

INFORMATION HANDOUT

For Contract No. 07-300704

At 07-LA-5-13.8/19.2

Identified by

Project ID 0713000492

MATERIALS INFORMATION

Aerially Deposited Lead Site Report

Asbestos Containing Material Survey Bridge Assessment

Fiber Optic Cable System As- Built Drawings

Local Labor Summary

Local Hire Residency Certification Form



AERIALY DEPOSITED LEAD SITE INVESTIGATION REPORT

**PAVEMENT REHABILITATION PROJECT- ADA
CURB RAMP RECONSTRUCTION,
CONSTRUCTION OF CONCRETE SAFETY
BARRIER, CONSTRUCTION OF MVPS AND
REPLACEMENT OF BRIDGE APPROACH AND
DEPARTURE PAVEMENT SLABS FROM ROUTE
5/710 SEPARATION TO MAIN STREET
UNDERCROSSING**

LOCATION: LA-5- PM 13.8/19.2

PROJECT NUMBER/EFIS NO.: 0173000492-1

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CONTRACT NO. 07A3321

TASK ORDER NO. 17

STANTEC PROJECT NO.: 185831017

Submitted to:

**California Department of Transportation,
District 7**

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EXECUTIVE SUMMARY

At the request of Caltrans District 7 Hazardous Waste South Branch, and pursuant to the provisions of Caltrans Agreement 07A3321 and the Task Order No. 17 request, an ADL SI was conducted at proposed ADA curb ramp reconstruction locations, concrete barriers and maintenance vehicle pullout locations along SR5 between PM 13.8 to 19.2, from the SR5/SR710 Separation (SR710) in the City of Commerce and the Main Street undercrossing in the City of Los Angeles, in Los Angeles County, California (Figure 1). This investigation was conducted to evaluate the potential presence of ADL and other heavy metals in shallow subsurface soils at locations where ADA curb ramp improvements and construction of concrete barriers and MVPs are proposed. The project locations were provided by Caltrans in an Attachment to the Task Order and are shown on Figures 2 through 13.

The objective of the ADL SI is to evaluate the presence and distribution of ADL and other heavy metals in subsurface soils within each of the proposed ADA curb ramp reconstruction locations, maintenance vehicle pullout areas and concrete barrier locations. The data will be used by Caltrans to perform the statistical evaluations of the data and to make recommendations for handling and/or disposal of soil generated during construction activities. In addition to the ADL SI, an Asbestos Containing Materials (ACM) Survey was conducted on the S5-E10 Connector Undercrossing (PM 18.38) and the Main Street Undercrossing (PM 19.2) to support Caltrans' proposed pavement rehabilitation and removal and replacement of certain bridge components, as part of the scope of work for requested for Task Order 17. The details of the ACM survey are discussed and will be issued to Caltrans in an ACM Survey Report under a separate cover

Fifty-four borings were advanced at 15 separate locations. A total of 105 soil samples and 5 duplicate samples were collected at depths ranging from surface to two feet bgs and analyzed for total lead. A total of 55 soil samples and two duplicate samples were analyzed for soluble lead by Cal WET-citric. In addition, 53 soil samples and 2 duplicate samples were analyzed for soluble lead by Cal WET-DI, 20 soil samples and two duplicate samples were analyzed for soluble lead using the TCLP extraction, 10 soil samples and one duplicate sample were analyzed for pH, and 9 soil samples and one duplicate sample were analyzed for Title 22 metals.

The following summarizes the results and findings of this investigation:

1. ADL is present at each of the 12 proposed ADA curb ramp reconstruction locations, at the S. Ditman Avenue Concrete Barrier and at both of the Maintenance Vehicle Pullouts (MVPs).

2. Total lead concentrations were not reported above the California TTLC of 1,000 mg/kg in any sample.
3. Cal WET-Citric soluble lead concentrations exceeded the California STLC (5 mg/L) in 43 samples.
4. Cal WET-DI concentrations met or exceeded the Caltrans Lead Variance threshold of 1.5 mg/L in five samples.
5. TCLP soluble lead concentrations did not exceed the federal toxicity characteristic threshold (5 mg/L) in any of the samples analyzed.
6. The reported pH values were within the limits of non-hazardous waste and were above the Caltrans Lead Variance thresholds.
7. Slightly elevated concentrations of antimony, copper, selenium and zinc were reported above expected background levels. However, they did not exceed U.S. Environmental Protection Agency (EPA) health-risk based screening levels for industrial commercial property use.
8. Arsenic concentrations were within expected background concentrations but they exceeded CHHSLs and the EPA RSLs in the nine soil samples and one duplicate sample analyzed.

Based on the findings and results of the investigation, soil in the investigation areas is impacted by ADL. Based on these findings, the following are recommended:

1. All work should be conducted under the guidance of a lead compliance plan (LCP) prepared in accordance with Section 14-11.03 Material Containing Hazardous Waste Concentrations of Aerially Deposited Lead of the 2010 Standard Specifications. The purpose of the LCP is to identify measures that will be implemented during construction to reduce potential exposure to workers and the general public.

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1.0 INTRODUCTION

1.1 PROJECT DESCRIPTION

At the request of the California Department of Transportation (Caltrans) District 7 Hazardous Waste South Branch, and pursuant to the provisions of Caltrans Agreement 07A3321 and the Task Order No. 17 request, an Aerially Deposited Lead Site Investigation (ADL SI) was conducted at proposed Americans with Disabilities Act (ADA) curb ramp reconstruction locations, concrete barriers and maintenance vehicle pullout locations along State Route 5 (SR5) between PM 13.8 to 19.2, from the SR5/SR710 Separation (SR710) in the City of Commerce and the Main Street undercrossing in the City of Los Angeles, in Los Angeles County, California (Figure 1). This investigation was conducted to evaluate the potential presence of ADL and other heavy metals in shallow subsurface soils at locations where ADA curb ramp improvements and construction of concrete barriers and maintenance vehicle pullouts (MVPs) are proposed. The project locations were provided by Caltrans in an attachment to the Task Order and are shown on Figures 2 through 13.

In addition to the ADL SI, an Asbestos Containing Materials (ACM) Survey was conducted on the S5-E10 Connector Undercrossing (PM 18.38) and the Main Street Undercrossing (PM 19.2) to support Caltrans' proposed pavement rehabilitation and removal and replacement of certain bridge components, as part of the scope of work for requested for Task Order 17. The details of the ACM survey are discussed and will be issued to Caltrans in an ACM Survey Report under a separate cover

1.2 PURPOSE AND OBJECTIVES

The objective of the ADL SI is to evaluate the presence and distribution of ADL and other heavy metals in subsurface soils within each of the proposed ADA curb ramp reconstruction locations, concrete safety barrier, and MVP locations. The data will be used by Caltrans to perform the statistical evaluations of the data and to make recommendations for handling and/or disposal of soil generated during construction activities.

1.3 BACKGROUND

According to the Task Order No. 17 Request, the proposed work will support Caltrans' plans to perform timely pavement rehabilitation to preserve and extend the existing pavement on SR5 between the SR5/SR710 Separation (PM13.8) in the city of Commerce and, the Main Street undercrossing (PM19.2) in the city of Los Angeles, in Los Angeles County, California. In addition to pavement rehabilitation, the project also proposes to remove and replace existing guardrails, construct and upgrade existing curb ramps to meet current ADA standards, construct maintenance vehicle pullouts (MVPs) and concrete safety barriers, gore paving, and replace existing attenuators with crash cushions (Smart Cushion). Ramp termini upgrade, replacement of bridge

approach/departure slabs and asphalt/concrete (AC) dike reconstruction are also proposed as part of the project improvements, within the project limits. Caltrans requested an ADL SI to evaluate proper handling and disposition of soil excavated during construction of the proposed project.

2.0 PROJECT SETTING

This section describes the project setting and includes a description of the study area, the physiographic setting of the study area, the general geology and hydrogeology of the area, and a description of the site vicinity.

2.1 SITE DESCRIPTION

The study area is located along the northbound and southbound on- and off-ramp shoulders of SR5 within Caltrans Right-of-way (ROW) through portions of Commerce and Los Angeles, in Los Angeles County, California (Figure 1).

2.2 PHYSIOGRAPHIC SETTING

The Site is located within the limits of the Downey and Montebello Plains, south of the Los Angeles Narrows. Site topography along SR5 slopes south from the Repetto Hills (northeast of the Site) towards the Huntington Park/Maywood area. Elevations across the Site range from approximately 340 feet above mean sea level (amsl) near the north end of the Site (United States Geological Survey [USGS], 1953) to approximately 180 feet amsl near the eastern end of the Site at the City of Commerce (USGS, 1953).

2.3 REGIONAL GEOLOGY AND HYDROGEOLOGY

The Site is located within the Peninsular Ranges Geomorphic Province of California. According to the California Geological Society's (CGS), *California Geomorphic Provinces-Note 36* (CGS, 2002), the Peninsular Ranges Geomorphic Province is characterized by ranges separated by valleys trending northwest and subparallel to faults extending out from the San Andreas Fault. The geology across the Site is made up of Recent alluvial fan deposits formed by the Los Angeles (western area of the site) and Rio Hondo-San Gabriel River systems (eastern area of the site)(DWR, 1961). These alluvial deposits are described as unconsolidated stream deposited gravel, sand silt and clay (DWR, 1961).

As is the case with most of southern California, the Site is located in a seismically active area. Faults in the Site vicinity include the Newport-Inglewood Fault zone to the southwest, and the Coyote Pass Fault to the north at the base of the Repetto Hills and the Rio Hondo Fault to the northeast of the Site (DWR, 1961). The nearest active faults are those associated with the Newport-Inglewood Fault zone. The Newport-Inglewood faults are right-lateral with probable maximum magnitudes of 6.0 to 7.4 (SCEDC, 2013).

According to the State of California Water Resources Control Board GeoTracker website (GeoTracker), the area of the Site is located within the Los Angeles-San Gabriel River Watershed in the Central Basin of the Coastal Plain of Los Angeles groundwater basin (SCWRCB, 2014). A report prepared for a facility located near the center of the Site indicates that groundwater was reported at approximately 60 feet below the

ground surface (URS, 2002). Groundwater is expected to flow in a general west to southwest direction, following regional topography.

2.4 SITE VICINITY

The area along the SR5 corridor is comprised of densely developed residential and commercial/industrial properties.

3.0 SCOPE OF WORK

The proposed scope of the ADL SI, as described in the Task Order Request, consisted of the general elements described below (deviations from the Task Order scope are described in Section 4.3):

- Pre-field Investigation activities:
 - Development of a project proposal to guide task order activities;
 - Development of a site specific health and safety plan (HASP);
 - Coordination of equipment and subcontractors.
 - Utility clearance

- Field Investigations:
 - Advancement and sampling of 44 borings at 12 separate proposed ADA curb reconstruction locations:
 - Four borings at each ADA curb ramp reconstruction location. Where there are two ADA curb ramp reconstruction areas in the same vicinity (same on- or off-ramp area), two (2) borings are proposed for each ramp area.
 - Collect samples at surface (0 to 0.5) and 1.5 to 2.0 feet below ground surface (bgs), for a total of 88 samples.
 - Advancement and sampling of six borings at two separate proposed MVP construction locations
 - Three borings at each MVP reconstruction locations.
 - Collect samples at surface (0 to 0.5) and 0.5 to 1.0 foot bgs, for a total of 12 samples.
 - Advancement and sampling of six borings at two separate proposed concrete barrier locations
 - Three borings at each concrete barrier locations.
 - Collect samples at surface (0 to 0.5) and 1.5 to 2.0 feet bgs, for a total of 12 samples.
 - Decontamination of sampling equipment
 - Collection and preservation of soil samples from each boring;
 - Boring location survey using global positioning system (GPS);
 - Boring abandonment.

- Laboratory analysis of soil samples pursuant to the requirements of Task Order No. 17 for,
 - Total lead;
 - Soluble lead by California Waste Extraction Test using citric acid extract (Cal WET-Citric);
 - Soluble lead by modified Cal WET using deionized water extract (Cal WET-DI);

- Soluble lead by Toxicity Characteristic Leaching Procedure (TCLP);
 - pH; and
 - Title 22 metals.
- Data validation, database generation, and preparation of this report.

4.0 SOIL INVESTIGATION METHODOLOGY

The soil investigation was conducted in general accordance with the methods and requirements of Task Order 17. The following subsections summarize the methodology implemented in completing the required scope of work, along with any deviations from the scope of work described in the task order.

4.1 PRE-FIELD ACTIVITIES

District 7 Task Order Manager Mr. Anm Wasim Choudhury provided photographs and maps illustrating the proposed ramp and boring locations. Site reconnaissance was conducted to mark the boring locations for Underground Service Alert (USA) notifications as well as to evaluate accessibility to the proposed borehole locations.

As required by Task Order 17, a site-specific HASP was developed in accordance with California Occupational Safety and Health Administration (Cal OSHA) requirements to guide field sampling activities. The HASP describes health and safety procedures and was submitted to Caltrans for approval prior to initiating field activities.

4.2 FIELD INVESTIGATIONS

Fifty-four (54) borings (locations shown on Figures 2 through 13) were advanced at 15 discontinuous locations along SR5 between the SR5/SR710 Separation in the city of Commerce and, the Main Street undercrossing in the city of Los Angeles, in Los Angeles County, California (Figure 1). The field methods used for the ADL SI were consistent with those proposed in Stantec's December 1, 2014 *ADL Site Investigation and Asbestos Survey Proposal*. Accessibility issues were encountered and are discussed in Section 4.3.

The weather was cool and sunny during the first two days of sampling (December 10 and 11, 2014). The third day of sampling was postponed due to heavy rain. Sampling activities resumed on December 15, 2014. The following subsections describe the methodology and procedures followed in conducting the field investigations.

4.2.1 Health and Safety

Prior to initiating daily field work, a tail gate health and safety meeting was conducted at the Site with field personnel. During the tail gate meeting, daily work activities and health and safety issues were discussed, including the following:

- Field tasks to be conducted throughout the day;
- Project schedule;
- Hazard awareness;
- General health and safety practices, procedures and issues;

- Specific health and safety issues related to the day's work;
- Health and Safety procedures, controls, etc.;
- Engineering controls; personal protective equipment and monitoring;
- Traffic control and safety; and
- Emergency procedures and contacts.

Field documentation of health and safety meetings and monitoring were maintained throughout the duration of field activities. A copy of the completed field forms are provided in Appendix A. An electronic copy of the full HASP is included in Appendix A, in compact disk format.

4.2.2 Traffic Control

The following traffic control measures were implemented during field sampling activities:

- Traffic cones were placed along roadway shoulders at each separate work area, and
- Trucks with high visibility flashing amber strobe lights were positioned between oncoming traffic and workers.

4.2.3 Site Investigations - Soil Sampling Activities

Forty-four (44) borings were advanced at 12 proposed ADA curb ramp reconstruction project locations and four borings were advanced at one proposed concrete barrier location. These borings were advanced via hand auger to a total depth of two (2) feet bgs. Using the hand auger, two samples were collected from each boring, one at surface (0-0.5) and a second sample was collected at two feet bgs (1.5-2.0).

Six borings were advanced at two proposed MVP locations via hand auger to a total depth of one foot bgs. Two soil samples were collected from each boring, one at surface (0-0.5) and a second sample was collected at one foot bgs (0.5-1.0).

4.2.4 Sample Collection and Preservation

All samples were collected directly from the hand auger bailer, discharged to a clean zip lock one-gallon bag, manually homogenized, then discharged to eight-ounce laboratory certified clean glass jars.

Each sample jar was labeled with a specific sample identification (I.D.) number, boring I.D., project I.D., EA number, sample date, and sample time. Samples were also recorded on chain-of-custody (CoC) forms and delivered to an environmental laboratory for analysis.

4.2.5 Boring Locations

All boring locations were identified and plotted on a field map with a unique boring identification (I.D.) number to represent each borehole (Figures 2 through 13). In addition, the spatial coordinates (x and y) for each borehole were obtained using a handheld field GPS Trimble unit. The spatial coordinates for the borings are provided in Appendix B. A photographic record of the boring locations is provided in Appendix C.

4.2.6 Decontamination

All sampling equipment reused during the field investigation was decontaminated prior to sampling at each sample interval using a non-phosphate detergent solution and triple rinsed with distilled water.

4.2.7 Borehole Abandonment

Excess soil cuttings were replaced in their respective borehole.

4.2.8 Investigation Derived Wastes (IDW)

All IDW were disposed of in accordance with U.S. EPA publication OSWER Directive 9345.3-02 entitled "Management of Investigation-Derived Waste During Site Inspections" as specified in Contract 07A3321, Method 17. Used and soiled personal protective equipment (PPE) was bagged and disposed to the municipal trash.

4.2.9 Field Quality Assurance/Quality Control

In accordance with Task Order 17, the equipment blank was collected to evaluate the adequacy of field decontamination efforts. One equipment blank was collected for each CoC. The equipment blank (also the field blank) was collected by pouring distilled water over the sampling equipment and collecting the water in appropriate sample containers. The QA/QC samples were analyzed for Title 22 Metals (Table 2).

Five blind duplicate soil samples were collected at selected locations to evaluate the adequacy of laboratory analysis methods. Duplicate and primary samples are identified below:

- 1267-DUP1-20141210 is a duplicate sample 1267-114-0,
- 1267DUP2-20141210 is a duplicate of sample 1267-120-2,
- 1267-DUP3-20141211 is a duplicate of sample 1267-139-0,
- 1267-DUP4-20141211 is a duplicate of sample 1267-146-0, and
- 1267-DUP5-20141211 is a duplicate of sample 1267-147-0.

All duplicate samples were analyzed for Total lead by EPA test method 6010B (Table 1). Duplicate samples 1267-DUP4-20141211 and 1267-DUP5-20141211 were also analyzed for Soluble lead by CAL WET-Citric, Soluble lead by Cal WET-DI, and Soluble lead by TCLP (EPA test method 1311), as discussed in section 5.0 (Table 1). Duplicate sample 1267-DUP1-20141210 was also analyzed for pH (EPA test method 9045C) and for Title 22 metals (Table 2).

4.3 DEVIATIONS FROM TASK ORDER SCOPE OF WORK

The following summarizes deviations or changes from the task order scope of work (as described above in Section 3.0):

1. Concrete Barrier SB (Calzona Street): The Task Order Request called for four borings to be advanced at the northbound on-ramp/off-ramp to Calzona Street. Following Caltrans field instructions while marking borings, the Caltrans project manager clarified that the correct concrete barrier to be assessed was the southbound, concrete barrier. Upon assessing the location, the borings were cancelled due to the ground surface being covered with concrete and concreted cobbles.
2. Concrete Barrier SB (South Ditman [S. Ditman] Avenue On-ramp): The Task Order Request called for two borings to be advanced at the southbound on-ramp from S. Ditman Avenue. Following Caltrans field instructions while marking borings, two additional borings were added to the scope of work at this location. As a result, four borings were advanced at the southbound S. Ditman Avenue on-ramp (Figure 13).
3. Location 2 - Off-Ramp to Mission Road (Left): The Task Order Request called for four borings to be advanced to two feet bgs. During the field activities boring 1267-119 encountered refusal at 0.5 feet bgs. Two step-out borings were advanced; however, each boring encountered refusal at approximately 0.5 feet bgs. As a result, one surface sample (0-0.5 feet bgs) was collected from this boring (Figure 3).
4. Location 14 - On-Ramp from 7th Street (Right): The Task Order Request called for four borings to be advanced to two feet bgs. During the field activities boring 1267-136 encountered refusal at 1.0 foot bgs. Three step-out borings were advanced; however, each boring encountered refusal at approximately 1 foot bgs. As a result, one surface sample (0-0.5 feet bgs) was collected from this boring (figure 7).
5. Location 21 On-Ramp from Concord Street (Left): The Task Order Request called for four borings to be advanced to two feet bgs. During the field activities boring 1267-142 encountered refusal at 1.5 feet bgs. Three step-out borings were advanced; however, each boring encountered refusal at approximately 1.5 feet bgs, due to the presence of tree roots. As a result, one surface sample (0-0.5 feet bgs) was collected from this boring (figure 11).

5.0 LABORATORY ANALYSIS

A total of 105 soil samples, plus five duplicates and two equipment blanks and two field blanks were submitted under CoC to Advanced Technology Laboratories (ATL). ATL is certified through the California Environmental Laboratory Accreditation Program (ELAP) to conduct the analyses required in this task order. The lab was directed to perform the following analyses based on Caltrans Task Order No. 17:

- *Total lead by EPA test method 6010B*—used to evaluate total lead concentrations against health screening limits, California hazardous waste total threshold limit concentration (TTL), and the conditions of the Caltrans Lead Variance.
- *Soluble lead by CAL WET-Citric*—used to assess soluble lead concentrations with respect to California hazardous waste Soluble Threshold Limit Concentration (STLC) of 5 mg/L.
- *Soluble lead by Cal WET-DI*—used to evaluate requirements for on-site soil management in accordance with the conditions of the Caltrans Lead Variance.
- *Soluble lead by TCLP (EPA test method 1311)*—used to evaluate waste characteristics and the requirements for disposal against Federal hazardous waste toxicity characteristic threshold limit of 5 mg/L.
- *PH (EPA test method 9045C)*— used to evaluate the requirements for on-site soil management and off-site disposal against the conditions of the Caltrans Lead Variance and hazardous waste thresholds, respectively.
- *Title 22 metals (EPA test method 6010B/7470)*—used to screen soil samples for other potentially elevated heavy metal analytes to further characterize excess soil for off-site disposal.

Copies of the laboratory CoCs and analytical reports are attached in Appendix D.

6.0 INVESTIGATIVE RESULTS

6.1 FIELD FINDINGS

The soils encountered during sampling were generally brown in color and consisted primarily of silts and sand mixtures with fine gravels, poorly graded sand, well-graded sand, sandy clays and well graded gravel.

Groundwater was not encountered in any of the boreholes and not expected to be present in shallow soils.

6.2 ANALYTICAL RESULTS

A summary of the analytical results is presented in Tables 1 and 2. Copies of the laboratory reports and CoC forms are included in Appendix D.

6.2.1 *Total Lead*

One hundred five (105) soil samples and 5 duplicate samples were analyzed for total lead by EPA test method 6010B. Total lead concentrations ranged from 3.6 to 710 milligrams per kilogram (mg/kg) [Table 1].

Total lead concentrations did not exceed the TLC of 1,000 mg/kg in any of the samples submitted for analysis.

6.2.2 *Soluble Lead (Cal WET- Citric)*

Fifty-five (55) soil samples and two duplicate samples were analyzed for soluble lead by Cal WET-Citric. Soluble lead concentrations ranged from 0.42 NJ¹ to 45 milligrams per liter (mg/L) [see Table 1].

Soluble lead concentrations met or exceeded the Soluble Threshold Limit Concentration (STLC) of 5 mg/L in 43 of the samples analyzed.

6.2.3 *Soluble Lead (TCLP)*

Twenty (20) soil samples and two duplicate samples were analyzed for TCLP lead analysis. TCLP soluble lead concentrations ranged from 0.034 NJ² to 1.10 mg/L (see Table 1).

Soluble lead concentrations did not exceed the TCLP threshold of 5 mg/L in any of the samples analyzed.

¹ NJ-flag indicates that the analyte was tentatively identified, and the value is considered approximate.

² NJ-flag indicates that the analyte was tentatively identified, and the value is considered approximate.

6.2.4 Soluble Lead (Cal WET- DI)

The Caltrans variance allows for reuse of materials exceeding the STLC if the Cal WET-DI soluble lead concentrations do not exceed 1.5 mg/L (Type Y-1 material) or 150 mg/L (Type Y-2 material) using a less rigorous extraction test that incorporates distilled water as the solvent rather than the Cal WET citric acid or TCLP acetic acid extractant. This method is identified as the DHS modified Cal WET DI test.

Fifty-three (53) soil samples and two duplicate samples were submitted for soluble lead analyses by the Cal WET DI extraction method. The Cal WET DI concentrations ranged from non-detect (less than the laboratory method reporting limit of 0.027 mg/L to 2.7 mg/L (Table 1).

Soluble lead concentrations met or exceeded the Caltrans Lead Variance threshold of 1.5 mg/L (Type Y-1 material) in six of the samples analyzed.

6.2.5 pH

Ten (10) samples were analyzed for pH. The pH values ranged from 7.0 to 8.3 (Table 1). All pH values were within the thresholds for non-hazardous waste and above the Caltrans Lead Variance thresholds.

6.2.6 Title 22 Metals

As directed in the Task Order and for verification purposes, nine soil samples (and one duplicate sample) were analyzed for Title 22 metals. As directed in the Task Order, the samples selected for analysis were to be representative of all samples, and not solely focused on the highest total lead concentrations. The Title 22 Metals analysis was requested in anticipation of the Regional Water Quality Control Board requirements for a Site Investigation involving the possibility of elevated concentrations of other metals along the freeway other than ADL. A total of ten (10) samples were analyzed for Title 22 metals to evaluate whether potentially elevated concentrations of heavy metals, in addition to lead, pose a concern in the ADA curb ramp reconstruction areas.

As indicated in Table 2, Title 22 metals other than lead, were reported at concentrations well below their respective hazardous waste thresholds. With the exception of antimony, copper, selenium and zinc, Title 22 metals were reported at concentrations generally consistent with expected background (Marrett, 1991). The slightly elevated concentrations of antimony, copper, selenium and zinc, do not exceed U.S. Environmental Protection Agency (EPA) health-risk based screening levels for industrial commercial property use. While arsenic concentrations exceeded the California Human Health Screening Levels (CHHSLs) and the EPA Regional Screening Levels (RSLs), the reported concentrations are within expected background concentrations for Southern California. Consequently, lead is the driver for soil handling, waste classification and disposal.

6.3 DATA VALIDATION

Prior to submitting soil samples to the laboratory, the chain-of-custody documentation was reviewed for accuracy and completeness. The laboratory reports were cross-checked with the chain-of-custody forms to confirm accurate transposing of sample information. In addition, an initial comparison of total lead and CalWET-citric data was conducted. Total lead and soluble lead are bivariate variables. Typically, CalWET-citric soluble lead concentrations range from 2 to 10 percent of the total lead concentrations. Based on initial evaluation of the data, two samples (1267-133-0 and 1267-116-2) were flagged as suspect and re-analyzed due to unexpected ratios between total and soluble lead concentrations. Sample 1267-133-0 was re-analyzed for total lead, CalWET-citric soluble lead and CalWET-DI soluble lead. Sample 1267-116-2 was re-analyzed for total lead. The results of the re-extracted samples were within expected ratios for total lead and soluble lead. Consequently, second set of data were validated and reported in place of the original results in the data tables. However, all data are appended to this report.

The data were validated based on the principles of the U.S. EPA National Functional Guidelines to ensure completeness and adequacy of the data set. The data were validated and reviewed for the following:

- Completeness of data deliverables (chain of custody records, laboratory data, laboratory quality assurance and quality control (QA/QC) data);
- Sample holding time;
- Sample preservation;
- Blank data (method, trip, and equipment);
- Laboratory control sample (LCS) recovery;
- Laboratory duplicate sample precision;
- Matrix spike/matrix spike duplicate (MS/MSD) recovery; and
- Overall data assessment.

The following summarizes the results of the validation:

1. Method Blanks: Several metals analytes (barium, chromium, cobalt, copper, lead, nickel, zinc and STLC lead) were reported in the method blank at very low concentrations. Associated sample results below the blank concentration are validated to non-detect and flagged "UJB". Sample results greater than the blank concentration are flagged "JB". The detection limit is changed to the blank concentration. Sample results greater than 10 times the blank concentration require no qualifying action.
2. Equipment Blanks: Several metals were reported in equipment blanks at very low levels, and may be reflective of laboratory method blank detections,

field artifact associated with dust, incomplete decontamination or artifact from contact with metal sampling equipment.

3. Laboratory Duplicate Samples: Laboratory duplicate samples were reported within the relative percent difference (RPD) control limit of 20 percent except for the following:
 - a. Laboratory report 1403942; 6010B batch B4L0526 – Laboratory duplicate RPDs above limits $\pm 20\%$ for Antimony at 133%, Copper at 30% and Zinc at 85%. Sample site specific. Associated result flagged “J” for 1267-102-0 only.
 - b. Batch B4L0497 – Laboratory duplicate RPD above limits for Lead at 21%. Samples site specific. Associated result flagged “J” for 1267-102-2 only.
 - c. Batch B4L0498 – Laboratory duplicate RPD above limits for Lead at 33%. Samples site specific. Associated result flagged “J” for 1267-117-2 only.
 - d. Batch B4L0698 - Laboratory duplicate RPD above limits for Lead at 26%. Samples site specific. Associated result flagged “J” for 1267-112-2 only.
 - e. Batch B4L0499 – Laboratory duplicate RPD above limits for Lead at 95%. Samples site specific. Associated result flagged “J” for 1267-128-0 only.
 - f. Batch B4L0500 – Laboratory duplicate RPD above limits for Lead at 28%. Samples site specific. Associated result flagged “J” for 1267-133-0 only.
 - g. Batch B4L0736 - Laboratory duplicate RPD above limits for STLC Lead at 28%. Samples site specific. Associated result flagged “J” for 1267-113-2 only.
 - h. Batch B4L0738 – Laboratory duplicate RPD above limits for STLC Lead at 46%. Samples site specific. Associated result flagged “J” for 1267-142-0 only.
 - i. Batch B5A0187 – Laboratory duplicate RPD above limits for STLC Lead at 39%. Sample site specific. Associated sample result flagged “J” for 1267-133-0 only
 - j. Batch B4L0827 – Laboratory duplicate RPD above limits for STLC DI Lead at 28%. Samples site specific. Associated result flagged “J” for 1267-112-0 only.

- k. Batch B4L0829 – Laboratory duplicate RPD above limits for STLC DI Lead at 33%. Samples site specific. Associated result flagged “J” for 1267-142-0 only.
- l. Batch B4L0830 – Laboratory duplicate RPD above limits for STLC DI Lead at 29%. Samples site specific. Associated result flagged “J” for 1267-147-0 only.
- m. 7471A batch B4L0528 - Laboratory duplicate RPD above limits for Mercury at 168%. Samples site specific. Associated result flagged “J” for 1267-102-2 only.
- n. Laboratory report 1403989; 6010B batch B4L0502 – Laboratory duplicate RPDs above limits $\pm 20\%$ for Lead at 28%. Sample site specific. Associated result flagged “J” for 1267-151-1 only.
- o. Batch B4L0830 – Laboratory duplicate RPD above limits for STLC DI Lead at 76%. Samples site specific. Associated result flagged “J” for 1267-154-0 only.

The RPD issues appear to be the result of natural sample heterogeneity. Out of control sample results are “J-flagged”. Accuracy was verified by the LCS (which was within control limits). No other corrective action was required and the data were qualified as indicated above.

- 4. Matrix Spike and Spike Duplicates: Matrix spike and duplicate samples were analyzed to assess accuracy and to evaluate matrix effects on data analysis. The percent recoveries and RPDs were found to within laboratory-determined control limits except:
 - a. Laboratory report 1403942; 6010B batch B4L0526 - %Rs below $\pm 40\%$ limit for Zinc at -137%. Associated result flagged “J” for 1267-102-0 only.
 - b. Laboratory report 1403989; 6010B batch B4L0738 - %Rs below $\pm 40\%$ limit for STLC Lead at 56%. Associated result flagged “J” for 1267-149-0 only.
 - c. Laboratory report 1403942; 7471A batch B4L0528 – Post digestion spike recovery for Mercury is above laboratory limit of 115% at 121%. Associated positive results flagged “J” for all samples in the laboratory report.

The RPD issues appear to be the result of natural sample heterogeneity. Out of control sample results are “J-flagged”. Accuracy was verified by the LCS which was within control limits). No other corrective action was required.

Mercury results are considered biased high. Recoveries on lead and zinc may be the result of heterogeneity. The soluble lead results were reviewed and found to be in line with expected concentrations at the reported total lead concentration. Zinc concentration may be biased low, but is not considered a constituent of concern. Reported concentrations are an order of magnitude below thresholds.

5. Field duplicates Soil sample and duplicate sample results are presented in the following table:

Sample Identification	Lead Concentration (milligrams per kilogram [mg/kg])	Duplicate Lead Concentration (mg/kg)
1267-114-0 (Pair 1)	14	18
1267-120-2 (Pair 2)	44	14J
1267-139-0 (Pair 3)	11	10
1267-146-2 (Pair 4)	25J	200J
1267-147-0 (Pair 5)	300J	430J

Field soil sample and duplicate concentrations show relatively good agreement. Differences are attributed to natural soil heterogeneity. The results of the duplicate samples are:

Pair 1 – ALL RPDs within limits.

Pair 2 – RPD above limits for Lead. Associated results flagged “J” for duplicate samples only.

Pair 3 – RPD within limits.

Pair 4 - RPD above limits for Lead. Associated results flagged “J” for duplicate samples only.

Pair 5 – All RPDs within limits except for total Lead. Associated results flagged “J” for duplicate samples only.

6. Data were considered “useable” and marked as such in the tables provided and that it was validated according to the EPA and scope of work. No data were qualified as “rejected”. The Data Validation Reports/Checklists summarize compounds that were qualified and are attached to this summary. Additionally, data qualifiers and the reason codes associated with the qualifier are in Table 1.

Based on the validation process, the data are adequate for the purposes of this study as qualified (see attached tables). A Copy of the Data Validation report is included as Appendix E

7.0 SUMMARY

At the request of Caltrans District 7 Hazardous Waste South Branch, and pursuant to the provisions of Caltrans Agreement 07A3321 and the Task Order No. 17 request, an ADL SI was conducted at proposed ADA curb ramp reconstruction locations, concrete barriers and maintenance vehicle pullout locations along SR5 between PM 13.8 to 19.2, from the SR5/SR710 Separation (SR710) in the City of Commerce and the Main Street undercrossing in the City of Los Angeles, in Los Angeles County, California (Figure 1). This investigation was conducted to evaluate the potential presence of ADL and other heavy metals in shallow subsurface soils at locations where ADA curb ramp improvements and construction of concrete barriers and MVPs are proposed. The project locations were provided by Caltrans in an Attachment to the Task Order and are shown on Figures 2 through 13.

The objective of the ADL SI is to evaluate the presence and distribution of ADL and other heavy metals in subsurface soils within each of the proposed ADA curb ramp reconstruction locations, maintenance vehicle pullout areas and concrete barrier locations. The data will be used by Caltrans to perform the statistical evaluations of the data and to make recommendations for handling and/or disposal of soil generated during construction activities. In addition to the ADL SI, an Asbestos Containing Materials (ACM) Survey was conducted on the S5-E10 Connector Undercrossing (PM 18.38) and the Main Street Undercrossing (PM 19.2) to support Caltrans' proposed pavement rehabilitation and removal and replacement of certain bridge components, as part of the scope of work for requested for Task Order 17. The details of the ACM survey are discussed and will be issued to Caltrans in an ACM Survey Report under a separate cover

Fifty-four borings were advanced at 15 separate locations. A total of 105 soil samples and 5 duplicate samples were collected at depths ranging from surface to two feet bgs and analyzed for total lead. A total of 55 soil samples and two duplicate samples were analyzed for soluble lead by Cal WET-citric. In addition, 53 soil samples and 2 duplicate samples were analyzed for soluble lead by Cal WET-DI, 20 soil samples and two duplicate samples were analyzed for soluble lead using the TCLP extraction, 10 soil samples and one duplicate sample were analyzed for pH, and 9 soil samples and one duplicate sample were analyzed for Title 22 metals.

The following summarizes the results and findings of this investigation:

1. ADL is present at each of the 12 proposed ADA curb ramp reconstruction locations, at the S. Ditman Avenue Concrete Barrier and at both of the Maintenance Vehicle Pullouts (MVPs).
2. Total lead concentrations were not reported above the California TLC of 1,000 mg/kg in any sample.

3. Cal WET-Citric soluble lead concentrations exceeded the California STLC (5 mg/L) in 43 samples.
4. Cal WET-DI concentrations met or exceeded the Caltrans Lead Variance threshold of 1.5 mg/L in five samples.
5. TCLP soluble lead concentrations did not exceed the federal toxicity characteristic threshold (5 mg/L) in any of the samples analyzed.
6. The reported pH values were within the limits of non-hazardous waste and were above the Caltrans Lead Variance thresholds.
7. Slightly elevated concentrations of antimony, copper, selenium and zinc were reported above expected background levels. However, they did not exceed U.S. Environmental Protection Agency (EPA) health-risk based screening levels for industrial commercial property use.
8. Arsenic concentrations were within expected background concentrations but they exceeded CHHSLs and the EPA RSLs in the nine soil samples and one duplicate sample analyzed.

8.0 RECOMMENDATIONS

Based on the findings and results of the investigation, soil in the investigation areas is impacted by ADL. Based on these findings, the following is recommended:

1. All work should be conducted under the guidance of a lead compliance plan (LCP) prepared in accordance with Section 14-11.03 Material Containing Hazardous Waste Concentrations of Aerially Deposited Lead of the 2010 Standard Specifications. The purpose of the LCP is to identify measures that will be implemented during construction to reduce potential exposure to workers and the general public.

9.0 LIST OF PREPARERS

This Aerially Deposited Lead Site Investigation report has been prepared under the direction of the following environmental professionals.

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Respectfully submitted,

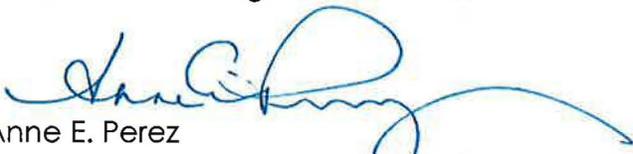
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TABLES

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS - LEAD AND pH
ADL SITE INVESTIGATION
LA-5- PM 13.8/19.2
LOS ANGELES COUNTY, CALIFORNIA
PN: 0713000492-1; EA#300701
TASK ORDER #17; CONTRACT 07A3321

Curb Ramp Number	Sample ID	Total Lead ⁽¹⁾ (mg/kg)		Soluble Lead ⁽¹⁾ Cal WET-Citric (mg/L)		Soluble Lead ⁽¹⁾ Cal WET-DI (mg/L)		Soluble Lead ⁽¹⁾ TCLP (mg/L)		pH ⁽²⁾
			Validation Qualifier		Validation Qualifier		Validation Qualifier		Validation Qualifier	
14 (Figure 7)	1267-133-0*	130		9.4	J	0.56	NJ			
	1267-133-2	140		7.0		0.53	NJ			
	1267-134-0	170		9.7		0.49	NJ			
	1267-134-2	130		8.1		0.46	NJ			
	1267-135-0	210		12		0.96	NJ	0.49		
	1267-135-2	76		3.0	J	0.085	NJ			
	1267-136-0	230		16		<0.027		0.25		
16 (Figure 9)	1267-137-0	14								
	1267-137-2	3.6								
	1267-138-0	16								
	1267-138-2	16								
	1267-139-0	11								
	1267-139-2	6.0								
	1267-140-0	9.4								
1267-140-2	4.9									
21 (Figure 11)	1267-141-0	120		5.5		0.12	NJ			
	1267-141-2	14								
	1267-142-0	120		10	J	0.17	NJ			
	1267-143-0	150		7.6		0.29	NJ			
	1267-143-2	13								
	1267-144-0	140		9.3		0.11	NJ			
	1267-144-2	45								
CB S. DITMAN AVE. (Figure 13)	1267-145-0	120		11		0.52	NJ			
	1267-145-2	49								
	1267-146-0	210		18		1.0		0.56		
	1267-146-2	25	J							
	1267-147-0	300	J	23		1.5	J	0.46		
	1267-147-2	15								
	1267-148-0	380		19		0.72	NJ	0.30		
1267-148-2	160		4.9		0.26	NJ				
MVP SOUTHBOUND (Figure 12)	1267-149-0	480		25	J	1.9		0.32		7.9
	1267-149-1	22								
	1267-150-0	52		1.8		<0.027				
	1267-150-1	12								
	1267-151-0	75		3.3		0.041	NJ			
1267-151-1	12	J								
MVP NORTHBOUND (Figure 12)	1267-152-0	300		12		0.63	NJ	0.24		
	1267-152-1	19								
	1267-153-0	64		3.2		0.11	NJ			
	1267-153-1	10								
	1267-154-0	110		7.8		1.5	J			
1267-154-1	52		1.5							
	1267-DUP1-20141210	18								8.3
	1267-DUP2-20141210	14	J							
	1267-DUP3-20141211	10								
	1267-DUP4-20141211	200	J	6.9		0.38	NJ	0.097		
	1267-DUP5-20141211	430	J	22		1.4		0.40		
	1267-EB1-20141210	<0.0014								
	1267-FB1-20141210	<0.0014								
	1267-EB1-20141215	<0.0014								
1267-FB2-20141215	<0.0014									
Minimum		3.6		0.42		<0.027		0.034	J	7.0
Maximum		710		45		2.7		1.10		8.3
Mean		81.5		--		--		--		--
Standard Deviation		107.3		--		--		--		--

NOTES:

(1) Analysis by EPA method 6010B. Extraction methods vary.

(2) pH determined with EPA method 9045C.

mg/kg = milligrams per kilogram

mg/L = milligrams per liter

SHADED = exceeds threshold limit of 5 mg/L for STLC

-- = Not analyzed or not applicable

CB = Concrete Barrier Location

MVP = Maintenance Vehicle Pullout Location

VALIDATION QUALIFIERS

- J** The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- B** The analyte was detected in the method, field and/or trip blank.
- NJ** The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ** The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- *** The sample was reanalyzed due to data inconsistency. The reported result is from the second analysis. Both laboratory reports are appended to this r

TABLE 2 - SUMMARY OF SOIL ANALYTICAL RESULTS - TITLE 22 METALS
ADL SITE INVESTIGATION
LA-5- PM 13.8/19.2
LOS ANGELES COUNTY, CALIFORNIA
PN: 0713000492-1; EA#300701
TASK ORDER #17; CONTRACT 07A3321

Caltrans Unique Sample ID	Sample Depth (feet bgs)	Sample Date	TITLE 22 METALS by EPA Test Method 6010/7470																											
			Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury												
CHHSLs - Industrial Use (1)			380	0.24	63,000	190	7.5	100,000	3,200	38,000	4,800	16,000	4,800	4,800	63	6,700	100,000	180												
USEPA RSLs - Industrial Use (2)			470	3.0	220,000	2,300	980	1,800,000	350	47,000	5,800	22,000	5,800	5800	12	5,800	350,000	40												
Expected Background Concentrations (3)			0.15-1.95	12 (4)	133-1400	0.25-2.70	0.05-1.70	23-1579	2.7-46.9	9.1-96.4	0.1-9.6	9-509	0.015-0.430	13.2-39.4	9.8-36.2	75-288	133-236	0.05-0.90												
California TTLC			500	500	10,000	75	100	2,500	8,000	2,500	3,500	2,000	100	500	700	2,400	5,000	20												
10 x California STLC			150	50	1,000	7.5	10	50	800	250	3,500	200	10	50	70	240	2,500	2												
20 x RCRA Toxicity Characteristic			---	100	2,000	---	20	100	--	--	---	---	20	100	---	---	---	4												
SOIL SAMPLES																														
1267-102-0	0	12/10/2014	5.9	J	4.0	130	0.27	NJ	0.93	NJ	18	4.9	80	J	1.0	14	1.9	0.07	NJ	<0.20	24	450	J	0.11	J					
1267-105-2	2	12/10/2014	1.2	NJ	3.1	91	0.53	NJ	<0.11		12	6.4	11		0.27	NJ	7.9	1.8	<0.06		<0.20	34	48		0.09	NJ				
1267-107-0	0	12/10/2014	0.63	NJ	8.3	56	0.24	NJ	0.12	NJ	9.4	4.5	21		0.77	NJ	330	1.2	<0.06		<0.20	20	110		0.07	NJ				
1267-114-0	0	12/10/2014	0.46	NJ	4.0	42	0.21	NJ	<0.11		7.9	4.3	14		0.17	NJ	6.2	0.80	NJ	<0.06		<0.20	15	43		0.03	NJ			
1267-114-2	2	12/10/2014	<0.25		5.4	120	0.41	NJ	0.46	NJ	27	6.2	130		1.3		24	2.2	<0.06		<0.20	31	180		0.05	NJ				
1267-118-0	0	12/10/2014	1.2	NJ	3.8	150	0.47	NJ	1.3		24	6.4	58		2.0		16	1.6	0.33	NJ	<0.20	25	540		0.18	J				
1267-123-2	2	12/10/2014	0.53	NJ	2.3	70	0.37	NJ	0.23	NJ	10	4.7	19		0.49	NJ	10	1.2	0.08	NJ	<0.20	21	48		0.07	NJ				
1267-131-2	2	12/11/2014	0.67	NJ	4.3	140	0.42	NJ	0.24	NJ	14	6.7	26		0.97	NJ	11	1.8	<0.06		<0.20	32	220		0.36	J				
1267-134-0	0	12/11/2014	0.71	NJ	2.8	130	0.22	NJ	0.42	NJ	86	4.8	47		1.8		12	2.1	0.33	NJ	<0.20	24	170		0.10	J				
1267-DUP1-20141210	NA	12/10/2014	0.40	NJ	3.7	40	0.20	NJ	<0.11		8.1	4.1	14		0.16	NJ	6.1	0.87	NJ	<0.06		<0.20	15	42		0.03	NJ			
QA/QC SAMPLES																														
1267-EB1-20141210	NA	12/10/2014	<0.0026		<0.0024	0.0014	NJ, B	<0.0002		<0.0001	<0.0013	U, JB	<0.0004		0.0044	NJ, B	<0.0005		<0.0018	U, JB	<0.0040		<0.0006		<0.0026	<0.0013	0.0063	NJ, B	<0.11	
1267-FB1-20141210	NA	12/10/2014	<0.0026		<0.0024	0.0014	NJ, B	<0.0002		<0.0001	0.0015	NJ, B	<0.0004		0.0034	NJ, B	<0.0005		<0.0018	U, JB	<0.0040		<0.0006		<0.0026	<0.0013	0.0045	NJ, B	<0.11	
1267-EB1-20141215	NA	12/15/2014	<0.0026		<0.0024	0.0010	NJ, B	<0.0002		<0.0001	0.0011	NJ, B	0.0005	NJ	0.0041	NJ, B	0.0024	NJ, B	<0.0016	U, JB	<0.0040		0.0010	NJ	<0.0026	<0.0013	0.0061	NJ, B	<0.11	
1267-FB2-20141215	NA	12/15/2014	<0.0026		<0.0024	<0.0009	U, JB	<0.0002		<0.0001	0.0012	NJ, B	<0.0004		0.0041	NJ, B	<0.0007	U, JB	<0.0016	U, JB	<0.0040		0.0013	NJ	<0.0026	<0.0013	0.0072	NJ, B	<0.11	

CHHSLs = California Human Health Screening Levels

RSLs = Regional Screening Levels

TTLC = Total Threshold Limit Concentration

STLC = Soluble Threshold Limit Concentration

bgs = below ground surface

Sample depth in feet below the ground surface

<0.5 - Analyte not reported at or above stated method detection limit

(1) Soil, California Human Health Screening Levels for Commercial/Industrial and Residential Land Use, California Environmental Protection Agency, January 2005; updates 2009 & 2010 Office of Environmental Health Hazard Assessment Table 1.

(2) United States Environmental Protection Agency (Region 9) Regional Screening Levels (RSLs; in mg/Kg) for VOCs for industrial and residential soil (last updated November 2014) -- Traditional Table with a Target Cancer Risk Level of 1.0x10-6 and a Target Hazard Quotient of 1.0.

(3) G.R. Bradford, A.C. Chang, A.L. Page, D. Bakhtar, J.A. Frampton, and H. Wright, Background Concentrations of Trace and Major Elements in California Soils, March 1996.

(4) California Department of Toxic Substances Control (DTSC), 2008, Determination of a Southern California Regional Background Arsenic Concentration in Soil, March.

SHADED = exceeds expected threshold concentrations

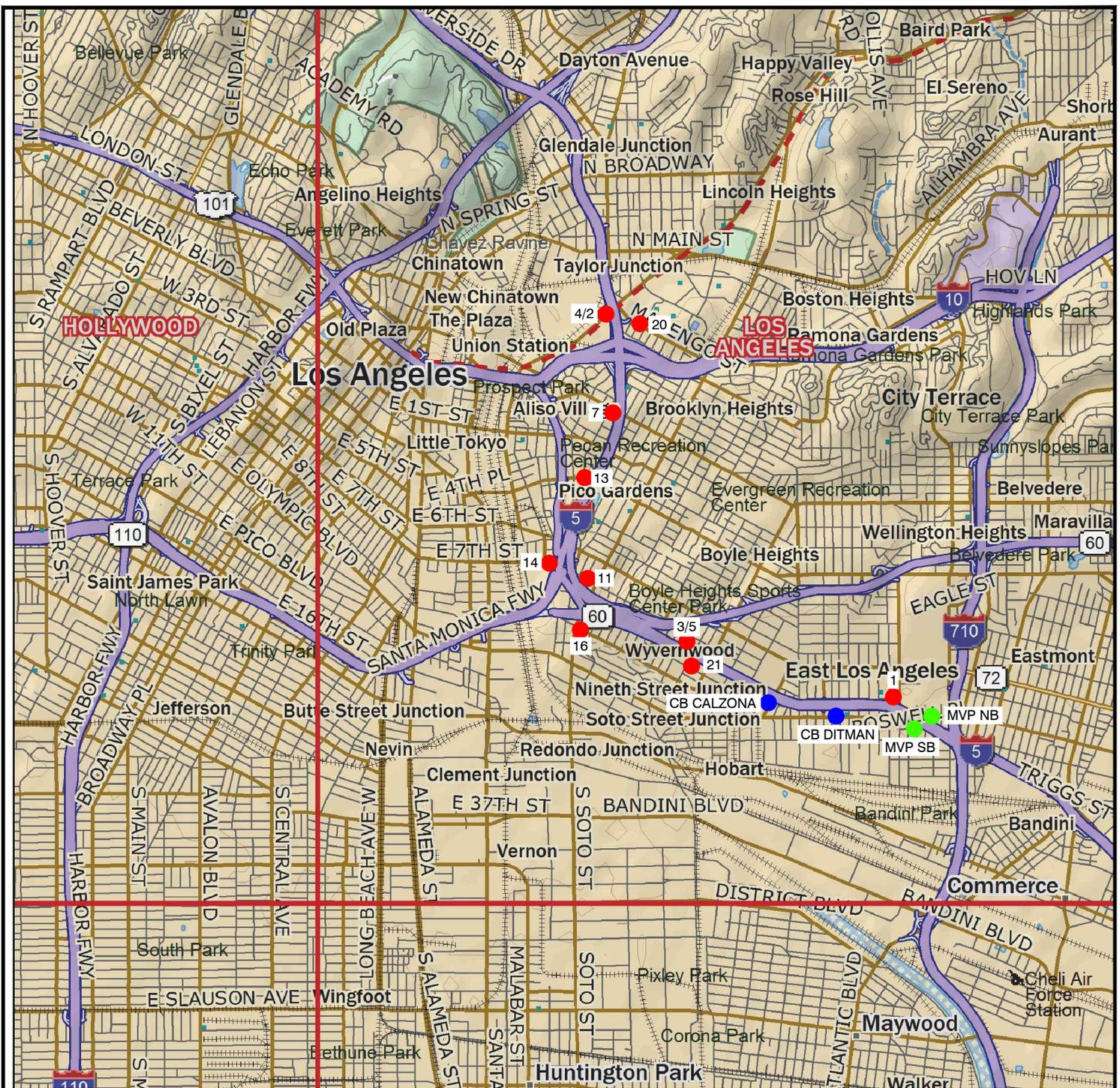
J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

B - The analyte was detected in the method, field and/or trip blank.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

FIGURES

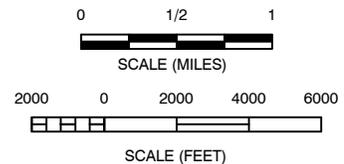


NOTES:

- 16 CURB RAMP LOCATION IDENTIFICATION
- CB : CONCRETE BARRIER LOCATION IDENTIFICATION
- MVP: MAINTENANCE VEHICLE PULLOUT LOCATION IDENTIFICATION
- CURB RAMP LOCATION
- CB LOCATION
- MVP LOCATION



CALIFORNIA



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REFERENCE: DELORME TOPO MAP, LOS ANGELES, CALIFORNIA

	CALTRANS, DISTRICT 7 Contract: 07A3321 Task Order No. 17 LA-5 PM 13.8/19.2 PN: 0713000492-1; EA: 07-300701			SITE LOCATION MAP		FIGURE: 1
	JOB NUMBER: 185831017	DRAWN BY: STA	CHECKED BY: MA-S	APPROVED BY: KM	DATE: 01/13/15	



LEGEND:

1267-101 ●

BORING LOCATION

Total Pb

TOTAL LEAD IN MILLIGRAMS PER KILOGRAM (mg/kg)

Cal-WET

SOLUBLE LEAD BY CAL-WET CITRIC IN MILLIGRAMS PER LITER (mg/L)

Cal-WET DI

SOLUBLE LEAD BY CAL-WET DI IN MILLIGRAMS PER LITER (mg/L)

TCLP

SOLUBLE LEAD TOXICITY CHARACTERISTIC LEACHING PROCEDURE (mg/L)

<

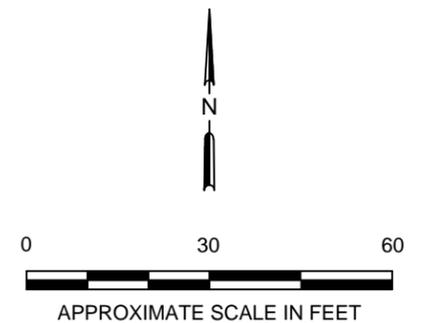
ANALYTE NOT REPORTED AT OR ABOVE STATED LABORATORY METHOD DETECTION LIMIT (MDL)

NJ

THE ANALYSIS INDICATES THE PRESENCE OF AN ANALYTE THAT HAS BEEN "TENTATIVELY IDENTIFIED" AND THE ASSOCIATED NUMERICAL VALUE REPRESENTS ITS APPROXIMATE CONCENTRATION

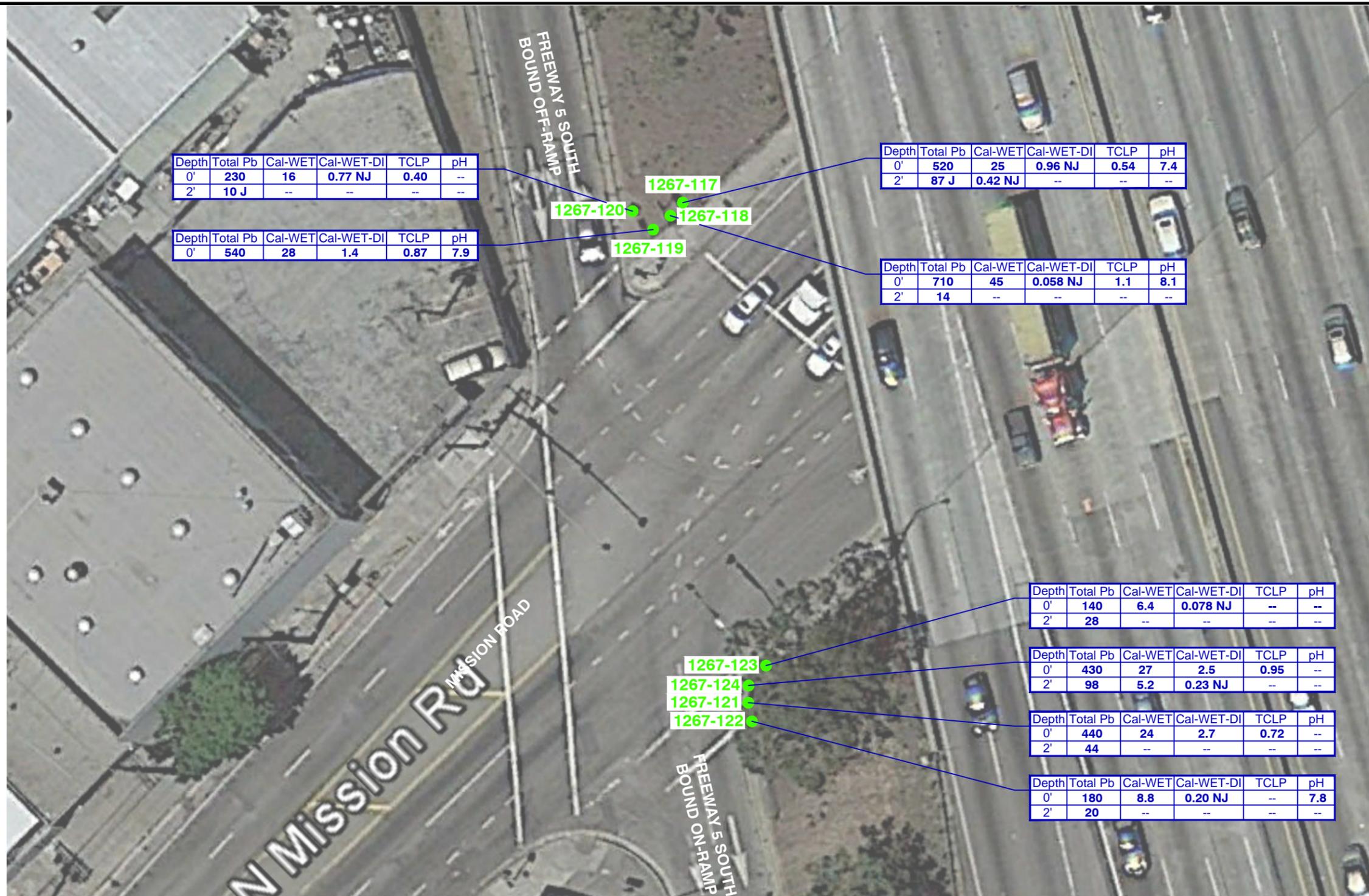
--

NOT ANALYZED



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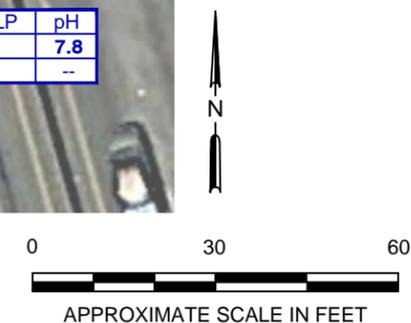
 25964-F BUSINESS CENTER DRIVE REDLANDS, CALIFORNIA 92374 PHONE: (909) 335-6116 FAX: (909) 335-6120	FOR: CALTRANS, DISTRICT 7 Contract: 07A3321 Task Order No. 17 LA-5 PM 13.8/19.2 PN: 0713000492-1; EA: 07-300701	CURB RAMP LOCATION 1 SAMPLE LOCATION MAP ON-RAMP FROM DOWNEY ROAD (RIGHT)		FIGURE: 2
	JOB NUMBER: 185831017	DRAWN BY: STA	CHECKED BY: MA-S	APPROVED BY: KM



LEGEND:

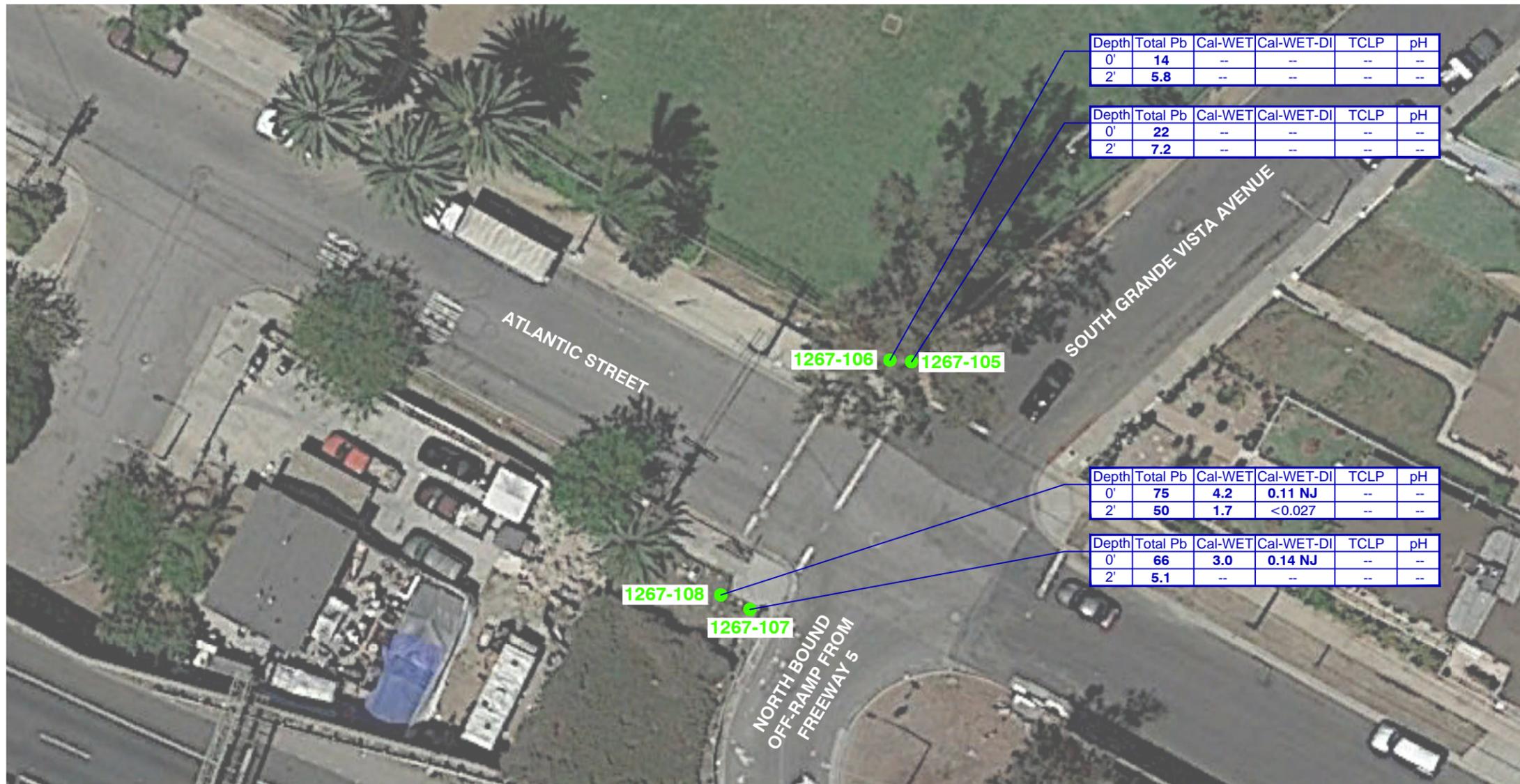
1267-117 ● BORING LOCATION

- Total Pb TOTAL LEAD IN MILLIGRAMS PER KILOGRAM (mg/kg)
- Cal-WET SOLUBLE LEAD BY CAL-WET CITRIC IN MILLIGRAMS PER LITER (mg/L)
- Cal-WET DI SOLUBLE LEAD BY CAL-WET DI IN MILLIGRAMS PER LITER (mg/L)
- TCLP SOLUBLE LEAD TOXICITY CHARACTERISTIC LEACHING PROCEDURE (mg/L)
- < ANALYTE NOT REPORTED AT OR ABOVE STATED LABORATORY METHOD DETECTION LIMIT (MDL)
- J THE ANALYTE WAS POSITIVELY IDENTIFIED; THE ASSOCIATED NUMERICAL VALUE IS THE APPROXIMATE CONCENTRATION OF THE ANALYTE IN THE SAMPLE
- NJ THE ANALYSIS INDICATES THE PRESENCE OF AN ANALYTE THAT HAS BEEN "TENTATIVELY IDENTIFIED" AND THE ASSOCIATED NUMERICAL VALUE REPRESENTS ITS APPROXIMATE CONCENTRATION
- NOT ANALYZED



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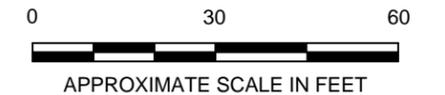
<p>25964-F BUSINESS CENTER DRIVE REDLANDS, CALIFORNIA 92374 PHONE: (909) 335-6116 FAX: (909) 335-6120</p>	FOR: CALTRANS, DISTRICT 7 Contract: 07A3321 Task Order No. 17 LA-5 PM 13.8/19.2 PN: 0713000492-1; EA: 07-300701		CURB RAMP LOCATIONS 2 & 4 SAMPLE LOCATION MAP OFF-RAMP TO/FROM MISSION ROAD (LEFT)		FIGURE: 3
	JOB NUMBER: 185831017	DRAWN BY: STA	CHECKED BY: MA-S	APPROVED BY: KM	DATE: 01/10/15



LEGEND:

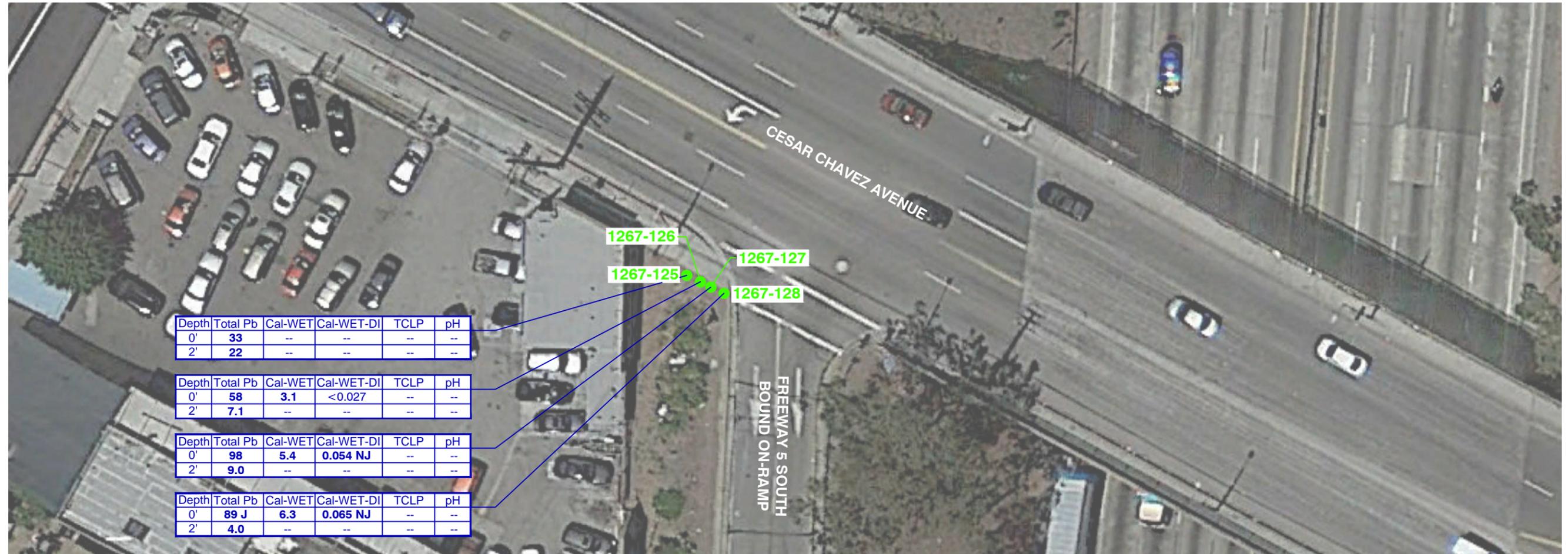
1267-105 ● BORING LOCATION

- Total Pb TOTAL LEAD IN MILLIGRAMS PER KILOGRAM (mg/kg)
- Cal-WET SOLUBLE LEAD BY CAL-WET CITRIC IN MILLIGRAMS PER LITER (mg/L)
- Cal-WET DI SOLUBLE LEAD BY CAL-WET DI IN MILLIGRAMS PER LITER (mg/L)
- TCLP SOLUBLE LEAD TOXICITY CHARACTERISTIC LEACHING PROCEDURE (mg/L)
- < ANALYTE NOT REPORTED AT OR ABOVE STATED LABORATORY METHOD DETECTION LIMIT (MDL)
- NJ THE ANALYSIS INDICATES THE PRESENCE OF AN ANALYTE THAT HAS BEEN "TENTATIVELY IDENTIFIED" AND THE ASSOCIATED NUMERICAL VALUE REPRESENTS ITS APPROXIMATE CONCENTRATION
- NOT ANALYZED



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	JOB NUMBER: 185831017	DRAWN BY: STA	CHECKED BY: MA-S	APPROVED BY: KM	DATE: 01/10/15



Depth	Total Pb	Cal-WET	Cal-WET-DI	TCLP	pH
0'	33	--	--	--	--
2'	22	--	--	--	--

Depth	Total Pb	Cal-WET	Cal-WET-DI	TCLP	pH
0'	58	3.1	<0.027	--	--
2'	7.1	--	--	--	--

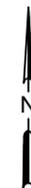
Depth	Total Pb	Cal-WET	Cal-WET-DI	TCLP	pH
0'	98	5.4	0.054 NJ	--	--
2'	9.0	--	--	--	--

Depth	Total Pb	Cal-WET	Cal-WET-DI	TCLP	pH
0'	89 J	6.3	0.065 NJ	--	--
2'	4.0	--	--	--	--

LEGEND:

1267-125 ● BORING LOCATION

- Total Pb TOTAL LEAD IN MILLIGRAMS PER KILOGRAM (mg/kg)
- Cal-WET SOLUBLE LEAD BY CAL-WET CITRIC IN MILLIGRAMS PER LITER (mg/L)
- Cal-WET DI SOLUBLE LEAD BY CAL-WET DI IN MILLIGRAMS PER LITER (mg/L)
- TCLP SOLUBLE LEAD TOXICITY CHARACTERISTIC LEACHING PROCEDURE (mg/L)
- < ANALYTE NOT REPORTED AT OR ABOVE STATED LABORATORY METHOD DETECTION LIMIT (MDL)
- J THE ANALYTE WAS POSITIVELY IDENTIFIED; THE ASSOCIATED NUMERICAL VALUE IS THE APPROXIMATE CONCENTRATION OF THE ANALYTE IN THE SAMPLE
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- NOT ANALYZED



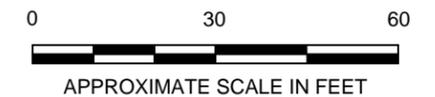
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	JOB NUMBER: 185831017	DRAWN BY: STA	CHECKED BY: MA-S	APPROVED BY: KM	DATE: 01/10/15



LEGEND:

- 1267-111 BORING LOCATION
- Total Pb TOTAL LEAD IN MILLIGRAMS PER KILOGRAM (mg/kg)
- Cal-WET SOLUBLE LEAD BY CAL-WET CITRIC IN MILLIGRAMS PER LITER (mg/L)
- Cal-WET DI SOLUBLE LEAD BY CAL-WET DI IN MILLIGRAMS PER LITER (mg/L)
- TCLP SOLUBLE LEAD TOXICITY CHARACTERISTIC LEACHING PROCEDURE (mg/L)
- < ANALYTE NOT REPORTED AT OR ABOVE STATED LABORATORY METHOD DETECTION LIMIT (MDL)
- J THE ANALYTE WAS POSITIVELY IDENTIFIED; THE ASSOCIATED NUMERICAL VALUE IS THE APPROXIMATE CONCENTRATION OF THE ANALYTE IN THE SAMPLE
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	JOB NUMBER: 185831017	DRAWN BY: STA	CHECKED BY: MA-S	APPROVED BY: KM	DATE: 01/10/15



Depth	Total Pb	Cal-WET	Cal-WET-DI	TCLP	pH
0'	130	9.4	0.56 J	--	--
2'	140	7.0	0.53 NJ	--	--

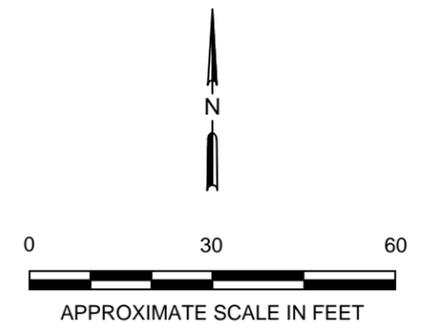
Depth	Total Pb	Cal-WET	Cal-WET-DI	TCLP	pH
0'	170	9.7	0.49 NJ	--	--
2'	130	8.1	0.46 NJ	--	--

Depth	Total Pb	Cal-WET	Cal-WET-DI	TCLP	pH
0'	210	12	0.96 NJ	0.49	--
2'	76	3.0 J	0.085 NJ	--	--

Depth	Total Pb	Cal-WET	Cal-WET-DI	TCLP	pH
0'	230	16	<0.027	0.25	--

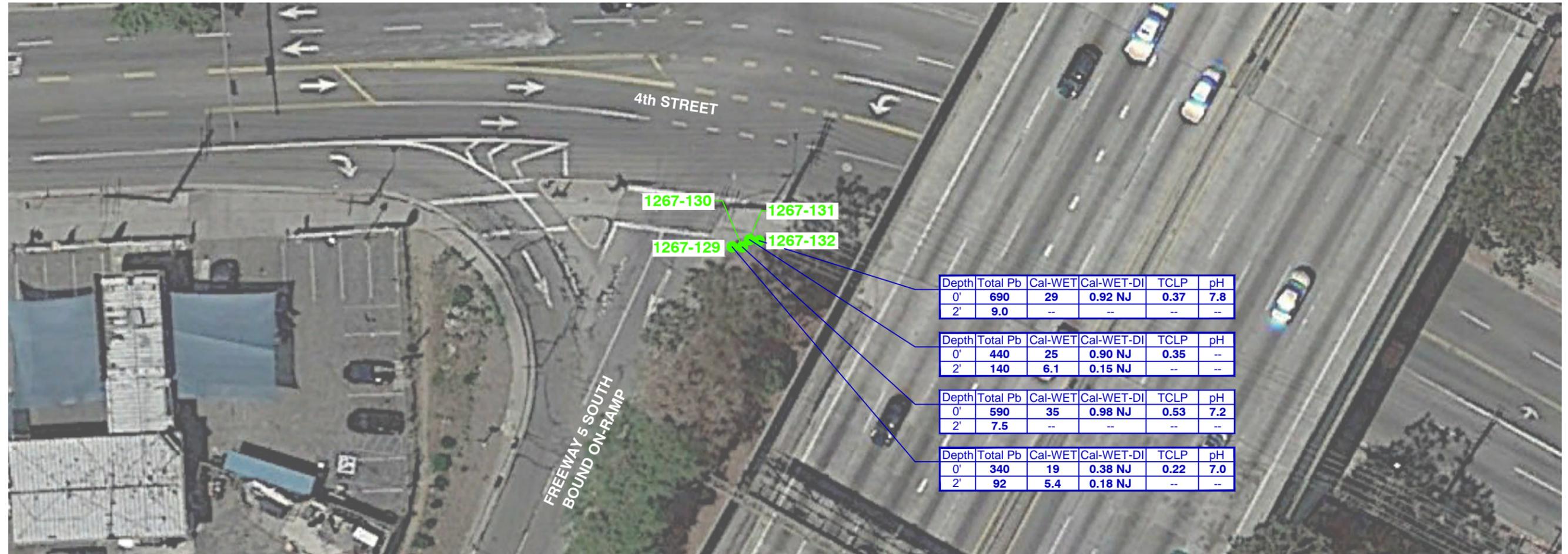
LEGEND:

