-12-13	0920	X	X		1	1040	C	
	43	6-1		30	X	X					
	44	6-2		35	X	X					
	45	6-3		40	X	X					
	46	6-4		45	X	X					
		EQUIP BLANK	7-12-13	1530							

Circle or Add Analysis(es) Requested: 8018 (Total Metal), 8015B (DRO) / 8021 (TEX), 8015B (GRO) / 8021 (TEX), 8270C (BNA), 8280B (Nottles), 8082 (PCB), 8081A (Pesticides)

Preservatives: H=Hcl N=HNO₃ S=H₂SO₄ C=4°C
 Z=Zn(AC)₂ O=NaOH T=Na₂S₂O₃

TAT: A= Overnight ≤ 24 hrs B= Next workday C= 2 Workdays D= 3 Workdays E= 7 Workdays Routine

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

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 7/13/2013 Workorder: N010581
 Rep sample Temp (Deg C): 13.20 IR Gun ID: 1
 Temp Blank: Yes No
 Carrier name: Golden State Overnight
 Last 4 digits of Tracking No.: 2996 Packing Material Used: None
 Cooling process: Ice Ice Pack Dry Ice Other None

Sample Receipt Checklist

- | | | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------|----------------------------------------|-------------------------------------------------|
| 1. Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| 2. Custody seals intact, signed, dated on shipping container/cooler? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 3. Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 4. Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 5. Sampler's name present in COC? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 6. Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 7. Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 8. Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 9. Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 10. Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 11. All samples received within holding time? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 12. Temperature of rep sample or Temp Blank within acceptable limit? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | NA <input type="checkbox"/> |
| 13. Water - VOA vials have zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |
| 14. Water - pH acceptable upon receipt?
Example: pH > 12 for (CN,S); pH<2 for Metals | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | NA <input type="checkbox"/> |
| 15. Did the bottle labels indicate correct preservatives used? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 16. Were there Non-Conformance issues at login?
Was Client notified? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |
| | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |

Comments: Temperature is outside acceptable limit. pH of equipment blank was adjusted to <2.0.

Checklist Completed By QBM for: TMC 7/15/13

Reviewed By: [Signature]

	< WebShip > > > > 800-322-5555 www.gso.com	
Ship From: GEOCON - LIVERMORE OFFICE GEOCON, INC. 6671 BRISA STREET LIVERMORE, CA 94550	Tracking #: 522262996 	SDS
Ship To: SAMPLE RECEIVING ADVANCED TECHNOLOGY LABS - LAS VEGAS 3151 W. POST ROAD LAS VEGAS, NV 89118	LVS LAS VEGAS	
COD: \$0.00	D89103A  13992639	
Reference: E8560-02-49		
Delivery Instructions:		
Signature Type: SIGNATURE REQUIRED	<small>Print Date : 07/12/13 16:49 PM</small>	

Package 1 of 1

 Print All

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.

STEP 2 - Fold this page in half.

STEP 3 - Securely attach this label to your package, do not cover the barcode.

STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

ADDITIONAL OPTIONS:

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section. Our liability for loss or damage to any package is limited to your actual damages or \$100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is \$500. For other shipments the highest declared value is \$10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is \$500. Items of "extraordinary value" include, but not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

July 29, 2013

Rick Day
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

CA-ELAP No.:2676
NV Cert. No.:NV-009222007A

Workorder No.: N010581

RE: I 580 STORM REPAIR, E8560-02-49

Attention: Rick Day

Enclosed are the results for sample(s) received on July 13, 2013 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

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

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,



Jose Tenorio Jr.
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 - Las Vegas.



**Advanced Technology
Laboratories, Inc.**

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Advanced Technology Laboratories, Inc.

ANALYTICAL RESULTS

Print Date: 29-Jul-13

CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B7-0
Lab Order:	N010581	Collection Date:	7/12/2013 12:48:00 PM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-031		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B			EPA 6010B		
RunID: ICP2_130725B	QC Batch: 43521			PrepDate: 7/25/2013		Analyst: CEI
Lead	510	1.0		mg/Kg	1	7/25/2013 02:16 PM

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



**Advanced Technology
Laboratories, Inc.**

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: MB-43521	SampType: MBLK	TestCode: 6010_S	Units: mg/Kg	Prep Date: 7/25/2013	RunNo: 89722						
Client ID: PBS	Batch ID: 43521	TestNo: EPA 6010B EPA 3050B		Analysis Date: 7/25/2013	SeqNo: 1619622						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead ND 1.0

Sample ID: LCS-43521	SampType: LCS	TestCode: 6010_S	Units: mg/Kg	Prep Date: 7/25/2013	RunNo: 89722						
Client ID: LCSS	Batch ID: 43521	TestNo: EPA 6010B EPA 3050B		Analysis Date: 7/25/2013	SeqNo: 1619623						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 45.412 1.0 50.00 0 90.8 80 120

Sample ID: N010581-031A-DUP	SampType: DUP	TestCode: 6010_S	Units: mg/Kg	Prep Date: 7/25/2013	RunNo: 89722						
Client ID: ZZZZZZ	Batch ID: 43521	TestNo: EPA 6010B EPA 3050B		Analysis Date: 7/25/2013	SeqNo: 1619627						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 535.079 0.99 513.8 4.06 20

Sample ID: N010581-031A-MS	SampType: MS	TestCode: 6010_S	Units: mg/Kg	Prep Date: 7/25/2013	RunNo: 89722						
Client ID: ZZZZZZ	Batch ID: 43521	TestNo: EPA 6010B EPA 3050B		Analysis Date: 7/25/2013	SeqNo: 1619628						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 515.478 0.99 49.60 513.8 3.45 75 125 S

Sample ID: N010581-031A-MSD	SampType: MSD	TestCode: 6010_S	Units: mg/Kg	Prep Date: 7/25/2013	RunNo: 89722						
Client ID: ZZZZZZ	Batch ID: 43521	TestNo: EPA 6010B EPA 3050B		Analysis Date: 7/25/2013	SeqNo: 1619629						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 554.847 1.0 50.20 513.8 81.8 75 125 515.5 7.36 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, Inc.**

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

July 31, 2013

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

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

CA-ELAP No.:2676
NV Cert. No.:NV-009222007A

Workorder No.: N010581

RE: I 580 STORM REPAIR, E8560-02-49

Attention: Rick Day

Enclosed are the results for sample(s) received on July 13, 2013 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,



Jose Tenorio Jr.
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 - Las Vegas.



**Advanced Technology
Laboratories, Inc.**

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B1-0
Lab Order:	N010581	Collection Date:	7/12/2013 9:10:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-001A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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ICP METALS BY STLC

WET/ EPA 6010B

RunID: ICP2_130729A	QC Batch: R89753	PrepDate:	Analyst: CEI
Chromium	0.22	0.050	mg/L
			5
			7/29/2013 10:41 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		



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B2-0
Lab Order:	N010581	Collection Date:	7/12/2013 10:20:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-005A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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ICP METALS BY STLC

WET/ EPA 6010B

RunID: ICP2_130729A	QC Batch: R89753	PrepDate:	Analyst: CEI
Lead	4.6	0.050	mg/L
			5
			7/29/2013 12:11 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	



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B2-4
Lab Order:	N010581	Collection Date:	7/12/2013 10:35:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-009A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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ICP METALS BY STLC

WET/ EPA 6010B

RunID: ICP2_130729A	QC Batch: R89753	PrepDate:	Analyst: CEI
Chromium	0.25	0.050	mg/L
			5
			7/29/2013 10:53 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		



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B3-2
Lab Order:	N010581	Collection Date:	7/12/2013 11:27:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-013A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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ICP METALS BY STLC

WET/ EPA 6010B

RunID: ICP2_130729A	QC Batch: R89753	PrepDate:	Analyst: CEI
Chromium	0.25	0.050	mg/L
			5
			7/29/2013 10:57 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		



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B4-0
Lab Order:	N010581	Collection Date:	7/12/2013 11:30:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-014A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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ICP METALS BY STLC

WET/ EPA 6010B

RunID: ICP2_130729A	QC Batch: R89753	PrepDate:	Analyst: CEI
Lead	5.7	0.050	mg/L
			5
			7/29/2013 11:05 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		



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B4-4
Lab Order:	N010581	Collection Date:	7/12/2013 11:50:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-018A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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ICP METALS BY STLC

WET/ EPA 6010B

RunID: ICP2_130729A	QC Batch: R89753	PrepDate:	Analyst: CEI
Chromium	0.21	0.050	mg/L
			5
			7/29/2013 11:18 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	



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B5-0
Lab Order:	N010581	Collection Date:	7/12/2013 1:34:00 PM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-019A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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ICP METALS BY STLC

WET/ EPA 6010B

RunID: ICP2_130729A	QC Batch: R89753	PrepDate:	Analyst: CEI
Lead	8.1	0.050	mg/L
			5
			7/29/2013 11:23 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	



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B5-6.5
Lab Order:	N010581	Collection Date:	7/12/2013 2:05:00 PM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-025A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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ICP METALS BY STLC

WET/ EPA 6010B

RunID: ICP2_130729A	QC Batch: R89753	PrepDate:	Analyst: CEI
Chromium	0.20	0.050	mg/L
			5
			7/29/2013 11:28 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		



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B6-3
Lab Order:	N010581	Collection Date:	7/12/2013 1:50:00 PM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-029A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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ICP METALS BY STLC

WET/ EPA 6010B

RunID: ICP2_130729A	QC Batch: R89753	PrepDate:	Analyst: CEI
Chromium	0.22	0.050	mg/L
			5
			7/29/2013 11:32 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	



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B7-0
Lab Order:	N010581	Collection Date:	7/12/2013 12:48:00 PM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-031A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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ICP METALS BY STLC

WET/ EPA 6010B

RunID: ICP2_130729A	QC Batch: R89753	PrepDate:	Analyst: CEI
Lead	32	0.050 mg/L	5
			7/29/2013 11:36 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	



CLIENT: Geocon Consultants, Inc.

Client Sample ID: B7-2

Lab Order: N010581

Collection Date: 7/12/2013 12:57:00 PM

Project: I 580 STORM REPAIR, E8560-02-49

Matrix: SOIL

Lab ID: N010581-033A

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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ICP METALS BY STLC

WET/ EPA 6010B

RunID: ICP2_130729A

QC Batch: R89753

PrepDate:

Analyst: CEI

Chromium

0.27

0.050

mg/L

5

7/29/2013 11:41 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		



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B8-0
Lab Order:	N010581	Collection Date:	7/12/2013 12:10:00 PM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-034A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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ICP METALS BY STLC

WET/ EPA 6010B

RunID: ICP2_130729A	QC Batch: R89753	PrepDate:	Analyst: CEI
Lead	5.1	0.050	mg/L
			5
			7/29/2013 11:45 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		



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B8-5
Lab Order:	N010581	Collection Date:	7/12/2013 12:55:00 PM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-039A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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ICP METALS BY STLC

WET/ EPA 6010B

RunID: ICP2_130729A	QC Batch: R89753	PrepDate:	Analyst: CEI
Chromium	0.25	0.050	mg/L
			5
			7/29/2013 11:50 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		



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B9-1
Lab Order:	N010581	Collection Date:	7/12/2013 9:30:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-042A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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ICP METALS BY STLC

WET/ EPA 6010B

RunID: ICP2_130729A	QC Batch: R89753	PrepDate:	Analyst: CEI
Chromium	0.40	0.050	mg/L
			5
			7/29/2013 11:54 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		



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B9-2
Lab Order:	N010581	Collection Date:	7/12/2013 9:35:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-043A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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ICP METALS BY STLC

WET/ EPA 6010B

RunID: ICP2_130729A	QC Batch: R89753	PrepDate:	Analyst: CEI
Lead	ND	0.050 mg/L	5
			7/29/2013 11:58 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		



ANALYTICAL QC SUMMARY REPORT

CLIENT: Geocon Consultants, Inc.

Work Order: N010581

Project: I 580 STORM REPAIR, E8560-02-49

TestCode: 6010_ST

Sample ID: MB-R89753	SampType: MBLK	TestCode: 6010_ST	Units: mg/L	Prep Date:	RunNo: 89753						
Client ID: PBS	Batch ID: R89753	TestNo: WET/EPA 60		Analysis Date: 7/29/2013	SeqNo: 1620978						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	0.010									
Lead	ND	0.010									

Sample ID: LCS-R89753	SampType: LCS	TestCode: 6010_ST	Units: mg/L	Prep Date:	RunNo: 89753						
Client ID: LCSS	Batch ID: R89753	TestNo: WET/EPA 60		Analysis Date: 7/29/2013	SeqNo: 1620979						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.471	0.010	0.5000	0	94.1	85	115				
Lead	0.474	0.010	0.5000	0	94.8	85	115				

Sample ID: MB1-43515	SampType: MBLK	TestCode: 6010_ST	Units: mg/L	Prep Date:	RunNo: 89753						
Client ID: PBS	Batch ID: R89753	TestNo: WET/EPA 60		Analysis Date: 7/29/2013	SeqNo: 1620980						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.003	0.050									
Lead	ND	0.050									

Sample ID: MB2-43515	SampType: MBLK	TestCode: 6010_ST	Units: mg/L	Prep Date:	RunNo: 89753						
Client ID: PBS	Batch ID: R89753	TestNo: WET/EPA 60		Analysis Date: 7/29/2013	SeqNo: 1620981						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.003	0.050									
Lead	ND	0.050									

Sample ID: N010581-005A-DUP	SampType: DUP	TestCode: 6010_ST	Units: mg/L	Prep Date:	RunNo: 89753						
Client ID: ZZZZZZ	Batch ID: R89753	TestNo: WET/EPA 60		Analysis Date: 7/29/2013	SeqNo: 1621003						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.003	0.050									
Lead	ND	0.050									

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
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference



3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_ST

Sample ID: N010581-005A-DUP	SampType: DUP	TestCode: 6010_ST	Units: mg/L	Prep Date:	RunNo: 89753						
Client ID: ZZZZZZ	Batch ID: R89753	TestNo: WET/EPA 60		Analysis Date: 7/29/2013	SeqNo: 1621003						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.139	0.050						0.1516	8.77	20	
Lead	12.385	0.050						4.635	91.1	20	R

Sample ID: N010581-005A-MS	SampType: MS	TestCode: 6010_ST	Units: mg/L	Prep Date:	RunNo: 89753						
Client ID: ZZZZZZ	Batch ID: R89753	TestNo: WET/EPA 60		Analysis Date: 7/29/2013	SeqNo: 1621004						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2.573	0.050	2.500	0.1516	96.9	75	125				
Lead	6.984	0.050	2.500	4.635	94.0	75	125				

Sample ID: N010581-005A-MSD	SampType: MSD	TestCode: 6010_ST	Units: mg/L	Prep Date:	RunNo: 89753						
Client ID: ZZZZZZ	Batch ID: R89753	TestNo: WET/EPA 60		Analysis Date: 7/29/2013	SeqNo: 1621005						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	2.561	0.050	2.500	0.1516	96.4	75	125	2.573	0.452	20	
Lead	6.905	0.050	2.500	4.635	90.8	75	125	6.984	1.13	20	

Sample ID: N010581-033A-DUP	SampType: DUP	TestCode: 6010_ST	Units: mg/L	Prep Date:	RunNo: 89753						
Client ID: ZZZZZZ	Batch ID: R89753	TestNo: WET/EPA 60		Analysis Date: 7/29/2013	SeqNo: 1621006						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.357	0.050						0.2661	29.2	20	R
Lead	1.498	0.050						1.495	0.212	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- A **Advanced Technology Laboratories, Inc.**
- 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

Nancy Sibucan

From: Luann Beadle [beadle@geoconinc.com]
Sent: Wednesday, July 24, 2013 8:53 AM
To: Advanced Technology Labs, Inc.
Subject: Lab Order N010581

Hi ATL,

We had several samples with results $\geq 10XSTLC$. Could you please run WET analyses on the following samples for chromium and lead, as indicated on the chart below?

N010581-013A	B3-2	Chromium	110
N010581-018A	B4-4	Chromium	120
N010581-009A	B2-4	Chromium	140
N010581-025A	B5-6.5	Chromium	140
N010581-033A	B7-2	Chromium	140
N010581-039A	B8-5	Chromium	140
N010581-001A	B1-0	Chromium	150
N010581-029A	B6-3	Chromium	150
N010581-042A	B9-1	Chromium	170
N010581-014A	B4-0	Lead	51
N010581-005A	B2-0	Lead	54
N010581-034A	B8-0	Lead	67
N010581-019A	B5-0	Lead	83
N010581-043A	B9-2	Lead	120
N010581-031A	B7-0	Lead	460

Also, please re-homogenize and re-analyze sample B7-0. It is inconsistent with the remaining data.