- 1267-133 BORING LOCATION
- Total Pb TOTAL LEAD IN MILLIGRAMS PER KILOGRAM (mg/kg)
- Cal-WET SOLUBLE LEAD BY CAL-WET CITRIC IN MILLIGRAMS PER LITER (mg/L)
- Cal-WET DI SOLUBLE LEAD BY CAL-WET DI IN MILLIGRAMS PER LITER (mg/L)
- TCLP SOLUBLE LEAD TOXICITY CHARACTERISTIC LEACHING PROCEDURE (mg/L)
- < ANALYTE NOT REPORTED AT OR ABOVE STATED LABORATORY METHOD DETECTION LIMIT (MDL)
- J THE ANALYTE WAS POSITIVELY IDENTIFIED; THE ASSOCIATED NUMERICAL VALUE IS THE APPROXIMATE CONCENTRATION OF THE ANALYTE IN THE SAMPLE
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- NOT ANALYZED



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	JOB NUMBER: 185831017	DRAWN BY: STA	CHECKED BY: MA-S	APPROVED BY: KM	DATE: 01/10/15



Depth	Total Pb	Cal-WET	Cal-WET-DI	TCLP	pH
0'	690	29	0.92 NJ	0.37	7.8
2'	9.0	--	--	--	--

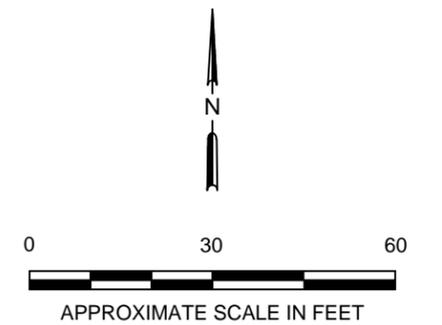
Depth	Total Pb	Cal-WET	Cal-WET-DI	TCLP	pH
0'	440	25	0.90 NJ	0.35	--
2'	140	6.1	0.15 NJ	--	--

Depth	Total Pb	Cal-WET	Cal-WET-DI	TCLP	pH
0'	590	35	0.98 NJ	0.53	7.2
2'	7.5	--	--	--	--

Depth	Total Pb	Cal-WET	Cal-WET-DI	TCLP	pH
0'	340	19	0.38 NJ	0.22	7.0
2'	92	5.4	0.18 NJ	--	--

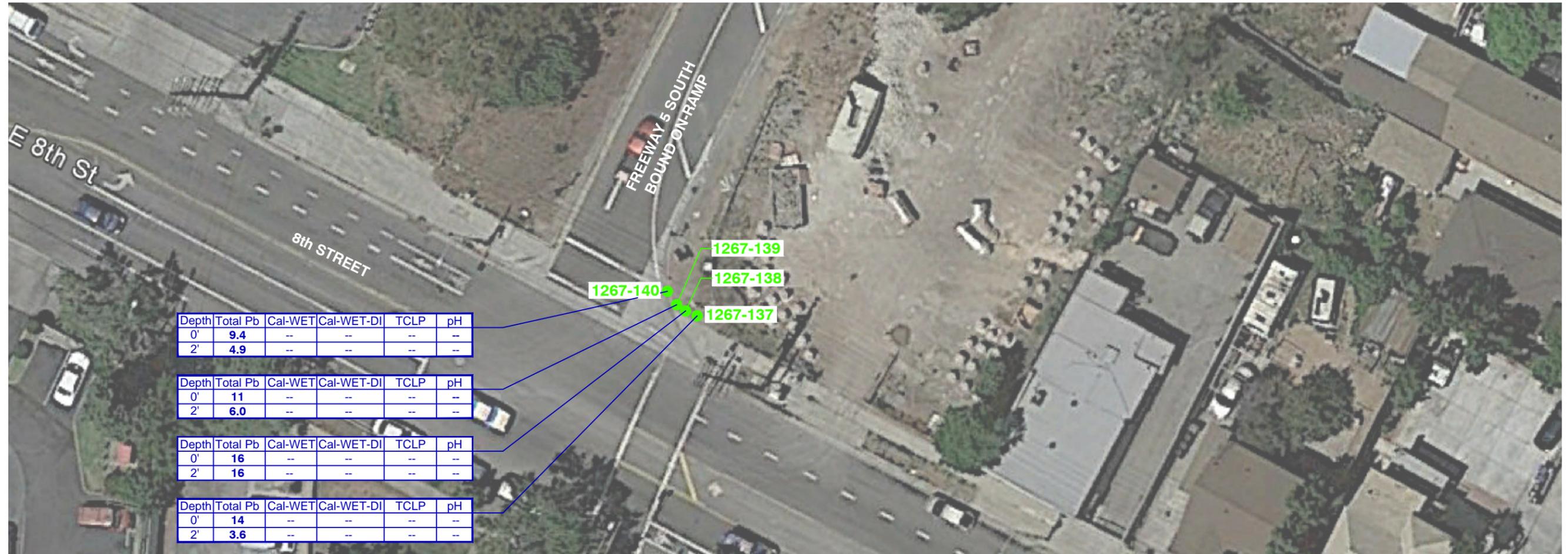
LEGEND:

- 1267-129 BORING LOCATION
- Total Pb TOTAL LEAD IN MILLIGRAMS PER KILOGRAM (mg/kg)
- Cal-WET SOLUBLE LEAD BY CAL-WET CITRIC IN MILLIGRAMS PER LITER (mg/L)
- Cal-WET DI SOLUBLE LEAD BY CAL-WET DI IN MILLIGRAMS PER LITER (mg/L)
- TCLP SOLUBLE LEAD TOXICITY CHARACTERISTIC LEACHING PROCEDURE (mg/L)
- < ANALYTE NOT REPORTED AT OR ABOVE STATED LABORATORY METHOD DETECTION LIMIT (MDL)
- NJ THE ANALYSIS INDICATES THE PRESENCE OF AN ANALYTE THAT HAS BEEN "TENTATIVELY IDENTIFIED" AND THE ASSOCIATED NUMERICAL VALUE REPRESENTS ITS APPROXIMATE CONCENTRATION
- NOT ANALYZED



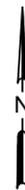
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	JOB NUMBER: 185831017	DRAWN BY: STA	CHECKED BY: MA-S	APPROVED BY: KM	DATE: 01/10/15



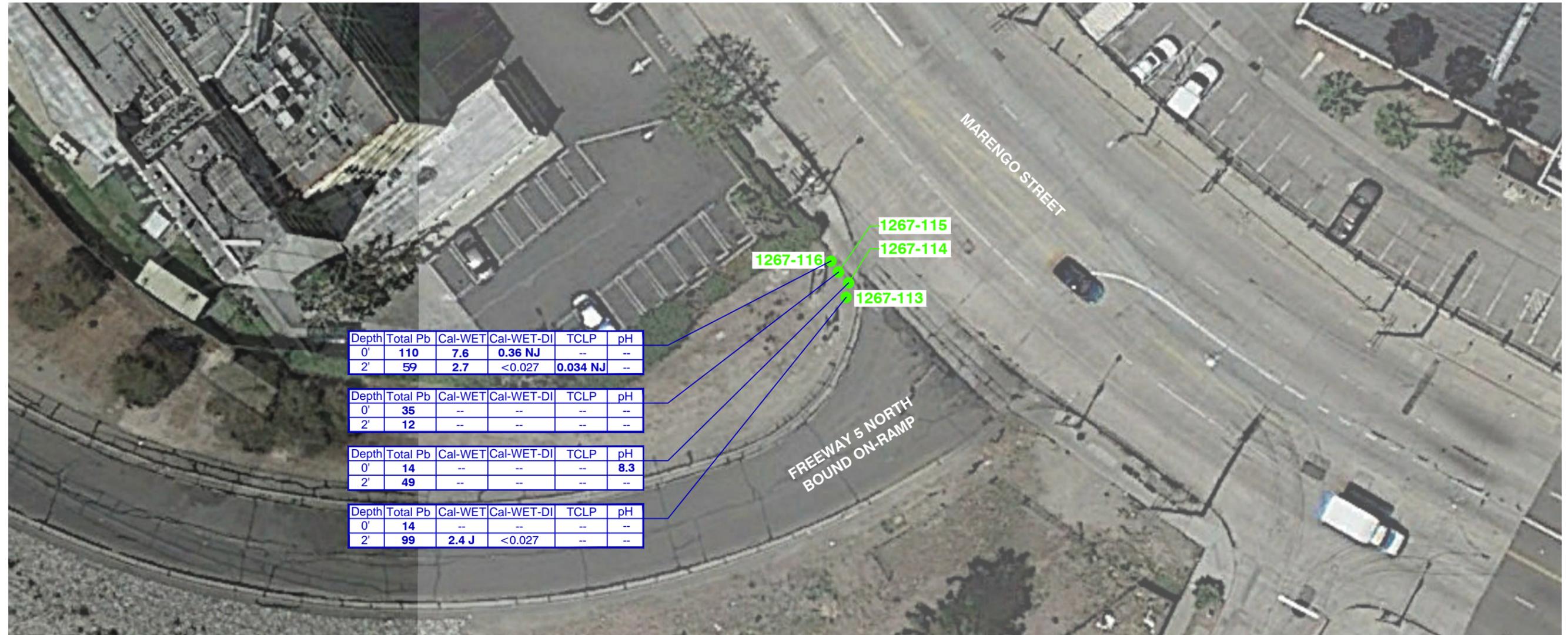
LEGEND:

- **1267-137** BORING LOCATION
- Total Pb TOTAL LEAD IN MILLIGRAMS PER KILOGRAM (mg/kg)
- Cal-WET SOLUBLE LEAD BY CAL-WET CITRIC IN MILLIGRAMS PER LITER (mg/L)
- Cal-WET DI SOLUBLE LEAD BY CAL-WET DI IN MILLIGRAMS PER LITER (mg/L)
- TCLP SOLUBLE LEAD TOXICITY CHARACTERISTIC LEACHING PROCEDURE (mg/L)
- NOT ANALYZED



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<p style="font-size: 8px; margin-top: 5px;">25964-F BUSINESS CENTER DRIVE REDLANDS, CALIFORNIA 92374 PHONE: (909) 335-6116 FAX: (909) 335-6120</p>	FOR: CALTRANS, DISTRICT 7 Contract: 07A3321 Task Order No. 17 LA-5 PM 13.8/19.2 PN: 0713000492-1; EA: 07-300701		CURB RAMP LOCATION 16 SAMPLE LOCATION MAP SOUTH BOUND ON-RAMP FROM 8th STREET (RIGHT)		FIGURE: <b style="font-size: 24px;">9
	JOB NUMBER: 185831017	DRAWN BY: STA	CHECKED BY: MA-S	APPROVED BY: KM	DATE: 01/10/15



Depth	Total Pb	Cal-WET	Cal-WET-DI	TCLP	pH
0'	110	7.6	0.36 NJ	--	--
2'	59	2.7	<0.027	0.034 NJ	--

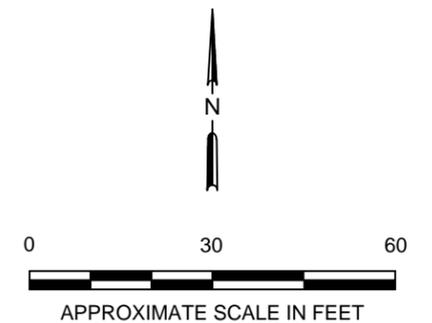
Depth	Total Pb	Cal-WET	Cal-WET-DI	TCLP	pH
0'	35	--	--	--	--
2'	12	--	--	--	--

Depth	Total Pb	Cal-WET	Cal-WET-DI	TCLP	pH
0'	14	--	--	--	8.3
2'	49	--	--	--	--

Depth	Total Pb	Cal-WET	Cal-WET-DI	TCLP	pH
0'	14	--	--	--	--
2'	99	2.4 J	<0.027	--	--

LEGEND:

- 1267-113 BORING LOCATION
- Total Pb TOTAL LEAD IN MILLIGRAMS PER KILOGRAM (mg/kg)
- Cal-WET SOLUBLE LEAD BY CAL-WET CITRIC IN MILLIGRAMS PER LITER (mg/L)
- Cal-WET DI SOLUBLE LEAD BY CAL-WET DI IN MILLIGRAMS PER LITER (mg/L)
- TCLP SOLUBLE LEAD TOXICITY CHARACTERISTIC LEACHING PROCEDURE (mg/L)
- < ANALYTE NOT REPORTED AT OR ABOVE STATED LABORATORY METHOD DETECTION LIMIT (MDL)
- J THE ANALYTE WAS POSITIVELY IDENTIFIED; THE ASSOCIATED NUMERICAL VALUE IS THE APPROXIMATE CONCENTRATION OF THE ANALYTE IN THE SAMPLE
- NJ THE ANALYSIS INDICATES THE PRESENCE OF AN ANALYTE THAT HAS BEEN "TENTATIVELY IDENTIFIED" AND THE ASSOCIATED NUMERICAL VALUE REPRESENTS ITS APPROXIMATE CONCENTRATION
- NOT ANALYZED



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	JOB NUMBER: 185831017	DRAWN BY: STA	CHECKED BY: MA-S	APPROVED BY: KM	DATE: 01/10/15



Depth	Total Pb	Cal-WET	Cal-WET-DI	TCLP	pH
0'	120	5.5	0.12 NJ	--	--
2'	14	--	--	--	--

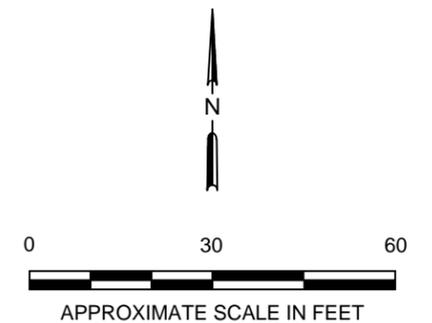
Depth	Total Pb	Cal-WET	Cal-WET-DI	TCLP	pH
0'	150	7.6	0.29 NJ	--	--
2'	13	--	--	--	--

Depth	Total Pb	Cal-WET	Cal-WET-DI	TCLP	pH
0'	140	9.3	0.11 NJ	--	--
2'	45	--	--	--	--

Depth	Total Pb	Cal-WET	Cal-WET-DI	TCLP	pH
0'	120	10 J	0.17 NJ	--	--
2'	--	--	--	--	--

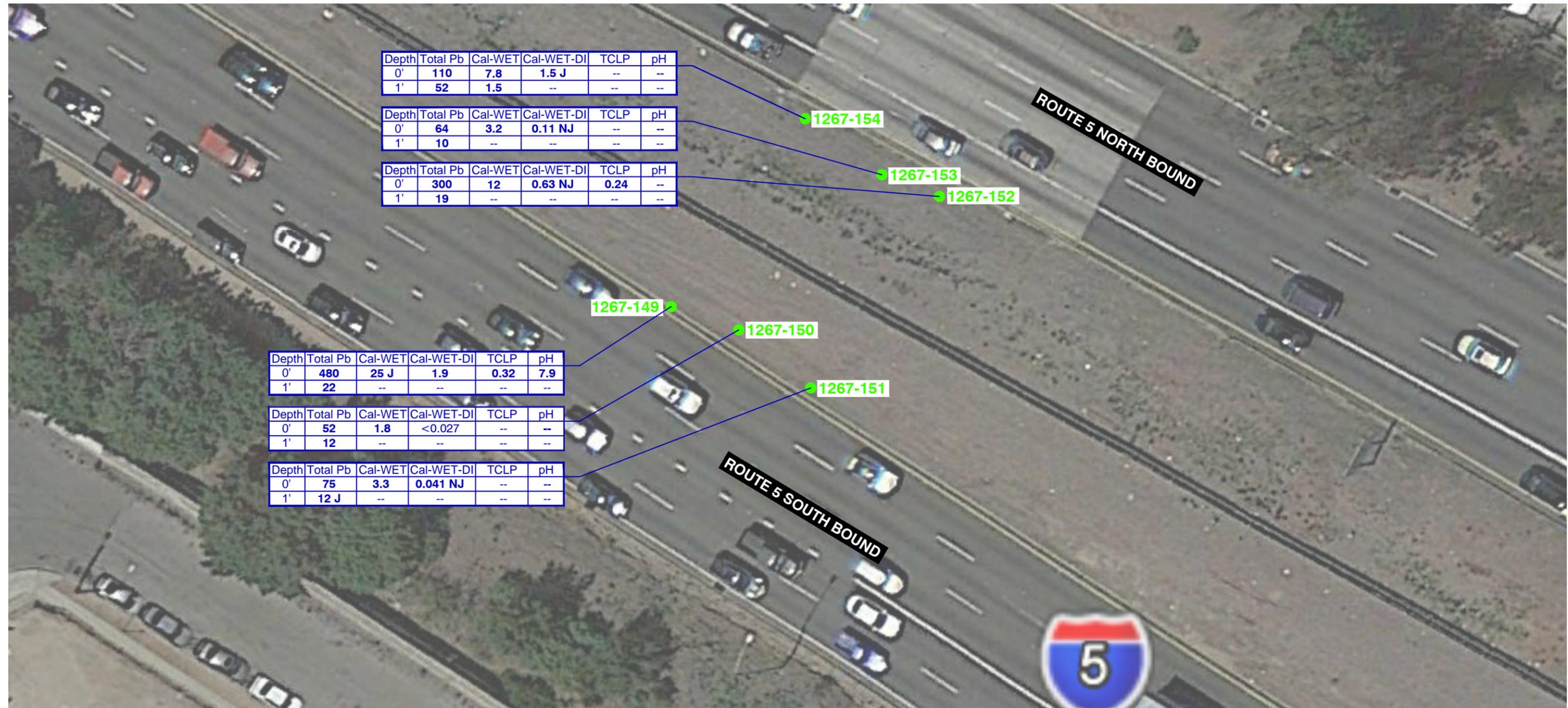
LEGEND:

- 1267-113 BORING LOCATION
- Total Pb TOTAL LEAD IN MILLIGRAMS PER KILOGRAM (mg/kg)
- Cal-WET SOLUBLE LEAD BY CAL-WET CITRIC IN MILLIGRAMS PER LITER (mg/L)
- Cal-WET DI SOLUBLE LEAD BY CAL-WET DI IN MILLIGRAMS PER LITER (mg/L)
- TCLP SOLUBLE LEAD TOXICITY CHARACTERISTIC LEACHING PROCEDURE (mg/L)
- < ANALYTE NOT REPORTED AT OR ABOVE STATED LABORATORY METHOD DETECTION LIMIT (MDL)
- NJ THE ANALYSIS INDICATES THE PRESENCE OF AN ANALYTE THAT HAS BEEN "TENTATIVELY IDENTIFIED" AND THE ASSOCIATED NUMERICAL VALUE REPRESENTS ITS APPROXIMATE CONCENTRATION
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	JOB NUMBER: 185831017	DRAWN BY: STA	CHECKED BY: MA-S	APPROVED BY: KM	DATE: 01/10/15



LEGEND:

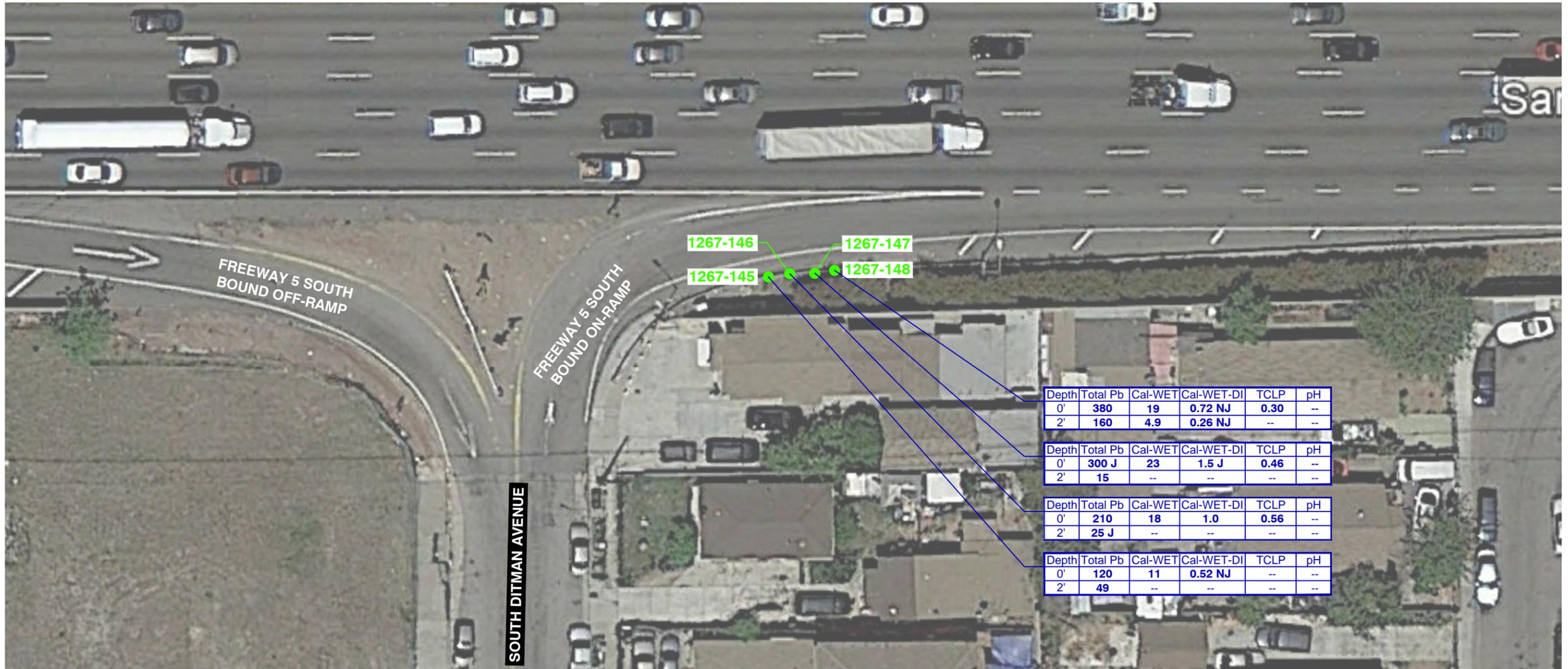
1267-149 ● BORING LOCATION

- Total Pb TOTAL LEAD IN MILLIGRAMS PER KILOGRAM (mg/kg)
- Cal-WET SOLUBLE LEAD BY CAL-WET CITRIC IN MILLIGRAMS PER LITER (mg/L)
- Cal-WET DI SOLUBLE LEAD BY CAL-WET DI IN MILLIGRAMS PER LITER (mg/L)
- TCLP SOLUBLE LEAD TOXICITY CHARACTERISTIC LEACHING PROCEDURE (mg/L)
- < ANALYTE NOT REPORTED AT OR ABOVE STATED LABORATORY METHOD DETECTION LIMIT (MDL)
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- NOT ANALYZED



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<p>25964-F BUSINESS CENTER DRIVE REDLANDS, CALIFORNIA 92374 PHONE: (909) 335-6116 FAX: (909) 335-6120</p>	FOR: CALTRANS, DISTRICT 7 Contract: 07A3321 Task Order No. 17 LA-5 PM 13.8/19.2 PN: 0713000492-1; EA: 07-300701		MVP LOCATIONS SAMPLE LOCATION MAP ALONG ROUTE 5		FIGURE: 12
	JOB NUMBER: 185831017	DRAWN BY: STA	CHECKED BY: MA-S	APPROVED BY: KM	DATE: 01/10/15



Depth	Total Pb	Cal-WET	Cal-WET-DI	TCLP	pH
0'	380	19	0.72 NJ	0.30	--
2'	160	4.9	0.26 NJ	--	--

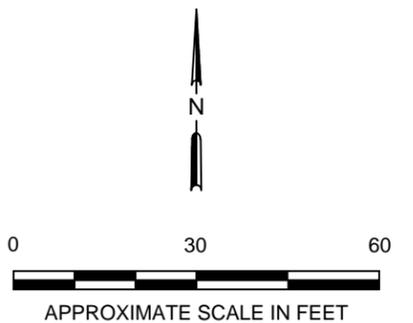
Depth	Total Pb	Cal-WET	Cal-WET-DI	TCLP	pH
0'	300 J	23	1.5 J	0.46	--
2'	15	--	--	--	--

Depth	Total Pb	Cal-WET	Cal-WET-DI	TCLP	pH
0'	210	18	1.0	0.56	--
2'	25 J	--	--	--	--

Depth	Total Pb	Cal-WET	Cal-WET-DI	TCLP	pH
0'	120	11	0.52 NJ	--	--
2'	49	--	--	--	--

LEGEND:

- 1267-145 BORING LOCATION
- Total Pb TOTAL LEAD IN MILLIGRAMS PER KILOGRAM (mg/kg)
- Cal-WET SOLUBLE LEAD BY CAL-WET CITRIC IN MILLIGRAMS PER LITER (mg/L)
- Cal-WET DI SOLUBLE LEAD BY CAL-WET DI IN MILLIGRAMS PER LITER (mg/L)
- TCLP SOLUBLE LEAD TOXICITY CHARACTERISTIC LEACHING PROCEDURE (mg/L)
- < ANALYTE NOT REPORTED AT OR ABOVE STATED LABORATORY METHOD DETECTION LIMIT (MDL)
- J THE ANALYTE WAS POSITIVELY IDENTIFIED; THE ASSOCIATED NUMERICAL VALUE IS THE APPROXIMATE CONCENTRATION OF THE ANALYTE IN THE SAMPLE
- NJ THE ANALYSIS INDICATES THE PRESENCE OF AN ANALYTE THAT HAS BEEN "TENTATIVELY IDENTIFIED" AND THE ASSOCIATED NUMERICAL VALUE REPRESENTS ITS APPROXIMATE CONCENTRATION
- NOT ANALYZED



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<p>25964-F BUSINESS CENTER DRIVE REDLANDS, CALIFORNIA 92374 PHONE: (909) 335-6116 FAX: (909) 335-6120</p>	FOR: CALTRANS, DISTRICT 7 Contract: 07A3321 Task Order No. 17 LA-5 PM 13.8/19.2 PN: 0713000492-1; EA: 07-300701	CONCRETE BARRIER LOCATION SAMPLE LOCATION MAP SOUTH BOUND ON-RAMP FROM SOUTH DITMAN AVENUE (LEFT)		FIGURE: 13
	JOB NUMBER: 185831017	DRAWN BY: STA	CHECKED BY: MA-S	APPROVED BY: KM

**APPENDIX A
HASP AND FIELD FORMS**



**SITE-SPECIFIC HEALTH AND SAFETY
PLAN (HASP)
TASK ORDER NO. 17 – ADL
INVESTIGATION AND ASBESTOS
SURVEY - LA-5**

07A3321-17

**Pavement Rehabilitation Project- ADA Curb
Ramp Reconstruction, construction of
Concrete safety barrier, construction of MVPs
and replacement of bridge approach and
departure pavement slabs from Route 5/710
Separation to Main Street Undercrossing**

Location:LA-5 13.8/19.2

Los Angeles County, California

PN: 0713000492-1

EA: 300701

Prepared for:

The State of California, Department of
Transportation

District 7 - South

Los Angeles, California

Contract # 07A3321

Submitted by:

Stantec Consulting Services Inc.

25864-F Business Center Dr.

Redlands, CA 92374

December 3, 2014



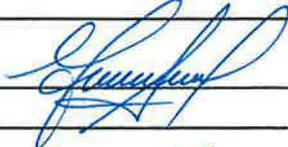
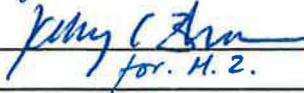
Purpose and Approval

Our work can be hazardous, and it is imperative that we never forget that! It is the purpose of this Health and Safety Plan (HASP) to proactively aid Stantec employees in:

- Identifying and understanding the potential risks/hazards they may encounter at the site.
- Mitigating those potential risks/hazards.

Stantec's policy is to complete our work on this site without any type of incident (injury, illness, impact to the environment, impact to property and equipment). In order to achieve this goal, the project team will work together to perform an effective hazard assessment. The team will then establish appropriate precautions and communicate these daily among project staff. Staff will be responsible for communicating changing field conditions to the project management so these conditions and appropriate precautions may be re-evaluated as needed. Staff will implement **STOP WORK AUTHORITY** at any time they believe that conditions may be inherently unsafe or might cause damage to property or harm to the environment. Staff may refuse to participate in work they believe will be unsafe. If it is believed that such conditions exist, staff will communicate immediately with the Project Manager to resolve the situation. We expect all subcontractors and project personnel to share this goal.

Client: <u>The State of California, Department of Transportation – 07A3321</u>	Site Name: Pavement Rehabilitation Project – ADA Curb Ramp Reconstruction , construction of concrete safety barrier, construction of MVPs, and replacement of bridge approach and departure pavement slabs from Route 5/710 Separation to Main Street Undercrossing, Location: LA-5 13.8/19.2
Project Name: TASK ORDER NO. 17 – ADL INVESTIGATION AND ASBESTOS SURVEY	Project Number: <u>185831017</u>
Start Date: <u>December 3, 2014</u>	End Date: <u>January 30, 2015</u>
Plan Review Date*: <u>June 3, 2015</u>	
(*The Plan Review Date is the date the HASP would need to be re-reviewed to maintain current information is included should the Task Order be extended. The Plan Review date is no longer than 6 months from the start of the Period of Performance – however, no reviews will be performed on the HASP outside of the Task Order Period of Performance.)	
<u>Kevin Miskin</u> Project Manager	Signature: <u>[Signature]</u> for K.H. Date: <u>12/4/14</u>
<u>Dan Feldt, MPH, CIH</u> Health and Safety Manager, Certified Industrial Hygienist (CIH) HASP review	Signature: <u>[Signature]</u> Date: <u>12-3-14</u>
<u>Monica L. Aragon</u> Office Safety Environmental Coordinator (OSEC)	Signature: <u>[Signature]</u> Date: <u>12/4/2014</u>
<u>Jason Stagno</u> ACM Site Health and Safety Officer (SHSO)	Signature: <u>[Signature]</u> on behalf of J.S. Date: <u>12/4/2014</u>
<u>Anne Perez</u> Peer Reviewer	Signature: <u>[Signature]</u> for A.P. Date: <u>12/4/2014</u>

<u>Monica L. Aragon</u> HASP Originator	Signature: 	Date: <u>12/4/2014</u>
<u>Mark Zellmer</u> <u>ADL Site Health and Safety</u> <u>Officer (SHSO)</u>	Signature: 	Date: <u>12/04/2014</u>

The health and safety guidelines in this HASP were prepared exclusively for this site. This HASP will be amended (with changes recorded on the Health and Safety Plan Modification Log located in Attachment A) if site conditions, scope of work, training dates, personnel, or other critical items change before the scheduled HASP review date above. This HASP is intended to be available on site. Contents of this binder are listed in Attachment 1. Elements of the HASP shall be reviewed during daily tailgate meetings conducted by the Site Health & Safety Officer.



Acknowledgement and Agreement Form

"Zero Tolerance for Incidents of ANY Kind. Work Together to Ensure a SAFE and High Quality Project"

All parties conducting site activities are required to coordinate their activities and practices with the Stantec Site Health and Safety Officer (SHSO). Stantec has provided a copy of this HASP to site contractors in the interest of disclosure of potential risks/hazards of which Stantec may be aware. Similarly, contractors shall inform Stantec of any potential site risks/hazards of which they are aware including the contractor's work, equipment, procedures and chemicals.

This HASP has been developed for the purpose of proactively aiding Stantec employees in identifying, understanding, and mitigating the potential risks/hazards they are may encounter at the site. This HASP may also be used as a reference document by properly trained and experienced Stantec subcontractors and clients. However, sub-contractors and other contractors at the site must develop their own HASP to address the potential risks/hazards faced by their own employees.

This HASP should NOT be understood by contractors or anyone other than Stantec employees to provide information on all of the potential risks/hazards to which they may be exposed as a result of their work. Stantec claims no responsibility for use of this HASP by others.

Your signature below confirms the following: that you have read and understand the potential risks/hazards identified by Stantec and the associated mitigation measures discussed in this HASP; that there may be additional risks or hazards that are not identified in this HASP; that you have received training and medical surveillance according to this HASP and the OSHA Standard on Hazardous Waste Operations and Emergency Response (29 CFR 1910.120); and that you understand that you could be prohibited by the Stantec Site Health and Safety Officer or other authorized Stantec personnel from working on this project for not complying with any aspect of this or any other applicable HASP.

(All Stantec and subcontractor personnel must sign.)

Name	Signature	Company	Date
MONICA L. ARAGON		STANTEC	12/8/14
Mark Zeller		Stantec	12/9/14
ANM CHOUDHURY		Caltrans	12/9/14
Keith Posekian		Stantec	12/10/14
Melissa Baernstein		stantec	12/11/14
Jason Stagno		Stantec	12/11/14

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5.0 JOURNEY MANAGEMENT PLAN	5.1

ATTACHMENTS

Attachment A General Safety Information (for all Sites)
Attachment B Training Certificates
Attachment 1 Stantec Field Binder Checklist and Project Applicable Forms
Attachment 2 Job Safety Analyses
Attachment 3 RMS-2 Fit for Duty
Attachment 4 Driver's Fatigue Checklist /Safe Driving Vehicle Pre-Use Checklist
Attachment 5 RMS-3 incident/Near Miss Investigation and Collision Kit

1.0 Emergency Response

PHONE NUMBERS

The nearest telephone is: Jason Stagno (Stantec) for the ACM crew at (805) 630-8648 (cell) and Mark Zellmer (Stantec) for the ADL crew at (714) 742-9131. There is no landline available for this project and cell phone and cell phone reception may be intermittent. Additional personnel, including the SHSO, who may be on-site are listed below:

1. Dion Monge (Field Staff) 909-556-6516 (cell phone) (ACM Crew)
2. Keith Posekian (805) 719-9352 (cell phone) (ACM Crew)
3. Melissa Baernstein 909-362-3942 (cell phone) (ACM Crew)
4. Josh Sargent 909-289-7111 (cell phone) (ADL Crew)
5. Mike Clayton 760-995-6432 (cell phone) (ADL Crew)
6. Ryan McDaniel 909-289-9675 (cell phone) (ADL Crew)
7. Scott Edblad 661-754-0862 (cell phone) (ADL Crew)

Emergency Response			
	Name	Telephone	Verification
Hospitals	White Memorial Medical Center 1720 East Cesar E Chavez Avenue, Los Angeles, CA	911 or Non-emergency 323-268-5000	12/3/2014
Ambulance	Care Ambulance Service, Inc.	911 or Non-emergency 877-972-0999	12/3/2014
Police	California Highway Patrol 1601 Corporate Center Drive, Monterey Park, California 91754	911 or Non-emergency 323-980-4600	12/3/2014
Fire Department	Los Angeles County Fire Dept Station 4 450 E Temple St, Los Angeles, CA	911 or Non-emergency 213-485-6204	12/3/2014
Spill Response	Belshire Environmental	(800)-995-8220	12/3/2014
Environmental Response	National Response Center (24-hour hotline)	(800) 424-8802	12/3/2014
Environmental Protection	US Environmental Protection Agency (24-hour hotline)	(800) 424-9346	12/3/2014
Emergency Services	Office of Emergency Services (24-hour hotline)	(800) 852-7550	12/3/2014
Poison Control	California/U.S. National Poison Control Center (24-hour hotline)	(800) 222-1222	12/3/2014
Agency / Line Locator			
National Line Locator	National 811 Call-Before-You-Dig Hotline (24-hour hotline)	811	12/3/2014
Public Utility Locator	DIG ALERT	811	12/3/2014

Local office and additional contacts in case of an emergency or field questions regarding the Site:



Stantec

- 1. Kevin Miskin (Contract Manager) at 909-224-3406**
- 2. Anne Perez (TO Support) at 951-255-8202**
- 3. Monica L. Aragon at 562-354-2643**

Flow charts for contacting additional departments in Stantec and official reporting protocol can be found in Section 1.4 of Attachment A.

2.0 Project Team Information

Project Team Phone Numbers			
Project Role/Name		Telephone	Verification
Stantec Project/Contract Manager	Kevin Miskin	909-224-3406 (cell) 909-255-8210 (office)	12/3/2014
Field Staff #1: Stantec ACM Site Health and Safety Officer (SHSO), Cal-Certified Asbestos Consultant	Jason Stagno	805-630-8648	12/3/2014
Field Staff #2: Stantec ADL Site Health and Safety Officer (SHSO)	Mark Zellmer	714-742-9131	12/3/2014
Field Staff #3: Stantec project Staff (ADL)	Keith Posekian	805-719-9352	12/3/2014
Field Staff #4: Stantec project Staff (ACM)	Melissa Baernstein	909-362-3942	12/3/2014
Field Staff #5: Stantec project Staff (ADL)	Ryan McDaniel	909-289-9675	12/3/2014
Field Staff #6: Stantec project Staff (ADL) Cal-Certified Asbestos Consultant (ACM)	Scott Edblad	661-754-0862	12/3/2014
Field Staff #7: Stantec Project Staff (ADL)	Mike Clayton	760-995-6432	12/3/2014
Field Staff #8: Stantec Project Staff, Cal-Certified Asbestos Consultant (ACM)	Dion Monge	909-556-6516	12/3/2014
Field Staff #9: Stantec project Staff (ADL)	Josh Sargent	909-289-7111	12/3/2014
Stantec Business Unit Leader	Kyle Emerson	951-315-0534 (cell) 909-335-6116 (office)	12/3/2014
Senior Certified Industrial Hygienist (CIH)	Dan Feldt	414-305-1984	12/3/2014
Stantec West Region Health, Safety, Environment (HSE) Coordinator	Clint Reuter	818.395.8556 Cell 949.923.6258 Office	12/3/2014
Stantec Human Resources Representative	Peggy Ramos	949-923-6061	12/3/2014
OSEC (Stantec Office Safety & Environmental Coordinator)	Monica L. Aragon	714-471-5711	12/3/2014

(Note: The Field Staff will be on-Site. All others are Stantec employees supporting all Stantec staff and not necessarily charging time to the Task Order.)

TRAINING

Site personnel will be trained and certified in hazardous waste operations and emergency response as follows:

- 40-Hour HAZWOPER Training;
- OSHA Respiratory Protection (29 CFR 1910.134)
- Annual 8-Hour Refresher [29 CFR 1910.120(e)(8)];



- First Aid/CPR Training;
- Physical examination consistent with 29 Code of Federal Regulations (CFR) 1910.120 (and 8 California Code of Regulations (CCR) 5192, if applicable);
- Supervisory 8-hour Training [29 CFR 1910.120(e)(4)] for the Site Manager/SHSO; and
- Additional training specific to the job being performed (e.g., Fall Protection, Lock Out/Tag Out, Hot Work, Confined Space, etc.).

In addition to the above-mentioned trainings, Stantec personnel are required to have training in a behavior-based safety program and defensive driving. Fit tests are also required for respirator use.

Client-Specific Safety Procedures:

Caltrans does not have any additional required safety programming or expectations, thus Stantec staff will comply with state, federal and local regulations, and Stantec policies, procedures and expectations.

Site specific staff safety training certification information is listed on the following page.

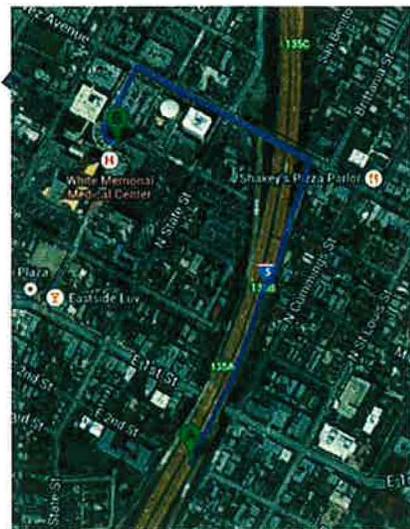
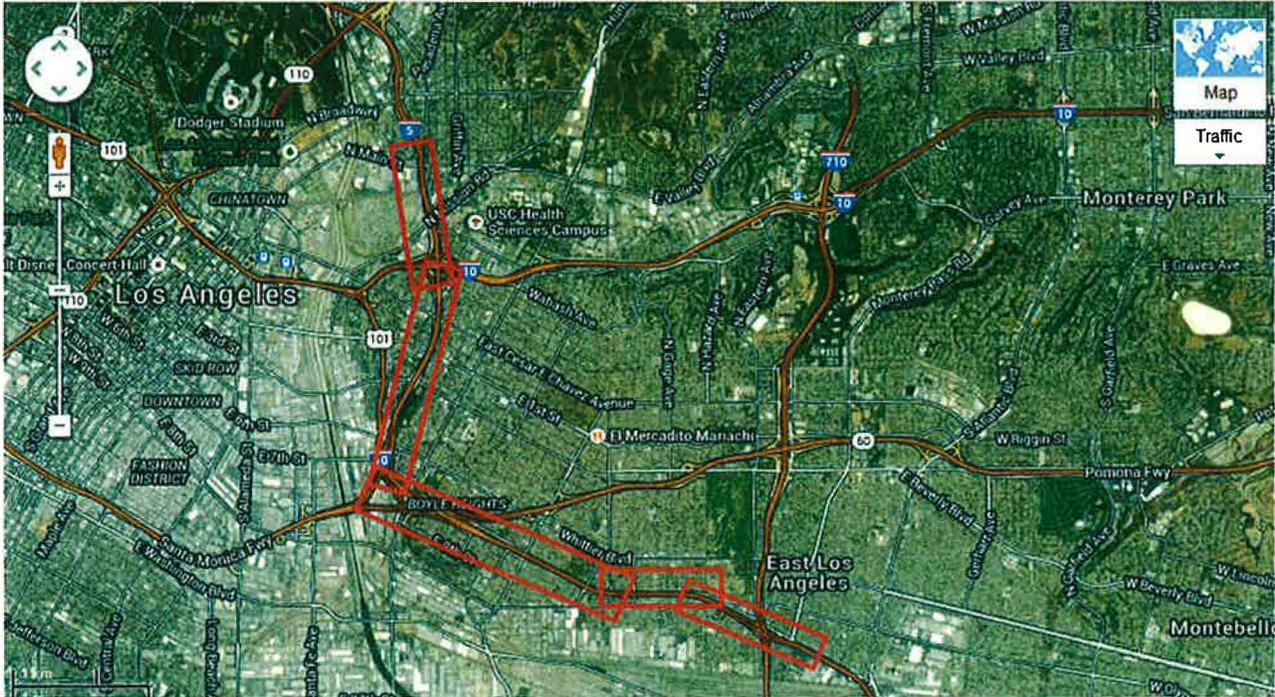
**SITE SPECIFIC STAFF TRAINING
(Includes personnel that could potentially visit the Site)**

Name	40Hr HAZWOPER	8Hr HAZWOPER Refresher	CPR / First Aid	Annual Physical	Defensive Driver Training	Respirator Fit Test
FIELD STAFF: Jason Stagno (ACM)	07/07/2004	09/07/2014	6/14/2013	12/12/2013	09/06/2012	12/12/2013
FIELD STAFF: Melissa Baernstein (ACM)	08/25/05	5/28/2014	11/8/2013	10/7/2013	10/07/13	3/1/2013
FIELD STAFF: Mark Zellmer (ADL)	4/10/2007	5/31/2014	11/8/2013	03/11/2014	03/10/2013	03/17/2014
FIELD STAFF: Keith Posekian (ADL)	06/14/2013	07/13/2014	06/28/2013	04/30/2014	10/27/2013	04/30/2014
List Staff Changes/Additions Below						
OSEC: Monica L. Aragon	08/28/00	09/09/2014	01/30/14	03/28/14	05/21/12	11/21/14
FIELD STAFF: Dion Monge (ACM)	02/11/2005	05/28/2014	11/8/2013	11/8/2013	03/28/2013	03/28/13
FIELD STAFF: Scott Edblad (ADL)	11/04/2000	02/18/2014	06/14/2013	12/17/2013	9/12/2013	12/17/2013
FIELD STAFF: Mike Clayton (ADL)	1/26/2006	4/11/2014	2/24/2012	3/20/2014	05/6/2012	03/20/2014
FIELD STAFF: Josh Sargent (ADL)	6/12/2012	9/19/2014	11/8/2013	8/20/2013	8/20/2013	8/20/2013
FIELD STAFF: Ryan McDaniel (ADL)	10/28/2013	11/26/2014	10/14/2013	10/14/2013	10/22/2013	10/28/2013

Copies of the OSHA 8-Hour Refresher Certificates are included in Attachment B.

DIRECTIONS AND MAP TO THE HOSPITAL

The SHSO will verify and validate the route to the hospital by driving it before work begins. The work area has been outlined in red, with the hospital indicated by the arrow:



I-10 E/I-5 N

- | | | |
|--|---------------------------------------------------------------------------------------------------------------------|---------------------------|
| | 1. Head northeast on I-10 E/I-5 N | go 0.2 mi
total 0.2 mi |
| | 2. Take the exit toward Cesar Chavez Ave | go 0.1 mi
total 0.4 mi |
| | 3. Turn left onto East Cesar E Chavez Avenue | go 0.2 mi
total 0.6 mi |
| | 4. Take the 3rd left
Destination will be on the right
About 1 min | go 0.1 mi
total 0.7 mi |
| | White Memorial Medical Center, 1720 East Cesar E Chavez Avenue, Los Angeles, California 90033, United States | |

3.0 Scope of Work

The scope of this project is described in the Aerially Deposited Lead Investigation and Asbestos Surveys Proposal, dated December 1, 2014. There are 2 bridges included in this project. The field activities are summarized below

Task No. 4 - Field Investigations

ADL Survey

To support the ADL survey, soil samples will be collected from hand auger borings at depth discrete intervals not to exceed two (2) feet below ground surface (bgs) for laboratory analysis. Excess soil removed during hand auguring will be placed back into the boring. This proposed scope of work is intended to evaluate whether excavated soil generated during the proposed construction activities will result in the need for special handling or disposal (as defined by Title 22 of the California Code of Regulations) with respect to ADL-impacted soil.

ADL Field Sampling

As directed in the Task Order No. 17 Request, Stantec proposes to advance up to 56 total borings from sixteen (16) discontinuous curb reconstruction areas. Borings will be advanced at the locations designated in the Task Order according to the Attachment A table also provided by Caltrans. No borings will be advanced outside of the existing right of way or in existing paved areas. According to the Task Order request, samples will be collected at the following depths:

- Curb ramp locations (44 borings proposed):
 - Two (2) samples per boring at depth of surface (0.0-0.5) and two (1.5-2.0) feet below the ground surface (bgs).
- MVP locations (6 borings proposed):
 - Two (2) samples per boring at depth of surface (0.0-0.5) and one (0.5-1.0) foot below the ground surface (bgs).
- Concrete Barrier locations (6 borings proposed):
 - Two (2) samples per boring at depth of surface (0.0-0.5) and two (1.5-2.0) feet below the ground surface (bgs).

Additionally:

- Approximately 112 samples will be collected and analyzed at a stationary laboratory. The data will be used to evaluate soil characteristics for handling and disposal. No borings will be advanced outside of the existing right of way or in existing paved areas.
- ADL samples will be collected directly from the hand auger bailer, discharged to a clean ziplock one (1) gallon bag, manually homogenized, then discharged to eight-ounce laboratory certified clean glass jars. All soil sampling equipment will be decontaminated before advancing at each boring location using the three bucket system. Each sample will be labeled with a unique identification along with the borehole ID, sample depth, sample date, and sample time. All samples will be annotated on chain-of-custody forms and delivered to a laboratory certified by the California Department of Health Services Environmental Laboratory Accreditation Program for the analyses indicated herein.
- Survey boring locations using a handheld Trimble GPS unit (during augering activities).
- All samples will be analyzed for:
 - Total Lead by EPA Test Method 6010B.
- Select samples will be analyzed for

- Soluble lead using the CalWET method using the citric acid as the extractant when total lead concentrations are greater than or equal to 50 mg/kg or 50 percent (50%) of the samples.
 - Soluble lead using the CalWET method using deionized water (DI) as the extractant - when the CalWET-citric concentration is greater than the Soluble Threshold Limit Concentration (STLC) of 5.0 mg/L.
 - Soluble lead using the Toxicity Characteristic Leaching Procedure (TCLP) by EPA Method 1311 – performed on all samples reporting total lead concentrations of 1,000 mg/kg or higher, or the 20 percent (20%) of the samples reporting the highest total lead concentrations.
 - Title 22 Metals – the ten (10) samples reporting the highest total lead concentrations will be analyzed for Title 22 metals.
 - pH using EPA Test Method 9045 - the ten percent (10%) or a minimum of four (4) samples reporting the highest total lead concentrations will be analyzed for pH.
- The following QA/QC samples will be collected:
 - Equipment Blanks: As directed in the task order request, equipment (decontamination) blank samples, one for every chain of custody (approximately 3 total), will be analyzed for Title 22 metals.
 - Field Duplicate: As directed in the task order request, five (5) field duplicate samples will be collected and analyzed for Title 22 metals
 - Trip Blanks: trip blank samples are not required for this investigation because no samples are being analyzed for volatile organic compounds.

ACM Survey

As part of the asbestos surveys, Stantec will conduct an inspection of the *accessible* portions of each bridge to evaluate whether suspect ACMs are present in accessible construction materials. Representative bulk material samples will be collected from homogeneous suspect ACM materials, which may include felt, asphalt, concrete, conduit, drainage piping, and shims, if present. A homogeneous area is defined as an area where the suspect material is uniform in texture and color and appears to be identical in every respect. Stantec will use the Asbestos Hazard Emergency Response Act (AHERA) sampling guidelines, as outlined in 40 CFR 763 to determine the number of asbestos containing material (ACM) samples required to be collected from each suspect homogeneous area as identified in the following table. A summary table of AHERA guidelines is presented below.

AHERA SAMPLE CRITERIA	
Type of Homogeneous Material	EPA Required Number of Samples
Surfacing: Less than 1,000 sq. ft.	3
Surfacing: 1000 – 5000 sq. ft.	5
Surfacing: Greater than 5000 sq. ft	7
Thermal System Insulation	3 samples per homogeneous material
Miscellaneous Materials	Discretion of the Building Inspector

Stantec's sampling is destructive in nature and small pieces of structural materials will be collected for laboratory analysis. Stantec will not replace or repair these materials. However, the removal of small pieces of structural materials does not typically compromise structural integrity.



Stantec assumes the following:

- Stantec will conduct all sampling from accessible locations on bridge deck shoulders and abutments.
- Lane closures, mechanical lifts and ladders will not be required to access potential ACMs.
- The highway bridge center divider will only be sampled if the sampling crew(s) can safely park their vehicle in the center median providing for safe access.
- Shim counts will be estimated, based on the number of guardrail posts, when located on inaccessible bridge railings.
- Recommendations for suspect ACMs that are not readily accessible will be based on the results of samples collected from similar accessible materials.
- No Global Positioning System (GPS) coordinates will be obtained for ACM sampling locations. Many times the locations are located in places on the bridges where satellite coverage is limited and readings cannot be obtained.
- Should lane closures be required to conduct the work safely, Stantec will provide adequate traffic control as needed. Lane closures and traffic control requirements shall comply with Contract Agreement 07A3321 and Caltrans 2010 Revised Standard Plans. Stantec will also obtain approval and schedule from Caltrans traffic Management Center (TMC), for the lane closures prior to the start of work.

Stantec estimates that approximately 25 ACM samples will be collected from each of the two (2) bridges, totaling approximately 50 ACM samples.

The scope of work for the ADL investigation will be conducted by a two-person team and the ACM survey will be conducted by one two-person team, as well. Both teams will conduct their respective sampling at different locations simultaneously. A buddy system will be implemented during the sampling activities as a secondary measure for protection against traffic. One team of two will conduct the shallow depth borings, while the third person conducts the drilling oversight (Attachment 2).

The scope of work will be conducted in a manner consistent with the methods and assumptions outlined in **TASK ORDER NO. 17**.

All work plans referenced in this HASP will be available for Stantec personnel on site. The field staff may also call the Project Manager, Kevin Miskin (909-224-3406) or Task Manager, Anne Perez (951-255-8202), or Monica L. Aragon (562-354-2643) should they have any questions that are not specifically addressed in the HASP or the work plan.

4.0 Site Background, Potential Hazards and Mitigation Measures

PROJECT BACKGROUND INFORMATION

The Site background is described in the Task Order Request, dated December 1, 2014, and summarized below.

Project Background

The purpose of this task order is to evaluate asbestos containing materials (ACMs) on structural materials of two (2) bridges (maps included as an attachment to the Task Order request) and to conduct an aerially deposited lead (ADL) site investigation along portions of State Route 5 (SR5). According to the Caltrans Task Order No. 17 request, the purpose of the proposed project is to perform timely pavement rehabilitation to preserve and extend the existing pavement on SR5 between the SR5/SR710 Separation (PM 13.8) and the Main Street undercrossing (PM19.2) in the city of Commerce in East Los Angeles, and the city of Los Angeles in Los Angeles County, respectively. In addition to pavement rehabilitation, the project also proposes to remove and replace existing guardrails, construct and upgrade existing curb ramps to meet current ADA standards, construct maintenance vehicle pullouts (MVPs), concrete safety barriers, gore paving, and replace existing attenuators with crash cushion (Smart Cushion). Ramp termini upgrade, replacement of bridge approach/departure slabs and AC dike reconstruction is also proposed as part of the project improvements. The ACM portion of the project will include sampling all accessible potential ACM materials in the bridge and guardrail structures where renovations/demolitions are necessary to complete the proposed project. The work will be conducted pursuant to the provisions in Stantec's Agreement 07A3321, and with the Task Order request emailed November 19, 2014.

POTENTIAL HAZARDS

Chemical:

The intent of the survey to be performed is to identify whether ACMs are present in accessible bridge materials. Therefore, asbestos is a potential inhalation hazard.

No historical reports were provided indicating that specific chemical hazards have been discovered at the Site during previous investigations. However, potential chemical hazards at this site may include:

- Aerially deposited lead (ADL) and other heavy metals in soil.

Physical:

The project area is located along the SR-5 through areas of Los Angeles County (within Caltrans Right-of-Way (PM LA-5 13.8/19.2). Other potential site specific hazards may include:

- Traffic
 - Set cones up in your immediate work area to provide visibility to the vehicles traveling in the area of the work zone. Don't turn your back to traffic.
 - Use the work vehicle as an added buffer for your work area (DO NOT BLOCK TRAFFIC), and consider a closure of the immediately adjacent lane with proper signage.

- Wind/debris
 - Should weather conditions change and become a hindrance to performing the task safely, stop work and contact the project manager.
- Heat
 - Be sure to drink plenty of liquids, be sure your co-worker is drinking enough liquids. The site appears to have access to areas that do provide a lot of shade so be sure to take breaks to cool down.
- Trips/falls
 - To protect yourself, always look before you step. Work will be done around the highway and along the highway slopes under bridges. Take care walking and standing working in all areas of the site.
- Noise
 - The Site is adjacent to Highway lanes – wear the proper hearing protection if found to be necessary.
- PPE
 - Wear the proper PPE for the tasks involved – minimum: gloves, hard hat, safety glasses, steel toed boots, high-viz safety vest, and when appropriate, a dust mask (see below). Additional safety wear may need to be used if site conditions change.

HAZARD MITIGATION

Attachment A provides information for on avoiding, monitoring and mitigating chemical and physical hazards, including general hazards that can potentially be encountered on any project site (earthquakes, bees, etc). As described, proper hygiene and personal protective equipment (PPE) shall be required including,

- Washing hands before eating, smoking and always after sample collection is completed, and
- Donning hard hats, reflective high visibility vests, steel toed shoes, and disposable sampling gloves.

Project work will be near the lanes of a busy highway. Traffic control will be essential for safety. To improve worker safety, traffic warning signage, cones and truck flashers will be provided to alert drivers to workers along the shoulders. Traffic control will consist of the following elements:

- W21-5 "Shoulder Work" signs will be placed in the area ahead of each borehole. The signs will be moved as work progresses to assure that the signage follows the work. Signs will be placed appropriately to improve visibility to drivers.
- High visibility reflective cones will be placed along the pavement edge ahead of and next to the work area.
- Work trucks will have flashing yellow strobe lights and will be positioned, preferably at a slight diagonal to the pavement edge, as safety barriers between workers and oncoming traffic.

Protect yourself, always look before you step and wear proper PPE for the task being performed.

5.0 Journey Management Plan

PURPOSE

The purpose of this Journey Management Procedure (JMP) is to prevent losses associated with motor vehicle related incidents including: injuries to drivers, passengers and pedestrians, damage to motor vehicles and damage to third party property. By communicating potential safety risks before mobilizing to a site, a motor vehicle operator will be able to prepare for and avoid potential hazards.

These JMPs apply to all vehicles assigned for the support of site operations, including company owned and personal use vehicles. This JMP does not apply to vendors (such as UPS, FedEx, etc.) not under contract with Stantec or their supplier. This JMP does not address hazards that are external to the site access/egress and on the onsite project operations.

Site Specific JMP

General Vehicle Hazards

Highways approaching/near the project site are typically congested – allow extra time and space, slow down, and watch for vehicles.

Site Specific Potential Vehicle Hazards

Heat, traffic, winds. Watch for debris along the roadway. Highway adjacent – watch for traffic. If parking along the shoulder, watch for traffic before exiting vehicle. Use the vehicle to provide a buffer between you and the traffic, where possible. Watch for dips, debris, bushes. ****SHOULDER CLOSURE of immediately adjacent shoulder to work activity should be considered utilizing cones and signage****

Directions: Access to the Site

The Site is located along the bridges and off the right-of way of State Route 5 between the SR5 and SR710 separation in the City of Commerce and the Main Street undercrossing in the City of Los Angeles, in Los Angeles County. Access may be gained along the highway or from the applicable streets adjacent to where the samples are being collected. Access to the areas along the on-off-ramps will be evaluated in order to take the safest exit into the shoulder which may be in a location off the ramps but the sampling area accessed by walking to it. Cones should be carried to the work area.

Directions: Leaving the Site

Site Specific Restrictions and Controls

None noted

This Journey Management Plan is approved for use:

From: 10/17/2014	Time: 0500	To: 11/30/14	Time: 1900
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Journey Management Plan Maintained by

Field Manager : Jason Stagno (ACM)	Cell: 805-630-8648
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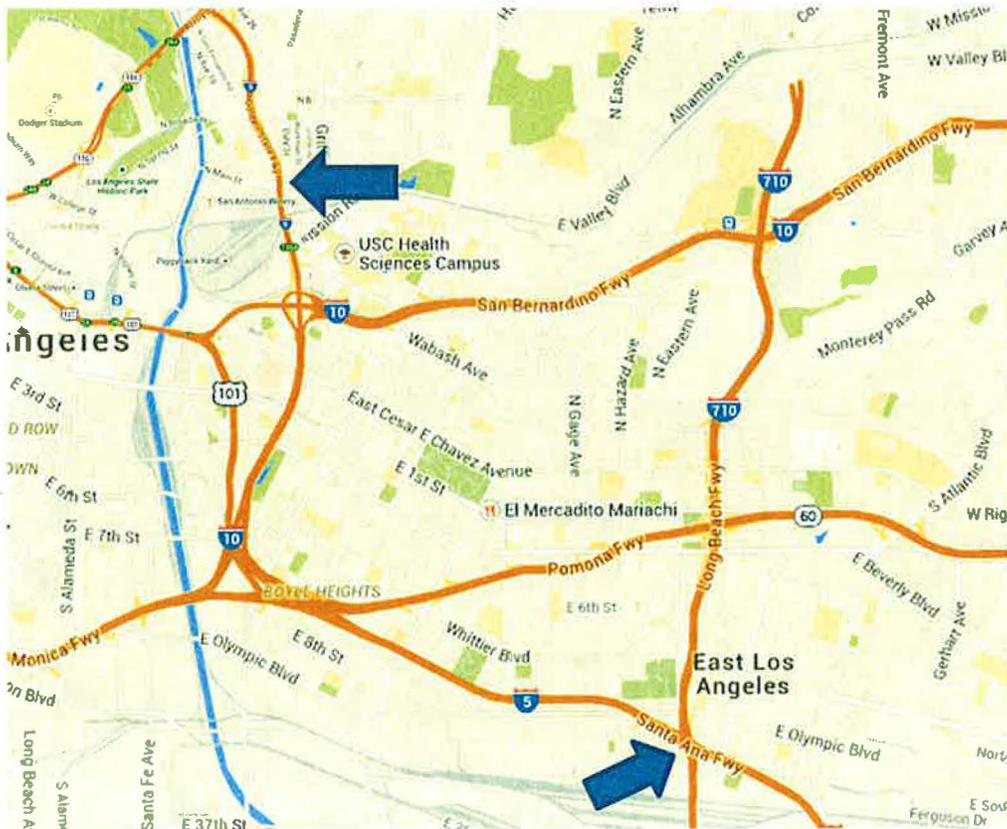
Contract Project Manager: Kevin Miskin	Cell: 909-224-3406
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Should an incident occur, refer to Attachment A, Section 1.4 and Attachment 6 for Stantec's procedures of notifications and reporting.

SITE MAP/SKETCH

It can be helpful in clarifying access/egress routes, parking and positioning of equipment, traffic cones and other delineators.

Site Sketch



The area of the ADL Investigation and the ACM surveys is located along Interstate 5 Freeway, approximately located between the two blue arrows on the figure above.

Access entry locations will vary at each of the ADL investigation and ACM survey locations since they are not grouped together.

(Site view provided from Google Maps, 2014.)

Attachment A

General Safety Information for ALL SITES

1.0 General Safety Information

1.1 Emergency Response Procedures: Evacuation

In the event of an on-site or off-site emergency requiring site evacuation (e.g., fire, release, explosion, etc), the following procedures will be followed:

- Stop Work and notify the SHSO.
- Evacuate the site and go to the emergency meeting location if safe conditions exist. The evacuation point is shown in the sketch below or following this page. If safe conditions prevent evacuation to this location, move upwind, away from the source of the emergency. Maintain a safe distance from the source.
- Check in with the SHSO at the emergency meeting location. The SHSO will take attendance once all personnel have gathered.
- Dial the appropriate emergency response number(s). State the problem clearly and completely and remain on the line until dismissed by the operator.
- Only attempt extinguishing small fires with portable dry chemical (A-B-C) extinguishers on-hand. When in doubt, emergency response personnel shall be notified.
- Do not reenter the emergency site without specific approval from emergency response personnel.

Randomly scheduled evacuation drills may be conducted at any time during field activities.

1.2 Emergency Response Procedures: Injury or Illness

If an injury or illness occurs, take the following action:

- Stop Work, stabilize the situation, and secure the site.
- Administer First Aid for the person immediately using a first aid and blood-borne pathogens kit.
- Determine if emergency response (fire/ambulance) is necessary. If so, call appropriate emergency response numbers on closest available phone. Provide the location of the injured person and other details as requested. Drive the individual to the hospital only if it makes sense.
- If emergency decontamination is required:
 - Immediately remove any contaminated personal protective equipment (PPE) or clothing. (EXCEPTION: if the person has been burned, only emergency medical services (EMS) personnel should remove any clothing)
 - If possible, wash contaminated area with mild soap and water.
 - Use eyewash station if necessary.
 - Personnel assisting the contaminated individual will don the proper PPE to avoid exposure.
- For all injuries or illness, even minor cuts, scratches, and bruises, notify the SHSO immediately. The SHSO is responsible for initiating incident reporting procedures immediately after the victim(s)/site have been stabilized. The SHSO will assume responsibility during a medical emergency until more qualified EMS personnel arrive at the site as needed.
- As promptly as possible following an injury or illness, the Project Manager or designee shall ensure appropriate notification has been made to the family of the individual involved.
- Please see Section 1.6 for incident reporting procedures.

1.2.1 Injuries or Illnesses Requiring Hospital Service WITHOUT Ambulance Service

Injuries or illnesses requiring hospital service without ambulance services include minor lacerations, minor sprains, etc. The following procedures will be taken immediately:

- The SHSO will ensure prompt transportation of the injured person to a physician or hospital.
- A representative of Stantec will always drive the injured employee to the medical facility and remain at the facility until the employee is ready to be discharged.
- If the driver of the vehicle is not familiar with directions to the hospital, a second person shall accompany the driver and the injured employee and navigate the route to the hospital.
- If it is necessary for the SHSO to accompany the injured employee, provisions will be made to have another employee, properly trained and certified in First Aid, to act as the temporary SHSO.
- If the injured employee is able to return to the job site the same day, he/she will bring a statement from the doctor containing such information as:
 - Date
 - Employee's name
 - Diagnosis
 - Date he/she is able to return to work, regular or light duty
 - Date he/she is to return to doctor for follow-up appointment, if necessary
 - Signature and address of doctor
- As promptly as possible following an injury or illness, ensure appropriate notification has been made to the family of the individual involved.
- Please see Section 1.6 for incident reporting procedures.

If the injured employee is unable to return to the job site the same day, the employee who transported him will bring this information back to the job site and report it to the Project Manager, office OSEC, Clint Reuter, Stantec's Practice and Risk Management (PRM), and their regional Human Resources Specialist.

1.2.2 Injuries or Illnesses Requiring Hospital Service WITH Ambulance Service

Injuries or illnesses requiring transport by ambulance include life-threatening conditions such as severe head injuries, amputations, heart attacks, heat stroke, etc. The following procedures will be taken immediately:

- Call for ambulance service and notify the SHSO.
- Administer First Aid until ambulance service arrives or until relieved by EMS personnel.
- While the injured employee is being transported, the SHSO will contact the medical facility to be utilized.
- One designated representative will accompany the injured employee to the medical facility and remain at the facility until final diagnosis and other relevant information is obtained.
- As promptly as possible following an injury or illness, ensure appropriate notification has been made to the family of the individual involved.
- Please see Section 1.6 for incident reporting procedures.

1.2.3 Death of an Individual or Hospitalization of Three or More Employees

The emergency response procedures above will be followed. If the injured person dies, follow the incident reporting procedures. PRM will notify the Human Resources Department, local law enforcement officials immediately. Human Resources will notify the local OSHA** office within 8 hours of a fatality or the hospitalization of three or more employees.

**From this point forward in this document, the terms OSHA (i.e. federal Occupational Safety and Health Administration or FedOSHA) will be used interchangeably and shall be considered equivalent to the State of California Division of Occupational Safety and Health or CalOSHA..

1.3 Emergency Response Procedures: Spills or Cut Lines

Prevent problems by documenting the location of underground lines (e.g., product, sewer, electrical, gas, telephone, fiber optic) before starting site work. If a line or tank is drilled through, or a leak occurs, document the event as soon as possible using the Incident Investigation Report.

In the event of a spill/release, follow this plan:

- Stop Work, stabilize the situation, and secure the site.
- Stay upwind of the spill/release.
- Wear appropriate PPE.
- Turn off equipment and other sources of ignition, but only from a safe distance.
- Turn off pumps and shut valves to stop the flow/leak, but only from a safe distance.
- Plug the leak or collect drippings, when possible, if you can do this safely and within your level of training.
- Use sorbent pads to collect product and impede its flow, if possible and only if you can do it safely and within your level of training.
- Call Fire Department immediately if fire or explosion risk is involved (i.e. natural gas involved).
- Notify the SHSO to begin the incident reporting procedures. All spills/releases will be reported to the Client Project Manager within 24 hours.
- Determine if the client wants Stantec to repair the damage or if the client will use an emergency repair contractor of their choice.
- Based on agreements, contact emergency spill contractor for containment of free product. The contacts for this project will be the local fire department.
- Advise the client of spill discharge notification requirements and determine who will complete and submit forms. *(Do not submit or report to agencies without the client's consent.)* Document each interaction with the client and regulators and note, in writing; name, title, authorizations, refusals, decisions, and commitments to any action.
- Do not transport or approve transportation of contaminated soils or product until proper manifests have been completed and approved. Be aware that soils/product may meet criteria for hazardous waste.
- Do not sign manifests as generator of wastes unless you have been given appropriate training and approval for signing on behalf of the generator; contact Project Manager or Waste Compliance Manager to discuss waste transportation.
- If the spill extends into waterways, the Coast Guard and the National Response Center shall be notified immediately by the client (or by the Stantec Project Manager with the client's permission).

The Project Manager will involve the client/generator in any Incident Investigation process. The client/generator is under obligation to report to the proper government agencies.

1.4 Incident Reporting Procedures

This section outlines the procedures that will be followed in the event of an incident. A flowchart and a table with necessary contact information (phone numbers, fax numbers, and email addresses) for incident reporting are also provided.

In the event of an incident:

1. Stop Work, stabilize the situation, and secure the site.
2. Report all incidents, injuries, spills, non-conformance events, permit exceedances and potential incidents (near losses) immediately to the SHSO, who will then notify the Stantec Project Manager. **If you are unsure whether or not something should be reported, Stop Work and proceed with notification anyway.**

3. The Stantec Project Manager will make internal notifications* to the following:
 - Office OSEC
 - At least one Stantec Senior HSE Team Member (Clint Reuter, Tony Wong);
 - The Account Manager (Jack Hardin)
 - **If a team member does not answer, leave a detailed message with a number at which you can be reached, and follow-up with another call later.**

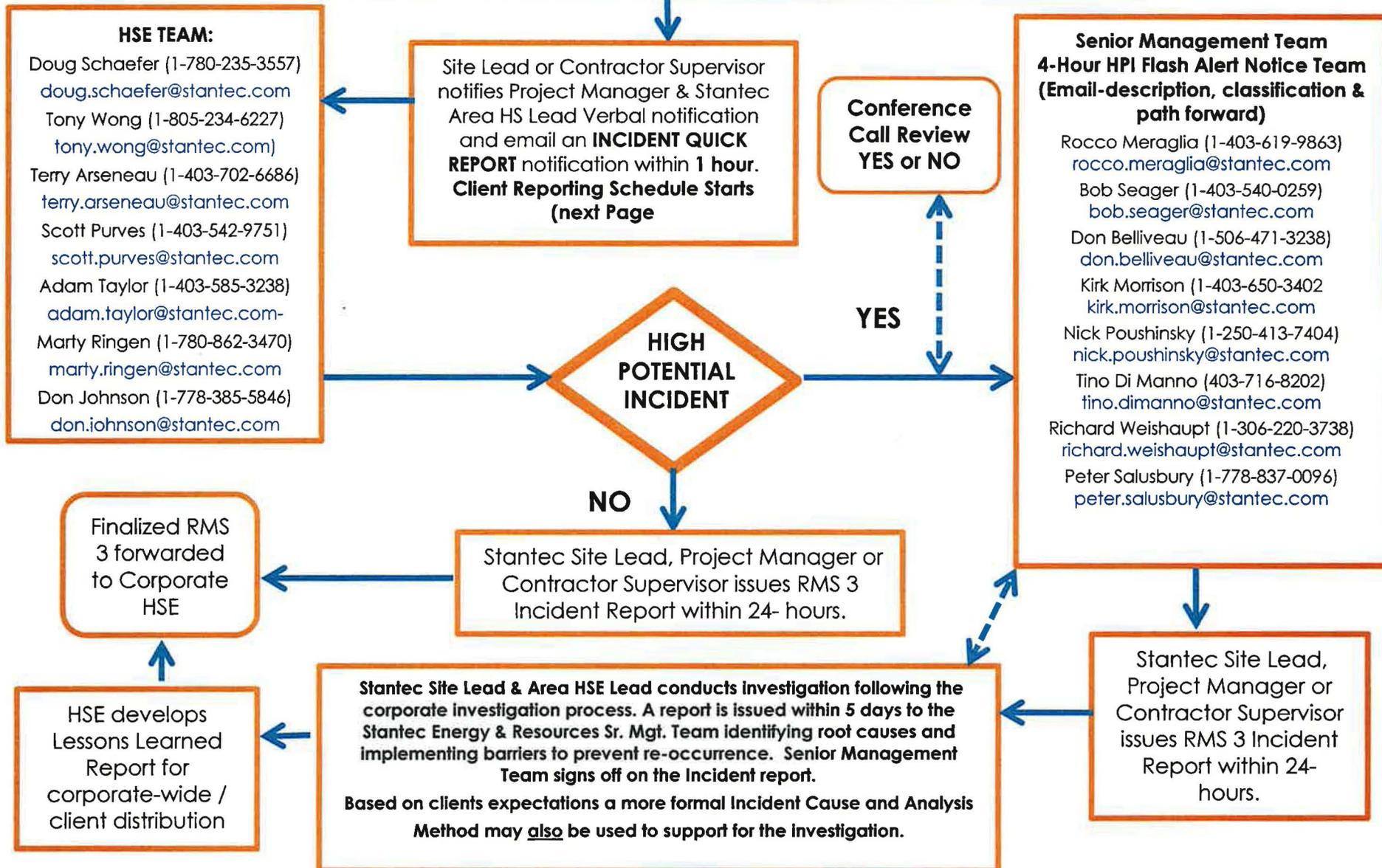
*Internal notification is a Stantec requirement. Internal reporting requirements were established primarily to provide a pathway for employees to obtain the assistance of company health and safety experts during an incident or significant near loss. Secondary to obtaining expert assistance, internal notification is required to help Stantec track injuries and near losses that occur to our employees. The data captured during the reporting process is then used to identify trends that can be pro-actively addressed to improve overall health and safety within our company. This helps everyone go home safely.

4. The Stantec Project Manager will obtain concurrence from at least one of Stantec's HSE Team Members and the Account Manager regarding Caltrans' reporting requirements.
5. A: If the incident is determined to not be reportable to Caltrans, the SHSO, office OSEC, and Stantec Project Manager will submit an initial copy of the Stantec Incident Investigation/Near Loss Investigation (IINLI) report to Stantec's PRM group in Edmonton (via phone and fax), and Clint Reuter within 24 hours of the event. The final report is due within 5 business days.

B: If the incident is determined to be reportable to Caltrans, the Stantec Project Manager and Account Manager will:
 - Notify Caltrans and also provide a written report of the incident on a Stantec IINLI form to Stantec's PRM group (via fax and phone), and Clint Reuter within 24 hours and a final report within 5 business days.

Stantec Energy & Resources Incident Reporting

Incident occurs:
 Stop work, stabilize the situation, secure the site & provide immediate care. Stantec employee or contractor must immediately report the incident the Stantec Project Lead. Injured personnel requiring medical attention will transport the injured person to medical care and remain until released.



**Client Reporting Schedule
"No client requirements"**

Notifications

Stantec Account and HSE Support Contacts - notify within 1 hour

See Project Team Phone Numbers for
National Account Manager (NAM)
Alternate NAM
Health and Safety Coordinator

Client - notify within 24 hours unless high potential (notify within 1 hour) :

See Project Team Phone Numbers for
Client

Incident Investigation Report within 5 days

See Project Team Phone Numbers for
Client

Incident Type	Definition (Current Stantec Corporate Definitions)
Report Only	An employee needs to document a happening which may be relevant in the future. Examples include: witnessing an accident or a non-work-related injury, an incident on a worksite not involving Stantec personnel, physical signs and symptoms related to workstation ergonomics and/or materials handling
Incident	Any unplanned event that adversely affects our employees, our business, its physical assets, the clients we serve, or the environment.
Serious Incident	Any work-related incident where there is property damage greater than \$5000, employee hospitalization, fatality, facility/site shutdown, or involves a third party (public). A near miss with the potential for any of the above consequences would also be considered a serious incident.
Near-Miss	Any event that could adversely affect our employees, our business, its physical assets, the customers we serve, or the environment, given any change in circumstances.
Hazard Identification	The identification of a condition or practice that has the potential for an incident or loss.
Property Damage (Vehicle)	Damage to any vehicle used for Stantec business, includes normal wear and tear (e.g. tire damage, minor scratches, stone chips to paint or windshield, mechanical wear), whether the vehicle is attended or not.
Property Damage (Other)	Damage to equipment, materials, etc., excluding vehicle damage.
Theft	Theft of any property under the care and control of Stantec.
Non-compliance	Where an employee or project is identified as operating outside the parameters of Stantec policy and/or legislative requirements.