All on a regular TAT.

Thank you,

Luann



Luann Beadle | Senior Staff Scientist
Geocon Consultants, Inc.

6671 Brisa Street, Livermore, CA 94550

Office: 925.371.5900, ext. 403 Direct: 925.961.5272 Mobile: 925.395.1669

beadle@geoconinc.com

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August 08, 2013

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

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

CA-ELAP No.:2676
NV Cert. No.:NV-009222007A

Workorder No.: N010581

RE: I 580 STORM REPAIR, E8560-02-49

Attention: Rick Day

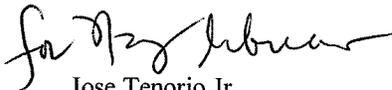
Enclosed are the results for sample(s) received on July 13, 2013 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,



Jose Tenorio Jr.
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 - Las Vegas.



**Advanced Technology
Laboratories, Inc.**

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Project: I 580 STORM REPAIR, E8560-02-49
Lab Order: N010581

CASE NARRATIVE

Analytical Comments for EPA 6010B_STDI:

RPD for Sample and Sample Duplicate is outside criteria ; however, the analytical batch was validated by the Laboratory Control Sample (LCS).



CLIENT: Geocon Consultants, Inc.
Lab Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49
Lab ID: N010581-014

Client Sample ID: B4-0
Collection Date: 7/12/2013 11:30:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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ICP METALS BY WET DI EXTRACTION

WET DI/ EPA 6010B

RunID: ICP2_130808A	QC Batch: R89895	PrepDate:	Analyst: admin
Lead	0.33	0.050 mg/L	1
			8/8/2013 11:12 AM

LEAD BY TCLP EXTRACTION

EPA 3010A

EPA 1311/ 6010B

RunID: ICP2_130806C	QC Batch: 43607	PrepDate: 8/6/2013	Analyst: CEI
Lead	ND	0.25 mg/L	1
			8/6/2013 06:14 PM

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



CLIENT: Geocon Consultants, Inc.
Lab Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49
Lab ID: N010581-019

Client Sample ID: B5-0
Collection Date: 7/12/2013 1:34:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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ICP METALS BY WET DI EXTRACTION

WET DI/ EPA 6010B

RunID: ICP2_130808A	QC Batch: R89895				PrepDate:	Analyst: admin
Lead	0.35	0.050		mg/L	1	8/8/2013 11:16 AM

LEAD BY TCLP EXTRACTION

EPA 3010A

EPA 1311/ 6010B

RunID: ICP2_130806C	QC Batch: 43607				PrepDate:	8/6/2013 Analyst: CEI
Lead	ND	0.25		mg/L	1	8/6/2013 06:47 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



CLIENT: Geocon Consultants, Inc.
Lab Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49
Lab ID: N010581-031

Client Sample ID: B7-0
Collection Date: 7/12/2013 12:48:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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ICP METALS BY WET DI EXTRACTION

WET DI/ EPA 6010B

RunID: ICP2_130808A	QC Batch: R89895	PrepDate:	Analyst: admin
Lead	ND	0.050 mg/L	1
			8/8/2013 11:19 AM

LEAD BY TCLP EXTRACTION

EPA 3010A

EPA 1311/ 6010B

RunID: ICP2_130806C	QC Batch: 43607	PrepDate:	8/6/2013	Analyst: CEI
Lead	ND	0.25 mg/L	1	8/6/2013 06:51 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



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B8-0
Lab Order:	N010581	Collection Date:	7/12/2013 12:10:00 PM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-034		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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ICP METALS BY WET DI EXTRACTION

WET DI/ EPA 6010B

RunID: ICP2_130808A	QC Batch: R89895	PrepDate:	Analyst: admin	
Lead	ND	0.050 mg/L	1	8/8/2013 11:23 AM

LEAD BY TCLP EXTRACTION

EPA 3010A

EPA 1311/ 6010B

RunID: ICP2_130806C	QC Batch: 43607	PrepDate:	8/6/2013	Analyst: CEI
Lead	ND	0.25 mg/L	1	8/6/2013 06:56 PM

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



CLIENT: Geocon Consultants, Inc.
Work Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_STDI

Sample ID:	SampType:	TestCode:	Units:	Prep Date:	RunNo:						
MB-R89895	MBLK	6010_STDI	mg/L		89895						
Client ID: PBW	Batch ID: R89895	TestNo: WET DI/ EPA		Analysis Date: 8/8/2013	SeqNo: 1627881						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.050									
Sample ID: LCS-R89895	LCS	6010_STDI	mg/L		89895						
Client ID: LCSW	Batch ID: R89895	TestNo: WET DI/ EPA		Analysis Date: 8/8/2013	SeqNo: 1627882						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.509	0.050	0.5000	0	102	85	115				
Sample ID: MB-43584	MBLK	6010_STDI	mg/L		89895						
Client ID: PBW	Batch ID: R89895	TestNo: WET DI/ EPA		Analysis Date: 8/8/2013	SeqNo: 1627883						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.050									
Sample ID: MB2-43584	MBLK	6010_STDI	mg/L		89895						
Client ID: PBW	Batch ID: R89895	TestNo: WET DI/ EPA		Analysis Date: 8/8/2013	SeqNo: 1627884						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.050									
Sample ID: N010582-025A-DUP	DUP	6010_STDI	mg/L		89895						
Client ID: ZZZZZZ	Batch ID: R89895	TestNo: WET DI/ EPA		Analysis Date: 8/8/2013	SeqNo: 1627898						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	2.162	0.050						1.828	16.8	20	

Qualifiers:

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



CLIENT: Geocon Consultants, Inc.
Work Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_STDI

Sample ID: N010582-032A-DUP	SampType: DUP	TestCode: 6010_STDI	Units: mg/L	Prep Date:	RunNo: 89895						
Client ID: ZZZZZZ	Batch ID: R89895	TestNo: WET DI/ EPA		Analysis Date: 8/8/2013	SeqNo: 1627905						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	1.269	0.050						0.7671	49.3	20	R

Sample ID: N010582-032A-MS	SampType: MS	TestCode: 6010_STDI	Units: mg/L	Prep Date:	RunNo: 89895						
Client ID: ZZZZZZ	Batch ID: R89895	TestNo: WET DI/ EPA		Analysis Date: 8/8/2013	SeqNo: 1627906						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	1.789	0.10	1.000	0.7671	102	75	125				

Sample ID: N010582-025A-MS	SampType: MS	TestCode: 6010_STDI	Units: mg/L	Prep Date:	RunNo: 89895						
Client ID: ZZZZZZ	Batch ID: R89895	TestNo: WET DI/ EPA		Analysis Date: 8/8/2013	SeqNo: 1627911						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	2.779	0.10	1.000	1.828	95.1	75	125				

Sample ID: N010582-025A-MSD	SampType: MSD	TestCode: 6010_STDI	Units: mg/L	Prep Date:	RunNo: 89895						
Client ID: ZZZZZZ	Batch ID: R89895	TestNo: WET DI/ EPA		Analysis Date: 8/8/2013	SeqNo: 1627912						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	2.786	0.10	1.000	1.828	95.8	75	125	2.779	0.265	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, Inc.**

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCPB

Sample ID: MB-43607	SampType: MBLK	TestCode: 6010_TCPB	Units: mg/L	Prep Date: 8/6/2013	RunNo: 89866						
Client ID: PBS	Batch ID: 43607	TestNo: EPA 1311/ 60 EPA 3010A		Analysis Date: 8/6/2013	SeqNo: 1626173						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead ND 0.25

Sample ID: MB-43583_TC	SampType: MBLK	TestCode: 6010_TCPB	Units: mg/L	Prep Date: 8/6/2013	RunNo: 89866						
Client ID: PBS	Batch ID: 43607	TestNo: EPA 1311/ 60 EPA 3010A		Analysis Date: 8/6/2013	SeqNo: 1626174						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead ND 0.25

Sample ID: MB2-43583_TC	SampType: MBLK	TestCode: 6010_TCPB	Units: mg/L	Prep Date: 8/6/2013	RunNo: 89866						
Client ID: PBS	Batch ID: 43607	TestNo: EPA 1311/ 60 EPA 3010A		Analysis Date: 8/6/2013	SeqNo: 1626175						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead ND 0.25

Sample ID: LCS-43607	SampType: LCS	TestCode: 6010_TCPB	Units: mg/L	Prep Date: 8/6/2013	RunNo: 89866						
Client ID: LCSS	Batch ID: 43607	TestNo: EPA 1311/ 60 EPA 3010A		Analysis Date: 8/6/2013	SeqNo: 1626176						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 0.522 0.25 0.5000 0 104 85 115

Sample ID: N010581-014A-MS	SampType: MS	TestCode: 6010_TCPB	Units: mg/L	Prep Date: 8/6/2013	RunNo: 89866						
Client ID: ZZZZZ	Batch ID: 43607	TestNo: EPA 1311/ 60 EPA 3010A		Analysis Date: 8/6/2013	SeqNo: 1626190						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 0.513 0.25 0.5000 0.02590 97.3 75 125

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, Inc.**

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT: Geocon Consultants, Inc.
Work Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCPB

Sample ID: N010581-014A-MSD	SampType: MSD	TestCode: 6010_TCPB	Units: mg/L	Prep Date: 8/6/2013	RunNo: 89866						
Client ID: ZZZZZZ	Batch ID: 43607	TestNo: EPA 1311/ 60 EPA 3010A		Analysis Date: 8/6/2013	SeqNo: 1626192						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.511	0.25	0.5000	0.02590	97.0	75	125	0.5126	0.351	20	

Sample ID: N010582-024A-DUP	SampType: DUP	TestCode: 6010_TCPB	Units: mg/L	Prep Date: 8/6/2013	RunNo: 89866						
Client ID: ZZZZZZ	Batch ID: 43607	TestNo: EPA 1311/ 60 EPA 3010A		Analysis Date: 8/6/2013	SeqNo: 1626202						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.079	0.25						0.08468	0	20	

Sample ID: N010582-025A-MS	SampType: MS	TestCode: 6010_TCPB	Units: mg/L	Prep Date: 8/6/2013	RunNo: 89866						
Client ID: ZZZZZZ	Batch ID: 43607	TestNo: EPA 1311/ 60 EPA 3010A		Analysis Date: 8/6/2013	SeqNo: 1626204						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.911	0.25	0.5000	0.4771	86.8	75	125				

Sample ID: N010582-026A-DUP	SampType: DUP	TestCode: 6010_TCPB	Units: mg/L	Prep Date: 8/6/2013	RunNo: 89866						
Client ID: ZZZZZZ	Batch ID: 43607	TestNo: EPA 1311/ 60 EPA 3010A		Analysis Date: 8/6/2013	SeqNo: 1626206						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.086	0.25						0.1147	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, Inc.**

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Glen S. Gesmundo

From: Luann Beadle [beadle@geoconinc.com]
Sent: Thursday, August 01, 2013 8:52 AM
To: 'ATLInc Reports'
Subject: RE: I 580 STORM REPAIR, E8560-02-49 (ATL No. N010581) Addendum report for STLC

Please analyze the following samples for DI-WET and TCLP:

B4-0, B5-0, B7-0, and B8-0

Regular TAT,
Thanks,
Luann

From: ATLInc Reports [<mailto:reports@atl-labs.com>]
Sent: Wednesday, July 31, 2013 1:26 PM
To: day@geoconinc.com; beadle@geoconinc.com
Cc: livermore@geoconinc.com
Subject: I 580 STORM REPAIR, E8560-02-49 (ATL No. N010581) Addendum report for STLC

Enclosed is an addendum report for STLC for the above project.

Thanks,

Glen Gesmundo



3151 W. Post Road Las Vegas, NV 89118
www.atl-labs.com
Tel: (702) 307-2659 Ext. 406
Fax: (702) 307-2691

Advanced Technology Laboratories, Inc. is a full-service woman owned environmental laboratory providing organic and inorganic analyses of soil, water, wastewater, storm water and hazardous waste samples. *ATL Inc* is certified by the State of California, NELAP, and the State of Nevada. It is also a certified UDBE, SBE and DBE. *ATL Inc* takes pride in providing our customers with quick turnaround time, excellent customer service and defensible data while offering very competitive rates.



3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

October 21, 2013

Rick Day
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
TEL: (925) 371-5900
FAX: (925) 371-5915

CA-ELAP No.: 2676
NV Cert. No.: NV-009222007A

Workorder No.: N010581

RE: I 580 STORM REPAIR, E8560-02-49

Attention: Rick Day

Enclosed are the results for sample(s) received on July 13, 2013 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,



Jose Tenorio Jr.
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 - Las Vegas.



**Advanced Technology
Laboratories, Inc.**

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B1-0
Lab Order:	N010581	Collection Date:	7/12/2013 9:10:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-001A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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ICP METALS BY STLC

WET/ EPA 6010B

RunID: ICP2_131018A	QC Batch: R90823	PrepDate: 10/14/2013	Analyst: CEI
Nickel	1.2	0.050	mg/L
		5	10/18/2013 10:32 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	



CLIENT:	Geocon Consultants, Inc.	Client Sample ID:	B2-4
Lab Order:	N010581	Collection Date:	7/12/2013 10:35:00 AM
Project:	I 580 STORM REPAIR, E8560-02-49	Matrix:	SOIL
Lab ID:	N010581-009A		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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ICP METALS BY STLC

WET/ EPA 6010B

RunID: ICP2_131018A	QC Batch: R90823	PrepDate: 10/14/2013	Analyst: CEI
Nickel	3.7	0.050	mg/L
		5	10/18/2013 10:58 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	



CLIENT: Geocon Consultants, Inc.
Work Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_ST

Sample ID: MB-R90823	SampType: MBLK	TestCode: 6010_ST	Units: mg/L	Prep Date: 4/24/2013	RunNo: 90823
Client ID: PBS	Batch ID: R90823	TestNo: WET/ EPA 60		Analysis Date: 10/18/2013	SeqNo: 1667389
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nickel	ND	0.010									
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Sample ID: MB-44114	SampType: MBLK	TestCode: 6010_ST	Units: mg/L	Prep Date: 10/14/2013	RunNo: 90823
Client ID: PBS	Batch ID: R90823	TestNo: WET/ EPA 60		Analysis Date: 10/18/2013	SeqNo: 1667390
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nickel	0.020	0.050									
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Sample ID: LCS-R90823	SampType: LCS	TestCode: 6010_ST	Units: mg/L	Prep Date:	RunNo: 90823
Client ID: LCSS	Batch ID: R90823	TestNo: WET/ EPA 60		Analysis Date: 10/18/2013	SeqNo: 1667391
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nickel	0.513	0.010	0.5000	0	103	85	115				
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Sample ID: N010581-001A-DUP	SampType: DUP	TestCode: 6010_ST	Units: mg/L	Prep Date: 10/14/2013	RunNo: 90823
Client ID: ZZZZZ	Batch ID: R90823	TestNo: WET/ EPA 60		Analysis Date: 10/18/2013	SeqNo: 1667393
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nickel	1.304	0.050					1.226	6.14	20		
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Sample ID: N010581-001A-MS	SampType: MS	TestCode: 6010_ST	Units: mg/L	Prep Date:	RunNo: 90823
Client ID: ZZZZZ	Batch ID: R90823	TestNo: WET/ EPA 60		Analysis Date: 10/18/2013	SeqNo: 1667395
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nickel	3.636	0.050	2.500	1.226	96.4	75	125				
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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



CLIENT: Geocon Consultants, Inc.
Work Order: N010581
Project: I 580 STORM REPAIR, E8560-02-49

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_ST

Sample ID: N010581-001A-MSD	SampType: MSD	TestCode: 6010_ST	Units: mg/L	Prep Date:	RunNo: 90823						
Client ID: ZZZZZZ	Batch ID: R90823	TestNo: WET/ EPA 60	Analysis Date: 10/18/2013	SeqNo: 1667396							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	3.433	0.050	2.500	1.226	88.3	75	125	3.636	5.75	20	

Qualifiers:

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



**Advanced Technology
Laboratories, Inc.**

3151 W. Post Rd Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691

Calculations are based on raw values

Glen S. Gesmundo

From: Luann Beadle [beadle@geoconinc.com]
Sent: Friday, October 11, 2013 9:55 AM
To: Advanced Technology Labs, Inc.
Subject: Lab Order N010581 TO-49 Benedict

Hi ATL,

Could you please run WET nickel on samples B1-0 and B2-4? 5-day TAT, please.