Incident Type	Definition (Current Stantec Corporate Definitions)
*Near Miss - Injury	An employee reports physical symptoms related to work activities which have not yet resulted in treatment of any type, nor have they impacted the employee's working ability.
First Aid	An injury or illness requires first aid treatment only
Medical Treatment	Medical treatment above and beyond first aid, without loss of work time beyond the day of injury or illness.
Restricted Work	Change in job duties and/or shortened work day resulting from a work-related injury or illness, affecting the employee's ability to engage in one or more routine work activities (i.e. an activity carried out at least once per week).
Lost Time	Health care professional recommends one or more days away from work due to a work-related injury or illness.
Fatality	Work related fatality.
Motor Vehicle Incident	An incident involving a vehicle driven by an employee, whether on or off the road, that has resulted in damage to assets, the environment or Stantec's reputation, irrespective of cost or responsibility for cause. This does not include damage as a result of normal wear and tear (see Property Damage – Vehicle).
Spill or Release	Discharge of material or substance which is reportable to a third party such as a regulatory agency or a client, or which may expose an employee to a health risk.
Contractor Recordable Injury	Definitions as above, including Medical Aid – No Lost Time, Restricted Work, Lost Time or Fatality) but applied to a Stantec subcontractor.
Fire / Explosion / Flood	A natural or man-made hazard including fire, explosion or flood that causes damage or injury.
Violence or Harassment	Any act in which a person is abused, threatened, intimidated or assaulted in the course of their employment.
3rd Party Incident	Incident involves someone who is not party to the work being completed, but may be impacted. Example: Member of the public.
Utility Strike	Compromising or disrupting of service to buried and/or overhead utility service lines, municipal or third party owned utility services, UST system components and other subsurface property service lines or systems
Work Refusal	An employee has enacted their legislated Right to Refuse dangerous work.
Stop Work Authority	An employee has enacted Stantec's Stop Work Authority provisions upon observing the presence of unsafe conditions associated with Stantec work activities. All employees have the right to stop or refuse work when they perceive an immediate danger to their health and safety or that of their colleagues.
	For Consideration
High Potential Incident	<p>A Near Miss, First Aid injury, Medical Aid injury, Modified Work injury or Lost Time injury can often have the potential to be a fatality or a Significant Injury with disability if the circumstances would have been slightly different. For example, a Lost Time incident due to a back soft tissue injury would only be counted as a Lost Time with low potential for a serious injury, whereas a First Aid incident involving a remotely operated machine striking a worker and imparting a small cut would be counted as a First Aid incident with high potential for a Fatality or a Significant Injury.</p> <p>Any incident with energy exchange that had the potential to be a Fatality or a Significant Injury if the circumstances would have been slightly different should be counted as High Potential; all others should be counted as low potential and reported as normal incidents (see above).</p> <p>In terms of Risk Assessment language when the exposure, probability and consequence of the hazard(s) that created the injury calculate to a High or Extreme Risk Level, the incident should be counted as a High Potential; all others should be counted as low potential.</p>

Incident Type	Definition (Current Stantec Corporate Definitions)
Critical Risk Control	<p style="text-align: center;">TBA</p> <ol style="list-style-type: none"> 1. Vehicles and Mobile Equipment 2. Hazardous Materials Management 3. Equipment Safeguarding 4. De-Energization, Isolation, Lock-Out, and Tagging 5. Working at Heights 6. Lifting Operations 7. Confined Space 8. Excavations and Trenching 9. Ergonomic & Manual Handling 10. Working on Ice or water 11. Wildlife Interactions

2.0 Potential Airborne Concerns and Air Monitoring Action Levels

****NOTE:** OSHA (federal) is used interchangeably and equally with California OSHA (CalOSHA) in this document.

An air purifying respirator or masking with high-efficiency particulate air (HEPA) filtering capability shall be used while sampling suspect ACM materials. Given that the proposed work will take place adjacent to Highway SR5, the following is a list of chemicals that may be present in the work area but are not planned to be monitored on a continual basis given that no soil disturbance is planned.

The list below includes lead, asbestos, and carbon monoxide.

Potential Airborne Concerns						
Chemical (Or Class)	OSHA PEL ACGIH TLV	Other Pertinent Limits	Warning Properties	Routes of Exposure or Irritation	Acute Health Effects	Chronic Health Effects/Target Organs
Lead	OSHA PEL: 8 hr. TWA 0.050 mg/m ³ ACGIH TLV: 8 hr. TWA 0.050 mg/m ³	NIOSH REL, 0.05 mg/m ³ 8 hr. TWA	A heavy, ductile, soft, gray solid	Inhalation, ingestion, skin and/or eye contact.	Effects of overexposure to lead - (1) Short term (acute) overexposure. Lead is a potent, systemic poison that serves no known useful function once absorbed by your body. Taken in large enough doses, lead can be fatal in a matter of days. A condition affecting the brain called acute encephalopathy may arise which develops quickly to seizures, coma, and death from cardiorespiratory arrest. A short term dose of lead can lead to acute encephalopathy. Short term occupational exposures of this magnitude are highly unusual, but not impossible.	Similar forms of encephalopathy may, however, arise from extended, chronic exposure to lower doses of lead. There is no sharp dividing line between rapidly developing acute effects of lead, and chronic effects which take longer to acquire. Lead can potentially adversely affect numerous body systems, and can cause forms of health impairment and disease which arise after periods of exposure as short as days or as long as several years. See note below table
Asbestos	Cal/Fed OSHA/ACGIH PEL 0.1 fiber/cc 8 hr. TWA 1.0 f/cc (Fed/Cal OSHA 30-min STEL)		Gray chalk-like or cloth	Inhalation, ingestion,	Irritation to the eyes, skin, respiratory tract, gastrointestinal tract,	Lung, GI, carcinogen

Potential Airborne Concerns						
Chemical (Or Class)	OSHA PEL ACGIH TLV	Other Pertinent Limits	Warning Properties	Routes of Exposure or Irritation	Acute Health Effects	Chronic Health Effects/Target Organs
Carbon Monoxide	OSHA PEL 50 ppm 8 hr. TWA CalOSHA PEL 25 ppm 8 hr. TWA CalOSHA 200 ppm-ceiling ACGIH TLV 25 ppm 8 hr. TWA	NIOSH REL = 35 ppm 8 hr. TWA IDLH = 1200 ppm	Colorless, odorless gas	Inhalation	headache, drowsiness, lassitude (weakness, exhaustion), narcosis; dyspnea, heart palpitation, unconsciousness, death	None established

Abbreviation	Explanation
PEL	Permissible Exposure Limit set by OSHA (8 hour time-weighted average/TWA)
REL	Recommended Exposure Limit (set by National Institute of Occupational Safety & Health-NIOSH)
C	Ceiling Limit (airborne concentration not to be exceeded for any period of time)
STEL	15-minute Short Term Exposure Limit (unless other time period specifically identified)
IDLH	Immediately Dangerous to Life or Health
TWA	8 hour time-weighted average (PEL, TLV, REL)
TLV	Threshold Limit Value set by the American Conference of Governmental Industrial Hygienists (ACGIH) 8 hr. TWA
AIHA WEEL	Workplace Environmental Exposure Level (set by the AIHA-American Industrial Hygiene Association)
SKIN	Skin Absorption is significant contributor to total exposure
NIOSH	National Institute of Occupation Safety and Health
CNS	Central Nervous System
CVS	Cardiovascular System

3.0 Other Potential Site Hazards

3.1 Physical Hazards

Physical hazards may include traffic, uneven terrain, sharp debris, fencing, holes, noise, etc. Thusly, a constant awareness of one's location is paramount to your personal safety. However, knowing where you are, the level of noise produced by associated machinery and hearing protection may hinder your ability to hear vocal warnings. "Keep your head on a swivel" as the order of the day.

Be aware of the location of all of the equipment activities in your work area.

To protect yourself, always look before you step and wear proper PPE for the task being performed.

3.2 Weather and Natural Disasters

Hazards associated with weather and natural disasters may include, but are not limited to, effects of extreme heat (heat exhaustion, heat stroke), effects of extreme cold (hypothermia, frostbite), high winds, heavy rain, lightning, heavy snow, ice, earthquakes, landslides, flooding, etc.

The most likely hazards at the site are effects of extreme heat (heat exhaustion, heat stroke) and earthquakes.

To protect yourself from heat, perform the heaviest work during the coolest part of the day; drink plenty of cool water; wear light, loose-fitting, breathable clothing; and take frequent, short breaks in the shade. Certain medications, having a previous heat-related illness, and wearing PPE such as a respirator or protective suit can increase risk.

Heat Exhaustion

What are the symptoms?

HEADACHES; DIZZINESS OR LIGHTEADEDNESS; WEAKNESS; MOOD CHANGES SUCH AS IRRITABILITY, CONFUSION, OR THE INABILITY TO THINK STRAIGHT; UPSET STOMACH; VOMITING; DECREASED OR DARK-COLORED URINE; FAINTING OR PASSING OUT; AND PALE, CLAMMY SKIN

What should you do?

- Act immediately. If not treated, heat exhaustion may advance to heat stroke or death.
- Move the victim to a cool, shaded area to rest. Don't leave the person alone. If symptoms include dizziness or lightheadedness, lay the victim on his or her back and raise the legs 6 to 8 inches. If symptoms include nausea or upset stomach, lay the victim on his or her side.
- Loosen and remove any heavy clothing.
- Have the person drink cool water (about a cup every 15 minutes) unless sick to the stomach.
- Cool the person's body by fanning and spraying with a cool mist of water or applying a wet cloth to the person's skin.
- Call 911 for emergency help if the person does not feel better in a few minutes.

Heat Stroke—A Medical Emergency

What are the symptoms?

DRY, PALE SKIN WITH NO SWEATING; HOT, RED SKIN THAT LOOKS SUNBURNED; MOOD CHANGES SUCH AS IRRITABILITY, CONFUSION, OR THE INABILITY TO THINK STRAIGHT; SEIZURES OR FITS; AND UNCONCIOUSNESS WITH NO RESPONSE

What should you do?

- Call 911 for emergency help immediately.
- Move the victim to a cool, shaded area. Don't leave the person alone. Lay the victim on his or her back. Move any nearby objects away from the person if symptoms include seizures or fits. If symptoms include nausea or upset stomach, lay the victim on his or her side.
- Loosen and remove any heavy clothing.
- Have the person drink cool water (about a cup every 15 minutes) if alert enough to drink something, unless sick to the stomach.
- Cool the person's body by fanning and spraying with a cool mist of water or wiping the victim with a wet cloth or covering him or her with a wet sheet.
- Place ice packs under the armpits and groin area.

How can you protect yourself and your coworkers?

- Learn the signs and symptoms of heat-induced illnesses and how to respond.
- Train your workforce about heat-induced illnesses.
- Perform the heaviest work during the coolest part of the day.
- Build up tolerance to the heat and the work activity slowly. This usually takes about 2 weeks.
- Use the buddy system, with people working in pairs.
- Drink plenty of cool water, about a cup every 15 to 20 minutes.
- Wear light, loose-fitting, breathable clothing, such as cotton.
- Take frequent, short breaks in cool, shaded areas to allow the body to cool down.
- Avoid eating large meals before working in hot environments.
- Avoid alcohol or beverages with caffeine. These make the body lose water and increase the risk for heat illnesses.

What factors put you at increased risk?

- Taking certain medications. Check with your health-care provider or pharmacist to see if any medicines you are taking affect you when working in hot environments.
- Having a previous heat-induced illness.
- Wearing personal protective equipment such as a respirator or protective suit.

The Heat Equation

HIGH TEMPERATURE + HIGH HUMIDITY
+ PHYSICAL WORK = HEAT ILLNESS

When the body is unable to cool itself through sweating, **serious** heat illnesses may occur. The most severe heat-induced illnesses are heat exhaustion and heat stroke. If left untreated, **heat exhaustion** could progress to **heat stroke** and possible **death**.

Relative Humidity	Temperature
70%	100°F / 37.8°C
60%	95°F / 35°C
50%	90°F / 32.2°C
40%	85°F / 29.4°C
30%	80°F / 26.7°C

■ Danger
■ Caution
■ Less Hazardous

U.S. Department of Labor
 Occupational Safety and Health Administration
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HEAT STRESS

INTRODUCTION

Operations involving high air temperatures, radiant heat sources, high humidity, direct physical contact with hot objects, or strenuous physical activities have a high potential for inducing heat stress in employees engaged in such operations. Outdoor operations conducted in hot weather, such as construction, refining, asbestos removal, and hazardous waste site activities, especially those that require workers to wear semi-permeable or impermeable protective clothing, are also likely to cause heat stress among exposed workers.

CAUSAL FACTORS

Age, weight, degree of physical fitness, degree of acclimatization, metabolism, use of alcohol or drugs, and a variety of medical conditions such as hypertension all affect a person's sensitivity to heat. However, even the type of clothing worn must be considered. Prior heat injury predisposes an individual to additional injury. It is difficult to predict just who will be affected and when, because individual susceptibility varies. In addition, environmental factors include more than the ambient air temperature. Radiant heat, air movement, conduction, and relative humidity all affect an individual's response to heat.

DEFINITIONS

The American Conference of Governmental Industrial Hygienists (2002) states that workers should not be permitted to work when their deep body temperature exceeds 100.4°F (38 °C).

Heat is a measure of energy in terms of quantity.

A **calorie** is the amount of heat required to raise 1 gram of water 1°C (based on a standard temperature of 16.5 to 17.5°).

Conduction is the transfer of heat between materials that contact each other. Heat passes from the warmer material to the cooler material. For example, a worker's skin can transfer heat to a contacting surface if that surface is cooler, and vice versa.

Convection is the transfer of heat in a moving fluid. Air can be described as a fluid. Air flowing past the body can cool the body if the air temperature is cool. On the other hand, air that exceeds 35°C (95°F) can increase the heat load on the body.

Evaporative cooling takes place when sweat evaporates from the skin. High humidity reduces the rate of evaporation and thus reduces the effectiveness of the body's primary cooling mechanism.

Radiation is the transfer of heat energy through space. A worker whose body temperature is greater than the temperature of the surrounding surfaces radiates heat to these surfaces. Hot surfaces and infrared light sources radiate heat that can increase the body's heat load.

Globe temperature is the temperature inside a blackened, hollow, thin copper globe.

Metabolic heat is a by-product of the body's activity.

Natural wet bulb (NWB) temperature is measured by exposing a wet sensor, such as a wet cotton wick fitted over the bulb of a thermometer, to the effects of evaporation and convection. The term natural refers to the movement of air around the sensor.

Dry bulb (DB) temperature is measured by a thermal sensor, such as an ordinary mercury-in-glass thermometer, that is shielded from direct radiant energy sources.

HEAT DISORDERS AND HEALTH EFFECTS

HEAT STROKE

Heat Stroke occurs when the body's system of temperature regulation fails and body temperature rises to critical levels. This condition is caused by a combination of highly variable factors, and its occurrence is difficult to predict. **Heat stroke is a medical emergency.** The primary signs and symptoms of heat stroke are confusion; irrational behavior; loss of consciousness; convulsions; a lack of sweating (usually); hot, dry skin; and an abnormally high body temperature, e.g., a rectal temperature of 41°C (105.8°F). If body temperature is too high, it causes death. The elevated metabolic temperatures caused by a combination of workload and environmental heat load, both of which contribute to heat stroke, are also highly variable and difficult to predict. If a worker shows signs of possible heat stroke, professional medical treatment should be obtained immediately. The worker should be placed in a shady area and the outer clothing should be removed. The worker's skin should be wetted and air movement around the worker should be increased (as long as the temperature of the air is less than 95° F) to improve evaporative cooling until professional methods of cooling are initiated and the seriousness of the condition can be assessed. Fluids should be replaced as soon as possible.

The medical outcome of an episode of heat stroke depends on the victim's physical fitness and the timing and effectiveness of first aid treatment. Regardless of the worker's protests, no employee

suspected of being ill from heat stroke should be sent home or left unattended unless a physician has specifically approved such an order.

HEAT EXHAUSTION

The signs and symptoms of heat exhaustion are headache, nausea, vertigo, weakness, thirst, and giddiness. Fortunately, this condition responds readily to prompt treatment. Heat exhaustion should not be dismissed lightly, however, for several reasons. One is that the fainting associated with heat exhaustion can be dangerous because the victim may be operating machinery or controlling an operation that should not be left unattended; moreover, the victim may be injured when he or she faints. Also, the signs and symptoms seen in heat exhaustion are similar to those of heat stroke, a real potential medical emergency.

Workers suffering from heat exhaustion should be removed from the hot environment and given fluid replacement. They should also be encouraged to get adequate rest.

HEAT CRAMPS

Heat Cramps are usually caused by performing hard physical labor in a hot environment. These cramps have been attributed to an electrolyte imbalance caused by sweating. It is important to understand that cramps can be caused by both too much and too little salt. Cramps appear to be caused by the lack of water replenishment. Because sweat is a hypotonic solution ($\pm 0.3\%$ sodium chloride), excess salt can build up in the body if the water lost through sweating is not replaced.

Thirst cannot be relied on as a guide to the need for water; instead, water must be taken every 15 to 20 minutes in hot environments. Under extreme conditions, such as working for 6 to 8 hours in heavy protective gear, a loss of sodium may occur. Studies have shown that drinking commercially available carbohydrate-electrolyte replacement liquids is effective in minimizing physiological disturbances during recovery.

HEAT COLLAPSE

Heat Collapse ("Fainting"). In heat collapse, the brain does not receive enough oxygen because blood pools in the extremities. As a result, the exposed individual may lose consciousness. This reaction is similar to that of heat exhaustion and does not affect the body's heat balance. However, the onset of heat collapse is rapid and unpredictable. To prevent heat collapse, the worker should gradually become acclimatized to the hot environment.

HEAT RASHES

Heat Rashes are the most common problem in hot work environments. "Prickly heat", as heat rashes are sometimes called, is manifested as red papules on the skin and usually appears in areas where the clothing is restrictive. As sweating increases, these papules give rise to a prickling sensation. Prickly heat occurs in skin that is persistently wetted by unevaporated sweat, and heat rash papules may become infected if they are not treated. In most cases, heat rashes will disappear when the affected individual returns to a cool environment.

HEAT FATIGUE

A factor that predisposes an individual to heat fatigue is lack of acclimatization. The use of a program of acclimatization and training for work in hot environments is advisable. Acclimatization can take several weeks depending on the individual involved and the difference in temperature between the location from which the person is coming and the temperature to which he/she is going. The signs and symptoms of heat fatigue include impaired performance of skilled sensorimotor, mental, or vigilance

jobs. There is no treatment for heat fatigue except to remove the heat stress before a more serious heat-related condition develops.

CONTROL MEASURES FOR HEAT STRESS

Ventilation, air-cooling, fans, shielding, and insulation are the five major types of engineering controls used to reduce heat stress in hot work environments. Heat reduction can also be achieved by using power assists and tools that reduce the physical demands placed on a worker.

However, for this approach to be successful, the metabolic effort required for the worker to use or operate these devices must be less than the effort required without them. Another method is to reduce the effort necessary to operate power assists. Workers should be allowed to take frequent rest breaks in a cooler environment.

ACCLIMATIZATION

The human body can adapt to heat exposure to some extent. This physiological adaptation is called acclimatization. After a period of acclimatization, the same activity will produce fewer cardiovascular demands. The worker will sweat more efficiently (causing better evaporative cooling), and thus will more easily be able to maintain normal body temperatures.

FLUID REPLACEMENT

Cool (50°-60°F) water or any cool liquid (except alcoholic beverages, tea and coffee) should be made available to workers to encourage them to drink small amounts frequently, e.g., one cup every 20 minutes. Ample supplies of liquids should be placed close to the work area. Although some commercial replacement drinks contain salt, this is not necessary for acclimatized individuals because most people add enough salt to their summer diets.

GENERAL VENTILATION

General ventilation is used to dilute hot air with cooler air (generally cooler air that is brought in from the outside). This technique clearly works better in cooler climates than in hot ones. A permanently installed ventilation system usually handles large areas or entire buildings. Portable or local exhaust systems may be more effective or practical in smaller areas.

AIR TREATMENT/AIR COOLING

Air treatment/air cooling differs from ventilation because it reduces the temperature of the air by removing heat (and sometimes humidity) from the air.

Air conditioning is a method of air-cooling, but it is expensive to install and operate. An alternative to air conditioning is the use of chillers to circulate cool water through heat exchangers over which air from the ventilation system is then passed; chillers are more efficient in cooler climates or in dry climates where evaporative cooling can be used.

Local air cooling can be effective in reducing air temperature in specific areas. Two methods have been used successfully in industrial settings. One type, cool rooms, can be used to enclose a specific workplace or to offer a recovery area near hot jobs. The second type is a portable blower with built-in air chiller. The main advantage of a blower, aside from portability, is minimal set-up time.

Another way to reduce heat stress is to increase the airflow or convection using fans, etc. in the work area (as long as the air temperature is less than the worker's skin temperature). Changes in air speed can help workers stay cooler by increasing both the convective heat exchange (the exchange between the skin surface and the surrounding air) and the rate of evaporation. Because this method does not actually cool the air, any increases in air speed must impact the worker directly to be effective.

If the outdoor air temperature (i.e. the dry bulb temperature) is higher than 95°F (35 °C) the hot air passing over the skin can actually make the worker hotter (i.e. add to the overall body heat load). When the temperature is >95°F and the air is dry, evaporative cooling may be improved by air movement, although this improvement will be offset by the convective heat. When the temperature exceeds 95°F and the relative humidity is 100%, air movement will make the worker hotter. Increases in air speed have no effect on the body temperature of workers wearing vapor-barrier clothing.

HEAT CONDUCTION

Heat conduction methods include insulating the hot surface that generates the heat and changing the surface itself.

Simple engineering controls, such as shields, can be used to reduce radiant heat i.e. heat coming from hot surfaces within the worker's line of sight. Surfaces that exceed 95°F, and this is very common on hot summer days, are sources of infrared radiation that can add to the worker's heat load. Flat black surfaces absorb heat more than smooth, polished ones. Having cooler surfaces surrounding the worker, assists in cooling because the worker's body radiates heat toward them.

With some sources of radiation, such as heating pipes, it is possible to use both insulation and surface modifications to achieve a substantial reduction in radiant heat. Instead of reducing radiation from the source, shielding can be used to interrupt the path between the source and the worker. Polished surfaces make the best barriers, although special glass or metal mesh surfaces can be used if visibility is a problem.

Shields should be located so that they do not interfere with airflow, unless they are also being used to reduce convective heating. The reflective surface of the shield should be kept clean to maintain its effectiveness.

ADMINISTRATIVE CONTROLS/SAFE WORK PRACTICES

Training is the key to good work practices. Unless all employees understand the reasons for using new, or changing old, work practices, the chances of such a program succeeding are greatly reduced. NIOSH (1986) states that a good heat stress training program should include least the following components:

- ♦ Knowledge of the hazards of heat stress;
- ♦ Recognition of predisposing factors, danger signs, and symptoms;
- ♦ Awareness of first-aid procedures for, and the potential health effects of, heat stroke and heat exhaustion;

- Employee responsibilities in avoiding heat stress;
- Dangers of using drugs, including therapeutic ones, and alcohol in hot work environments;
- Use of protective clothing and equipment; and
- Purpose and coverage of environmental and medical surveillance programs and the advantages of worker participation programs.

Hot jobs should be scheduled for the cooler part of the day when possible, and routine maintenance and repair work in hot areas should be scheduled for the cooler seasons of the year.

Measurement is often required of those environmental factors that most nearly correlate with deep body temperature and other physiological responses to heat. At the present time, the Wet Bulb Globe Temperature Index (WBGT) is the most used technique to measure these environmental factors. WBGT values are calculated by the following equations:

WET BULB GLOBE TEMPERATURE INDEXES (WBGI)

Indoor or outdoors with no solar load

$$WBGT = 0.7NWB + 0.3GT$$

Outdoors with solar load

$$WBGT = 0.7NWB + 0.2GT + 0.1DB$$

Where: WBGT = Wet Bulb Globe Temperature Index
NWB = Natural Wet Bulb Temperature
DB = Dry Bulb (air) Temperature
GT = Globe Thermometer Temperature

The determination of WBGT requires the use of a black globe thermometer, a natural (static) wet-bulb thermometer, and a dry-bulb thermometer. The measurement of environmental factors shall be performed as follows:

1. The range of the dry and the natural wet-bulb thermometers should be -5°C to $+50^{\circ}\text{C}$, with an accuracy of $\pm 0.5^{\circ}\text{C}$. The dry bulb thermometer must be shielded from the sun and the other radiant surfaces of the environment without restricting the airflow around the bulb. The wick of the natural wet bulb thermometer should be kept wet with distilled water for at least one-half hour before the temperature reading is made. It is not enough to immerse the other end of the wick into a reservoir of distilled water and wait until the whole wick becomes wet by capillarity. The wick must be wetted by direct application of water from a syringe one-half hour before each reading. The wick must cover the bulb of the thermometer and an equal length of additional wick must cover the stem above the bulb. The wick should always be clean, and new wicks should be washed before using.
2. A globe thermometer, consisting of a 15 cm (6-inch) in diameter hollow copper sphere painted on the outside with a matte black finish, or equivalent, must be used. The bulb or sensor of a thermometer (range -5°C to $+100^{\circ}\text{C}$ with an accuracy of $\pm 0.5^{\circ}\text{C}$) must be fixed in the center of the sphere. The globe thermometer should be exposed at least 25 minutes before it is read.
3. A stand should be used to suspend the three thermometers so that they do not restrict free airflow around the bulbs and the wet-bulb and globe thermometer are not shaded.
4. It is permissible to use any other type of temperature sensor that gives a reading similar to that of a mercury thermometer under the same conditions.
5. The thermometers must be placed so that the readings are representative of the employee's work or rest areas, as appropriate.

Once the WBGT has been estimated, employers can estimate workers' metabolic heat load and use the ACGIH method to determine the appropriate work/rest regimen, clothing, and equipment to use to control the heat exposures of workers in their facilities.

REFLECTIVE CLOTHING

Reflective clothing, which can vary from aprons and jackets to suits that completely enclose the worker from neck to feet, can stop the skin from absorbing radiant heat. However, since most reflective clothing does not allow air exchange through the garment, the reduction of radiant heat must more than offset the corresponding loss in evaporative cooling. For this reason, reflective clothing should be worn as loosely as possible. In situations where radiant heat is high, auxiliary-cooling systems can be used under the reflective clothing.

AUXILIARY BODY COOLING

1. Commercially available **ice vests**, though heavy, may accommodate as many as 72 ice packets, which are usually filled with water. Carbon dioxide (dry ice) can also be used as a coolant. The cooling offered by ice packets lasts only 2 to 4 hours at moderate to heavy heat loads, and frequent replacement is necessary. However, ice vests do not encumber the worker and thus permit maximum mobility. Cooling with ice is also relatively inexpensive.

2. **Wetted clothing** is another simple and inexpensive personal cooling technique. It is effective when reflective or other impermeable protective clothing is worn. The clothing may be wetted terry cloth coveralls or wetted two-piece, whole-body cotton suits. This approach to auxiliary cooling can be quite effective under conditions of high temperature and low humidity, where evaporation from the wetted garment is not restricted.

3. **Water-cooled garments** range from a hood, which cools only the head, to vests and "long johns," which offer partial or complete body cooling. Use of this equipment requires a battery-driven circulating pump, liquid-ice coolant, and a container.

Although this system has the advantage of allowing wearer mobility, the weight of the components limits the amount of ice that can be carried and thus reduces the effective use time. The heat transfer rate in liquid cooling systems may limit their use to low-activity jobs; even in such jobs, their service time is only about 20 minutes per pound of cooling ice. To keep outside heat from melting the ice, an outer insulating jacket should be an integral part of these systems.

4. **Circulating air** is the most highly effective, as well as the most complicated, personal cooling system. By directing compressed air around the body from a supplied air system, both evaporative and convective cooling is improved. The greatest advantage occurs when circulating air is used with impermeable garments or double cotton overalls.

One type, used when respiratory protection is also necessary, forces exhaust air from a supplied-air hood ("bubble hood") around the neck and down inside an impermeable suit. The air then escapes through openings in the suit. Air can also be supplied directly to the suit without using a hood in three ways:

- by a single inlet;
- by a distribution tree; or
- by a perforated vest.

In addition, a vortex tube can be used to reduce the temperature of circulating air. The cooled air from this tube can be introduced either under the clothing or into a bubble hood. The use of a vortex tube separates the air stream into a hot and cold stream; these tubes also can be used to supply heat in cold climates. Circulating air, however, is noisy and requires a constant source of compressed air supplied through an attached air hose.

One problem with this system is the limited mobility of workers whose suits are attached to an air hose. Another is that of getting air to the work area itself. These systems should therefore be used in work areas where workers are not required to move around much or to climb. Another concern with these systems is that they can lead to dehydration. The cool, dry air feels comfortable and the worker may not realize that it is important to drink liquids frequently.

RESPIRATOR USAGE

The use of any kind of respiratory protection device increases stress on a worker, and this stress contributes to overall heat stress. Chemical protective clothing such as totally encapsulating chemical protection suits will also add to the heat stress problem.

SUMMARY

Heat stress offers significant challenges when work needs to be performed under hot ambient conditions. However, a well thought-out program can substantially reduce the chances of heat stress. A combination of engineering and administrative controls along with effective use of personal protective equipment can protect employees from suffering the effects of heat stress

EARTHQUAKES

Earthquakes can last just a few seconds or as long as several minutes. Safety precautions include (as amended from http://safety.lovetoknow.com/Earthquake_Safety_Precautions):

- Before an earthquake:
 - Store heavy items or glassware on low shelves so they do not become dangerous projectiles. Secure large equipment with straps, bolts, or other stabilizing methods.
 - Know the emergency meeting location at the site.
- During an earthquake:
 - Immediately seek a safe location such as in a doorway, beneath a table or desk, or along an interior wall away from windows or hazardous objects.
 - Cover the back of your head and your eyes to minimize injury from flying debris
 - Do not take elevators during an earthquake.
 - If outdoors, stay in open areas away from buildings, power lines, trees, and other potential hazards.
 - If driving, stop quickly but safely and stay in the vehicle. Do not stop near power lines, bridges, overpasses, or other potentially dangerous locations.
 - Stay calm and brace yourself to keep your balance. Sit if possible.
- After an earthquake:
 - Be prepared for aftershocks, which may be stronger than the initial jolt.
 - Administer First Aid and summon emergency assistance if necessary.
 - Wear PPE (boots, gloves) to avoid getting cut by broken glass.
 - Turn off gas, electricity, and water if damage is suspected or if advised to do so by authorities.
 - Be cautious opening cabinets, cupboards, and closets in case items are poised to fall.
 - Keep phone lines clear for emergency use.
 - Be patient: it may take hours or days to restore all services depending on the severity of the quake.

1.3 Biological Hazards

Biological hazards may include, but are not limited to, bees/wasps, spiders, snakes, stray dogs, rats and poisonous/allergenic plants.

Bee/Wasp Precautions

Purpose

Bees and similar organisms such as wasps, hornets and yellow jackets can cause significant injury, pain and/or discomfort during our work. This precaution has been developed to help avoid injury.

We can encounter these organisms during a number of our tasks such as:

- Opening well vault covers
- Opening core or sample boxes
- Performing O & M in system compounds
- Working in tall grass, weeds and brush
- Performing site assessments (indoors and outdoors)

Yellow Jackets

Yellow Jackets are found throughout the United States. Yellow Jackets feed on insects, spiders and a wide variety of other food items. They are medium-sized, stout-bodied, and black with bright yellow bands. Yellow-jackets construct globular paper nests, usually in underground cavities. Favorite nesting places include rodent burrows, compost piles and wall voids.



Yellow Jackets are scavengers and frequently are found foraging around compost piles and garbage receptacles. Their activity can be discouraged in the vicinity of patios, parks, picnic and other recreational areas by covering all food and disposing of waste in covered containers.

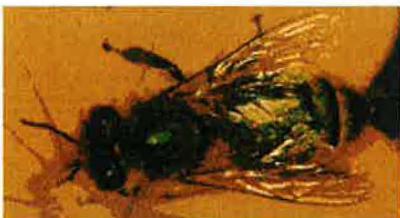
Paper Wasps

Paper wasps are about 1" in length, have a spindle-shaped body and are marked with a brown and yellow pattern. Paper wasps construct umbrella-shaped, single-layered nests with exposed cells. Nests may be built in trees and shrubs but frequently are found under building overhangs, in attics, barns, garages and sheds. These wasps are not considered overly aggressive and usually pose a threat only when their nests are disturbed. However, foraging wasps can cause considerable annoyance as they fly in and about entrances of buildings.



Honey Bees

Honey bees may become troublesome when they swarm or build colonies in or near residential areas. Honeybees occasionally invade homes and establish a colony, building combs of wax containing honey, pollen and brood in wall spaces. Once established, a colony is difficult to remove because it usually involves structural modification of the building. To be effective, the honey and wax should be removed along with the bees or the site will remain attractive to other swarms.



Bumble Bees

These bees most commonly become a problem when they establish nests close to a sidewalk or near building foundations. Bumble bees are large, robust bees covered with dense black and yellow hairs. They commonly reach one inch in length. Bumble bees usually are not overly aggressive, but will sting if molested. To avoid confrontations with bumble bees, stay clear of patches of flowers visited by adults. These bees can be controlled by spraying or dusting insecticides into their nests. Retreatment may be necessary.



What to do?

Naturally, there are many kinds of bees, and other insects for that matter, about which we should be concerned. The following are some good rules of thumb to keep in mind.

To mitigate hazards associated with bees/wasps:

- Avoid known locations of bees/wasps.
- Keep your eyes and ears open for swarms.
- Look for insects flying in and out of openings such as a crack in the wall, an open pipe end, or a well vault lid.
- Be cautious of tall grass as some bees build their hives at ground level.
- Be cautious of pointed structures, especially in barns, storage sheds, and outbuildings as bees often build hives in those structures.
- Avoid wearing citrus or floral aftershaves or perfumes as bees/wasps may be attracted to these odors.
- Wear light colored clothing as insects are generally attracted to dark colors.
- Fill in cracks or crevices and close open ends of pipes when bees/wasps are not around.
- Leave the area as quickly as possible if a nest has been disturbed. Do not retrieve nearby belongings. Do not stand still. Do not try to fight them.

If stung by a bee or wasp, wash the area with soap and water. If you have been stung over 15 times or are having symptoms other than pain and swelling, seek emergency medical assistance immediately. Staff that are allergic will carry an EpiPen® as prescribed by a doctor. The SHSO, OSEC and Project Manager should be made aware of this prior to the start of the project.

Insect Sting Reactions

Insect sting reactions can be classified into three types - a normal reaction, a toxic reaction, and an allergic reaction. A normal reaction, lasts only a few hours, involves pain, redness, swelling, itching, and warmth at the site of the sting. A toxic reaction lasts for several days, results from multiple stings and causes muscle cramps, headache, fever, and drowsiness. An allergic reaction is similar to a toxic reaction but is triggered with only one sting.

An allergic reaction can involve one or more of the following: hives, itching, and swelling in areas other than the sting site; tightness in the chest and difficulty in breathing; a hoarse voice or swelling of the tongue; dizziness or a sharp drop in blood pressure; and unconsciousness or cardiac arrest.

4.0 Site Control and Safety Procedures

Procedures described in this section are intended to aid Stantec personnel in mitigating site risks/hazards.

Video Cameras

Prior to using a camera or other electronic recording devices on this site, all on-site personnel and/or visitors will obtain approval from the Project Manager.

Daily Production Health and Safety Briefings

A safety meeting will be conducted twice daily and as needed at the site to discuss the health and safety issues for the activities to be conducted that day. The topics of the meeting will include, at a minimum, general health and safety procedures, reviewing health and safety policies and reviewing the job hazard analyses for the tasks to be conducted. Additional safety meetings may be conducted if the scope of work changes during the day, or if other health and safety issues are identified. The meetings can be documented in using the RMS-2 Fit for Duty Forms included in Attachment 3.

Driving

- Review the Stantec Safe Driving Procedures provided on-site.
- Utilize the Journey Hazard Assessment Card to identify potential driving/journey/traffic hazards before each trip.
- The Daily Vehicle Checklists should be used at least once a day for each vehicle driven for Stantec business to identify potential vehicle issues/hazards. Copies of the Daily Vehicle Inspection Checklist are included in this HASP as Attachment 4.
- Have each team member who will travel to/from the site review the site-specific Journey Management Plan (JMP) before traveling to identify routes of travel and potential driving/journey/traffic hazards. JMP(s) will be kept with each traveling employee throughout the entire course of travel.
- A Stantec Vehicle Collision Kit will be kept in every vehicle used for Stantec project work. A Stantec Vehicle Collision Kit is included in this HASP as Attachment 5.

Drug and Alcohol Testing

Following an incident, Stantec will follow the incident reporting procedures. If appropriate, Stantec will include drug and alcohol testing, consistent with Stantec's Policies and Procedures, as well as the client's contractual requirements for testing.

Exclusion Zone and Decontamination (as applicable)

No eating, drinking, smoking or raw tobacco use is permitted in the exclusion zone. These activities will be conducted only in designated areas of the site. Use of PDAs, cell phones, pagers, or other electrical devices (with the exception of intrinsically safe devices) are prohibited in the exclusion zone. Personnel will properly decontaminate after leaving an exclusion zone. Decontamination procedures may involve disposing of Tyveks, latex gloves, etc. in a decontamination zone located immediately outside of the exclusion zone. At a minimum, personnel will wash any exposed skin before leaving a site using soap and water or pre-moistened cleansing towels. Stantec will evaluate the hazards and develop site-specific decontamination procedures to address the chemical hazards at each site. These procedures can be found in the job safety analyses.



HASP Inspections

The site-specific HASP should be inspected in the field by the SHSO or other Stantec personnel to determine the effectiveness of the plan. Any deficiencies should be corrected and changes will be recorded on the HASP Modification Log.

Jewelry

Jewelry can be dangerous and shall not be worn during field activities. Large earrings, long necklaces, loose-fitting bracelets, rings, watches, etc. can become entangled in machinery and cause traumatic amputation of limbs, as well as be conductive of electricity.

Job Safety Analysis

Job Safety Analyses (JSAs) will be prepared or revised prior to mobilizing to the field. Applicable JSAs will be reviewed in detail on a daily basis by all affected on-site workers and/or visitors. Any revisions to the JSAs will be hand written into the JSAs, forwarded to the project manager, and communicated to during Daily Production Health and Safety Briefings. JSAs are located in Attachment 2.

Material Safety Data Sheets (a.k.a. Safety Data Sheets/GHS)

Material Safety Data Sheets (MSDSs) will be available in the Stantec HASP &/or in the sub-contractor's HASP for chemicals on site (including chemicals brought on site by on-site personnel and/or visitors).

Permits

The approved/signed Task Order for the project is the permit to work on Caltrans right-of-way and must be available onsite at all times. The signed approved task order will serve as the general permit to work for this site.

Personal Protective Equipment

PPE is identified in JSAs. PPE listed in each JSA is specific to the task outlined in the JSA and is consistent with either OSHA 1910.132 or Appendix B of 29 CFR 1910.120. PPE is to be used in accordance with manufacturers' recommendations and employee training. Minimum PPE at the site includes steel toe/steel shank boots, high visibility work gloves, hi-viz safety vest, long sleeve shirt, pants, safety glasses with side shields, and a hard hat.

Pre-entry Briefing

All on-site workers and visitors will receive a pre-entry briefing prior to accessing work areas of the site. The briefing will include reviewing contents of the HASP, signing the Acknowledgement and Agreement Form. The briefing for visitors may be abbreviated to be fit-for-purpose based on the intent of the visit.

Public Questions and Press

Questions about the site posed by neighbors, the press, or other interested parties will be directed to the **Caltrans Project Manager Anm Wasim Choudhury at (213) 897-4058**.

Shutoff Valves/Switches

(IF NEEDED) The SHSO will identify the location of shutoff valves and switches for utilities and products on the Site Plan and disseminate this information to all site personnel and visitors as appropriate.

Site Access and Layout

Before mobilizing to the site for an event, the property owner(s) will be notified.

Site Security

Security of our staff, subcontractors, equipment, and the public is of paramount importance to Stantec. Employees are trained in hazard recognition and will follow standard policies and procedures to report and mitigate site security issues/hazards if identified. Note that security consideration is different than traffic guidance and control, which also impacts security to some extent. Security refers to personal safety and freedom from theft or violence. The following items will be evaluated when considering security measures at the site:

- Recent criminal activity at the site and nearby areas (ask site owner/operator and the police);
- Work hours (security concerns may be different depending on the time of day); and
- Lighting at the site (thieves are generally dissuaded from stealing on well lighted sites).

Standard security measures will be implemented on site to minimize the potential for loss at the site. Standard security measures include properly maintained lighting, functioning locks for windows/doors/equipment storage areas, and maintaining control of tools and equipment when not in use. Security may be implemented in a variety of ways:

- Orange construction fence (minimal security);
- Chain link fencing;
- Extra lighting;
- Specialized locks; and/or
- Contract security.

Traffic Guidance and Control

Incidents on sites have shown the need for a site-specific Traffic Guidance and Control Plan. The SHSO and project staff will develop a Traffic Guidance and Control Plan and disseminate this information to all site personnel. This plan will consider the amount of traffic at a site and provide for the safety of all workers. Equipment and resources to be considered as part of traffic guidance and control include:

- Vehicle hazard lights (tail and headlights)
- Cones/Delineators
- Placement of vehicles as barriers between workers and traffic
- Rotating amber hazard lights that can be placed on top of vehicles
- Signage advising drivers of shoulder work.

Other considerations for the Traffic Guidance and Control Plan include:

- Lane closures with proper signing
- Requiring personal vehicles (that aren't being used as barriers) to park as far away from potential traffic as possible.
- Cordoning off as much space as is necessary to ensure our safety.
- Identifying traffic flow routes and parking areas for heavy equipment (e.g., vacuum trucks, drill rigs, etc.) and establishing site speed limits.
- Reviewing local regulations for: formally developed traffic guidance and control plans signed by licensed individuals, police details, flagmen, hours of activity, closure of streets, etc.

Work Hours

Work on this project will be conducted between the hours of 0700 to 1800.



Waste Management

A. Waste Generation (Type(s)/Quantities Expected):

Anticipated (YES/NO): **NO**

Types: Liquid Solid Sludge Other (describe) _____

Quantity (Expected Volume): Unknown

B. Characteristics (Expected): **NA FOR TO17 SCOPE**

Corrosive Flammable/Combustible Radioactive Toxic

Reactive Unknown

Other (specify) _____

C. Packaging Requirements for Waste Material (Expected): **NA FOR TO17 SCOPE**

- DOT-approved Drums
- Baker Tanks (possibly tankers if trucked off-site) _____
- Lined Waste Bins
- Temporary Stockpile _____

D. Disposal and/or Treatment Methods Proposed (Expected): **NA FOR TO17 SCOPE**

There are no waste materials expected to be generated during the ACM sampling work.

When/If applicable: All wastes will be labeled, sampled, and analyzed for all applicable chemicals of potential concern and physical properties (e.g., pH, vapor pressure, etc.) to ensure proper waste characterization. Results of analysis will determine how and where impacted materials may be disposed. Belshire Environmental will be responsible for the categorization and transportation of all solid waste generated on this Site, if any. All materials will be disposed of or treated in accordance with federal, state and local regulations as selected and arranged by Stantec.

4.1 Organization and Responsibilities

An organization chart for project personnel is provided below.



A table summarizing responsibilities for project personnel is provided below.

Project Job Title	General Project Responsibilities
Stantec Project Manager	Overall financial and logistics. Contact client and subs to understand all hazards. Discuss with SHSO. Follow-up all incidents upon notice.
Stantec Site Health and Safety Officer	Conduct Site Safety Meeting (tailgate) and fieldwork in accordance with JSA and this HASP. Report all incidents and near misses immediately to Project Manager.
Stantec Support/Project Staff	Assist Stantec Site Health and Safety Officer in implementing site scope of work
Stantec Business Unit Leader	Provide immediate support at notice of all incidents
Stantec Sr. Certified Industrial Hygienist	Respond with corporate resources to all incidents as appropriate. Assist in HASP review. Assist in incident investigation.
Stantec Human Resources	Assist with incident review, recordkeeping.
Stantec Office Safety and Environment Coordinator	Manage Health and Safety responsibilities for personnel in Office. Assist employees with setting up training and attending/completing necessary courses.
Caltrans Project Manager	Provide all known analytical data gathered by others and notice of hazards. Provide access to site and available emergency response capabilities.

Attachment B
Training Certificates



Certificate of Completion

Presented to

Jason Stagno

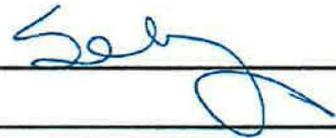
of

Stantec Consulting Services Inc.

for successful completion of

Stantec Hazwoper Refresher Course v3, PS4 eLesson

Dated: 09-07-2014





Certificate of Completion

Presented to

Dion Monge

of

Stantec Consulting Services Inc.

for successful completion of

Stantec Hazwoper Refresher Course v3, PS4 eLesson

Dated: 5/28/2014

A blue ink signature, likely of a representative from UL, written over two horizontal lines. The signature is stylized and includes the letters 'UL' and 'SEC'.



Certificate of Completion

Presented to

Melissa Baernstein

of

Stantec Consulting Services Inc.

for successful completion of

Stantec Hazwoper Refresher Course v3, PS4 eLesson

Dated: 5/28/2014

A handwritten signature in cursive, appearing to read 'A. C. P.', written over two horizontal lines. To the right of the signature, the letters 'DIEC' are printed.



Certificate of Completion

Presented to

Monica Aragon-Guzman

of

Stantec Consulting Services Inc.

for successful completion of

Stantec Hazwoper Refresher Course v3, PS4 eLesson

Dated: 09-09-2014



Principal Geologist



Certificate of Completion

Presented to

Joshua Sargent

of

Stantec Consulting Services Inc.

for successful completion of

Stantec Hazwoper Refresher Course v3, PS4 eLesson

Dated: 09-19-2014





Certificate of Completion

Presented to

Michael Clayton

of

Stantec Consulting Services Inc.

for successful completion of

Stantec Hazwoper Refresher Course v3, PS4 eLesson

Dated: 4/11/2014



ROSEC



Certificate of Completion

Presented to

Ryan McDaniel

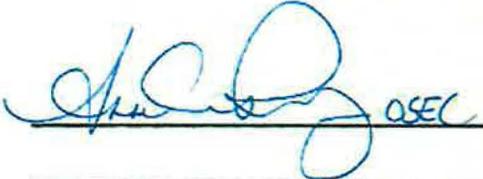
of

Stantec Consulting Services Inc.

for successful completion of

**Stantec HAZWOPER Refresher Course V3, PS4 eLesson Updated
081514**

Dated: 11-26-2014



OSEC



Certificate of Completion

Presented to

Mark Zellmer

of

Stantec Consulting Services Inc.

for successful completion of

Stantec Hazwoper Refresher Course v3, PS4 eLesson

Dated: 5/31/2014

A handwritten signature in blue ink, appearing to read 'D. Zellmer', written over a horizontal line.

Senior Engineer



Certificate of Completion

Presented to

Scott Edblad

of

Stantec Consulting Services Inc.

for successful completion of

Stantec Hazwoper Refresher Course v3, PS4 eLesson

Dated: 2/18/2014



STEVEN DRAY

DEPARTMENT OF INDUSTRIAL RELATIONS
Division of Occupational Safety and Health
Asbestos Unit
2424 Arden Way, Suite 495
Sacramento, CA 95825-2417
(916) 574-2993 Office (916) 483-0572 Fax
<http://www.dir.ca.gov/dirdatabass.html> actu@dir.ca.gov



209214949C

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October 24, 2014

Jason J Stagno

Dear Certified Asbestos Consultant or Technician:

Enclosed is your certification card. **To maintain your certification, you must abide by the rules printed on the back of the certification card.**

Your certification is valid for a period of one year. If you wish to renew your certification, you must apply for renewal at least 60 days before the expiration date shown on your card. [8 CCR 341.15(h)(1)].

Please hold and do not send copies of your required AHERA refresher renewal certificates to our office until you apply for renewal of your certification.

Certificates must be kept current if you are actively working as a CAC or CSST. The grace period is only for those who are not actively working as an asbestos consultant or site surveillance technician.

Please contact our office at the above address, fax number or email; of any changes in your contact/mailling information within 15 days of the change.

Sincerely,

Jeff Ferrell
Senior Safety Engineer

Attachment: Certification Card

cc: File

State of California
Division of Occupational Safety and Health
Certified Asbestos Consultant

Jason J Stagno

Name

Certification No. 12-4949

Expires on 11/14/15

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code



Renewal - Card Attached (Revised 10/24/2012)



Certificate of Completion

Presented to

Keith Posekian

of

Stantec Consulting Services Inc.

for successful completion of

Stantec Hazwoper Refresher Course v3, PS4 eLesson

Dated: **07-13-2014**



L.O. SIMON

Attachment 1

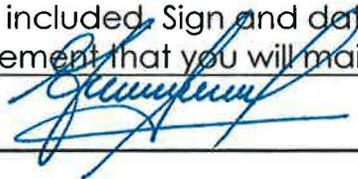
Stantec Field Binder Checklist and Project Applicable Forms

Stantec Field Binder Checklist

INCLUDED			FORMS	Qty.	COMMENTS
YES	NO	N/A			
PROJECT DOCUMENTS					
			Kick-off Meeting Materials	1	
X			Site-Specific Workplan / Written Scope	1	
			Project Management Checklist	1	
			Field and Safety Supplies Checklist	5	
X			Sampling Procedures	1	
			Permits	1	
			Traffic Control Plans	1	
STANTEC ENVIRONMENTAL SERVICES SECTOR					
Field Notes and Logs					
			Site Observation Report	20	
			Borehole/Well Construction Logs	10	
			Gauging Logs	5	
			Purge Groundwater Sampling Logs	10	
			Grab Groundwater Sample Log	10	
			Non-Aqueous Phase Liquid Bailing Sheets	5	
			O&M Field Data Log	20	
			Waste Management Form	10	
Oil & Gas Subsector					
HSE Monitoring					
X			Equipment Calibration Sheet	5	
X			Air Monitoring Logs	10	
			HSE Opportunity Card	5	
			SAFE Observation Remedial System	1	
			SAFE Observation Emergency Drill	1	
			SAFE Observation Groundwater	1	
			SAFE Observation Drilling	1	
			SAFE Observation Excavation	1	
			SAFE Observation Heavy Equipment	1	
STANTEC CORPORATE HEALTH SAFETY AND ENVIRONMENT					
Hazard Assessment					
X			RMS2- FIELD LEVEL Risk ASSESSMENT (FIT FOR DUTY), 1 day	20	
X			RMS2- FIELD LEVEL Risk ASSESSMENT (FIT FOR DUTY), 5 days	10	
			RMS 7 - Quantified Hazard Assessment		
			SWP 102a - Workplace Violence	1	

Stantec Field Binder Checklist

INCLUDED			FORMS	Qty.	COMMENTS
YES	NO	N/A			
			Inspection Form		
			SWP 105a - Hazard Assessment for PPE Assessment Form	1	
HSE Monitoring and Incident Report					
			RMS 5 - Worksite Inspection - Field	1	
X			RMS 3 - Incident Report	1	To be used as needed
Driving Safety and JMP					
X			SWP 124a - Vehicle Pre-Use Checklist	20	
			SWP 124b - Journey Management Plan	1	
Ground Disturbance					
X			SWP 213a - Pre-Ground Disturbance Worksheet Approval	1	
X			SWP 213b - Ground Disturbance Form	1	
			SWP 213d - Backfill Inspection Form	1	
Electrical Work					
			SWP 406a - Electrical Job Brief Hazard Assessment	1	
			SWP 406b - Energized Work Permit	1	
			SWP 408a - LTT Permit	1	
			SWP 408b - Emergency LTT Removal	1	
			SWP 408c - LTT Periodic Audit	1	
Confined Space					
			SWP 411a - Confined Space Entry Permit	1	
			SWP 411b - Alternate Entry Permit	1	
Lifting Operations					
			SWP 217a - Forklift Pre-Operational Checklist	1	
CLIENT-SPECIFIC DOCUMENTS					
<p>Instructions: Review your Stantec Field Binder prior to starting work and ensure applicable contents are included. Sign and date the checklist. Your signature indicates your acknowledgement that you will maintain the field binder with forms required for your work.</p>					
Signature				Date: 12/3/2014	



**HEALTH, SAFETY AND ENVIRONMENT
SAFE WORK PRACTICE
PRE-GROUND DISTURBANCE WORKSHEET & APPROVAL FORM
SWP-213a**



* Form to be completed by Project Manager or Designate

Section One: Project Information			
Project Number:	195831017	Project Name:	TD 17 A3321-17 ADL + ACM
Project Manager:	MONICA L. ARAGON		
Client:	CALTRANS		
Location:	VARIOUS LOCATIONS ALONG SR-5		
Planned Excavation Method:	<input type="checkbox"/> Mechanical <input checked="" type="checkbox"/> Hand	Planned Excavation Depth:	<input type="checkbox"/> <30 cm / 1 ft and/or <input checked="" type="checkbox"/> >30cm / 1 ft
Work Description: (provide detail information as to what work is planned and how it will be executed): COLLECTION OF SOIL SAMPLES FOR LEAD ON ON-RAMP AND OFF RAMP LOCATIONS , COLLECTION OF ASBESTOS SAMPLES ON BRIDGES. (2)			
Information provided/completed by:	<input checked="" type="checkbox"/> Client <input checked="" type="checkbox"/> Stantec		
Section Two: Utilities Location and Verification			
1. Review location description provided by client.	Yes <input checked="" type="checkbox"/> (circle all that apply) No <input type="checkbox"/> N/A <input type="checkbox"/> Justification:	Green Field / Brown Field / White Zone / Other	
2. Identify and confirm land use.	Yes <input checked="" type="checkbox"/> (circle all that apply) No <input type="checkbox"/> N/A <input type="checkbox"/> Justification:	Ag Land / Urban (Municipal Urban) / Native Forest / Industrial	
3a. Full-sweep line locate required	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Justification:	HAND AUGERING	
3b. Point-specific line locates	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Justification:		
3c. Quote required and authorized (prior to location activities started)	Yes <input type="checkbox"/> Provided by: Client Name: _____ Date: _____ No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Justification:		
4. Utility locates have been performed by public utility company(s) within required timeframe. Locates are clear/visible.	Yes <input type="checkbox"/> Contact Date: _____ Contact Person: _____ Proposed Meet Date: _____	Ticket Number: SEE ATTACHED Alternate Contact: _____ Meet Time: _____	
*for multiple utility companies, please note dates and contact information using questions 5-15	No <input type="checkbox"/> N/A <input type="checkbox"/> Justification:	Ticket Expiration Date: 1/5/15	
5. Private locate company has been contacted and is an approved utility locating contractor. Markings are clear and visible.	Yes <input type="checkbox"/> Contact Name: _____ Contact Number: _____ Meet Date: _____ Meet Time: _____ No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Justification:		

**HEALTH, SAFETY AND ENVIRONMENT
SAFE WORK PRACTICE
PRE-GROUND DISTURBANCE WORKSHEET & APPROVAL FORM
SWP-213a**



6. Site access/permission has been secured <i>Land owner/tenant has been contacted.</i>	Yes <input checked="" type="checkbox"/>	Land Owner Name: Permit/Authorization Number: Land Agent Name: <i>* Attach Access Agreement and Permit Authorization</i>	Contact Number: Contact Number:
	No <input type="checkbox"/>	N/A <input type="checkbox"/> Justification:	
7. Work discussed with owner/tenant.	Yes <input type="checkbox"/>	Owner Name: N/A <input checked="" type="checkbox"/> Justification:	Tenant Name:
	No <input type="checkbox"/>		
8a. All crossing agreements for third party and owner facilities are in place and conditions have been met.	Yes <input type="checkbox"/>	Crossing or proximity agreements: 1. 2. 3. <i>* Attach crossing agreements with conditions</i>	
	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/> Justification:	
8b. Have third party line owners been given 48 hours' notice to crossing or encroachment?	Yes <input type="checkbox"/>		
	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/> Justification:	
9. Is owner's representative required to be present when exposing or excavating near/across lines?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/> N/A <input type="checkbox"/> Justification:	
10a. Reviewed site information to identify subsurface structures relevant to planned site activities. <i>Review easements, right of ways, historical plot plans, previous site investigation, soil surveys, boring logs, etc.</i>	<i>Check all that apply</i>		
	<input type="checkbox"/>	3rd party identified	<input type="checkbox"/> Recent high pressure plots reviewed?
	<input type="checkbox"/>	Recent low pressure plots reviewed?	<input type="checkbox"/> Land title search reviewed?
	<input type="checkbox"/>	Land Standing Report reviewed?	<input type="checkbox"/> Previous Site Investigations?
	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/> Justification:	<input type="checkbox"/> Other
10b. Most recent as-built drawings and/or site plans surveys obtained. <i>Including UST, product and vent lines, building layout.</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/> N/A <input type="checkbox"/> Justification:	
	Yes <input checked="" type="checkbox"/>		
10c. Municipal utilities drawings.	No <input type="checkbox"/>	N/A <input type="checkbox"/> Justification:	
11. All applicable local, provincial and federal permits have been obtained.	Yes <input type="checkbox"/>	Local/City Permit Number: Other: <i>* Copy attached and on site</i>	Provincial/State Permit Number: Other:
	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/> Justification:	

Approval to Proceed with Field Activities

Client Approval:

Print Name: **ANM WASIM CHOUDHURY** Signature: Date: **12/9/14**

Project Manager/Designate Approval:

Print Name: **MONICA BRAGON** Signature: Date: **12/9/14**

**HEALTH, SAFETY AND ENVIRONMENT
SAFE WORK PRACTICE
GROUND DISTURBANCE FORM
SWP-213b**



Ground Disturbance Form

Field Activity			
1. Copy of current locates and drawings on site.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/> N/A <input type="checkbox"/>	Justification:
2. All site personnel involved in ground disturbance activities have been briefed on clearance protocols, line locations and signed off on work plan	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/> N/A <input type="checkbox"/>	Justification:
3a. Work area is secured.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/> N/A <input type="checkbox"/>	Justification:
3b. Site work permits have been obtained.	Yes <input type="checkbox"/>	No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Justification:
3c. Emergency shut-off switch is located for all impacted equipment.	Yes <input type="checkbox"/>	No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Justification:
3d. Fire extinguishers/warning sign/barriers are present.	Yes <input type="checkbox"/>	No <input type="checkbox"/> N/A <input type="checkbox"/>	Justification:
3e. Signage in place for overhead power lines.	Yes <input type="checkbox"/>	No <input type="checkbox"/> N/A <input type="checkbox"/>	Justification:
3f. Specify other safety equipment as needed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Location of area lights/signs and associated subsurface lines identified.	Yes <input type="checkbox"/>	Located by:	Phone: Date:
Ticket/Confirmation No:	No <input type="checkbox"/> N/A <input type="checkbox"/>	Company/Utility:	
	Justification:	<i>SEE ATTACHED</i>	
5a. Location of all telecommunication and associated subsurface lines identified.	Yes <input type="checkbox"/>	Located by:	Phone: Date:
Ticket/Confirmation No:	No <input type="checkbox"/> N/A <input type="checkbox"/>	Company/Utility:	
	Justification:	<i>SEE ATTACHED</i>	
5b. Fiber optic lines identified.	Yes <input type="checkbox"/>	Located by:	Phone: Date:
Ticket/Confirmation No:	No <input type="checkbox"/> N/A <input type="checkbox"/>	Company/Utility:	
	Justification:	<i>SEE ATTACHED</i>	
6. Location of drains and associated inter-connecting lines identified.	Yes <input type="checkbox"/>	Located by:	Phone: Date:
	No <input type="checkbox"/> N/A <input type="checkbox"/>	Company/Utility:	
	Justification:	<i>SEE ATTACHED</i>	
7. Location of all electrical junction boxes and associated interconnecting lines identified.	Yes <input type="checkbox"/>	Located by:	Phone: Date:
	No <input type="checkbox"/> N/A <input type="checkbox"/>	Justification:	
	Status: Live <input type="checkbox"/> Shut-off and locked out <input type="checkbox"/> Removed from service <input type="checkbox"/>		
	Confirmation of status: Name:		Date:
	<i>* Maintain minimum safe distance of > 7 m/23 ft.</i>		
	<i>SEE ATTACHED</i>		

**HEALTH, SAFETY AND ENVIRONMENT
SAFE WORK PRACTICE
GROUND DISTURBANCE FORM
SWP-213b**



<p>8. Location of natural gas meters or connections and all interconnecting lines identified.</p> <p><i>SEE ATTACHED</i></p>	<p>Yes <input type="checkbox"/> Located by: Company/Utility:</p> <p>No <input type="checkbox"/> N/A <input type="checkbox"/> Justification:</p> <p>Status: Live <input type="checkbox"/> Shut-off and locked out <input type="checkbox"/> Removed from service <input type="checkbox"/></p> <p>Confirmation of status: Name: _____ Date: _____</p>	<p>Phone: _____ Date: _____</p>
<p>9. Location of Cable lines.</p> <p><i>SEE ATTACHED</i></p>	<p>Yes <input type="checkbox"/> Located by: Company/Utility:</p> <p>No <input type="checkbox"/> N/A <input type="checkbox"/> Justification:</p>	<p>Phone: _____ Date: _____</p>
<p>10. Location of Water lines.</p> <p><i>SEE ATTACHED</i></p>	<p>Yes <input type="checkbox"/> Located by: Company/Utility:</p> <p>No <input type="checkbox"/> N/A <input type="checkbox"/> Justification:</p>	<p>Phone: _____ Date: _____</p>
<p>11. Presence and tracing of process/storm sewers identified /understood <i>If other concrete, fiberglass, untraced PVC lines are potentially in the ground disturbance area, identify means of identification in comments section.</i></p>	<p>Yes <input type="checkbox"/> Located by: Company/Utility:</p> <p>No <input type="checkbox"/> N/A <input type="checkbox"/> Justification:</p> <p>Comments (need to comment on water sewer line): _____</p>	<p>Phone: _____ Date: _____</p>
<p>12. Presence of underground pipelines associated with pumps and pump galleries, manifolds, tank fields, compressors, production wells, loading racks and equipment identified.</p>	<p>Yes <input type="checkbox"/> Located by: Company/Utility:</p> <p>No <input type="checkbox"/> N/A <input type="checkbox"/> Justification:</p>	<p>Phone: _____ Date: _____</p>
<p>13. Location of all aboveground indicators of subsurface utilities/services that may be leading to or from buildings within planned work area are identified.</p>	<p>Yes <input type="checkbox"/></p> <p>No <input type="checkbox"/> N/A <input type="checkbox"/> Justification:</p>	
<p>14a. Orientation, arrangement, location, sizes of tanks, STP and extractor covers identified.</p>	<p>Yes <input type="checkbox"/></p> <p>No <input type="checkbox"/> N/A <input type="checkbox"/> Justification:</p>	
<p>14b. Burial depth of tank determined if relevant</p>	<p>Yes <input type="checkbox"/> Depth: _____</p> <p>No <input type="checkbox"/> N/A <input type="checkbox"/> Justification:</p>	
<p>14c. Presence of underground lines for instrumentation, process analyzer, and motor-operated valves are inspected/identified.</p>	<p>Yes <input type="checkbox"/></p> <p>No <input type="checkbox"/> N/A <input type="checkbox"/> Justification:</p>	
<p>15. Location of other pertinent features surface or sub-surface that may be of relevance to work scope has been identified.</p>	<p>Yes <input type="checkbox"/></p> <p>No <input type="checkbox"/> N/A <input type="checkbox"/> Justification:</p>	
<p>16. Are all buried lines and utilities that are identified on all drawing sources staked or marked in the ground disturbance zone plus a 30 m /100 ft. buffer?</p>	<p>Yes <input type="checkbox"/></p> <p>No <input type="checkbox"/> N/A <input type="checkbox"/> Justification:</p>	

**HEALTH, SAFETY AND ENVIRONMENT
SAFE WORK PRACTICE
GROUND DISTURBANCE FORM
SWP-213b**



<p>17. Critical zones have been identified. <i>5 m / 16.5 ft of pipeline crossing area, or the distance defined in the pipeline crossing agreement. 3 m / 10 ft. distance from edge of tank pumps and pump galleries, manifolds, on/below grade transformers, compressors, production wells, flow lines, loading racks, other process equipment, operating dispenser islands and suspected hazardous/critical utilities, product lines, other subsurface structures, and entire area between tank field and dispensers at retail sites</i></p>	<p>Yes <input type="checkbox"/> Identify critical zones: No <input type="checkbox"/> N/A <input type="checkbox"/> Justification:</p>						
<p>18. Has the owner/representative inspected the crossings or encroachment areas prior to beginning work?</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Justification:</p>						
<p>19. Are all conditions of the Crossing Agreements being met?</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Justification:</p>						
<p>20. Are all operators aware of the mechanical excavation zone as discussed in the tailgate meeting?</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Justification:</p>						
<p>21. Location and surface features indicative of product lines or other subsurface structures identified.</p>	<p>Check all that apply</p> <table border="0"> <tr> <td><input type="checkbox"/> Pipe marker signs present</td> <td><input type="checkbox"/> Surface scaring present</td> </tr> <tr> <td><input type="checkbox"/> Ground depressions present</td> <td><input type="checkbox"/> Water cc's identified</td> </tr> <tr> <td><input type="checkbox"/> Cut lines observed</td> <td><input type="checkbox"/> Vegetation distressed</td> </tr> </table> <p>Other:</p> <p>No <input type="checkbox"/> N/A <input type="checkbox"/> Justification:</p>	<input type="checkbox"/> Pipe marker signs present	<input type="checkbox"/> Surface scaring present	<input type="checkbox"/> Ground depressions present	<input type="checkbox"/> Water cc's identified	<input type="checkbox"/> Cut lines observed	<input type="checkbox"/> Vegetation distressed
<input type="checkbox"/> Pipe marker signs present	<input type="checkbox"/> Surface scaring present						
<input type="checkbox"/> Ground depressions present	<input type="checkbox"/> Water cc's identified						
<input type="checkbox"/> Cut lines observed	<input type="checkbox"/> Vegetation distressed						
<p>22. Road and pipeline crossing zones identified.</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Justification:</p>						
<p>23. If subsurface structures exposed, extra precautions have been taken to ensure structural integrity.</p>	<p>Yes <input type="checkbox"/> Describe: No <input type="checkbox"/> N/A <input type="checkbox"/> Justification:</p>						

Comments / Findings	Actions to Close Out Items	Person Completing	Date Completed
---------------------	----------------------------	-------------------	----------------

**HEALTH, SAFETY AND ENVIRONMENT
SAFE WORK PRACTICE
GROUND DISTURBANCE FORM
SWP-213b**



Completed by: (print name)		Company:	
Signature		Date:	

Attachment 2
Job Safety Analyses

1. Driving to/from the job Site (with no trailer) Job Safety Analysis (JSA)

POC	Development Team	Position/Title	Date	Reviewed By	Position/Title
X	Michael Philipp	West Region Health and Safety Manager	10/04/2006		
			05/27/2008	Michael Philipp	West Region Health and Safety Manager
Site specific edits to this JSA were made by			09/12/2014	Monica L. Aragon	OSEC
If most recent review date is more than six months old, then this JSA must be updated and reviewed again to remain current					
POC is the JSA development 'Point Of Contact'					

Field staff must review job-specific work plan and coordinate with project manager to verify that all up-front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g. site managers, inspectors, clients, subcontractors, etc.). A tailgate safety meeting must be performed and documented at the beginning of each workday. Last-Minute Risk Assessment (LMRA) procedures must be used throughout the project. Weather conditions (heat, cold, rain, and lightning) must also be considered. Each employee is empowered, expected, and has the responsibility to stop the work performed by him/herself or another co-worker if the working conditions or behaviors are considered unsafe. All employees should act proactively to identify and mitigate hazards to the safest extent of their ability. Use Stop Work Authority as needed.

Job Steps	Personal Protective Equipment	Potential Hazard	Critical Actions
Perform LMRA procedures.	Wear reflective vest for traffic, steel toed shoes, long sleeve shirt, hardhat, safety glasses with side shields, and high visibility work gloves.	Slip/trip/falls, struck by traffic	<ul style="list-style-type: none"> ● Assess the potential hazards. Analyze how to reduce the risk. – STANTEC_____. ● Review JSA – STANTEC_____.
Verify Journey Management Plan is complete and current		Unexpected traffic detours	<ul style="list-style-type: none"> ● Assure directions are available and understood prior to commencing travel – STANTEC_____. ● Pull the vehicle into a safe location if additional directions must be confirmed – STANTEC_____. ● Increase following distance to allow extra time to stop if you are in

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Job Steps	Personal Protective Equipment	Potential Hazard	Critical Actions
			unfamiliar territory - STANTEC_____.
Verify a Vehicle Collision Kit, a 3-lb type ABC fire extinguisher, and other as needed emergency equipment is in the vehicle.	Safety vest, high visibility work gloves, steel-toe/shank boots, safety glasses, long-sleeved shirt	Struck by another vehicle, pinch points, falling equipment	<ul style="list-style-type: none"> ● Verify prepared field kit is in the vehicle. Inventory of the kit should include first aid kit, blood borne pathogen kit, fire extinguisher, collision kit, flashlight, etc. – STANTEC_____. ● For cold weather areas the inventory should also include a bag of sand, a bag of salt, gloves, wool socks, wool caps, wool blankets, tire chains, small shovel and matches – STANTEC_____.
Perform perimeter walk around of vehicle for damage or unusual conditions, and complete the SWP-124a - Vehicle Pre-Use Checklist.	Safety vest, high visibility work gloves, steel-toe/shank boots, safety glasses, long-sleeved shirt	Getting hit by a car, pinch points, slip/trip/fall, chemical contacts (grease or oil from car), overheated engine or break-down due to lack of critical fluids.	<ul style="list-style-type: none"> ● Complete the SWP-124a - Vehicle Pre-Use Checklist prior to travel – STANTEC_____. ● Wear safety vest and watch for cars during walk around– STANTEC_____. ● Address all questionable items prior to departure – STANTEC_____. ● Assure tires are properly inflated – STANTEC_____. ● Assure there are no cuts or bulges in the sidewalls – STANTEC_____. ● Assure windshield and window glass is clean and not cracked or crazed – STANTEC_____. ● Lift wiper arms and check wiper blades for damage or deterioration – STANTEC_____. ● Check behind vehicle for obstructions – STANTEC_____. ● Check under vehicle engine for evidence of fluid leaks – STANTEC_____. ● Check fluid levels– STANTEC_____. ● Wear Nitrile gloves when checking under hood – STANTEC_____. ● Verify all traffic control equipment is removed/safely stowed away – STANTEC_____. ● Look for and identify possible slip, trip, fall, and pinch point hazards –

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Job Steps	Personal Protective Equipment	Potential Hazard	Critical Actions
			STANTEC_____ <ul style="list-style-type: none"> ● Do not touch metal with moist or wet skin – STANTEC_____. ● Scrape windows, front and rear windshields – STANTEC_____.
Enter and prepare to start vehicle	SEAT BELT , sunglasses if needed	Back or body strain, slip/trip/fall, blind spots, inability to signal intentions, streaking windshield, impaired vision.	<ul style="list-style-type: none"> ● Be aware of footing, handholds, and head room when entering vehicle – STANTEC_____. ● Adjust seat so back is fully supported, upper arms close to body, and pedals within easy reach – STANTEC_____. ● Lower steering wheel so hands are below shoulders and shoulders are relaxed – STANTEC_____. ● Check mirror adjustments each time vehicle is re-started – STANTEC_____. ● Locate and test operations of front and rear turn signals, headlamps, wipers, and washer fluid – STANTEC_____. ● Verify proper operation of climate controls – STANTEC_____. ● Fasten seat belt – STANTEC_____. ● Lock doors – STANTEC_____. ● Driver's cell phone shall be turned off – STANTEC_____. ● Turn on headlights if vehicle is not equipped with day-time running lights – STANTEC_____.

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Job Steps	Personal Protective Equipment	Potential Hazard	Critical Actions
Start engine and let vehicle warm up.	SEAT BELT , sunglasses if needed	Unexpected movement.	<ul style="list-style-type: none"> ● Assure that transmission is in Park, or in neutral if a manual transmission, and that parking brake is set – STANTEC_____. ● Refer to Manufacturers vehicle manual for warm up times – STANTEC_____. ● Assure there is sufficient gas, oil and other critical fluids – STANTEC_____. ● Check for proper function of warning lights – STANTEC_____. ● Make any other necessary adjustments prior to driving – STANTEC_____.
Pull out of parking space.	SEAT BELT , sunglasses if needed	Collision with other vehicles, pedestrians, or stationary objects.	<ul style="list-style-type: none"> ● Check mirrors and over shoulder in all directions prior to pulling out of parking space – STANTEC_____. ● Give two short blasts on the horn and while looking over your shoulder – STANTEC_____. ● Slowly pull out of the parking space being prepared to apply the brakes if needed – STANTEC_____. ● Signal if parallel parked along a street – STANTEC_____. ● Avoid reversing when possible – STANTEC_____. ● If reversing with 2 or more personnel in the vehicle, then at least 1 person must exit the vehicle and act as a spotter. If alone, before getting in the car, assess the area for approaching pedestrians and vehicles – STANTEC_____.
Drive a motor vehicle	SEAT BELT , sunglasses if needed	Collision, injury or death to occupants or other parties.	<ul style="list-style-type: none"> ● Use the Stantec safe driving techniques – STANTEC_____. ● Scan – Scan your horizon – STANTEC_____. ● Timing – Do you have enough time to stop – STANTEC_____. ● Alert – Don't drive when you are tired – STANTEC_____. ● Next – Anticipate what could happen next – STANTEC_____. ● Team – Passengers need to assist – STANTEC_____. ● Elevate – Elevate your line of site – STANTEC_____.

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Job Steps	Personal Protective Equipment	Potential Hazard	Critical Actions
			<ul style="list-style-type: none"> ● Courteous – Don't be the driver others dislike – STANTEC_____. ● Driver's cell phone shall be turned off – STANTEC_____. ● Scan major and minor intersections before entry (left-right-left) – STANTEC_____. ● Scan mirrors frequently, at least one mirror every 5-8 seconds – STANTEC_____. ● Avoid staring while evaluating road conditions – STANTEC_____. ● Maintain adequate spacing between your vehicle and the vehicle in front of you (Rule of thumb is 1 second for every 10 miles per hour – STANTEC_____. ● After stopping, allow vehicle in front to move for 3 seconds before accelerating – STANTEC_____. ● Evaluate approaching merge before you reach them – STANTEC_____. ● Avoid being boxed in by other vehicles – STANTEC_____. ● Seek eye contact with other drivers – STANTEC_____. ● Before changing lanes, signal well in advance, check mirrors and over shoulder, and allow adequate space before changing lanes – STANTEC_____. ● Avoid blind spots – STANTEC_____. ● Increase the distance between your vehicle and the vehicle in front of you at night and in inclement weather. – STANTEC_____.
Pauses in travel	Safety vest, high visibility work gloves, steel-toe/shank boots, safety glasses, long-sleeved shirt, cell phone.	Struck by another vehicle, insecure connections	<ul style="list-style-type: none"> ● If there is a pause in travel (i.e. rest stop, gas station) do another walk around the vehicle prior to resuming travel – STANTEC_____. ● Be aware of nefarious characters – STANTEC_____.