Thanks,
Luann



Luann Beadle | Senior Staff Scientist
Geocon Consultants, Inc.
6671 Brisa Street, Livermore, CA 94550
Office: 925.371.5900, ext. 403 Direct: 925.961.5272 Mobile: 925.395.1669
beadle@geoconinc.com

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EMSL Analytical, Inc

2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577

Phone/Fax: (510) 895-3675 / (510) 895-3680

<http://www.emsl.com>

sanleandrolab@emsl.com

EMSL Order:	091311246
CustomerID:	GECN21
CustomerPO:	
ProjectID:	E8560-06-**

Attn: **Rick Day**
Geocon Consultants, Inc.
6671 Brisa Street

Livermore, CA 94550

Phone: (925) 371-5900
Fax: (925) 371-5915
Received: 07/16/13 3:00 PM
Analysis Date: 7/30/2013
Collected: 7/12/2013

Project: **E8560-02-49 / BENEDICT DRIVE**

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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
B1-1 <i>091311246-0001</i>		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
B3-1 <i>091311246-0002</i>		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<0.25% Chrysotile
B4-2 <i>091311246-0003</i>		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
B5-4 <i>091311246-0004</i>		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
B6-0 <i>091311246-0005</i>		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
B7-1 <i>091311246-0006</i>		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<0.25% Chrysotile
B8-3 <i>091311246-0007</i>		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	<0.25% Chrysotile

Analyst(s)
Matthew Batongbacal (7)


Baojia Ke, Laboratory Manager
or other approved signatory

This report relates only to the samples listed above and may not be reproduced except in full, without EMSL's written approval. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. EMSL is not responsible for sample collection activities or method limitations. Some samples may contain asbestos fibers below the resolution limit of PLM. EMSL recommends that samples reported as none detected or less than the limit of detection undergo additional analysis via TEM. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from 07/30/2013 14:51:47



EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

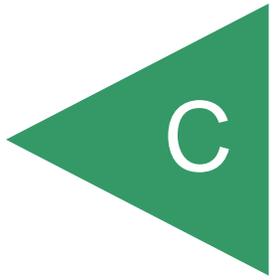
EMSL Order Number (Lab Use Only):

#091311246

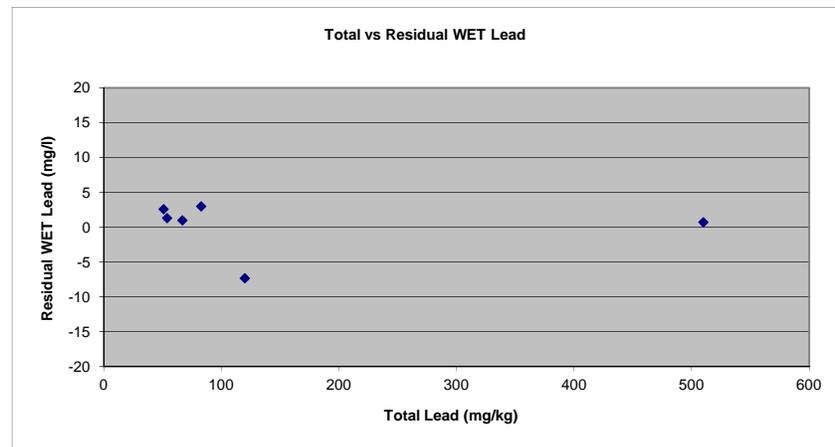
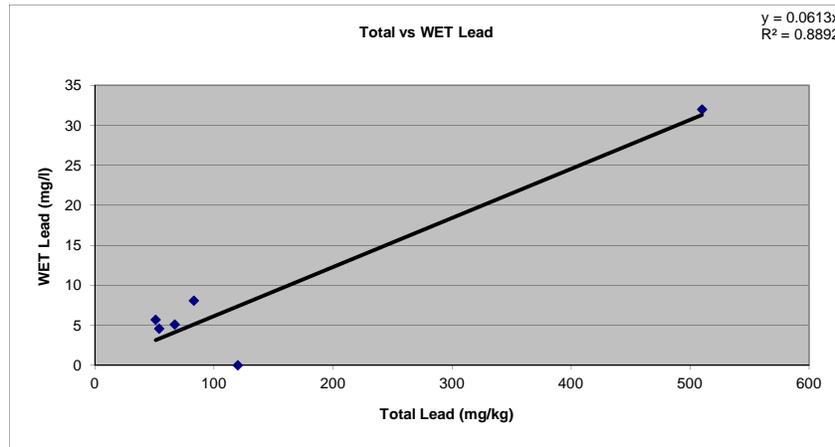
EMSL ANALYTICAL, INC.
2235 POLVOROSA DR., STE. 230
SAN LEANDRO, CA 94577
PHONE: (510) 895-3675
FAX: (510) 895-3680

Company: GECON		EMSL-Bill to: <input type="checkbox"/> Same <input type="checkbox"/> Different <small>If Bill to is Different note instructions in Comments**</small>	
Street: 6671 BRISA ST		<i>Third Party Billing requires written authorization from third party</i>	
City: LIVERMORE	State/Province: CA	Zip/Postal Code: 94550	Country: USA
Report To (Name): R. DAY, L. BEADLE, C. MERRITT		Fax #: 925 371-5915	
Telephone #: 925-371-5900		Email Address: ON FILE	
Project Name/Number:		U.S. State Samples Taken:	
Please Provide Results: <input type="checkbox"/> Fax <input type="checkbox"/> Email <input type="checkbox"/> Purchase Order:			
Turnaround Time (TAT) Options* - Please Check			
<input type="checkbox"/> 3 Hour	<input type="checkbox"/> 6 Hour	<input type="checkbox"/> 24 Hour	<input type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input checked="" type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week
<small>*For TEM Air 3 hours/6 hours, please call ahead to schedule. *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.</small>			
PCM - Air <input type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA		TEM - Air <input type="checkbox"/> 4-4.5hr TAT (AHERA only) <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> EPA Level II <input type="checkbox"/> ISO 10312	
PLM - Bulk (reporting limit) <input type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) <input type="checkbox"/> NYS 198.1 (friable in NY) <input type="checkbox"/> NYS 198.6 NOB (non-friable-NY) <input type="checkbox"/> NIOSH 9002 (<1%)		TEM - Bulk <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> NYS NOB 198.4 (non-friable-NY) <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM Mass Analysis-EPA 600 sec. 2.5 TEM - Water: EPA 100.2 Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking	
		TEM- Dust <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167)	
		Soil/Rock/Vermiculite <input checked="" type="checkbox"/> PLM CARB 435 - A (0.25% sensitivity) <input type="checkbox"/> PLM CARB 435 - B (0.1% sensitivity) <input type="checkbox"/> TEM CARB 435 - B (0.1% sensitivity) <input type="checkbox"/> TEM CARB 435 - C (0.01% sensitivity) <input type="checkbox"/> EPA Protocol (Semi-Quantitative) <input type="checkbox"/> EPA Protocol (Quantitative)	
		Other: <input type="checkbox"/>	
<input type="checkbox"/> Check For Positive Stop - Clearly Identify Homogenous Group			
Samplers Name:		Samplers Signature:	
Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
	B1-1		7-12-13 ⁰⁹⁰⁰ 1500
	B3-1		
	B4-2		
	B5-4		
	B6-0		
	B7-1		
	B8-3		
Client Sample # (s): B1 TO B8		Total # of Samples: 7	
Relinquished (Client): CHRIS MERRITT		Date: 7-16-13	Time:
Received (Lab):		Date: RECEIVED JUL 18 2013	Time: 3pm
Comments/Special Instructions:		WI Angel	

APPENDIX



Sample ID	Sample Depth (feet)	Total Lead (mg/kg)	WET Lead (mg/l)	Residual WET Lead (mg/l)	Squared Residual WET Lead (mg/l)
B7-0	0 to 0.5	510	32	0.71	0.51
B8-0	0 to 0.5	67	5.1	0.99	0.98
B2-0	0 to 0.5	54	4.6	1.29	1.66
B4-0	0 to 0.5	51	5.7	2.57	6.61
B5-0	0 to 0.5	83	8.1	3.01	9.05
B9-2	2 to 2.5	120	0.025	-7.34	53.83



As - Site

Number of Valid Observations	10
Number of Distinct Observations	8
Minimum	1.2
Maximum	5.8
Mean	2.56
Median	1.95
SD	1.642
Variance	2.696
Coefficient of Variation	0.641
Skewness	1.595
Mean of log data	0.797
SD of log data	0.53
95% Standard Bootstrap UCL	3.40

Co -Site

Number of Valid Observations	10
Number of Distinct Observations	8
Minimum	15
Maximum	30
Mean	23
Median	23.5
SD	3.944
Variance	15.56
Coefficient of Variation	0.171
Skewness	-0.407
Mean of log data	3.121
SD of log data	0.184
95% Standard Bootstrap UCL	24.9

Ni - Site

Number of Valid Observations	10
Number of Distinct Observations	8
Minimum	40
Maximum	210
Mean	125.2
Median	120
SD	51.5
Variance	2653
Coefficient of Variation	0.411
Skewness	0.305
Mean of log data	4.74
SD of log data	0.475
95% Standard Bootstrap UCL	150

Pb - Site

Number of Valid Observations	45
Number of Distinct Observations	34
Minimum	0.5
Maximum	510
Mean	27.1
Median	3.5
SD	77.77
Variance	6049
Coefficient of Variation	2.875
Skewness	5.727
Mean of log data	1.671
SD of log data	1.791
95% Standard Bootstrap UCL	46.0

TPHd

Number of Valid Observations	13
Number of Distinct Observations	11
Minimum	1.2
Maximum	150
Mean	28.8
Median	4.2
SD	44.53
Variance	1983
Coefficient of Variation	1.549
Skewness	2.126
Mean of log data	2.154
SD of log data	1.707
95% Standard Bootstrap UCL	47.7

Pb - 0 to 0.5

Number of Valid Observations	9
Number of Distinct Observations	9
Minimum	19
Maximum	510
Mean	98.6
Median	51
SD	155.6
Variance	24198
Coefficient of Variation	1.578
Skewness	2.908
Mean of log data	4
SD of log data	1
90% Standard Bootstrap UCL	159
95% Standard Bootstrap UCL	179

Pb - 1 to 1.5

Number of Valid Observations	9
Number of Distinct Observations	9
Minimum	2.2
Maximum	33
Mean	14.6
Median	14
SD	10.25
Variance	105
Coefficient of Variation	0.703
Skewness	0.519
Mean of log data	2.362
SD of log data	0.958
90% Standard Bootstrap UCL	18.7
95% Standard Bootstrap UCL	19.9

Pb - 2 to 2.5

Number of Valid Observations	9
Number of Distinct Observations	6
Minimum	0.5
Maximum	120
Mean	17.2
Median	1.5
SD	39.5
Variance	1560
Coefficient of Variation	2.298
Skewness	2.76
Mean of log data	0.798
SD of log data	1.977
90% Standard Bootstrap UCL	32.9
95% Standard Bootstrap UCL	37.5

Pb - 3 to 3.5

Number of Valid Observations	7
Number of Distinct Observations	7
Minimum	0.5
Maximum	6.9
Mean	2.60
Median	1.8
SD	2.285
Variance	5.223
Coefficient of Variation	0.879
Skewness	1.386
Mean of log data	0.633
SD of log data	0.88
90% Standard Bootstrap UCL	3.64
95% Standard Bootstrap UCL	3.93

Pb - 4 to 4.5

Number of Valid Observations	6
Number of Distinct Observations	5
Minimum	0.5
Maximum	3.6
Mean	2.25
Median	2.7
SD	1.476
Variance	2.179
Coefficient of Variation	0.656
Skewness	-0.448
Mean of log data	0.511
SD of log data	0.958
90% Standard Bootstrap UCL	2.95
95% Standard Bootstrap UCL	3.16

Pb - 5 to 5.5

Number of Valid Observations	3
Number of Distinct Observations	3
Minimum	1.4
Maximum	2.4
Mean	1.87

Memorandum

*Flex your power!
Be energy efficient!*

To: MS. KELLY HOLDEN
Office Chief
Bridge Design-West

Date: January 23, 2014

Attention: G. Danke

File: 04-ALA-580 PM 33.4
EA: 04-2G8600
EFIS 0412000009
Benedict Drive Off-Ramp

From: DAVID NESBITT 
Transportation Engineer
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

MAHMOOD MOMENZADEH 
Chief, Branch C
Office of Geotechnical Design – West
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CHRIS RISDEN 
Chief, Branch B
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

Subject: **FOUNDATION REPORT**

SCOPE OF WORK

This Foundation Report (FR) supersedes the Foundation Report dated June 11, 2013. The Foundation Report provides our geotechnical recommendations for the proposed repair of the Benedict Drive Westbound Off-ramp on Route 580. The scope of work included the following:

- Field reconnaissance to observe and document site conditions.
- Review of geology open-files and as-built plans.
- Subsurface exploration consisting of two vertical borings in April 2012. Cone Penetrometer Tests were conducted in October 2012.
- Installation of one Slope Inclinator (SI) and one piezometer. Periodic readings of the SI and piezometer were recorded.
- Soil samples were retrieved from the drilled soil borings. Selected soil samples were sent to the Translab in Sacramento for analyses.
- Engineering analyses and the development of foundation recommendations.

MS. KELLY HOLDEN
Attn: G. Danke
January 23, 2014
Page 2

PROJECT DESCRIPTION

The project is located at the Benedict Drive off-ramp from westbound Route 580 in the City of San Leandro, Alameda County (Figure 1). The Benedict Drive off-ramp is a single lane exit on Route 580, but widens to two lanes for the most of the length of the off-ramp. The off-ramp increases in elevation relative to westbound Route 580, with a maximum height of approximately 25 ft above Route 580. This section of Route 580 was constructed in the mid-1960's. A retaining wall was constructed between westbound Route 580 and the Benedict Drive off-ramp during original construction. There has been constant creeping of the shoulder resulting in continuous maintenance repairs of the left lane of the off-ramp. The length of the cracking and settlement of the left lane is approximately 380 ft. It appears the slope above the retaining wall is slowly creeping down towards Route 580.

FIELD INVESTIGATION

A subsurface investigation was conducted from April 3 to April 4, 2012. The subsurface investigation consisted of drilling two vertical soil borings; RW-12-001 and RW-12-002. In situ Standard Penetration Test (SPT) blow counts were recorded at 5-foot interval to evaluate the consistency of the on-site soils. Soil samples were collected from the SPT sampler, and retained for identification. Selected soil samples were transported to the Caltrans Geotechnical Laboratory in Sacramento for testing.

Soil boring RW-12-001 was drilled to a depth of 36.5 ft and a piezometer was installed. Soil boring RW-12-002 was drilled to a depth of 41.5 ft and a slope inclinometer (SI) was installed. Slope Inclinometer readings indicate that a slide plane exists at approximately 12-ft below the existing ground surface.

A piezometer casing was set at 35.6 feet below grade to measure groundwater in boring RW-12-001. Groundwater measurements were conducted on April 20, May 10, June 14, August 16, and October 4, 2012. All readings reported dry casing to a depth of 35.6 ft. Slope Inclinometer readings are located in Appendix A.

In addition to the drilled soil borings, five Cone Penetrometer Tests (CPT) were conducted in October 2012 to better define the soil condition along the distressed road alignment. Results of the CPTs are included in the Log-Of-Test borings in Appendix B.

LABORATORY TESTING

Selected soil samples retrieved from the borings were tested to evaluate the properties pertinent to our analyses. The types of laboratory tests performed include the following:

MS. KELLY HOLDEN

Attn: G. Danke

January 23, 2014

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- Atterberg Limits (AASHTO T 89, AASHTO T 90).
- Moisture Content (AASHTO T 265, ASTM D 2216).
- Corrosion Content California Test Methods (CTM 643, CTM 442, CTM 417).
- Mechanical Analysis (ASTM D 422)

Laboratory test results are located in Appendix C.

EXISTING STRUCTURES

There is an existing retaining wall located in between the shoulder of westbound Route 580 and the Benedict Drive off ramp. The as-built plans for the retaining wall indicate it was built during the original construction of the freeway at this location. The retaining wall has a maximum height of 16 ft, and is supported on Cast-In-Drilled-Hole (CIDH) piles. A visual inspection of the retaining wall indicated no signs of damage or movement.

There is also an existing 4 inches gas line crossing the Benedict off-ramp which is within the limits of the proposed soldier pile wall.

SITE GEOLOGICAL INFORMATION

Climate

The climate of Alameda County is characterized by cool, wet winters and warm, dry summers. The San Francisco Bay borders the county on the west and controls temperatures throughout the year, minimizing extremes between the seasons. The eastern half of the county, separated from the western half by rolling coastal hills, is drier with greater temperature extremes. The average temperature for Hayward, near the project area, is 58.0° F, with a low of 49.7° F in January and a high of 65.4° F in September. Humidity in the region is generally low, with winter having the highest humidity and fall the lowest. Winds are generally out of the west and below 10 miles per hour. The strongest winds are associated with cold winter storms and westerly summer breezes drawn in by the warmer eastern interior. Rainfall is greatest during the winter with annual totals averaging 26.3 inches/year in San Leandro. November through March are the wettest months throughout the year averaging 4.33 inches, with January being the wettest of these with 5.20 inches. April through October being the dry season average 0.56 inches with August being the driest month of the year averaging 0.06 inches.

Topography & Drainage

The project area lies on the eastern edge of a broad, flat plain that slopes gently east to west toward the San Francisco Bay. This plain is bordered on the east by gently sloping northwest-trending foothills that separate the bay from the Coast Ranges and the Central Valley farther to the east. Route 580 follows roughly the toe of slope of the East Bay Hills through San Leandro

and much of Oakland. The Benedict Drive off-ramp gently rises from an elevation of 56 feet at its origination and terminates at an elevation of approximately 110 feet, over a distance of 1,100 feet. A 450 feet long retaining wall separates Route 580 from the elevated Benedict off-ramp. The walls southern end is at ground level and rises to a maximum height of approximately 15 feet.

Drainage through the project area is roughly east to west toward the San Francisco Bay. The nearest major creek is San Leandro Creek, approximately ¼ mile to the north of the project area.

Regional Geology

Located within the Coast Range geomorphic province of California, the geology of the region consists of northwest-trending ridges, gently sloping hills, intermountain valleys, and large, elongated depressions. The San Andreas Fault system, the most prominent geologic feature in the area, includes the San Andreas Fault as well as numerous splays, including the Hayward and Calaveras Faults, which together take up strain between the northward migrating Pacific plate and the southward (relatively) moving North American plate.

The major faults within the system are predominantly right-lateral, strike-slip faults with some compressional component, and these act together to form the prominent ridges and valleys. The San Francisco Bay, a partially filled northwest-trending depression extending from the Santa Clara Valley in the south to the Petaluma Valley in the north, is a direct result of these fault interactions.

Cretaceous sedimentary rocks of the Great Valley Sequence and Jurassic, Cretaceous, and Tertiary sedimentary and metamorphic rocks of the Franciscan Group dominate the region. Great Valley Sequence rocks represent the filling of long, roughly north/south-trending marine basins which were present during the un-roofing of the Sierra Nevada to the east. Franciscan Group rocks are generally melange material created by the sub-duction of the Pacific plate beneath the North American plate. It consists of blocks of low to high-grade metamorphic rocks contained in a sheared shale matrix with minor unmetamorphosed clastic and chemical sedimentary blocks.

Site Geology

The project area sits just at the base of the East Bay Hills and is underlain by alluvium deposited as fans during the Holocene and Pleistocene, as published geologic maps indicate (Figure 2).¹ . As-built plans and preliminary boring logs that were drilled in April 2012 show that the area around Benedict Drive is characterized by stiff to very stiff fine-grained sediments: lean to fat clays, ranging from gravelly clays with sand, sandy clays, and sandy silty clays.

¹ Ibid.

Soils

The soil that is located at the project site are "...xerorthents-Altamont complex, 30 to 50 percent slopes."² Refer to Soil Map (Figure 3). (The USDA, NRCS; Custom Soil Resource Report for Alameda County, California; 2012 can be supplied upon request.)

SCOUR EVALUATION

Scour is not anticipated to be an issue for this site, because there is no watercourse running through the site.

CORROSION EVALUATION

One sample was collected from boring RW-12-002 for corrosion testing. The test result indicated that the sample is not corrosive to foundation elements.

Table 1 Corrosivity Test Result

Boring No.	Depth	Minimum Resistivity (ohm-cm)	pH	Chloride (ppm)	Sulfate (ppm)
RW-12-002	12-15 ft	936	8.37	-	-

SEISMIC RECOMMENDATIONS

Faulting and Seismicity

The project site is located within a seismically active region dominated by the northwest trending San Andreas Fault. Several other faults that parallel the San Andreas make up the larger San Andreas Fault system and separate the Pacific Plate on the west from the North American Plate to the east. The San Andreas Fault system can be thought of as a diffuse plate boundary at which strain is spread across a wide region. There are larger, well-known faults within the system that tend to be the most active; however, there are other unnamed faults that are not mapped that may produce moderate earthquakes.

There are numerous active faults within the San Francisco Bay Area that have the potential to produce large earthquakes, such as: Calaveras Fault zone (Northern Calaveras Section) and the San Andreas Fault zone (Peninsula Section), approximately 9.2 east and 18.2 miles west of the project site, respectively (Figure 4).³ The closest of these faults is the Hayward Fault zone, both

² <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

³ California State Department of Transportation Fault Database, 2007,
http://www.dot.ca.gov/hq/esc/earthquake_engineering/SDC_site/

the Northern and Southern sections, which are within a half mile of the project site. The Hayward Fault is a right-lateral strike-slip fault that dips 90 degrees relative to horizontal. Based on the Caltrans ARS Online Application, the Hayward Fault zone (Northern Section); Fault No. 353 is the controlling fault for this project. Table 2 presents the Hayward Fault zone seismic data. Data are from Caltrans 2007 Seismic Hazard Report. Maximum Credible Earthquakes are given in Mw (moment magnitude) and are a function of the length and width of a fault zone and not of recent or historical events.

Table 2: Seismic Data

FAULT	Fault No.	Distance (Miles)	Fault Type	Maximum Credible Earthquake	Peak Ground Acceleration
Hayward fault zone (Northern section)	353	0.5	Right Lateral Strike Slip	7.3	0.47g
Hayward fault zone (Southern Hayward section)	354	0.5	Right Lateral Strike Slip	7.4	0.46 g
Probabilistic Model Period	USGS Seismic Hazard Map(2008) 975 Year Return				0.70g

Seismic Hazards

Potential seismic hazards in such an active region include primary surface rupture, a seismic fault creep, and the secondary effects due to strong ground shaking. The following describes the hazards that may be encountered during either a surface rupture or ground shaking event and possible mitigation procedures to use during design and/or construction (Figure 5).

Primary Seismic Hazards

Surface rupture and fault creep:

There are no active faults that cross the project limits, therefore, fault rupture and fault creep are not considered to pose a hazard to the project.

Secondary Seismic Hazards

Ground shaking:

The potential for strong ground shaking in the project area during the life of the project is high and will affect both roadways and structures. Loose, saturated soils pose the greatest threat

during episodes of strong shaking. The following lists are possible hazards that may be caused by strong ground shaking and the probability of their occurrence within the project limits:

Liquefaction:

Liquefaction, a phenomenon in which soils lose all shear strength and turns essentially into a fluid momentarily, is considered low in the project area. Potentially liquefiable deposits are generally composed of clean sand with a high ratio of void space. Subsurface sampling indicated stiff to very stiff clays, stiff to very stiff gravelly clays with sand, and medium dense to very dense clayey gravel with sand. The subsurface conditions suggest a low potential for liquefaction.

SUBSURFACE AND GROUNDWATER CONDITIONS

The soil encountered during the subsurface investigation, as interpreted from boring RW-12-001 consists approximately of a 15 ft layer of stiff to very stiff gravelly clay with sand, which is underlain by a medium dense to very dense layer of clayey gravel with sand.

The soil encountered during the subsurface investigation, as interpreted from boring RW-12-002 consists approximately of a 15 ft layer of stiff gravelly clay with sand, which is underlain by a layer of stiff to very stiff clay.

Groundwater was not measured during the drilling operation due to the drilling method. The drill method was rotary wash, which circulates water during the drilling operation. The piezometer was installed to a depth of 35.6 ft, and no groundwater has been measured (dry).

GEOTECHNICAL RECOMMENDATIONS

Wall Type and Construction Method

The most viable repair strategy for this location is to construct a soldier beam and lagging wall, because of its narrow footprint and the close proximity of the existing retaining wall. Considering the conditions of the roadway and the existing slope, a wall with an approximate length of 400-ft. would be required. Based on the preliminary general plan sheet, the wall begins at Station 84+19.63 and ends at Station 88+21.00 on the "R" line. The wall would be offset approximately 3-ft. from the curb of the left lane. The wall shall be designed for a cantilever height of 12 ft. We recommend the removal of material in front of the wall to a depth of 7-ft, and develop a bench at that depth. We recommend that the slope in front of the wall be rebuilt with a slope of 2(H): 1(V).

The wall is constructed by developing a working bench 7-ft down from the top of the slope, and cutting a back slope from the center line of the two lanes. The cut slope shall not be steeper than

1V:1H. Soldier beam piles will be installed in the drill holes located as shown on the plans. A maximum pile spacing of 7 ft is recommended. The pile spacing may slightly vary where the gas line crosses the wall to allow a minimum drill hole offset of 4 ft from the gas line. Use of heavy construction equipment shall be avoided over and near the vicinity of the gas line. The wall backfill shall be lightweight aggregate in accordance with the Caltrans Special Provisions.

Design Parameters

The soldier pile wall should be designed using the lateral earth pressure diagram, Figure 5.5.5.6-1 of Section 5, Retaining Walls, from the Bridge Design Specifications (August 2004). This figure is attached in Appendix D.

Based on the site conditions and proposed construction summarized above, we recommend the following requirements/criteria for the proposed soldier beam and lagging wall design:

- Assume a design height of 12-ft and a horizontal back slope. The minimum embedment length is 18.5 ft, and a minimum total pile length of 30.5 ft.
- For soil material behind the wall (active zone) extending 0.15 H below the wall base, use the following soil parameters: internal friction angle, $\phi = 20^\circ$, cohesion, $c = 50$ psf, and a soil total unit weight, $\gamma = 125$ lbs/ft³. For zone 2, the active zone below zone 1, and the passive in front of the wall below 12 ft wall height, use the following soil parameters: internal friction angle, $\phi = 30^\circ$, cohesion, $c = 50$ psf, and a soil total unit weight, $\gamma = 130$ lbs/ft³. Use an arching factor of 0.08*(friction angle noted above).
- Calculate passive pressure against the piles using the log spiral method with a friction angle, $\phi = 30^\circ$, cohesion, $c = 50$ psf, and a unit weight γ of 125 lbs/ft³. For design purposes, use a minimum bench width of 5-ft. at the base of the retaining wall, followed by a 2(H): 1(V) slope.
- Because of the potential for high ground acceleration, the seismic stability of the wall should be checked. For seismic earth pressure against the wall/piles, use a triangular pressure distribution with depth for a maximum pressure of 38 H psf, where H is the full design height.

Drainage

We recommend that Class 8 rock slope protection fabric be placed behind the vertical face of the wall lagging to limit the piping of fines. No special drainage is needed since drainage is facilitated by the use of wood lagging without having any other permanent facing.

CONSTRUCTION CONSIDERATIONS AND REQUIREMENTS

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Attn: G. Danke
January 23, 2014
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The following construction considerations and requirements should be included in the design and construction specifications for the proposed wall.

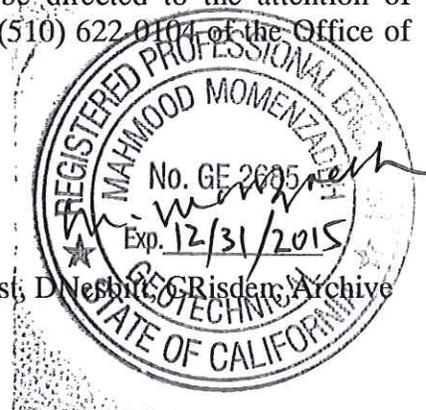
- After the "bench" has been graded, the soldier piles should be installed in accordance with Section 49-4 of the most current Caltrans Standard Specifications.
- Drilling and concrete placement for soldier pile construction shall be staggered. No two adjacent holes can be open at the same time. Drilled holes for soldier piles can't be left open overnight.
- The installation of the soldier piles must be completed prior to the placement of any temporary fill required for a construction bench behind the face of wall. No fill shall be placed on the slide area before all piles and lagging are in place.
- During the drilling operation for the proposed soldier beam piles, we believe that some caving of the drilled holes will likely occur. Thus, use of temporary casing is required. Based on the piezometer readings, only localized groundwater may be anticipated.
- If constructed during the rainy season, suitable drainage measures shall be used and are the responsibility of the contractor.
- All temporary cuts shall conform to Cal-OSHA requirements in general, and shall be no steeper than 1V:1H.
- Ensure that material used for backfill behind the soldier pile wall conforms to the special provisions for lightweight aggregate. A slope can be constructed with excavated material from the site in front of the soldier pile wall at a 2 (H): 1(V) slope. All earthwork shall be in accordance to Section 19 of the most current Caltrans Standard Specifications.

Any questions regarding the above recommendations should be directed to the attention of Mahmood Momenzadeh at (510) 286-5732 or David Nesbitt at (510) 622-0104 of the Office of Geotechnical Design-West.

* * * * *

Attachments:

c: TPokrywka, GDanke, MMomenzadeh, SRajendra, JHaghparast, DNesbitt, GRisden, Archive



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Attn: G. Danke
January 23, 2014
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DNesbitt/dn

References:

"Caltrans improves mobility across California"

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January 23, 2014

Page 11

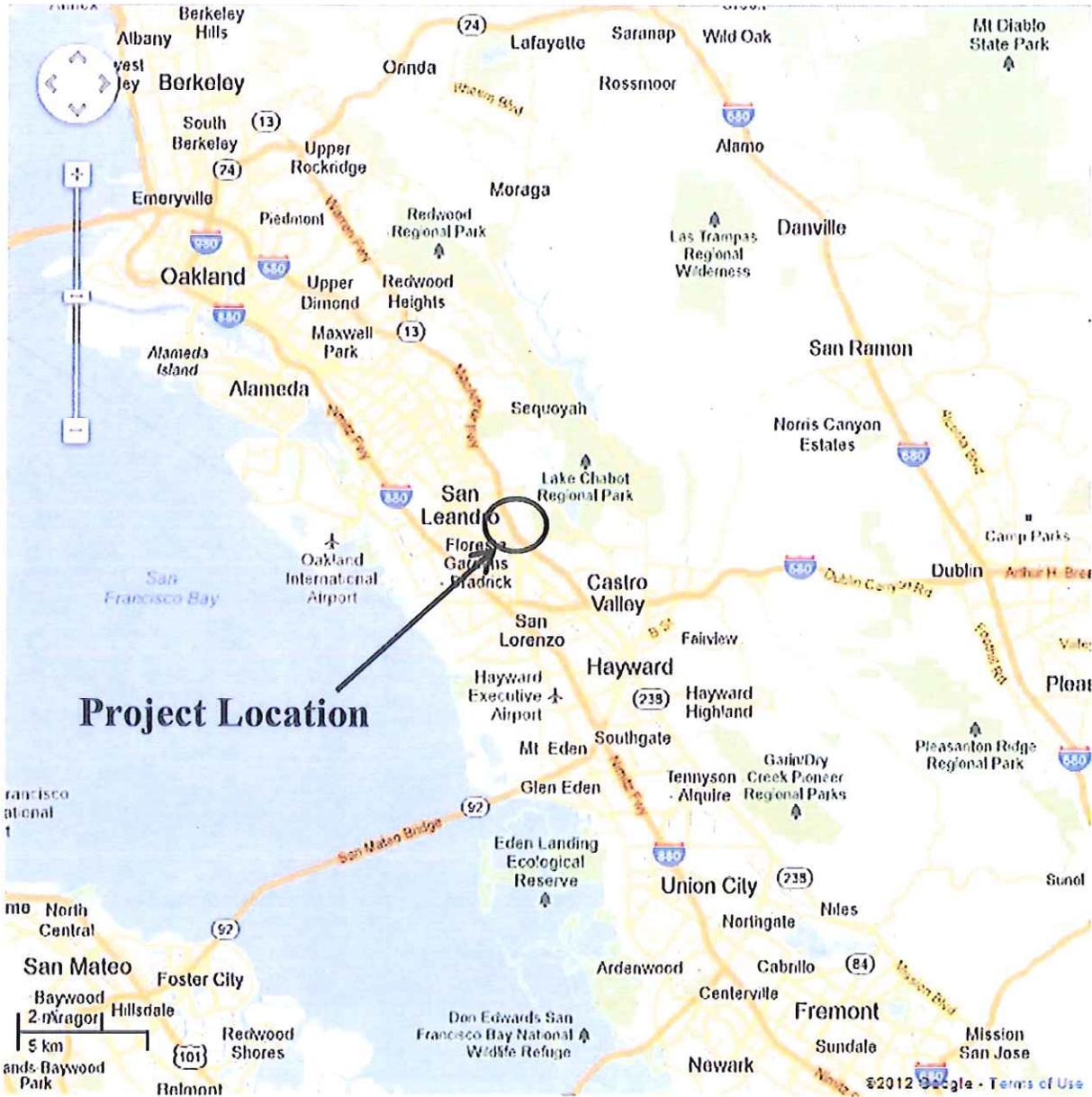
California State Department of Transportation Fault Database, 2007,
http://www.dot.ca.gov/hq/esc/earthquake_engineering/SDC_site/