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Job Steps	Personal Protective Equipment	Potential Hazard	Critical Actions
Reversing the vehicle	SEAT BELT , sunglasses if needed	Collision, injury or death to occupants or other parties.	<ul style="list-style-type: none"> ● Make all backing maneuvers slowly and cautiously – STANTEC_____. ● Check mirrors and over shoulders – STANTEC_____. ● If reversing with 2 or more personnel in the vehicle, then at least 1 person must exit the vehicle and act as a spotter. If alone, before getting in the car, assess the area for approaching pedestrians and vehicles – STANTEC_____.
Parking	SEAT BELT , sunglasses if needed	Collision, injury or death to occupants or other parties.	<ul style="list-style-type: none"> ● Park away from other cars when possible and when safe. – STANTEC_____. ● Look for pull-through parking to avoid reversing – STANTEC_____. ● Back into parking spot when possible and safe and legal – STANTEC_____. ● If reversing with 2 or more personnel in the vehicle, then at least 1 person must exit the vehicle and act as a spotter. If alone, before getting in the car, assess the area for approaching pedestrians and vehicles – STANTEC_____. ● Maintain cushion of safety from fixed objects – STANTEC_____. ● Set parking brake – STANTEC_____.
POST-TRIP		Conditions worsen leading to mechanical failure possibly resulting in accident, injury, or death.	<ul style="list-style-type: none"> ● Report vehicle problems immediately to company representative or rental car agency – STANTEC_____. ● Schedule a tune-up or repair if necessary – STANTEC_____.

ACM/PACM/LBP Sampling

POC	Development Team	Position/Title	Date	Reviewed By	Position/Title
√	Michael Allen Philipp	West Region H & S Manager	10/12/05		
	Scott Jordan	OE Coordinator	10/12/05		
	Dianne Burnia	National OE Coordinator	10/12/05		
			02/02/06	Michael A Philipp	West Region Health and Safety Manager
Site specific edits to this JSA were made on and by			10/1/2014	Monica L. Aragon	OSEC
If most recent review date is more than six months old, then this JSA must be updated and reviewed again to remain current					
POC is the JSA development 'Point Of Contact'					
<p><i>Field staff must review job-specific work plan and coordinate with project manager to verify that all up-front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g. site managers, inspectors, clients, subcontractors, etc.). A tailgate safety meeting must be performed and documented at the beginning of each workday. Last-Minute Risk Assessment (LMRA) procedures must be used throughout the project. Weather conditions (heat, cold, rain, lightning) must also be considered. Each employee is empowered, expected, and has the responsibility to stop the work performed by him/herself or another co-worker if the working conditions or behaviors are considered unsafe. All employees should act proactively to identify and mitigate hazards to the safest extent of their ability.</i></p>					
① Job Steps	② Personal Protective Equipment	③ Potential Hazard	④ Critical Actions		
Mobilize with the proper equipment for Asbestos Containing Material/Presumed Asbestos Containing Material (ACM/PACM) and LBP Sampling.	Gather necessary PPE. Steel toed and shank boots, long sleeve shirt, hard hat, safety glasses with side shields, ear plugs/muffs, leather gloves for the non-chemical aspects of work as necessary; Wear an air purifying respirator with HEPA/P-100 filters, and other PPE as needed. <i>(Use a North 7700 series half face respirator or its equivalent. Best brand nitrile gloves or their equivalent. Howard Leight Max foam earplugs with an NRR of 33 or their equivalent. Tyvek, poly coated chemical resistant suit or its equivalent).</i>	Vehicle accident. Lifting hazards. Delay or improper performance of work due to improper equipment onsite.	<ul style="list-style-type: none"> ● Start project with Production Safety Meeting (RMS -2 – Fit for Duty – Attachment 3) - STANTEC/Contractor. Discuss: <ul style="list-style-type: none"> -ensure all STANTEC/Client permits are filled out appropriately and discussed - STANTEC. -potential hazards and ways to avoid them - STANTEC/Contractor. - motor vehicle safety topic - STANTEC/Contractor. - current days weather conditions - STANTEC/Contractor.. - PPE requirements - STANTEC/Contractor. - check contractors HASP, Certs, MSDS's, and equipment maintenance records - STANTEC. - using safe lifting procedures - STANTEC/Contractor. ● Review ACM/PACM/LBP Sampling Procedures – STANTEC/Contractor. ● Make sure contractors are aware of their responsibilities for labor, equipment and supplies - STANTEC/Contractor. ● Review permit conditions as required - STANTEC/Contractor. ● Conduct LMRA procedures - STANTEC/Contractor. ● Take your time. Do not rush - STANTEC/Contractor. ● Use the buddy system for carrying loads in excess of 50 lbs and to continuously observe oncoming traffic. - Stantec ● Access the area, are there hazards present - STANTEC/Contractor. ● Wear safety glasses and leather work gloves when loading, unloading, and 		

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① Job Steps	② Personal Protective Equipment	③ Potential Hazard	④ Critical Actions
			whenever material handling - STANTEC/Contractor. <ul style="list-style-type: none"> ● Secure load in vehicle - STANTEC/Contractor ● Use lids to debris/garbage containers. Do not leave buckets open without a lid! Material in the bucket can spill - STANTEC/Contractor ● Use bubble wrap or other insulating material to cushion the sample containers during transport – STANTEC
Set up work zones as necessary.	Steel toed and shank boots, long sleeve shirt, hardhat (if required by job site), safety glasses with side shields/goggles.	Slip, trip and falls.	<ul style="list-style-type: none"> ● Employ safe lifting procedures – STANTEC/Contractor. ● Maintain good housekeeping – STANTEC/Contractor. ● Use the buddy system for carrying loads in excess of 50 lbs and to continuously observe oncoming traffic. - Stantec
Commence bulk sampling	Don required PPE as appropriate for this step: steel toed and shank boots, long sleeve shirt, hardhat, safety glasses with side shields, hearing protection, leather gloves for the non-chemical aspects of work as necessary. Wear a Tyvek suit. Wear chemical resistant gloves during sampling and handling of ACM/PACM/LBP. Wear a half-face air-purifying respirator/mask with HEPA filtration capability (i.e. P-100) (required).	Slip, trips and falls, exposure to contaminants, falls from ladders, cross contamination of samples. Back strain.	<ul style="list-style-type: none"> ● Inspect step-ladder before use. Do not use top step to stand on – STANTEC/Contractor. ● Request unnecessary personnel to leave the sampling area as appropriate – STANTEC/Contractor. ● Wear appropriate PPE during sampling evolution – STANTEC/Contractor. ● Wear a half-face air-purifying respirator/mask with HEPA/P-100 filtration capability as necessary – STANTEC/Contractor. ● Use plenty of water if utilizing wet sampling method – STANTEC/Contractor. ● Use the buddy system for carrying loads in excess of 50 lbs and to continuously observe oncoming traffic. - Stantec ● Decontaminate sampling equipment between each sample. Decontamination will be accomplished with a fresh water rinse, (spray bottle), into an appropriate container. Decontamination can also be accomplished utilizing wet wipes – STANTEC/Contractor. ● Properly label and record sample information; date of sample, location of sample, type of material sampled, amount (square feet or lineal feet), of material and a unique ID number – STANTEC/Contractor. ● Properly mark location of each sample on site map – STANTEC/Contractor. ● Properly "patch" sample area as appropriate – STANTEC/Contractor.
Decontaminate all	Use a North 7700 series half-face	Chemical exposure, heat	<ul style="list-style-type: none"> ● Use three stage decontamination for boots; use an Alconox wash,

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1 Job Steps	2 Personal Protective Equipment	3 Potential Hazard	4 Critical Actions
equipment/personnel.	respirator or its equivalent. Use North Part #7583P100 cartridges or their equivalent. Use chemical resistant gloves. Use LaCrosse steel toe/shank rubber boots or their equivalent. Use Howard Leight Max foam earplugs with an NRR of 33 or their equivalent. Use Tyvek suit (with hood) or its equivalent	stress.	<p>freshwater rinse followed by a second freshwater rinse. Dispose of all other used PPE in drums with plastic liners – STANTEC/Contractor.</p> <ul style="list-style-type: none"> ● Use proper PPE doffing procedures, taking care not to come in contact with contaminated/potentially contaminated PPE – STANTEC/Contractor. ● Use a three stage decontamination process for respirator wash. <i>Mild dishwashing liquid & fresh water wash followed by a fresh water rinse followed by a second fresh water rinse</i>– STANTEC/Contractor. ● Use a three stage decontamination process for a tool wash. <i>Alconox wash followed by a fresh water rinse followed by a second fresh water rinse</i> – STANTEC/Contractor. ● Have proper storage containment and labeling available onsite. Place materials in isolated location away from traffic and other site functions. (See next section for Waste Description) – STANTEC/Contractor. ● Transfer decontamination water to DOT approved 55-gallon drums – STANTEC/Contractor. ● Use the buddy system for carrying loads in excess of 50 lbs and to continuously observe oncoming traffic. - Stantec
Supervisor/SHSO must confirm all sample locations are properly patched/repaired.	Don required PPE as appropriate for this step: steel toed and shank shoes, hardhat, safety glasses with side shields, hearing protection, leather gloves for the non-chemical aspects of work as necessary. Wear a Tyvek suit as necessary. Wear chemical resistant gloves during sampling and handling of ACM/PACM. Wear a half-face air-purifying respirator/mask with HEPA/P-100 filtration capability as necessary.	Slip, trips and falls, exposure to contaminants, falls from ladders, cross contamination of samples. Back strain.	<ul style="list-style-type: none"> ● Inspect step-ladder before use. Do not use top step to stand on – STANTEC/Contractor. ● Request unnecessary personnel to leave the sampling area as appropriate – STANTEC/Contractor. ● Wear appropriate PPE during sampling evolution – STANTEC/Contractor. ● Wear a full-face air-purifying respirator with combination organic vapor/P-100 cartridges as necessary – STANTEC/Contractor. ● Use plenty of water if utilizing wet sampling method – STANTEC/Contractor. ● Use the buddy system to continuously observe oncoming traffic. - Stantec ● Decontaminate sampling equipment between each sample. Decontamination will be accomplished with a fresh water rinse, (spray bottle), into an appropriate container. Decontamination can also be accomplished utilizing wet wipes – STANTEC/Contractor. ● Properly label and record sample information; date of sample, location of

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1 Job Steps	2 Personal Protective Equipment	3 Potential Hazard	4 Critical Actions
			<p>sample, type of material sampled, amount (square feet or lineal feet), of material and a unique ID number – STANTEC/Contractor.</p> <ul style="list-style-type: none"> ● Properly mark location of each sample on site map – STANTEC/Contractor. ● Properly "patch" sample area as appropriate – STANTEC/Contractor.
Clean site/demobilize.	Steel toed and shank boots, long sleeve shirt, hardhat, safety glasses with side shields, hearing protection, and leather gloves for the non-chemical aspects of work as necessary.	Slip, trip and falls. Safety hazard left on site. Lifting hazard.	<ul style="list-style-type: none"> ● Leave site clean of refuse and debris – STANTEC/Contractor. ● Use the buddy system for carrying loads in excess of 50 lbs and to continuously observe oncoming traffic. - Stantec ● Notify property management/personnel of departure – STANTEC/Contractor. ● Use proper lifting techniques or use mechanical assistance – STANTEC/Contractor.
Package and deliver samples to lab.		Exposure to contaminants	<ul style="list-style-type: none"> ● Handle and pack sample bags carefully – STANTEC/Contractor. ● Use proper lifting techniques – STANTEC/Contractor.

Task. The following table addresses the concerns with hand augering for the collection of soil samples.

POC	Development Team	Position/Title	Date	Reviewed By	Position/Title
	Michael Allen Philipp	West Region Health and Safety Manager	09/23/05		
			02/02/06	Michael Allen Philipp	West Region Health and Safety Manager
Site specific edits to this JSA were made on and by			09/12/2014	Monica L. Aragon	OSEC
If most recent review date is more than six months old, then this JSA must be updated and reviewed again to remain current					
POC is the JSA development 'Point Of Contact'					
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1 Job Steps	2 Personal Protective Equipment	3 Potential Hazard	4 Critical Actions		
Clear hand augering locations.	Wear reflective vest for traffic, steel toed and shank shoes, hardhat, safety glasses with side shields, and leather gloves as necessary.	Traffic hazards, overhead and underground installations, product releases, property damage, dealer inconvenience.	<ul style="list-style-type: none"> ● Reference SWP-213a Pre-Ground Disturbance Worksheet and Approval Form and SWP-213b Ground Disturbance Form ● Coordinate with Site Manger (or designee) to minimize potential conflicts. ● Review proposed locations against available construction drawings and known utilities, tanks, product lines, etc. ● Mark out the proposed borehole locations. ● Call underground utility locating service for public line location clearance and get list of utilities being contacted. If necessary, coordinate private line locator for private property. ● Develop a traffic guidance and control plan with the client and local agencies as applicable. Plan may include use of delineators, barrier tape, jersey barriers, construction fence, etc. (Refer to Section 4.0). ● It is the responsibility of the SHSO to annotate the Site Plan with the Traffic Guidance and Control configuration if a formally developed Traffic Guidance and Control Plan is not available. 		
Mobilize with proper equipment/supplies for hand augering/soil sampling.	Gather necessary PPE. Reflective vest for traffic, steel toed and shank shoes, hard hat, safety glasses with side shields, ear plugs/muffs, leather	Vehicle accident. Lifting hazards. Delay or improper performance of work due to improper	<ul style="list-style-type: none"> ● Start project with Production Safety Meeting (Attachment 3 - RMS2 Fit for Duty). ● Follow safe driving procedures. 		

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1 Job Steps	2 Personal Protective Equipment	3 Potential Hazard	4 Critical Actions
	gloves for the non-chemical aspects of work as necessary; Wear a half-face air purifying respirator/mask with HEPA/P-100 filtration capabilities, and other PPE as needed. (Use a North 7700 series half-face respirator or its equivalent. Best brand nitrile gloves or their equivalent. Howard Leight Max foam earplugs with an NRR of 33 or their equivalent. Tyvek, poly-coated chemical resistant suit or its equivalent).	equipment onsite.	<ul style="list-style-type: none"> ● Employ safe lifting procedures. ● Review permit conditions (if applicable).
Visually clear proposed hand augering/soil sampling locations.	Wear reflective vest for traffic, steel toed and shank shoes, hardhat, safety glasses with side shields, and leather gloves as necessary.	Underground installations.	<ul style="list-style-type: none"> ■ Complete Pre-Mobilization section of SWP-213a Pre-Ground Disturbance Worksheet and Approval Form and SWP-213b Ground Disturbance Form and adjust hand-augering locations as necessary.
Set up necessary traffic guidance and control equipment. See Section 4.0 for detailed plan.	Wear reflective vest for traffic, steel toed and shank shoes, hardhat, safety glasses with side shields, and leather gloves as necessary.	Struck by vehicle during placement. Vehicle accident as a result of improper traffic guidance and control equipment placement.	<ul style="list-style-type: none"> ● Use buddy system for placing traffic guidance and control equipment. ● Implement traffic guidance and control plan such as setting out delineators, construction fence and caution tape defining safety area. ● Adhere to approved Traffic Guidance and Control Plans when working in roadways. ● It is the responsibility of the SHSO to annotate the Site Plan with the Traffic Guidance and Control configuration if a formally developed Traffic Guidance and Control Plan is not available.
Set up exclusion zone(s) and workstations (hand augering and logging/sample collection).	Wear reflective vest for traffic, steel toed and shank shoes, hardhat, safety glasses with side shields, and leather gloves as necessary.	Struck by vehicle during set up. Slip, trip and fall hazards.	<ul style="list-style-type: none"> ● Implement exclusion zone set-up. ● It is the responsibility of the SHSO to annotate the Site Plan with the Exclusion Zone set up. ● Set up workstations with clear walking paths to and from hand augering location. ● Use delineators, construction fence, and/or safety tape as required.

Field staff must review job-specific work plan and coordinate with project manager to verify that all up-front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g. site managers, inspectors, clients, subcontractors, etc.). A tailgate safety meeting must be performed and documented at the beginning of each workday. Last-Minute Risk Assessment (LMRA) procedures must be used throughout the project. Weather conditions (heat, cold, rain, and lightning) must also be considered. Each employee is empowered, expected, and has the responsibility to stop the work performed by him/herself or another co-worker if the working conditions or behaviors are considered unsafe. All employees should act proactively to identify and mitigate hazards to the safest extent of their ability.

1 Job Steps	2 Personal Protective Equipment	3 Potential Hazard	4 Critical Actions
			<ul style="list-style-type: none"> ● If utilizing Visqueen, (sheet plastic), for sampling area, completely secure Visqueen to the pavement, dirt, etc. with duct tape, delineators, etc. Do not use objects that are hard to notice or could become a trip hazard themselves.
Commence hand augering .	Don required PPE as appropriate for this step: steel toed and shank shoes, hard hat, safety glasses with side shields, hearing protection, reflective safety vest, and leather gloves for the non-chemical aspects of work as necessary. Wear chemical resistant gloves during handling of soil. Wear a half-face air-purifying respirator/mask with HEPA/P-100 filtration capabilities if necessary or as directed. (Use a North 7700 series half face respirator or its equivalent. Best brand nitrile gloves or their equivalent. Howard Leight Max foam earplugs with an NRR of 33 or their equivalent. Tyvek poly-coated suit or its equivalent).	Back strain, exposure to chemical hazards, hitting an underground utility, repetitive motion.	<ul style="list-style-type: none"> ■ Initiate air quality monitoring as outlined in Section 2.0 if required. ■ Have appropriate respirator with combination organic vapor/P-100 cartridges within 3-5 feet of work area, readily available. ■ Stand upwind to avoid exposure whenever possible. ■ Use the organic vapor monitor aggressively to track the airborne concentration of contaminants close to potential sources such as the core as it is being raised from the hole, the core is opened, etc. ■ Evaluate any soil samples inside a Ziploc bag at arm's length. DO NOT EVALUATE THE SAMPLE WITH THE BAG OPEN. THIS WILL AVOID UNNECESSARY EXPOSURE. ■ Use proper lifting techniques and tools. ■ Complete the Pre-Drilling section of the Borehole Clearance Review form. ■ Decontaminate sampling equipment after collecting a sample and decontaminate hand-augering equipment after each borehole. ■ Avoid twisting back during the operation; Decontaminate equipment after use. Decontamination will be accomplished by an Alconox wash with tap water rinse followed by a de-ionized or distilled water rinse. Collect rinse water in 5 gallon buckets and transfer to 55-gallon drums and stage drums in a location agreed upon by the SHSO and the Property/Station Owner/Manager.
Collect samples in accordance with sampling plan.	Steel toed and shank shoes, hardhat, safety glasses with side shields, hearing protection, reflective safety vest, and leather gloves for the non-chemical aspects of work as necessary. Wear a half-face air purifying respirator/mask with HEPA/P-100 filtration capability if necessary or as directed. (see above)	Cross-contamination, improper labeling or storage, exposure to site contaminants.	<ul style="list-style-type: none"> ■ Evaluate any soil samples inside a Ziploc bag at arm's length. DO NOT EVALUATE THE SAMPLE WITH THE BAG OPEN. THIS WILL AVOID UNNECESSARY EXPOSURE. ■ Decontaminate sampling equipment between each sampling run. Label samples in accordance with sampling plan. ■ Keep samples stored in proper containers, at correct temperature, and away from work area. ■ Conduct air monitoring as outlined in Section 2.0. ■ Have appropriate respirator with combination organic vapor/P-100 cartridges within 3-5 feet of work area, readily available.
Proper clean up and disposal of broken	Safety glasses Long sleeved shirts	Exposure to broken glass and acid (from water	<ul style="list-style-type: none"> ● Isolate area where broken glass is located - STANTEC/Contractor.

Field staff must review job-specific work plan and coordinate with project manager to verify that all up-front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g. site managers, inspectors, clients, subcontractors, etc.). A tailgate safety meeting must be performed and documented at the beginning of each workday. Last-Minute Risk Assessment (LMRA) procedures must be used throughout the project. Weather conditions (heat, cold, rain, and lightning) must also be considered. Each employee is empowered, expected, and has the responsibility to stop the work performed by him/herself or another co-worker if the working conditions or behaviors are considered unsafe. All employees should act proactively to identify and mitigate hazards to the safest extent of their ability.

① Job Steps	② Personal Protective Equipment	③ Potential Hazard	④ Critical Actions
sample container.	Leather Work Gloves Hand Broom and Dust Pan A receptacle for the broken glass (something to contain the broken glass (double garbage bag, a box, or bucket).	preservation acids) Injury	<ul style="list-style-type: none"> ● Determine if the sample container was preserved (did it have acid in it?) - STANTEC. ● Determine what to contain the broken glass in, and where to dispose of the broken glass before beginning to pick up the glass - STANTEC. ● Collect equipment needed to clean up and contain the broken glass - STANTEC/Contractor. ● Minimize "picking up" broken glass pieces with your gloved hands. Use a dust pan if possible/practical - STANTEC/Contractor. ● If broken glass is located inside a container (i.e. box), to the extent practical, leave glass inside box and put entire box into a garbage bag. Double bag if warranted. Place into dumpster - STANTEC/Contractor. ● If broken glass is inside a cooler, remove all other sample containers and place in a safe location, then use hand broom and dust pan to sweep up glass in cooler - STANTEC. ● After clean-up is complete, contact your Project Manager to report this Loss/Incident - STANTEC.

2. Soil sampling via hand auger (Groundwater Sampling) and borehole abandonment JSA

Field staff must review job-specific work plan and coordinate with project manager to verify that all up-front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g. site managers, inspectors, clients, subcontractors, etc.). A tailgate safety meeting must be performed and documented at the beginning of each workday. Last-Minute Risk Assessment (LMRA) procedures must be used throughout the project. Weather conditions (heat, cold, rain, and lightning) must also be considered. Each employee is empowered, expected, and has the responsibility to stop the work performed by him/herself or another co-worker if the working conditions or behaviors are considered unsafe. All employees should act proactively to identify and mitigate hazards to the safest extent of their ability.

1 Job Steps	2 Personal Protective Equipment	3 Potential Hazard	4 Critical Actions
Clear hand augering locations.	Wear reflective vest for traffic, steel toed and shank shoes, hardhat, safety glasses with side shields, and leather gloves as necessary.	Traffic hazards, overhead and underground installations, product releases, property damage, dealer inconvenience.	<ul style="list-style-type: none"> ● Reference SWP-213a Pre-Ground Disturbance Worksheet and Approval Form and SWP-213b Ground Disturbance Form ● Coordinate with Site Manger (or designee) to minimize potential conflicts. ● Review proposed locations against available construction drawings and known utilities, tanks, product lines, etc. ● Mark out the proposed borehole locations. ● Call underground utility locating service for public line location clearance and get list of utilities being contacted. If necessary, coordinate private line locator for private property. ● Develop a traffic guidance and control plan with the client and local agencies as applicable. Plan may include use of delineators, barrier tape, jersey barriers, construction fence, etc. (Refer to Section 4.0). ● It is the responsibility of the SHSO to annotate the Site Plan with the Traffic Guidance and Control configuration if a formally developed Traffic Guidance and Control Plan is not available.
Mobilize with proper equipment/supplies for hand augering/soil sampling.	Gather necessary PPE. Reflective vest for traffic, steel toed and shank shoes, hard hat, safety glasses with side shields, ear plugs/muffs, leather gloves for the non-chemical aspects of work as necessary; Wear an air purifying respirator with combination organic vapor/P-100 cartridges, and other PPE as needed. (Use a North 7700 series half-face respirator or its equivalent. Best brand nitrile gloves or their equivalent. Howard Leight Max foam earplugs with an NRR of 33 or their equivalent. Tyvek, poly-	Vehicle accident. Lifting hazards. Delay or improper performance of work due to improper equipment onsite.	<ul style="list-style-type: none"> ● Start project with Production Safety Meeting (Attachment 3 - RMS2 Fit for Duty). ● Follow safe driving procedures. ● Employ safe lifting procedures. ● Review permit conditions (if applicable).

Field staff must review job-specific work plan and coordinate with project manager to verify that all up-front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g. site managers, inspectors, clients, subcontractors, etc.). A tailgate safety meeting must be performed and documented at the beginning of each workday. Last-Minute Risk Assessment (LMRA) procedures must be used throughout the project. Weather conditions (heat, cold, rain, and lightning) must also be considered. Each employee is empowered, expected, and has the responsibility to stop the work performed by him/herself or another co-worker if the working conditions or behaviors are considered unsafe. All employees should act proactively to identify and mitigate hazards to the safest extent of their ability.

1 Job Steps	2 Personal Protective Equipment	3 Potential Hazard	4 Critical Actions
	coated chemical resistant suit or its equivalent).		
Visually clear proposed hand augering/soil sampling locations.	Wear reflective vest for traffic, steel toed and shank shoes, hardhat, safety glasses with side shields, and leather gloves as necessary.	Underground installations.	<ul style="list-style-type: none"> ● Complete Pre-Mobilization section of SWP-213a Pre-Ground Disturbance Worksheet and Approval Form and SWP-213b Ground Disturbance Form and adjust hand augering locations as necessary.
Set up necessary traffic guidance and control equipment. See Section 4.0 for detailed plan.	Wear reflective vest for traffic, steel toed and shank shoes, hardhat, safety glasses with side shields, and leather gloves as necessary.	Struck by vehicle during placement. Vehicle accident as a result of improper traffic guidance and control equipment placement.	<ul style="list-style-type: none"> ● Use buddy system for placing traffic guidance and control equipment. ● Implement traffic guidance and control plan such as setting out delineators, construction fence and caution tape defining safety area. ● Adhere to approved Traffic Guidance and Control Plans when working in roadways. ● It is the responsibility of the SHSO to annotate the Site Plan with the Traffic Guidance and Control configuration if a formally developed Traffic Guidance and Control Plan is not available.
Set up exclusion zone(s) and workstations (hand augering and logging/sample collection).	Wear reflective vest for traffic, steel toed and shank shoes, hardhat, safety glasses with side shields, and leather gloves as necessary.	Struck by vehicle during set up. Slip, trip and fall hazards.	<ul style="list-style-type: none"> ● Implement exclusion zone set-up. ● It is the responsibility of the SHSO to annotate the Site Plan with the Exclusion Zone set up. ● Set up workstations with clear walking paths to and from hand augering location. ● Use delineators, construction fence, and/or safety tape as required. ● If utilizing Visqueen, (sheet plastic), for sampling area, completely secure Visqueen to the pavement, dirt, etc. with duct tape, delineators, etc. Do not use objects that are hard to notice or could become a trip hazard themselves.
Commence hand augering .	Don required PPE as appropriate for this step: steel toed and shank shoes, hard hat, safety glasses with side shields, hearing protection, reflective safety vest, and leather gloves for the non-chemical aspects of work as necessary. Wear	Back strain, exposure to chemical hazards, hitting an underground utility, repetitive motion.	<ul style="list-style-type: none"> ● Initiate air quality monitoring as outlined in Section 2.0 If required. ● Have appropriate respirator with combination organic vapor/P-100 cartridges within 3-5 feet of work area, readily available. ● Stand upwind to avoid exposure whenever possible. ● Use the organic vapor monitor aggressively to track the airborne concentration of contaminants close to potential sources such as

Field staff must review job-specific work plan and coordinate with project manager to verify that all up-front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g. site managers, inspectors, clients, subcontractors, etc.). A tailgate safety meeting must be performed and documented at the beginning of each workday. Last-Minute Risk Assessment (LMRA) procedures must be used throughout the project. Weather conditions (heat, cold, rain, and lightning) must also be considered. Each employee is empowered, expected, and has the responsibility to stop the work performed by him/herself or another co-worker if the working conditions or behaviors are considered unsafe. All employees should act proactively to identify and mitigate hazards to the safest extent of their ability.

① Job Steps	② Personal Protective Equipment	③ Potential Hazard	④ Critical Actions
	<p>chemical resistant gloves during handling of soil. Wear a half-face air-purifying respirator/mask with HEPA/P-100 filtration capability if necessary or as directed. (Use a North 7700 series half-face respirator or its equivalent. Best brand nitrile gloves or their equivalent. Howard Leight Max foam earplugs with an NRR of 33 or their equivalent. Tyvek poly-coated suit or its equivalent).</p>		<p>the core as it is being raised from the hole, the core is opened, etc.</p> <ul style="list-style-type: none"> ● Evaluate any soil samples inside a Ziploc bag at arm's length. DO NOT EVALUATE THE SAMPLE WITH THE BAG OPEN. THIS WILL AVOID UNNECESSARY EXPOSURE. ● Use proper lifting techniques and tools. ● Complete the Pre-Drilling section of the Borehole Clearance Review form. ● Decontaminate sampling equipment after collecting a sample and decontaminate hand augering equipment after each borehole. ● Avoid twisting back during the operation; Decontaminate equipment after use. Decontamination will be accomplished by an Alconox wash with tap water rinse followed by a de-ionized or distilled water rinse. Collect rinse water in 5 gallon buckets and transfer to 55-gallon drums and stage drums in a location agreed upon by the SHSO and the Property/Station Owner/Manager.
<p>Collect samples in accordance with sampling plan.</p>	<p>Steel toed and shank shoes, hardhat, safety glasses with side shields, hearing protection, reflective safety vest, and leather gloves for the non-chemical aspects of work as necessary. Wear appropriate air purifying respirator with combination organic vapor/P-100 cartridges if needed.</p>	<p>Cross-contamination, improper labeling or storage, exposure to site contaminants.</p>	<ul style="list-style-type: none"> ● Evaluate any soil samples inside a Ziploc bag at arm's length. DO NOT EVALUATE THE SAMPLE WITH THE BAG OPEN. THIS WILL AVOID UNNECESSARY EXPOSURE. ● Decontaminate sampling equipment between each sampling run. Label samples in accordance with sampling plan. ● Keep samples stored in proper containers, at correct temperature, and away from work area. ● Conduct air monitoring as outlined in Section 2.0. ● Have appropriate respirator with combination organic vapor/P-100 cartridges within 3-5 feet of work area, readily available.
<p>Proper clean up and disposal of broken sample container.</p>	<p>Safety glasses Long sleeved shirts Leather Work Gloves Hand Broom and Dust Pan A receptacle for the broken glass (something to contain the broken glass (double garbage bag, a box, or bucket).</p>	<p>Exposure to broken glass and acid (from water preservation acids) Injury</p>	<ul style="list-style-type: none"> ● Isolate area where broken glass is located - STANTEC/Contractor. ● Determine if the sample container was preserved (did it have acid in it?) - STANTEC. ● Determine what to contain the broken glass in, and where to dispose of the broken glass before beginning to pick up the glass - STANTEC.

Field staff must review job-specific work plan and coordinate with project manager to verify that all up-front logistics are completed prior to starting work including, but not limited to, permitting, access agreements, and notification to required contacts (e.g. site managers, inspectors, clients, subcontractors, etc.). A tailgate safety meeting must be performed and documented at the beginning of each workday. Last-Minute Risk Assessment (LMRA) procedures must be used throughout the project. Weather conditions (heat, cold, rain, and lightning) must also be considered. Each employee is empowered, expected, and has the responsibility to stop the work performed by him/herself or another co-worker if the working conditions or behaviors are considered unsafe. All employees should act proactively to identify and mitigate hazards to the safest extent of their ability.

1 Job Steps	2 Personal Protective Equipment	3 Potential Hazard	4 Critical Actions
			<ul style="list-style-type: none"> ● Collect equipment needed to clean up and contain the broken glass - STANTEC/Contractor. ● Minimize "picking up" broken glass pieces with your gloved hands. Use a dust pan if possible/practical - STANTEC/Contractor. ● If broken glass is located inside a container (i.e. box), to the extent practical, leave glass inside box and put entire box into a garbage bag. Double bag if warranted. Place into dumpster - STANTEC/Contractor. ● If broken glass is inside a cooler, remove all other sample containers and place in a safe location, then use hand broom and dust pan to sweep up glass in cooler - STANTEC. ● After cleanup is complete, contact your Project Manager to report this Loss/Incident - STANTEC.
Supervisor/SHSO must confirm all boreholes are closed, filled in and/or capped.		Possible injuries and damage to property due to stepping into or driving over the well.	<ul style="list-style-type: none"> ● Visually inspect each and every borehole.
Perform personal decontamination procedures.	As worn in exclusion zone.	Slips/trips/falls. Splashes, chemical contamination. Contact with contaminated materials.	<ul style="list-style-type: none"> ● Perform personal (dry) decontamination procedures – STANTEC/Contractor. <ul style="list-style-type: none"> ■ Drop off tools and perform equipment decontamination procedures on the equipment - STANTEC/Contractor. ■ Perform a "dry" decontamination on boots using a stiff bristle fiberglass long handled brush - STANTEC/Contractor. ■ Remove inner/outer gloves and dispose of properly - STANTEC/Contractor. ● Wash hands, face, arms and neck (any exposed skin) using sink or bottled water. If water isn't available, use baby wipes or a similar product - STANTEC/Contractor.
Clean site/demobilize.	Steel toed and shank shoes, hardhat, safety glasses with side shields, hearing protection, reflective safety vest, and leather gloves for the non-chemical aspects	Traffic. Safety hazard left on site. Lifting hazards.	<ul style="list-style-type: none"> ● Use buddy system as necessary to remove traffic guidance and control equipment. ● Leave site clean of refuse and debris. ● Clearly mark/barricade any borings that need later topping off or

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① Job Steps	② Personal Protective Equipment	③ Potential Hazard	④ Critical Actions
	of work as necessary.		curing. ● Notify site personnel of departure, final well locations and any cuttings/purge water left onsite. ● Use proper lifting techniques
Package and deliver samples to lab.		Bottle breakage, back strain.	● Handle and pack bottle carefully (bubble wrap bags are helpful). Use proper lifting techniques.

Attachment 3

RMS-2 Fit for Duty



Project: _____ Project No: _____

Client: _____

Location: _____

Start Date: _____

Work Description Provide A General Description Of The Work To Be Conducted.

Documentation and Procedure Review

1. Risk Management Strategy (RMS1) form and/or Site Specific Health and Safety Plan signed and reviewed? Yes No*
2. Emergency Response Plan reviewed? Yes No* N/A
3. Tested two-way communications (cell phone, satellite phone) and security measures? Yes No*
4. Attended Client Site Health and Safety meeting? Yes No* N/A
5. Conducted Stantec site safety meeting with all workforces? Yes No* N/A
6. Are there any new or unexpected hazards not identified in the RMS1/HASP?
If yes, include in the Job Safety Analysis (JSA). Yes No
7. Working alone or remote work?
If yes, complete call in/out process – Safe Work form must be completed. Yes No

Notifications and Permits

8. Are work permits required for this site?
If yes, have they been completed and submitted as required? Yes No
 Yes No*
9. Are utility locates required for this site?
If yes, have they been completed and reviewed? Yes No
 Yes No*
10. Does the Client require any notification prior to starting the work?
If yes, has the notification been provided? Yes No
 Yes No*

***Contact your Project Manager immediately.**

Personal Protective Equipment List specific PPE as needed. Verify type and inspect condition.

- | | | |
|------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------|
| <input type="checkbox"/> Head Protection Type: _____ | <input type="checkbox"/> Hearing Protection: _____ | <input type="checkbox"/> Gloves Type: _____ |
| <input type="checkbox"/> Foot Protection Type: _____ | <input type="checkbox"/> Respiratory Protection: _____ | <input type="checkbox"/> Water Safety Gear: _____ |
| <input type="checkbox"/> Eye Protection Type: _____ | <input type="checkbox"/> Fire Retardant Coveralls: _____ | <input type="checkbox"/> _____ |
| <input type="checkbox"/> High Visibility Vest: _____ | <input type="checkbox"/> Fall Protection: _____ | <input type="checkbox"/> _____ |

Tools and Equipment List specific equipment to be used. Verify type and inspect condition.

- | | | |
|--------------------------------|--------------------------------|--------------------------------|
| <input type="checkbox"/> _____ | <input type="checkbox"/> _____ | <input type="checkbox"/> _____ |
| <input type="checkbox"/> _____ | <input type="checkbox"/> _____ | <input type="checkbox"/> _____ |

**HEALTH, SAFETY, AND ENVIRONMENT
RMS2- FIELD LEVEL Risk ASSESSMENT (FIT FOR DUTY), 1 day**



Daily Tailgate Discussions/Subcontractor Input

Start	Time:	Weather:
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Mid-Day	Time:	Weather:
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Post-Day	Time:	Weather:
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Know the hazards:

By signing here, you are stating the following:

1. I have been involved in the Job Safety Analysis and understand the hazards and risk control actions associated with each task I am about to perform.
2. I understand the permit to work requirements applicable to the work I am about to perform (if it includes permitted activities).
3. I am aware that no jobs or work (that is not risk-assessed) is to be performed.
4. I am aware of my obligation to **"Stop Work"** (See *Stop Work Section*).

Arrived and departed fit for duty:

5. I am physically and mentally fit for duty.
6. I am not under the influence of any type of medication, drugs or alcohol that could affect my ability to work safely.
7. I am aware of my responsibility to bring any illness, injury (regardless of where or when it occurred) or fatigue issue I may have to the attention of the Crew Lead.
8. I signed out uninjured unless I have otherwise informed the Crew Lead.

**Insert fitness level under corresponding time column: Fit for Duty = F Alternate Plan = AP
Team Lead to contact Project Manager for any personnel identified as AP**

Individual Name/Company Name/Signature	Time:	Time:	Time:

I will STOP the job any time anyone is concerned or uncertain about safety.
I will STOP the job if anyone identifies a hazard or additional mitigation not recorded.
I will be alert to any changes in personnel or their fitness level (AP), conditions at the work site or hazards.
 If it is necessary to **STOP THE JOB**, I will reassess the task, hazards and mitigations; and then proceed only when safe to do so.



- Remember to**
1. Stop and think
 2. Look around
 3. Assess risk
 4. Control risks
 5. Begin/resume work

Are you ready to work safely?

Conclusion of day: I certify that the planned work activities are completed for the day and all injuries and first aids have been reported via RMS3.

Signature of Crew Lead: _____ **Date:** _____

Job Safety Analysis (JSA) Must be completed for all field activities.

Basic Job Steps	Potential Hazards	Controls to Reduce or Eliminate Hazard	Person Responsible

Review the hazard categories below and check the mitigation measures applicable to the identified scope of work.

<p>Environmental Hazards</p> <ul style="list-style-type: none"> 1. Work area clean <input type="checkbox"/> 2. Material storage identified <input type="checkbox"/> 3. Dust/Mist/Fume <input type="checkbox"/> 4. Noise in area <input type="checkbox"/> 5. Extreme temperatures <input type="checkbox"/> 6. Spill potential <input type="checkbox"/> 7. Waste containers needed <input type="checkbox"/> 8. Waste properly disposed <input type="checkbox"/> 9. Waste plan identified <input type="checkbox"/> 10. Excavation permit required <input type="checkbox"/> 11. Other workers in area <input type="checkbox"/> 12. Weather conditions <input type="checkbox"/> 13. MSDS reviewed <input type="checkbox"/> 	<p>Access/Egress Hazards</p> <ul style="list-style-type: none"> 23. Aerial life/Man basket (inspected & tagged) <input type="checkbox"/> 24. Scaffold (inspected & tagged) <input type="checkbox"/> 25. Ladders (tied off) <input type="checkbox"/> 26. Slips & trips <input type="checkbox"/> 27. Hoisting (tools, equipment) <input type="checkbox"/> 28. Evacuation (alarms, routes, ph. #) <input type="checkbox"/> 29. Confined space entry permit required <input type="checkbox"/> 	<p>Rigging & Hoisting Hazards</p> <ul style="list-style-type: none"> 38. Lift study required <input type="checkbox"/> 39. Proper tools used <input type="checkbox"/> 40. Tools inspected <input type="checkbox"/> 41. Equipment inspected <input type="checkbox"/> 42. Slings inspected <input type="checkbox"/> 43. Others working overhead/below <input type="checkbox"/> 44. Critical lift permit <input type="checkbox"/>
<p>Ergonomic Hazards</p> <ul style="list-style-type: none"> 14. Awkward body position <input type="checkbox"/> 15. Over extension <input type="checkbox"/> 16. Prolonged twisting/bending motion <input type="checkbox"/> 17. Working in a tight area <input type="checkbox"/> 18. Lift too heavy/awkward to lift <input type="checkbox"/> 19. Parts of body in line of fire <input type="checkbox"/> 20. Repetitive motion <input type="checkbox"/> 21. Hands not in line of sight <input type="checkbox"/> 22. Working above your head <input type="checkbox"/> 	<div style="text-align: center;">  <p>Remember to</p> <ol style="list-style-type: none"> 1. Stop and Think 2. Look around 3. Assess risk 4. Control risks 5. Begin/resume work <p>Are you ready to work safely?</p> </div>	<p>Electrical Hazards</p> <ul style="list-style-type: none"> 45. GFI test <input type="checkbox"/> 46. Lighting levels too low <input type="checkbox"/> 47. Working on/near energized equipment <input type="checkbox"/> 48. Electrical cords condition <input type="checkbox"/> 49. Electrical tools condition <input type="checkbox"/> 50. Fire extinguisher <input type="checkbox"/> 51. Hot work or electrical permit required <input type="checkbox"/>
	<p>Overhead Hazards</p> <ul style="list-style-type: none"> 30. Barricades & signs in place <input type="checkbox"/> 31. Hole coverings identified <input type="checkbox"/> 32. Harness/lanyard inspected <input type="checkbox"/> 33. 100% Tie-off with harness <input type="checkbox"/> 34. Tie off points identified <input type="checkbox"/> 35. Falling items <input type="checkbox"/> 36. Foreign bodies in eyes <input type="checkbox"/> 37. Hoisting or moving loads overhead <input type="checkbox"/> 	<p>Personal Limitations/Hazards</p> <ul style="list-style-type: none"> 52. Procedure not available for task <input type="checkbox"/> 53. Confusing instructions <input type="checkbox"/> 54. No training for task or tools to be used <input type="checkbox"/> 55. First time performing the task <input type="checkbox"/> 56. Micro break (stretching/flexing) <input type="checkbox"/> 57. Report all injuries to your supervisor <input type="checkbox"/>

**It is important that all relevant hazards have plans in place to reduce risk.
 Be sure that all associated permits are closed off at the end of the job.**

Remember: Stop and Think

Reviewed by Name and Signature: _____

Fit for Duty

Safety is influenced by many factors, but the most important is the health and well-being of Stantec's employees and partners. Physical and mental health are just as important as good tools, good practices, and good job planning.

This card is designed to help you do a quick self-assessment of your physical and mental health. Any concerns resulting from your assessment regarding your ability to carry out your job responsibilities safely and in good health need to be discussed with your supervisor before starting work.

- Am I feeling good today and ready to work at my typical level of physical activity and responsibility?
- Do I have any sprains/strains, areas of weakness or soreness?
- Am I managing multiple sources of stress?
- Am I well hydrated?
- Any physically-demanding activities recently (chores, sports, hobbies)?
- Am I well-rested with a good energy level? When did I eat last?
- Am I taking any medications that can make me drowsy or adversely affect my safe performance?
- Any cuts/scrapes are clean and bandaged?
- Did I remember to bring with me my health maintenance medications (blood pressure, diabetes, cholesterol, heart, etc.)?

If your answers to any of the questions above indicate that you may not be ready to work, contact your supervisor immediately to discuss a plan of action.

LAST-MINUTE RISK ASSESSMENT (LMRA)

1. STOP and Think

2. Look around

Is the work area safe?
Will my work endanger others?
Will other people pose risk?

3. Assess risk

Do I clearly understand the task?
Will lifting or manual handling be required?
Potential for slips, trips, or falls?
Are there driving or vehicle concerns?
Have I considered all underground services?
Moving or pressurized equipment?
What could go wrong?

4. Control risk

What can I do to control hazards?
Do I have the right tools?
Is the SWP (Safe Work Practice) appropriate?
Do I have the appropriate PPE?
Are emergency plans in place?

5. Begin/Resume work

If you're unsure, talk to your supervisor.



Are you ready to work safely?

**HEALTH, SAFETY, AND ENVIRONMENT
RMS2 – FIELD LEVEL Risk ASSESSMENT (FIT FOR DUTY), 5 day**



Project: TO17 Project No: 185831017
 Client: CALTRANS
 Location: SR 5 NB/SB NEAR 710 FREEWAY
 Start Date: DEC. 9, 2014

Documentation and Procedure Review

- 11. Risk Management Strategy (RMS1) form and/or Site Specific Health and Safety Plan signed and reviewed? Yes No*
- 12. Emergency Response Plan reviewed? Yes No* N/A
- 13. Tested two-way communications (cell phone, satellite phone) and security measures? Yes No*
- 14. Attended Client Site Health and Safety meeting? Yes No* N/A
- 15. Conducted Stantec site safety meeting with all workforces? Yes No* N/A
- 16. Are there any new or unexpected hazards not identified in the RMS1/HASP?
If yes, include in the Job Safety Analysis (JSA). Yes No
- 17. Working alone or remote work?
If yes, complete call in/out process – Safe Work form must be completed. Yes No

Notifications and Permits

- 18. Are work permits required for this site?
If yes, have they been completed and submitted as required? Yes No
 Yes No*
- 19. Are utility locates required for this site?
If yes, have they been completed and reviewed? Yes No
 Yes No*
- 20. Does the Client require any notification prior to starting the work?
If yes, has the notification been provided? Yes No
 Yes No*

***Contact your Project Manager immediately.**

Work Description Provide a general description of the work to be conducted.

*ADL + ACM INVESTIGATION
 COLLECTION OF SOIL SAMPLES AND ACM SAMPLES, VARIOUS LOCATIONS ALONG
 ON RAMP S AND OFF RAMP S + BRIDGES*

Personal Protective Equipment List specific PPE as needed. Verify type and inspect condition.

- Head Protection Type: _____ Hearing Protection: AS NEEDED Gloves Type: _____
- Foot Protection Type: _____ Respiratory Protection: FOR ACM Water Safety Gear: _____
- Eye Protection Type: _____ Fire Retardant Coveralls: _____ _____
- High Visibility Vest: _____ Fall Protection: _____ _____

Tools and Equipment List specific equipment to be used. Verify type and inspect condition.

- GPS, Augers, cones and sign as needed
- Ocean Bucket _____ _____

HEALTH, SAFETY, AND ENVIRONMENT

RMS2 – FIELD LEVEL Risk ASSESSMENT (FIT FOR DUTY), 5 day

05.1 DAILY TAILGATE DISCUSSIONS/SUBCONTRACTOR INPUT



Date:	12/9/14	Time:	8:00	Weather:	SUNNY
Start	HOSPITAL ROUTE, SOW, TRAFFIC SAFETY, EMERGENCY RESPONSE, SLIP TRIPS + FALLS, SWA.				
Mid-Day					
Post-Day					
Date:	12/10/14	Time:	0700	Weather:	Sunny
Start	Hospital, STF, Traffic, SWA				
Mid-Day					
Post-Day					
Date:	12/11/14	Time:	0700	Weather:	overcast, cool
Start	SWA, STF, Traffic, scope				
Mid-Day					
Post-Day					
Date:	12/14/14	Time:	1000	Weather:	P. Cloudy
Start	SWA, STF, Traffic, scope				
Mid-Day					
Post-Day					
Date:		Time:		Weather:	
Start					
Mid-Day					
Post-Day					

HEALTH, SAFETY, AND ENVIRONMENT
RMS2 – FIELD LEVEL Risk ASSESSMENT (FIT FOR DUTY), 5 day



I know the hazards:

By signing here, you are stating the following:

- 9. I have been involved in the Job Safety Analysis (JSA) and understand the hazards and risk control actions associated with each task I am about to perform.
- 10. I understand the permit to work requirements applicable to the work I am about to perform (if it includes permitted activities).
- 11. I am aware that work that has not been risk-assessed must not be performed.
- 12. I am aware of my ability and obligation to **Stop Work** (See below).

I arrived and departed fit for duty (see Fit for Duty card for further information):

- 13. I am physically and mentally fit for duty.
- 14. I am not under the influence of any type of medication, drugs or alcohol that could affect my ability to work safely.
- 15. I am aware of my responsibility to bring any illness, injury (regardless of where or when it occurred), symptoms of soreness or discomfort, or fatigue issue I may have to the attention of the Crew Lead or Supervisor.
- 16. I sign out uninjured unless I have otherwise informed the Crew Lead or Supervisor.

Insert fitness level under corresponding time column: Fit for Duty = F Alternate Plan = AP															
Team Lead to contact: Project Manager for any personnel identified as AP															
Individual Name/Company Name/Signature	Date: 12/9/14			Date: 12/10/14			Date: 12/11/14			Date: 12/14/14			Date:		
	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:
MONICA L. ARAGON / Stantec / [Signature]	8:00														
Mark Zilman / Stantec / [Signature]				12:00	16:30		12:00		14:30						
ANM CHOUDHURY / Caltrans / [Signature]															
Keith Rosekian / Stantec / [Signature]				KP ^F	12:00 ^F	15:30 ^F	07:00 ^F		15:30 ^F	10:00 ^F					
ANM CHOUDHURY / Caltrans / [Signature]															
Jason Stagno / Stantec / [Signature]							07:00 ^F								
Melissa Baernstein / Stantec / [Signature]							07:00 ^F								

I will **STOP WORK** any time anyone is concerned or uncertain about safety. I will **STOP WORK** if anyone identifies a hazard or additional mitigation not recorded. I will be alert to any changes in personnel or their fitness level (AP), conditions at the work site or hazards. If it is necessary to **STOP WORK**, I will reassess the task, hazards and mitigations; and then proceed only when safe to do so.

Conclusion of day: I certify that the planned work activities are completed for the day and all injuries and first aids have been reported via RMS3.

Signature of Crew Lead: _____ Date: 12/9/14
 Signature of Crew Lead: _____ Date: 12/10/14
 Signature of Crew Lead: _____ Date: 12/11/14
 Signature of Crew Lead: _____ Date: 12/14/14
 Signature of Crew Lead: _____ Date: _____



- Remember to**
1. Stop and think
 2. Look around
 3. Assess risk
 4. Control risks
 5. Begin/resume work

Basic Job Steps	Potential Hazards	Controls to Reduce or Eliminate Hazard	Person Responsible
See HASP JSAs			

Review the hazard categories below and check the mitigation measures applicable to the identified scope of work.

<p>Environmental Hazards</p> <ul style="list-style-type: none"> 23. Work area clean 24. Material storage identified 25. Dust/Mist/Fume 26. Noise in area 27. Extreme temperatures 28. Spill potential 29. Waste containers needed 30. Waste properly disposed 31. Waste plan identified 32. Excavation permit required 33. Other workers in area 34. Weather conditions 35. MSDS reviewed 	<p>Access/Egress Hazards</p> <ul style="list-style-type: none"> 38. Aerial life/Man basket (inspected & tagged) 39. Scaffold (inspected & tagged) 40. Ladders (tied off) 41. Slips & trips 42. Hoisting (tools, equipment) 43. Evacuation (alarms, routes, ph. #) 44. Confined space entry permit required 	<p>Rigging & Hoisting Hazards</p> <ul style="list-style-type: none"> 58. Lift study required 59. Proper tools used 60. Tools inspected 61. Equipment inspected 62. Slings inspected 63. Others working overhead/below 64. Critical lift permit
<p>Ergonomic Hazards</p> <ul style="list-style-type: none"> 36. Awkward body position 37. Over extension 38. Prolonged twisting/bending motion 39. Working in a tight area 40. Lift too heavy/awkward to lift 41. Parts of body in line of fire 42. Repetitive motion 43. Hands not in line of sight 44. Working above your head 		<p>Electrical Hazards</p> <ul style="list-style-type: none"> 65. GFI test 66. Lighting levels too low 67. Working on/near energized equipment 68. Electrical cords condition 69. Electrical tools condition 70. Fire extinguisher 71. Hot work or electrical permit required
	<p>Overhead Hazards</p> <ul style="list-style-type: none"> 45. Barricades & signs in place 46. Hole coverings identified 47. Harness/lanyard inspected 48. 100% Tie-off with harness 49. Tie off points identified 50. Falling items 51. Foreign bodies in eyes 52. Hoisting or moving loads overhead 	<p>Personal Limitations/Hazards</p> <ul style="list-style-type: none"> 72. Procedure not available for task 73. Confusing instructions 74. No training for task or tools to be used 75. First time performing the task 76. Micro break (stretching/flexing) 77. Report all injuries to your supervisor

**It is important that all relevant hazards have plans in place to reduce risk.
Be sure that all associated permits are closed off at the end of the job.**

Remember: Stop and Think

Reviewed by Name and Signature: _____

Required Pre-Entry Discussion Topics / Requirements for All Workers and Visitors



Safety rules apply to anyone entering a Stantec workplace or worksite, including employees, supervisors, management and visitors

COMPANY SAFETY RULES (REFERENCE: STANTEC'S HSE MANUAL SECTION 1.3)

- Take reasonable care to protect the health and safety of yourself and others, and the environments in which we all work.
- Consumption of alcohol is only approved during company-sponsored events. Consumption or possession of illegal drugs on company premises, or on any company jobsite, is prohibited.
- Horseplay, fighting or otherwise interfering with other employees is prohibited.
- Theft, vandalism or any other abuses or misuse of company property is prohibited.
- All unsafe acts and conditions, including "near miss" incidents, spills or releases of hazardous materials, property damage, and injuries are to be promptly reported to your supervisor in accordance with Section 12 of the HSE manual, and Section 1.8 of this health and safety plan (HASP).
- Clothing and personal protective equipment (PPE) shall be appropriate to tasks being performed, as determined by hazard assessment (refer to job safety analyses and/or standard operating procedures in Attachment 2 and the work risk assessment tool in Attachment 1 of this HASP).
- All work shall be conducted in accordance with applicable regulatory safety requirements, client safety requirements, and in accordance with Stantec's HSE manual.
- Only use tools, vehicles and equipment that are in good repair, with all guards and safety devices in place, and for which you have sufficient training and experience. Select tools, vehicles and equipment appropriate for the task intended, and use them in compliance with the manufacturer's written instructions.
- Every employee will keep the work area neat, clean and orderly. A floor or other surface used by any employee will be kept free of obstructions, hazards, and accumulations of refuse, snow or ice.
- As a Stantec employee, you are responsible and authorized to STOP work immediately if you become aware of an unsafe act or condition that could place anyone in danger, or if you are not confident in the work plan. Refer to the Stop Work Authority for guidance.

DISCUSSION IDEAS FOR THE DAILY PRODUCTION H&S MEETING

- Emergency response plan, emergency vehicle (full of fuel) and muster point
- Route to medical aid (hospital or other facility)
- Work hours, is night work planned?
- Hand signals around heavy equipment
- Traffic control
- Pertinent Legislation and Regulations
- Above and below ground utilities (energized or de-energized)
- Material Safety Data Sheets (MSDS)
- To who, what, why, and when to report an incident
- Fire extinguisher and First Aid kit locations
- Excavations, trenching sloping and shoring
- Personal protective equipment (PPE) and training

Required Pre-Entry Discussion Topics / Requirements for All Workers and Visitors



- Safety equipment and training
- Emergency telephone and telephone numbers (may not be 911)
- Eye wash stations and washroom locations
- Energy lock-out/tag-out procedures. Location of "kill Switches" etc.
- Weather restrictions
- Site security. Site hazards. Is special waste present?
- Traffic and people movements
- Working around machinery (both static and mobile)
- Sources of ignition, static electricity etc.
- Stings, bites, large animals and other naturally related injuries
- Working above grade
- Working at isolated sites
- Decontamination procedures (both personnel and equipment)
- Falls, trips, sprains and lifting injuries (how to prevent)
- Right to refuse unsafe work
- Adjacent property issues (residence, business, school, day care center)
- Hand & glove safety, pinch points, hand positioning

Attachment 4

Driver's Fatigue Checklist /Safe Driving Vehicle Pre-Use Checklist

Too tired to drive?

A road safety initiative of RACV, Rural Ambulance Victoria and Metropolitan Ambulance Service

Driver Fatigue Checklist

Before you drive, answer these questions to make sure you are not too tired to drive.

Have you been getting full nights of restful sleep over the past week?

When you don't get enough sleep you acquire sleep debt. The only way to repay the debt is by sleeping.

Are you setting off on a trip after a good night's sleep, rather than after a full day at work?

Being awake for 17 hours has the same effect on driving as having a BAC (Blood Alcohol Concentration) of .05, doubling your risk of crashing. After 24 hours the BAC equivalent is 0.1, equating to a 7 times greater risk of crashing than someone who is well rested.

Are you planning to start your trip after 6am, rather than starting out earlier when you would normally be asleep?

Your body naturally wants to sleep between about 1am and 6am greatly increasing your risk of crashing, at those times.

Have you allowed time in your trip to stop and rest if you feel tired?

Regular breaks every 2 hours will help maintain vigilance, however, the only way to combat fatigue is to sleep.

Do you stop and have a Powernap if you feel tired while driving?

Stopping for a 15 to 30 minute sleep or Powernap when you are tired is effective in alleviating the short-term effects of fatigue, but ensure you allow time to recover from your sleep before commencing to drive.

Are you sure that you do not suffer from a sleeping disorder, such as sleep apnoea?

2% of people suffer from the most common sleep disorder, sleep apnoea. Men over 50, particularly those overweight, are most at risk.

Yes	No
<input type="checkbox"/>	<input type="checkbox"/>

If you have answered "no" to any of these questions you may be at risk of fatigue.



Too tired to drive?

What is fatigue?

Driver fatigue contributes to more than 25 per cent of all road crashes in Victoria.

Two main causes:

- lack of quality sleep
- driving at times when you would normally be asleep.

Protect yourself from having a fatigue-related crash by:

- making sure you regularly get enough sleep
- being aware of the fatigue high crash risk times when driving between 1am -6am
- not starting a long trip after a long day's work
- planning your trip so you can take regular breaks
- seeking medical advice if you often feel sleepy
- being aware of the effects of any medication taken.

Once you're on the road:

- regular rest breaks to help keep you alert, but if you feel tired, the only way to keep safe is to stop and sleep
- eat proper and well-balanced meals, preferably at your normal meal times.

If you feel tired when driving, take a Powernap (sleep for 15 to 30 minutes), but allow time to recover from your sleep before commencing to drive.

Don't be fooled by myths about fatigue! The following common beliefs about fatigue are untrue:

- myth** – Coffee is the best way to combat fatigue.
Coffee only provides short-term benefits; once its effects wear off, you suffer from sleep rebound, which is a major cause of crashes.
- myth** – Playing music will help keep me alert.
This is only a short-term benefit.
- myth** – Plenty of fresh air through the window will help keep me alert.
This is only a short-term benefit.
- myth** – Young people need less sleep.
In fact, drivers under 25 years of age are over-represented in fatigue crashes.
- myth** – I know when I am tired, or when I am having "sleep attacks".
The danger is that you only find out how tired you are when it's too late.

The only cure for fatigue is sleep

HEALTH, SAFETY AND ENVIRONMENT

SAFE DRIVING – VEHICLE PRE-USE CHECKLIST

SWP 124A

Employee Name:

Region/Business Unit:

Date:

Time:

Vehicle Color:

Vehicle Make/Model:

Vehicle License Plate Number:

Job:

Job #:

of Km or Mi Driven

Job:

Job #:

of Km or Mi Driven

Odometer Start:

Odometer Stop:

Total Km or Mi Driven:

Stantec Vehicle

Rental

Personal Vehicle

Perimeter Walk Around:

Item is OK

Item is NOT OK

Check for signs of vandalism, negligence, damage or unusual conditions		
Check all tires for excessive and unusual wear and proper inflation – include the spare tire if accessible		
Check under vehicle for signs of leaking fluids		
Check wiper blades (Do they work? Do they need replacement?)		
Check all light systems – brake, head, back-up, running, turn signals, emergency flashers		
Check to make sure doors, truck/toolbox lids, tailgates all open and close properly		
(Make sure you have keys to any toolboxes that you may need to access)		

Check Gauges on Dashboard:

Fuel Level		
Oil light		
Engine Coolant Temperature Gauge		
Service Indicator Lights		
Battery Charge Indicator		

HEALTH, SAFETY AND ENVIRONMENT

SAFE DRIVING – VEHICLE PRE-USE CHECKLIST

SWP 124A

Inside Vehicle:

Make sure seatbelts are present for all who will be riding in the vehicle		
Secure all cargo in the vehicle so that items will not become projectiles in the event of sudden stops or collisions		
Adjust the seat position, rearview and side mirrors		
Adjust temperature controls, vents, radio, etc.		

If Pulling a Trailer:

Is trailer properly hitched to the vehicle (including safety chains)		
All lights are working properly		
Proper trailer for the load (check weight specifications) and load is balanced. If you anticipate the load is near the trailer weight limit, weigh the trailer at a weigh station		
Are tires in good condition and properly inflated?		

Notify the vehicle manager or rental company if you feel that any deficiencies are unsafe and **DO NOT** drive the vehicle

Signature:

HEALTH, SAFETY AND ENVIRONMENT

SAFE DRIVING – VEHICLE PRE-USE CHECKLIST

SWP 124A

1 REVISION HISTORY

Date	Change	Acknowledgments
2010/02/23	Changed HSE to SWP; reformatted header and footer; added revision history	GD
20121015	Updated and reviewed by PS	KDR

Attachment 5
RMS-3 incident/Near Miss Investigation and Collision Kit



INCIDENT REPORT – RMS 3

Incidents involving injury, potential injury, or report of pain, soreness, or discomfort must be reported immediately (within one hour) to a supervisor. Supervisors will then immediately contact their HSE representative to develop a plan for assessment and care. This form must be completed and submitted within 24 hours of any incident. Do not delay submission waiting for signatures. Email to hse@stantec.com or fax unsigned report to (780) 969-2030 and file locally in compliance with the corporate [records retention policy and practices](#) once all signatures have been obtained.

This document contains privileged and confidential information prepared at the request of Stantec's Legal Counsel. The contents of this report are restricted to HR personnel, Risk Management Representatives, Project Manager and PC Leader, and Stantec's Insurer, Adjuster and Legal Counsel. Information collected will be used solely for the purpose of meeting the requirements of Stantec's HSE and insurance programs, complying with applicable legislation, and will be used in accordance with any governing privacy legislation. The information collected will be maintained electronically and may be included in required reports.

SECTION 1: GENERAL INFORMATION			
Office location:		BC number:	
Location of incident:			
Incident date and time:		Date and time reported:	
Project name:		Project number:	
Client Name:			
Person in charge:		Person in Charge Phone:	

SECTION 2: STANTEC EMPLOYEE INFORMATION (if more than one identify extras in incident details below)			
Name:		Phone:	
Job position:		Group name:	
Time employee began work:		Job Experience (in years)	
Type of employment:	Full Time <input type="checkbox"/> ; Visitor <input type="checkbox"/> ; Contract <input type="checkbox"/> ; Volunteer <input type="checkbox"/> ; Seasonal <input type="checkbox"/>		
Supervisor:		Supervisor Phone:	

SECTION 3: INCIDENT DETAILS			
Type of Incident:	<i>*incident types marked with an asterisk, please complete pages 1 and 4 only</i>		
	See StanNet for a list of Incident Type Definitions		
<input type="checkbox"/> *Report Only	<input type="checkbox"/> *Hazard Identification	<input type="checkbox"/> *Near Miss	
<input type="checkbox"/> First Aid	<input type="checkbox"/> Motor Vehicle Incident	<input type="checkbox"/> 3 rd Party Incident (i.e., Public)	
<input type="checkbox"/> Medical Aid – No Lost Time	<input type="checkbox"/> Property Damage - Vehicle	<input type="checkbox"/> Spill or Release	
<input type="checkbox"/> Restricted Work	<input type="checkbox"/> Property Damage - Other	<input type="checkbox"/> Utility Strike	
<input type="checkbox"/> Lost Time	<input type="checkbox"/> Theft	<input type="checkbox"/> Fire/Explosion/Flood	
<input type="checkbox"/> Fatality	<input type="checkbox"/> Contractor Recordable Incident	<input type="checkbox"/> Stop Work Authority	
<input type="checkbox"/> Violence or Harassment	<input type="checkbox"/> Non-compliance	<input type="checkbox"/> Other (specify details below)	
Describe incident in detail: (include any issues related to people, equipment, materials, environment, and processes)			
Immediate corrective actions taken:			

Canada East (Atlantic) – Neil Clements (506-639-2961); Canada East (ON/QC) – Jim Elkins (613-404-8508); Canada Prairie & Mountain – Yvonne Beattie (780-616-8909); International – Kev Metcalfe (780-231-2185); US Northeast & South – Fred Miller (610-235-7315); US Midwest & Mid-Atlantic – Keith Kuhlmann (740-816-6170); US West – Clint Reuter (818-395-8556)

SECTION 4: MEDICAL INFORMATION																																									
Name of first aid attendant:	Injury recorded in first aid log? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>																																								
Description of first aid or medical treatment administered:																																									
Clinic/hospital sent to:																																									
Attending physician/paramedic (if known):																																									
Area of Injury – Please check all that apply:																																									
<input type="checkbox"/> Head <input type="checkbox"/> Teeth <input type="checkbox"/> Upper back <input type="checkbox"/> Face <input type="checkbox"/> Neck <input type="checkbox"/> Lower back <input type="checkbox"/> Eye(s) <input type="checkbox"/> Chest <input type="checkbox"/> Abdomen <input type="checkbox"/> Ear(s) <input type="checkbox"/> Other <u>Specify</u>	<table border="0"> <tr> <td>Left</td> <td>Right</td> <td>Left</td> <td>Right</td> <td>Left</td> <td>Right</td> <td>Left</td> <td>Right</td> </tr> <tr> <td><input type="checkbox"/> Shoulder</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/> Wrist</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/> Hip</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/> Ankle</td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Arm</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/> Hand</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/> Thigh</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/> Foot</td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Elbow</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/> Finger(s)</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/> Knee</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/> Toe(s)</td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Forearm</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/> Lower Leg</td> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Left	Right	Left	Right	Left	Right	Left	Right	<input type="checkbox"/> Shoulder	<input type="checkbox"/>	<input type="checkbox"/> Wrist	<input type="checkbox"/>	<input type="checkbox"/> Hip	<input type="checkbox"/>	<input type="checkbox"/> Ankle	<input type="checkbox"/>	<input type="checkbox"/> Arm	<input type="checkbox"/>	<input type="checkbox"/> Hand	<input type="checkbox"/>	<input type="checkbox"/> Thigh	<input type="checkbox"/>	<input type="checkbox"/> Foot	<input type="checkbox"/>	<input type="checkbox"/> Elbow	<input type="checkbox"/>	<input type="checkbox"/> Finger(s)	<input type="checkbox"/>	<input type="checkbox"/> Knee	<input type="checkbox"/>	<input type="checkbox"/> Toe(s)	<input type="checkbox"/>	<input type="checkbox"/> Forearm	<input type="checkbox"/>	<input type="checkbox"/> Lower Leg	<input type="checkbox"/>				
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<input type="checkbox"/> Elbow	<input type="checkbox"/>	<input type="checkbox"/> Finger(s)	<input type="checkbox"/>	<input type="checkbox"/> Knee	<input type="checkbox"/>	<input type="checkbox"/> Toe(s)	<input type="checkbox"/>																																		
<input type="checkbox"/> Forearm	<input type="checkbox"/>	<input type="checkbox"/> Lower Leg	<input type="checkbox"/>																																						
Has the injured employee had a previous similar injury or disability? Yes <input type="checkbox"/> No <input type="checkbox"/>																																									

SECTION 5: PROPERTY OR VEHICLE DAMAGE: STANTEC			
Ownership Details (choose one):	<input type="checkbox"/> Rented (attach rental agreement)	<input type="checkbox"/> Stantec Owned	<input type="checkbox"/> Personal (employee vehicle)
Year, Make, and Model of Vehicle:	Vehicle ID # (VIN)		
Nature of damage:	Estimated cost of damage: \$		
Description of damaged property:			
Attending police officer (if known):	Badge #:		
Copy of police report received	Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, file number: (attach copy of police report)		
PROPERTY OR VEHICLE DAMAGE: 3RD PARTY			
Name of owner and contact number:			
Year, Make, and Model of Vehicle:	License Plate Number:		
Insurer and Policy Number:			
Injured parties? Yes <input type="checkbox"/> No <input type="checkbox"/>	If yes, describe injuries:		
Diagram or photographs attached?	Yes <input type="checkbox"/> No <input type="checkbox"/>		

WITNESS INFORMATION - #1			
Name:			Phone Number:
Witness statement provided?	Yes (attached) <input type="checkbox"/>	No <input type="checkbox"/>	

WITNESS INFORMATION - #2			
Name:			Phone Number:
Witness statement provided?	Yes (attached) <input type="checkbox"/>	No <input type="checkbox"/>	

SECTION 6: SPILL OR RELEASE			
Substance:			
Quantity:	Employee(s) exposed via:	<input type="checkbox"/> Inhalation <input type="checkbox"/> Contact <input type="checkbox"/> Ingestion <input type="checkbox"/> n/a	
Off-site impacts observed or anticipated?	Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, describe:		
Name of regulatory agencies contacted:			
Contact name, number, date and time of call:			

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SECTION 7: ANALYSIS		
IMMEDIATE/DIRECT CAUSES		
A. UNSAFE ACTIONS (check off as many as necessary)		
<input type="checkbox"/> Operating equipment without authority	<input type="checkbox"/> Failing to use personal protective equipment properly	<input type="checkbox"/> Failure to identify hazard or risk
<input type="checkbox"/> Failure to warn	<input type="checkbox"/> Improper loading	<input type="checkbox"/> Inattention
<input type="checkbox"/> Failure to secure	<input type="checkbox"/> Improper placement	<input type="checkbox"/> Failure to communicate
<input type="checkbox"/> Operating at improper speed	<input type="checkbox"/> Improper lifting or handling	<input type="checkbox"/> Other: Specify
<input type="checkbox"/> Making safety devices inoperative	<input type="checkbox"/> Improper position for a task	
<input type="checkbox"/> Removing safety devices	<input type="checkbox"/> Servicing equipment in operation	
<input type="checkbox"/> Using defective/improper equipment	<input type="checkbox"/> Horseplay	
<input type="checkbox"/> Using equipment improperly	<input type="checkbox"/> Failure to follow procedure, policy or practice	
B. UNSAFE CONDITIONS (check off as many as necessary)		
<input type="checkbox"/> Inadequate guards/barriers	<input type="checkbox"/> Radiation exposure	<input type="checkbox"/> Inadequate information/data
<input type="checkbox"/> Improper/inadequate PPE	<input type="checkbox"/> High or low temperature exposures	<input type="checkbox"/> Inadequate preparation/planning
<input type="checkbox"/> Defective tools or equipment	<input type="checkbox"/> Inadequate or excess illumination	<input type="checkbox"/> Inadequate support/assistance
<input type="checkbox"/> Congested work area	<input type="checkbox"/> Inadequate ventilation	<input type="checkbox"/> Road conditions
<input type="checkbox"/> Inadequate warning system	<input type="checkbox"/> Presence of harmful materials	<input type="checkbox"/> Weather conditions
<input type="checkbox"/> Fire and explosion hazards	<input type="checkbox"/> Inadequate instructions/procedures	<input type="checkbox"/> Other: Specify
<input type="checkbox"/> Poor housekeeping; disorder	<input type="checkbox"/> Hazardous environmental conditions: gases, dusts, smokes, fumes, vapours	
<input type="checkbox"/> Noise exposure		
BASIC/ROOT CAUSES		
C. PERSONAL FACTORS (check off as many as necessary)		
<input type="checkbox"/> Inadequate physical capability	<input type="checkbox"/> Mental stress	<input type="checkbox"/> Lack of knowledge
<input type="checkbox"/> Physical stress	<input type="checkbox"/> Lack of skill	<input type="checkbox"/> Other: Specify
D. JOB FACTORS (check off as many as necessary)		
<input type="checkbox"/> Inadequate leadership or supervision	<input type="checkbox"/> Inadequate maintenance (scheduled or preventative)	<input type="checkbox"/> Excessive wear and tear
<input type="checkbox"/> Inadequate engineering	<input type="checkbox"/> Inadequate tools or equipment	<input type="checkbox"/> Inadequate communications
<input type="checkbox"/> Inadequate purchasing	<input type="checkbox"/> Inadequate work standards	<input type="checkbox"/> Improper motivation
<input type="checkbox"/> Abuse or misuse	<input type="checkbox"/> Other: Specify	

SECTION 8: FOLLOW-UP				
Short-term:	Corrective Action	Assigned To	Target Date	Completion Date
Long-term:	Corrective Action	Assigned To	Target Date	Completion Date

Canada East (Atlantic) – Neil Clements (506-639-2961); Canada East (ON/QC) – Jim Elkins (613-404-8508); Canada Prairie & Mountain – Yvonne Beattie (780-616-8909); International – Kev Metcalfe (780-231-2185); US Northeast & South – Fred Miller (610-235-7315); US Midwest & Mid-Atlantic – Keith Kuhlmann (740-816-6170); US West – Clint Reuter (818-395-8556)

REVIEW COMMENTS		
Involved Employee Comments:		
Signature: Job Title:	Print Name:	Date:
Lead Investigator Comments:		
Signature: Job Title:	Print Name:	Date:
Supervisor/Project Manager:		
Signature: Job Title:	Print Name:	Date:
HSE Representative (OSEC/JH&S Committee/RSEC/HSE Manager):		
Signature: Job Title:	Print Name:	Date:
Management Review:		
Signature: Job Title:	Print Name:	Date:
Client Review (if required):		
Signature: Job Title:	Print Name:	Date:
Additional Comments:		

Canada East (Atlantic) – Neil Clements (506-639-2961); Canada East (ON/QC) – Jim Elkins (613-404-8508); Canada Prairie & Mountain – Yvonne Beattie (780-616-8909); International – Kev Metcalfe (780-231-2185); US Northeast & South – Fred Miller (610-235-7315); US Midwest & Mid-Atlantic – Keith Kuhlmann (740-816-6170); US West – Clint Reuter (818-395-8556)

Contact information.

Immediately Call Corporate HSE, and Practice & Risk Management, and (if injuries) Human Resources.

Health, Safety & Environment: Call:

Keith Robinson	Office (614) 545-3787	Cell (614) 545-3787
Clint Reuter	Office (949) 923-6258	Cell (818) 395-8556

Practice & Risk Management: Fax unsigned report to (780) 969-2030

Human Resources: **For Injuries Only** contact the Human Resources Rep. for your region:

US East: Jennie Moore

Jennie Moore: Phone: (585) 413-5241, Cell: (585) 613-8022, Fax: (585) 272-7442,
E-Mail: jennie.moore@stantec.com.

US West: Peggy Ramos

Peggy Ramos: Phone: (949) 923-6061, Fax: (949) 923-6015,
E-Mail: peggy.ramos@stantec.com

US Mtn Desert: (Arlington, Houston, Midland, Phoenix, Scottsdale, Ponca City SLC): Shannon Drake

Shannon Drake: Phone: (602) 707-4627, Fax (602) 532-7784,
E-Mail: Shannon.Drake@stantec.com

US Mtn Desert: (Dallas, Fort Worth, Denver, Fort Collins, Golden, Las Vegas, Reno, Oklahoma City, Tucson) Sheryl Appelt

Sheryl Appelt: Phone: (602) 707-9495, Fax (602) 926-2217,
E-Mail: Sheryl.Appelt@stantec.com

Fax and/or scan-email report to all three.

VEHICLE COLLISION KIT

Stantec Vehicle Collision Kit

The following items should be enclosed in an envelope in the glove box of all Stantec vehicles:

- Vehicle Registration Card
- Vehicle Insurance Card with name and phone number of agent
- Name of Preferred Body Shop or Maintenance Facility to take damaged vehicle (usually nearest Dealership)
- Owner's Manual
- Disposable Camera
- Note Pad and Pen

WHAT TO DO AFTER A COLLISION:

Auto collisions: Even the most careful drivers may be involved. Knowledge of what to do **after** the collision can make the experience a little less frightening and decrease the chance of unnecessary complications.

After a Collision

- Check for injuries. Life and health are more important than damage to vehicles.
- Make note of specific damages to all vehicles involved.
- Write down the names, addresses and license numbers of persons involved in the collision. Also, write a description of the other vehicles.
- Call the police, even if the collision is minor.
- Jot down names and addresses of anyone who may have witnessed the collision. This can prevent disagreement concerning how the collision actually happened.

Other Do's and Don'ts

- DO jot down details about the collision, the location, and circumstances such as weather conditions and visibility.
- DO notify your insurance agent about the collision immediately.
- DON'T sign any document unless it is for the police or your insurance agent.

Remember that a Stantec incident investigation form must also be completed following any collision. The collision must be reported to the Stantec Project Manager in addition to the following people:

Practice and Risk Management :

Fax: 780-969-2030

Keith Robinson
Clint Reuter

Office (614) 545-3787
Office (949) 923-6258

Cell (614) 545-3787
Cell (818) 395-8556



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
11/01/2014

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER AON REED STENHOUSE INC. AON RISK SERVICES CENTRAL, INC. 900 - 10026 - 102A AVENUE EDMONTON, AB T5J 0Y2	CONTACT NAME ANDREA OTTO	PHONE (A/C No. Ext): 1-952-807-0679	FAX (A/C. No.): 1-312-381-6608
	E-MAIL ADDRESS: ANDREA.OTTO@AON.COM		
INSURED STANTEC CONSULTING SERVICES INC. 25864-F BUSINESS CENTER DRIVE, REDLANDS, CA 92374	INSURER(S) AFFORDING COVERAGE		NAIC #
	INSURER A: ZURICH AMERICAN INSURANCE COMPANY		16535
	INSURER B: SENTRY INSURANCE A MUTUAL COMPANY		24988
	INSURER C: ZURICH INSURANCE COMPANY		
	INSURER D: SENTRY INSURANCE A MUTUAL COMPANY		24988
INSURER E:			
INSURER F:			

COVERAGES CERTIFICATE NUMBER: **582** REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL ISUR INSR	ISUR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	GENERAL LIABILITY			GLO5415704	05/01/14	05/01/15	EACH OCCURRENCE \$ 2,000,000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY			XCUI COVER INCLUDED			DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000
	<input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR				MED EXP (Any one person) \$ 10,000		
	<input checked="" type="checkbox"/> CONTRACTUAL/CROSS LIABILITY				PERSONAL & ADV INJURY \$ 2,000,000		
<input checked="" type="checkbox"/> OWNERS & CONTRACTORS			GENERAL AGGREGATE \$ 4,000,000				
GEN'L AGGREGATE LIMIT APPLIES PER:							PRODUCTS - COMPOP AGG \$ 2,000,000
	<input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO SUBJECT <input checked="" type="checkbox"/> LOC						\$
B	AUTOMOBILE LIABILITY			90-17043-03	11/01/14	11/01/15	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000
	<input checked="" type="checkbox"/> ANY AUTO						BODILY INJURY (Per person) \$
	<input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS						BODILY INJURY (Per accident) \$
	<input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS						PROPERTY DAMAGE (Per accident) \$
							\$
C	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR			8831307	05/01/14	05/01/15	EACH OCCURRENCE \$ 5,000,000
	<input checked="" type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE			EXCESS GENERAL, AUTO AND EMPLOYERS LIABILITY (FOLLOW FORM)			AGGREGATE \$ 5,000,000
	<input type="checkbox"/> DED <input checked="" type="checkbox"/> RETENTION \$ 10,000				\$		
D	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY			90-17043-01	11/01/14	11/01/15	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)		N/A				E.L. EACH ACCIDENT \$ 1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE \$ 1,000,000
							E.L. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)
REDLANDS, CA.

CERTIFICATE HOLDER TO WHOM IT MAY CONCERN	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE <i>Andrea R. Off</i>

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Project: FD 17 ADL
 Location: SR 5
 Project #: _____
 Drilling Start: 12/10 0924 Completed: 0930
 Installation Start: _____ Completed: _____
 Drilling Company: _____
 Drilling Equipment: _____
 Drilling Method: Hand Auger
 Sampling Equipment: _____

Boring ID: 1267-107
 Page: _____ of _____
 Northing: _____ Easting: _____
 Latitude: _____ Longitude: _____
 Ground Elev (ft): _____ TOC Elev (ft): _____
 Initial DTW (ft): _____ Borehole Depth (ft): 2
 Static DTW (ft): _____ Well Depth (ft): _____
 Well Casing DIA (in): _____ Borehole Dia (in): _____
 Logged By: K. Roseman Checked By: _____

Time & Depth (ft)	Graphic log	USCS	Description: <small>Example: SAND (SP) - olive (2.5Y 5/4), trace (5%) fines, 20-30% fine grained sand, fine to coarse gravel, medium dense, medium plasticity, stiff, moist, no petroleum hydrocarbon odor, no staining</small>	Sample	Time/Sample ID/Method	Measured Recovery (ft)	Blow Counts	Headspace H ₂ O (ppm)	Depth (ft)	Well Construction or Borehole Backfill
0									0	
-0.5									0.5	
-1									1	
-1.5									1.5	
-2									2	
-2.5									2.5	
-3									3	
-3.5									3.5	
-4									4	
-4.5									4.5	
-5									5	
-5.5									5.5	
-6									6	
-6.5									6.5	
-7									7	
-7.5									7.5	
-8									8	
-8.5									8.5	
-9									9	
-9.5									9.5	
-10									10	

SP - Partly graded sand w/ silt & gravel; (10YR 4/2) Dark grayish brown; Some fines; Fine-grained sand; Some sub-angular gravels; moist; No odor/stain

~~1267-107-0~~
0925

SP - Partly graded sand (10YR 5/6) yellowish brown; Fine-med grained sand; Trace moist; No odor/stain

~~1267-107-2~~
0930

Terminated @ 2' BGS



Project: TO 17 ADL
 Location: SRS
 Project #: _____
 Drilling Start: 1037 Completed: 1045
 Installation Start: _____ Completed: _____
 Drilling Company: _____
 Drilling Equipment: _____
 Drilling Method: Hand Auger
 Sampling Equipment: _____

Boring ID: 1267-109
 Page: 1 of 1
 Northing: _____ Easting: _____
 Latitude: _____ Longitude: _____
 Ground Elev (ft): _____ TOC Elev (ft): _____
 Initial DTW (ft): _____ Borehole Depth (ft): 2
 Static DTW (ft): _____ Well Depth (ft): _____
 Well Casing DIA (in): _____ Borehole Dia (in): _____
 Logged By: K. Posekian Checked By: _____

Time & Depth (ft)	Graphic log	USCS	Description:	Sample	Time/Sample ID/Method	Measured Recovery (ft)	Blow Counts	Headspace PID (ppm)	Depth (ft)	Well Construction or Borehole Backfill
			Example: SAND (SP) - olive (2.5Y 5/4), trace (5%) fines, 20-30% fine grained sand, fine to coarse gravel, medium dense, medium plasticity, stiff, moist, no petroleum hydrocarbon odor, no staining							
0	ML		Organic Debris @ surface							
0			Silty Sand (10YR 3/4) Dark Brown; 30% fines; fine-med. grained sand; moist; No odor/stain; rootlets	⊗	1267-109-8 1038				0	
2	ML		Silty Sand (10YR 4/4) Dark yellowish Brown; some fines; fine-med. grained sand; trace ang. gravel; moist; No odor/stain	⊗	1267-109-2 1045				2	
2			Terminated @ 2' BGS							
5			1 refusal (RP)							



Project: ADL-T017
 Location: SRS
 Project #: _____
 Drilling Start: 12/10 1350 Completed: 1355
 Installation Start: _____ Completed: _____
 Drilling Company: _____
 Drilling Equipment: _____
 Drilling Method: HAND AUGER
 Sampling Equipment: _____

Boring ID: 1267-122
 Page: _____ of _____
 Northing: _____ Easting: _____
 Latitude: _____ Longitude: _____
 Ground Elev (ft): _____ TOC Elev (ft): _____
 Initial DTW (ft): _____ Borehole Depth (ft): 2
 Static DTW (ft): _____ Well Depth (ft): _____
 Well Casing DIA (in): _____ Borehole Dia (in): _____
 Logged By: K. Bosekian Checked By: _____

Time & Depth (ft)	Graphic log	USCS	Description: <small>Example: SAND (SP) - olive (2.5Y 5/4), trace (5%) fines, 20-30% fine grained sand, fine to coarse gravel, medium dense, medium plasticity, silt, moist, no petroleum hydrocarbon odor, no staining</small>	Sample	Time/ Sample ID/ Method	Measured Recovery (ft)	Blow Counts	Headspace PID (ppm)	Depth (ft)	Well Construction or Borehole Backfill
0		SP	Partly Graded sand w/ Gravel (10YR 3/3) Dark Brown; Fine-med grained sand; Gravels, subang-subrand; moist; No odor/stain		1267-122-0 1351				0	
2		SP- SM	Partly Graded sand w/ Silt + Gravel (10YR 3/3) V. Dark Grayish Brown; Some fines; Fine-med. grained sand; Gravels, subang-subrand; moist; No odor/stain		1267-122-2 1355				2	
			Terminated @ 2' BGS							



Project: ADL-T017
 Location: SR5
 Project #: _____
 Drilling Start: 10/6/11 Completed: 11/01
 Installation Start: _____ Completed: _____
 Drilling Company: _____
 Drilling Equipment: _____
 Drilling Method: HAND AUGER
 Sampling Equipment: _____

Boring ID: 1267-135
 Page: 1 of 1
 Northing: _____ Easting: _____
 Latitude: _____ Longitude: _____
 Ground Elev (ft): _____ TOC Elev (ft): _____
 Initial DTW (ft): _____ Borehole Depth (ft): _____
 Static DTW (ft): _____ Well Depth (ft): 2
 Well Casing DIA (in): _____ Borehole Dia (in): _____
 Logged By: K.P. Checked By: _____

Time & Depth (ft)	Graphic log	USCS	Description:	Sample	Time/Sample ID/Method	Measured Recovery (%)	Blow Counts	Headspace (ppm)	Depth (ft)	Well Construction or Borehole Backfill
0			Example: SAND (SP) - olive (2.5Y 5/4), trace (5%) fines, 20-30% fine grained sand, fine to coarse gravel, medium dense, medium plasticity, stiff, moist, no petroleum hydrocarbon odor, no staining							
0		SP-SM	Partly Gravel Sand w/ silt & gravel (10YR 3/1) V. Dark Gray 10-20% fines; Fine-med grained sand; Gravel; Subang-subang; Moist; No odor/stain		1267-135-0 1047					
2		SP	Partly Gravel Sand (10YR 3/2) V. Dark Grayish Brown; Fine-med grained sand; Moist; No odor/stain		1267-135-2 1101					
2			Terminated @ 2' BGS							



Project: ADL-TO 17
 Location: SR 5
 Project #:
 Drilling Start: 12/11 1334 Completed: 1345
 Installation Start: 12/11 1334 Completed:
 Drilling Company:
 Drilling Equipment:
 Drilling Method: HAND AUGER
 Sampling Equipment:

Boring ID: 1267-141
 Page: 1 of 1
 Northing:
 Latitude:
 Ground Elev (ft):
 Initial DTW (ft):
 Static DTW (ft):
 Well Casing DIA (in):
 Logged By: KP
 Easting:
 Longitude:
 TOC Elev (ft):
 Borehole Depth (ft): 2
 Well Depth (ft):
 Borehole Dia (in):
 Checked By:

Time & Depth (ft)	Graphic Log	USCS	Description: <small>Example: SAND (SP) - olive (2.5Y 5/4), trace (5%) fines, 20-30% fine grained sand, fine to coarse gravel, medium dense, medium plasticity, stiff, moist, no petroleum hydrocarbon odor, no slaining</small>	Sample	Time/ Sample ID/ Method	Measured Recovery (ft)	Blow Counts	Headpace PID (ppm)	Depth (ft)	Well Construction or Borehole Backfill
0		ML	Sandy Silt (10YR 2 1/2) V. Dark Brown; mostly fines; 20-30% fine grained sand; moist; No odor/stain; Rootlets	X	1267-141-0 1335				0	
2		ML	Sandy Silt w/ SAA bot (10YR 3/4) Dark yellowish Brown; increasing Gravels, subrounded; Subm; moist; rootlets	X	1267-141-2 1345				2	
3			Terminated @ 2' BGS						3	

(909) 255 8202



Project: ADL-TOA
 Location: SR5
 Project #: _____
 Drilling Start: 12/11 1348 Completed: 1403
 Installation Start: _____ Completed: _____
 Drilling Company: _____
 Drilling Equipment: _____
 Drilling Method: HAND AUGER
 Sampling Equipment: _____

Boring ID: 1207-144
 Page: 1 of 1
 Northing: _____ Easting: _____
 Latitude: _____ Longitude: _____
 Ground Elev (ft): _____ TOC Elev (ft): _____
 Initial DTW (ft): _____ Borehole Depth (ft): 2
 Static DTW (ft): _____ Well Depth (ft): _____
 Well Casing DIA (in): _____ Borehole Dia (in): _____
 Logged By: K.P. Checked By: _____

Time & Depth (ft)	Graphic log	USCS	Description: <small>Example: SAND (SP) - olive (2.5Y 5/4), trace (5%) fines, 20-30% fine grained sand, fine to coarse gravel, medium dense, medium plasticity, stiff, moist, no petroleum hydrocarbon odor, no staining</small>	Sample	Time/Sample ID/Method	Measured Recovery (%)	Blow Counts	Headspace PID (ppm)	Depth (ft)	Well Construction or Borehole Backfill
0		ML	Sandy Silt (10YR 2/2) V. Dark Brown; Mostly fines; fine-grained sand; Moist; Rootlets; No odor/stain	X	1207-144-0 1349				0	
2		ML	SAA but increasing gravels, subang-subround; moist, no odor/stain; rootlets	X	1207-144-2 1403				2	
2.5			Terminated @ 2' BGS						2.5	

12/10/14 1267-

FIELD NOTES:

103-0 0802

103-2 0809

104-0 0815

104-2 0825

106-0 0915

106-2 0922

108-0 0927

108-2 0935

110-0 1021

110-2 1030

111-0 1037

111-2 1046

113-0 1156

113-2 1204

114-0 1216

114-2 1224

123-0 1336

123-2 1350

124-0 1357

124-2 1410

120-0 1416

117-0 1456

117-2 1510

118-0 1522

118-2 1545

119-0 1505

120-2 1530

refusal at 1' move to 1' refusal at 6", move EI refusal at 6"

refusal at 6", stepout 1' to west refusal at 6", stepout 1' to N

refusal - 3 stepouts

refusal at 6" - 4 stepout attempts w/ refusal at 6" - 1'

4th stepout 120-0 1416

Dup 2 on 120-2

121-0 1335

121-2 1343

122-0 1351

122-2 1355

12/16/14

FIELD NOTES:

125-0 0810	145-0 1515
125-2 0812	145-2 1533
126-0 0815	146-0 1514
126-2 0820	146-2 1520
128-0 0840	147-0 1502
128-2 0845	147-2 1504
131-0 0934 0926	148-0 1459
131-2 0934	148-2 1507
132-0 0942	Dup 4 = 146-2
132-2 0951 0951	Dup 5 = 147-0
129-0 0925 refusal at 1.5' step out	
129-2 0935	
130-0 0945	
130-2 0950	
126-0 1113	
126-2 refusal at 1' step out in 3 directions - 2.4mil Concrete - 3' at 1'	refusal
137-0 1206	
137-2 1211	
138-0 1215	
136-2 1221	
139 135 -0 1218	
139-2 1225	
140-0 1205	
140-2 1213	
Dup 3 = 139-0	
141-0 1335	
141-2 1345	
142-0 1337 stepped out 3 times - refusal at ~ 1.5' (roofs)	
143-0 1350	
143-2 1410	
144-0 1349	
144-2 1403	

12/14/14

FIELD NOTES:

0845 arrive at meeting point - finish logging 145-149
0935 Equipment blank
149-0 1055
149-1 1059
150-0 1057
150-1 1101
151-0 1105
151-1 1107
152-0 1049
152-1 ~~1050~~ 1052
153-0 1046
153-1 1048
154-0 1040
154-1 1043



PROJECT: CoalTrans T017
 LOCATION: _____
 PROJECT NUMBER: 145631017
 DRILLING STARTED: 12/10/14 COMPLETED: 12/10/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 103
 PAGE: 1 OF 1
 NORTHING (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): 2
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MZ CHECKED BY: _____

TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		SM	silty sand 10 yr 1/2 brn; fa to med	X	103-0 0802				0	[Empty well construction area]
1			gravel; 30% fines; trace sub angular moist; organic debris;						1	
2		SC SM	clayey sand 10 yr 1/2 brn; fa grn to med grn; trace angular fa	X	103-2 0809				2	
3			gravel; 40% fines; moist;						3	
4			silty;						4	
5			Total depth 2'						5	
10									10	
15									15	
20									20	
25									25	

FILEPATH: \\office015\KAMERON\Blank Log Form - KAM.dwg[|menyrafh|]May 28, 2005 at 17:50[|layout: Model

PROJECT: CalTrans T017
 LOCATION: L.A.
 PROJECT NUMBER: LY5431017
 DRILLING STARTED: 12/10/14 COMPLETED: 12/10/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 104
 PAGE: 1 OF 1
 NORTHING (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): 2
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MZ CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		SM	Silty sand; 10% fines; fine to med grain; 30% fines; trace sub angular gravel; moist; organic debris	X	104-0 D815				0	
1									1	
2		SC SM	Clayey sand; 10% fines; fine to med grain; trace sub angular gravel; 40% fines; moist; silty	X	104-2 D825				2	
3									3	
4									4	
5									5	
6									6	
10									10	
15									15	
20									20	
25									25	

FILEPATH: \\office015\KAMERON\Blank Log Form - KAM.dwg|kmanysab|May 26, 2005 at 17:50|Layout Model

PROJECT: Caltrans T017
 LOCATION: Los Angeles
 PROJECT NUMBER: 85431017
 DRILLING STARTED: 12/10/14 COMPLETED: 12/10/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 106
 PAGE: 1 OF 1
 NORTHING (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MZ CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (inches)	Depth (feet)	Well Construction or Borehole Backfill
0		SM	silty sand; 10% fines; 5% clay; strong brown lignite; moist; 30% fines; rootlets	X	106-0 0915				0	
1									1	
2		SM	silty sand; 10% fines; 5% clay; strong brown lignite; 30% fines; moist	X	106-2 0922				2	
3									3	
4									4	
5			Total depth 2'						5	
10									10	
15									15	
20									20	
25									25	

PROJECT: Caltrans T017
 LOCATION: LA
 PROJECT NUMBER: 185831017
 DRILLING STARTED: 12/10/14 COMPLETED: 12/10/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 108
 PAGE: 1 OF 1
 NORTHING (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MR CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		SM	silty sand 10 yr 3/4 dk yellowish brn; fm to med gm; 40% fines; moist; rootlets	X	108-0 0927				0	
1					108-2 0935			1		
2		SM	10 yr 3/4 dk yellowish brn; fm gm; some med to coarse gm; trace angular to sub-angular fm gravel; moist	X	108-2 0935			2		
3				X	108-2 0935			3		
4									4	
5			Total depth 2'						5	
10									10	
15									15	
20									20	
25									25	

PROJECT: Caltrans T017
 LOCATION: L.A.
 PROJECT NUMBER: 145831017
 DRILLING STARTED: 12/10/14 COMPLETED: 12/10/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 110
 PAGE: 1 OF 1
 NORTHING (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MZ CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		ml	silt; sand 10% R 3/4 dk brn; fw to mod grn; 30% fines; loamy; moist rootlets	X	110-0 1021				0	
1									1	
2		ml	silt; sand 10% R 3/4 dk yellowish brn well graded sand - sub angular to sub rounded; trace angular fn gravel; moist; rootlets	X	110-2 1030				2	
3									3	
4									4	
5			Total depth 2'						5	
10									10	
15									15	
20									20	
25									25	

PROJECT: Caltrans F007
 LOCATION: L.A.
 PROJECT NUMBER: 185688017
 DRILLING STARTED: 12/10/14 COMPLETED: 12/10/14
 INSTALLATION STARTED: 12/10/14 COMPLETED: 12/10/14
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 111
 PAGE: 1 OF 1
 NORthing (N): _____ EASTING (E): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MZ CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		SM	Silty Sand. 10.4 P. 3/4. dk. yell. w/ sh. l. brn.;	X	111-0 1037				0	
1			fn to med grn, 30% fines; moist; rootlets.						1	
2		SM	Silty Sand. 10.4 P. 3/4. dk. yellowish brn.	X	111-2 1046				2	
3			fn to med grn; 35% fines; moist; rootlets; loamy and clayey.						3	
4									4	
5			Total depth 2'						5	
10									10	
15									15	
20									20	
25									25	

PROJECT: Caltrans T017
 LOCATION: L.A.
 PROJECT NUMBER: 145431017
 DRILLING STARTED: 12/10/04 COMPLETED: 12/10/04
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 113
 PAGE: 1 OF 1
 NORthing (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: ML CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		SP	sand w/ silt 10.4% dk yellowish gray to med gray; some sub rounded coarse grn; 10% fines; moist + trace sh gravel	X	113-0				0	
1		SM		X	113-1				1	
2				X	113-2				2	
3		SA	sand with silt + clay 2.5% olive gray; well graded sand sub angular to sub rounded; moist 10% fines						3	
4		SC							4	
5									5	
			Total depth 2'							
10									10	
15									15	
20									20	
25									25	

PROJECT: Caltrans T017
 LOCATION: L.A.
 PROJECT NUMBER: 185881017
 DRILLING STARTED: 12/10/14 COMPLETED: 12/10/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 114
 PAGE: 1 OF 1
 NORTHING (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MZ CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		SM	silty sand w/ silt 10-15% dk yellowish brn, fine to med gran, 10% fines, trace sub angular fn gravel, moist	X	114-D 1216	Dup-1			0	
1		SM		X	114-2 1228				1	
2		SM	sand w/ silt + clay 2:54% olive brn; well graded sand 20% fines; angular to sub angular to sub rounded; moist						2	
3									3	
4									4	
5									5	
			Total depth 2'							
10									10	
15									15	
20									20	
25									25	



PROJECT: Caltrans T017
 LOCATION: LA
 PROJECT NUMBER: 185831017
 DRILLING STARTED: 12/10/14 COMPLETED: 12/10/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLD NO: 118
 PAGE: 1 OF 1
 NORTHING (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MZ CHECKED BY: _____

TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		SM	silty sand 10 yr 3/4 dia grain; fn to med gm; some sub rounded coarse	X	118-0 1522				0	
1			yrn; trace sub rounded fn gravel moist; 15% fines	X	118-2 1545				1	
2		GW	well graded gravel 10 yr 10/16 dia; yellowish brown; fn sand to sub angular ^{med} gravel; moist; trace fines						2	
3									3	
4									4	
5									5	
			Total depth 2'							
10									10	
15									15	
20									20	
25									25	

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PROJECT: Caltrans T017
 LOCATION: 145831017 L.A.
 PROJECT NUMBER: 145831017
 DRILLING STARTED: 12/10/14 COMPLETED: 12/10/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 112
 PAGE: 1 OF 1
 NORTHING (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MZ CHECKED BY: _____

TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		SM	Silty sand. 10YR 7.5 dk brown poorly graded; fn to coarse gra-	X	117-9 1455				0	
1			sub angular to sub rounded; trace						1	
2			sub angular fn gravel, 30% fines, moist	X	117-2 1510				2	
3		SM SC	Silty sand. 10YR 7.5 dk brown; poorly graded fn to coarse grain; sub						3	
4			angular to sub rounded; trace						4	
5			fn gravel & brick fragments; clay balls						5	
			Total depth 2'							
10									10	
15									15	
20									20	
25									25	

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PROJECT: Caltrans T017
 LOCATION: 145671017 L.A.
 PROJECT NUMBER: 185031017
 DRILLING STARTED: 12/10/14 COMPLETED: 02/10/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 119-0
 PAGE: 1 OF 1
 NORthing (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MZ CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		SM	st. to sand. 10 x 12.5 d. n. form; poorly graded; fm to sub angular coarse gravel; 5% sub angular fine gravel; 20% fines; no st		119-0 1505				0	
1									1	
2									2	
3									3	
4									4	
5									5	
10									10	
15									15	
20									20	
25									25	

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PROJECT: Caltrans T017
 LOCATION: L.A.
 PROJECT NUMBER: 185831017
 DRILLING STARTED: 12/10/14 COMPLETED: 12/10/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 120
 PAGE: 1 OF 1
 NORthing (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MR CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0	SM		Silty sand to 4R 3/8 dk. brn; fn 9m; 20% fines; trace sub angular fn gravel; moist	X	120-0 1416				0	
2	SP		Sand to 4R 1/4 dk. yellowish brn; fn 9m; trace sub angular fn to med gravel; moist; trace fines	X	120-2 1530				2	
3									3	
4									4	
5			Total depth 2'						5	
10									10	
15									15	
20									20	
25									25	



PROJECT: Caltrans T017
 LOCATION: L4:
 PROJECT NUMBER: 145831047
 DRILLING STARTED: 12/10/14 COMPLETED: 12/10/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / Borehole NO: 123
 PAGE: 1 OF 1
 NORTHING (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MC CHECKED BY: _____

TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		SM	Silty Sand. 10YR 3/6. dk. brn; fr. grn; 40% fines; moist	X	123-0 1376				0	
1									1	
2		SM	Silty Sand. 10YR 4/6. brown; well graded - sub angular; moist; 20% fines	X	123-2 1350				2	
3									3	
4									4	
5			Total depth 2'						5	
10									10	
15									15	
20									20	
25									25	

PROJECT: Caltrans T017
 LOCATION: L.A.
 PROJECT NUMBER: 185531017
 DRILLING STARTED: 12/10/14 COMPLETED: 12/10/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 124
 PAGE: 1 OF 1
 NORthing (N): _____ EASTING (E): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MZ CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		SM	Silty sand. 10.4% fines. Brown; fine to med grn; 30% fines; moist; trace	X	124-0 1357				0	
1		fine	med sub rounded gravel						1	
2		SM	Silty sand. 10.4% fines. Brown; poorly graded fine to coarse grn - sub	X	124-2 1410				2	
3			angular to sub rounded; 35% fines; moist; trace sub angular						3	
4			to sub rounded med gravel						4	
5			Total depth 2'						5	
10									10	
15									15	
20									20	
25									25	

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PROJECT: Caltrans T017
 LOCATION: L.A.
 PROJECT NUMBER: 185481017
 DRILLING STARTED: 12/11/14 COMPLETED: 12/11/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 125
 PAGE: 1 OF 1
 NORthing (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MZ CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		Sm	silty sand; 10 y 12 y dk yellowish brown; fine-grained; 10% sub angular fine gravel; 30% fines; moist	X	125-0 0810				0	
1									1	
2		Sm	silty sand; 10 y 12 y dk yellowish brown; fine-grained; 30% fines; moist	X	125-2 0812				2	
3									3	
4			Total depth 2'						4	
5									5	
10									10	
15									15	
20									20	
25									25	

PROJECT: Caltrans T017
 LOCATION: L.A.
 PROJECT NUMBER: 185831017
 DRILLING STARTED: 12/11/14 COMPLETED: 12/11/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 126
 PAGE: 1 OF 1
 NORTHING (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MR CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		SM	Silty sand, 10% R ₃ q. dk. brn.; fin. gm; poorly sorted; 5% sub angular coarse-gran. moist; 20% fines; trace sub angular in gravel	X	126-0 0815				0	
1									1	
2		SP- SM	Poorly graded sand; 2.5-4 1/4 ft olive brn; fin gm; 10% sub angular fin gravel; 10% fines; moist	X	126-2 0820				2	
3									3	
4									4	
5			Total depth 2						5	
10									10	
15									15	
20									20	
25									25	

PROJECT: Caltrans T017
 LOCATION: L.A
 PROJECT NUMBER: 165881017
 DRILLING STARTED: 12/11/14 COMPLETED: 12/11/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 128
 PAGE: 1 OF 1
 NORTHING (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MZ CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		g.c. sm	Sandy clayey sand 10% fine; olive brown; well graded; sub angular to sub rounded; 10% fine sub rounded gravel; 20% fines; moist	X	128-0 0840				0	
1									1	
2		SP: sm	Poorly graded sand 2.5Y5/4 olive brown; fine gran; 10% sub angular fine gravel; 10% fines; moist	X	128-2 0845				2	
3									3	
4									4	
5			Total depth 2'						5	
10									10	
15									15	
20									20	
25									25	

PROJECT: Caltrans T017
 LOCATION: L.A.
 PROJECT NUMBER: 145831017
 DRILLING STARTED: _____ COMPLETED: _____
 INSTALLATION STARTED: 12/6/14 COMPLETED: 12/6/14
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 129
 PAGE: 1 OF 1
 NORthing (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: LT CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		SM	silty sand 10% 1/2 dk blk; fu	X	129-0 0925				0	
1			gn. loamy w/ orange debris 40% fines moist						1	
2		SM	silty sand 10% 1/2 dk blk; fu to	X	129-2 0935				2	
3			med. gn., 40% fine; trace sub-						3	
4			angular fu gravel; moist						4	
5			Total depth 2'						5	
10									10	
15									15	
20									20	
25									25	

PROJECT: Caltrans T017
 LOCATION: L.A.
 PROJECT NUMBER: 145431017
 DRILLING STARTED: 12/6/14 COMPLETED: 12/4/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 130
 PAGE: 1 OF 1
 NORTHING (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: ML CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		ML	silty sand 10YR 7/8 dk brn / Sn gn. lamination w/ organic detritus; moist, 40% fines	X	130-0 0945				0	
1									1	
2		ML	silty sand 10YR 4/6 brn; Sn to med gn.; 40% fines; clay balls; moist	X	130-2 0950				2	
3									3	
4			Total depth 2'						4	
5									5	
10									10	
15									15	
20									20	
25									25	



PROJECT: Caltrans T017
 LOCATION: L.A.
 PROJECT NUMBER: 185431017
 DRILLING STARTED: 02/11/14 COMPLETED: 12/01/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 131
 PAGE: 1 OF 1
 NORTHING (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MZ CHECKED BY: _____

TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		SM	Silty sand 10YR 4/6 gr; f; to med grn; loamy w/ organic debris; 40% fines; moist	X	131-0 0926				0	
1									1	
2		SM	Silty sand 10YR 4/6 gr; f; to med grn; 40% fines; clay balls; moist	X	131-2 0934				2	
3									3	
4									4	
5			Total depth 2'						5	
10									10	
15									15	
20									20	
25									25	

PROJECT: Caltrans T017
 LOCATION: L.A.
 PROJECT NUMBER: 145831017
 DRILLING STARTED: 12/11/14 COMPLETED: 12/11/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 132
 PAGE: 1 OF 1
 NORthing (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: ML CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		SM	silty sand w/ 40% fines; dk brown; fine to med grn; loamy w/ organic debris; 40% fines; moist	X	132-0 0942				0	
1									1	
2		SM	silty sand w/ 40% fines; lt brn; fine to med grn; 40% fines; trace sub angular coarse grn sand; clayey	X	132-2 0951				2	
3									3	
4									4	
5			Total depth 2'						5	
10									10	
15									15	
20									20	
25									25	

PROJECT: Caltrans T017
 LOCATION: L.A.
 PROJECT NUMBER: 145831017
 DRILLING STARTED: 12/11/14 COMPLETED: 12/11/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 137-
 PAGE: 1 OF 1
 NORthing (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: M7 CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headpace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		SC	sandy clay; 10% R ₅ /3 all clay; fine to med grain; 50% fines; moist	X	137-0 1206				0	
1									1	
2		SM SM	well graded sand; 5% R ₅ /2 olive gray; sub rounded to sub angular; 10% sub angular fine gravel; moist; 10% fines	X	137-2 1211				2	
3									3	
4									4	
5			Total depth 2'						5	
10									10	
15									15	
20									20	
25									25	

PROJECT: Caltrans T017
 LOCATION: L.A.
 PROJECT NUMBER: 185831017
 DRILLING STARTED: 12/4/14 COMPLETED: 12/4/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 138
 PAGE: 1 OF 1
 NORthing (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MZ CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		SC	Sandy clay 10-12% dk brn; fm to med grn; 50% fines; moist		138-0 1215				0	
1									1	
2		SM	Sand 5-4 5/8 oliv brn gray sub rounded to sub angular 10% sub angular fm gravel; moist; 10% fines		138-2 1221				2	
3									3	
4									4	
5			Total depth 2'						5	
10									10	
15									15	
20									20	
25									25	

PROJECT: Caltrans T017
 LOCATION: LA
 PROJECT NUMBER: 185831017
 DRILLING STARTED: 12/11/14 COMPLETED: 12/11/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 139
 PAGE: 1 OF 1
 NORthing (N): _____ EASTING (E): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MZ CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		SC	sandy clay 10-15% dk-brn; fm to med grn; 50% fines; moist	X	139-0 1218				0	
1									1	
2		SW- SM	sand w/ silt 5-7 1/2% olive gray; sub rounded to sub angular 10% sub angular fm gravel; moist; 10% fines	X	139-2 1225				2	
3									3	
4									4	
5									5	
			Total depth 2'							
10									10	
15									15	
20									20	
25									25	

PROJECT: Caltrans T017
 LOCATION: L.A.
 PROJECT NUMBER: 175831017
 DRILLING STARTED: 12/11/14 COMPLETED: 12/11/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 140
 PAGE: 1 OF 1
 NORthing (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MZ CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		SC	sandy clay 10YR 3/4 dk brn fn to med grn; 50% fines; moist	X	140-0 1205				0	
1									1	
2		SW SM	sand w/ silt 5Y 5/2 olive gray sub rounded to sub angular; 10% sub angular fn gravel; 10% fines; moist	X	140-2 1217				2	
3									3	
4									4	
5									5	
			Total depth 2'							
10									10	
15									15	
20									20	
25									25	

PROJECT: Caltrans TO17
 LOCATION: L.A.
 PROJECT NUMBER: 185831017
 DRILLING STARTED: 12/14/14 COMPLETED: 12/14/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 143
 PAGE: 1 OF 1
 NORTHING (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MZ CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5YS/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		MC	sandy silt 10 YR 4/5 brn; f to med grn; 40% sand; moist	X	143-0 1350				0	
1									1	
2		SM	silty sand 10 YR 4/5 brn; f to grn 30% fines; moist	X	143-2 1410				2	
3									3	
4									4	
5			Total depth 2'						5	
10									10	
15									15	
20									20	
25									25	



PROJECT: Caltrans T017
 LOCATION: LA
 PROJECT NUMBER: 185431017
 DRILLING STARTED: 12/11/14 COMPLETED: 12/11/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLD NO: 145
 PAGE: 1 OF 1
 NORthing (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MZ CHECKED BY: _____

TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		SC	clayey silty sand 10YR 3/4 dk	X	145-0				0	
1		SM	yellowish brn; fa to med grn; fines 50%; moist	X	1515				1	
2		ML	silt with sand 10YR 3/5 dk brn	X	145-2				2	
3		SM	br grn; 20% sand; moist		1537				3	
4			Total depth 2'						4	
5			Refusal at 1' step out						5	
			6" towards on ramp							
			encountered metal conduit							
10									10	
15									15	
20									20	
25									25	

PROJECT: Caltrans TD 17
 LOCATION: L.A.
 PROJECT NUMBER: 14583017
 DRILLING STARTED: 12/11/14 COMPLETED: 12/11/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 146
 PAGE: 1 OF 1
 NORTHING (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MZ CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0	SM		Silty sand. 10-12% dk. yellowish brn. fn to med grn; fines 50% moist	X	146-0 1514				0	
1			trace angular coarse grn sand						1	
2	ML		Silt-y sand. 10-12% dk. brn; fn grn; sand 20% moist	X	146-2 1520				2	
3									3	
4									4	
5			Total depth 2'						5	
			Refusal at 1' stepout							
			6" towards on ramp							
			encountered natural condudate							
10									10	
15									15	
20									20	
25									25	



PROJECT: Caltrans T017
 LOCATION: L.A.
 PROJECT NUMBER: 185821072
 DRILLING STARTED: 12/11/14 COMPLETED: 12/11/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 147
 PAGE: 1 OF 1
 NORTHING (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MR CHECKED BY: _____

TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		SM	Silty sand. 10YR 3/4 dk yellowish brn; fine to med grn; 40% fines; moist	X	147-0 150Z				0	
1									1	
2		S.C. SM	clayey-silt. sand. 10YR 3/4 dk yellowish brn; 40% fines; moist	X	147-2 150X				2	
3									3	
4			Total depth 2'						4	
5									5	
10									10	
15									15	
20									20	
25									25	

FILEPATH: \\office015\KAMERON\Blank Log Form - KAM.dwg[\\kmanyrath\May 28, 2005 at 17:50]Layout: Model

PROJECT: Caltrans T017
 LOCATION: LA
 PROJECT NUMBER: 145981017
 DRILLING STARTED: 12/16/14 COMPLETED: 12/16/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLD NO: 148
 PAGE: 1 OF 1
 NORTHING (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MZ CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		Mu	sandy silt. 10% R. 3% dk. yellowish brn; 90% fine gr. sand; trace sub rounded fin gravel; moist	X	1490 1459				0	
1									1	
2		Sm	st. bty. sand. 10% R. 3% dk. yellowish brn; fine to med gr; 40% fines; moist; clayey						2	
3									3	
4									4	
5									5	
10									10	
15									15	
20									20	
25									25	

FILEPATH: \\office015\KAMERON\Blank Log Form - KAM.dwg [kmanyrath] May 26, 2005 at 17:50 [Layout: Model]



PROJECT: Caltrans T017
 LOCATION: LA
 PROJECT NUMBER: 185831017
 DRILLING STARTED: 12/14/14 COMPLETED: _____
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 049
 PAGE: 1 OF 1
 NORTHING (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MZ CHECKED BY: _____

TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0	SM								0	
1	SM		silty sand, 10 YR 7/4 d (yellowish brown) fine to med grain; 30% fines moist	149-0 1055 149-1 1059					1	
2									2	
3									3	
4									4	
5									5	
10									10	
15									15	
20									20	
25									25	



PROJECT: Paltreas TD17
 LOCATION: L.A.
 PROJECT NUMBER: 185431017
 DRILLING STARTED: 12/14/14 COMPLETED: 12/14/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 150
 PAGE: 1 OF 1
 NORTHING (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MZ CHECKED BY: _____

TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0	SM		silty sand; 10-12% dk yellowish brn; fine to med grn; 30% fines; moist trace sub rounded fm gravel to 0.5"	X	150-0				0	
1	SM			X	150-1				1	
2					1101				2	
3			Total depth 1'						3	
4									4	
5									5	
10									10	
15									15	
20									20	
25									25	

PROJECT: Caltrans T017
 LOCATION: L.A
 PROJECT NUMBER: 185831017
 DRILLING STARTED: 12/14/14 COMPLETED: 12/14/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 151
 PAGE: 1 OF 1
 NORthing (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MR CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		SM	silty sand; 10-12% dk. yellowish brn. f. to med; 30% fines; moist 20% fines @ 1'	X	151-0 1105				0	
1		SM		X	151-1 1107				1	
2									2	
3									3	
4									4	
5									5	
10									10	
15									15	
20									20	
25									25	

FILEPATH: \\H:\off\ce015\KAMERON\Blank Log Form - KAM.dwg [kmanyrath] May 28, 2005 at 17:50 [layout: Model]



PROJECT: Caltrans T017
 LOCATION: L-1
 PROJECT NUMBER: 1969 031017
 DRILLING STARTED: 12/14/14 COMPLETED: 12/14/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 152
 PAGE: 1 OF 1
 NORTHING (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MZ CHECKED BY: _____

TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace P/D (units)	Depth (feet)	Well Construction or Borehole Backfill
0		SM	silty sand; 10-12% clay; olive to yellowish brown; fine to med grn; 90% silt; moist; clayey; clayey from 0.5-1'	X	152-0				0	
1		SM-sc		X	152-1				1	
2					1052			2		
3			Total depth 1'					3		
4								4		
5								5		
10								10		
15								15		
20								20		
25								25		

PROJECT: Caltrans T017
 LOCATION: LA
 PROJECT NUMBER: 14543017
 DRILLING STARTED: 12/4/14 COMPLETED: 12/14/14
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLD NO: LS3
 PAGE: 1 OF 1
 NORTHING (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MR CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		SM	silty sand; 10% R _z ; 3/4 dk yellow; low fn to med grn; 30% ft us; clayey; moist	X	153-R				0	
1		SM		X	153-1 1046				1	
2									2	
3									3	
4									4	
5									5	
10									10	
15									15	
20									20	
25									25	

FILEPATH: \\office015\KAMERON\Blank Log Form - KAM.dwg [kmanysath] May 28, 2005 at 17:50 [Layout: Model]

PROJECT: Caltrans T017
 LOCATION: L.A.
 PROJECT NUMBER: 185631017
 DRILLING STARTED: 12/14/14 COMPLETED: _____
 INSTALLATION STARTED: _____ COMPLETED: _____
 DRILLING COMPANY: _____
 DRILLING EQUIPMENT: _____
 DRILLING METHOD: Hand Auger
 SAMPLING EQUIPMENT: _____

WELL / PROBEHOLE / BOREHOLE NO: 154
 PAGE: 2 OF 1
 NORTHING (ft): _____ EASTING (ft): _____
 LATITUDE: _____ LONGITUDE: _____
 GROUND ELEV (ft): _____ TOC ELEV (ft): _____
 INITIAL DTW (ft): _____ BOREHOLE DEPTH (ft): _____
 STATIC DTW (ft): _____ WELL DEPTH (ft): _____
 WELL CASING DIAMETER (in): _____ BOREHOLE DIAMETER (in): _____
 LOGGED BY: MZ CHECKED BY: _____



TIME & DEPTH (feet)	Graphic Log	USCS	DESCRIPTION: Example: SAND; SP; olive (2.5Y5/4); trace 5% fines; 20-30% fine-grained sand; fine-to-coarse gravel; medium-dense; medium plasticity; stiff; moist; no petroleum hydrocarbon odor; no staining	Sample	Time Sample ID Method	Measured Recovery (feet)	Blow Counts	Headspace PID (units)	Depth (feet)	Well Construction or Borehole Backfill
0		SM	silty sand 10% dk yellow silty brown fine to med grs; 20% fines; clayey; moist	X	154-0 1040				0	
1		SM	moist	X	154-1 1045				1	
2									2	
3									3	
4			Total depth 1'						4	
5									5	
10									10	
15									15	
20									20	
25									25	

APPENDIX B
BORING GPS COORDINATES

**BORING GPS COORDINATES
ADL SITE INVESTIGATION
LA-5- PM 13.8/19.2
LOS ANGELES COUNTY, CALIFORNIA
PN: 0713000492-1; EA#300701
TASK ORDER #17; CONTRACT 07A3321**

Boring ID	Latitude ¹ (degrees north)	Longitude ¹ (degrees west)	Northing (UTM)	Easting ² (UTM)
1267-101	34.020298	-118.180153	3765034.48	391038.45
1267-102	34.020288	-118.180172	3765033.39	391036.69
1267-103	34.020289	-118.180173	3765033.50	391036.59
1267-104	34.020275	-118.180184	3765031.96	391035.56
1267-105	34.026209	-118.206118	3765717.91	388648.86
1267-106	34.026209	-118.206119	3765718.72	388648.66
1267-107	34.020560	-118.206329	3765701.04	388637.37
1267-108	34.026066	-118.206249	3765702.15	388636.46
1267-109	34.032802	-118.218429	3766462.43	387520.83
1267-110	34.032841	-118.218427	3766466.75	387521.06
1267-111	34.032837	-118.218444	3766466.27	387519.46
1267-112	34.032813	-118.218413	3766463.33	387522.30
1267-113	34.059003	-118.213128	3769361.65	388044.67
1267-114	34.059034	-118.213118	3769365.41	388045.57
1267-115	34.059041	-118.213125	3769366.19	388044.99
1267-116	34.059055	-118.213135	3769367.74	388044.05
1267-117	34.060067	-118.215344	3769482.40	387841.52
1267-118	34.060061	-118.215361	3769481.75	387839.90
1267-119	34.060053	-118.215361	3769480.91	387839.90
1267-120	34.060054	-118.215365	3769480.98	387839.60
1267-121	34.059719	-118.215262	3769443.72	387848.65
1267-122	34.059740	-118.215255	3769446.04	387849.30
1267-123	34.059755	-118.215245	3769447.69	387850.24
1267-124	34.059736	-118.215263	3769445.60	387848.60
1267-125	34.049744	-118.214662	3768336.84	387890.90
1267-126	34.049721	-118.214640	3768334.37	387892.87
1267-127	34.049718	-118.214629	3768334.03	387893.83
1267-128	34.049714	-118.214621	3768333.57	387894.64
1267-129	34.043010	-118.217580	3767593.43	387612.61
1267-130	34.043011	-118.217571	3767593.53	387613.48
1267-131	34.043016	-118.217564	3767594.07	387614.10
1267-132	34.043016	-118.217555	3767594.05	387614.93
1267-133	34.034160	-118.222059	3766616.99	387187.52
1267-134	34.034153	-118.222048	3766616.21	387188.52
1267-135	34.034141	-118.222027	3766614.85	387190.37
1267-136	34.034129	-118.221999	3766613.49	387192.93
1267-137	34.027722	-118.218341	3765899.01	387522.18
1267-138	34.027730	-118.218354	3765899.91	387521.01
1267-139	34.027735	-118.218368	3765900.48	387519.74
1267-140	34.027742	-118.218376	3765901.26	387519.01
1267-141	34.024764	-118.205547	3765557.02	388699.60
1267-142	34.024751	-118.205535	3765555.56	388700.66
1267-143	34.024762	-118.205534	3765556.78	388700.81
1267-144	34.024755	-118.205542	3765556.01	388699.98
1267-145	34.019913	-118.189025	3765001.26	390218.74
1267-146	34.019921	118.188994	3765002.12	390221.62
1267-147	34.019935	-118.188949	3765003.62	390225.82
1267-148	34.019921	-118.188885	3765002.00	390231.71
1267-149	34.017726	-118.176206	3764745.08	391399.63
1267-150	34.017717	-118.176137	3764744.01	391405.95
1267-151	34.017673	-118.176068	3764739.06	391412.32
1267-152	34.017820	-118.175948	3764755.23	391423.51
1267-153	34.017836	-118.176002	3764757.06	391418.61
1267-154	34.017880	-118.176073	3764762.02	391412.10

Notes:

¹ North American Datum 83 (WPS 84)

² Zone 11

APPENDIX C
PHOTOGRAPHIC RECORD

STANTEC CONSULTING SERVICES INC
PHOTOGRAPHIC RECORD

Client: Calif. Department of Transportation, District 7

Job Number: 185831017

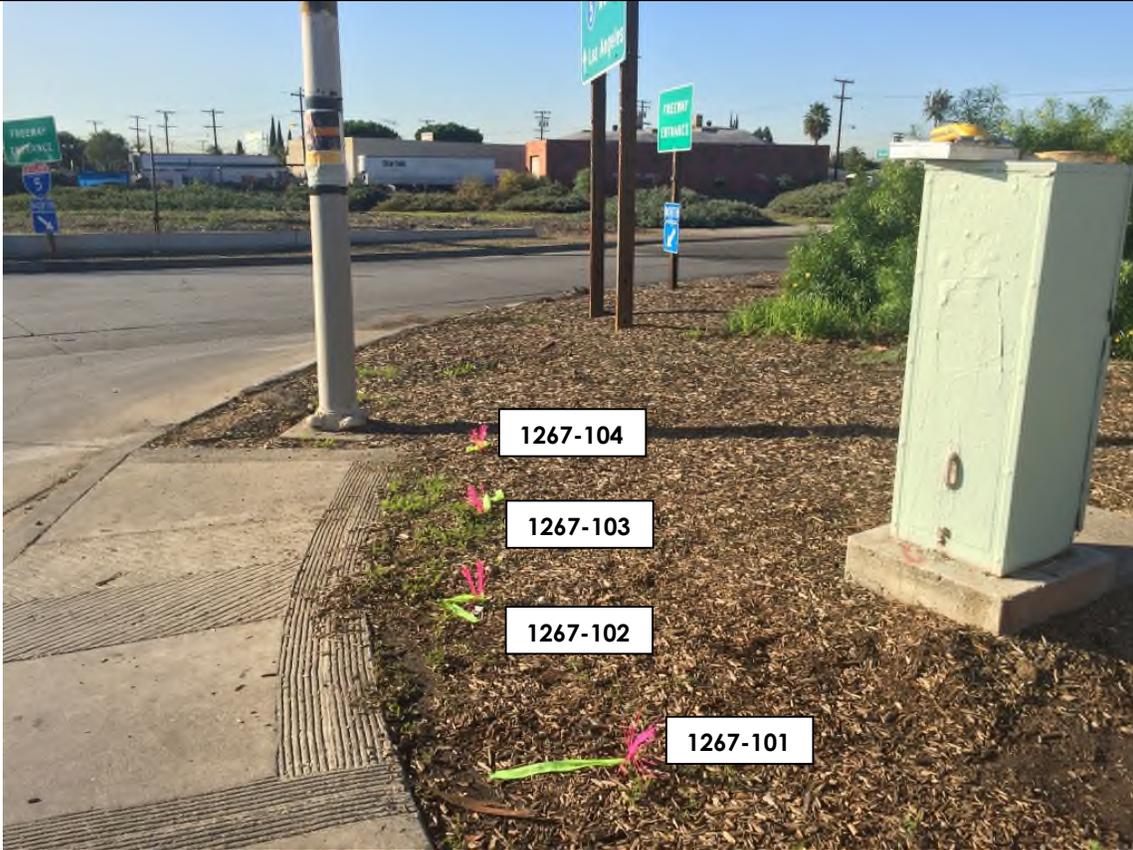
Site Name: Task Order #17 – SR 5 ADL

Location:
City of Los Angeles, CA

Photographer: Monica Aragon/Mark Zellmer

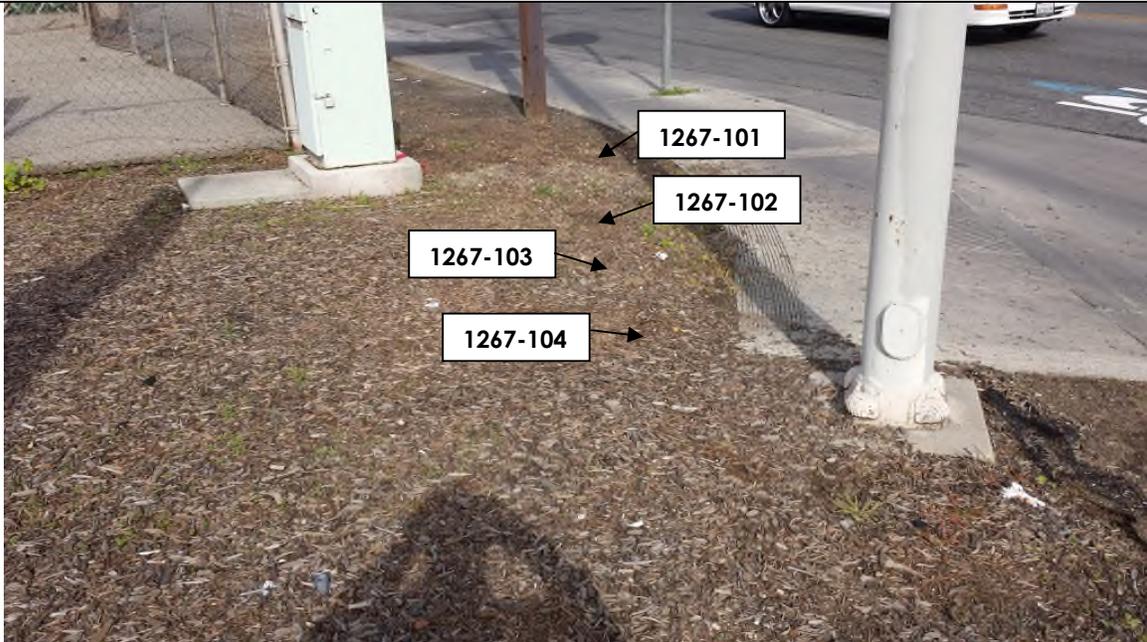
Date: December 9-15, 2014

Photograph No. 1



Location 1 – On-Ramp from Downey Road: View of location of borings 1267-101 through 1267-104 – Facing Southwest.

Photograph No. 2



Location 1 – On-Ramp from Downey Road: View of location of borings 1267-101 through 1267-104 after soil sampling – Facing Southwest.

STANTEC CONSULTING SERVICES INC
PHOTOGRAPHIC RECORD

Client: Calif. Department of Transportation, District 7

Job Number: 185831017

Site Name: Task Order #17 – SR 5 ADL

Location:
City of Los Angeles, CA

Photographer: Monica Aragon/Mark Zellmer

Date: December 9-15, 2014

Photograph No. 3



Location 3 – Off-Ramp to Grande Vista Avenue (Left): View of location of borings 1267-105 and 1267-106 – Facing Northwest.

Photograph No. 4



Location 3 – Off-Ramp to Grande Vista Avenue (Left): View of location of borings 1267-105 and 1267-106 after soil sampling – Facing east.

STANTEC CONSULTING SERVICES INC
PHOTOGRAPHIC RECORD

Client: Calif. Department of Transportation, District 7

Job Number: 185831017

Site Name: Task Order #17 – SR 5 ADL

Location:
City of Los Angeles, CA

Photographer: Monica Aragon/Mark Zellmer

Date: December 9-15, 2014

Photograph No. 5



Location 5 – Off-Ramp to Grande Vista Avenue (Left): View of location of borings 1267-107 and 1267-108 – Facing South.

Photograph No. 6



Location 5 – Off-Ramp to Grande Vista Avenue (Left): View of location of borings 1267-107 and 1267-108 after soil sampling – Facing South.

STANTEC CONSULTING SERVICES INC
PHOTOGRAPHIC RECORD

Client: Calif. Department of Transportation, District 7

Job Number: 185831017

Site Name: Task Order #17 – SR 5 ADL

Location:
City of Los Angeles, CA

Photographer: Monica Aragon/Mark Zellmer

Date: December 9-15, 2014

Photograph No. 7



Location 11 – On-Ramp from 7th /Breed Street (Right): View of location of borings 1267-109 and 1267-112 – Facing North.

Photograph No. 8



Location 11 – On-Ramp from 7th /Breed Street (Right): View of location of borings 1267-110 and 1267-111 – Facing South

STANTEC CONSULTING SERVICES INC
PHOTOGRAPHIC RECORD

Client: Calif. Department of Transportation, District 7

Job Number: 185831017

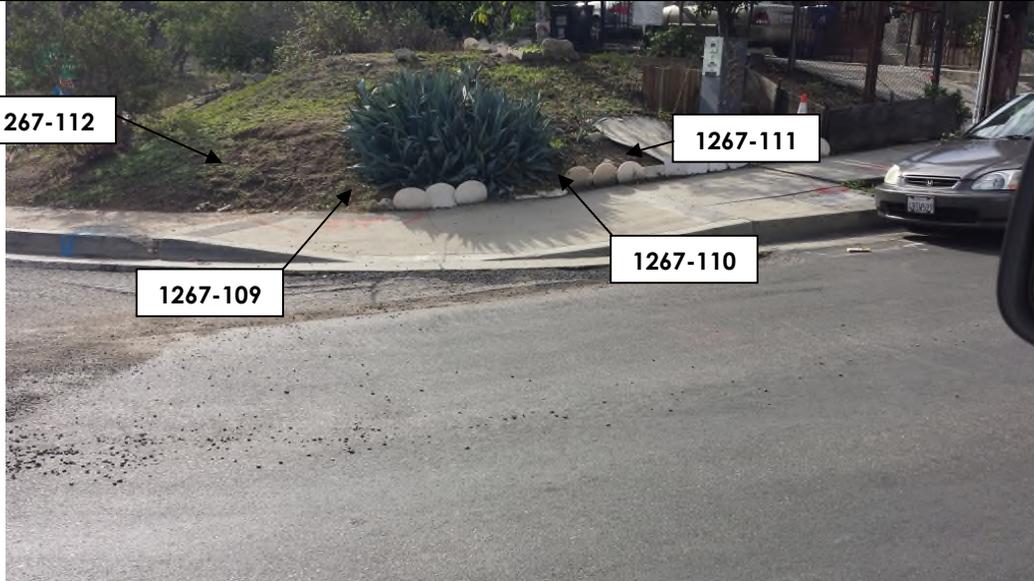
Site Name: Task Order #17 – SR 5 ADL

Location:
City of Los Angeles, CA

Photographer: Monica Aragon/Mark Zellmer

Date: December 9-15, 2014

Photograph No. 9



Location 11 – On-Ramp from 7th /Breed Street (Right): View of location of borings 1267-109 through 1267-112 after soil sampling – Facing west.

Photograph No. 10



Location 20 – On-Ramp from Marengo Street (Right): View of location of borings 1267-113 through 1267-116 – Facing Southeast.

STANTEC CONSULTING SERVICES INC
PHOTOGRAPHIC RECORD

Client: Calif. Department of Transportation, District 7

Job Number: 185831017

Site Name: Task Order #17 – SR 5 ADL

Location:
City of Los Angeles, CA

Photographer: Monica Aragon/Mark Zellmer

Date: December 9-15, 2014

Photograph No. 11



Location 20 – On-Ramp from Marengo Street (Right): View of location of borings 1267-113 through 1267-115 after soil sampling – Facing Southeast.

STANTEC CONSULTING SERVICES INC
PHOTOGRAPHIC RECORD

Client: Calif. Department of Transportation, District 7

Job Number: 185831017

Site Name: Task Order #17 – SR 5 ADL

Location:
City of Los Angeles, CA

Photographer: Monica Aragon/Mark Zellmer

Date: December 9-15, 2014

Photograph No. 12



Location 2 – Off-Ramp to Mission Road (Left): View of location of boring 1267-117 through 1267-120 – Facing West.

Photograph No. 13



Location 4 – On-Ramp to Mission Road (Left): View of location of borings 1267-121, 1267-124 and 1267-122 – Facing southeast.

STANTEC CONSULTING SERVICES INC
PHOTOGRAPHIC RECORD

Client: Calif. Department of Transportation, District 7

Job Number: 185831017

Site Name: Task Order #17 – SR 5 ADL

Location:
City of Los Angeles, CA

Photographer: Monica Aragon/Mark Zellmer

Date: December 9-15, 2014

Photograph No. 14



Location 4 – On-Ramp from Mission Road (Left): View of location of borings 1267-123 and 1267-124 – from Above, facing Southeast.

Photograph No. 15



Location 4 – On-Ramp from Mission Road (Left): View of location of boring 1267-122 – from Above, facing east.

STANTEC CONSULTING SERVICES INC
PHOTOGRAPHIC RECORD

Client: Calif. Department of Transportation, District 7

Job Number: 185831017

Site Name: Task Order #17 – SR 5 ADL

Location:
City of Los Angeles, CA

Photographer: Monica Aragon/Mark Zellmer

Date: December 9-15, 2014

Photograph No. 16



Location 4 – On-Ramp from Mission Road (Left): View of location of borings 1267-121 through 1267-124 after soil sampling – Facing east.

Photograph No. 17



Location 7 – On-Ramp from Cesar Chavez Avenue (Right): View of location of borings 1267-125 through 1267-128 – Facing Southeast.

STANTEC CONSULTING SERVICES INC
PHOTOGRAPHIC RECORD

Client: Calif. Department of Transportation, District 7

Job Number: 185831017

Site Name: Task Order #17 – SR 5 ADL

Location:
City of Los Angeles, CA

Photographer: Monica Aragon/Mark Zellmer

Date: December 9-15, 2014

Photograph No. 18



Location 7 – On-Ramp from Cesar Chavez Avenue (Right): View of location of borings 1267-125 through 1267-128 – Facing Southeast.

STANTEC CONSULTING SERVICES INC
PHOTOGRAPHIC RECORD

Client: Calif. Department of Transportation, District 7

Job Number: 185831017

Site Name: Task Order #17 – SR 5 ADL

Location:
City of Los Angeles, CA

Photographer: Monica Aragon/Mark Zellmer

Date: December 9-15, 2014

Photograph No. 19



Location 13 – On-Ramp from 4th Street (Left): View of location of borings 1267-129 through 1267-132 – Facing North.

Photograph No. 20



Location 13 – On-Ramp from 4th Street (Left): View of location of borings 1267-129 through 1267-132 after soil sampling – Facing Northeast.

STANTEC CONSULTING SERVICES INC
PHOTOGRAPHIC RECORD

Client: Calif. Department of Transportation, District 7

Job Number: 185831017

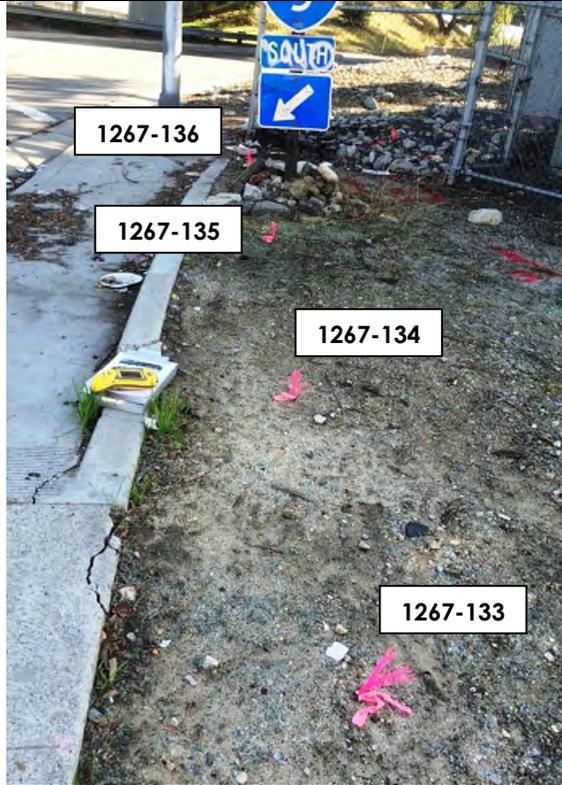
Site Name: Task Order #17 – SR 5 ADL

Location:
City of Los Angeles, CA

Photographer: Monica Aragon/Mark Zellmer

Date: December 9-15, 2014

Photograph No. 21



Location 14 – On-Ramp from 7th Street (Right): View of location of borings 1267-133 through 1267-136 – Facing Southeast.

Photograph No. 22



Location 14 – On-Ramp from 7th Street (Right): View of location of borings 1267-134 and 1267-135 after soil sampling – Facing Southeast.

STANTEC CONSULTING SERVICES INC
PHOTOGRAPHIC RECORD

Client: Calif. Department of Transportation, District 7

Job Number: 185831017

Site Name: Task Order #17 – SR 5 ADL

Location:
City of Los Angeles, CA

Photographer: Monica Aragon/Mark Zellmer

Date: December 9-15, 2014

Photograph No. 23



Location 14 – On-Ramp from 7th Street (Right): View of location of borings 1267-133 through 1267-136 after soil sampling – Facing Southeast.

STANTEC CONSULTING SERVICES INC
PHOTOGRAPHIC RECORD

Client: Calif. Department of Transportation, District 7

Job Number: 185831017

Site Name: Task Order #17 – SR 5 ADL

Location:
City of Los Angeles, CA

Photographer: Monica Aragon/Mark Zellmer

Date: December 9-15, 2014

Photograph No. 24



Location 16 – On-Ramp from 8th Street (Right): View of location of borings 1267-137 through 1267-140 – Facing West.

Photograph No. 25



Location 16 – On-Ramp from 8th Street (Right): View of location of borings 1267-138 through 1267-140 after sampling – Facing Southeast.

STANTEC CONSULTING SERVICES INC
PHOTOGRAPHIC RECORD

Client: Calif. Department of Transportation, District 7

Job Number: 185831017

Site Name: Task Order #17 – SR 5 ADL

Location:
City of Los Angeles, CA

Photographer: Monica Aragon/Mark Zellmer

Date: December 9-15, 2014

Photograph No. 26



Location 21 – On-Ramp from Concord Street (Left): View of location of borings 1267-141 through 1267-144 – Facing Southeast.

Photograph No. 27



Location 21 – On-Ramp from Concord Street (Left): View of location of borings 1267-141 and 1267-142 after soil sampling – Facing South.

STANTEC CONSULTING SERVICES INC
PHOTOGRAPHIC RECORD

Client: Calif. Department of Transportation, District 7

Job Number: 185831017

Site Name: Task Order #17 – SR 5 ADL

Location:
City of Los Angeles, CA

Photographer: Monica Aragon/Mark Zellmer

Date: December 9-15, 2014

Photograph No. 28



Concrete Barrier– Along Route 5 (S. Ditman Avenue On-Ramp): View of location of borings 1267-145 and 1267-146 – Facing East.

Photograph No. 29



Concrete Barrier– Along Route 5 (S. Ditman Avenue On-Ramp): View of location of borings 1267-147 and 1267-148 – Facing West.

STANTEC CONSULTING SERVICES INC
PHOTOGRAPHIC RECORD

Client: Calif. Department of Transportation, District 7

Job Number: 185831017

Site Name: Task Order #17 – SR 5 ADL

Location:
City of Los Angeles, CA

Photographer: Monica Aragon/Mark Zellmer

Date: December 9-15, 2014

Photograph No. 30



Concrete Barrier– Along Route 5 (S. Ditman Avenue On-Ramp): View of location of borings 1267-148 after sampling – Facing West.

STANTEC CONSULTING SERVICES INC
PHOTOGRAPHIC RECORD

Client: Calif. Department of Transportation, District 7

Job Number: 185831017

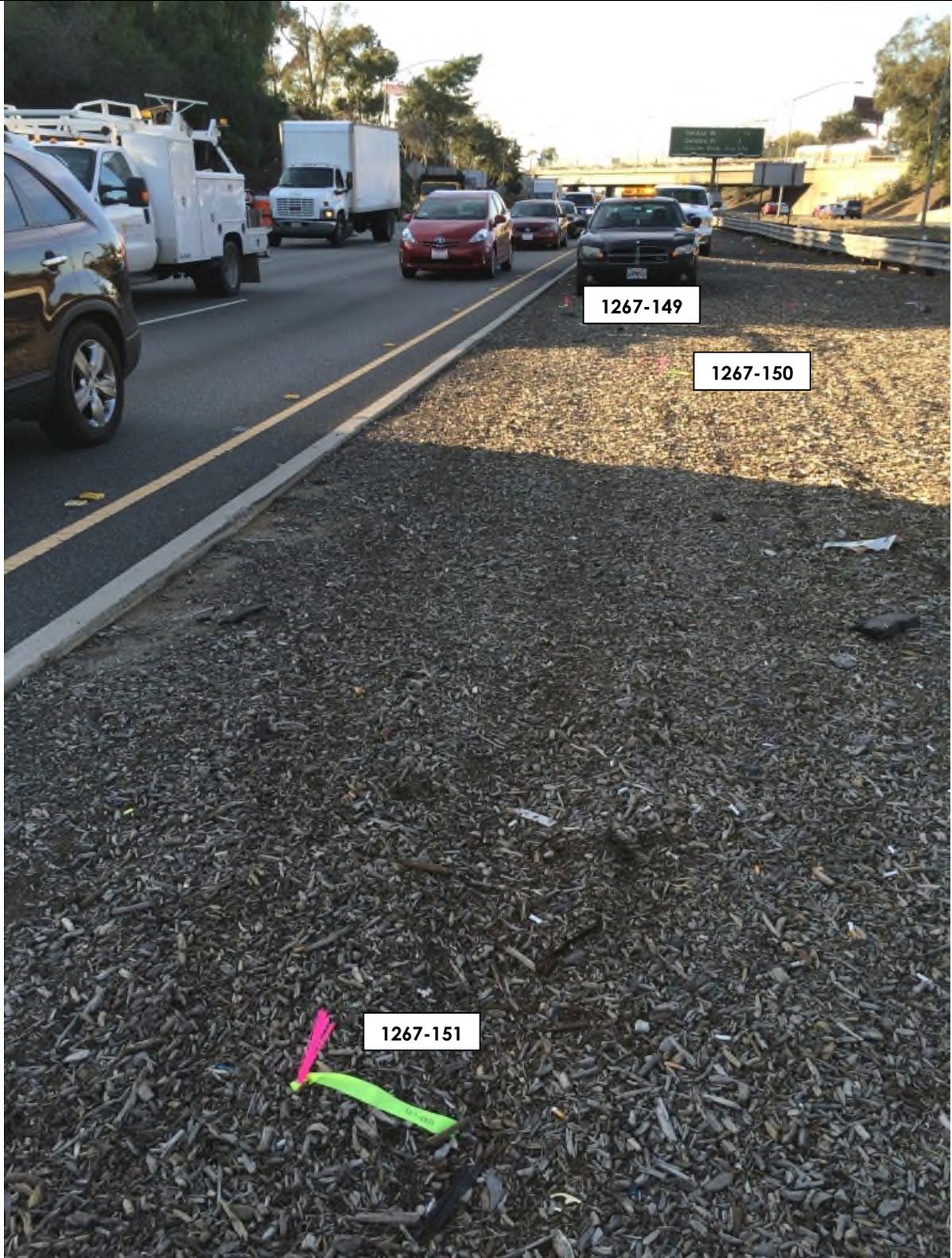
Site Name: Task Order #17 – SR 5 ADL

Location:
City of Los Angeles, CA

Photographer: Monica Aragon/Mark Zellmer

Date: December 9-15, 2014

Photograph No. 31



MVP Southbound: View of location of borings 1267-149 through 1267-151 – Facing West.

STANTEC CONSULTING SERVICES INC
PHOTOGRAPHIC RECORD

Client: Calif. Department of Transportation, District 7

Job Number: 185831017

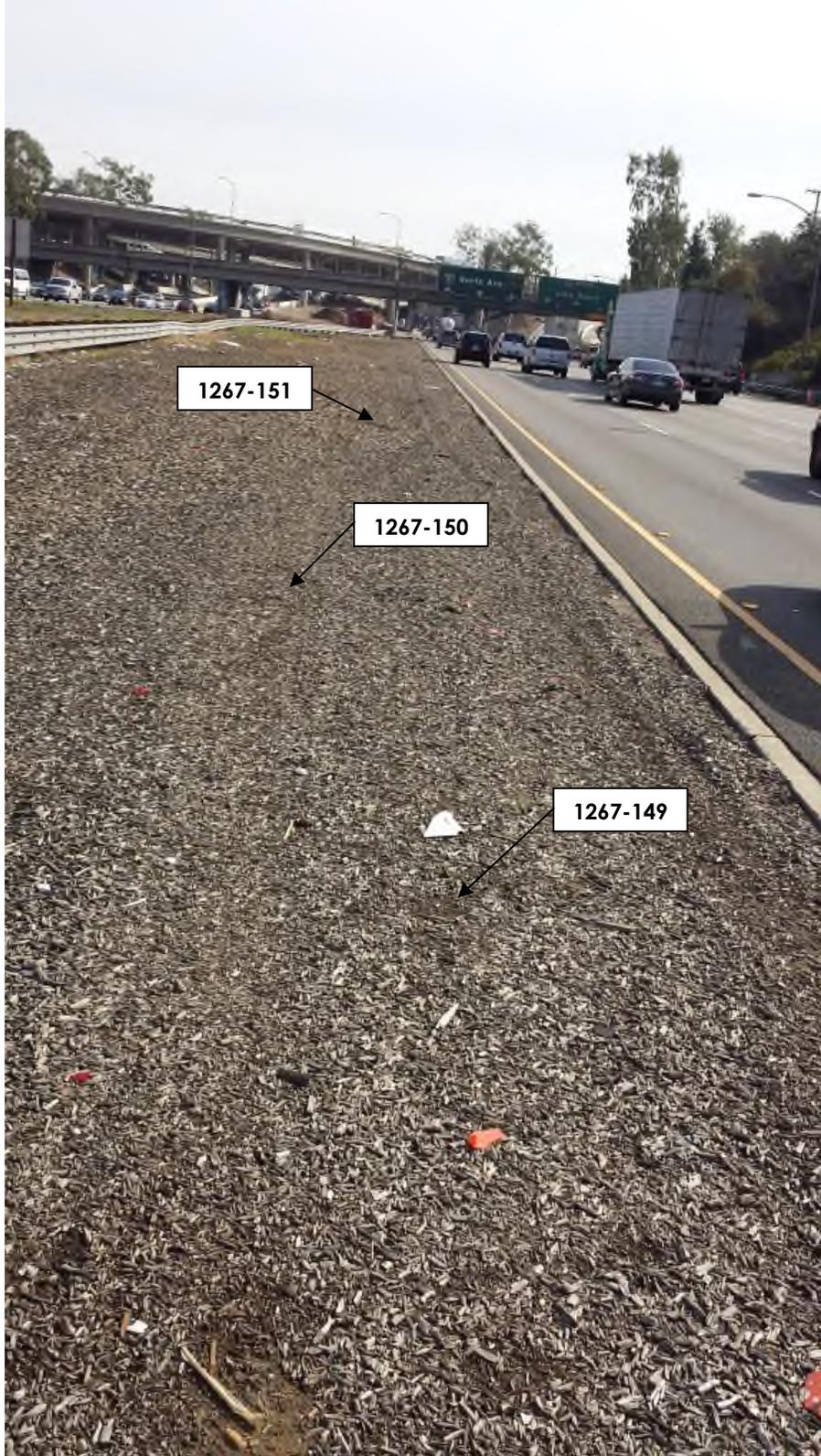
Site Name: Task Order #17 – SR 5 ADL

Location:
City of Los Angeles, CA

Photographer: Monica Aragon/Mark Zellmer

Date: December 9-15, 2014

Photograph No. 32



MVP Southbound: View of location of borings 1267-149 through 1267-151 after sampling – Facing East.

STANTEC CONSULTING SERVICES INC
PHOTOGRAPHIC RECORD

Client: Calif. Department of Transportation, District 7

Job Number: 185831017

Site Name: Task Order #17 – SR 5 ADL

Location:
City of Los Angeles, CA

Photographer: Monica Aragon/Mark Zellmer

Date: December 9-15, 2014

Photograph No. 33



MVP Northbound: View of location of borings 1267-152 through 1267-154 – Facing West.