Graymer, R.W., Jones, D.L., Brabb, E.E., 1996, Preliminary geologic map emphasizing bedrock formations in Alameda County, California: A digital database, USGS Open File Report 96-252

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U.S. Geological Survey and California Geological Survey, 2006, Quaternary fault and fold database for the United States, 12/01/2008, from USGS web site:
<http://earthquakes.usgs.gov/regional/qfaults/>

Welch, L.E., 1975, Soil Survey of Alameda County, California, western part, United States Department of Agriculture



Project Location

North

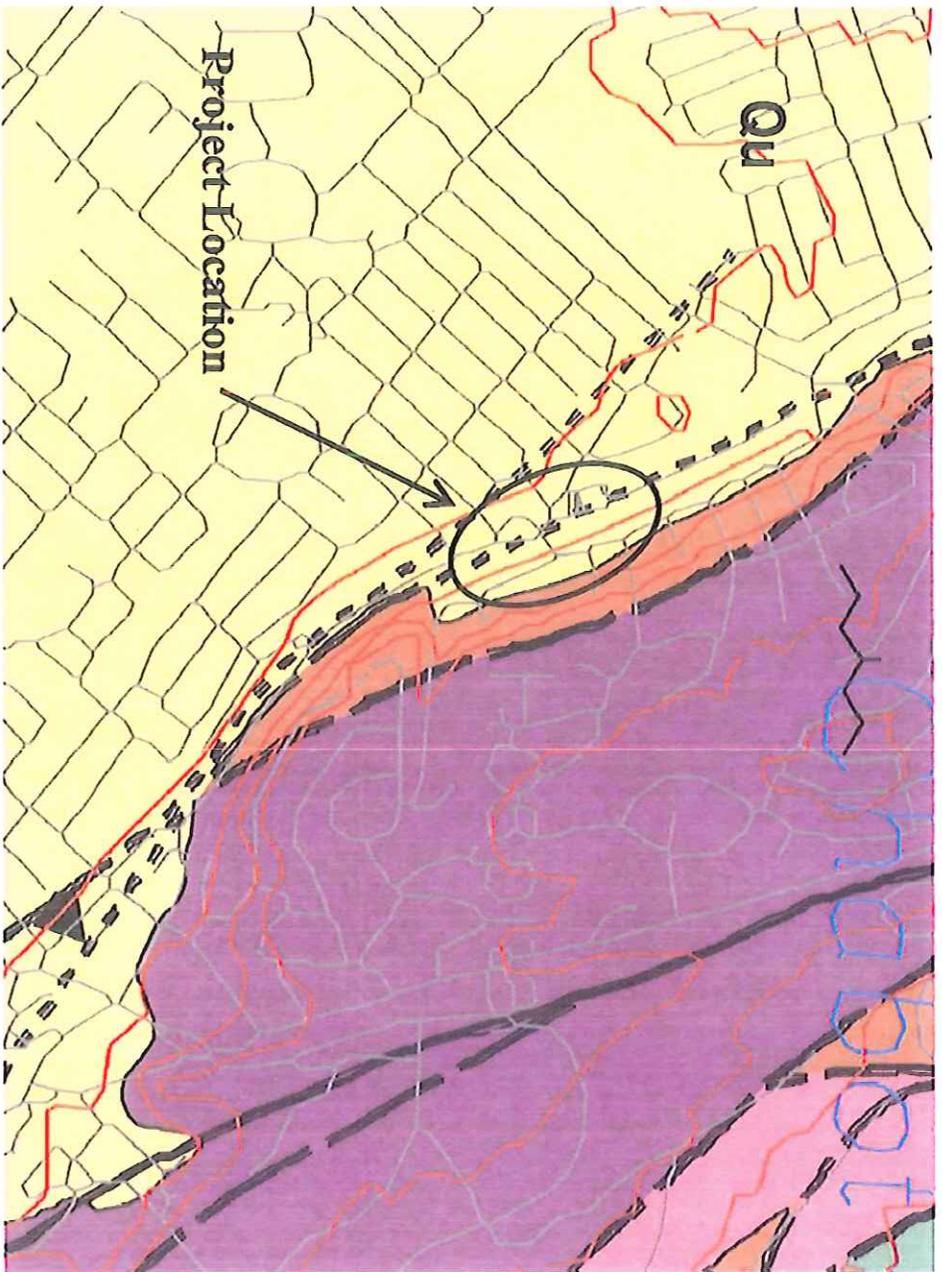
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BRANCH B



Figure 1 - Location Map

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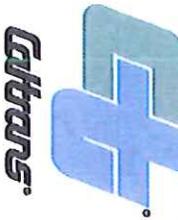
PM 33.4
January 2014



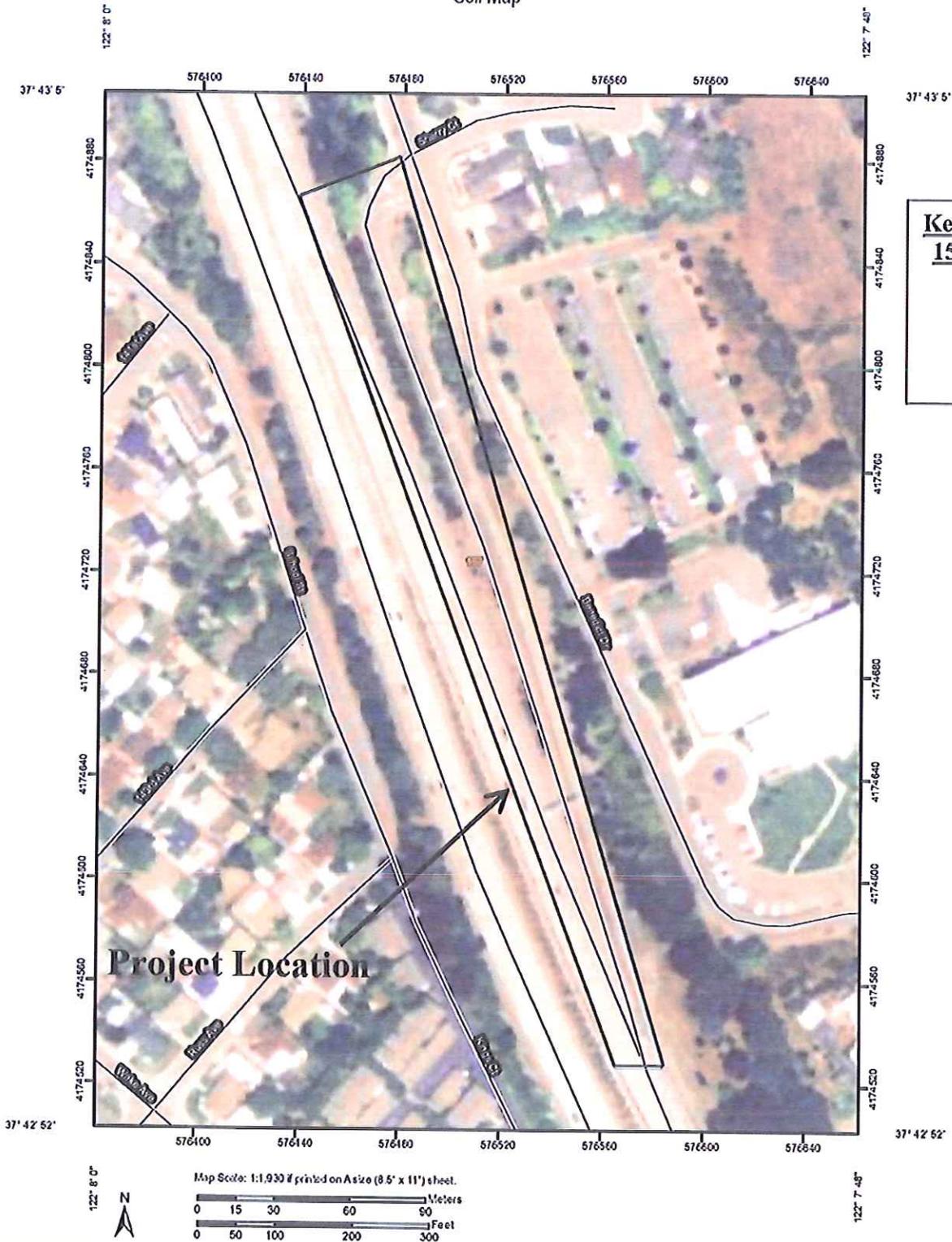
- KEY**
- Qu Undivided surficial deposits
 - Jsv Keratophyre and quartz keratophyre
 - Jpb Pillow basalt
 - Jb Basalt and diabase
 - Jgb Gabbro

North
↑

MAP TAKEN FROM: USGS Preliminary geologic map emphasizing bedrock formations in Alameda County, California: A digital database by Graymer, Et al, Open-File Report 96-252

<p><u>SCALE</u></p> <p>Not to Scale</p>		<p>Engineering Service Center DIVISION OF ENGINEERING SERVICES OFFICE OF GEOTECHNICAL SERVICES GEOTECHNICAL DESIGN BRANCH (WEST) – BRANCH B</p>				
<p>Figure 2 - GEOLOGY MAP</p>		<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">04-ALA-580</td> <td style="width: 50%; border: none;">PM 33.4</td> </tr> <tr> <td style="width: 50%; border: none;">0412000009-0</td> <td style="width: 50%; border: none;">January 2014</td> </tr> </table>	04-ALA-580	PM 33.4	0412000009-0	January 2014
04-ALA-580	PM 33.4					
0412000009-0	January 2014					

Custom Soil Resource Report
Soil Map



Key
157 - xerorthents-
 Altamont
 complex, 30
 to 50 percent
 slopes

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 BRANCH B



Figure 3 - Soil Map

ALA 580
 0412000009-0

PM 33.4
 January 2014



U.S. Geological Survey and California Geological Survey, 2006, Quaternary fault and fold database for the United States, 12/01/2008, from USGS web site: <http://earthquakes.usgs.gov/regional/qfaults/> Base map from Google Earth 2008

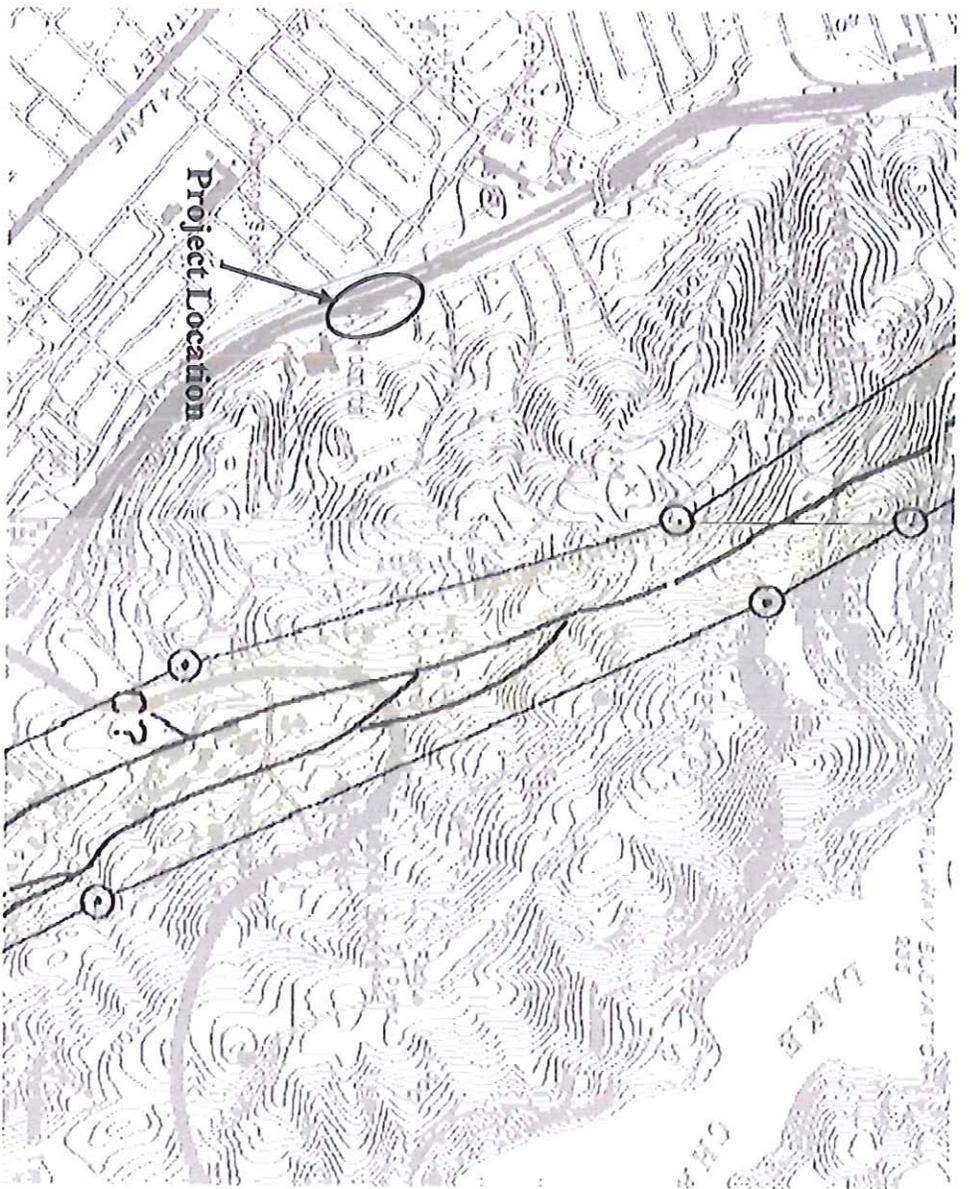
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Figure 4 - Regional Fault Map

04-ALA-580
0412000009-0

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January 2014



MAP EXPLANATION

Potentially Active Faults

Faults considered to have been active during Holocene time are to have a relatively high potential for surface rupture. Solid line where accuracy is long dash where approximately located, short dash where inferred, circles where concealed, stars (?) indicates locations uncertain. Evidence of historic offset indicated by 'YS' or earthquake-associated event or 'C' or evidence from caused by creep or possible creep.

Special Studies Zone Boundaries

These are delineated as straight-line segments that connect circles turning points so as to define special studies zone segments.
 ---○--- Sawtooth projection of zone boundary.