STANTEC CONSULTING SERVICES INC
PHOTOGRAPHIC RECORD

Client: Calif. Department of Transportation, District 7

Job Number: 185831017

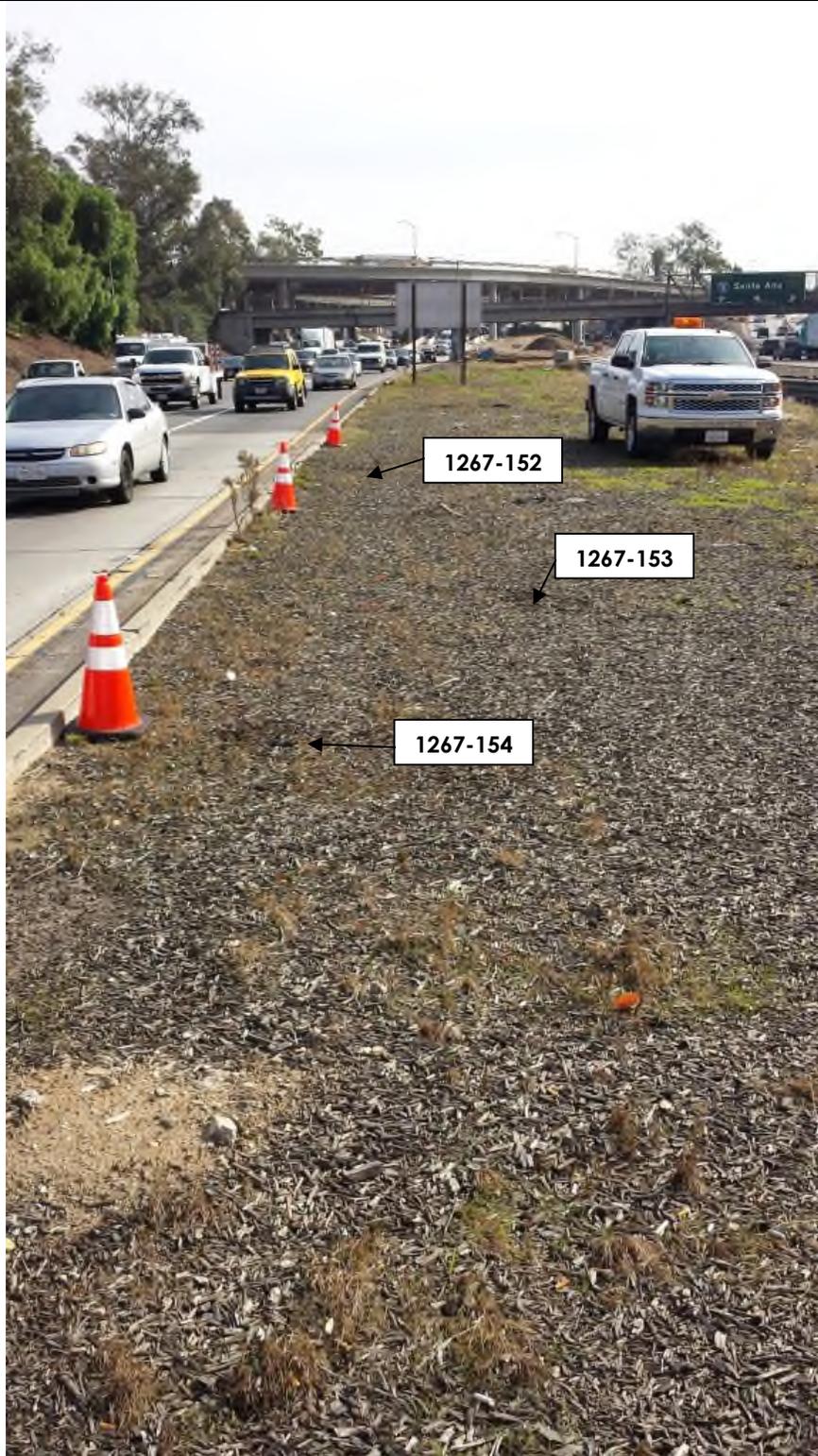
Site Name: Task Order #17 – SR 5 ADL

Location:
City of Los Angeles, CA

Photographer: Monica Aragon/Mark Zellmer

Date: December 9-15, 2014

Photograph No. 34



MVP Northbound: View of location of borings 1267-152 through 1267-154 after soil sampling – Facing East.

APPENDIX D
ANALYTICAL LABORATORY REPORTS and CHAIN-OF-CUSTODY RECORDS



January 06, 2015

Anne Perez/Monica Aragon
Stantec
3777 Worsham Avenue, Ste. 200
Long Beach, CA 90808
Tel: (562) 354-2638
Fax:

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

Re: ATL Work Order Number : 1403942

Client Reference : 185831017, Task: 200.0003, Caltrans 07A3321-17

Enclosed are the results for sample(s) received on December 11, 2014 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read 'Eddie Rodriguez', with a small 'Er' monogram below the main signature.

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Stantec
3777 Worsham Avenue, Ste. 200
Long Beach , CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
Report To : Anne Perez/Monica Aragon
Reported : 01/06/2015

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
1267-101-0	1403942-01	Soil	12/10/14 8:00	12/11/14 17:50
1267-101-2	1403942-02	Soil	12/10/14 8:05	12/11/14 17:50
1267-102-0	1403942-03	Soil	12/10/14 8:10	12/11/14 17:50
1267-102-2	1403942-04	Soil	12/10/14 8:15	12/11/14 17:50
1267-103-0	1403942-05	Soil	12/10/14 8:02	12/11/14 17:50
1267-103-2	1403942-06	Soil	12/10/14 8:09	12/11/14 17:50
1267-104-0	1403942-07	Soil	12/10/14 8:15	12/11/14 17:50
1267-104-2	1403942-08	Soil	12/10/14 8:25	12/11/14 17:50
1267-105-0	1403942-09	Soil	12/10/14 9:16	12/11/14 17:50
1267-105-2	1403942-10	Soil	12/10/14 9:18	12/11/14 17:50
1267-106-0	1403942-11	Soil	12/10/14 9:15	12/11/14 17:50
1267-106-2	1403942-12	Soil	12/10/14 9:22	12/11/14 17:50
1267-107-0	1403942-13	Soil	12/10/14 9:25	12/11/14 17:50
1267-107-2	1403942-14	Soil	12/10/14 9:30	12/11/14 17:50
1267-108-0	1403942-15	Soil	12/10/14 9:27	12/11/14 17:50
1267-108-2	1403942-16	Soil	12/10/14 9:35	12/11/14 17:50
1267-109-0	1403942-17	Soil	12/10/14 10:38	12/11/14 17:50
1267-109-2	1403942-18	Soil	12/10/14 10:45	12/11/14 17:50
1267-110-0	1403942-19	Soil	12/10/14 10:21	12/11/14 17:50
1267-110-2	1403942-20	Soil	12/10/14 10:30	12/11/14 17:50
1267-111-0	1403942-21	Soil	12/10/14 10:37	12/11/14 17:50
1267-111-2	1403942-22	Soil	12/10/14 10:46	12/11/14 17:50
1267-112-0	1403942-23	Soil	12/10/14 10:20	12/11/14 17:50
1267-112-2	1403942-24	Soil	12/10/14 10:34	12/11/14 17:50
1267-113-0	1403942-25	Soil	12/10/14 11:56	12/11/14 17:50
1267-113-2	1403942-26	Soil	12/10/14 12:04	12/11/14 17:50
1267-114-0	1403942-27	Soil	12/10/14 12:16	12/11/14 17:50
1267-114-2	1403942-28	Soil	12/10/14 12:28	12/11/14 17:50
1267-115-0	1403942-29	Soil	12/10/14 12:15	12/11/14 17:50
1267-115-2	1403942-30	Soil	12/10/14 12:23	12/11/14 17:50
1267-116-0	1403942-31	Soil	12/10/14 11:55	12/11/14 17:50
1267-116-2	1403942-32	Soil	12/10/14 12:03	12/11/14 17:50
1267-117-0	1403942-33	Soil	12/10/14 14:55	12/11/14 17:50
1267-117-2	1403942-34	Soil	12/10/14 15:10	12/11/14 17:50



Certificate of Analysis

Stantec
3777 Worsham Avenue, Ste. 200
Long Beach , CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17

Report To : Anne Perez/Monica Aragon

Reported : 01/06/2015

1267-118-0	1403942-35	Soil	12/10/14 15:22	12/11/14 17:50
1267-118-2	1403942-36	Soil	12/10/14 15:45	12/11/14 17:50
1267-119-0	1403942-37	Soil	12/10/14 15:05	12/11/14 17:50
1267-120-0	1403942-38	Soil	12/10/14 14:16	12/11/14 17:50
1267-120-2	1403942-39	Soil	12/10/14 15:30	12/11/14 17:50
1267-121-0	1403942-40	Soil	12/10/14 13:35	12/11/14 17:50
1267-121-2	1403942-41	Soil	12/10/14 13:43	12/11/14 17:50
1267-122-0	1403942-42	Soil	12/10/14 13:51	12/11/14 17:50
1267-122-2	1403942-43	Soil	12/10/14 13:55	12/11/14 17:50
1267-123-0	1403942-44	Soil	12/10/14 13:36	12/11/14 17:50
1267-123-2	1403942-45	Soil	12/10/14 13:50	12/11/14 17:50
1267-124-0	1403942-46	Soil	12/10/14 13:57	12/11/14 17:50
1267-124-2	1403942-47	Soil	12/10/14 14:10	12/11/14 17:50
1267-125-0	1403942-48	Soil	12/11/14 8:10	12/11/14 17:50
1267-125-2	1403942-49	Soil	12/11/14 8:12	12/11/14 17:50
1267-126-0	1403942-50	Soil	12/11/14 8:15	12/11/14 17:50
1267-126-2	1403942-51	Soil	12/11/14 8:20	12/11/14 17:50
1267-127-0	1403942-52	Soil	12/11/14 8:25	12/11/14 17:50
1267-127-2	1403942-53	Soil	12/11/14 8:30	12/11/14 17:50
1267-128-0	1403942-54	Soil	12/11/14 8:40	12/11/14 17:50
1267-128-2	1403942-55	Soil	12/11/14 8:45	12/11/14 17:50
1267-129-0	1403942-56	Soil	12/11/14 9:25	12/11/14 17:50
1267-129-2	1403942-57	Soil	12/11/14 9:35	12/11/14 17:50
1267-130-0	1403942-58	Soil	12/11/14 9:45	12/11/14 17:50
1267-130-2	1403942-59	Soil	12/11/14 9:50	12/11/14 17:50
1267-131-0	1403942-60	Soil	12/11/14 9:26	12/11/14 17:50
1267-131-2	1403942-61	Soil	12/11/14 9:34	12/11/14 17:50
1267-132-0	1403942-62	Soil	12/11/14 9:42	12/11/14 17:50
1267-132-2	1403942-63	Soil	12/11/14 9:51	12/11/14 17:50
1267-133-0	1403942-64	Soil	12/11/14 10:40	12/11/14 17:50
1267-133-2	1403942-65	Soil	12/11/14 10:45	12/11/14 17:50
1267-134-0	1403942-66	Soil	12/11/14 10:50	12/11/14 17:50
1267-134-2	1403942-67	Soil	12/11/14 11:00	12/11/14 17:50
1267-135-0	1403942-68	Soil	12/11/14 10:47	12/11/14 17:50
1267-135-2	1403942-69	Soil	12/11/14 11:01	12/11/14 17:50
1267-136-0	1403942-70	Soil	12/11/14 11:13	12/11/14 17:50
1267-137-0	1403942-71	Soil	12/11/14 12:06	12/11/14 17:50
1267-137-2	1403942-72	Soil	12/11/14 12:11	12/11/14 17:50
1267-138-0	1403942-73	Soil	12/11/14 12:15	12/11/14 17:50



Certificate of Analysis

Stantec
3777 Worsham Avenue, Ste. 200
Long Beach , CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17

Report To : Anne Perez/Monica Aragon

Reported : 01/06/2015

1267-138-2	1403942-74	Soil	12/11/14 12:21	12/11/14 17:50
1267-139-0	1403942-75	Soil	12/11/14 12:18	12/11/14 17:50
1267-139-2	1403942-76	Soil	12/11/14 12:25	12/11/14 17:50
1267-140-0	1403942-77	Soil	12/11/14 12:05	12/11/14 17:50
1267-140-2	1403942-78	Soil	12/11/14 12:13	12/11/14 17:50
1267-141-0	1403942-79	Soil	12/11/14 13:35	12/11/14 17:50
1267-141-2	1403942-80	Soil	12/11/14 13:45	12/11/14 17:50
1267-142-0	1403942-81	Soil	12/11/14 13:37	12/11/14 17:50
1267-143-0	1403942-82	Soil	12/11/14 13:50	12/11/14 17:50
1267-143-2	1403942-83	Soil	12/11/14 14:10	12/11/14 17:50
1267-144-0	1403942-84	Soil	12/11/14 13:49	12/11/14 17:50
1267-144-2	1403942-85	Soil	12/11/14 14:03	12/11/14 17:50
1267-145-0	1403942-86	Soil	12/11/14 15:15	12/11/14 17:50
1267-145-2	1403942-87	Soil	12/11/14 15:33	12/11/14 17:50
1267-146-0	1403942-88	Soil	12/11/14 15:14	12/11/14 17:50
1267-146-2	1403942-89	Soil	12/11/14 15:20	12/11/14 17:50
1267-147-0	1403942-90	Soil	12/11/14 15:02	12/11/14 17:50
1267-147-2	1403942-91	Soil	12/11/14 15:08	12/11/14 17:50
1267-148-0	1403942-92	Soil	12/11/14 14:59	12/11/14 17:50
1267-148-2	1403942-93	Soil	12/11/14 15:07	12/11/14 17:50
1267-DUP1-20141210	1403942-94	Soil	12/10/14 0:00	12/11/14 17:50
1267-DUP2-20141210	1403942-95	Soil	12/10/14 0:00	12/11/14 17:50
1267-DUP3-20141211	1403942-96	Soil	12/11/14 0:00	12/11/14 17:50
1267-DUP4-20141211	1403942-97	Soil	12/11/14 0:00	12/11/14 17:50
1267-DUP5-20141211	1403942-98	Soil	12/11/14 0:00	12/11/14 17:50
1267-EB1-20141210	1403942-99	Water	12/10/14 8:00	12/11/14 17:50
1267-FB1-20141210	1403942-AA	Water	12/10/14 8:01	12/11/14 17:50

CASE NARRATIVE

Sample Receiving/General Comments:

Documentation pertaining to additional analyses/change order available upon request.

Results were J-flagged. "J" is used to flag those results that are between the PQL (Practical Quantitation Limit) and the calculated MDL (Method Detection Limit). Results that are "J" flagged are estimated values since it becomes difficult to accurately quantitate the analyte near the MDL.



Certificate of Analysis

Stantec
 3777 Worsham Avenue, Ste. 200
 Long Beach , CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
 Report To : Anne Perez/Monica Aragon
 Reported : 01/06/2015

Lead by ICP-AES EPA 6010B

Analyte: Lead

Analyst: SB

Laboratory ID	Client Sample ID	Result	Units	PQL	MDL	Dilution	Batch	Prepared	Date/Time		Notes
									Analized		
1403942-01	1267-101-0	110	mg/kg	1.0	0.07	1	B4L0497	12/17/2014	12/18/14 10:30		
1403942-02	1267-101-2	45	mg/kg	1.0	0.07	1	B4L0497	12/17/2014	12/18/14 10:31		
1403942-03	1267-102-0	390	mg/kg	1.0	0.07	1	B4L0497	12/17/2014	12/18/14 10:32		
1403942-04	1267-102-2	41	mg/kg	0.99	0.07	1	B4L0497	12/17/2014	12/18/14 10:34		
1403942-05	1267-103-0	190	mg/kg	1.0	0.07	1	B4L0497	12/17/2014	12/18/14 10:37		
1403942-06	1267-103-2	41	mg/kg	1.0	0.07	1	B4L0497	12/17/2014	12/18/14 10:37		
1403942-07	1267-104-0	190	mg/kg	1.0	0.07	1	B4L0497	12/17/2014	12/18/14 10:38		
1403942-08	1267-104-2	7.5	mg/kg	1.0	0.07	1	B4L0497	12/17/2014	12/18/14 10:39		
1403942-09	1267-105-0	22	mg/kg	1.0	0.07	1	B4L0497	12/17/2014	12/18/14 10:40		
1403942-10	1267-105-2	7.2	mg/kg	1.0	0.07	1	B4L0497	12/17/2014	12/18/14 10:40		
1403942-11	1267-106-0	14	mg/kg	1.0	0.07	1	B4L0497	12/17/2014	12/18/14 10:41		
1403942-12	1267-106-2	5.8	mg/kg	1.0	0.07	1	B4L0497	12/17/2014	12/18/14 10:44		
1403942-13	1267-107-0	66	mg/kg	1.0	0.07	1	B4L0497	12/17/2014	12/18/14 10:45		
1403942-14	1267-107-2	5.1	mg/kg	1.0	0.07	1	B4L0497	12/17/2014	12/18/14 10:45		
1403942-15	1267-108-0	75	mg/kg	1.0	0.07	1	B4L0498	12/17/2014	12/18/14 10:52		
1403942-16	1267-108-2	50	mg/kg	1.0	0.07	1	B4L0498	12/17/2014	12/18/14 10:55		
1403942-17	1267-109-0	99	mg/kg	1.0	0.07	1	B4L0498	12/17/2014	12/18/14 10:55		
1403942-18	1267-109-2	4.7	mg/kg	1.0	0.07	1	B4L0498	12/17/2014	12/18/14 10:56		
1403942-19	1267-110-0	48	mg/kg	1.0	0.07	1	B4L0498	12/17/2014	12/18/14 10:57		
1403942-20	1267-110-2	31	mg/kg	1.0	0.07	1	B4L0498	12/17/2014	12/18/14 10:58		
1403942-21	1267-111-0	140	mg/kg	1.0	0.07	1	B4L0498	12/17/2014	12/18/14 10:58		
1403942-22	1267-111-2	27	mg/kg	1.0	0.07	1	B4L0498	12/17/2014	12/18/14 10:59		
1403942-23	1267-112-0	83	mg/kg	1.0	0.07	1	B4L0498	12/17/2014	12/18/14 11:00		
1403942-24	1267-112-2	23	mg/kg	1.0	0.07	1	B4L0498	12/17/2014	12/18/14 11:01		
1403942-25	1267-113-0	14	mg/kg	1.0	0.07	1	B4L0498	12/17/2014	12/18/14 11:05		
1403942-26	1267-113-2	99	mg/kg	1.0	0.07	1	B4L0498	12/17/2014	12/18/14 11:06		
1403942-27	1267-114-0	14	mg/kg	1.0	0.07	1	B4L0498	12/17/2014	12/18/14 11:07		
1403942-28	1267-114-2	49	mg/kg	1.0	0.07	1	B4L0498	12/17/2014	12/18/14 11:08		
1403942-29	1267-115-0	35	mg/kg	1.0	0.07	1	B4L0498	12/17/2014	12/18/14 11:08		
1403942-30	1267-115-2	12	mg/kg	1.0	0.07	1	B4L0498	12/17/2014	12/18/14 11:09		



Certificate of Analysis

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Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
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 Reported : 01/06/2015

Lead by ICP-AES EPA 6010B

Analyte: Lead

Analyst: SB

Laboratory ID	Client Sample ID	Result	Units	PQL	MDL	Dilution	Batch	Prepared	Date/Time		Notes
									Analized		
1403942-31	1267-116-0	110	mg/kg	1.0	0.07	1	B4L0498	12/17/2014	12/18/14 11:10		
1403942-32	1267-116-2	390	mg/kg	1.0	0.07	1	B4L0498	12/17/2014	12/18/14 11:11		
1403942-33	1267-117-0	520	mg/kg	1.0	0.07	1	B4L0498	12/17/2014	12/18/14 11:11		
1403942-34	1267-117-2	87	mg/kg	1.0	0.07	1	B4L0498	12/17/2014	12/18/14 11:14		
1403942-35	1267-118-0	710	mg/kg	1.0	0.07	1	B4L0499	12/17/2014	12/18/14 11:20		
1403942-36	1267-118-2	14	mg/kg	1.0	0.07	1	B4L0499	12/17/2014	12/18/14 11:21		
1403942-37	1267-119-0	540	mg/kg	1.0	0.07	1	B4L0499	12/17/2014	12/18/14 11:22		
1403942-38	1267-120-0	230	mg/kg	1.0	0.07	1	B4L0499	12/17/2014	12/18/14 11:25		
1403942-39	1267-120-2	10	mg/kg	1.0	0.07	1	B4L0499	12/17/2014	12/18/14 11:26		
1403942-40	1267-121-0	440	mg/kg	1.0	0.07	1	B4L0499	12/17/2014	12/18/14 11:26		
1403942-41	1267-121-2	44	mg/kg	1.0	0.07	1	B4L0499	12/17/2014	12/18/14 11:27		
1403942-42	1267-122-0	180	mg/kg	1.0	0.07	1	B4L0499	12/17/2014	12/18/14 11:28		
1403942-43	1267-122-2	20	mg/kg	1.0	0.07	1	B4L0499	12/17/2014	12/18/14 11:29		
1403942-44	1267-123-0	140	mg/kg	1.0	0.07	1	B4L0499	12/17/2014	12/18/14 11:29		
1403942-45	1267-123-2	28	mg/kg	1.0	0.07	1	B4L0499	12/17/2014	12/18/14 11:32		
1403942-46	1267-124-0	430	mg/kg	1.0	0.07	1	B4L0499	12/17/2014	12/18/14 11:34		
1403942-47	1267-124-2	98	mg/kg	1.0	0.07	1	B4L0499	12/17/2014	12/18/14 11:35		
1403942-48	1267-125-0	33	mg/kg	1.0	0.07	1	B4L0499	12/17/2014	12/18/14 11:36		
1403942-49	1267-125-2	22	mg/kg	1.0	0.07	1	B4L0499	12/17/2014	12/18/14 11:37		
1403942-50	1267-126-0	58	mg/kg	1.0	0.07	1	B4L0499	12/17/2014	12/18/14 11:37		
1403942-51	1267-126-2	7.1	mg/kg	1.0	0.07	1	B4L0499	12/17/2014	12/18/14 11:38		
1403942-52	1267-127-0	98	mg/kg	1.0	0.07	1	B4L0499	12/17/2014	12/18/14 11:39		
1403942-53	1267-127-2	9.0	mg/kg	1.0	0.07	1	B4L0499	12/17/2014	12/18/14 11:40		
1403942-54	1267-128-0	89	mg/kg	1.0	0.07	1	B4L0499	12/17/2014	12/18/14 11:40		
1403942-55	1267-128-2	4.0	mg/kg	1.0	0.07	1	B4L0500	12/17/2014	12/18/14 11:49		
1403942-56	1267-129-0	340	mg/kg	1.0	0.07	1	B4L0500	12/17/2014	12/18/14 11:49		
1403942-57	1267-129-2	92	mg/kg	1.0	0.07	1	B4L0500	12/17/2014	12/18/14 11:50		
1403942-58	1267-130-0	590	mg/kg	1.0	0.07	1	B4L0500	12/17/2014	12/18/14 11:51		
1403942-59	1267-130-2	7.5	mg/kg	1.0	0.07	1	B4L0500	12/17/2014	12/18/14 11:52		
1403942-60	1267-131-0	440	mg/kg	1.0	0.07	1	B4L0500	12/17/2014	12/18/14 11:55		



Certificate of Analysis

Stantec
 3777 Worsham Avenue, Ste. 200
 Long Beach , CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
 Report To : Anne Perez/Monica Aragon
 Reported : 01/06/2015

Lead by ICP-AES EPA 6010B

Analyte: Lead

Analyst: SB

Laboratory ID	Client Sample ID	Result	Units	PQL	MDL	Dilution	Batch	Prepared	Date/Time		Notes
									Analized		
1403942-61	1267-131-2	140	mg/kg	1.0	0.07	1	B4L0500	12/17/2014	12/18/14 11:55		
1403942-62	1267-132-0	690	mg/kg	1.0	0.07	1	B4L0500	12/17/2014	12/18/14 11:56		
1403942-63	1267-132-2	9.0	mg/kg	1.0	0.07	1	B4L0500	12/17/2014	12/18/14 11:57		
1403942-64	1267-133-0	140	mg/kg	1.0	0.07	1	B4L0500	12/17/2014	12/18/14 11:58		
1403942-65	1267-133-2	140	mg/kg	1.0	0.07	1	B4L0500	12/17/2014	12/18/14 12:00		
1403942-66	1267-134-0	170	mg/kg	1.0	0.07	1	B4L0500	12/17/2014	12/18/14 12:01		
1403942-67	1267-134-2	130	mg/kg	1.0	0.07	1	B4L0500	12/17/2014	12/18/14 12:01		
1403942-68	1267-135-0	210	mg/kg	1.0	0.07	1	B4L0500	12/17/2014	12/18/14 12:04		
1403942-69	1267-135-2	76	mg/kg	1.0	0.07	1	B4L0500	12/17/2014	12/18/14 12:05		
1403942-70	1267-136-0	230	mg/kg	1.0	0.07	1	B4L0500	12/17/2014	12/18/14 12:06		
1403942-71	1267-137-0	14	mg/kg	1.0	0.07	1	B4L0500	12/17/2014	12/18/14 12:06		
1403942-72	1267-137-2	3.6	mg/kg	1.0	0.07	1	B4L0500	12/17/2014	12/18/14 12:07		
1403942-73	1267-138-0	16	mg/kg	1.0	0.07	1	B4L0500	12/17/2014	12/18/14 12:08		
1403942-74	1267-138-2	16	mg/kg	1.0	0.07	1	B4L0500	12/17/2014	12/18/14 12:09		
1403942-75	1267-139-0	11	mg/kg	1.0	0.07	1	B4L0501	12/17/2014	12/18/14 12:17		
1403942-76	1267-139-2	6.0	mg/kg	1.0	0.07	1	B4L0501	12/17/2014	12/18/14 12:18		
1403942-77	1267-140-0	9.4	mg/kg	1.0	0.07	1	B4L0501	12/17/2014	12/18/14 12:18		
1403942-78	1267-140-2	4.9	mg/kg	1.0	0.07	1	B4L0501	12/17/2014	12/18/14 12:19		
1403942-79	1267-141-0	120	mg/kg	1.0	0.07	1	B4L0501	12/17/2014	12/18/14 12:20		
1403942-80	1267-141-2	14	mg/kg	1.0	0.07	1	B4L0501	12/17/2014	12/18/14 12:21		
1403942-81	1267-142-0	120	mg/kg	0.99	0.07	1	B4L0501	12/17/2014	12/18/14 12:21		
1403942-82	1267-143-0	150	mg/kg	1.0	0.07	1	B4L0501	12/17/2014	12/18/14 12:24		
1403942-83	1267-143-2	13	mg/kg	1.0	0.07	1	B4L0501	12/17/2014	12/18/14 12:25		
1403942-84	1267-144-0	140	mg/kg	1.0	0.07	1	B4L0501	12/17/2014	12/18/14 12:26		
1403942-85	1267-144-2	45	mg/kg	1.0	0.07	1	B4L0501	12/17/2014	12/18/14 12:28		
1403942-86	1267-145-0	120	mg/kg	1.0	0.07	1	B4L0501	12/17/2014	12/18/14 12:29		
1403942-87	1267-145-2	49	mg/kg	1.0	0.07	1	B4L0501	12/17/2014	12/18/14 12:29		
1403942-88	1267-146-0	210	mg/kg	1.0	0.07	1	B4L0501	12/17/2014	12/18/14 12:30		
1403942-89	1267-146-2	25	mg/kg	1.0	0.07	1	B4L0501	12/17/2014	12/18/14 12:31		
1403942-90	1267-147-0	300	mg/kg	1.0	0.07	1	B4L0501	12/17/2014	12/18/14 12:34		



Certificate of Analysis

Stantec
3777 Worsham Avenue, Ste. 200
Long Beach , CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
Report To : Anne Perez/Monica Aragon
Reported : 01/06/2015

Lead by ICP-AES EPA 6010B

Analyte: Lead

Analyst: SB

Laboratory ID	Client Sample ID	Result	Units	PQL	MDL	Dilution	Batch	Prepared	Date/Time	Notes
									Analyzed	
1403942-91	1267-147-2	15	mg/kg	1.0	0.07	1	B4L0501	12/17/2014	12/18/14 12:34	
1403942-92	1267-148-0	380	mg/kg	1.0	0.07	1	B4L0501	12/17/2014	12/18/14 12:35	
1403942-93	1267-148-2	160	mg/kg	1.0	0.07	1	B4L0501	12/17/2014	12/18/14 12:36	
1403942-94	1267-DUP1-201 41210	18	mg/kg	1.0	0.07	1	B4L0501	12/17/2014	12/18/14 12:37	
1403942-95	1267-DUP2-201 41210	14	mg/kg	1.0	0.07	1	B4L0502	12/17/2014	12/18/14 12:45	
1403942-96	1267-DUP3-201 41211	10	mg/kg	1.0	0.07	1	B4L0502	12/17/2014	12/18/14 12:46	
1403942-97	1267-DUP4-201 41211	200	mg/kg	1.0	0.07	1	B4L0502	12/17/2014	12/18/14 12:47	
1403942-98	1267-DUP5-201 41211	430	mg/kg	1.0	0.07	1	B4L0502	12/17/2014	12/18/14 12:47	



Certificate of Analysis

Stantec
 3777 Worsham Avenue, Ste. 200
 Long Beach , CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
 Report To : Anne Perez/Monica Aragon
 Reported : 01/06/2015

TCLP Metals by ICP-AES EPA 6010B

Analyte: Lead

Analyst: RR

Laboratory ID	Client Sample ID	Result	Units	PQL	MDL	Dilution	Batch	Prepared	Date/Time		Notes
									Analized		
1403942-03	1267-102-0	0.25	mg/L	0.050	0.0014	1	B4L0702	12/24/2014	12/26/14 11:00		
1403942-05	1267-103-0	0.11	mg/L	0.050	0.0014	1	B4L0702	12/24/2014	12/26/14 11:03		
1403942-32	1267-116-2	0.034	mg/L	0.050	0.0014	1	B4L0702	12/24/2014	12/26/14 11:06		J
1403942-33	1267-117-0	0.54	mg/L	0.050	0.0014	1	B4L0702	12/24/2014	12/26/14 11:08		
1403942-35	1267-118-0	1.1	mg/L	0.050	0.0014	1	B4L0702	12/24/2014	12/26/14 11:14		
1403942-37	1267-119-0	0.87	mg/L	0.050	0.0014	1	B4L0702	12/24/2014	12/26/14 11:17		
1403942-38	1267-120-0	0.40	mg/L	0.050	0.0014	1	B4L0702	12/24/2014	12/26/14 11:20		
1403942-40	1267-121-0	0.72	mg/L	0.050	0.0014	1	B4L0702	12/24/2014	12/26/14 11:22		
1403942-46	1267-124-0	0.95	mg/L	0.050	0.0014	1	B4L0702	12/24/2014	12/26/14 11:25		
1403942-56	1267-129-0	0.22	mg/L	0.050	0.0014	1	B4L0703	12/24/2014	12/26/14 11:44		
1403942-58	1267-130-0	0.53	mg/L	0.050	0.0014	1	B4L0703	12/24/2014	12/26/14 11:46		
1403942-60	1267-131-0	0.35	mg/L	0.050	0.0014	1	B4L0703	12/24/2014	12/26/14 11:49		
1403942-62	1267-132-0	0.37	mg/L	0.050	0.0014	1	B4L0703	12/24/2014	12/26/14 11:51		
1403942-68	1267-135-0	0.49	mg/L	0.050	0.0014	1	B4L0703	12/24/2014	12/26/14 11:54		
1403942-70	1267-136-0	0.25	mg/L	0.050	0.0014	1	B4L0703	12/24/2014	12/26/14 11:57		
1403942-88	1267-146-0	0.56	mg/L	0.050	0.0014	1	B4L0703	12/24/2014	12/26/14 11:59		
1403942-90	1267-147-0	0.46	mg/L	0.050	0.0014	1	B4L0703	12/24/2014	12/26/14 12:02		
1403942-92	1267-148-0	0.30	mg/L	0.050	0.0014	1	B4L0703	12/24/2014	12/26/14 12:04		
1403942-97	1267-DUP4-201 41211	0.097	mg/L	0.050	0.0014	1	B4L0703	12/24/2014	12/26/14 12:10		
1403942-98	1267-DUP5-201 41211	0.40	mg/L	0.050	0.0014	1	B4L0703	12/24/2014	12/26/14 12:18		



Certificate of Analysis

Stantec
 3777 Worsham Avenue, Ste. 200
 Long Beach , CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
 Report To : Anne Perez/Monica Aragon
 Reported : 01/06/2015

STLC Metals by ICP-AES by EPA 6010B

Analyte: Lead

Analyst: RR

Laboratory ID	Client Sample ID	Result	Units	PQL	MDL	Dilution	Batch	Prepared	Date/Time	Notes
									Analyzed	
1403942-01	1267-101-0	8.1	mg/L	1.0	0.027	20	B4L0736	12/26/2014	12/29/14 16:15	
1403942-03	1267-102-0	18	mg/L	1.0	0.027	20	B4L0736	12/26/2014	12/29/14 16:22	
1403942-05	1267-103-0	14	mg/L	1.0	0.027	20	B4L0736	12/26/2014	12/29/14 16:24	
1403942-07	1267-104-0	10	mg/L	1.0	0.027	20	B4L0736	12/26/2014	12/29/14 16:30	
1403942-13	1267-107-0	3.0	mg/L	1.0	0.027	20	B4L0736	12/26/2014	12/29/14 16:32	
1403942-15	1267-108-0	4.2	mg/L	1.0	0.027	20	B4L0736	12/26/2014	12/29/14 16:34	
1403942-16	1267-108-2	1.7	mg/L	1.0	0.027	20	B4L0736	12/26/2014	12/29/14 16:37	
1403942-17	1267-109-0	5.5	mg/L	1.0	0.027	20	B4L0736	12/26/2014	12/29/14 16:39	
1403942-21	1267-111-0	6.3	mg/L	1.0	0.027	20	B4L0736	12/26/2014	12/29/14 16:41	
1403942-23	1267-112-0	4.1	mg/L	1.0	0.027	20	B4L0736	12/26/2014	12/29/14 16:43	
1403942-26	1267-113-2	2.4	mg/L	1.0	0.027	20	B4L0736	12/26/2014	12/29/14 16:46	
1403942-31	1267-116-0	7.6	mg/L	1.0	0.027	20	B4L0737	12/26/2014	12/29/14 18:20	
1403942-32	1267-116-2	2.7	mg/L	1.0	0.027	20	B4L0737	12/26/2014	12/29/14 18:22	
1403942-33	1267-117-0	25	mg/L	1.0	0.027	20	B4L0737	12/26/2014	12/29/14 18:24	
1403942-34	1267-117-2	0.42	mg/L	1.0	0.027	20	B4L0737	12/26/2014	12/29/14 18:27	J
1403942-35	1267-118-0	45	mg/L	1.0	0.027	20	B4L0737	12/26/2014	12/29/14 18:29	
1403942-37	1267-119-0	28	mg/L	1.0	0.027	20	B4L0737	12/26/2014	12/29/14 18:31	
1403942-38	1267-120-0	16	mg/L	1.0	0.027	20	B4L0737	12/26/2014	12/29/14 18:33	
1403942-40	1267-121-0	24	mg/L	1.0	0.027	20	B4L0737	12/26/2014	12/29/14 18:36	
1403942-42	1267-122-0	8.8	mg/L	1.0	0.027	20	B4L0737	12/26/2014	12/29/14 18:42	
1403942-44	1267-123-0	6.4	mg/L	1.0	0.027	20	B4L0737	12/26/2014	12/29/14 18:44	
1403942-46	1267-124-0	27	mg/L	1.0	0.027	20	B4L0737	12/26/2014	12/29/14 18:51	
1403942-47	1267-124-2	5.2	mg/L	1.0	0.027	20	B4L0737	12/26/2014	12/29/14 18:53	
1403942-50	1267-126-0	3.1	mg/L	1.0	0.027	20	B4L0737	12/26/2014	12/29/14 18:55	
1403942-52	1267-127-0	5.4	mg/L	1.0	0.027	20	B4L0737	12/26/2014	12/29/14 18:57	
1403942-54	1267-128-0	6.3	mg/L	1.0	0.027	20	B4L0737	12/26/2014	12/29/14 18:59	
1403942-56	1267-129-0	19	mg/L	1.0	0.027	20	B4L0737	12/26/2014	12/29/14 19:02	
1403942-57	1267-129-2	5.4	mg/L	1.0	0.027	20	B4L0737	12/26/2014	12/29/14 19:08	
1403942-58	1267-130-0	35	mg/L	1.0	0.027	20	B4L0737	12/26/2014	12/29/14 19:10	
1403942-60	1267-131-0	25	mg/L	1.0	0.027	20	B4L0737	12/26/2014	12/29/14 19:12	



Certificate of Analysis

Stantec
 3777 Worsham Avenue, Ste. 200
 Long Beach , CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
 Report To : Anne Perez/Monica Aragon
 Reported : 01/06/2015

STLC Metals by ICP-AES by EPA 6010B

Analyte: Lead

Analyst: RR

Laboratory ID	Client Sample ID	Result	Units	PQL	MDL	Dilution	Batch	Prepared	Date/Time		Notes
									Analized		
1403942-61	1267-131-2	6.1	mg/L	1.0	0.027	20	B4L0737	12/26/2014	12/29/14 19:14		
1403942-62	1267-132-0	29	mg/L	1.0	0.027	20	B4L0738	12/26/2014	12/29/14 19:33		
1403942-64	1267-133-0	19	mg/L	1.0	0.027	20	B4L0738	12/26/2014	12/29/14 19:36		
1403942-65	1267-133-2	7.0	mg/L	1.0	0.027	20	B4L0738	12/26/2014	12/29/14 19:38		
1403942-66	1267-134-0	9.7	mg/L	1.0	0.027	20	B4L0738	12/26/2014	12/29/14 19:40		
1403942-67	1267-134-2	8.1	mg/L	1.0	0.027	20	B4L0738	12/26/2014	12/29/14 19:42		
1403942-68	1267-135-0	12	mg/L	1.0	0.027	20	B4L0738	12/26/2014	12/29/14 19:45		
1403942-69	1267-135-2	3.0	mg/L	1.0	0.027	20	B4L0738	12/26/2014	12/29/14 19:47		
1403942-70	1267-136-0	16	mg/L	1.0	0.027	20	B4L0738	12/26/2014	12/29/14 19:49		
1403942-79	1267-141-0	5.5	mg/L	1.0	0.027	20	B4L0738	12/26/2014	12/29/14 19:51		
1403942-81	1267-142-0	10	mg/L	1.0	0.027	20	B4L0738	12/26/2014	12/29/14 19:54		
1403942-82	1267-143-0	7.6	mg/L	1.0	0.027	20	B4L0738	12/26/2014	12/29/14 20:04		
1403942-84	1267-144-0	9.3	mg/L	1.0	0.027	20	B4L0738	12/26/2014	12/29/14 20:06		
1403942-86	1267-145-0	11	mg/L	1.0	0.027	20	B4L0738	12/26/2014	12/29/14 20:08		
1403942-88	1267-146-0	18	mg/L	1.0	0.027	20	B4L0738	12/26/2014	12/29/14 20:11		
1403942-90	1267-147-0	23	mg/L	1.0	0.027	20	B4L0738	12/26/2014	12/29/14 20:13		
1403942-92	1267-148-0	19	mg/L	1.0	0.027	20	B4L0738	12/26/2014	12/29/14 20:15		
1403942-93	1267-148-2	4.9	mg/L	1.0	0.027	20	B4L0738	12/26/2014	12/29/14 20:17		
1403942-97	1267-DUP4-201 41211	6.9	mg/L	1.0	0.027	20	B4L0738	12/26/2014	12/29/14 20:20		
1403942-98	1267-DUP5-201 41211	22	mg/L	1.0	0.027	20	B4L0738	12/26/2014	12/29/14 20:26		



Certificate of Analysis

Stantec
 3777 Worsham Avenue, Ste. 200
 Long Beach , CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
 Report To : Anne Perez/Monica Aragon
 Reported : 01/06/2015

STLC DI Metals by ICP-AES by EPA 6010B

Analyte: Lead

Analyst: RR

Laboratory ID	Client Sample ID	Result	Units	PQL	MDL	Dilution	Batch	Prepared	Date/Time	Notes
									Analyzed	
1403942-01	1267-101-0	0.28	mg/L	1.0	0.027	20	B4L0827	01/02/2015	01/02/15 15:04	J
1403942-03	1267-102-0	ND	mg/L	1.0	0.027	20	B4L0827	01/02/2015	01/02/15 15:06	
1403942-05	1267-103-0	ND	mg/L	1.0	0.027	20	B4L0827	01/02/2015	01/02/15 15:08	
1403942-07	1267-104-0	0.19	mg/L	1.0	0.027	20	B4L0827	01/02/2015	01/02/15 15:10	J
1403942-13	1267-107-0	0.14	mg/L	1.0	0.027	20	B4L0827	01/02/2015	01/02/15 15:13	J
1403942-15	1267-108-0	0.11	mg/L	1.0	0.027	20	B4L0827	01/02/2015	01/02/15 15:15	J
1403942-16	1267-108-2	ND	mg/L	1.0	0.027	20	B4L0827	01/02/2015	01/02/15 15:17	
1403942-17	1267-109-0	0.37	mg/L	1.0	0.027	20	B4L0827	01/02/2015	01/02/15 15:23	J
1403942-21	1267-111-0	0.30	mg/L	1.0	0.027	20	B4L0827	01/02/2015	01/02/15 15:25	J
1403942-23	1267-112-0	0.12	mg/L	1.0	0.027	20	B4L0827	01/02/2015	01/02/15 15:27	J
1403942-26	1267-113-2	ND	mg/L	1.0	0.027	20	B4L0827	01/02/2015	01/02/15 15:33	
1403942-31	1267-116-0	0.36	mg/L	1.0	0.027	20	B4L0827	01/02/2015	01/02/15 15:35	J
1403942-32	1267-116-2	ND	mg/L	1.0	0.027	20	B4L0827	01/02/2015	01/02/15 15:38	
1403942-33	1267-117-0	0.96	mg/L	1.0	0.027	20	B4L0827	01/02/2015	01/02/15 15:40	J
1403942-35	1267-118-0	0.058	mg/L	1.0	0.027	20	B4L0827	01/02/2015	01/02/15 15:42	J
1403942-37	1267-119-0	1.4	mg/L	1.0	0.027	20	B4L0827	01/02/2015	01/02/15 15:48	
1403942-38	1267-120-0	0.77	mg/L	1.0	0.027	20	B4L0827	01/02/2015	01/02/15 15:50	J
1403942-40	1267-121-0	2.7	mg/L	1.0	0.027	20	B4L0827	01/02/2015	01/02/15 15:52	
1403942-42	1267-122-0	0.20	mg/L	1.0	0.027	20	B4L0827	01/02/2015	01/02/15 15:54	J
1403942-44	1267-123-0	0.078	mg/L	1.0	0.027	20	B4L0827	01/02/2015	01/02/15 15:56	J
1403942-46	1267-124-0	2.5	mg/L	1.0	0.027	20	B4L0829	01/02/2015	01/02/15 16:15	
1403942-47	1267-124-2	0.23	mg/L	1.0	0.027	20	B4L0829	01/02/2015	01/02/15 16:17	J
1403942-50	1267-126-0	ND	mg/L	1.0	0.027	20	B4L0829	01/02/2015	01/02/15 16:19	
1403942-52	1267-127-0	0.054	mg/L	1.0	0.027	20	B4L0829	01/02/2015	01/02/15 16:21	J
1403942-54	1267-128-0	0.065	mg/L	1.0	0.027	20	B4L0829	01/02/2015	01/02/15 16:23	J
1403942-56	1267-129-0	0.38	mg/L	1.0	0.027	20	B4L0829	01/02/2015	01/02/15 16:26	J
1403942-57	1267-129-2	0.18	mg/L	1.0	0.027	20	B4L0829	01/02/2015	01/02/15 16:28	J
1403942-58	1267-130-0	0.98	mg/L	1.0	0.027	20	B4L0829	01/02/2015	01/02/15 16:30	J
1403942-60	1267-131-0	0.90	mg/L	1.0	0.027	20	B4L0829	01/02/2015	01/02/15 16:32	J
1403942-61	1267-131-2	0.15	mg/L	1.0	0.027	20	B4L0829	01/02/2015	01/02/15 16:38	J



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Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
 Report To : Anne Perez/Monica Aragon
 Reported : 01/06/2015

STLC DI Metals by ICP-AES by EPA 6010B

Analyte: Lead

Analyst: RR

Laboratory ID	Client Sample ID	Result	Units	PQL	MDL	Dilution	Batch	Prepared	Date/Time		Notes
									AnalYZed		
1403942-62	1267-132-0	0.92	mg/L	1.0	0.027	20	B4L0829	01/02/2015	01/02/15 16:44		J
1403942-64	1267-133-0	26	mg/L	1.0	0.027	20	B4L0829	01/02/2015	01/02/15 16:46		
1403942-65	1267-133-2	0.53	mg/L	1.0	0.027	20	B4L0829	01/02/2015	01/02/15 16:48		J
1403942-66	1267-134-0	0.49	mg/L	1.0	0.027	20	B4L0829	01/02/2015	01/02/15 16:51		J
1403942-67	1267-134-2	0.46	mg/L	1.0	0.027	20	B4L0829	01/02/2015	01/02/15 16:53		J
1403942-68	1267-135-0	0.96	mg/L	1.0	0.027	20	B4L0829	01/02/2015	01/02/15 16:55		J
1403942-69	1267-135-2	0.085	mg/L	1.0	0.027	20	B4L0829	01/02/2015	01/02/15 16:57		J
1403942-70	1267-136-0	ND	mg/L	1.0	0.027	20	B4L0829	01/02/2015	01/02/15 17:03		
1403942-79	1267-141-0	0.12	mg/L	1.0	0.027	20	B4L0829	01/02/2015	01/02/15 17:05		J
1403942-81	1267-142-0	0.17	mg/L	1.0	0.027	20	B4L0829	01/02/2015	01/02/15 17:07		J
1403942-82	1267-143-0	0.29	mg/L	1.0	0.027	20	B4L0830	01/02/2015	01/02/15 17:37		J
1403942-84	1267-144-0	0.11	mg/L	1.0	0.027	20	B4L0830	01/02/2015	01/02/15 17:39		J
1403942-86	1267-145-0	0.52	mg/L	1.0	0.027	20	B4L0830	01/02/2015	01/02/15 17:41		J
1403942-88	1267-146-0	1.0	mg/L	1.0	0.027	20	B4L0830	01/02/2015	01/02/15 17:43		
1403942-90	1267-147-0	1.5	mg/L	1.0	0.027	20	B4L0830	01/02/2015	01/02/15 17:45		
1403942-92	1267-148-0	0.72	mg/L	1.0	0.027	20	B4L0830	01/02/2015	01/02/15 17:56		J
1403942-93	1267-148-2	0.26	mg/L	1.0	0.027	20	B4L0830	01/02/2015	01/02/15 17:58		J
1403942-97	1267-DUP4-201 41211	0.38	mg/L	1.0	0.027	20	B4L0830	01/02/2015	01/02/15 18:00		J
1403942-98	1267-DUP5-201 41211	1.4	mg/L	1.0	0.027	20	B4L0830	01/02/2015	01/02/15 18:02		

Mercury by AA (Cold Vapor) EPA 7470A

Analyte: Mercury

Analyst: SB

Laboratory ID	Client Sample ID	Result	Units	PQL	MDL	Dilution	Batch	Prepared	Date/Time		Notes
									AnalYZed		
1403942-99	1267-EB1-20141 210	ND	ug/L	0.20	0.11	1	B4L0465	12/16/2014	12/16/14 17:22		
1403942-AA	1267-FB1-20141 210	ND	ug/L	0.20	0.11	1	B4L0465	12/16/2014	12/16/14 17:24		



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Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
 Report To : Anne Perez/Monica Aragon
 Reported : 01/06/2015

Mercury by AA (Cold Vapor) EPA 7471A

Analyte: Mercury

Analyst: SB

Laboratory ID	Client Sample ID	Result	Units	PQL	MDL	Dilution	Batch	Prepared	Date/Time		Notes
									Analized		
1403942-03	1267-102-0	0.11	mg/kg	0.10	0.009	1	B4L0528	12/18/2014	12/18/14 15:26		
1403942-10	1267-105-2	0.09	mg/kg	0.10	0.009	1	B4L0528	12/18/2014	12/18/14 15:36		J
1403942-13	1267-107-0	0.07	mg/kg	0.10	0.009	1	B4L0528	12/18/2014	12/18/14 15:38		J
1403942-27	1267-114-0	0.03	mg/kg	0.10	0.009	1	B4L0528	12/18/2014	12/18/14 15:40		J
1403942-28	1267-114-2	0.05	mg/kg	0.10	0.009	1	B4L0528	12/18/2014	12/18/14 15:46		J
1403942-35	1267-118-0	0.18	mg/kg	0.10	0.009	1	B4L0528	12/18/2014	12/18/14 15:48		
1403942-45	1267-123-2	0.07	mg/kg	0.10	0.009	1	B4L0528	12/18/2014	12/18/14 15:50		J
1403942-61	1267-131-2	0.36	mg/kg	0.10	0.009	1	B4L0528	12/18/2014	12/18/14 15:52		
1403942-66	1267-134-0	0.10	mg/kg	0.10	0.009	1	B4L0528	12/18/2014	12/18/14 15:54		
1403942-94	1267-DUP1-201 41210	0.03	mg/kg	0.10	0.009	1	B4L0528	12/18/2014	12/18/14 15:56		J

pH by EPA 9045C

Analyte: pH

Analyst: LA

Laboratory ID	Client Sample ID	Result	Units	PQL	MDL	Dilution	Batch	Prepared	Date/Time		Notes
									Analized		
1403942-08	1267-104-2	8.2	pH Units	0.10	0.10	1	B4L0545	12/18/2014	12/18/14 16:40		
1403942-27	1267-114-0	8.3	pH Units	0.10	0.10	1	B4L0545	12/18/2014	12/18/14 16:40		
1403942-33	1267-117-0	7.4	pH Units	0.10	0.10	1	B4L0770	12/29/2014	12/29/14 15:24		
1403942-35	1267-118-0	8.1	pH Units	0.10	0.10	1	B4L0770	12/29/2014	12/29/14 15:24		
1403942-37	1267-119-0	7.9	pH Units	0.10	0.10	1	B4L0770	12/29/2014	12/29/14 15:24		
1403942-42	1267-122-0	7.8	pH Units	0.10	0.10	1	B4L0545	12/18/2014	12/18/14 16:40		
1403942-56	1267-129-0	7.0	pH Units	0.10	0.10	1	B4L0545	12/18/2014	12/18/14 16:40		
1403942-58	1267-130-0	7.2	pH Units	0.10	0.10	1	B4L0770	12/29/2014	12/29/14 15:24		
1403942-62	1267-132-0	7.8	pH Units	0.10	0.10	1	B4L0770	12/29/2014	12/29/14 15:24		
1403942-94	1267-DUP1-201 41210	8.3	pH Units	0.10	0.10	1	B4L0545	12/18/2014	12/18/14 16:40		



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Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
Report To : Anne Perez/Monica Aragon
Reported : 01/06/2015

Client Sample ID 1267-102-0

Lab ID: 1403942-03

Title 22 Metals by ICP-AES EPA 6010B

Analyst: RR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	5.9	2.0	0.25	1	B4L0526	12/18/2014	12/18/14 12:02	
Arsenic	4.0	1.0	0.19	1	B4L0526	12/18/2014	12/18/14 12:02	
Barium	130	1.0	0.14	1	B4L0526	12/18/2014	12/18/14 12:02	
Beryllium	0.27	1.0	0.04	1	B4L0526	12/18/2014	12/18/14 12:02	J
Cadmium	0.93	1.0	0.11	1	B4L0526	12/18/2014	12/18/14 12:02	J
Chromium	18	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:02	
Cobalt	4.9	1.0	0.15	1	B4L0526	12/18/2014	12/18/14 12:02	
Copper	80	2.0	0.05	1	B4L0526	12/18/2014	12/18/14 12:02	
Molybdenum	1.0	1.0	0.05	1	B4L0526	12/18/2014	12/18/14 12:02	
Nickel	14	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:02	
Selenium	1.9	1.0	0.15	1	B4L0526	12/18/2014	12/18/14 12:02	
Silver	0.07	1.0	0.06	1	B4L0526	12/18/2014	12/18/14 12:02	J
Thallium	ND	1.0	0.20	1	B4L0526	12/18/2014	12/18/14 12:02	
Vanadium	24	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:02	
Zinc	450	1.0	0.11	1	B4L0526	12/18/2014	12/18/14 12:02	

Client Sample ID 1267-105-2

Lab ID: 1403942-10

Title 22 Metals by ICP-AES EPA 6010B

Analyst: RR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	1.2	2.0	0.25	1	B4L0526	12/18/2014	12/18/14 12:07	J
Arsenic	3.1	1.0	0.19	1	B4L0526	12/18/2014	12/18/14 12:07	
Barium	91	1.0	0.14	1	B4L0526	12/18/2014	12/18/14 12:07	
Beryllium	0.53	1.0	0.04	1	B4L0526	12/18/2014	12/18/14 12:07	J
Cadmium	ND	1.0	0.11	1	B4L0526	12/18/2014	12/18/14 12:07	
Chromium	12	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:07	
Cobalt	6.4	1.0	0.15	1	B4L0526	12/18/2014	12/18/14 12:07	
Copper	11	2.0	0.05	1	B4L0526	12/18/2014	12/18/14 12:07	
Molybdenum	0.27	1.0	0.05	1	B4L0526	12/18/2014	12/18/14 12:07	J
Nickel	7.9	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:07	
Selenium	1.8	1.0	0.15	1	B4L0526	12/18/2014	12/18/14 12:07	
Silver	ND	1.0	0.06	1	B4L0526	12/18/2014	12/18/14 12:07	
Thallium	ND	1.0	0.20	1	B4L0526	12/18/2014	12/18/14 12:07	
Vanadium	34	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:07	
Zinc	48	1.0	0.11	1	B4L0526	12/18/2014	12/18/14 12:07	



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Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
 Report To : Anne Perez/Monica Aragon
 Reported : 01/06/2015

Client Sample ID 1267-107-0

Lab ID: 1403942-13

Title 22 Metals by ICP-AES EPA 6010B

Analyst: RR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	0.63	2.0	0.25	1	B4L0526	12/18/2014	12/18/14 12:09	J
Arsenic	8.3	1.0	0.19	1	B4L0526	12/18/2014	12/18/14 12:09	
Barium	56	1.0	0.14	1	B4L0526	12/18/2014	12/18/14 12:09	
Beryllium	0.24	1.0	0.04	1	B4L0526	12/18/2014	12/18/14 12:09	J
Cadmium	0.12	1.0	0.11	1	B4L0526	12/18/2014	12/18/14 12:09	J
Chromium	9.4	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:09	
Cobalt	4.5	1.0	0.15	1	B4L0526	12/18/2014	12/18/14 12:09	
Copper	21	2.0	0.05	1	B4L0526	12/18/2014	12/18/14 12:09	
Molybdenum	0.77	1.0	0.05	1	B4L0526	12/18/2014	12/18/14 12:09	J
Nickel	330	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:09	
Selenium	1.2	1.0	0.15	1	B4L0526	12/18/2014	12/18/14 12:09	
Silver	ND	1.0	0.06	1	B4L0526	12/18/2014	12/18/14 12:09	
Thallium	ND	1.0	0.20	1	B4L0526	12/18/2014	12/18/14 12:09	
Vanadium	20	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:09	
Zinc	110	1.0	0.11	1	B4L0526	12/18/2014	12/18/14 12:09	

Client Sample ID 1267-114-0

Lab ID: 1403942-27

Title 22 Metals by ICP-AES EPA 6010B

Analyst: RR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	0.46	2.0	0.25	1	B4L0526	12/18/2014	12/18/14 12:11	J
Arsenic	4.0	1.0	0.19	1	B4L0526	12/18/2014	12/18/14 12:11	
Barium	42	1.0	0.14	1	B4L0526	12/18/2014	12/18/14 12:11	
Beryllium	0.21	1.0	0.04	1	B4L0526	12/18/2014	12/18/14 12:11	J
Cadmium	ND	1.0	0.11	1	B4L0526	12/18/2014	12/18/14 12:11	
Chromium	7.9	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:11	
Cobalt	4.3	1.0	0.15	1	B4L0526	12/18/2014	12/18/14 12:11	
Copper	14	2.0	0.05	1	B4L0526	12/18/2014	12/18/14 12:11	
Molybdenum	0.17	1.0	0.05	1	B4L0526	12/18/2014	12/18/14 12:11	J
Nickel	6.2	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:11	
Selenium	0.80	1.0	0.15	1	B4L0526	12/18/2014	12/18/14 12:11	J
Silver	ND	1.0	0.06	1	B4L0526	12/18/2014	12/18/14 12:11	
Thallium	ND	1.0	0.20	1	B4L0526	12/18/2014	12/18/14 12:11	
Vanadium	15	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:11	
Zinc	43	1.0	0.11	1	B4L0526	12/18/2014	12/18/14 12:11	



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Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
 Report To : Anne Perez/Monica Aragon
 Reported : 01/06/2015

Client Sample ID 1267-114-2

Lab ID: 1403942-28

Title 22 Metals by ICP-AES EPA 6010B

Analyst: RR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	0.25	1	B4L0526	12/18/2014	12/18/14 12:12	
Arsenic	5.4	1.0	0.19	1	B4L0526	12/18/2014	12/18/14 12:12	
Barium	120	1.0	0.14	1	B4L0526	12/18/2014	12/18/14 12:12	
Beryllium	0.41	1.0	0.04	1	B4L0526	12/18/2014	12/18/14 12:12	J
Cadmium	0.46	1.0	0.11	1	B4L0526	12/18/2014	12/18/14 12:12	J
Chromium	27	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:12	
Cobalt	6.2	1.0	0.15	1	B4L0526	12/18/2014	12/18/14 12:12	
Copper	130	2.0	0.05	1	B4L0526	12/18/2014	12/18/14 12:12	
Molybdenum	1.3	1.0	0.05	1	B4L0526	12/18/2014	12/18/14 12:12	
Nickel	24	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:12	
Selenium	2.2	1.0	0.15	1	B4L0526	12/18/2014	12/18/14 12:12	
Silver	ND	1.0	0.06	1	B4L0526	12/18/2014	12/18/14 12:12	
Thallium	ND	1.0	0.20	1	B4L0526	12/18/2014	12/18/14 12:12	
Vanadium	31	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:12	
Zinc	180	1.0	0.11	1	B4L0526	12/18/2014	12/18/14 12:12	

Client Sample ID 1267-118-0

Lab ID: 1403942-35

Title 22 Metals by ICP-AES EPA 6010B

Analyst: RR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	1.2	2.0	0.25	1	B4L0526	12/18/2014	12/18/14 12:17	J
Arsenic	3.8	1.0	0.19	1	B4L0526	12/18/2014	12/18/14 12:17	
Barium	150	1.0	0.14	1	B4L0526	12/18/2014	12/18/14 12:17	
Beryllium	0.47	1.0	0.04	1	B4L0526	12/18/2014	12/18/14 12:17	J
Cadmium	1.3	1.0	0.11	1	B4L0526	12/18/2014	12/18/14 12:17	
Chromium	24	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:17	
Cobalt	6.4	1.0	0.15	1	B4L0526	12/18/2014	12/18/14 12:17	
Copper	58	2.0	0.05	1	B4L0526	12/18/2014	12/18/14 12:17	
Molybdenum	2.0	1.0	0.05	1	B4L0526	12/18/2014	12/18/14 12:17	
Nickel	16	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:17	
Selenium	1.6	1.0	0.15	1	B4L0526	12/18/2014	12/18/14 12:17	
Silver	0.33	1.0	0.06	1	B4L0526	12/18/2014	12/18/14 12:17	J
Thallium	ND	1.0	0.20	1	B4L0526	12/18/2014	12/18/14 12:17	
Vanadium	25	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:17	
Zinc	540	1.0	0.11	1	B4L0526	12/18/2014	12/18/14 12:17	



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Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
Report To : Anne Perez/Monica Aragon
Reported : 01/06/2015

Client Sample ID 1267-123-2

Lab ID: 1403942-45

Title 22 Metals by ICP-AES EPA 6010B

Analyst: RR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	0.53	2.0	0.25	1	B4L0526	12/18/2014	12/18/14 12:19	J
Arsenic	2.3	1.0	0.19	1	B4L0526	12/18/2014	12/18/14 12:19	
Barium	70	1.0	0.14	1	B4L0526	12/18/2014	12/18/14 12:19	
Beryllium	0.37	1.0	0.04	1	B4L0526	12/18/2014	12/18/14 12:19	J
Cadmium	0.23	1.0	0.11	1	B4L0526	12/18/2014	12/18/14 12:19	J
Chromium	10	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:19	
Cobalt	4.7	1.0	0.15	1	B4L0526	12/18/2014	12/18/14 12:19	
Copper	19	2.0	0.05	1	B4L0526	12/18/2014	12/18/14 12:19	
Molybdenum	0.49	1.0	0.05	1	B4L0526	12/18/2014	12/18/14 12:19	J
Nickel	10	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:19	
Selenium	1.2	1.0	0.15	1	B4L0526	12/18/2014	12/18/14 12:19	
Silver	0.08	1.0	0.06	1	B4L0526	12/18/2014	12/18/14 12:19	J
Thallium	ND	1.0	0.20	1	B4L0526	12/18/2014	12/18/14 12:19	
Vanadium	21	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:19	
Zinc	48	1.0	0.11	1	B4L0526	12/18/2014	12/18/14 12:19	

Client Sample ID 1267-131-2

Lab ID: 1403942-61

Title 22 Metals by ICP-AES EPA 6010B

Analyst: RR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	0.67	2.0	0.25	1	B4L0526	12/18/2014	12/18/14 12:21	J
Arsenic	4.3	1.0	0.19	1	B4L0526	12/18/2014	12/18/14 12:21	
Barium	140	1.0	0.14	1	B4L0526	12/18/2014	12/18/14 12:21	
Beryllium	0.42	1.0	0.04	1	B4L0526	12/18/2014	12/18/14 12:21	J
Cadmium	0.24	1.0	0.11	1	B4L0526	12/18/2014	12/18/14 12:21	J
Chromium	14	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:21	
Cobalt	6.7	1.0	0.15	1	B4L0526	12/18/2014	12/18/14 12:21	
Copper	26	2.0	0.05	1	B4L0526	12/18/2014	12/18/14 12:21	
Molybdenum	0.97	1.0	0.05	1	B4L0526	12/18/2014	12/18/14 12:21	J
Nickel	11	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:21	
Selenium	1.8	1.0	0.15	1	B4L0526	12/18/2014	12/18/14 12:21	
Silver	ND	1.0	0.06	1	B4L0526	12/18/2014	12/18/14 12:21	
Thallium	ND	1.0	0.20	1	B4L0526	12/18/2014	12/18/14 12:21	
Vanadium	32	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:21	
Zinc	220	1.0	0.11	1	B4L0526	12/18/2014	12/18/14 12:21	



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Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
Report To : Anne Perez/Monica Aragon
Reported : 01/06/2015

Client Sample ID 1267-134-0

Lab ID: 1403942-66

Title 22 Metals by ICP-AES EPA 6010B

Analyst: RR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	0.71	2.0	0.25	1	B4L0526	12/18/2014	12/18/14 12:22	J
Arsenic	2.8	1.0	0.19	1	B4L0526	12/18/2014	12/18/14 12:22	
Barium	130	1.0	0.14	1	B4L0526	12/18/2014	12/18/14 12:22	
Beryllium	0.22	1.0	0.04	1	B4L0526	12/18/2014	12/18/14 12:22	J
Cadmium	0.42	1.0	0.11	1	B4L0526	12/18/2014	12/18/14 12:22	J
Chromium	86	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:22	
Cobalt	4.8	1.0	0.15	1	B4L0526	12/18/2014	12/18/14 12:22	
Copper	47	2.0	0.05	1	B4L0526	12/18/2014	12/18/14 12:22	
Molybdenum	1.8	1.0	0.05	1	B4L0526	12/18/2014	12/18/14 12:22	
Nickel	12	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:22	
Selenium	2.1	1.0	0.15	1	B4L0526	12/18/2014	12/18/14 12:22	
Silver	0.33	1.0	0.06	1	B4L0526	12/18/2014	12/18/14 12:22	J
Thallium	ND	1.0	0.20	1	B4L0526	12/18/2014	12/18/14 12:22	
Vanadium	24	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:22	
Zinc	170	1.0	0.11	1	B4L0526	12/18/2014	12/18/14 12:22	

Client Sample ID 1267-DUP1-20141210

Lab ID: 1403942-94

Title 22 Metals by ICP-AES EPA 6010B

Analyst: RR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	0.40	2.0	0.25	1	B4L0526	12/18/2014	12/18/14 12:24	J
Arsenic	3.7	1.0	0.19	1	B4L0526	12/18/2014	12/18/14 12:24	
Barium	40	1.0	0.14	1	B4L0526	12/18/2014	12/18/14 12:24	
Beryllium	0.20	1.0	0.04	1	B4L0526	12/18/2014	12/18/14 12:24	J
Cadmium	ND	1.0	0.11	1	B4L0526	12/18/2014	12/18/14 12:24	
Chromium	8.1	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:24	
Cobalt	4.1	1.0	0.15	1	B4L0526	12/18/2014	12/18/14 12:24	
Copper	14	2.0	0.05	1	B4L0526	12/18/2014	12/18/14 12:24	
Molybdenum	0.16	1.0	0.05	1	B4L0526	12/18/2014	12/18/14 12:24	J
Nickel	6.1	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:24	
Selenium	0.87	1.0	0.15	1	B4L0526	12/18/2014	12/18/14 12:24	J
Silver	ND	1.0	0.06	1	B4L0526	12/18/2014	12/18/14 12:24	
Thallium	ND	1.0	0.20	1	B4L0526	12/18/2014	12/18/14 12:24	
Vanadium	15	1.0	0.07	1	B4L0526	12/18/2014	12/18/14 12:24	
Zinc	42	1.0	0.11	1	B4L0526	12/18/2014	12/18/14 12:24	



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Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
Report To : Anne Perez/Monica Aragon
Reported : 01/06/2015

Client Sample ID 1267-EB1-20141210

Lab ID: 1403942-99

Title 22 Metals by ICP-AES EPA 6010B

Analyst: RR

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	0.010	0.0026	1	B4L0463	12/16/2014	12/17/14 09:16	
Arsenic	ND	0.010	0.0024	1	B4L0463	12/16/2014	12/17/14 09:16	
Barium	0.0014	0.0030	0.0004	1	B4L0463	12/16/2014	12/17/14 09:16	J
Beryllium	ND	0.0030	0.0002	1	B4L0463	12/16/2014	12/17/14 09:16	
Cadmium	ND	0.0030	0.0001	1	B4L0463	12/16/2014	12/17/14 09:16	
Chromium	0.0013	0.0030	0.0003	1	B4L0463	12/16/2014	12/17/14 09:16	J
Cobalt	ND	0.0030	0.0004	1	B4L0463	12/16/2014	12/17/14 09:16	
Copper	0.0044	0.0090	0.0009	1	B4L0463	12/16/2014	12/17/14 09:16	J
Lead	ND	0.0050	0.0014	1	B4L0463	12/16/2014	12/17/14 09:16	
Molybdenum	ND	0.0050	0.0005	1	B4L0463	12/16/2014	12/17/14 09:16	
Nickel	0.0018	0.0050	0.0004	1	B4L0463	12/16/2014	12/17/14 09:16	J
Selenium	ND	0.010	0.0040	1	B4L0463	12/16/2014	12/17/14 09:16	
Silver	ND	0.0030	0.0006	1	B4L0463	12/16/2014	12/17/14 09:16	
Thallium	ND	0.015	0.0026	1	B4L0463	12/16/2014	12/17/14 09:16	
Vanadium	ND	0.0030	0.0013	1	B4L0463	12/16/2014	12/17/14 09:16	
Zinc	0.0063	0.025	0.0017	1	B4L0463	12/16/2014	12/17/14 09:16	J



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Reported : 01/06/2015

Client Sample ID 1267-FB1-20141210
Lab ID: 1403942-AA

Title 22 Metals by ICP-AES EPA 6010B

Analyst: RR

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	0.010	0.0026	1	B4L0463	12/16/2014	12/17/14 09:18	
Arsenic	ND	0.010	0.0024	1	B4L0463	12/16/2014	12/17/14 09:18	
Barium	0.0014	0.0030	0.0004	1	B4L0463	12/16/2014	12/17/14 09:18	J
Beryllium	ND	0.0030	0.0002	1	B4L0463	12/16/2014	12/17/14 09:18	
Cadmium	ND	0.0030	0.0001	1	B4L0463	12/16/2014	12/17/14 09:18	
Chromium	0.0015	0.0030	0.0003	1	B4L0463	12/16/2014	12/17/14 09:18	J
Cobalt	ND	0.0030	0.0004	1	B4L0463	12/16/2014	12/17/14 09:18	
Copper	0.0034	0.0090	0.0009	1	B4L0463	12/16/2014	12/17/14 09:18	J
Lead	ND	0.0050	0.0014	1	B4L0463	12/16/2014	12/17/14 09:18	
Molybdenum	ND	0.0050	0.0005	1	B4L0463	12/16/2014	12/17/14 09:18	
Nickel	0.0016	0.0050	0.0004	1	B4L0463	12/16/2014	12/17/14 09:18	J
Selenium	ND	0.010	0.0040	1	B4L0463	12/16/2014	12/17/14 09:18	
Silver	ND	0.0030	0.0006	1	B4L0463	12/16/2014	12/17/14 09:18	
Thallium	ND	0.015	0.0026	1	B4L0463	12/16/2014	12/17/14 09:18	
Vanadium	ND	0.0030	0.0013	1	B4L0463	12/16/2014	12/17/14 09:18	
Zinc	0.0045	0.025	0.0017	1	B4L0463	12/16/2014	12/17/14 09:18	J



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Reported : 01/06/2015

QUALITY CONTROL SECTION

Title 22 Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B4L0463 - EPA 3010A_W

Blank (B4L0463-BLK1)

Prepared: 12/16/2014 Analyzed: 12/17/2014

Antimony	ND	0.010		NR					
Arsenic	ND	0.010		NR					
Barium	1.1581E-3	0.0030		NR					J
Beryllium	ND	0.0030		NR					
Cadmium	ND	0.0030		NR					
Chromium	0.001326	0.0030		NR					J
Cobalt	0.000438	0.0030		NR					J
Copper	0.003114	0.0090		NR					J
Lead	ND	0.0050		NR					
Molybdenum	ND	0.0050		NR					
Nickel	0.001781	0.0050		NR					J
Selenium	ND	0.010		NR					
Silver	ND	0.0030		NR					
Thallium	ND	0.015		NR					
Vanadium	ND	0.0030		NR					
Zinc	0.004268	0.025		NR					J

LCS (B4L0463-BS1)

Prepared: 12/16/2014 Analyzed: 12/17/2014

Antimony	1.00928	0.010	1.00000		101	80 - 120			
Arsenic	0.999472	0.010	1.00000		99.9	80 - 120			
Barium	1.04712	0.0030	1.00000		105	80 - 120			
Beryllium	1.03636	0.0030	1.00000		104	80 - 120			
Cadmium	1.00543	0.0030	1.00000		101	80 - 120			
Chromium	1.03000	0.0030	1.00000		103	80 - 120			
Cobalt	1.03018	0.0030	1.00000		103	80 - 120			
Copper	1.02735	0.0090	1.00000		103	80 - 120			
Lead	1.01454	0.0050	1.00000		101	80 - 120			
Molybdenum	1.01885	0.0050	1.00000		102	80 - 120			
Nickel	1.01286	0.0050	1.00000		101	80 - 120			
Selenium	0.950252	0.010	1.00000		95.0	80 - 120			
Silver	1.02234	0.0030	1.00000		102	80 - 120			
Thallium	1.02312	0.015	1.00000		102	80 - 120			
Vanadium	1.01022	0.0030	1.00000		101	80 - 120			
Zinc	0.991215	0.025	1.00000		99.1	80 - 120			

Duplicate (B4L0463-DUP1)

Source: 1403912-01

Prepared: 12/16/2014 Analyzed: 12/17/2014

Antimony	ND	0.010		ND	NR				20
Arsenic	ND	0.010		ND	NR				20
Barium	0.001712	0.0030		1.8685E-3	NR		8.74	20	J
Beryllium	ND	0.0030		ND	NR				20
Cadmium	ND	0.0030		ND	NR				20
Chromium	0.001492	0.0030		0.001679	NR		11.8	20	J
Cobalt	ND	0.0030		ND	NR				20



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Report To : Anne Perez/Monica Aragon

Reported : 01/06/2015

Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B4L0463 - EPA 3010A_W (continued)

Duplicate (B4L0463-DUP1) - Continued

Source: 1403912-01

Prepared: 12/16/2014 Analyzed: 12/17/2014

Copper	0.005361	0.0090		0.005915	NR		9.84	20	J
Lead	ND	0.0050		ND	NR			20	
Molybdenum	ND	0.0050		0.001315	NR			20	
Nickel	0.001840	0.0050		0.002005	NR		8.59	20	J
Selenium	ND	0.010		ND	NR			20	
Silver	ND	0.0030		ND	NR			20	
Thallium	ND	0.015		ND	NR			20	
Vanadium	ND	0.0030		ND	NR			20	
Zinc	0.01255	0.025		0.016428	NR		26.8	20	R, J

Matrix Spike (B4L0463-MS1)

Source: 1403912-01

Prepared: 12/16/2014 Analyzed: 12/17/2014

Antimony	2.37101	0.010	2.50000	ND	94.8	78 - 121			
Arsenic	2.39029	0.010	2.50000	ND	95.6	78 - 124			
Barium	2.38528	0.0030	2.50000	1.8685E-3	95.3	81 - 118			
Beryllium	2.40865	0.0030	2.50000	ND	96.3	87 - 119			
Cadmium	2.28219	0.0030	2.50000	ND	91.3	80 - 113			
Chromium	2.37168	0.0030	2.50000	0.001679	94.8	85 - 115			
Cobalt	2.43501	0.0030	2.50000	ND	97.4	83 - 113			
Copper	2.37756	0.0090	2.50000	0.005915	94.9	72 - 132			
Lead	2.29533	0.0050	2.50000	ND	91.8	77 - 121			
Molybdenum	2.28021	0.0050	2.50000	0.001315	91.2	82 - 111			
Nickel	2.42651	0.0050	2.50000	0.002005	97.0	80 - 114			
Selenium	2.32158	0.010	2.50000	ND	92.9	75 - 121			
Silver	2.36382	0.0030	2.50000	ND	94.6	84 - 116			
Thallium	2.43849	0.015	2.50000	ND	97.5	70 - 122			
Vanadium	2.34757	0.0030	2.50000	ND	93.9	85 - 114			
Zinc	2.38476	0.025	2.50000	0.016428	94.7	70 - 123			

Matrix Spike Dup (B4L0463-MSD1)

Source: 1403912-01

Prepared: 12/16/2014 Analyzed: 12/17/2014

Antimony	2.40928	0.010	2.50000	ND	96.4	78 - 121	1.60	20	
Arsenic	2.42290	0.010	2.50000	ND	96.9	78 - 124	1.35	20	
Barium	2.42582	0.0030	2.50000	1.8685E-3	97.0	81 - 118	1.69	20	
Beryllium	2.45849	0.0030	2.50000	ND	98.3	87 - 119	2.05	20	
Cadmium	2.34002	0.0030	2.50000	ND	93.6	80 - 113	2.50	20	
Chromium	2.42208	0.0030	2.50000	0.001679	96.8	85 - 115	2.10	20	
Cobalt	2.43735	0.0030	2.50000	ND	97.5	83 - 113	0.0961	20	
Copper	2.42173	0.0090	2.50000	0.005915	96.6	72 - 132	1.84	20	
Lead	2.29291	0.0050	2.50000	ND	91.7	77 - 121	0.105	20	
Molybdenum	2.30107	0.0050	2.50000	0.001315	92.0	82 - 111	0.910	20	
Nickel	2.42469	0.0050	2.50000	0.002005	96.9	80 - 114	0.0749	20	
Selenium	2.34029	0.010	2.50000	ND	93.6	75 - 121	0.803	20	
Silver	2.39882	0.0030	2.50000	ND	96.0	84 - 116	1.47	20	
Thallium	2.47748	0.015	2.50000	ND	99.1	70 - 122	1.59	20	
Vanadium	2.36338	0.0030	2.50000	ND	94.5	85 - 114	0.671	20	
Zinc	2.43356	0.025	2.50000	0.016428	96.7	70 - 123	2.03	20	

Batch B4L0526 - EPA 3050B_S



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Report To : Anne Perez/Monica Aragon
Reported : 01/06/2015

Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes
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Batch B4L0526 - EPA 3050B_S (continued)