CGS, Alquist-Priolo Earthquake
 Fault Zone Maps, Hayward and
 San Leandro Quadrangles, 1982
 Scale No Scale
http://www.quake.ca.gov/gmaps/a/p/ap_maps.htm

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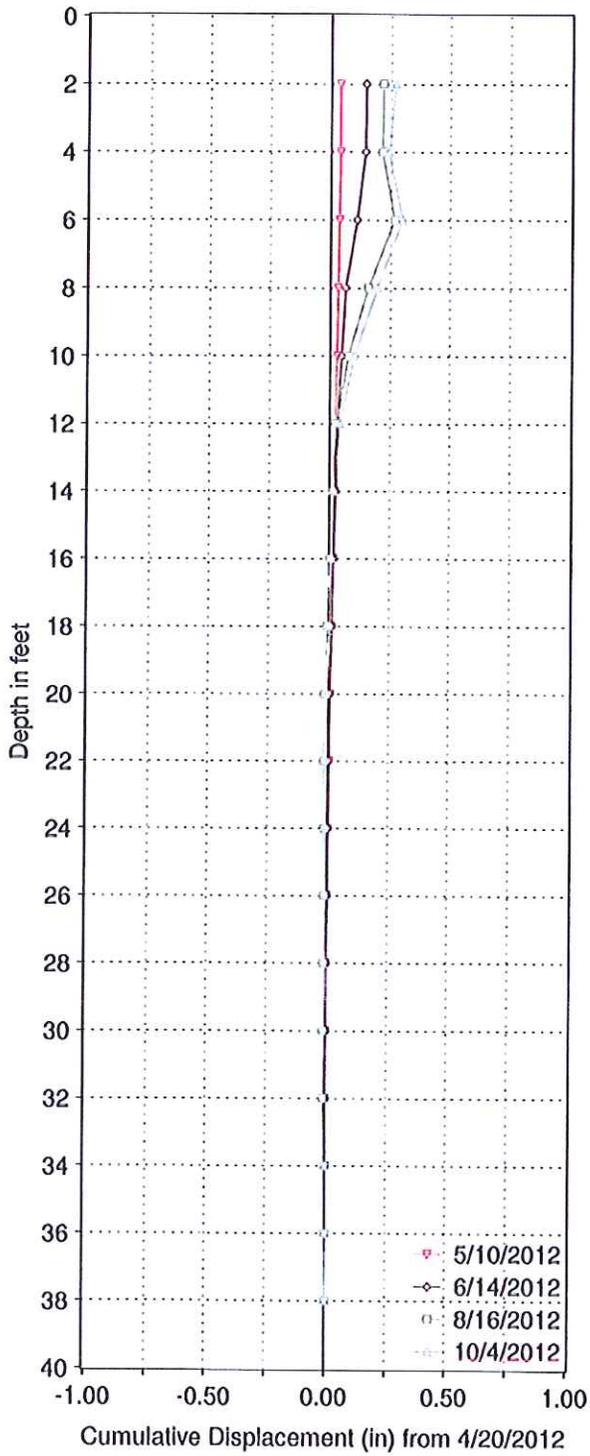


Figure 5 - Alquist-Priolo Fault Zone Map

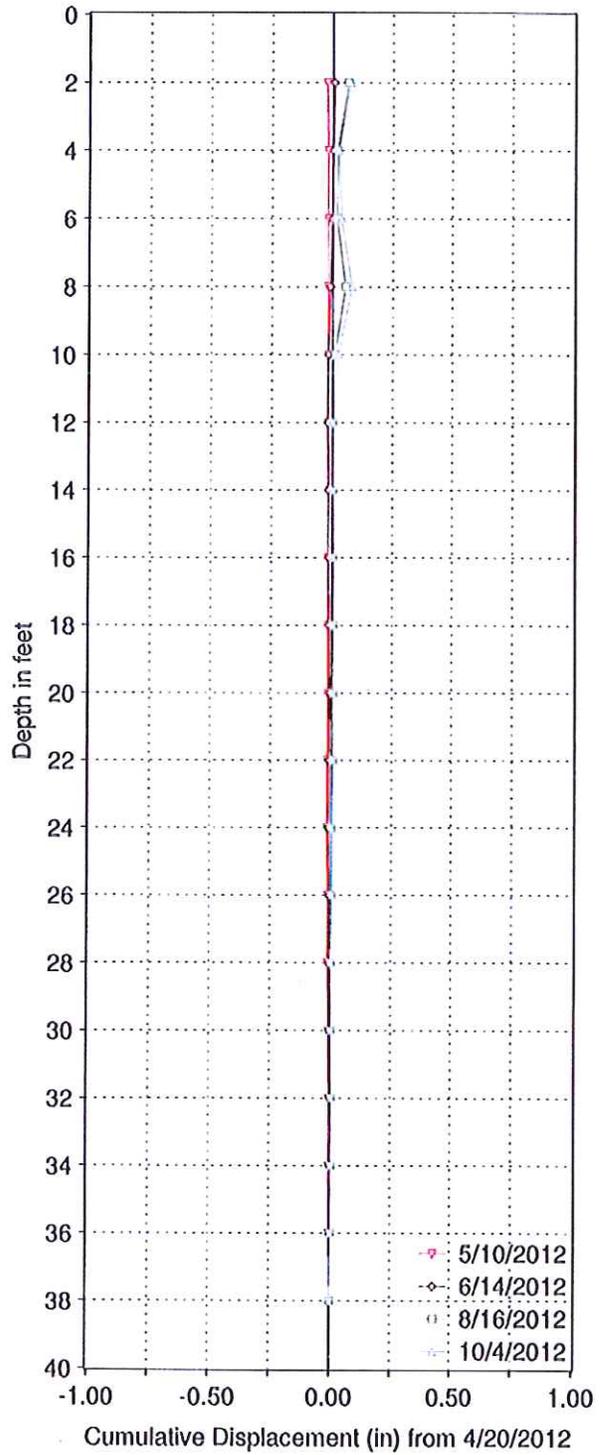
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 0412000009-0 January 2014

APPENDEIX A

BENEDR RW12-002, A-Axis



BENEDR RW12-002, B-Axis



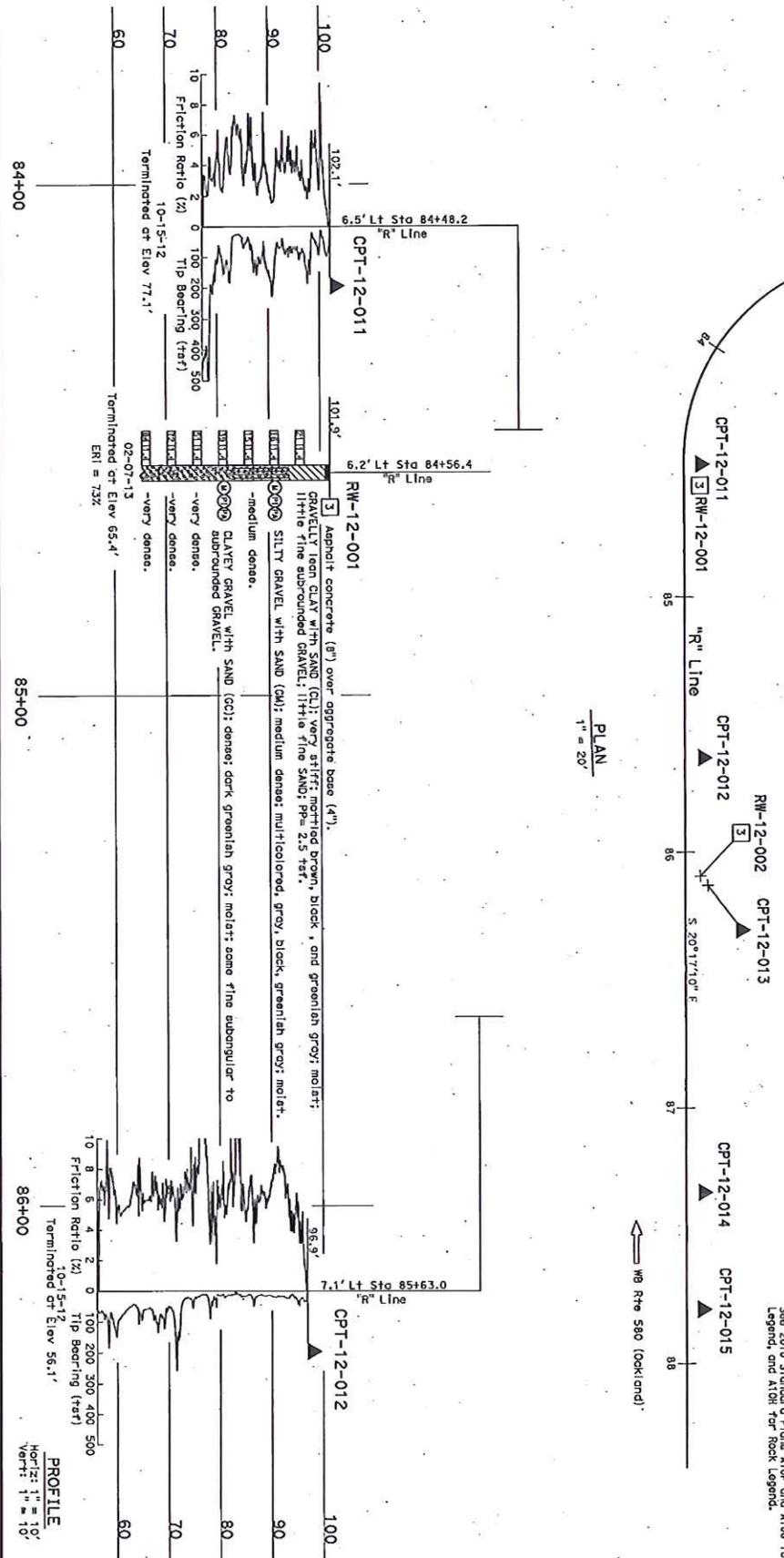
BENEDICT DRIVE
04-ALA-580-PM 33.5

APPENDEIX B

BENCH MARK
 SUBV 1014 PK/CT TAC on ramp
 33.1 ft left of "R" Line, Sta 85+64.3
 N: 1528220.289
 E: 456000.206
 NAVD: 89

To Benedict Dr.

PLAN
 1" = 20'



ENGINEERING SERVICES		MATERIALS AND GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BENEDICT DRIVE OFF-RAMP	
FUNCTIONAL SUPERVISOR NAME: T. Fodor/CAD		FIELD INVESTIGATION SVT CONDUCTED BY: J. Moore		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		LOG OF TEST BORINGS 1 OF 3	
DRAWN BY: R. NGUYEN		FIELD INVESTIGATION SVT D. Needham		PROJECT NUMBER & PHASE: 04120000911		CONTRACT NO.: 04-C20801		SHEET NUMBER	
DATE: 04/03/13		DATE: 04/03/13		PROJECT NUMBER & PHASE: 04120000911		CONTRACT NO.: 04-C20801		SHEET NUMBER	
DATE: 04/03/13		DATE: 04/03/13		PROJECT NUMBER & PHASE: 04120000911		CONTRACT NO.: 04-C20801		SHEET NUMBER	
DATE: 04/03/13		DATE: 04/03/13		PROJECT NUMBER & PHASE: 04120000911		CONTRACT NO.: 04-C20801		SHEET NUMBER	

DIST	COUNTY	ROUTE	POST MILES	SHEET TOTAL
04	Alameda	580	TOTAL PROJECT	

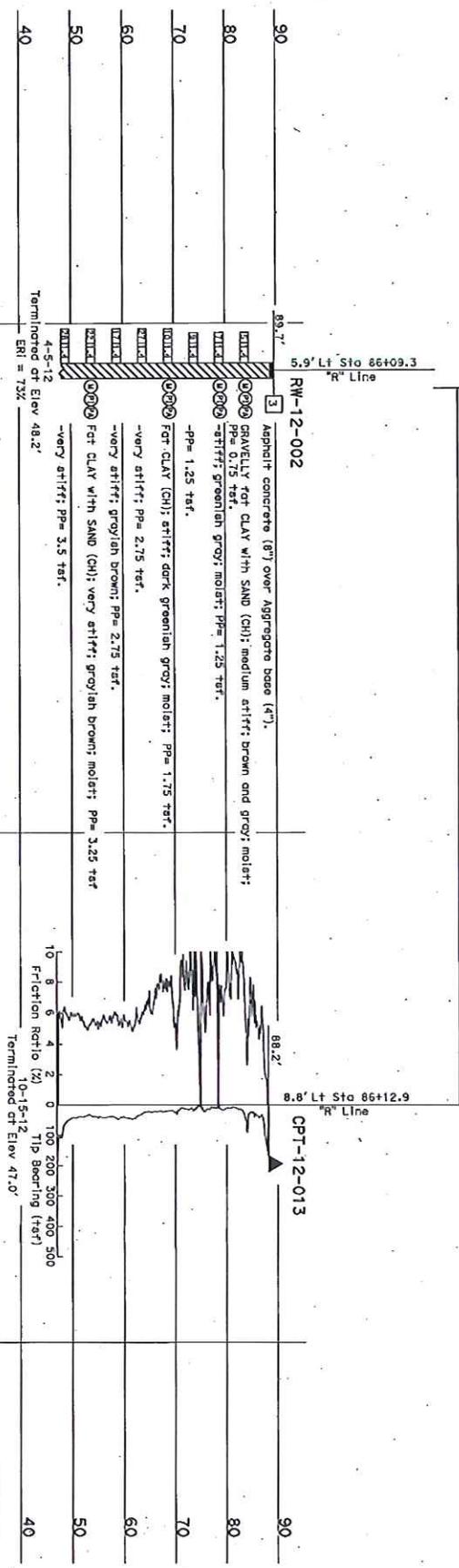
REGISTERED PROFESSIONAL ENGINEER
 No. 45600
 State of California
 Geotechnical Engineering

REGISTERED PROFESSIONAL ENGINEER
 No. 12345
 State of California
 Geotechnical Engineering

PLANS APPROVAL DATE: 04/03/13
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This LOG is prepared in accordance with the California Soil & Rock Engineering, Classification, & Prescription Manual (S&RCEM) (S&RCEM-10) and AISC for S&RCEM. See 2010 Standard Plans & Specifications and AISC for S&RCEM Logbook and AISC for S&RCEM Logbook.

FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS 1 OF 3"



ENGINEERING SERVICES		MATERIALS AND GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BENEDICT DRIVE OFF-RAMP	
FUNCTIONAL SUPERVISION Name: T. Polczynski		DESIGN SUPERVISION Checked by: J. Moore		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		LOG OF TEST BORINGS 2 OF 3	
DESIGNER Name: F. Nguyen		FIELD INVESTIGATION By: D. Weiditt		DESIGN BRANCH X		CONTRACT NO. 04-2080(1)		DATE PLOTTED -> 09-APR-2013	
CHECKED Name: J. Moore		DATE PLOTTED 09-APR-2013		PROJECT NUMBER & PHASE: 04-2080(01)		CONTRACT NO. 04-2080(1)		TIME PLOTTED -> 14:51	
DATE PLOTTED 09-APR-2013		TIME PLOTTED 14:51		PROJECT NUMBER & PHASE: 04-2080(01)		CONTRACT NO. 04-2080(1)		DATE PLOTTED 09-APR-2013	

PLANS APPROVAL DATE: 4-24-13

REGISTERED PROFESSIONAL ENGINEER

Benjamin J. Weiditt

NO. 12345

STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER

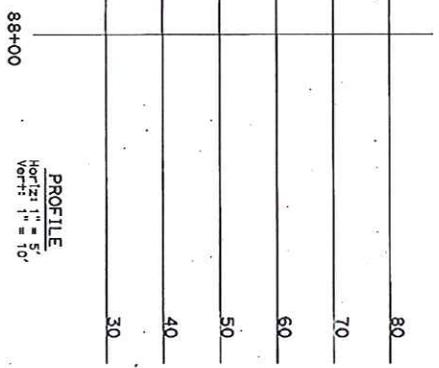
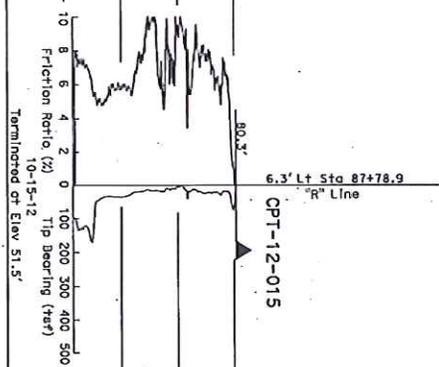
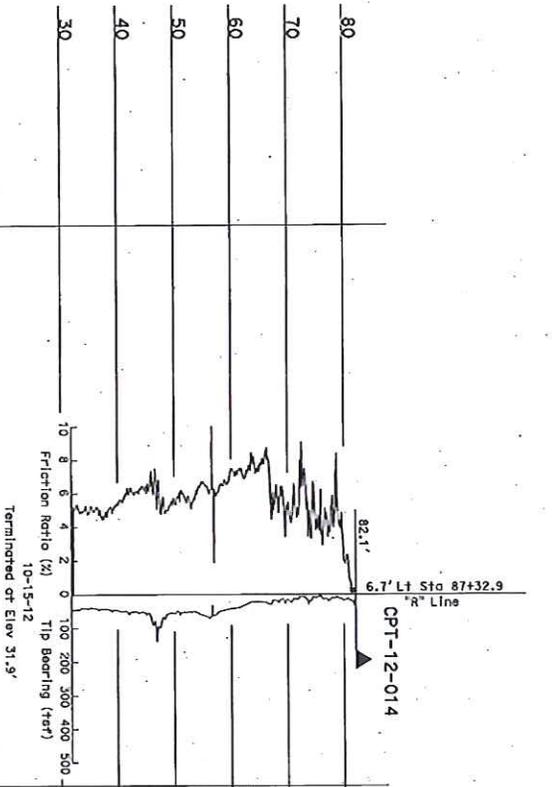
Benjamin J. Weiditt

NO. 12345

STATE OF CALIFORNIA

This LOG sheet was prepared in accordance with the California Soil & Rock Sampling Standard, Section 2010, Standard Plans A105 and A106 for S011 Legend, and A108 for Rock Legend.

FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS 1 OF 3"



ENGINEERING SERVICES		MATERIALS AND GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH X		LOG OF TEST BORINGS 3 OF 3	
FUNCTIONAL SUPERVISION NAME: T. POJYCHAK	DESIGNED BY: F. NUOVEN	FIELD INVESTIGATION BY: D. NEADITT	PROJECT NUMBER & PHASE: 0412000001	DATE: 3/24/13	CONTRACT NO.: 04-208001	PROJECT NO.: 04-208001	DATE PLOTTED: 09-APR-2013	TIME PLOTTED: 14:51	DATE PLOTTED: 09-APR-2013
CONTRACT NO. OF TEST BORING SHEET									

REGISTERED PROFESSIONAL ENGINEER
 State of California
 License No. 42-013
 M. J. ...
 REGISTERED PROFESSIONAL ENGINEER
 State of California
 License No. 42-013
 M. J. ...

PLANS APPROVAL DATE: _____

This LOTB sheet was prepared in accordance with the California Standard Specifications (2010 Edition). See 2010 Standard Plans A10F and A10G for Soil Legend and A10H for Rock Legend.

APPENDEIX C



CALIFORNIA DEPARTMENT OF TRANSPORTATION
 GEOTECHNICAL LABORATORY

GL TRACKING NO : 12-032
 Dist - EA: 04-2G8600
 Report Date: June 28, 2012
 Page: 1/1

CLASSIFICATION TEST SUMMARY

SAMPLE ID	% FINER THAN																ATTERBERG LIMITS			AS RECEIVED		Gs
	3"	2 1/2"	2"	1 1/2"	1"	3/4"	1/2"	3/8"	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100	No. 200	5µ	1µ	LL	PI	Y _c (pcf)	% _m	
RW-12-001_2				100	89	87	80	75	61	55	48	42	36	30	26	9	4	37	9			18.3
RW-12-001_4						100	93	82	56	46	40	36	33	29	25	16	11	50	25			14.5
RW-12-002_1							100	99	73	70	68	65	62	58	54	33	28	63	36			25.6
RW-12-002_15																						
RW-12-002_2				100	94		88	86	74	72	69	66	63	59	55	36	29	57	32			23.3
RW-12-002_4									100	99	97	95	92	90	87	65	47	64	37			30.5
RW-12-002_7								100	97	95	94	92	89	86	82	54	44	67	43			24.8

APPENDEIX D

For temporary walls with vertical elements embedded in granular soil or rock and retaining cohesive soil, Figures 5.5.5.6-1 and 5.5.5.6-2 may be used to determine the lateral earth pressure distributions on the embedded portion of the vertical elements and Figure 5.5.5.6-4 may be used to determine the lateral earth pressure distribution due to the retained cohesive soil.

The lateral earth pressure distributions in Figures 5.5.5.6-1 thru 5.5.5.6-4 shown acting on the embedded portion of vertical wall elements shall be applied to the effective width, b' , of discrete vertical wall elements. See Article 5.7.6 for effective widths of discrete vertical wall elements to be used.

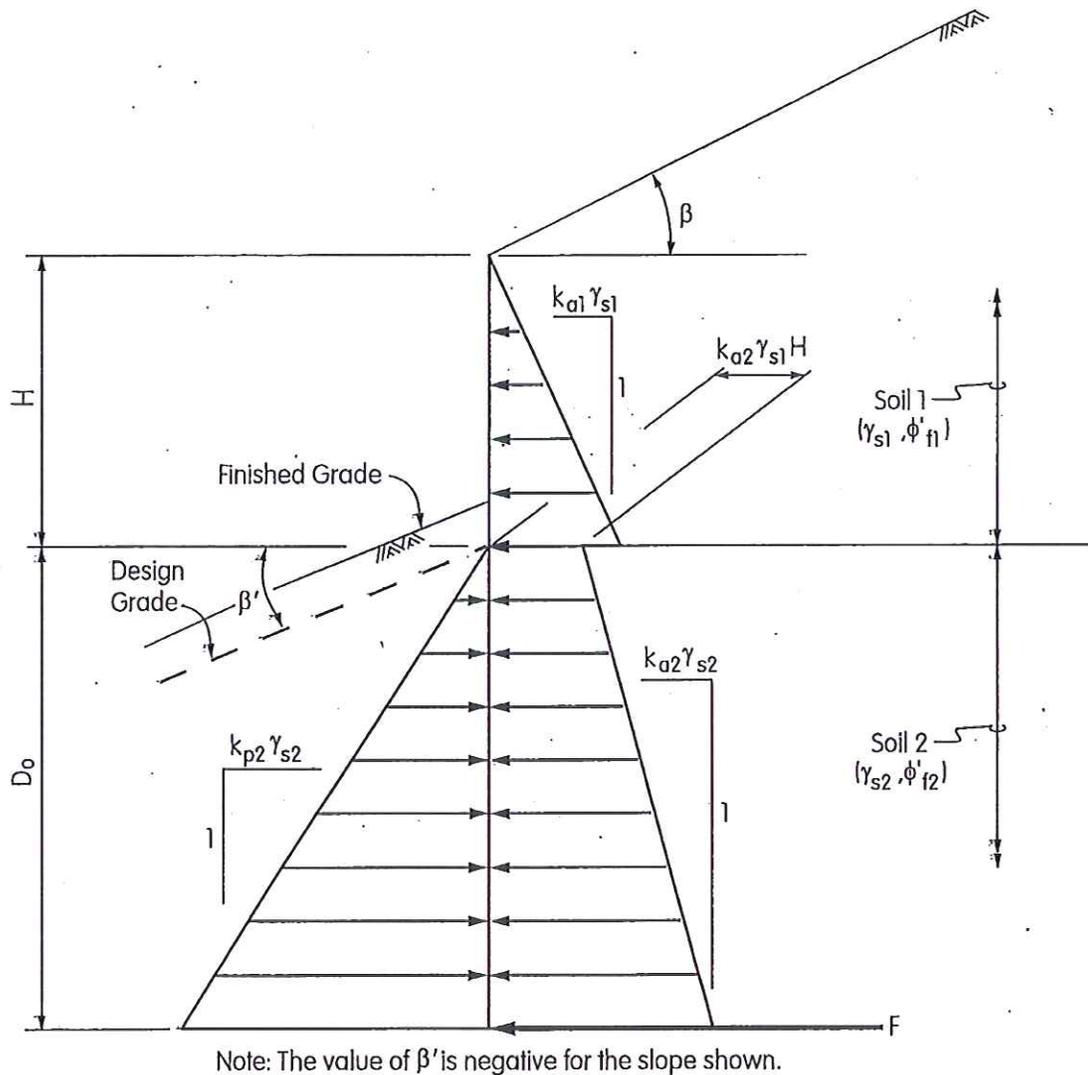


Figure 5.5.5.6-1 Simplified Lateral Earth Pressure Distributions for Permanent Non-gravity Cantilevered Walls with Vertical Wall Elements Embedded in Granular Soil and Retaining Granular Soil



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Recycled Water Truck Program

To help save limited potable water supplies, EBMUD provides recycled water at no charge to trucks for construction and other non-potable purposes. The Recycled Water Truck Program supplies clean, safe, disinfected recycled water for allowed uses like dust control, soil compaction, power washing, decorative fountains, landscape irrigation and ponds, street washing, and sewer flushing. To learn about other allowable uses of recycled water please see "Recycled Water Uses Allowed in CA" below.

Recycled water for trucks is available at EBMUD's main wastewater treatment plant in West Oakland and in North Richmond. Recycled water from this program may be used **only** in EBMUD's service area. Customers interested in participating must apply for a Recycled Water Use Permit. Please:

- Apply in person, at EBMUD's New Business Office on the 1st Floor of the Administration Building, 375 11th Street, Oakland, or
- Download the form below from EBMUD's website, or
- Call the Recycled Water Truck Program Manager at (510) 287-1346 or call (510) 287-7011 to request an application form be sent to you.

Completed applications should be returned to EBMUD. You may mail, email or fax the form as noted below:

EBMUD, Recycled Water Truck Program
 P.O. Box 24055, MS 407, Oakland, CA 94623-1055
 Email: mblueste@ebmud.com or mwest@ebmud.com
 Fax: (510) 287-1295, Attention: Mark Bluestein

The documents below are PDF files that can be viewed and printed through Adobe Acrobat Reader, a free software.



Recycled Water Uses Allowed in CA	47.14 KB
Recycled Water Truck Program Use Permit	48.38 KB
RWTP-Certificate of Liability Insurance	26.47 KB
RWTP-Worker's Comp Certificate	21.11 KB

Requirements

- Tank trucks must be equipped with an air gap.
- Truck owners must show proof of valid truck registration (copy for each truck must be attached to permit application).
- Truck owners must show proof of vehicle liability insurance and workers' compensation insurance. Copies of the Certificate of Liability Insurance or an ACCORD form, and the Certificate of Workers' Compensation Insurance must be attached to permit application. Photocopies, PDFs, and scanned documents are acceptable.
- Before EBMUD can fill their trucks for the first time, customers/drivers are required to attend a brief on-site training in order to learn about using the filling station and the proper handling and use of recycled water. EBMUD's Recycled Water Truck Program Manager schedules the training and informs customers of the date, time, and location.
- If a company has more than one truck driver who will use this program, all drivers must attend an on-site training, and read and sign the Recycled Water Truck Program Guidelines below.
- Once the customer/driver completes the on-site orientation and training, EBMUD will issue a signed Recycled Water Use Permit along with magnetic recycled water signs to affix to each of the customer's trucks.
- Other requirements and details about the filling stations will be reviewed at the on-site training.

Recycled Water Truck Program Guidelines	47.88 KB
---------------------------------------------------------	----------

Popular Pages in Recycled Water

- [Current Recycled Water Users](#)
- [Long-Term Recycled Water Planning](#)
- [Water Recycling Projects Under Construction](#)
- [About Recycled Water](#)
- [Recycled Water Customer Service Corner](#)

News

Recycled Water FAQs for Construction & Other Workers

See below for our Recycled Water Frequently Asked Questions for Construction & Other Workers.

Recycled Water Truck Programs in the East Bay

Several agencies offer recycled water through a truck/purple hydrant program in the East Bay. View list of East Bay recycled water truck programs below.

Regulatory Approval

The California Department of Public Health has approved this program which operates under EBMUD's existing master recycled water permit shown below. Customers must certify in the Recycled Water Truck Program permit that they have read the applicable rules and regulations in the master recycled water permit (Order 96-011) and agree to abide by them.



TRUCK CUSTOMER FILLS HIS TANKER TRUCK WITH RECYCLED WATER.

Recycled Water FAQs for Construction and Other Workers	31.05 KB
Recycled Water Truck Programs in the East Bay	26.2 KB
Order 96-011	152.96 KB

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Recycled Water for Construction & Other Uses
Truck Program/Recycled Water Hydrant Sources in the East Bay Area
(Updated July 2014)

As a service to EBMUD customers, the list below includes summary information about various utilities, including EBMUD, within the EBMUD service area or relatively close to it that produce and supply recycled water. **Please contact agencies directly for more details about their recycled water truck programs.**

All customers who plan to use recycled water must first obtain permits from the appropriate recycled water supplier.

The recycled water suppliers on this list offer tertiary-treated recycled water. For information about allowed uses of tertiary-treated recycled water, please go to: www.ebmud.com > Water Supply > Recycling > About Recycled Water > Recycled Water Uses Allowed in CA (PDF document).

Disinfected Tertiary Treated:

Central Contra Costa Sanitary District

Program Description: Central San, with treatment facilities near the Interstate 680 and Highway 4 interchange, has a recycled water hydrant program (purple hydrants). To learn more about Central San's truck and purple hydrant program:

Contact: Melody LaBella

Phone Number: (925) 229-7370

Web Page: <http://www.centalsan.org/index.cfm?navId=159>

Dublin San Ramon Services District

Program Description: There are currently seven purple hydrants in Dublin and four in San Ramon (including Dougherty Valley). Additionally, customers can pick up recycled water at DSRSD's Regional Wastewater Treatment Facility in Pleasanton near the Interstates 580 and 680 interchange. To learn more about DSRSD's truck and purple hydrant program:

Contact: Ann Cigliuti

Phone Number: (925) 875-2334

Web Page: <http://www.dsrdsd.com/do-business-with-us/recycled-water-use/recycled-water-hydrants-and-fill-station>

East Bay Municipal Utility District

Program Description: The Recycled Water Truck Program (RWTP) includes two truck filling stations located as follows:

- Wastewater Treatment Plant in West Oakland.
- Driveway entrance to North Richmond Water Reclamation Plant, two blocks from the Richmond Parkway.

Contact: Mark Bluestein

Phone Number: (510) 287-1346

Web Page: <http://www.ebmud.com/environment/conservation-and-recycling/recycling/recycled-water-truck-program>

City of Livermore

Program Description: Numerous purple hydrants on recycled water distribution system. To learn more about Livermore's purple hydrant program:

Contact: Dean Atkins

Phone Number: (925) 960-8125



Recycled Water Truck Program Guidelines

(May 2014)

Recycled Water Quality: EBMUD's Recycled Water Truck Program (RWTP) supplies clean, safe tertiary-treated recycled water that has been through a treatment process that includes either microfiltration or sand filtration and extra disinfection. Recycled water treated to this high level meets the rigorous and protective standards set by the California Department of Public Health and qualifies for unrestricted uses.

General Program Requirements

1. Customers with trucks interested in getting recycled water must apply for a Recycled Water Use Permit. The application may be obtained as follows:
 - In person, at EBMUD's New Business Office on the 1st Floor of the Administration Building, 375 11th Street, Oakland.
 - By downloading the form from EBMUD's website (www.ebmud.com): Home Page > Water Supply > Recycling > Recycled Water Truck Program > Recycled Water Truck Program Use Permit.
 - By calling the Recycled Water Truck Program Manager at (510) 287-1346 and requesting that the application form be mailed to the customer.
2. Application forms must be completed and returned, with copies of required documents attached (photocopies, PDFs, scanned documents acceptable), to EBMUD's Recycled Water Truck Program. Options for submitting completed applications include:
 - Mail to EBMUD, P.O. Box 24055, Recycled Water Truck Program, MS 407, Oakland, CA 94623-1055.
 - Email to mblueste@ebmud.com.
 - Fax to (510) 287-1295, Attention: Mark Bluestein.
3. EBMUD's recycled water may be used *only* within EBMUD's service area.
4. Tank trucks must be equipped with an air gap.
5. Truck owners must show proof of valid truck registration (a copy for each truck must be attached to permit application).
6. Truck owners must show proof of vehicle liability insurance (see permit form for coverage and documentation requirements) and worker's compensation insurance (unless owner-operated with no employees).
7. Before trucks can be filled for the first time, all truck owners and/or drivers are required to attend a brief on-site orientation/training in order to learn about using the filling station and the proper handling and use of recycled water. EBMUD's Recycled Water Truck Program Manager schedules the on-site orientation/training and informs customers of the date, time, and location.

8. Once the customer completes the on-site orientation/training and an EBMUD inspector verifies the required air gap, EBMUD will issue a signed Recycled Water Use Permit along with three magnetic recycled water signs to affix to the customer's truck (both sides and rear). EBMUD provides the first set of signs at no charge; the customer will have to pay (at cost) for any replacement signs. Customers who use EBMUD's Wastewater Treatment Plant filling station also will be issued a decal for truck tracking purposes.
9. The Recycled Water Use Permit must be available for inspection at all times. The recycled water user/user's agent must carry at least two copies in the truck.

Wastewater Treatment Plant Requirements

1. Recycled water is available at EBMUD's Wastewater Treatment Plant, located at 2020 Wake Avenue in West Oakland. (EBMUD provides maps and directions to the plant and to the recycled water filling station within the plant.)
2. In order to enter EBMUD's Wastewater Treatment Plant to access the recycled water filling station, the truck driver must leave one copy of the Recycled Water Use Permit at the plant's Security Gate for each water pickup.
3. Trucks must have an affixed EBMUD-issued decal and appropriately-placed recycled water signage to enter the Wastewater Treatment Plant.
4. Trucks must cross a live railroad line to access EBMUD's Wastewater Treatment Plant. Do not wait or park on the tracks at any time.
5. ***NO IDLING***. Please turn off your truck engine while filling or waiting at the filling station.
6. ***NO SMOKING*** is permitted in the plant at any time (smoking is a safety hazard as there are flammable gases, oxygen, and methane present).
7. The speed limit is ***10 miles per hour*** within the plant.
8. In the event an emergency alarm sounds (six long tones), the truck driver needs to call (510) 287-1522 for further instructions.
9. Please do ***not*** leave any trash or debris in the filling station area.

North Richmond Filling Station Requirements

1. Access to the North Richmond RWTP filling station is restricted to those truck customers ***only*** who have an EBMUD-issued permit. (EBMUD provides a map and directions to the location of the North Richmond recycled water filling station.)