Blank (B4L0526-BLK1)

Prepared: 12/18/2014 Analyzed: 12/18/2014

Antimony	ND	2.0			NR			
Arsenic	ND	1.0			NR			
Barium	ND	1.0			NR			
Beryllium	ND	1.0			NR			
Cadmium	ND	1.0			NR			
Chromium	0.236621	1.0			NR			J
Cobalt	ND	1.0			NR			
Copper	0.211384	2.0			NR			J
Molybdenum	ND	1.0			NR			
Nickel	0.159165	1.0			NR			J
Selenium	ND	1.0			NR			
Silver	ND	1.0			NR			
Thallium	ND	1.0			NR			
Vanadium	ND	1.0			NR			
Zinc	0.304000	1.0			NR			J

LCS (B4L0526-BS1)

Prepared: 12/18/2014 Analyzed: 12/18/2014

Antimony	49.1568	2.0	50.0000	98.3	80 - 120			
Arsenic	47.9973	1.0	50.0000	96.0	80 - 120			
Barium	52.7500	1.0	50.0000	106	80 - 120			
Beryllium	50.0019	1.0	50.0000	100	80 - 120			
Cadmium	50.2920	1.0	50.0000	101	80 - 120			
Chromium	52.6685	1.0	50.0000	105	80 - 120			
Cobalt	50.3151	1.0	50.0000	101	80 - 120			
Copper	52.5790	2.0	50.0000	105	80 - 120			
Molybdenum	49.0414	1.0	50.0000	98.1	80 - 120			
Nickel	49.7996	1.0	50.0000	99.6	80 - 120			
Selenium	45.8088	1.0	50.0000	91.6	80 - 120			
Silver	50.9925	1.0	50.0000	102	80 - 120			
Thallium	49.6600	1.0	50.0000	99.3	80 - 120			
Vanadium	51.3992	1.0	50.0000	103	80 - 120			
Zinc	48.9898	1.0	50.0000	98.0	80 - 120			

Duplicate (B4L0526-DUP1)

Source: 1403942-03

Prepared: 12/18/2014 Analyzed: 12/18/2014

Antimony	1.17942	2.0		5.85808	NR	133	20	R, J
Arsenic	3.86672	1.0		3.96035	NR	2.39	20	
Barium	127.896	1.0		129.950	NR	1.59	20	
Beryllium	0.268744	1.0		0.271754	NR	1.11	20	J
Cadmium	0.809486	1.0		0.930985	NR	14.0	20	J
Chromium	19.3018	1.0		17.5284	NR	9.63	20	
Cobalt	5.41868	1.0		4.93295	NR	9.38	20	
Copper	59.3658	2.0		80.4635	NR	30.2	20	R
Molybdenum	0.945508	1.0		1.04194	NR	9.70	20	J
Nickel	15.9191	1.0		14.1039	NR	12.1	20	
Selenium	1.74278	1.0		1.93070	NR	10.2	20	
Silver	ND	1.0		0.071127	NR		20	
Thallium	ND	1.0		ND	NR		20	



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Reported : 01/06/2015

Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B4L0526 - EPA 3050B_S (continued)

Duplicate (B4L0526-DUP1) - Continued

Source: 1403942-03

Prepared: 12/18/2014 Analyzed: 12/18/2014

Vanadium	25.7004	1.0		24.2941	NR		5.63	20	
Zinc	184.207	1.0		453.936	NR		84.5	20	R

Matrix Spike (B4L0526-MS1)

Source: 1403942-03

Prepared: 12/18/2014 Analyzed: 12/18/2014

Antimony	95.4257	2.0	125.000	5.85808	71.7	21 - 126			
Arsenic	111.486	1.0	125.000	3.96035	86.0	57 - 113			
Barium	251.618	1.0	125.000	129.950	97.3	29 - 146			
Beryllium	109.869	1.0	125.000	0.271754	87.7	65 - 110			
Cadmium	99.6348	1.0	125.000	0.930985	79.0	56 - 107			
Chromium	126.792	1.0	125.000	17.5284	87.4	49 - 127			
Cobalt	106.016	1.0	125.000	4.93295	80.9	57 - 112			
Copper	173.555	2.0	125.000	80.4635	74.5	56 - 127			
Molybdenum	109.398	1.0	125.000	1.04194	86.7	62 - 108			
Nickel	116.069	1.0	125.000	14.1039	81.6	42 - 127			
Selenium	106.484	1.0	125.000	1.93070	83.6	58 - 105			
Silver	113.201	1.0	125.000	0.071127	90.5	63 - 113			
Thallium	96.9952	1.0	125.000	ND	77.6	53 - 110			
Vanadium	131.714	1.0	125.000	24.2941	85.9	66 - 112			
Zinc	283.299	1.0	125.000	453.936	-137	28 - 137			M1

Matrix Spike Dup (B4L0526-MSD1)

Source: 1403942-03

Prepared: 12/18/2014 Analyzed: 12/18/2014

Antimony	98.7417	2.0	125.628	5.85808	73.9	21 - 126	3.42	20	
Arsenic	113.943	1.0	125.628	3.96035	87.5	57 - 113	2.18	20	
Barium	228.653	1.0	125.628	129.950	78.6	29 - 146	9.56	20	
Beryllium	114.004	1.0	125.628	0.271754	90.5	65 - 110	3.69	20	
Cadmium	103.330	1.0	125.628	0.930985	81.5	56 - 107	3.64	20	
Chromium	129.143	1.0	125.628	17.5284	88.8	49 - 127	1.84	20	
Cobalt	109.443	1.0	125.628	4.93295	83.2	57 - 112	3.18	20	
Copper	180.631	2.0	125.628	80.4635	79.7	56 - 127	4.00	20	
Molybdenum	111.358	1.0	125.628	1.04194	87.8	62 - 108	1.78	20	
Nickel	117.709	1.0	125.628	14.1039	82.5	42 - 127	1.40	20	
Selenium	107.616	1.0	125.628	1.93070	84.1	58 - 105	1.06	20	
Silver	115.087	1.0	125.628	0.071127	91.6	63 - 113	1.65	20	
Thallium	99.8708	1.0	125.628	ND	79.5	53 - 110	2.92	20	
Vanadium	134.694	1.0	125.628	24.2941	87.9	66 - 112	2.24	20	
Zinc	286.865	1.0	125.628	453.936	-133	28 - 137	1.25	20	M1

Batch S4L0239 - B4L0433

Instrument Blank (S4L0239-IBL1)

Prepared: 12/17/2014 Analyzed: 12/17/2014

Antimony	ND	0.010			NR				
Arsenic	ND	0.010			NR				
Barium	ND	0.0030			NR				
Beryllium	ND	0.0030			NR				
Cadmium	ND	0.0030			NR				
Chromium	ND	0.0030			NR				
Cobalt	ND	0.0030			NR				



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Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes
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Batch S4L0239 - B4L0433 (continued)

Instrument Blank (S4L0239-IBL1) - Continued

Prepared: 12/17/2014 Analyzed: 12/17/2014

Copper	ND	0.0090			NR	
Lead	ND	0.0050			NR	
Molybdenum	ND	0.0050			NR	
Nickel	ND	0.0050			NR	
Selenium	ND	0.010			NR	
Silver	ND	0.0030			NR	
Thallium	ND	0.015			NR	
Vanadium	ND	0.0030			NR	
Zinc	ND	0.025			NR	

Batch S4L0258 - B4L0493

Instrument Blank (S4L0258-IBL1)

Prepared: 12/18/2014 Analyzed: 12/18/2014

Antimony	ND	2.0			NR	
Arsenic	ND	1.0			NR	
Barium	ND	1.0			NR	
Beryllium	ND	1.0			NR	
Cadmium	ND	1.0			NR	
Chromium	ND	1.0			NR	
Cobalt	ND	1.0			NR	
Copper	ND	2.0			NR	
Lead	ND	1.0			NR	
Molybdenum	ND	1.0			NR	
Nickel	ND	1.0			NR	
Selenium	ND	1.0			NR	
Silver	ND	1.0			NR	
Thallium	ND	1.0			NR	
Vanadium	ND	1.0			NR	
Zinc	ND	1.0			NR	



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Lead by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes
Batch B4L0497 - EPA 3050 Modified_S								
Blank (B4L0497-BLK1)								
Lead	ND	1.0						
				Prepared: 12/17/2014 Analyzed: 12/18/2014				
Blank (B4L0497-BLK2)								
Lead	0.289630	1.0						J
				Prepared: 12/17/2014 Analyzed: 12/18/2014				
LCS (B4L0497-BS1)								
Lead	50.6106	1.0	50.0000		101 80 - 120			
				Prepared: 12/17/2014 Analyzed: 12/18/2014				
Duplicate (B4L0497-DUP1)								
Lead	4.26846	1.0		5.06800	NR		17.1 20	
				Prepared: 12/17/2014 Analyzed: 12/18/2014				
Duplicate (B4L0497-DUP2)								
Lead	49.9506	1.0		40.5882	NR		20.7 20	R
				Prepared: 12/17/2014 Analyzed: 12/18/2014				
Matrix Spike (B4L0497-MS1)								
Lead	244.455	1.0	250.000	5.06800	95.8 33 - 134			
				Prepared: 12/17/2014 Analyzed: 12/18/2014				
Matrix Spike (B4L0497-MS2)								
Lead	283.268	1.0	250.000	40.5882	97.1 33 - 134			
				Prepared: 12/17/2014 Analyzed: 12/18/2014				
Matrix Spike Dup (B4L0497-MSD1)								
Lead	251.662	1.0	250.000	5.06800	98.6 33 - 134		2.91 20	
				Prepared: 12/17/2014 Analyzed: 12/18/2014				
Batch B4L0498 - EPA 3050 Modified_S								
Blank (B4L0498-BLK1)								
Lead	0.239157	1.0						J
				Prepared: 12/17/2014 Analyzed: 12/18/2014				
Blank (B4L0498-BLK2)								
Lead	0.188005	1.0						J
				Prepared: 12/17/2014 Analyzed: 12/18/2014				
LCS (B4L0498-BS1)								
Lead	52.0274	1.0	50.0000		104 80 - 120			
				Prepared: 12/17/2014 Analyzed: 12/18/2014				
Duplicate (B4L0498-DUP1)								
Lead	62.5042	1.0		87.1561	NR		32.9 20	R
				Prepared: 12/17/2014 Analyzed: 12/18/2014				
Duplicate (B4L0498-DUP2)								
Lead	17.3316	1.0		22.5185	NR		26.0 20	R
				Prepared: 12/17/2014 Analyzed: 12/18/2014				
Matrix Spike (B4L0498-MS1)								
Lead	290.105	1.0	250.000	87.1561	81.2 33 - 134			
				Prepared: 12/17/2014 Analyzed: 12/18/2014				
Matrix Spike (B4L0498-MS2)								
Lead	256.746	1.0	250.000	22.5185	93.7 33 - 134			
				Prepared: 12/17/2014 Analyzed: 12/18/2014				
Matrix Spike Dup (B4L0498-MSD1)								
Lead	295.168	1.0	250.000	87.1561	83.2 33 - 134		1.73 20	
				Prepared: 12/17/2014 Analyzed: 12/18/2014				
Batch B4L0499 - EPA 3050 Modified_S								



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Lead by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes
Blank (B4L0499-BLK1)						Prepared: 12/17/2014 Analyzed: 12/18/2014		
Lead	0.319792	1.0			NR			J
Blank (B4L0499-BLK2)						Prepared: 12/17/2014 Analyzed: 12/18/2014		
Lead	0.246839	1.0			NR			J
LCS (B4L0499-BS1)						Prepared: 12/17/2014 Analyzed: 12/18/2014		
Lead	48.3370	1.0	50.0000		96.7 80 - 120			
Duplicate (B4L0499-DUP1)						Prepared: 12/17/2014 Analyzed: 12/18/2014		
Lead	249.788	0.99		88.8938	NR	95.0	20	R
Duplicate (B4L0499-DUP2)						Prepared: 12/17/2014 Analyzed: 12/18/2014		
Lead	115.834	1.0		139.077	NR	18.2	20	
Matrix Spike (B4L0499-MS1)						Prepared: 12/17/2014 Analyzed: 12/18/2014		
Lead	331.492	1.0	250.000	88.8938	97.0 33 - 134			
Matrix Spike (B4L0499-MS2)						Prepared: 12/17/2014 Analyzed: 12/18/2014		
Lead	340.667	1.0	250.000	139.077	80.6 33 - 134			
Matrix Spike Dup (B4L0499-MSD1)						Prepared: 12/17/2014 Analyzed: 12/18/2014		
Lead	349.885	1.0	250.000	88.8938	104 33 - 134	5.40	20	
Batch B4L0500 - EPA 3050 Modified_S								
Blank (B4L0500-BLK1)						Prepared: 12/17/2014 Analyzed: 12/18/2014		
Lead	0.308321	1.0			NR			J
Blank (B4L0500-BLK2)						Prepared: 12/17/2014 Analyzed: 12/18/2014		
Lead	0.433906	1.0			NR			J
LCS (B4L0500-BS1)						Prepared: 12/17/2014 Analyzed: 12/18/2014		
Lead	50.9204	1.0	50.0000		102 80 - 120			
Duplicate (B4L0500-DUP1)						Prepared: 12/17/2014 Analyzed: 12/18/2014		
Lead	13.9802	1.0		16.4071	NR	16.0	20	
Duplicate (B4L0500-DUP2)						Prepared: 12/17/2014 Analyzed: 12/18/2014		
Lead	104.866	1.0		139.204	NR	28.1	20	R
Matrix Spike (B4L0500-MS1)						Prepared: 12/17/2014 Analyzed: 12/18/2014		
Lead	255.708	1.0	250.000	16.4071	95.7 33 - 134			
Matrix Spike (B4L0500-MS2)						Prepared: 12/17/2014 Analyzed: 12/18/2014		
Lead	365.772	1.0	250.000	139.204	90.6 33 - 134			
Matrix Spike Dup (B4L0500-MSD1)						Prepared: 12/17/2014 Analyzed: 12/18/2014		
Lead	250.506	1.0	250.000	16.4071	93.6 33 - 134	2.06	20	
Batch B4L0501 - EPA 3050 Modified_S								
Blank (B4L0501-BLK1)						Prepared: 12/17/2014 Analyzed: 12/18/2014		



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Lead by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes
Batch B4L0501 - EPA 3050 Modified_S (continued)								
Blank (B4L0501-BLK1) - Continued				Prepared: 12/17/2014 Analyzed: 12/18/2014				
Lead	ND	1.0			NR			
Blank (B4L0501-BLK2)				Prepared: 12/17/2014 Analyzed: 12/18/2014				
Lead	0.328966	1.0			NR			J
LCS (B4L0501-BS1)				Prepared: 12/17/2014 Analyzed: 12/18/2014				
Lead	50.9008	1.0	50.0000		102	80 - 120		
Duplicate (B4L0501-DUP1)		Source: 1403942-94			Prepared: 12/17/2014 Analyzed: 12/18/2014			
Lead	15.4983	1.0		17.6552	NR		13.0	20
Duplicate (B4L0501-DUP2)		Source: 1403942-84			Prepared: 12/17/2014 Analyzed: 12/18/2014			
Lead	142.325	1.0		139.597	NR		1.94	20
Matrix Spike (B4L0501-MS1)		Source: 1403942-94			Prepared: 12/17/2014 Analyzed: 12/18/2014			
Lead	265.898	1.0	250.000	17.6552	99.3	33 - 134		
Matrix Spike (B4L0501-MS2)		Source: 1403942-84			Prepared: 12/17/2014 Analyzed: 12/18/2014			
Lead	367.980	1.0	250.000	139.597	91.4	33 - 134		
Matrix Spike Dup (B4L0501-MSD1)		Source: 1403942-94			Prepared: 12/17/2014 Analyzed: 12/18/2014			
Lead	262.836	1.0	250.000	17.6552	98.1	33 - 134	1.16	20
Batch B4L0502 - EPA 3050 Modified_S								
Blank (B4L0502-BLK1)				Prepared: 12/17/2014 Analyzed: 12/18/2014				
Lead	0.263260	1.0			NR			J
Blank (B4L0502-BLK2)				Prepared: 12/17/2014 Analyzed: 12/18/2014				
Lead	0.200599	1.0			NR			J
LCS (B4L0502-BS1)				Prepared: 12/17/2014 Analyzed: 12/18/2014				
Lead	48.6384	1.0	50.0000		97.3	80 - 120		
Duplicate (B4L0502-DUP1)		Source: 1403992-10			Prepared: 12/17/2014 Analyzed: 12/18/2014			
Lead	8.10612	1.0		8.68608	NR		6.91	20
Duplicate (B4L0502-DUP2)		Source: 1403989-06			Prepared: 12/17/2014 Analyzed: 12/18/2014			
Lead	8.87992	1.0		11.7678	NR		28.0	20 R
Matrix Spike (B4L0502-MS1)		Source: 1403992-10			Prepared: 12/17/2014 Analyzed: 12/18/2014			
Lead	231.950	0.99	247.525	8.68608	90.2	33 - 134		
Matrix Spike (B4L0502-MS2)		Source: 1403989-06			Prepared: 12/17/2014 Analyzed: 12/18/2014			
Lead	264.424	1.0	250.000	11.7678	101	33 - 134		
Matrix Spike Dup (B4L0502-MSD1)		Source: 1403992-10			Prepared: 12/17/2014 Analyzed: 12/18/2014			
Lead	229.711	1.0	250.000	8.68608	88.4	33 - 134	0.970	20

Batch S4L0259 - B4L0496



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Lead by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes
Instrument Blank (S4L0259-IBL1)					Prepared: 12/18/2014 Analyzed: 12/18/2014			
Lead	ND	1.0			NR			



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

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes
Batch B4L0702 - EPA 1311_S								
Blank (B4L0702-BLK1)				Prepared: 12/24/2014 Analyzed: 12/26/2014				
Lead	ND	0.050			NR			
Blank (B4L0702-BLK2)				Prepared: 12/24/2014 Analyzed: 12/26/2014				
Lead	ND	0.050			NR			
LCS (B4L0702-BS1)				Prepared: 12/24/2014 Analyzed: 12/26/2014				
Lead	0.974054	0.050	1.00000		97.4 80 - 120			
Duplicate (B4L0702-DUP1)				Source: 1403942-46 Prepared: 12/24/2014 Analyzed: 12/26/2014				
Lead	0.907056	0.050		0.953298	NR	4.97	20	
Duplicate (B4L0702-DUP2)				Source: 1403903-32 Prepared: 12/24/2014 Analyzed: 12/26/2014				
Lead	1.69849	0.050		1.65362	NR	2.68	20	
Matrix Spike (B4L0702-MS1)				Source: 1403942-46 Prepared: 12/24/2014 Analyzed: 12/26/2014				
Lead	3.03692	0.050	2.50000	0.953298	83.3 77 - 121			
Matrix Spike (B4L0702-MS2)				Source: 1403903-32 Prepared: 12/24/2014 Analyzed: 12/26/2014				
Lead	3.93912	0.050	2.50000	1.65362	91.4 77 - 121			
Matrix Spike Dup (B4L0702-MSD1)				Source: 1403942-46 Prepared: 12/24/2014 Analyzed: 12/26/2014				
Lead	3.10909	0.050	2.50000	0.953298	86.2 77 - 121	2.35	20	
Batch B4L0703 - EPA 1311_S								
Blank (B4L0703-BLK1)				Prepared: 12/24/2014 Analyzed: 12/26/2014				
Lead	ND	0.050			NR			
Blank (B4L0703-BLK2)				Prepared: 12/24/2014 Analyzed: 12/26/2014				
Lead	ND	0.050			NR			
LCS (B4L0703-BS1)				Prepared: 12/24/2014 Analyzed: 12/26/2014				
Lead	0.947158	0.050	1.00000		94.7 80 - 120			
Duplicate (B4L0703-DUP1)				Source: 1403989-07 Prepared: 12/24/2014 Analyzed: 12/26/2014				
Lead	0.248405	0.050		0.237395	NR	4.53	20	
Duplicate (B4L0703-DUP2)				Source: 1403942-97 Prepared: 12/24/2014 Analyzed: 12/26/2014				
Lead	0.101582	0.050		0.097361	NR	4.24	20	
Matrix Spike (B4L0703-MS1)				Source: 1403989-07 Prepared: 12/24/2014 Analyzed: 12/26/2014				
Lead	2.61198	0.050	2.50000	0.237395	95.0 77 - 121			
Matrix Spike (B4L0703-MS2)				Source: 1403942-97 Prepared: 12/24/2014 Analyzed: 12/26/2014				
Lead	2.37598	0.050	2.50000	0.097361	91.1 77 - 121			
Matrix Spike Dup (B4L0703-MSD1)				Source: 1403989-07 Prepared: 12/24/2014 Analyzed: 12/26/2014				
Lead	2.51648	0.050	2.50000	0.237395	91.2 77 - 121	3.72	20	



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

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes
Batch B4L0736 - STLC_S Extraction								
Blank (B4L0736-BLK1)				Prepared: 12/26/2014 Analyzed: 12/29/2014				
Lead	ND	1.0			NR			
Blank (B4L0736-BLK2)				Prepared: 12/26/2014 Analyzed: 12/29/2014				
Lead	ND	1.0			NR			
LCS (B4L0736-BS1)				Prepared: 12/26/2014 Analyzed: 12/29/2014				
Lead	1.95888		2.00000		97.9 80 - 120			
Duplicate (B4L0736-DUP1)				Source: 1403942-26 Prepared: 12/26/2014 Analyzed: 12/29/2014				
Lead	3.16674	1.0		2.39157	NR	27.9	20	R
Duplicate (B4L0736-DUP2)				Source: 1403942-01 Prepared: 12/26/2014 Analyzed: 12/29/2014				
Lead	7.79378	1.0		8.08200	NR	3.63	20	
Matrix Spike (B4L0736-MS1)				Source: 1403942-26 Prepared: 12/26/2014 Analyzed: 12/29/2014				
Lead	4.62895		2.50000	2.39157	89.5 44 - 130			
Matrix Spike (B4L0736-MS2)				Source: 1403942-01 Prepared: 12/26/2014 Analyzed: 12/29/2014				
Lead	9.62375		2.50000	8.08200	61.7 44 - 130			
Matrix Spike Dup (B4L0736-MSD1)				Source: 1403942-26 Prepared: 12/26/2014 Analyzed: 12/29/2014				
Lead	4.25370		2.50000	2.39157	74.5 44 - 130	8.45	20	
Batch B4L0737 - STLC_S Extraction								
Blank (B4L0737-BLK1)				Prepared: 12/26/2014 Analyzed: 12/29/2014				
Lead	ND	1.0			NR			
Blank (B4L0737-BLK2)				Prepared: 12/26/2014 Analyzed: 12/29/2014				
Lead	0.028722	1.0			NR			J
LCS (B4L0737-BS1)				Prepared: 12/26/2014 Analyzed: 12/29/2014				
Lead	1.99617		2.00000		99.8 80 - 120			
Duplicate (B4L0737-DUP1)				Source: 1403942-61 Prepared: 12/26/2014 Analyzed: 12/29/2014				
Lead	7.29792	1.0		6.14695	NR	17.1	20	
Duplicate (B4L0737-DUP2)				Source: 1403942-44 Prepared: 12/26/2014 Analyzed: 12/29/2014				
Lead	6.85123	1.0		6.36417	NR	7.37	20	
Matrix Spike (B4L0737-MS1)				Source: 1403942-61 Prepared: 12/26/2014 Analyzed: 12/29/2014				
Lead	8.27782		2.50000	6.14695	85.2 44 - 130			
Matrix Spike (B4L0737-MS2)				Source: 1403942-44 Prepared: 12/26/2014 Analyzed: 12/29/2014				
Lead	8.59766		2.50000	6.36417	89.3 44 - 130			
Matrix Spike Dup (B4L0737-MSD1)				Source: 1403942-61 Prepared: 12/26/2014 Analyzed: 12/29/2014				
Lead	8.14147		2.50000	6.14695	79.8 44 - 130	1.66	20	
Batch B4L0738 - STLC_S Extraction								



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STLC Metals by ICP-AES by EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes	
Blank (B4L0738-BLK1)					Prepared: 12/26/2014 Analyzed: 12/29/2014				
Lead	0.036041	1.0			NR			J	
Blank (B4L0738-BLK2)					Prepared: 12/26/2014 Analyzed: 12/29/2014				
Lead	ND	1.0			NR				
LCS (B4L0738-BS1)					Prepared: 12/26/2014 Analyzed: 12/29/2014				
Lead	1.99457		2.00000		99.7	80 - 120			
Duplicate (B4L0738-DUP1)					Prepared: 12/26/2014 Analyzed: 12/29/2014				
Lead	26.4677	1.0		24.9344	NR		5.97	20	
Duplicate (B4L0738-DUP2)					Prepared: 12/26/2014 Analyzed: 12/29/2014				
Lead	6.42903	1.0		10.3088	NR		46.4	20 R	
Matrix Spike (B4L0738-MS1)					Prepared: 12/26/2014 Analyzed: 12/29/2014				
Lead	26.3326		2.50000	24.9344	55.9	44 - 130			
Matrix Spike (B4L0738-MS2)					Prepared: 12/26/2014 Analyzed: 12/29/2014				
Lead	12.2649		2.50000	10.3088	78.2	44 - 130			
Matrix Spike Dup (B4L0738-MSD1)					Prepared: 12/26/2014 Analyzed: 12/29/2014				
Lead	25.8460		2.50000	24.9344	36.5	44 - 130	1.86	20 M1	
Batch S4L0358 - B4L0730									
Instrument Blank (S4L0358-IBL1)					Prepared: 12/29/2014 Analyzed: 12/29/2014				
Lead	ND	0.050			NR				



Certificate of Analysis

Stantec
3777 Worsham Avenue, Ste. 200
Long Beach, CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
Report To : Anne Perez/Monica Aragon
Reported : 01/06/2015

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

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes
Batch B4L0827 - STLC DI_S Extraction								
Blank (B4L0827-BLK1)				Prepared: 1/2/2015 Analyzed: 1/2/2015				
Lead	ND	1.0			NR			
Blank (B4L0827-BLK2)				Prepared: 1/2/2015 Analyzed: 1/2/2015				
Lead	ND	1.0			NR			
LCS (B4L0827-BS1)				Prepared: 1/2/2015 Analyzed: 1/2/2015				
Lead	2.16832		2.00000		108 80 - 120			
Duplicate (B4L0827-DUP1)		Source: 1403942-44			Prepared: 1/2/2015 Analyzed: 1/2/2015			
Lead	0.082035	1.0		0.078002	NR	5.04	20	J
Duplicate (B4L0827-DUP2)		Source: 1403942-23			Prepared: 1/2/2015 Analyzed: 1/2/2015			
Lead	0.087953	1.0		0.116430	NR	27.9	20	R, J
Matrix Spike (B4L0827-MS1)		Source: 1403942-44			Prepared: 1/2/2015 Analyzed: 1/2/2015			
Lead	2.56054		2.50000	0.078002	99.3 70 - 130			
Matrix Spike (B4L0827-MS2)		Source: 1403942-23			Prepared: 1/2/2015 Analyzed: 1/2/2015			
Lead	2.64076		2.50000	0.116430	101 70 - 130			
Matrix Spike Dup (B4L0827-MSD1)		Source: 1403942-44			Prepared: 1/2/2015 Analyzed: 1/2/2015			
Lead	2.55460		2.50000	0.078002	99.1 70 - 130	0.232	20	
Batch B4L0829 - STLC DI_S Extraction								
Blank (B4L0829-BLK1)				Prepared: 1/2/2015 Analyzed: 1/2/2015				
Lead	ND	1.0			NR			
Blank (B4L0829-BLK2)				Prepared: 1/2/2015 Analyzed: 1/2/2015				
Lead	ND	1.0			NR			
LCS (B4L0829-BS1)				Prepared: 1/2/2015 Analyzed: 1/2/2015				
Lead	2.15677		2.00000		108 80 - 120			
Duplicate (B4L0829-DUP1)		Source: 1403942-81			Prepared: 1/2/2015 Analyzed: 1/2/2015			
Lead	0.120449	1.0		0.167563	NR	32.7	20	R, J
Duplicate (B4L0829-DUP2)		Source: 1403942-61			Prepared: 1/2/2015 Analyzed: 1/2/2015			
Lead	0.179546	1.0		0.146380	NR	20.4	20	R, J
Matrix Spike (B4L0829-MS1)		Source: 1403942-81			Prepared: 1/2/2015 Analyzed: 1/2/2015			
Lead	2.68695		2.50000	0.167563	101 70 - 130			
Matrix Spike (B4L0829-MS2)		Source: 1403942-61			Prepared: 1/2/2015 Analyzed: 1/2/2015			
Lead	2.63275		2.50000	0.146380	99.5 70 - 130			
Matrix Spike Dup (B4L0829-MSD1)		Source: 1403942-81			Prepared: 1/2/2015 Analyzed: 1/2/2015			
Lead	2.65694		2.50000	0.167563	99.6 70 - 130	1.12	20	
Batch B4L0830 - STLC DI_S Extraction								



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Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
 Report To : Anne Perez/Monica Aragon
 Reported : 01/06/2015

STLC DI Metals by ICP-AES by EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes	
Blank (B4L0830-BLK1)					Prepared: 1/2/2015 Analyzed: 1/2/2015				
Lead	ND	1.0			NR				
Blank (B4L0830-BLK2)					Prepared: 1/2/2015 Analyzed: 1/2/2015				
Lead	ND	1.0			NR				
LCS (B4L0830-BS1)					Prepared: 1/2/2015 Analyzed: 1/2/2015				
Lead	2.17924		2.00000		109 80 - 120				
Duplicate (B4L0830-DUP1)		Source: 1403989-11			Prepared: 1/2/2015 Analyzed: 1/2/2015				
Lead	0.676069	1.0		1.50624	NR	76.1	20	R, J	
Duplicate (B4L0830-DUP2)		Source: 1403942-90			Prepared: 1/2/2015 Analyzed: 1/2/2015				
Lead	2.00683	1.0		1.49863	NR	29.0	20	R	
Matrix Spike (B4L0830-MS1)		Source: 1403989-11			Prepared: 1/2/2015 Analyzed: 1/2/2015				
Lead	3.91591		2.50000	1.50624	96.4	70 - 130			
Matrix Spike (B4L0830-MS2)		Source: 1403942-90			Prepared: 1/2/2015 Analyzed: 1/2/2015				
Lead	3.89510		2.50000	1.49863	95.9	70 - 130			
Matrix Spike Dup (B4L0830-MSD1)		Source: 1403989-11			Prepared: 1/2/2015 Analyzed: 1/2/2015				
Lead	3.98147		2.50000	1.50624	99.0	70 - 130	1.66	20	



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Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
 Report To : Anne Perez/Monica Aragon
 Reported : 01/06/2015

Mercury by AA (Cold Vapor) EPA 7470A - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes
Batch B4L0465 - EPA 245.1/7470_W								
Blank (B4L0465-BLK1)								
								Prepared: 12/16/2014 Analyzed: 12/16/2014
Mercury	ND	0.20			NR			
LCS (B4L0465-BS1)								
								Prepared: 12/16/2014 Analyzed: 12/16/2014
Mercury	19.2298	0.20	20.0000		96.1 80 - 120			
Duplicate (B4L0465-DUP1)								
								Prepared: 12/16/2014 Analyzed: 12/16/2014
Mercury	ND	0.20		ND	NR		20	
Matrix Spike (B4L0465-MS1)								
								Prepared: 12/16/2014 Analyzed: 12/16/2014
Mercury	19.2870	0.20	20.0000	ND	96.4 70 - 130			
Matrix Spike Dup (B4L0465-MSD1)								
								Prepared: 12/16/2014 Analyzed: 12/16/2014
Mercury	18.8380	0.20	20.0000	ND	94.2 70 - 130	2.36	20	
Post Spike (B4L0465-PS1)								
								Prepared: 12/16/2014 Analyzed: 12/16/2014
Mercury	5.17021		5.00000	-0.001399	103 85 - 115			
Batch S4L0238 - B4L0464								
Instrument Blank (S4L0238-IBL1)								
								Prepared: 12/16/2014 Analyzed: 12/16/2014
Mercury	ND	0.20			NR			



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Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
 Report To : Anne Perez/Monica Aragon
 Reported : 01/06/2015

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

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes
Batch B4L0528 - EPA 7471_S								
Blank (B4L0528-BLK1)				Prepared: 12/18/2014 Analyzed: 12/18/2014				
Mercury	ND	0.10			NR			
LCS (B4L0528-BS1)				Prepared: 12/18/2014 Analyzed: 12/18/2014				
Mercury	0.792180	0.10	0.833333		95.1 80 - 120			
Duplicate (B4L0528-DUP1)		Source: 1403942-03		Prepared: 12/18/2014 Analyzed: 12/18/2014				
Mercury	1.30882	0.10		0.112586	NR	168	20	R
Matrix Spike (B4L0528-MS1)		Source: 1403942-03		Prepared: 12/18/2014 Analyzed: 12/18/2014				
Mercury	0.995469	0.10	0.833333	0.112586	106	70 - 130		
Matrix Spike Dup (B4L0528-MSD1)		Source: 1403942-03		Prepared: 12/18/2014 Analyzed: 12/18/2014				
Mercury	1.00815	0.10	0.833333	0.112586	107	70 - 130	1.27	20
Post Spike (B4L0528-PS1)		Source: 1403942-03		Prepared: 12/18/2014 Analyzed: 12/18/2014				
Mercury	0.007426		5.00000E-3	0.001351	121	85 - 115		M1
Batch S4L0264 - B4L0528								
Instrument Blank (S4L0264-IBL1)				Prepared: 12/18/2014 Analyzed: 12/18/2014				
Mercury	ND	0.10			NR			



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Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
 Report To : Anne Perez/Monica Aragon
 Reported : 01/06/2015

pH by EPA 9045C - Quality Control

Analyte	Result (pH Units)	PQL (pH Units)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B4L0545 - z_Prep_WC_1_S

Duplicate (B4L0545-DUP1)

Source: 1403942-94

Prepared: 12/18/2014 Analyzed: 12/18/2014

pH	7.97000	0.10		8.32000	NR		4.30	20	
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Batch B4L0770 - z_Prep_WC_1_S

Duplicate (B4L0770-DUP1)

Source: 1403942-33

Prepared: 12/29/2014 Analyzed: 12/29/2014

pH	7.16000	0.10		7.40000	NR		3.30	20	
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Certificate of Analysis

Stantec
3777 Worsham Avenue, Ste. 200
Long Beach, CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
Report To : Anne Perez/Monica Aragon
Reported : 01/06/2015

Notes and Definitions

R	RPD value outside acceptance criteria. Calculation is based on raw values.
M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
J	Analyte detected below the Practical Quantitation Limit but above or equal to the Method Detection Limit. Result is an estimated concentration.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

- Notes:
- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
 - (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
 - (3) Results are wet unless otherwise specified.



STANTEC CHAIN-OF-CUSTODY RECORD

COC # _____
Page 1 of 10

FIELD OFFICE INFORMATION		PROJECT INFORMATION				ANALYSES / METHOD REQUEST	REMARKS / PRECAUTIONS	
OFFICE: Stantec - Thousand Oaks		Project No.: 185831017		Task: 200.0003			Number of Containers Total Lead (TLC) - 6010 Title 22 Metals - 6010/7000 pH - 9045 STLC: Cal-WET Citric STLC: Cal-WET DI TLCP - 1311	TAT <input type="checkbox"/> Normal <input type="checkbox"/> Rush <input checked="" type="checkbox"/> Other: <u>5 days</u> REPORTING REQUIREMENTS <input type="checkbox"/> MB & SURGS <input type="checkbox"/> Dup/MS/MSD <input type="checkbox"/> Raw Data <input type="checkbox"/> CLP Rpt <input checked="" type="checkbox"/> EDD <input type="checkbox"/> Other
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808 Telephone: (562) 354-2643 Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com		Project Name: Caltrans 07A3321-17 Project Manager: Anne Perez/ Monica Aragon Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755						
Sample No. / Identification	Date	Time	Matrix *	Container & Size **	Preservative			
1 1267-101-0	12/10/14	0800	SO	8oz Jar	N/A	1	X	B C A
2 1267-101-2		0805	SO					
3 1267-102-0		0810					X	
4 1267-102-2		0815						
5 1267-103-0		0802						
6 1267-103-2		0809						
7 1267-104-0		0815						
8 1267-104-2		0825					X	
9 1267-105-0		0916						
10 1267-105-2		0918					X	
11 1267-106-0		0915						

A = TCLP: samples reporting ≥1000 mg/kg of lead or the highest 20% total lead concentrations from the project will be analyzed.
 B = Cal WET-Citric: samples reporting >50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed.
 C = Cal WET-DI: samples reporting 5 mg/l of Cal WET-Citric or the highest 50% total lead concentrations from the project will be analyzed.

Possible Hazard Identification
 Non-Hazardous Flammable Skin Irritant Poison B Unknown

Sample Disposal
 Return to Client Disposal by Lab Archive for _____ Months

1407482

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Signature		Print Name		Company		Date	Time
1(a) Relinquished by:		KEITH BORKAN		STANTEC		12/11	1750
1(b) Received by:		JOE ARICO		ATC		12/11/14	1750
2(a) Relinquished by:		JOE ARICO		ATC		12/11/14	19:12
2(b) Received by:		F. OWEN		AT		12/11/14	1912
3(a) Relinquished by:							
3(b) Received by:							

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

COC # _____
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FIELD OFFICE INFORMATION			PROJECT INFORMATION				ANALYSES / METHOD REQUEST	REMARKS/ PRECAUTIONS			
OFFICE: Stantec - Thousand Oaks			Project No.: 185831017		Task: 200.0003						
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808			Project Name: Caltrans 07A3321-17				Number of Containers				
Telephone: (562) 354-2643			Project Manager: Anne Perez/ Monica Aragon					Total Lead (TLC) - 6010	Title 22 Metals - 60107000	pH - 9045	
Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com			Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755								STLC: Cal-WET Citric
Sample No. / Identification			SAMPLE			Container & Size **	Preservative	TCLP - 1311			
			Date	Time	Matrix *						
12	1267-106-2	12/10/14	0922	50	Soil Jar	N/A	X	B	C	A	A = TCLP: samples reporting ≥1000 mg/kg of lead or the highest 20% total lead concentrations from the project will be analyzed.
13	1267-107-0		0925				X				
14	1267-107-2		0930								
15	1267-108-0		0927								B = Cal WET-Citric: samples reporting >50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed.
16	1267-108-2		0935								
17	1267-109-0		1038								C = Cal WET-DI: samples reporting 5 mg/l of Cal WET-Citric or the highest 50% total lead concentrations from the project will be analyzed.
18	1267-109-2		1043								
19	1267-110-0		1021								
20	1267-110-2		1030								
21	1267-110-0		1037								
22	1267-111-2		1046								

1403942
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Possible Hazard Identification: Non-Hazardous Flammable Skin Irritant Poison B Unknown

Sample Disposal: Return to Client Disposal by Lab Archive for _____ Months

Sampled by: _____ Shipment Method: _____ Airbill Number: _____

Signature	Print Name	Company	Date	Time
1(a) Relinquished by:	Keith Paekian	Stantec	12/11/14	1750
1(b) Received by:	ATC	ATC	12/11/14	1750
2(a) Relinquished by:	ATC	ATC	12/11/14	1912
2(b) Received by:	ATC	ATC	12/11/14	1912
3(a) Relinquished by: _____				
3(b) Received by: _____				

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

COC # _____
Page 3 of 10

FIELD OFFICE INFORMATION		PROJECT INFORMATION					ANALYSES / METHOD REQUEST					REMARKS / PRECAUTIONS			
OFFICE: Stantec - Thousand Oaks		Project No.: 185831017		Task: 200.0003			Number of Containers	Total Lead (TTLC) - 6010	Title 22 Metals - 6010/7000	pH - 9045	STLC: Cal-WET Citric	STLC: Cal-WET DI	TLCP - 1311	REMARKS / PRECAUTIONS TAT <input type="checkbox"/> Normal <input type="checkbox"/> Rush <input checked="" type="checkbox"/> Other: <u>5 days</u> REPORTING REQUIREMENTS <input type="checkbox"/> MB & SURGS <input type="checkbox"/> Dup/MS/MSD <input type="checkbox"/> Raw Data <input type="checkbox"/> CLP Rpt <input checked="" type="checkbox"/> EDD <input type="checkbox"/> Other	
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808		Project Name: Caltrans 07A3321-17			Project Manager: Anne Perez/ Monica Aragon										
Telephone: (562) 354-2643		Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755													
Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com															
Sample No. / Identification	Date	Time	Matrix *	Container & Size **	Preservative										
1267-112-0	12/10/14	1020	SO	8oz Jar	N/A	1	X			B	C	A		A = TCLP: samples reporting ≥1000 mg/kg of lead or the highest 20% total lead concentrations from the project will be analyzed.	
1267-112-2		1034													
1267-113-0		1156													
1267-113-2		1204												B = Cal WET-Citric: samples reporting >50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed.	
1267-114-0		1216						X	X						
1267-114-2		1228						X							
1267-115-0		1215												C = Cal WET-DI: samples reporting 5 mg/l of Cal WET-Citric or the highest 50% total lead concentrations from the project will be analyzed.	
1267-115-2		1223													
1267-116-0		1153													
1267-116-2		1203													
1267-117-0		1453													
Possible Hazard Identification					Sample Disposal										
<input type="checkbox"/> Non-Hazardous <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown					<input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months										

1403942

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Signature		Print Name		Company		Date	Time
1(a) Relinquished by:		Keith Posekian		Stantec		12/11/14	1750
1(b) Received by:		Joe Arago		ATC		12/11/14	1750
2(a) Relinquished by:		Joe Arago		ATC		12/11/14	1912
2(b) Received by:		Frown		AT		12/11/14	1912
3(a) Relinquished by:							
3(b) Received by:							

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

COC # _____
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FIELD OFFICE INFORMATION			PROJECT INFORMATION			ANALYSES / METHOD REQUEST	REMARKS / PRECAUTIONS						
OFFICE: Stantec - Thousand Oaks			Project No.: 185831017		Task: 200.0003								
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808			Project Name: Caltrans 07A3321-17			Number of Containers	REPORTING REQUIREMENTS						
Telephone: (562) 354-2643			Project Manager: Anne Perez/ Monica Aragon				<input type="checkbox"/> Normal <input type="checkbox"/> Rush <input checked="" type="checkbox"/> Other: 5 days	<input type="checkbox"/> MB & SURGS <input type="checkbox"/> Dup/MS/MSD <input type="checkbox"/> Raw Data <input type="checkbox"/> CLP Rpt <input checked="" type="checkbox"/> EDD <input type="checkbox"/> Other					
Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com			Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755										
Sample No. / Identification	SAMPLE		Matrix *	Container & Size **	Preservative	Total Lead (TTLC) - 6010	Title 22 Metals - 6010/7000	pH - 9045	STLC: Cal-WET Citric	STLC: Cal-WET DI	TLCP - 1311		
	Date	Time											
34 1267-117-2	12/10/14	1510	SO	8oz Jar	N/A	X			B	C	A		
35 1267-118-0		1522					X						
36 1267-118-2		1545											
37 1267-119-0													
37 1267-119-0		1505											
38 1267-119-2													
39 1267-120-0		1416											
40 1267-120-2		1530											
41 1267-121-0		1335											
42 1267-121-2		1343											
43 1267-122-0		1351						X					

Possible Hazard Identification
 Non-Hazardous Flammable Skin Irritant Poison B Unknown

Sample Disposal
 Return to Client Disposal by Lab Archive for _____ Months

1403942
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 34
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 42

Sampled by:		Shipment Method:		Airbill Number:	
Signature	Print Name	Company	Date	Time	
1(a) Relinquished by:	Keith Poser	Stantec	12/11/14	1750	
1(b) Received by:	JOE ARAGON	ATC	12/11/14	1750	
2(a) Relinquished by:	JOE ARAGON	ATC	12/11/14	1912	
2(b) Received by:	AT	AT	12/11/14	1912	
3(a) Relinquished by:					
3(b) Received by:					

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

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Page 5 of 10

FIELD OFFICE INFORMATION		PROJECT INFORMATION					ANALYSES / METHOD REQUEST	REMARKS / PRECAUTIONS			
OFFICE: Stantec - Thousand Oaks		Project No.: 185831017		Task: 200.0003							
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808		Project Name: Caltrans 07A3321-17					Number of Containers				
Telephone: (562) 354-2643		Project Manager: Anne Perez/ Monica Aragon						Total Lead (TLLC) - 6010	Title 22 Metals - 6010/7000	pH - 9045	
Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com		Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755									STLC: Cal-WET Citric
Sample No. / Identification		SAMPLE			Container & Size **	Preservative	TCLP - 1311				
		Date	Time	Matrix *							
43	1267-122-2	12/10/14	1355	SO	8 oz Jar	N/A	X	B	C	A	A = TCLP: samples reporting ≥1000 mg/kg of lead or the highest 20% total lead concentrations from the project will be analyzed.
44	1267-123-0	12/10/14	1336								
45	1267-123-2	12/10/14	1350				X				B = Cal WET-Citric: samples reporting >50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed.
46	1267-124-0	12/10/14	1357								
47	1267-124-2	12/10/14	1410								C = Cal WET-DI: samples reporting 5 mg/l of Cal WET-Citric or the highest 50% total lead concentrations from the project will be analyzed.
48	1267-125-0	12/11/14	0810								
49	1267-125-2		0812								
50	1267-126-0		0815								
51	1267-126-2		0820								
52	1267-127-0		0825								
53	1267-127-2		0830								

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Possible Hazard Identification: Non-Hazardous Flammable Skin Irritant Poison B Unknown

Sample Disposal: Return to Client Disposal by Lab Archive for _____ Months

Signature		Print Name		Company		Date	Time
1(a) Relinquished by:		Keith Posekian		Stantec		12/11/14	1750
1(b) Received by:		Joe Arceo		ATC		12/11/14	1750
2(a) Relinquished by:		Joe Arceo		ATC		12/11/14	1912
2(b) Received by:		FPOCWA		ATC		12/11/14	1912
3(a) Relinquished by:							
3(b) Received by:							

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

COC # _____
Page 6 of 10

FIELD OFFICE INFORMATION			PROJECT INFORMATION			ANALYSES / METHOD REQUEST	REMARKS/ PRECAUTIONS										
OFFICE: Stantec - Thousand Oaks			Project No.: 185831017		Task: 200.0003		TAT <input type="checkbox"/> Normal <input type="checkbox"/> Rush <input checked="" type="checkbox"/> Other: <u>5 days</u>										
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808			Project Name: Caltrans 07A3321-17			REPORTING REQUIREMENTS <input type="checkbox"/> MB & SURGS <input type="checkbox"/> Dup/MS/MSD <input type="checkbox"/> Raw Data <input type="checkbox"/> CLP Rpt <input checked="" type="checkbox"/> EDD <input type="checkbox"/> Other											
Telephone: (562) 354-2643			Project Manager: Anne Perez/ Monica Aragon														
Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com			Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755														
Sample No. / Identification	SAMPLE			Container & Size **	Preservative	Number of Containers	Total Lead (TLC) - 6010	Title 22 Metals - 6010/7000	pH - 9045	STLC: Cal-WET Citric	STLC: Cal-WET DI	TLCP - 1311					
	Date	Time	Matrix *														
1407992 54 1267-128-0	12/11/14	0840	SO	8oz Jar	N/A	1	X			B	C	A				A = TCLP: samples reporting ≥1000 mg/kg of lead or the highest 20% total lead concentrations from the project will be analyzed.	
55 1267-128-2		0845															
56 1267-129-0		0925							X								
57 1267-129-2		0935															B = Cal WET-Citric: samples reporting >50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed.
58 1267-130-0		0945															
59 1267-130-2		0950															
60 1267-130-0		0926															
61 1267-131-2		0934						X									C = Cal WET-DI: samples reporting 5 mg/l of Cal WET-Citric or the highest 50% total lead concentrations from the project will be analyzed.
62 1267-132-0		0942															
63 1267-132-2		0951															
64 1267-133-0		1040															

Possible Hazard Identification
 Non-Hazardous
 Flammable
 Skin Irritant
 Poison B
 Unknown
Sample Disposal
 Return to Client
 Disposal by Lab
 Archive for _____ Months
Sampled by:**Shipment Method:****Airbill Number:**

Signature	Print Name	Company	Date	Time
1(a) Relinquished by: <i>[Signature]</i>	Keith Breen	Stantec	12/11/14	1750
1(b) Received by: <i>[Signature]</i>	Joe Arleo	AR	12/11/14	1750
2(a) Relinquished by: <i>[Signature]</i>	Joe Arleo	AR	12/11/14	1912
2(b) Received by: <i>[Signature]</i>	Frown	AR	12/11/14	1912
3(a) Relinquished by:				
3(b) Received by:				

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other

**Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

COC # _____
Page 7 of 16

FIELD OFFICE INFORMATION		PROJECT INFORMATION					ANALYSES / METHOD REQUEST	REMARKS / PRECAUTIONS	
OFFICE: Stantec - Thousand Oaks		Project No.: 185831017		Task: 200.0003				Number of Containers	TAT <input type="checkbox"/> Normal <input type="checkbox"/> Rush <input checked="" type="checkbox"/> Other: 5 days REPORTING REQUIREMENTS <input type="checkbox"/> MB & SURGS <input type="checkbox"/> Dup/MS/MSD <input type="checkbox"/> Raw Data <input type="checkbox"/> CLP Rpt <input checked="" type="checkbox"/> EDD <input type="checkbox"/> Other
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808 Telephone: (562) 354-2643 Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / arne.perez@stantec.com		Project Name: Caltrans 07A3321-17			Project Manager: Anne Perez/ Monica Aragon		Total Lead (TLC) - 6010 Title 22 Metals - 6010/7000 pH - 9045 STLC: Cal-WET Citric STLC: Cal-WET DI TLCP - 1311		
Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755									
Sample No. / Identification	Date	Time	Matrix *	Container & Size **	Preservative				
1267-133-2	12/11/14	1045	SO	8oz	N/A	1	X		B C A
1267-134-0		1050						X	
1267-134-2		1100							
1267-135-0		1047							
1267-135-2		1101							
1267-136-0		1113							
1267-136-2 1267-137-0		1206							
1267-137-2		1211							
1267-138-0		1215							
1267-138-2		1221							
1267-139-0		1218							
Possible Hazard Identification					Sample Disposal				
<input type="checkbox"/> Non-Hazardous <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown					<input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months				

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Signature		Print Name		Company		Date	Time
1(a) Relinquished by:		Keith Borkian		Stantec		12/11/14	1750
1(b) Received by:		JOSE ANLEO		ATL		12/11/14	1750
2(a) Relinquished by:		JOSE ANLEO		ATL		12/11/14	1917
2(b) Received by:		FRONZ		AR		12/11/14	1912
3(a) Relinquished by:							
3(b) Received by:							

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

COC #
Page: 8 of 10

FIELD OFFICE INFORMATION		PROJECT INFORMATION					ANALYSES / METHOD REQUEST	REMARKS / PRECAUTIONS	
OFFICE: Stantec - Thousand Oaks		Project No.: 185831017		Task: 200.0003				Number of Containers Total Lead (TTL) - 6010 Title 22 Metals - 6010/7000 pH - 9045 STLC: Cal-WET Citric STLC: Cal-WET DI TLCP - 1311	TAT <input type="checkbox"/> Normal <input type="checkbox"/> Rush <input checked="" type="checkbox"/> Other: 5 days
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808 Telephone: (562) 354-2643 Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.peraz@stantec.com		Project Name: Caltrans 07A3321-17			Project Manager: Anne Perez / Monica Aragon		Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755		REPORTING REQUIREMENTS <input type="checkbox"/> MB & SURGS <input type="checkbox"/> Dup/MS/MSD <input type="checkbox"/> Raw Data <input type="checkbox"/> CLP Rpt <input checked="" type="checkbox"/> EDD <input type="checkbox"/> Other
Sample No. / Identification	Date	Time	Matrix *	Container & Size **	Preservative	A = TCLP: samples reporting >1000 mg/kg of lead or the highest 20% total lead concentrations from the project will be analyzed. B = Cal WET-Citric: samples reporting >50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed. C = Cal WET-DI: samples reporting 5 mg/l of Cal WET-Citric or the highest 50% total lead concentrations from the project will be analyzed.			
76 1267-139-2	12/11/14	1225	SO	802	N/A	X	B	C	A
77 1267-140-0		1205							
78 1267-140-2		123							
79 1267-141-0		1335							
80 1267-141-2		1345							
81 1267-142-0		1337							
82 1267-142-2 (KP)									
82 1267-143-0		1350							
83 1267-143-2		1410							
84 1267-144-0		1349							
85 1267-144-2		1403							

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Possible Hazard Identification: Non-Hazardous Flammable Skin Irritant Poison B Unknown

Sample Disposal: Return to Client Disposal by Lab Archive for _____ Months

Signature		Print Name		Company		Date	Time
1(a) Relinquished by:		Keith Posekian		Stantec		12/11/14	1750
1(b) Received by:		JOEL ARAGO		ATL		12/11/14	1710
2(a) Relinquished by:		JOEL ARAGO		ATL		12/11/14	1912
2(b) Received by:		FPOW		ATL		12/11/14	1912
3(a) Relinquished by:							
3(b) Received by:							

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

COC #
Page 9 of 10

FIELD OFFICE INFORMATION		PROJECT INFORMATION				Number of Containers	ANALYSES / METHOD REQUEST					REMARKS / PRECAUTIONS			
OFFICE: Stantec - Thousand Oaks		Project No.: 185831017		Task: 200.0003			Total Lead (TTL) - 6010	Title 22 Metals - 6010/7000	pH - 9045	STLC: Cal-WET Citric	STLC: Cal-WET DI	TLC - 1311	TAT <input type="checkbox"/> Normal <input type="checkbox"/> Rush <input checked="" type="checkbox"/> Other: 5 days		REPORTING REQUIREMENTS <input type="checkbox"/> MB & SURGS <input type="checkbox"/> Dup/MS/MSD <input type="checkbox"/> Raw Data <input type="checkbox"/> CLP Rpt <input checked="" type="checkbox"/> EDD <input type="checkbox"/> Other
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808 Telephone: (562) 354-2643 Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com		Project Name: Caltrans 07A3321-17		Project Manager: Anne Perez/ Monica Aragon		Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755									
Sample No. / Identification	SAMPLE			Container & Size **	Preservative										
	Date	Time	Matrix *												
1267-145-0	12/11/14	1515	SO	8oz Jar	N/A	1	X		B	C	A			A = TCLP: samples reporting ≥1000 mg/kg of lead or the highest 20% total lead concentrations from the project will be analyzed.	
1267-145-2		1533													
1267-146-0		1514													
1267-146-2		1520												B = Cal WET-Citric: samples reporting ≥50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed.	
1267-147-0		1502													
1267-147-2		1508													
1267-148-0		1459												C = Cal WET-DI: samples reporting 5 mg/l of Cal WET-Citric or the highest 50% total lead concentrations from the project will be analyzed.	
1267-148-2		1507													
1267-DUP1-20141210	12/10/14						X	X							
1267-DUP2-20141210	12/10/14														
1267-DUP3-20141211	12/11/14														
Possible Hazard Identification						Sample Disposal									
<input type="checkbox"/> Non-Hazardous <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown						<input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months									

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Signature		Print Name		Company		Date	Time
1(a) Relinquished by:		Keith Psekun		Stantec		12/11/14	1750
1(b) Received by:		Joe Arleo		ATV		12/11/14	1750
2(a) Relinquished by:		Joe Arleo		ATV		12/11/14	1912
2(b) Received by:		Pown		AR		12/11/14	1912
3(a) Relinquished by:							
3(b) Received by:							

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

COC # _____
Page 16 of 18

FIELD OFFICE INFORMATION		PROJECT INFORMATION				ANALYSES / METHOD REQUEST	REMARKS / PRECAUTIONS							
OFFICE: Stantec - Thousand Oaks		Project No.: 185831017		Task: 200.0003			TAT <input type="checkbox"/> Normal <input type="checkbox"/> Rush <input checked="" type="checkbox"/> Other: 5 days							
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808		Project Name: Caltrans 07A3321-17				Number of Containers	Total Lead (TTLC) - 6010	Title 22 Metals - 6010/7000	pH - 9045	STLC: Cal-WET Citric	STLC: Cal-WET DI	TLCP - 1311	REPORTING REQUIREMENTS	
Telephone: (562) 354-2643		Project Manager: Anne Perez/ Monica Aragon		Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755									<input type="checkbox"/> MB & SURGS	<input type="checkbox"/> Dup/MS/MSD
Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com		SAMPLE		Container & Size **	Preservative									
Sample No. / Identification	Date	Time	Matrix *											
1267-DUP4-20141211	12/11/14		SO	8oz Jar	N/A	1	X			B	C	A		A = TTCLP: samples reporting ≥1000 mg/kg of lead or the highest 20% total lead concentrations from the project will be analyzed.
1267-DUP5-20141211	12/11/14		SO	8oz Jar	N/A	1	X			B	C	A		
1267-EB1-20141210	12/10/14	0800	AQ	Poly	N/A			X						B = Cal WET-Citric: samples reporting >50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed.
1267-FB1-20141210	12/10/14	0801	AQ	Poly	N/A	1		X						C = Cal WET-DI: samples reporting 5 mg/l of Cal WET-Citric or the highest 50% total lead concentrations from the project will be analyzed.

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Possible Hazard Identification
 Non-Hazardous Flammable Skin Irritant Poison B Unknown

Sample Disposal
 Return to Client Disposal by Lab Archive for _____ Months

Sampled by:		Shipment Method:		Airbill Number:	
Signature	Print Name	Company	Date	Time	
1(a) Relinquished by: <i>[Signature]</i>	Keith Tosekian	Stantec	12/11/14	1750	
1(b) Received by: <i>[Signature]</i>	JOE ARAGON	ATC	12/11/14	1750	
2(a) Relinquished by: <i>[Signature]</i>	JOE ARAGON	ATC	12/11/14	1912	
2(b) Received by: <i>[Signature]</i>	FRDIAZ	AR	12/11/14	1912	
3(a) Relinquished by:					
3(b) Received by:					

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



January 16, 2015

Anne Perez/Monica Aragon
Stantec
3777 Worsham Avenue, Ste. 200
Long Beach, CA 90808
Tel: (562) 354-2638
Fax:

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

Re: ATL Work Order Number : 1403942
Client Reference : 185831017, Task: 200.0003, Caltrans 07A3321-17

Enclosed are the results for sample(s) received on December 11, 2014 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read 'E. Rodriguez', is written over a light gray rectangular background.

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Stantec
3777 Worsham Avenue, Ste. 200
Long Beach , CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
Report To : Anne Perez/Monica Aragon
Reported : 01/16/2015

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
1267-133-0	1403942-64	Soil	12/11/14 10:40	12/11/14 17:50

CASE NARRATIVE

Sample Receiving/General Comments:

Documentation pertaining to additional analyses/change order available upon request.

Results were J-flagged. "J" is used to flag those results that are between the PQL (Practical Quantitation Limit) and the calculated MDL (Method Detection Limit). Results that are "J" flagged are estimated values since it becomes difficult to accurately quantitate the analyte near the MDL.



Certificate of Analysis

Stantec
3777 Worsham Avenue, Ste. 200
Long Beach , CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
Report To : Anne Perez/Monica Aragon
Reported : 01/16/2015

Lead by ICP-AES EPA 6010B

Analyte: Lead

Analyst: RR

Laboratory ID	Client Sample ID	Result	Units	PQL	MDL	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1403942-64	1267-133-0	130	mg/kg	1.0	0.07	1	B5A0091	01/07/2015	01/07/15 16:40	

STLC Metals by ICP-AES by EPA 6010B

Analyte: Lead

Analyst: RR

Laboratory ID	Client Sample ID	Result	Units	PQL	MDL	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1403942-64	1267-133-0	9.4	mg/L	1.0	0.027	20	B5A0187	01/09/2015	01/12/15 10:35	

STLC DI Metals by ICP-AES by EPA 6010B

Analyte: Lead

Analyst: RR

Laboratory ID	Client Sample ID	Result	Units	PQL	MDL	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1403942-64	1267-133-0	0.56	mg/L	1.0	0.027	20	B5A0188	01/09/2015	01/12/15 10:48	J



Certificate of Analysis

Stantec
 3777 Worsham Avenue, Ste. 200
 Long Beach , CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
 Report To : Anne Perez/Monica Aragon
 Reported : 01/16/2015

QUALITY CONTROL SECTION

Lead by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5A0091 - EPA 3050 Modified_S									
Blank (B5A0091-BLK1)					Prepared: 1/7/2015 Analyzed: 1/7/2015				
Lead	0.269779	1.0			NR				J
Blank (B5A0091-BLK2)					Prepared: 1/7/2015 Analyzed: 1/7/2015				
Lead	0.069729	1.0			NR				J
LCS (B5A0091-BS1)					Prepared: 1/7/2015 Analyzed: 1/7/2015				
Lead	47.6036	1.0	50.0000		95.2	80 - 120			
Duplicate (B5A0091-DUP1)					Prepared: 1/7/2015 Analyzed: 1/7/2015				
Lead	3.09374	1.0		2.55376	NR		19.1	20	
Duplicate (B5A0091-DUP2)					Prepared: 1/7/2015 Analyzed: 1/7/2015				
Lead	23.0382	1.0		40.5322	NR		55.0	20	R
Matrix Spike (B5A0091-MS1)					Prepared: 1/7/2015 Analyzed: 1/7/2015				
Lead	212.707	1.0	250.000	2.55376	84.1	33 - 134			
Matrix Spike (B5A0091-MS2)					Prepared: 1/7/2015 Analyzed: 1/7/2015				
Lead	225.522	1.0	250.000	40.5322	74.0	33 - 134			
Matrix Spike Dup (B5A0091-MSD1)					Prepared: 1/7/2015 Analyzed: 1/7/2015				
Lead	222.424	1.0	250.000	2.55376	87.9	33 - 134	4.47	20	



Certificate of Analysis

Stantec
 3777 Worsham Avenue, Ste. 200
 Long Beach , CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
 Report To : Anne Perez/Monica Aragon
 Reported : 01/16/2015

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

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes
Batch B5A0187 - STLC_S Extraction								
Blank (B5A0187-BLK1)				Prepared: 1/9/2015 Analyzed: 1/12/2015				
Lead	0.186260	1.0			NR			J
LCS (B5A0187-BS1)				Prepared: 1/9/2015 Analyzed: 1/12/2015				
Lead	2.02166		2.00000		101 80 - 120			
Duplicate (B5A0187-DUP1)				Source: 1403942-64RE1 Prepared: 1/9/2015 Analyzed: 1/12/2015				
Lead	13.9489	1.0		9.37764	NR	39.2	20	R
Matrix Spike (B5A0187-MS1)				Source: 1403942-64RE1 Prepared: 1/9/2015 Analyzed: 1/12/2015				
Lead	11.4954		2.50000	9.37764	84.7	44 - 130		
Matrix Spike Dup (B5A0187-MSD1)				Source: 1403942-64RE1 Prepared: 1/9/2015 Analyzed: 1/12/2015				
Lead	11.5153		2.50000	9.37764	85.5	44 - 130	0.173	20



Certificate of Analysis

Stantec
 3777 Worsham Avenue, Ste. 200
 Long Beach , CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
 Report To : Anne Perez/Monica Aragon
 Reported : 01/16/2015

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

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes
Batch B5A0188 - STLC DI_S Extraction								
Blank (B5A0188-BLK1)				Prepared: 1/9/2015 Analyzed: 1/12/2015				
Lead	ND	1.0			NR			
LCS (B5A0188-BS1)				Prepared: 1/9/2015 Analyzed: 1/12/2015				
Lead	2.11771		2.00000		106 80 - 120			
Duplicate (B5A0188-DUP1)				Source: 1403942-64RE1 Prepared: 1/9/2015 Analyzed: 1/12/2015				
Lead	0.568026	1.0		0.559745	NR	1.47	20	J
Matrix Spike (B5A0188-MS1)				Source: 1403942-64RE1 Prepared: 1/9/2015 Analyzed: 1/12/2015				
Lead	3.05100		2.50000	0.559745	99.7	70 - 130		
Matrix Spike Dup (B5A0188-MSD1)				Source: 1403942-64RE1 Prepared: 1/9/2015 Analyzed: 1/12/2015				
Lead	3.05101		2.50000	0.559745	99.7	70 - 130	0.000391	20



Certificate of Analysis

Stantec
3777 Worsham Avenue, Ste. 200
Long Beach, CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
Report To : Anne Perez/Monica Aragon
Reported : 01/16/2015

Notes and Definitions

R	RPD value outside acceptance criteria. Calculation is based on raw values.
J	Analyte detected below the Practical Quantitation Limit but above or equal to the Method Detection Limit. Result is an estimated concentration.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

- Notes:
- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
 - (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
 - (3) Results are wet unless otherwise specified.