2. EBMUD will issue a hydrant meter access key following the completion of site orientation/training and the issuance of a permit. For truck customers who lose or misplace their key, EBMUD will charge a \$50 replacement fee.
3. Trucks must have appropriately-placed recycled water signage to use the North Richmond recycled water filling station.
4. Please do not block any turnaround areas or nearby driveway entrances/exits when waiting or filling.
5. **NO IDLING.** Please turn off your truck engine while filling or waiting at the filling station.
6. **NO SMOKING** is permitted at North Richmond recycled water filling station at any time (smoking is a potential safety hazard).
7. Please do **not** leave any trash or debris in the filling station area.
8. *PLEASE SECURELY RE-LOCK THE METER BEFORE LEAVING THE FILLING STATION AND MAKE SURE THAT NO WATER IS LEAKING FROM THE METER OR HYDRANT.*
9. In the event of an emergency concerning the recycled water hydrant, meter, fill pipe or hose (spillage, leaks, etc.), the truck driver needs to call the emergency contact number listed on the filling station sign for further instructions.

Recycled Water Handling and Use Requirements/Precautions

1. Do **not** drink recycled water or use it for food preparation. Additionally, the truck driver must notify workers and/or the public when recycled water is used at a site and tell them that they are not to drink recycled water or use it for food preparation.
2. Recycled water users should apply hand sanitizer or wash their hands with soap and potable water after working with recycled water and especially before eating or smoking.
3. Precautions should be taken to avoid food coming contact with recycled water while the use site is still wet.
4. Truck drivers should be equipped with an adequate first aid kit. Cuts or abrasions should be promptly washed, disinfected, and bandaged.
5. Recycled water shall not be allowed to spray onto external drinking water fountains.
6. Recycled water shall not be applied where it could contact or enter passing vehicles, buildings, areas where food is handled or eaten, or storm drains.
7. Recycled water users shall take adequate measures to prevent overspray, ponding, or run off of recycled water from the authorized recycled water use area unless it is specifically

allowed by the Regional Water Quality Control Board or by an attachment to the Recycled Water Use Permit issued by EBMUD.

8. There shall be no irrigation or impoundment of recycled water within a minimum of 50 feet of any domestic (drinking water) well.
9. Vehicles used for transportation and distribution of recycled water must have water-tight valves and fittings, must not leak, and tanks must be cleaned of contaminants prior to use. A truck or tank that has contained material from a septic tank or cesspool shall not be used to convey recycled water.
10. Recycled water must not be introduced into any permanent piping system and no connection shall be made between the tank truck and any part of a potable water system.
11. Tank trucks used to transport recycled water should not be used to carry potable water unless a thorough cleaning and disinfection process has been completed. Contact EBMUD at (510) 287-1346 for details.

I certify that I have read, understand, and agree to abide by the above guidelines.

Signature _____ Date _____

Print Name _____

Company _____

California Driver License Number: _____

Recycled Water Uses Allowed¹ in California

Use of Recycled Water	Treatment Level			
	Disinfected Tertiary Recycled Water	Disinfected Secondary – 2.2 Recycled Water	Disinfected Secondary – 23 Recycled Water	Undisinfected Secondary Recycled Water
<i>Irrigation of:</i>				
Food crops where recycled water contacts the edible portion of the crop, including all root crops	Allowed	Not Allowed	Not Allowed	Not Allowed
Parks and playgrounds	Allowed	Not Allowed	Not Allowed	Not Allowed
School yards	Allowed	Not Allowed	Not Allowed	Not Allowed
Residential landscaping	Allowed	Not Allowed	Not Allowed	Not Allowed
Unrestricted-access golf courses	Allowed	Not Allowed	Not Allowed	Not Allowed
Any other irrigation uses not prohibited by other provisions of the California Code of Regulations	Allowed	Not Allowed	Not Allowed	Not Allowed
Food crops, surface-irrigated, above-ground edible portion, and not contacted by recycled water	Allowed	Allowed	Not Allowed	Not Allowed
Cemeteries	Allowed	Allowed	Allowed	Not Allowed
Freeway landscaping	Allowed	Allowed	Allowed	Not Allowed
Restricted-access golf courses	Allowed	Allowed	Allowed	Not Allowed
Ornamental nursery stock and sod farms with unrestricted public access	Allowed	Allowed	Allowed	Not Allowed
Pasture for milk animals for human consumption	Allowed	Allowed	Allowed	Not Allowed
Non-edible vegetation with access control to prevent use as a park, playground or school yard	Allowed	Allowed	Allowed	Not Allowed
Orchards with no contact between edible portion and recycled water	Allowed	Allowed	Not Allowed ²	Not Allowed ²
Vineyards with no contact between edible portion and recycled water	Allowed	Allowed	Not Allowed ²	Not Allowed ²
Non food-bearing trees, including Christmas trees not irrigated less than 14 days before harvest	Allowed	Allowed	Allowed	Allowed
Fodder and fiber crops and pasture for animals not producing milk for human consumption	Allowed	Allowed	Allowed	Allowed
Seed crops not eaten by humans	Allowed	Allowed	Allowed	Allowed
Food crops undergoing commercial pathogen-destroying processing before consumption by humans	Allowed	Allowed	Allowed	Allowed
Ornamental nursery stock, sod farms not irrigated less than 14 day before harvest	Allowed	Allowed	Allowed	Allowed
<i>Supply for impoundment:</i>				
Non-restricted recreational impoundments, with supplemental monitoring for pathogenic organisms	Allowed ³	Not Allowed	Not Allowed	Not Allowed
Restricted recreational impoundments and publicly-accessible fish hatcheries	Allowed	Allowed	Not Allowed	Not Allowed
Landscape impoundments without decorative fountains	Allowed	Allowed	Allowed	Not Allowed
<i>Supply for cooling or air conditioning:</i>				
Industrial or commercial cooling or air conditioning involving cooling tower, evaporative condenser, or spraying that creates a mist	Allowed ⁴	Not Allowed	Not Allowed	Not Allowed
Industrial or commercial cooling or air conditioning not involving cooling tower, evaporative condenser, or spraying that creates a mist	Allowed	Allowed	Allowed	Not Allowed

Recycled Water Uses Allowed¹ in California

(continued)

Use of Recycled Water	Treatment Level			
	Disinfected Tertiary Recycled Water	Disinfected Secondary – 2.2 Recycled Water	Disinfected Secondary – 23 Recycled Water	Undisinfected Secondary Recycled Water
<i>Other uses:</i>				
Groundwater recharge	Allowed under special case-by-case permits by RWQCBs ⁵			
Flushing toilets and urinals	Allowed	Not Allowed	Not Allowed	Not Allowed
Priming drain traps	Allowed	Not Allowed	Not Allowed	Not Allowed
Industrial process water that may contact workers	Allowed	Not Allowed	Not Allowed	Not Allowed
Structural fire fighting	Allowed	Not Allowed	Not Allowed	Not Allowed
Decorative fountains	Allowed	Not Allowed	Not Allowed	Not Allowed
Commercial laundries	Allowed	Not Allowed	Not Allowed	Not Allowed
Consolidation of backfill material around potable water pipelines	Allowed	Not Allowed	Not Allowed	Not Allowed
Artificial snow making for commercial outdoor uses	Allowed	Not Allowed	Not Allowed	Not Allowed
Commercial car washes, not heating the water, excluding the general public from washing process	Allowed	Not Allowed	Not Allowed	Not Allowed
Industrial process water that will not come into contact with workers	Allowed	Allowed	Allowed	Not Allowed
Industrial boiler feedwater	Allowed	Allowed	Allowed	Not Allowed
Non-structural fire fighting	Allowed	Allowed	Allowed	Not Allowed
Backfill consolidation around non-potable piping	Allowed	Allowed	Allowed	Not Allowed
Soil compaction	Allowed	Allowed	Allowed	Not Allowed
Mixing concrete	Allowed	Allowed	Allowed	Not Allowed
Dust control on roads and streets	Allowed	Allowed	Allowed	Not Allowed
Cleaning roads, sidewalks, and outdoor work areas	Allowed	Allowed	Allowed	Not Allowed
Flushing sanitary sewers	Allowed	Allowed	Allowed	Allowed

This summary is prepared from the December 2, 2000-adopted Title 22 Water Recycling Criteria and supersedes all earlier versions. Prepared by Bahman Sheikh and edited by EBMUD Office of Water Recycling, who acknowledge this is a summary and not the formal version of the regulations referenced above.

¹ Refer to the full text of the December 2, 2000 version of Title 22: California Code of Regulations, Chapter 3 Water Recycling Criteria. This chart is only an informal summary of the uses allowed in this version, with the exception of orchards and vineyards noted as "Not Allowed²" on page 1 and explained below.

² Per California Department of Public Health letter of January 8, 2003 to California Regional Water Quality Control Boards.

³ Allowed with "conventional tertiary treatment." Additional monitoring for two years or more is necessary with direct filtration.

⁴ Drift eliminators and/or biocides are required if public or employees can be exposed to mist.

⁵ Refer to Groundwater Recharge Guidelines, available from the California Department of Public Health.



This Recycled Water Use Permit must be available for inspection at all times. The recycled water user/user's agent must carry two copies in the truck and present one copy at EBMUD's Wastewater Treatment Plant Security Gate for water pickups at that location only. Permit is subject to RWQCB Order 96-011.

Recycled Water Truck Program Recycled Water Use Permit

East Bay Municipal Utility District
Recycled Water Truck Program, MS 407
P.O. Box 24055
Oakland, CA 94623-1055

(For EBMUD use)

Permit Number: _____ Effective Date of Permit: _____

Hydrant meter key issued by EBMUD? Yes No

1. Customer Information

User's Name: _____

Name of Company: _____

Mailing Address: _____

City/State/ZIP Code: _____

Office Phone #: _____ Fax #: _____

Primary Contact: _____ Title: _____

Cell Phone or Other Phone #: _____

2. Truck Information

Provide the following information for the truck(s) for which a permit is requested. An EBMUD inspector must inspect each truck to determine that it is equipped with the necessary air gap before decal issuance.

Truck Trailer # (if applicable)	License Plate Number	Capacity of Tank or Storage Containers	(For EBMUD use)	
			Vehicle Equipped with Air Gap?	Decal #s

3. Recycled Water Use Information (Check all that apply)

Use of Recycled Water: Soil Compaction Dust Control Irrigation Power Washing

Sewer Flushing Street Cleaning Other: _____

RECYCLED WATER MUST NOT TO BE USED FOR STORM DRAIN FLUSHING

Application Method: Tank Truck Spray Wash Water

Other: _____

RECYCLED WATER FROM EBMUD MAY BE USED ONLY WITHIN EBMUD'S SERVICE AREA

Where you expect to apply recycled water within EBMUD's service area:

City: _____ Address: _____

City: _____ Address: _____

(Attach separate sheet if necessary)

4. Recycled Water Use Information

User agrees to install, maintain, and keep in place while using recycled water three magnetic signs (on both sides and the rear of each truck) identifying that recycled water is in use. EBMUD provides the first set of signs at no charge; replacement signs to be paid for at cost by user. **User must initial here to acknowledge these requirements:** _____ (initials)

In cases where EBMUD issues a hydrant meter key, the customer must pay EBMUD \$50 to replace any lost key. **User must initial here to acknowledge this requirement:** _____ (initials)

Customer must identify the person responsible for implementing worker/public protection at each site (i.e., that humans are not to drink recycled water or use it for preparing food).

Name of Responsible Person: _____

5. Vehicle Registration and Insurance Requirements

Permit holder must provide and attach copies of current vehicle registration (for each truck) and the following insurance requirements: 1) Proof of auto and trucking liability insurance with \$1 million in policy limits that include liability coverage for bodily injury, property and auto damage. It must also provide coverage for the use of owned, non-owned and hired automobiles and trucks. 2) Proof of Workers Compensation coverage that provides up to the state statutory limits. (For single owner/operators with no employees Worker's Compensation coverage can be waived).

CERTIFICATION & INDEMNIFICATION

I certify that I am an authorized agent for the company cited in this application and that I have authority to bind the company to the requirements of this permit and program. I hereby certify under penalty of perjury that the information provided in this permit application and in any attachment is true and accurate to the best of my knowledge. I also certify that I have read the applicable rules and regulations of the Regional Water Quality Control Board Order 96-011 and the EBMUD Recycled Water Truck Program Guidelines and agree to abide by them.

My company agrees to defend, indemnify, and hold harmless EBMUD and its Directors, officers, agents and employees from and against any and all loss, liability, expense, claims, suits, and damages, including attorneys' fees, arising out of or resulting from Permit Holder's, its associates', employees', subconsultants', or other agents' negligent acts, errors or omissions, or willful misconduct, in the operation and/or performance under this Recycled Water Use Permit.

Signature of User _____ Print Name _____

Title _____

Company _____ Date _____

AUTHORIZATION

Customer is authorized to use recycled water from EBMUD's Recycled Water Truck Program in accordance with EBMUD's Recycled Water Truck Program Guidelines and RWQCB Order 96-011.

Authorized Signature: _____

Filling Station Representative Signature: _____ Date _____



CERTIFICATE OF COMMERCIAL AUTO AND TRUCKING LIABILITY INSURANCE

THIS IS TO CERTIFY TO:

East Bay Municipal Utility District (EBMUD)
 Department: Water and Natural Resources
 Recycled Water Truck Program, MS 407
 Street Address: 375 11th St.
 Mailing Address: P.O. Box 24055
 City, State, Zip: Oakland, CA 94623-1055

THE FOLLOWING DESCRIBED POLICY HAS BEEN ISSUED TO:

District Contract/Permit Number: _____
 Insured: _____
 Address: _____

LOCATION AND DESCRIPTION OF PROJECT/AGREEMENT:

TYPE OF INSURANCE: Automobile/Trucking Liability: Coverage/Endorsements as required by agreement.
LIMITS OF LIABILITY: (MINIMUM) \$1,000,000/Occurrence, Bodily Injury, Property Damage- Auto Liability

SELF INSURED RETENTION (\$): (Auto/Trucking) _____
 Aggregate Limits (Auto/Trucking) _____

INSURANCE COMPANY(IES): (Auto/Trucking) _____

POLICY NUMBER(S): (Auto/Trucking) _____

POLICY TERM: From: (Auto/Trucking) _____ To: (Auto/Trucking) _____

THE FOLLOWING COVERAGES OR ENDORSEMENTS ARE INCLUDED IN THE POLICY(IES):

1. The coverage is *Primary and non-contributory* to any other applicable insurance carried by the District;
2. The policy(ies) covers *contractual liability*;
3. The policy(ies) covers the use of *owned, non-owned, and hired* trucks;
4. The policy(ies) covers the use of *owned, non-owned, and hired automobiles*;
5. The policy(ies) will not be canceled nor the above coverages/endorsements reduced without 30 days written notice to East Bay Municipal Utility District at the address above.

IT IS HEREBY CERTIFIED that the above policies provide liability insurance as required by the agreement between the East Bay Municipal Utility District and the insured.

Signed _____ Firm _____
 Address _____ Date _____
 _____ Phone _____

Signature

Date



CERTIFICATE OF WORKERS' COMPENSATION INSURANCE

THIS IS TO CERTIFY TO:

East Bay Municipal Utility District (EBMUD)
Department: Water and Natural Resources – RW Truck Program
Street Address: 375 Eleventh Street, MS 407
Mailing Address: P.O. Box 24055
City, State, Zip: Oakland, CA 94623

THE FOLLOWING DESCRIBED POLICY HAS BEEN ISSUED TO:

District Permit Number:
(completed by EBMUD) _____

Insured: _____

Address: _____

LOCATION AND DESCRIPTION OF PROJECT/AGREEMENT:

Procure recycled water at designated EBMUD Recycled Water Truck Program filling station (West Oakland or North Richmond).

TYPE OF INSURANCE: Workers' Compensation Insurance as required by California State Law.

INSURANCE COMPANY: _____

POLICY NUMBER: _____

POLICY TERM: From: _____ To: _____

The policy will not be canceled nor the above coverage reduced without 30 days written notice to East Bay Municipal Utility District at the address above.

IT IS HEREBY CERTIFIED the above policy provides insurance as required by the agreement between East Bay Municipal Utility District at the Insured.

Signed: _____
Authorized Signature of Broker, Agent, or Underwriter

Date: _____ Firm: _____

Address: _____

Phone: _____

"This certificate or verification of insurance is not an insurance policy and does not amend, extend, or alter the coverage afforded by the policies listed herein. Notwithstanding any requirement, term or condition of any contract or other document with respect to which this certificate or verification of insurance may be issued or may pertain, the insurance afforded by the policies described herein is subject to all the terms, exclusions, and conditions of the policies."