STANTEC CHAIN-OF-CUSTODY RECORD

COC # _____
Page 1 of 10

FIELD OFFICE INFORMATION		PROJECT INFORMATION				ANALYSES / METHOD REQUEST	REMARKS / PRECAUTIONS			
OFFICE: Stantec - Thousand Oaks		Project No.: 185831017		Task: 200.0003						
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808		Project Name: Caltrans 07A3321-17				Number of Containers				
Telephone: (562) 354-2643		Project Manager: Anne Perez/ Monica Aragon					Total Lead (TLC) - 6010			
Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com		Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755				Title 22 Metals - 6010/7000				
Sample No. / Identification		SAMPLE		Container & Size **	Preservative	pH - 9045	STLC: Cal-WET Citric	STLC: Cal-WET DI	TAT <input type="checkbox"/> Normal <input type="checkbox"/> Rush <input checked="" type="checkbox"/> Other: <u>5 days</u>	REPORTING REQUIREMENTS <input type="checkbox"/> MB & SURGS <input type="checkbox"/> Dup/MS/MSD <input type="checkbox"/> Raw Data <input type="checkbox"/> CLP Rpt <input checked="" type="checkbox"/> EDD <input type="checkbox"/> Other
	Date	Time	Matrix *							
1	1267-101-0	12/10/14	0800	SO	8oz Jar	N/A				A = TCLP: samples reporting ≥1000 mg/kg of lead or the highest 20% total lead concentrations from the project will be analyzed.
2	1267-101-2		0805	SO						
3	1267-102-0		0810				X			
4	1267-102-2		0815							B = Cal WET-Citric: samples reporting >50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed.
5	1267-103-0		0802							
6	1267-103-2		0809							
7	1267-104-0		0815							C = Cal WET-DI: samples reporting 5 mg/l of Cal WET-Citric or the highest 50% total lead concentrations from the project will be analyzed.
8	1267-104-2		0825				X			
9	1267-105-0		0916							
10	1267-105-2		0918				X			
11	1267-106-0		0915							
Possible Hazard Identification					Sample Disposal					
<input type="checkbox"/> Non-Hazardous <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown					<input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months					

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Signature		Print Name		Company		Date	Time
1(a) Relinquished by:		KEITH BORKAN		STANTEC		12/11	1750
1(b) Received by:		JOE ARICO		ATC		12/11/14	1750
2(a) Relinquished by:		JOE ARICO		ATC		12/11/14	19:12
2(b) Received by:		F. OWEN		ATC		12/11/14	1912
3(a) Relinquished by:							
3(b) Received by:							

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

COC # _____
Page 2 of 10

FIELD OFFICE INFORMATION			PROJECT INFORMATION				ANALYSES / METHOD REQUEST	REMARKS/ PRECAUTIONS			
OFFICE: Stantec - Thousand Oaks			Project No.: 185831017		Task: 200.0003						
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808			Project Name: Caltrans 07A3321-17				Number of Containers				
Telephone: (562) 354-2643			Project Manager: Anne Perez/ Monica Aragon					Total Lead (TLC) - 6010	Title 22 Metals - 60107000	pH - 9045	
Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com			Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755								STLC: Cal-WET Citric
Sample No. / Identification			SAMPLE			Container & Size **	Preservative	TCLP - 1311			
			Date	Time	Matrix *						
12	1267-106-2	12/10/14	0922	50	8oz Jar	N/A	X	B	C	A	A = TCLP: samples reporting >1000 mg/kg of lead or the highest 20% total lead concentrations from the project will be analyzed.
13	1267-107-0		0925				X				
14	1267-107-2		0930								
15	1267-108-0		0927								B = Cal WET-Citric: samples reporting >50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed.
16	1267-108-2		0935								
17	1267-109-0		1038								C = Cal WET-DI: samples reporting 5 mg/l of Cal WET-Citric or the highest 50% total lead concentrations from the project will be analyzed.
18	1267-109-2		1043								
19	1267-110-0		1021								
20	1267-110-2		1030								
21	1267-110-0		1037								
22	1267-111-2		1046								

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Possible Hazard Identification: Non-Hazardous Flammable Skin Irritant Poison B Unknown

Sample Disposal: Return to Client Disposal by Lab Archive for _____ Months

Signature		Print Name		Company		Date	Time
1(a) Relinquished by:		Keith Paekian		Stantec		12/11/14	1750
1(b) Received by:		ATC		ATC		12/11/14	1750
2(a) Relinquished by:		ATC		ATC		12/11/14	1912
2(b) Received by:		ATC		ATC		12/11/14	1912
3(a) Relinquished by:							
3(b) Received by:							

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

COC # _____
Page 3 of 10

FIELD OFFICE INFORMATION			PROJECT INFORMATION				ANALYSES / METHOD REQUEST						REMARKS / PRECAUTIONS					
OFFICE: Stantec - Thousand Oaks			Project No.: 185831017		Task: 200.0003		REQUEST						TAT <input type="checkbox"/> Normal <input type="checkbox"/> Rush <input checked="" type="checkbox"/> Other: <u>5 days</u>					
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808			Project Name: Caltrans 07A3321-17		Project Manager: Anne Perez/ Monica Aragon		Number of Containers	Total Lead (TTLC) - 6010	Title 22 Metals - 6010/7000	pH - 9045	STLC: Cal-WET Citric	STLC: Cal-WET DI			TLCP - 1311	REPORTING REQUIREMENTS <input type="checkbox"/> MB & SURGS <input type="checkbox"/> Dup/MS/MSD <input type="checkbox"/> Raw Data <input type="checkbox"/> CLP Rpt <input checked="" type="checkbox"/> EDD <input type="checkbox"/> Other		
Telephone: (562) 354-2643			Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755										Sample No. / Identification	Date		Time	Matrix *	Container & Size **
Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com																		
23 1267-112-0			12/10/14	1020	SO	8oz Jar	N/A	2	X				B	C	A		A = TCLP: samples reporting ≥1000 mg/kg of lead or the highest 20% total lead concentrations from the project will be analyzed.	
24 1267-112-2				1034														
25 1267-113-0				1156														
26 1267-113-2				1204													B = Cal WET-Citric: samples reporting >50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed.	
27 1267-114-0				1216					X	X								
28 1267-114-2				1228					X									
29 1267-115-0				1215													C = Cal WET-DI: samples reporting 5 mg/l of Cal WET-Citric or the highest 50% total lead concentrations from the project will be analyzed.	
30 1267-115-2				1223														
31 1267-116-0				1153														
32 1267-116-2				1203														
33 1267-117-0				1453														
Possible Hazard Identification						Sample Disposal												
<input type="checkbox"/> Non-Hazardous <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown						<input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months												

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Signature		Print Name		Company		Date	Time
1(a) Relinquished by: <i>[Signature]</i>		Keith Posekian		Stantec		12/11/14	1750
1(b) Received by: <i>[Signature]</i>		Joe Arago		ATC		12/11/14	1750
2(a) Relinquished by: <i>[Signature]</i>		Joe Arago		ATC		12/11/14	1912
2(b) Received by: <i>[Signature]</i>		Frown		AT		12/11/14	1912
3(a) Relinquished by:							
3(b) Received by:							

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

COC # _____
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FIELD OFFICE INFORMATION			PROJECT INFORMATION			ANALYSES / METHOD REQUEST	REMARKS/ PRECAUTIONS								
OFFICE: Stantec - Thousand Oaks	Project No.: 185831017		Task: 200.0003		Number of Containers		Total Lead (TTLC) - 6010	Title 22 Metals - 6010/7000	pH - 9045	STLC: Cal-WET Citric	STLC: Cal-WET DI	TLCP - 1311	TAT <input type="checkbox"/> Normal <input type="checkbox"/> Rush <input checked="" type="checkbox"/> Other: 5 days	REPORTING REQUIREMENTS <input type="checkbox"/> MB & SURGS <input type="checkbox"/> Dup/MS/MSD <input type="checkbox"/> Raw Data <input type="checkbox"/> CLP Rpt <input checked="" type="checkbox"/> EDD <input type="checkbox"/> Other	
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808	Project Name: Caltrans 07A3321-17		Project Manager: Anne Perez/ Monica Aragon			Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755									
Telephone: (562) 354-2643	Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com		Sample No. / Identification		Date	Time	Matrix *	Container & Size **	Preservative						
34	1267-117-2	12/10/14	1510	SO	8oz Jar	N/A				X					A = TTCLP: samples reporting ≥1000 mg/kg of lead or the highest 20% total lead concentrations from the project will be analyzed.
28	1267-118-0		1522							X					
20	1267-118-2		1545												
	1267-118-2 (VP)														B = Cal WET-Citric: samples reporting >50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed.
37	1267-119-0		1505												
	1267-119-2 (VP)														
26	1267-120-0		1416												C = Cal WET-DI: samples reporting 5 mg/l of Cal WET-Citric or the highest 50% total lead concentrations from the project will be analyzed.
24	1267-120-2		1530												
40	1267-121-0		1335												
41	1267-121-2		1343												
42	1267-122-0		1351								X				

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Possible Hazard Identification
 Non-Hazardous Flammable Skin Irritant Poison B Unknown

Sample Disposal
 Return to Client Disposal by Lab Archive for _____ Months

Sampled by:		Shipment Method:		Airbill Number:	
Signature	Print Name	Company	Date	Time	
1(a) Relinquished by:	Keith Poser	Stantec	12/11/14	1750	
1(b) Received by:	JOE ARAGON	ATC	12/11/14	1750	
2(a) Relinquished by:	JOE ARAGON	ATC	12/11/14	1912	
2(b) Received by:	AT	AT	12/11/14	1912	
3(a) Relinquished by:					
3(b) Received by:					

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

COC # _____
Page 5 of 10

FIELD OFFICE INFORMATION			PROJECT INFORMATION			ANALYSES / METHOD REQUEST	REMARKS/ PRECAUTIONS		
OFFICE: Stantec - Thousand Oaks			Project No.: 185831017		Task: 200.0003				
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808			Project Name: Caltrans 07A3321-17			Number of Containers			
Telephone: (562) 354-2643			Project Manager: Anne Perez/ Monica Aragon				Total Lead (TLLC) - 6010	Title 22 Metals - 6010/7000	pH - 9045
Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com			Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755						
Sample No. / Identification	SAMPLE			Container & Size **	Preservative				
	Date	Time	Matrix *						
43 1267-122-2	12/10/14	1355	SO	8 oz Jar	N/A	1	X	B C A	A = TCLP: samples reporting ≥1000 mg/kg of lead or the highest 20% total lead concentrations from the project will be analyzed.
44 1267-123-0	12/10/14	1336							
45 1267-123-2	12/10/14	1350					X		
46 1267-124-0	12/10/14	1357							B = Cal WET-Citric: samples reporting >50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed.
47 1267-124-2	12/10/14	1410							
48 1267-125-0	12/11/14	0810							C = Cal WET-DI: samples reporting 5 mg/l of Cal WET-Citric or the highest 50% total lead concentrations from the project will be analyzed.
49 1267-125-2		0812							
50 1267-126-0		0815							
51 1267-126-2		0820							
52 1267-127-0		0825							
53 1267-127-2		0830							

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Possible Hazard Identification: Non-Hazardous Flammable Skin Irritant Poison B Unknown

Sample Disposal: Return to Client Disposal by Lab Archive for _____ Months

Signature		Print Name		Company		Date	Time
1(a) Relinquished by:		Kerth Posekian		Stantec		12/11/14	1750
1(b) Received by:		Joe Aragon		ATC		12/11/14	1750
2(a) Relinquished by:		Joe Aragon		ATC		12/11/14	1912
2(b) Received by:		FPOCWA		ATC		12/11/14	1912
3(a) Relinquished by:							
3(b) Received by:							

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

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FIELD OFFICE INFORMATION			PROJECT INFORMATION			ANALYSES / METHOD REQUEST	REMARKS/ PRECAUTIONS											
OFFICE: Stantec - Thousand Oaks			Project No.: 185831017		Task: 200.0003		TAT <input type="checkbox"/> Normal <input type="checkbox"/> Rush <input checked="" type="checkbox"/> Other: <u>5 days</u>											
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808			Project Name: Caltrans 07A3321-17			REPORTING REQUIREMENTS <input type="checkbox"/> MB & SURGS <input type="checkbox"/> Dup/MS/MSD <input type="checkbox"/> Raw Data <input type="checkbox"/> CLP Rpt <input checked="" type="checkbox"/> EDD <input type="checkbox"/> Other												
Telephone: (562) 354-2643			Project Manager: Anne Perez/ Monica Aragon															
Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com			Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755															
Sample No. / Identification	SAMPLE			Container & Size **	Preservative	Number of Containers	Total Lead (TLC) - 6010	Title 22 Metals - 6010/7000	pH - 9045	STLC: Cal-WET Citric	STLC: Cal-WET DI	TLC - 1311						
	Date	Time	Matrix *															
1407992 54 1267-128-0	12/11/14	0840	SO	8oz Jar	N/A	1	X			B	C	A					A = TCLP: samples reporting ≥1000 mg/kg of lead or the highest 20% total lead concentrations from the project will be analyzed.	
55 1267-128-2		0845																
56 1267-129-0		0925							X									
57 1267-129-2		0935																B = Cal WET-Citric: samples reporting >50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed.
58 1267-130-0		0945																
59 1267-130-2		0950																
60 1267-130-0		0926																
61 1267-131-2		0934						X										C = Cal WET-DI: samples reporting 5 mg/l of Cal WET-Citric or the highest 50% total lead concentrations from the project will be analyzed.
62 1267-132-0		0942																
63 1267-132-2		0951																
64 1267-133-0		1040																

Possible Hazard Identification
 Non-Hazardous
 Flammable
 Skin Irritant
 Poison B
 Unknown
Sample Disposal
 Return to Client
 Disposal by Lab
 Archive for _____ Months
Sampled by:**Shipment Method:****Airbill Number:**

Signature	Print Name	Company	Date	Time
1(a) Relinquished by: <i>[Signature]</i>	Keith Breen	Stantec	12/11/14	1750
1(b) Received by: <i>[Signature]</i>	Joe Arleo	AR	12/11/14	1750
2(a) Relinquished by: <i>[Signature]</i>	Joe Arleo	AR	12/11/14	1912
2(b) Received by: <i>[Signature]</i>	Frown	AR	12/11/14	1912
3(a) Relinquished by:				
3(b) Received by:				

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other

**Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

COC # _____
Page 7 of 16

FIELD OFFICE INFORMATION		PROJECT INFORMATION					ANALYSES / METHOD REQUEST	REMARKS / PRECAUTIONS									
OFFICE: Stantec - Thousand Oaks		Project No.: 185831017		Task: 200.0003													
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808 Telephone: (562) 354-2643 Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com		Project Name: Caltrans 07A3321-17			Project Manager: Anne Perez/ Monica Aragon		Number of Containers	Total Lead (TLC) - 6010	Title 22 Metals - 6010/7000	pH - 9045	STLC: Cal-WET Citric	STLC: Cal-WET DI	TLC - 1311	TAT <input type="checkbox"/> Normal <input type="checkbox"/> Rush <input checked="" type="checkbox"/> Other: 5 days		REPORTING REQUIREMENTS <input type="checkbox"/> MB & SURGS <input type="checkbox"/> Dup/MS/MSD <input type="checkbox"/> Raw Data <input type="checkbox"/> CLP Rpt <input checked="" type="checkbox"/> EDD <input type="checkbox"/> Other	
Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755																	
Sample No. / Identification	SAMPLE			Container & Size **	Preservative	Number of Containers	Total Lead (TLC) - 6010	Title 22 Metals - 6010/7000	pH - 9045	STLC: Cal-WET Citric	STLC: Cal-WET DI	TLC - 1311	REMARKS / PRECAUTIONS				
	Date	Time	Matrix *														
1267-133-2	12/11/14	1045	SO	8oz	N/A	1	X			B	C	A	A = TCLP: samples reporting ≥1000 mg/kg of lead or the highest 20% total lead concentrations from the project will be analyzed.				
1267-134-0		1050						X									
1267-134-2		1100															
1267-135-0		1047											B = Cal WET-Citric: samples reporting ≥50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed.				
1267-135-2		1101															
1267-136-0		1113															
1267-136-2 1267-137-0		1206											C = Cal WET-DI: samples reporting 5 mg/l of Cal WET-Citric or the highest 50% total lead concentrations from the project will be analyzed.				
1267-137-2		1211															
1267-138-0		1215															
1267-138-2		1221															
1267-139-0		1218															
Possible Hazard Identification					Sample Disposal												
<input type="checkbox"/> Non-Hazardous <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown					<input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months												

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Signature		Print Name		Company		Date	Time
1(a) Relinquished by: <i>[Signature]</i>		Keith Boskian		Stantec		12/11/14	1750
1(b) Received by: <i>[Signature]</i>		JOSE ANLEO		ATL		12/11/14	1750
2(a) Relinquished by: <i>[Signature]</i>		JOSE ANLEO		ATL		12/11/14	1912
2(b) Received by: <i>[Signature]</i>		FRONZ		AR		12/11/14	1912
3(a) Relinquished by:							
3(b) Received by:							

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

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Page: 8 of 10

FIELD OFFICE INFORMATION		PROJECT INFORMATION					ANALYSES / METHOD REQUEST	REMARKS / PRECAUTIONS				
OFFICE: Stantec - Thousand Oaks		Project No.: 185831017		Task: 200.0003				Number of Containers	Total Lead (TTL) - 6010	Title 22 Metals - 6010/7000		
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808 Telephone: (562) 354-2643 Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.peraz@stantec.com		Project Name: Caltrans 07A3321-17			Project Manager: Anne Perez / Monica Aragon		pH - 9045				STLC: Cal-WET Citric	STLC: Cal-WET DI
		Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755										
Sample No. / Identification	Date	Time	Matrix *	Container & Size **	Preservative							
76 1267-139-2	12/11/14	1225	SO	802	N/A	1	X		B	C	A	A = TCLP: samples reporting >1000 mg/kg of lead or the highest 20% total lead concentrations from the project will be analyzed.
77 1267-140-0		1205										
78 1267-140-2		123										
79 1267-141-0		1335										B = Cal WET-Citric: samples reporting >50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed.
80 1267-141-2		1345										
81 1267-142-0		1337										
82 1267-142-2 (KP)												C = Cal WET-DI: samples reporting 5 mg/l of Cal WET-Citric or the highest 50% total lead concentrations from the project will be analyzed.
83 1267-143-0		1350										
84 1267-143-2		1410										
85 1267-144-0		1349										
85 1267-144-2		1403										
Possible Hazard Identification						Sample Disposal						
<input type="checkbox"/> Non-Hazardous <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown						<input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months						

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Signed by:		Shipment Method:		Airbill Number:	
Signature	Print Name	Company	Date	Time	
1(a) Relinquished by:	Keith Posekian	Stantec	12/11/14	1750	
1(b) Received by:	JOEL ARCEO	ATL	12/11/14	1710	
2(a) Relinquished by:	JOEL ARCEO	ATL	12/11/14	1912	
2(b) Received by:	FPOW	ATL	12/11/14	1912	
3(a) Relinquished by:					
3(b) Received by:					

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

COC #
Page 9 of 10

FIELD OFFICE INFORMATION		PROJECT INFORMATION				Number of Containers	ANALYSES / METHOD REQUEST					REMARKS / PRECAUTIONS	
OFFICE: Stantec - Thousand Oaks		Project No.: 185831017		Task: 200.0003			Total Lead (TTL) - 6010	Title 22 Metals - 6010/7000	pH - 9045	STLC: Cal-WET Citric	STLC: Cal-WET DI	TLC: 1311	<u>TAT</u> <input type="checkbox"/> Normal <input type="checkbox"/> Rush <input checked="" type="checkbox"/> Other: 5 days
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808 Telephone: (562) 354-2643 Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com		Project Name: Caltrans 07A3321-17		Project Manager: Anne Perez / Monica Aragon		Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755							
Sample No. / Identification	SAMPLE			Container & Size **	Preservative								
	Date	Time	Matrix *										
1267-145-0	12/11/14	1515	SO	8oz Jar	N/A	1	X		B	C	A	A = TCLP: samples reporting ≥1000 mg/kg of lead or the highest 20% total lead concentrations from the project will be analyzed.	
1267-145-2		1533											
1267-146-0		1514											
1267-146-2		1520										B = Cal WET-Citric: samples reporting ≥50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed.	
1267-147-0		1502											
1267-147-2		1508											
1267-148-0		1459											
1267-148-2		1507										C = Cal WET-DI: samples reporting 5 mg/l of Cal WET-Citric or the highest 50% total lead concentrations from the project will be analyzed.	
1267-DUP1-20141210	12/10/14						X	X					
1267-DUP2-20141210	12/10/14												
1267-DUP3-20141211	12/11/14												
Possible Hazard Identification						Sample Disposal							
<input type="checkbox"/> Non-Hazardous <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown						<input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months							

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Signature		Print Name		Company		Date	Time
1(a) Relinquished by:		Keith Psekun		Stantec		12/11/14	1750
1(b) Received by:		Joe Arago		ATL		12/11/14	1750
2(a) Relinquished by:		Joe Arago		ATL		12/11/14	1912
2(b) Received by:		Pown		AR		12/11/14	1912
3(a) Relinquished by:							
3(b) Received by:							

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

COC # _____
Page 16 of 18

FIELD OFFICE INFORMATION		PROJECT INFORMATION				ANALYSES / METHOD REQUEST	REMARKS / PRECAUTIONS												
OFFICE: Stantec - Thousand Oaks		Project No.: 185831017		Task: 200.0003			TAT <input type="checkbox"/> Normal <input type="checkbox"/> Rush <input checked="" type="checkbox"/> Other: 5 days												
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808		Project Name: Caltrans 07A3321-17				Number of Containers	REPORTING REQUIREMENTS <input type="checkbox"/> MB & SURGS <input type="checkbox"/> Dup/MS/MSD <input type="checkbox"/> Raw Data <input type="checkbox"/> CLP Rpt <input checked="" type="checkbox"/> EDD <input type="checkbox"/> Other												
Telephone: (562) 354-2643		Project Manager: Anne Perez/ Monica Aragon					Total Lead (TTLC) - 6010 Title 22 Metals - 6010/7000 pH - 9045 STLC: Cal-WET Citric STLC: Cal-WET DI TLCP - 1311	A = TTCLP: samples reporting ≥1000 mg/kg of lead or the highest 20% total lead concentrations from the project will be analyzed.											
Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com		Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755				B = Cal WET-Citric: samples reporting >50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed.													
Sample No. / Identification	SAMPLE			Container & Size **	Preservative	Number of Containers	Total Lead (TTLC) - 6010	Title 22 Metals - 6010/7000	pH - 9045	STLC: Cal-WET Citric	STLC: Cal-WET DI	TLCP - 1311							
	Date	Time	Matrix *																
97 1267-DUP4-20141211	12/11/14		SO	8oz Jar	N/A	1	X			B	C	A							
98 1267-DUP5-20141211	12/11/14		SO	8oz Jar	N/A	1	X			B	C	A							
99 1267-EB1-20141210	12/10/14	0800	AQ	Poly	N/A			X											
AR 1267-FB1-20141210	12/10/14	0801	AQ	Poly	N/A	1		X											
Possible Hazard Identification															Sample Disposal				
<input type="checkbox"/> Non-Hazardous <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown															<input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months				

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Signature		Print Name		Company		Date	Time
1(a) Relinquished by: <i>[Signature]</i>		Keith Tosekian		Stantec		12/11/14	1750
1(b) Received by: <i>[Signature]</i>		JOE ARAGON		ATC		12/11/14	1750
2(a) Relinquished by: <i>[Signature]</i>		JOE ARAGON		ATC		12/11/14	1912
2(b) Received by: <i>[Signature]</i>		FRDIAZ		AR		12/11/14	1912
3(a) Relinquished by:							
3(b) Received by:							

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other

February 03, 2015

Anne Perez/Monica Aragon
Stantec
3777 Worsham Avenue, Ste. 200
Long Beach, CA 90808
Tel: (562) 354-2638
Fax:

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

Re: ATL Work Order Number : 1403942

Client Reference : 185831017, Task: 200.0003, Caltrans 07A3321-17

Enclosed are the results for sample(s) received on December 11, 2014 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,



Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Stantec
3777 Worsham Avenue, Ste. 200
Long Beach , CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
Report To : Anne Perez/Monica Aragon
Reported : 02/03/2015

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
1267-116-2	1403942-32	Soil	12/10/14 12:03	12/11/14 17:50

CASE NARRATIVE

Sample Receiving/General Comments:

Documentation pertaining to additional analyses/change order available upon request.

Results were J-flagged. "J" is used to flag those results that are between the PQL (Practical Quantitation Limit) and the calculated MDL (Method Detection Limit). Results that are "J" flagged are estimated values since it becomes difficult to accurately quantitate the analyte near the MDL.



Certificate of Analysis

Stantec
3777 Worsham Avenue, Ste. 200
Long Beach , CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
Report To : Anne Perez/Monica Aragon
Reported : 02/03/2015

Lead by ICP-AES EPA 6010B

Analyte: Lead

Analyst: RR

Laboratory ID	Client Sample ID	Result	Units	PQL	MDL	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1403942-32	1267-116-2	59	mg/kg	1.0	0.07	1	B5A0825	01/30/2015	02/02/15 10:23	



Certificate of Analysis

Stantec
 3777 Worsham Avenue, Ste. 200
 Long Beach , CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
 Report To : Anne Perez/Monica Aragon
 Reported : 02/03/2015

QUALITY CONTROL SECTION

Lead by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B5A0825 - EPA 3050 Modified_S									
Blank (B5A0825-BLK1)									
Lead	ND	1.0							Prepared: 1/30/2015 Analyzed: 2/2/2015 NR
LCS (B5A0825-BS1)									
Lead	52.8388	1.0	50.0000		106	80 - 120			Prepared: 1/30/2015 Analyzed: 2/2/2015
Duplicate (B5A0825-DUP1)									
Lead	55.7950	1.0		58.7954	NR		5.24	20	Source: 1403942-32RE1 Prepared: 1/30/2015 Analyzed: 2/2/2015
Matrix Spike (B5A0825-MS1)									
Lead	249.764	1.0	250.000	58.7954	76.4	33 - 134			Source: 1403942-32RE1 Prepared: 1/30/2015 Analyzed: 2/2/2015
Matrix Spike Dup (B5A0825-MSD1)									
Lead	248.000	1.0	250.000	58.7954	75.7	33 - 134	0.709	20	Source: 1403942-32RE1 Prepared: 1/30/2015 Analyzed: 2/2/2015



Certificate of Analysis

Stantec
3777 Worsham Avenue, Ste. 200
Long Beach , CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
Report To : Anne Perez/Monica Aragon
Reported : 02/03/2015

Notes and Definitions

ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

- Notes:
- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
 - (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
 - (3) Results are wet unless otherwise specified.



STANTEC CHAIN-OF-CUSTODY RECORD

COC # _____
Page 1 of 10

FIELD OFFICE INFORMATION			PROJECT INFORMATION				ANALYSES / METHOD REQUEST	REMARKS / PRECAUTIONS				
OFFICE: Stantec - Thousand Oaks			Project No.: 185831017		Task: 200.0003							
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808 Telephone: (562) 354-2643 Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com			Project Name: Caltrans 07A3321-17		Project Manager: Anne Perez / Monica Aragon		Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755		TAT <input type="checkbox"/> Normal <input type="checkbox"/> Rush <input checked="" type="checkbox"/> Other: <u>5 days</u>	REPORTING REQUIREMENTS <input type="checkbox"/> MB & SURGS <input type="checkbox"/> Dup/MS/MSD <input type="checkbox"/> Raw Data <input type="checkbox"/> CLP Rpt <input checked="" type="checkbox"/> EDD <input type="checkbox"/> Other		
Sample No. / Identification	SAMPLE		Container & Size **	Preservative	Number of Containers	Total Lead (TLC) - 6010	Title 22 Metals - 6010/7000	pH - 9045			STLC: Cal-WET Citric	STLC: Cal-WET DI
1 1267-101-0	12/10/14	0800	SO	8oz Jar		N/A	1	X		B	C	A
2 1267-101-2		0805	SO									
3 1267-102-0		0810					X					
4 1267-102-2		0815										B = Cal WET-Citric: samples reporting >50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed.
5 1267-103-0		0802										
6 1267-103-2		0809										
7 1267-104-0		0815										C = Cal WET-DI: samples reporting 5 mg/l of Cal WET-Citric or the highest 50% total lead concentrations from the project will be analyzed.
8 1267-104-2		0825						X				
9 1267-105-0		0916										
10 1267-105-2		0918					X					
11 1267-106-0		0915										

Possible Hazard Identification
 Non-Hazardous Flammable Skin Irritant Poison B Unknown

Sample Disposal
 Return to Client Disposal by Lab Archive for _____ Months

Sampled by: _____ Shipment Method: _____ Airbill Number: _____

Signature	Print Name	Company	Date	Time
1(a) Relinquished by:	KEITH BORKAN	STANTEC	12/11	1750
1(b) Received by:	JOE ARICO	ATC	12/11/14	1750
2(a) Relinquished by:	JOE ARICO	ATC	12/11/14	19:12
2(b) Received by:	ARICO	ATC	12/11/14	1912
3(a) Relinquished by: _____				
3(b) Received by: _____				

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

COC # _____
Page 2 of 10

FIELD OFFICE INFORMATION			PROJECT INFORMATION				ANALYSES / METHOD REQUEST						REMARKS/ PRECAUTIONS									
OFFICE: Stantec - Thousand Oaks			Project No.: 185831017		Task: 200.0003		Number of Containers	Total Lead (TLC) - 6010	Title 22 Metals - 60107000	pH - 9045	STLC: Cal-WET Citric	STLC: Cal-WET DI	TLC - 1311	REMARKS/ PRECAUTIONS TAT <input type="checkbox"/> Normal <input type="checkbox"/> Rush <input checked="" type="checkbox"/> Other: <u>5 days</u> REPORTING REQUIREMENTS <input type="checkbox"/> MB & SURGS <input type="checkbox"/> Dup/MS/MSD <input type="checkbox"/> Raw Data <input type="checkbox"/> CLP Rpt <input checked="" type="checkbox"/> EDD <input type="checkbox"/> Other								
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808			Project Name: Caltrans 07A3321-17																			
Telephone: (562) 354-2643			Project Manager: Anne Perez/ Monica Aragon																			
Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com			Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755																			
Sample No. / Identification	SAMPLE			Container & Size **	Preservative	Total Lead (TLC) - 6010										Title 22 Metals - 60107000	pH - 9045	STLC: Cal-WET Citric	STLC: Cal-WET DI	TLC - 1311	REMARKS/ PRECAUTIONS	
	Date	Time	Matrix *																			
1267-106-2	12/10/14	0922	50	8oz Jar	N/A	X												B	C	A	A = TCLP: samples reporting >1000 mg/kg of lead or the highest 20% total lead concentrations from the project will be analyzed.	
1267-107-0		0925														X						
1267-107-2		0930																				
1267-108-0		0927																			B = Cal WET-Citric: samples reporting >50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed.	
1267-108-2		0935																				
1267-109-0		1038																				
1267-109-2		1043										C = Cal WET-DI: samples reporting 5 mg/l of Cal WET-Citric or the highest 50% total lead concentrations from the project will be analyzed.										
1267-110-0		1021																				
1267-110-2		1030																				
1267-110-0		1037																				
1267-111-2		1046																				

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Possible Hazard Identification: Non-Hazardous Flammable Skin Irritant Poison B Unknown

Sample Disposal: Return to Client Disposal by Lab Archive for _____ Months

Sampled by: _____ Shipment Method: _____ Airbill Number: _____

Signature	Print Name	Company	Date	Time
1(a) Relinquished by:	Keith Paekian	Stantec	12/11/14	1750
1(b) Received by:	ATC	ATC	12/11/14	1750
2(a) Relinquished by:	ATC	ATC	12/11/14	1912
2(b) Received by:	ATC	ATC	12/11/14	1912
3(a) Relinquished by: _____	_____	_____	_____	_____
3(b) Received by: _____	_____	_____	_____	_____

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

COC # _____
Page 3 of 10

FIELD OFFICE INFORMATION		PROJECT INFORMATION					ANALYSES / METHOD REQUEST					REMARKS / PRECAUTIONS			
OFFICE: Stantec - Thousand Oaks		Project No.: 185831017		Task: 200.0003			Number of Containers	Total Lead (TTLC) - 6010	Title 22 Metals - 6010/7000	pH - 9045	STLC: Cal-WET Citric	STLC: Cal-WET DI	TLCP - 1311	REMARKS / PRECAUTIONS TAT <input type="checkbox"/> Normal <input type="checkbox"/> Rush <input checked="" type="checkbox"/> Other: <u>5 days</u> REPORTING REQUIREMENTS <input type="checkbox"/> MB & SURGS <input type="checkbox"/> Dup/MS/MSD <input type="checkbox"/> Raw Data <input type="checkbox"/> CLP Rpt <input checked="" type="checkbox"/> EDD <input type="checkbox"/> Other	
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808		Project Name: Caltrans 07A3321-17			Project Manager: Anne Perez/ Monica Aragon										
Telephone: (562) 354-2643		Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755													
Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com															
Sample No. / Identification		Date	Time	Matrix *	Container & Size **	Preservative									
23 24 25 26 27 28 29 30 31 32 33	1267-112-0	12/10/14	1020	SO	8oz Jar	N/A	1	X			B	C	A	A = TCLP: samples reporting ≥1000 mg/kg of lead or the highest 20% total lead concentrations from the project will be analyzed.	
	1267-112-2		1034												
	1267-113-0		1156												
	1267-113-2		1204											B = Cal WET-Citric: samples reporting >50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed.	
	1267-114-0		1216					X	X						
	1267-114-2		1228					X							
	1267-115-0		1215											C = Cal WET-DI: samples reporting 5 mg/l of Cal WET-Citric or the highest 50% total lead concentrations from the project will be analyzed.	
	1267-115-2		1223												
	1267-116-0		1153												
	1267-116-2		1203												
	1267-117-0		1453												
Possible Hazard Identification						Sample Disposal									
<input type="checkbox"/> Non-Hazardous <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown						<input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months									

Signature		Print Name		Company		Date	Time
1(a) Relinquished by:		Keith Posekian	Stantec	12/11/14	1750		
1(b) Received by:		Joe Arco	ATC	12/11/14	1750		
2(a) Relinquished by:		Joe Arco	ATC	12/11/14	1912		
2(b) Received by:		Frown	AT	12/11/14	1912		
3(a) Relinquished by:							
3(b) Received by:							

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

COC # _____
Page 5 of 10

FIELD OFFICE INFORMATION			PROJECT INFORMATION			ANALYSES / METHOD REQUEST	REMARKS / PRECAUTIONS						
OFFICE: Stantec - Thousand Oaks			Project No.: 185831017		Task: 200.0003								
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808			Project Name: Caltrans 07A3321-17			Number of Containers							
Telephone: (562) 354-2643			Project Manager: Anne Perez/ Monica Aragon				Total Lead (TLLC) - 6010	Title 22 Metals - 6010/7000	pH - 9045				
Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com			Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755							STLC: Cal-WET Citric	STLC: Cal-WET DI		
Sample No. / Identification			SAMPLE										
			Date	Time	Matrix *	Container & Size **	Preservative						
43	1267-122-2	12/10/14	1355	SO	8 oz Jar	N/A		X	B	C	A		
44	1267-123-0	12/10/14	1336										
45	1267-123-2	12/10/14	1350					X					
46	1267-124-0	12/10/14	1357										
47	1267-124-2	12/10/14	1410										
48	1267-125-0	12/11/14	0810										
49	1267-125-2		0812										
50	1267-126-0		0815										
51	1267-126-2		0820										
52	1267-127-0		0825										
53	1267-127-2		0830										

Non-Hazardous Flammable Skin Irritant Poison B Unknown
 Return to Client Disposal by Lab Archive for _____ Months

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Sampled by:		Shipment Method:		Airbill Number:	
Signature	Print Name	Company	Date	Time	
1(a) Relinquished by:	Kerth Posekian	Stantec	12/11/14	1750	
1(b) Received by:	Joe Aragon	ATC	12/11/14	1750	
2(a) Relinquished by:	Joe Aragon	ATC	12/11/14	1912	
2(b) Received by:	FPOCWA	ATC	12/11/14	1912	
3(a) Relinquished by:					
3(b) Received by:					

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

COC # _____
Page 6 of 10

FIELD OFFICE INFORMATION			PROJECT INFORMATION			ANALYSES / METHOD REQUEST	REMARKS/ PRECAUTIONS											
OFFICE: Stantec - Thousand Oaks			Project No.: 185831017		Task: 200.0003		TAT <input type="checkbox"/> Normal <input type="checkbox"/> Rush <input checked="" type="checkbox"/> Other: <u>5 days</u>											
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808			Project Name: Caltrans 07A3321-17			REPORTING REQUIREMENTS <input type="checkbox"/> MB & SURGS <input type="checkbox"/> Dup/MS/MSD <input type="checkbox"/> Raw Data <input type="checkbox"/> CLP Rpt <input checked="" type="checkbox"/> EDD <input type="checkbox"/> Other												
Telephone: (562) 354-2643			Project Manager: Anne Perez/ Monica Aragon															
Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com			Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755															
Sample No. / Identification	SAMPLE			Container & Size **	Preservative	Number of Containers	Total Lead (TLC) - 6010	Title 22 Metals - 6010/7000	pH - 9045	STLC: Cal-WET Citric	STLC: Cal-WET DI	TLCP - 1311						
	Date	Time	Matrix *															
1267-128-0	12/11/14	0840	SO	8oz Jar	N/A	1	X			B	C	A					A = TCLP: samples reporting ≥1000 mg/kg of lead or the highest 20% total lead concentrations from the project will be analyzed.	
1267-128-2		0845																
1267-129-0		0925							X									
1267-129-2		0935																B = Cal WET-Citric: samples reporting >50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed.
1267-130-0		0945																
1267-130-2		0950																
1267-130-0		0926																
1267-131-2		0934						X										C = Cal WET-DI: samples reporting 5 mg/l of Cal WET-Citric or the highest 50% total lead concentrations from the project will be analyzed.
1267-132-0		0942																
1267-132-2		0951																
1267-133-0		1040																

Possible Hazard Identification
 Non-Hazardous
 Flammable
 Skin Irritant
 Poison B
 Unknown
Sample Disposal
 Return to Client
 Disposal by Lab
 Archive for _____ Months
Sampled by:**Shipment Method:****Airbill Number:**

Signature	Print Name	Company	Date	Time
1(a) Relinquished by: <i>[Signature]</i>	Keith Breen	Stantec	12/11/14	1750
1(b) Received by: <i>[Signature]</i>	Joe Arleo	AR	12/11/14	1750
2(a) Relinquished by: <i>[Signature]</i>	Joe Arleo	AR	12/11/14	1912
2(b) Received by: <i>[Signature]</i>	Frown	AR	12/11/14	1912
3(a) Relinquished by:				
3(b) Received by:				

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other

**Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

COC # _____
Page 7 of 16

FIELD OFFICE INFORMATION		PROJECT INFORMATION					ANALYSES / METHOD REQUEST	REMARKS / PRECAUTIONS		
OFFICE: Stantec - Thousand Oaks		Project No.: 185831017		Task: 200.0003				Number of Containers Total Lead (TTL) - 6010 Title 22 Metals - 6010/7000 pH - 9045 STLC: Cal-WET Citric STL: Cal-WET DI TLCP - 1311	TAT <input type="checkbox"/> Normal <input type="checkbox"/> Rush <input checked="" type="checkbox"/> Other: 5 days	REPORTING REQUIREMENTS <input type="checkbox"/> MB & SURGS <input type="checkbox"/> Dup/MS/MSD <input type="checkbox"/> Raw Data <input type="checkbox"/> CLP Rpt <input checked="" type="checkbox"/> EDD <input type="checkbox"/> Other
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808 Telephone: (562) 354-2643 Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com		Project Name: Caltrans 07A3321-17			Project Manager: Anne Perez/ Monica Aragon					
Sample No. / Identification	Date	Time	Matrix *	Container & Size **	Preservative					
1267-133-2	12/11/14	1045	SO	8oz	N/A	1	X		B C A	A = TCLP: samples reporting ≥1000 mg/kg of lead or the highest 20% total lead concentrations from the project will be analyzed.
1267-134-0		1050					X			
1267-134-2		1100								B = Cal WET-Citric: samples reporting ≥50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed.
1267-135-0		1047								
1267-135-2		1101								C = Cal WET-DI: samples reporting 5 mg/l of Cal WET-Citric or the highest 50% total lead concentrations from the project will be analyzed.
1267-136-0		1113								
1267-136-2 1267-137-0		1206								
1267-137-2		1211								
1267-138-0		1215								
1267-138-2		1221								
1267-139-0		1218								
Possible Hazard Identification					Sample Disposal					
<input type="checkbox"/> Non-Hazardous <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown					<input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months					

1402942-65
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Signature		Print Name		Company		Date	Time
1(a) Relinquished by:	<i>[Signature]</i>	Keith Borkian		Stantec		12/11/14	1750
1(b) Received by:	<i>[Signature]</i>	JOSE ANLEO		ATL		12/11/14	1750
2(a) Relinquished by:	<i>[Signature]</i>	JOSE ANLEO		ATL		12/11/14	1912
2(b) Received by:	<i>[Signature]</i>	FRONZ		AR		12/11/14	1912
3(a) Relinquished by:							
3(b) Received by:							

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

COC # 8 of 10
Page: 8 of 10

FIELD OFFICE INFORMATION		PROJECT INFORMATION					ANALYSES / METHOD REQUEST	REMARKS / PRECAUTIONS	
OFFICE: Stantec - Thousand Oaks		Project No.: 185831017		Task: 200.0003				Number of Containers Total Lead (TTL) - 6010 Title 22 Metals - 6010/7000 pH - 9045 STLC: Cal-WET Citric STLC: Cal-WET DI TLCP - 1311	TAT <input type="checkbox"/> Normal <input type="checkbox"/> Rush <input checked="" type="checkbox"/> Other: 5 days
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808 Telephone: (562) 354-2643 Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.peraz@stantec.com		Project Name: Caltrans 07A3321-17			Project Manager: Anne Perez / Monica Aragon		REPORTING REQUIREMENTS <input type="checkbox"/> MB & SURGS <input type="checkbox"/> Dup/MS/MSD <input type="checkbox"/> Raw Data <input type="checkbox"/> CLP Rpt <input checked="" type="checkbox"/> EDD <input type="checkbox"/> Other		
Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755		Sample No. / Identification		SAMPLE		Container & Size **	Preservative		
		Date	Time	Matrix *					
76	1267-139-2	12/11/14	1225	SO	802	N/A		X	B C A
77	1267-140-0		1205						
78	1267-140-2		123						
79	1267-141-0		1335						
80	1267-141-2		1345						
81	1267-142-0		1337						
	1267-142-2 (KP)								
82	1267-143-0		1350						
83	1267-143-2		1410						
84	1267-144-0		1349						
85	1267-144-2		1403						
Possible Hazard Identification						Sample Disposal			
<input type="checkbox"/> Non-Hazardous <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown						<input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months			

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Signed by:		Shipment Method:		Airbill Number:	
Signature	Print Name	Company	Date	Time	
1(a) Relinquished by:	Keith Posekian	Stantec	12/11/14	1750	
1(b) Received by:	JOEL ARAGO	ATL	12/11/14	1710	
2(a) Relinquished by:	JOEL ARAGO	ATL	12/11/14	1912	
2(b) Received by:	FPOW	ATL	12/11/14	1912	
3(a) Relinquished by:					
3(b) Received by:					

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

COC #
Page 9 of 10

FIELD OFFICE INFORMATION		PROJECT INFORMATION				Number of Containers	ANALYSES / METHOD REQUEST					REMARKS / PRECAUTIONS	
OFFICE: Stantec - Thousand Oaks		Project No.: 185831017		Task: 200.0003			Total Lead (TTL) - 6010	Title 22 Metals - 6010/7000	pH - 9045	STLC: Cal-WET Citric	STLC: Cal-WET DI	TLC - 1311	<u>TAT</u> <input type="checkbox"/> Normal <input type="checkbox"/> Rush <input checked="" type="checkbox"/> Other: 5 days
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808 Telephone: (562) 354-2643 Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com		Project Name: Caltrans 07A3321-17		Project Manager: Anne Perez / Monica Aragon		Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755							
Sample No. / Identification	SAMPLE			Container & Size **	Preservative								
	Date	Time	Matrix *										
1267-145-0	12/11/14	1515	SO	8oz Jar	N/A	1	X		B	C	A	A = TCLP: samples reporting ≥1000 mg/kg of lead or the highest 20% total lead concentrations from the project will be analyzed.	
1267-145-2		1533											
1267-146-0		1514											
1267-146-2		1520										B = Cal WET-Citric: samples reporting ≥50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed.	
1267-147-0		1502											
1267-147-2		1508											
1267-148-0		1459										C = Cal WET-DI: samples reporting 5 mg/l of Cal WET-Citric or the highest 50% total lead concentrations from the project will be analyzed.	
1267-148-2		1507											
1267-DUP1-20141210	12/10/14						X	X					
1267-DUP2-20141210	12/10/14												
1267-DUP3-20141211	12/11/14												
Possible Hazard Identification						Sample Disposal							
<input type="checkbox"/> Non-Hazardous <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown						<input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months							

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Signature		Print Name		Company		Date	Time
1(a) Relinquished by: <i>[Signature]</i>		Keith Psekun		Stantec		12/11/14	1750
1(b) Received by: <i>[Signature]</i>		Joe Arleo		ATV		12/11/14	1750
2(a) Relinquished by: <i>[Signature]</i>		Joe Arleo		ATV		12/11/14	1912
2(b) Received by: <i>[Signature]</i>		Pown		AR		12/11/14	1912
3(a) Relinquished by:							
3(b) Received by:							

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



STANTEC CHAIN-OF-CUSTODY RECORD

COC #

Page 16 of 18

FIELD OFFICE INFORMATION		PROJECT INFORMATION				ANALYSES / METHOD REQUEST	REMARKS / PRECAUTIONS							
OFFICE: Stantec - Thousand Oaks		Project No.: 185831017		Task: 200.0003			TAT							
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808		Project Name: Caltrans 07A3321-17				Number of Containers	Total Lead (TTL) - 6010	TITLE 22 Metals - 6010/7000	pH - 9045	STLC: Cal-WET Citric	STLC: Cal-WET DI	TLCP - 1311	REPORTING REQUIREMENTS	
Telephone: (562) 354-2643		Project Manager: Anne Perez/ Monica Aragon											<input type="checkbox"/> Normal	<input type="checkbox"/> MB & SURGS
Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com		Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755				<input type="checkbox"/> Rush	<input type="checkbox"/> Dup/MS/MSD							
Sample No. / Identification		SAMPLE			Container & Size **	Preservative	5 days		<input checked="" type="checkbox"/> Other:	<input type="checkbox"/> CLP Rpt	<input checked="" type="checkbox"/> EDD	<input type="checkbox"/> Other		
		Date	Time	Matrix *										
97	1267-DUP4-20141211	12/11/14		SO	8oz Jar	N/A	1	X		B	C	A	A = TCLP: samples reporting ≥1000 mg/kg of lead or the highest 20% total lead concentrations from the project will be analyzed.	
98	1267-DUP5-20141211	12/11/14		SO	8oz Jar	N/A	1	X		B	C	A		
99	1267-EB1-20141210	12/10/14	0800	AQ	Poly	N/A			X				B = Cal WET-Citric: samples reporting >50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed.	
AR	1267-FB1-20141210	12/10/14	0801	AQ	Poly	N/A	1		X				C = Cal WET-DI: samples reporting 5 mg/l of Cal WET-Citric or the highest 50% total lead concentrations from the project will be analyzed.	

Possible Hazard Identification
 Non-Hazardous Flammable Skin Irritant Poison B Unknown

Sample Disposal
 Return to Client Disposal by Lab Archive for _____ Months

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 AR

Sampled by:		Shipment Method:		Airbill Number:	
Signature	Print Name	Company	Date	Time	
1(a) Relinquished by:	Keith Tosekian	Stantec	12/11/14	1750	
1(b) Received by:	JOE ARAGO	ATC	12/11/14	1750	
2(a) Relinquished by:	JOE ARAGO	ATC	12/11/14	1912	
2(b) Received by:	FRED W	AR	12/11/14	1912	
3(a) Relinquished by:					
3(b) Received by:					

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



January 07, 2015

Anne Perez/Monica Aragon
Stantec
3777 Worsham Avenue, Ste. 200
Long Beach, CA 90808
Tel: (562) 354-2638
Fax:

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

Re: ATL Work Order Number : 1403989
Client Reference : 185831017, Task: 200.0003, Caltrans 07A3321-17

Enclosed are the results for sample(s) received on December 15, 2014 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read 'E. Rodriguez', is written over a light gray rectangular background.

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.

*3275 Walnut Avenue, Signal Hill, CA 90755 • Tel: 562-989-4045 • Fax: 562-989-4040
www.atlglobal.com*



Certificate of Analysis

Stantec
3777 Worsham Avenue, Ste. 200
Long Beach, CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
Report To : Anne Perez/Monica Aragon
Reported : 01/07/2015

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
1267-149-0	1403989-01	Soil	12/15/14 10:55	12/15/14 12:10
1267-149-1	1403989-02	Soil	12/15/14 10:59	12/15/14 12:10
1267-150-0	1403989-03	Soil	12/15/14 10:57	12/15/14 12:10
1267-150-1	1403989-04	Soil	12/15/14 11:01	12/15/14 12:10
1267-151-0	1403989-05	Soil	12/15/14 11:05	12/15/14 12:10
1267-151-1	1403989-06	Soil	12/15/14 11:07	12/15/14 12:10
1267-152-0	1403989-07	Soil	12/15/14 10:49	12/15/14 12:10
1267-152-1	1403989-08	Soil	12/15/14 10:52	12/15/14 12:10
1267-153-0	1403989-09	Soil	12/15/14 10:46	12/15/14 12:10
1267-153-1	1403989-10	Soil	12/15/14 10:48	12/15/14 12:10
1267-154-0	1403989-11	Soil	12/15/14 10:40	12/15/14 12:10
1267-154-1	1403989-12	Soil	12/15/14 10:43	12/15/14 12:10
1267-EB1-20141215	1403989-13	Aqueous	12/15/14 0:00	12/15/14 12:10
1267-FB2-20141215	1403989-14	Aqueous	12/15/14 0:00	12/15/14 12:10

CASE NARRATIVE

Sample Receiving/General Comments:

Documentation pertaining to additional analyses/change order available upon request.

Results were J-flagged. "J" is used to flag those results that are between the PQL (Practical Quantitation Limit) and the calculated MDL (Method Detection Limit). Results that are "J" flagged are estimated values since it becomes difficult to accurately quantitate the analyte near the MDL.



Certificate of Analysis

Stantec
3777 Worsham Avenue, Ste. 200
Long Beach , CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
Report To : Anne Perez/Monica Aragon
Reported : 01/07/2015

Lead by ICP-AES EPA 6010B

Analyte: Lead

Analyst: SB

Laboratory ID	Client Sample ID	Result	Units	PQL	MDL	Dilution	Batch	Prepared	Date/Time		Notes
									AnalYZed		
1403989-01	1267-149-0	480	mg/kg	1.0	0.07	1	B4L0502	12/17/2014	12/18/14 12:48		
1403989-02	1267-149-1	22	mg/kg	1.0	0.07	1	B4L0502	12/17/2014	12/18/14 12:49		
1403989-03	1267-150-0	52	mg/kg	1.0	0.07	1	B4L0502	12/17/2014	12/18/14 12:50		
1403989-04	1267-150-1	12	mg/kg	1.0	0.07	1	B4L0502	12/17/2014	12/18/14 12:50		
1403989-05	1267-151-0	75	mg/kg	1.0	0.07	1	B4L0502	12/17/2014	12/18/14 12:51		
1403989-06	1267-151-1	12	mg/kg	1.0	0.07	1	B4L0502	12/17/2014	12/18/14 12:54		
1403989-07	1267-152-0	300	mg/kg	1.0	0.07	1	B4L0502	12/17/2014	12/18/14 12:56		
1403989-08	1267-152-1	19	mg/kg	1.0	0.07	1	B4L0502	12/17/2014	12/18/14 12:57		
1403989-09	1267-153-0	64	mg/kg	1.0	0.07	1	B4L0502	12/17/2014	12/18/14 12:58		
1403989-10	1267-153-1	10	mg/kg	1.0	0.07	1	B4L0502	12/17/2014	12/18/14 12:58		
1403989-11	1267-154-0	110	mg/kg	1.0	0.07	1	B4L0502	12/17/2014	12/18/14 12:59		
1403989-12	1267-154-1	52	mg/kg	1.0	0.07	1	B4L0502	12/17/2014	12/18/14 13:00		

TCLP Metals by ICP-AES EPA 6010B

Analyte: Lead

Analyst: RR

Laboratory ID	Client Sample ID	Result	Units	PQL	MDL	Dilution	Batch	Prepared	Date/Time		Notes
									AnalYZed		
1403989-01	1267-149-0	0.32	mg/L	0.050	0.0014	1	B4L0703	12/24/2014	12/26/14 12:20		
1403989-07	1267-152-0	0.24	mg/L	0.050	0.0014	1	B4L0703	12/24/2014	12/26/14 12:23		



Certificate of Analysis

Stantec
3777 Worsham Avenue, Ste. 200
Long Beach , CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
Report To : Anne Perez/Monica Aragon
Reported : 01/07/2015

STLC Metals by ICP-AES by EPA 6010B

Analyte: Lead

Analyst: RR

Laboratory ID	Client Sample ID	Result	Units	PQL	MDL	Dilution	Batch	Prepared	Date/Time		Notes
									Analized		
1403989-01	1267-149-0	25	mg/L	1.0	0.027	20	B4L0738	12/26/2014	12/29/14 20:28		
1403989-03	1267-150-0	1.8	mg/L	1.0	0.027	20	B4L0739	12/26/2014	12/29/14 20:41		
1403989-05	1267-151-0	3.3	mg/L	1.0	0.027	20	B4L0739	12/26/2014	12/29/14 20:44		
1403989-07	1267-152-0	12	mg/L	1.0	0.027	20	B4L0739	12/26/2014	12/29/14 20:46		
1403989-09	1267-153-0	3.2	mg/L	1.0	0.027	20	B4L0739	12/26/2014	12/29/14 20:52		
1403989-11	1267-154-0	7.8	mg/L	1.0	0.027	20	B4L0739	12/26/2014	12/29/14 20:54		
1403989-12	1267-154-1	1.5	mg/L	1.0	0.027	20	B4L0739	12/26/2014	12/29/14 20:56		

STLC DI Metals by ICP-AES by EPA 6010B

Analyte: Lead

Analyst: RR

Laboratory ID	Client Sample ID	Result	Units	PQL	MDL	Dilution	Batch	Prepared	Date/Time		Notes
									Analized		
1403989-01	1267-149-0	1.9	mg/L	1.0	0.027	20	B4L0830	01/02/2015	01/02/15 18:04		
1403989-03	1267-150-0	ND	mg/L	1.0	0.027	20	B4L0830	01/02/2015	01/02/15 18:06		
1403989-05	1267-151-0	0.041	mg/L	1.0	0.027	20	B4L0830	01/02/2015	01/02/15 18:09		J
1403989-07	1267-152-0	0.63	mg/L	1.0	0.027	20	B4L0830	01/02/2015	01/02/15 18:11		J
1403989-09	1267-153-0	0.11	mg/L	1.0	0.027	20	B4L0830	01/02/2015	01/02/15 18:13		J
1403989-11	1267-154-0	1.5	mg/L	1.0	0.027	20	B4L0830	01/02/2015	01/02/15 18:19		

Mercury by AA (Cold Vapor) EPA 7470A

Analyte: Mercury

Analyst: SB

Laboratory ID	Client Sample ID	Result	Units	PQL	MDL	Dilution	Batch	Prepared	Date/Time		Notes
									Analized		
1403989-13	1267-EB1-20141 215	ND	ug/L	0.20	0.11	1	B4L0578	12/19/2014	12/22/14 12:26		
1403989-14	1267-FB2-20141 215	ND	ug/L	0.20	0.11	1	B4L0578	12/19/2014	12/22/14 12:41		



Certificate of Analysis

Stantec
3777 Worsham Avenue, Ste. 200
Long Beach , CA 90808

Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
Report To : Anne Perez/Monica Aragon
Reported : 01/07/2015

pH by EPA 9045C

Analyte: pH

Analyst: LA

Laboratory ID	Client Sample ID	Result	Units	PQL	MDL	Dilution	Batch	Prepared	Date/Time		Notes
									Analyzed		
1403989-01	1267-149-0	7.9	pH Units	0.10	0.10	1	B4L0770	12/29/2014	12/29/14 15:24		

Client Sample ID 1267-EB1-20141215

Lab ID: 1403989-13

Title 22 Metals by ICP-AES EPA 6010B

Analyst: RR

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	0.010	0.0026	1	B4L0563	12/19/2014	12/22/14 11:25	
Arsenic	ND	0.010	0.0024	1	B4L0563	12/19/2014	12/22/14 11:25	
Barium	0.0010	0.0030	0.0004	1	B4L0563	12/19/2014	12/22/14 11:25	J
Beryllium	ND	0.0030	0.0002	1	B4L0563	12/19/2014	12/22/14 11:25	
Cadmium	ND	0.0030	0.0001	1	B4L0563	12/19/2014	12/22/14 11:25	
Chromium	0.0011	0.0030	0.0003	1	B4L0563	12/19/2014	12/22/14 11:25	J
Cobalt	0.0005	0.0030	0.0004	1	B4L0563	12/19/2014	12/22/14 11:25	J
Copper	0.0041	0.0090	0.0009	1	B4L0563	12/19/2014	12/22/14 11:25	J
Lead	ND	0.0050	0.0014	1	B4L0563	12/19/2014	12/22/14 11:25	
Molybdenum	0.0024	0.0050	0.0005	1	B4L0563	12/19/2014	12/22/14 11:25	J
Nickel	0.0016	0.0050	0.0004	1	B4L0563	12/19/2014	12/22/14 11:25	J
Selenium	ND	0.010	0.0040	1	B4L0563	12/19/2014	12/22/14 11:25	
Silver	0.0010	0.0030	0.0006	1	B4L0563	12/19/2014	12/22/14 11:25	J
Thallium	ND	0.015	0.0026	1	B4L0563	12/19/2014	12/22/14 11:25	
Vanadium	ND	0.0030	0.0013	1	B4L0563	12/19/2014	12/22/14 11:25	
Zinc	0.0061	0.025	0.0017	1	B4L0563	12/19/2014	12/22/14 11:25	J



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Project Number : 185831017, Task: 200.0003, Caltrans 07A3321-17
 Report To : Anne Perez/Monica Aragon
 Reported : 01/07/2015

Client Sample ID 1267-FB2-20141215
Lab ID: 1403989-14

Title 22 Metals by ICP-AES EPA 6010B

Analyst: RR

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	0.010	0.0026	1	B4L0563	12/19/2014	12/22/14 11:35	
Arsenic	ND	0.010	0.0024	1	B4L0563	12/19/2014	12/22/14 11:35	
Barium	0.0008	0.0030	0.0004	1	B4L0563	12/19/2014	12/22/14 11:35	J
Beryllium	ND	0.0030	0.0002	1	B4L0563	12/19/2014	12/22/14 11:35	
Cadmium	ND	0.0030	0.0001	1	B4L0563	12/19/2014	12/22/14 11:35	
Chromium	0.0012	0.0030	0.0003	1	B4L0563	12/19/2014	12/22/14 11:35	J
Cobalt	ND	0.0030	0.0004	1	B4L0563	12/19/2014	12/22/14 11:35	
Copper	0.0041	0.0090	0.0009	1	B4L0563	12/19/2014	12/22/14 11:35	J
Lead	ND	0.0050	0.0014	1	B4L0563	12/19/2014	12/22/14 11:35	
Molybdenum	0.0007	0.0050	0.0005	1	B4L0563	12/19/2014	12/22/14 11:35	J
Nickel	0.0014	0.0050	0.0004	1	B4L0563	12/19/2014	12/22/14 11:35	J
Selenium	ND	0.010	0.0040	1	B4L0563	12/19/2014	12/22/14 11:35	
Silver	0.0013	0.0030	0.0006	1	B4L0563	12/19/2014	12/22/14 11:35	J
Thallium	ND	0.015	0.0026	1	B4L0563	12/19/2014	12/22/14 11:35	
Vanadium	ND	0.0030	0.0013	1	B4L0563	12/19/2014	12/22/14 11:35	
Zinc	0.0072	0.025	0.0017	1	B4L0563	12/19/2014	12/22/14 11:35	J



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Reported : 01/07/2015

QUALITY CONTROL SECTION

Title 22 Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B4L0563 - EPA 3010A_W

Blank (B4L0563-BLK1)

Prepared: 12/19/2014 Analyzed: 12/22/2014

Antimony	ND	0.010		NR					
Arsenic	ND	0.010		NR					
Barium	0.000923	0.0030		NR					J
Beryllium	ND	0.0030		NR					
Cadmium	ND	0.0030		NR					
Chromium	0.001040	0.0030		NR					J
Cobalt	ND	0.0030		NR					
Copper	0.002327	0.0090		NR					J
Lead	ND	0.0050		NR					
Molybdenum	0.000720	0.0050		NR					J
Nickel	0.001568	0.0050		NR					J
Selenium	ND	0.010		NR					
Silver	ND	0.0030		NR					
Thallium	ND	0.015		NR					
Vanadium	ND	0.0030		NR					
Zinc	0.005444	0.025		NR					J

LCS (B4L0563-BS1)

Prepared: 12/19/2014 Analyzed: 12/22/2014

Antimony	0.952072	0.010	1.00000	95.2	80 - 120				
Arsenic	0.932173	0.010	1.00000	93.2	80 - 120				
Barium	0.996709	0.0030	1.00000	99.7	80 - 120				
Beryllium	0.976708	0.0030	1.00000	97.7	80 - 120				
Cadmium	0.963268	0.0030	1.00000	96.3	80 - 120				
Chromium	0.980291	0.0030	1.00000	98.0	80 - 120				
Cobalt	0.958799	0.0030	1.00000	95.9	80 - 120				
Copper	0.962231	0.0090	1.00000	96.2	80 - 120				
Lead	0.917159	0.0050	1.00000	91.7	80 - 120				
Molybdenum	0.905366	0.0050	1.00000	90.5	80 - 120				
Nickel	0.949605	0.0050	1.00000	95.0	80 - 120				
Selenium	0.892596	0.010	1.00000	89.3	80 - 120				
Silver	0.998680	0.0030	1.00000	99.9	80 - 120				
Thallium	0.965610	0.015	1.00000	96.6	80 - 120				
Vanadium	0.972630	0.0030	1.00000	97.3	80 - 120				
Zinc	0.937342	0.025	1.00000	93.7	80 - 120				

Duplicate (B4L0563-DUP1)

Source: 1403989-13

Prepared: 12/19/2014 Analyzed: 12/22/2014

Antimony	ND	0.010		ND	NR			20	
Arsenic	ND	0.010		ND	NR			20	
Barium	1.0438E-3	0.0030		0.001014	NR	2.92		20	J
Beryllium	ND	0.0030		ND	NR			20	
Cadmium	0.000160	0.0030		ND	NR			20	J
Chromium	0.001284	0.0030		0.001114	NR	14.2		20	J
Cobalt	0.000463	0.0030		4.554E-4	NR	1.71		20	J



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Reported : 01/07/2015

Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B4L0563 - EPA 3010A_W (continued)

Duplicate (B4L0563-DUP1) - Continued

Source: 1403989-13

Prepared: 12/19/2014 Analyzed: 12/22/2014

Copper	0.002574	0.0090		4.0795E-3	NR		45.3	20	R, J
Lead	ND	0.0050		ND	NR			20	
Molybdenum	0.000499	0.0050		0.002411	NR		131	20	R, J
Nickel	0.001617	0.0050		0.001556	NR		3.89	20	J
Selenium	ND	0.010		ND	NR			20	
Silver	0.000745	0.0030		9.676E-4	NR		26.0	20	R, J
Thallium	ND	0.015		ND	NR			20	
Vanadium	ND	0.0030		ND	NR			20	
Zinc	0.006609	0.025		0.006134	NR		7.46	20	J

Matrix Spike (B4L0563-MS1)

Source: 1403989-13

Prepared: 12/19/2014 Analyzed: 12/22/2014

Antimony	2.56264	0.010	2.50000	ND	103	78 - 121			
Arsenic	2.52617	0.010	2.50000	ND	101	78 - 124			
Barium	2.50513	0.0030	2.50000	0.001014	100	81 - 118			
Beryllium	2.60544	0.0030	2.50000	ND	104	87 - 119			
Cadmium	2.48570	0.0030	2.50000	ND	99.4	80 - 113			
Chromium	2.66533	0.0030	2.50000	0.001114	107	85 - 115			
Cobalt	2.55216	0.0030	2.50000	4.554E-4	102	83 - 113			
Copper	2.56877	0.0090	2.50000	4.0795E-3	103	72 - 132			
Lead	2.44967	0.0050	2.50000	ND	98.0	77 - 121			
Molybdenum	2.47250	0.0050	2.50000	0.002411	98.8	82 - 111			
Nickel	2.56574	0.0050	2.50000	0.001556	103	80 - 114			
Selenium	2.44481	0.010	2.50000	ND	97.8	75 - 121			
Silver	2.54268	0.0030	2.50000	9.676E-4	102	84 - 116			
Thallium	2.60457	0.015	2.50000	ND	104	70 - 122			
Vanadium	2.49188	0.0030	2.50000	ND	99.7	85 - 114			
Zinc	2.56444	0.025	2.50000	0.006134	102	70 - 123			

Matrix Spike Dup (B4L0563-MSD1)

Source: 1403989-13

Prepared: 12/19/2014 Analyzed: 12/22/2014

Antimony	2.41602	0.010	2.50000	ND	96.6	78 - 121	5.89	20	
Arsenic	2.39448	0.010	2.50000	ND	95.8	78 - 124	5.35	20	
Barium	2.40890	0.0030	2.50000	0.001014	96.3	81 - 118	3.92	20	
Beryllium	2.51611	0.0030	2.50000	ND	101	87 - 119	3.49	20	
Cadmium	2.39846	0.0030	2.50000	ND	95.9	80 - 113	3.57	20	
Chromium	2.45032	0.0030	2.50000	0.001114	98.0	85 - 115	8.41	20	
Cobalt	2.41150	0.0030	2.50000	4.554E-4	96.4	83 - 113	5.67	20	
Copper	2.46648	0.0090	2.50000	4.0795E-3	98.5	72 - 132	4.06	20	
Lead	2.47967	0.0050	2.50000	ND	99.2	77 - 121	1.22	20	
Molybdenum	2.34326	0.0050	2.50000	0.002411	93.6	82 - 111	5.37	20	
Nickel	2.42518	0.0050	2.50000	0.001556	96.9	80 - 114	5.63	20	
Selenium	2.34562	0.010	2.50000	ND	93.8	75 - 121	4.14	20	
Silver	2.45753	0.0030	2.50000	9.676E-4	98.3	84 - 116	3.41	20	
Thallium	2.46791	0.015	2.50000	ND	98.7	70 - 122	5.39	20	
Vanadium	2.39682	0.0030	2.50000	ND	95.9	85 - 114	3.89	20	
Zinc	2.41051	0.025	2.50000	0.006134	96.2	70 - 123	6.19	20	



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 Reported : 01/07/2015

Lead by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes
Batch B4L0502 - EPA 3050 Modified_S								
Blank (B4L0502-BLK1)								
						Prepared: 12/17/2014 Analyzed: 12/18/2014		
Lead	0.263260	1.0			NR			J
Blank (B4L0502-BLK2)								
						Prepared: 12/17/2014 Analyzed: 12/18/2014		
Lead	0.200599	1.0			NR			J
LCS (B4L0502-BS1)								
						Prepared: 12/17/2014 Analyzed: 12/18/2014		
Lead	48.6384	1.0	50.0000		97.3 80 - 120			
Duplicate (B4L0502-DUP1)								
						Source: 1403992-10		
						Prepared: 12/17/2014 Analyzed: 12/18/2014		
Lead	8.10612	1.0		8.68608	NR		6.91 20	
Duplicate (B4L0502-DUP2)								
						Source: 1403989-06		
						Prepared: 12/17/2014 Analyzed: 12/18/2014		
Lead	8.87992	1.0		11.7678	NR		28.0 20	R
Matrix Spike (B4L0502-MS1)								
						Source: 1403992-10		
						Prepared: 12/17/2014 Analyzed: 12/18/2014		
Lead	231.950	0.99	247.525	8.68608	90.2 33 - 134			
Matrix Spike (B4L0502-MS2)								
						Source: 1403989-06		
						Prepared: 12/17/2014 Analyzed: 12/18/2014		
Lead	264.424	1.0	250.000	11.7678	101 33 - 134			
Matrix Spike Dup (B4L0502-MSD1)								
						Source: 1403992-10		
						Prepared: 12/17/2014 Analyzed: 12/18/2014		
Lead	229.711	1.0	250.000	8.68608	88.4 33 - 134	0.970	20	



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Reported : 01/07/2015

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

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes
Batch B4L0703 - EPA 1311_S								
Blank (B4L0703-BLK1)								
						Prepared: 12/24/2014	Analyzed: 12/26/2014	
Lead	ND	0.050			NR			
Blank (B4L0703-BLK2)								
						Prepared: 12/24/2014	Analyzed: 12/26/2014	
Lead	ND	0.050			NR			
LCS (B4L0703-BS1)								
						Prepared: 12/24/2014	Analyzed: 12/26/2014	
Lead	0.947158	0.050	1.00000		94.7 80 - 120			
Duplicate (B4L0703-DUP1)								
						Prepared: 12/24/2014	Analyzed: 12/26/2014	
Lead	0.248405	0.050		0.237395	NR	4.53	20	
Duplicate (B4L0703-DUP2)								
						Prepared: 12/24/2014	Analyzed: 12/26/2014	
Lead	0.101582	0.050		0.097361	NR	4.24	20	
Matrix Spike (B4L0703-MS1)								
						Prepared: 12/24/2014	Analyzed: 12/26/2014	
Lead	2.61198	0.050	2.50000	0.237395	95.0	77 - 121		
Matrix Spike (B4L0703-MS2)								
						Prepared: 12/24/2014	Analyzed: 12/26/2014	
Lead	2.37598	0.050	2.50000	0.097361	91.1	77 - 121		
Matrix Spike Dup (B4L0703-MSD1)								
						Prepared: 12/24/2014	Analyzed: 12/26/2014	
Lead	2.51648	0.050	2.50000	0.237395	91.2	77 - 121	3.72	20



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Reported : 01/07/2015

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

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes
Batch B4L0738 - STLC_S Extraction								
Blank (B4L0738-BLK1)								
						Prepared: 12/26/2014 Analyzed: 12/29/2014		
Lead	0.036041	1.0			NR			J
Blank (B4L0738-BLK2)								
						Prepared: 12/26/2014 Analyzed: 12/29/2014		
Lead	ND	1.0			NR			
LCS (B4L0738-BS1)								
						Prepared: 12/26/2014 Analyzed: 12/29/2014		
Lead	1.99457		2.00000		99.7 80 - 120			
Duplicate (B4L0738-DUP1)								
						Prepared: 12/26/2014 Analyzed: 12/29/2014		
Lead	26.4677	1.0		24.9344	NR		5.97 20	
Duplicate (B4L0738-DUP2)								
						Prepared: 12/26/2014 Analyzed: 12/29/2014		
Lead	6.42903	1.0		10.3088	NR		46.4 20	R
Matrix Spike (B4L0738-MS1)								
						Prepared: 12/26/2014 Analyzed: 12/29/2014		
Lead	26.3326		2.50000	24.9344	55.9 44 - 130			
Matrix Spike (B4L0738-MS2)								
						Prepared: 12/26/2014 Analyzed: 12/29/2014		
Lead	12.2649		2.50000	10.3088	78.2 44 - 130			
Matrix Spike Dup (B4L0738-MSD1)								
						Prepared: 12/26/2014 Analyzed: 12/29/2014		
Lead	25.8460		2.50000	24.9344	36.5 44 - 130	1.86	20	M1
Batch B4L0739 - STLC_S Extraction								
Blank (B4L0739-BLK1)								
						Prepared: 12/26/2014 Analyzed: 12/29/2014		
Lead	0.050602	1.0			NR			J
LCS (B4L0739-BS1)								
						Prepared: 12/26/2014 Analyzed: 12/29/2014		
Lead	2.04560		2.00000		102 80 - 120			
Duplicate (B4L0739-DUP1)								
						Prepared: 12/26/2014 Analyzed: 12/29/2014		
Lead	5.43628	1.0		4.10143	NR		28.0 20	R
Matrix Spike (B4L0739-MS1)								
						Prepared: 12/26/2014 Analyzed: 12/29/2014		
Lead	6.39552		2.50000	4.10143	91.8 44 - 130			
Matrix Spike Dup (B4L0739-MSD1)								
						Prepared: 12/26/2014 Analyzed: 12/29/2014		
Lead	6.35160		2.50000	4.10143	90.0 44 - 130	0.689	20	



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Reported : 01/07/2015

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

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B4L0830 - STLC DI_S Extraction									
Blank (B4L0830-BLK1)					Prepared: 1/2/2015 Analyzed: 1/2/2015				
Lead	ND	1.0			NR				
Blank (B4L0830-BLK2)					Prepared: 1/2/2015 Analyzed: 1/2/2015				
Lead	ND	1.0			NR				
LCS (B4L0830-BS1)					Prepared: 1/2/2015 Analyzed: 1/2/2015				
Lead	2.17924		2.00000		109	80 - 120			
Duplicate (B4L0830-DUP1)					Prepared: 1/2/2015 Analyzed: 1/2/2015				
Lead	0.676069		1.0	1.50624	NR		76.1	20	R, J
Duplicate (B4L0830-DUP2)					Prepared: 1/2/2015 Analyzed: 1/2/2015				
Lead	2.00683		1.0	1.49863	NR		29.0	20	R
Matrix Spike (B4L0830-MS1)					Prepared: 1/2/2015 Analyzed: 1/2/2015				
Lead	3.91591		2.50000	1.50624	96.4	70 - 130			
Matrix Spike (B4L0830-MS2)					Prepared: 1/2/2015 Analyzed: 1/2/2015				
Lead	3.89510		2.50000	1.49863	95.9	70 - 130			
Matrix Spike Dup (B4L0830-MSD1)					Prepared: 1/2/2015 Analyzed: 1/2/2015				
Lead	3.98147		2.50000	1.50624	99.0	70 - 130	1.66	20	



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 Reported : 01/07/2015

Mercury by AA (Cold Vapor) EPA 7470A - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes
Batch B4L0578 - EPA 245.1/7470_W								
Blank (B4L0578-BLK1)								
								Prepared: 12/19/2014 Analyzed: 12/22/2014
Mercury	ND	0.20			NR			
LCS (B4L0578-BS1)								
								Prepared: 12/19/2014 Analyzed: 12/22/2014
Mercury	10.6569	0.20	10.0000		107 80 - 120			
Duplicate (B4L0578-DUP1)								
								Source: 1403989-13 Prepared: 12/19/2014 Analyzed: 12/22/2014
Mercury	ND	0.20		ND	NR		20	
Matrix Spike (B4L0578-MS1)								
								Source: 1403989-13 Prepared: 12/19/2014 Analyzed: 12/22/2014
Mercury	10.4688	0.20	10.0000	ND	105 70 - 130			
Matrix Spike Dup (B4L0578-MSD1)								
								Source: 1403989-13 Prepared: 12/19/2014 Analyzed: 12/22/2014
Mercury	10.3905	0.20	10.0000	ND	104 70 - 130	0.751	20	
Post Spike (B4L0578-PS1)								
								Source: 1403989-13 Prepared: 12/19/2014 Analyzed: 12/22/2014
Mercury	5.41773		5.00000	-0.006749	108 85 - 115			



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Reported : 01/07/2015

pH by EPA 9045C - Quality Control

Analyte	Result (pH Units)	PQL (pH Units)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B4L0770 - z_Prep_WC_1_S

Duplicate (B4L0770-DUP1)

Source: 1403942-33

Prepared: 12/29/2014 Analyzed: 12/29/2014

pH	7.16000	0.10		7.40000	NR		3.30	20	
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Reported : 01/07/2015

Notes and Definitions

R	RPD value outside acceptance criteria. Calculation is based on raw values.
M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
J	Analyte detected below the Practical Quantitation Limit but above or equal to the Method Detection Limit. Result is an estimated concentration.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

- Notes:
- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
 - (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
 - (3) Results are wet unless otherwise specified.



STANTEC CHAIN-OF-CUSTODY RECORD

COC # 1 of 2
Page 1 of 2

FIELD OFFICE INFORMATION		PROJECT INFORMATION				Number of Containers	ANALYSES / METHOD REQUEST						REMARKS/ PRECAUTIONS
OFFICE: Stantec - Thousand Oaks		Project No.: 185831017		Task: 200.0003			Total Lead (TTLCL) - 6010	Title 22 Metals - 6010/7000	pH - 9045	STLC: Cal-WET Citric	STLC: Cal-WET DI	TLCP - 1311	TAT <input type="checkbox"/> Normal <input type="checkbox"/> Rush <input checked="" type="checkbox"/> Other: <u>5 days</u>
Send Report to: Stantec 3777 Worsham Ave, Suite 200 Long Beach, CA 90808 Telephone: (562) 354-2643 Fax/E-Mail: Monica.Aragon-Guzman@stantec.com / anne.perez@stantec.com		Project Name: Caltrans 07A3321-17		Project Manager: Anne Perez/ Monica Aragon		Laboratory: Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755							
Sample No. / Identification	Date	Time	Matrix *	Container & Size **	Preservative								
1267-149-0	12/15/14	1055	SO	8oz Jar	N/A	1	X		B	C	A		A = TCLP: samples reporting ≥1000 mg/kg of lead or the highest 20% total lead concentrations from the project will be analyzed.
1267-149-1		1059											
1267-150-0		1057											
1267-150-1		1101											B = Cal WET-Citric: samples reporting ≥50 mg/kg of lead or the highest 50% total lead concentrations from the project will be analyzed.
1267-151-0		1105											
1267-151-1		1107											
1267-152-0		1049											C = Cal WET-DI: samples reporting 5 mg/l of Cal WET-Citric or the highest 50% total lead concentrations from the project will be analyzed.
1267-152-1		1052											
1267-15360		1046											
1267-153-1		1048											
1267-154-0		1040											

Possible Hazard Identification
 Non-Hazardous Flammable Skin Irritant Poison B Unknown

Sample Disposal
 Return to Client Disposal by Lab Archive for _____ Months

Sampled by: R.P./M.Z. Shipment Method: Lab Carrier Airbill Number: _____

Signature	Print Name	Company	Date	Time
1(a) Relinquished by:	KEITH POSEKIAN	STANTEC	12/15/14	1210
1(b) Received by:	Edward Rodriguez	ATL	12-15-14	1210
2(a) Relinquished by:	Edward Rodriguez	ATL	12-15-14	1850
2(b) Received by:	FERNANDO DENA	ATL	12/15/14	1850
3(a) Relinquished by:				
3(b) Received by:				

*Matrix Key: AQ = Aqueous AR = Air SO = Soil WA = Waste OT = Other **Container: A = Amber C = Clear Glass V = VOA S = Soil Jar O = Orbo T = Tedlar B = Brass P = Plastic OT = Other



CHAIN OF CUSTODY FORM

25864-F-Business Center Dr., Redlands, CA 92374 (909)335-6116, Fax (909) 335-6120

Stantec

Page 2 of 2

Client Name/Address: Stantec 25864 F-Business Center Dr. 3977 Worsham Ave. Redlands, CA 92374 STE 200 Long Beach, CA 90808		Project/PO Number: 185831017 CalTrans 07 A3321		Analysis Required														
Project Manager: Anne Perez / Monica Aragon		Phone Number: 909-335-6116		VOC by EPA Method 8260B	CAM Metals (with Total Chromium) by EPA Method 200.	TPHg by 8015 M	Total Lead (TLCP) 6010	6010/7000	Titre 22-Metals	PH-9045	STLC-CalWET Citric	STIC: CALWET DI	TLCP-1311	Special Instructions				
Email Address: Monica.aragon-guzman@stantec.com		Fax Number: 909-335-6120		Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date	Sampling Time	Preservatives								
Sampler: Anne Perez @stantec.com				1267-154-1	SO	802 jar	1	12/15	1043	N/A				X				
				1267-EB1 - 20141215	AQ	poly	1	↓						X				* Only Titre 22*
				1267-EB2 - 20141215	AQ	poly	1	↓						X				* Only Titre 22*
																		A=TLCP: samples reporting 7000mg/lead/highest 10% tot. lead
																		B=CalWET-Citric: samples 750mg/lead or highest 50% tot. lead concs.
																		CalWET DI: Samples C=5mg/l of CalWET Citric or highest 50% total lead concs. will be analyzed.
Relinquished By: <i>[Signature]</i>		Date/Time: 12/15/14/1210		Received By: <i>[Signature]</i>		Date/Time: 12-15-14 12:10		Turnaround same day		Time: (Check)								
Relinquished By: <i>[Signature]</i>		Date/Time: 12-15-14 18:50		Received By: <i>[Signature]</i>		Date/Time: 12-15-14 1850		24 hours		5 days								
Relinquished By: <i>[Signature]</i>		Date/Time:		Received in Lab By:		Date/Time:		48 hours		normal								
								Sample Integrity: (Check)		intact		on ice <input checked="" type="checkbox"/>						

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Note: By relinquishing samples, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

3.4

APPENDIX E
DATA VALIDATION RECORDS

APPENDIX E

DATA VALIDATION REPORT

AERIALY DEPOSITED LEAD (ADL) SITE INVESTIGATION REPORT
CONCRETE BARRIER AND MEAL BEAM GUARDRAIL (MBGR) CONSTRUCTION
PROJECT AT VARIOUS LOCATIONS FROM MAIN STREET UNDERCROSSING TO
IMPERIAL HIGHWAY UNDERCROSSING IN LOS ANGELES COUNTY

LA-405, PM R12.6/R21.22,

Caltrans Contract Number 07A3321, Task Order #17

EA Number: 07-290001

Los Angeles County, California

The data validation procedure is based on the principles of the *U.S. EPA National Functional Guidelines* and U.S. EPA Region 9 requirements and is designed to ensure completeness and adequacy of the data set. Samples were collected and submitted for analysis to Advanced Technology Laboratories (ATL) in Signal Hill, California. Samples were analyzed for Total Title 22 Metals or Total Lead, TCLP Lead, SPLC Lead and STLC DI Lead by EPA SW-846 6010B, Mercury by 7471A/7470A and pH by 9045C.

The Data Validation Reports/Checklists summarize compounds that were qualified and are attached to this summary. Data was validated based on Regional EPA and *U.S. EPA National Functional Guidelines*. Data validation was performed in accordance with the Scope of Work. Data validation was performed to ensure the quality of project data. Two analytical reports and associated addenda were validated:

- 1403942
- 1403942-1
- 1403942-2 and
- 1403989.

The data were validated and reviewed for the following:

- Completeness of data deliverables (chain of custody records, laboratory data, laboratory quality assurance and quality control (QA/QC) data);
- Sample holding time;
- Sample preservation;
- Blank data (method, trip, and equipment);
- Laboratory control sample (LCS) recovery;
- Laboratory duplicate sample precision;
- Matrix spike/matrix spike duplicate (MS/MSD) recovery; and
- Overall data assessment.

The following summarizes the results of the validation:

1. Data Completeness: Data for 105 samples, 5 duplicate samples, two field blanks and two equipment blanks were collected on December 10, 2014 through December 12, 2014 were validated. Samples specified for analysis on the chain of custody were analyzed as specified. The project goal of 90 percent completeness was achieved.
2. Sample Hold Times: All samples were analyzed within sample hold times.
3. Sample Preservation: All samples were preserved in appropriate containers and preservative.
4. Method Blanks: Several metals analytes (barium, chromium, cobalt, copper, lead, nickel, zinc and STLC lead) were reported in the method blank at very low concentrations. Associated sample results below the blank concentration are validated to non-detect and flagged "UJB". Sample results greater than the blank concentration are flagged "JB". The detection limit is changed to the blank concentration. Sample results greater than 10 times the blank concentration require no qualifying action.
5. Equipment Blanks: Several metals were reported in equipment blanks at very low levels, and may be reflective of laboratory method blank detections, field artifact associated with dust, incomplete decontamination or artifact from contact with metal sampling equipment.
6. Laboratory Control Samples: No LCS samples reported percent recoveries outside of method and/or laboratory limits.
7. Laboratory Duplicate Samples: Laboratory duplicate samples were reported within the relative percent difference (RPD) control limit of 20 percent except for the following:
 - a. Laboratory report 1403942; 6010B batch B4L0526 – Laboratory duplicate RPDs above limits $\pm 20\%$ for Antimony at 133%, Copper at 30% and Zinc at 85%. Sample site specific. Associated result flagged "J" for 1267-102-0 only.
 - b. Batch B4L0497 – Laboratory duplicate RPD above limits for Lead at 21%. Sample site specific. Associated result flagged "J" for 1267-102-2 only.
 - c. Batch B4L0498 – Laboratory duplicate RPD above limits for Lead at 33%. Sample site specific. Associated result flagged "J" for 1267-117-2 only.
 - d. Batch B4L0698 - Laboratory duplicate RPD above limits for Lead at 26%. Sample site specific. Associated result flagged "J" for 1267-112-2 only.

- e. Batch B4L0499 – Laboratory duplicate RPD above limits for Lead at 95%. Sample site specific. Associated result flagged “J” for 1267-128-0 only.
- f. Batch B4L0500 – Laboratory duplicate RPD above limits for Lead at 28%. Sample site specific. Associated result flagged “J” for 1267-133-0 only.
- g. Batch B4L0736 - Laboratory duplicate RPD above limits for STLC Lead at 28%. Sample site specific. Associated result flagged “J” for 1267-113-2 only.
- h. Batch B4L0738 – Laboratory duplicate RPD above limits for STLC Lead at 46%. Sample site specific. Associated result flagged “J” for 1267-142-0 only.
- i. Batch B5A0187 – Laboratory duplicate RPD above limits for STLC Lead at 39%. Sample site specific. Associated sample result flagged “J” for 1267-133-0 only.
- j. Batch B4L0827 – Laboratory duplicate RPD above limits for STLC DI Lead at 28%. Sample site specific. Associated result flagged “J” for 1267-112-0 only.
- k. Batch B4L0829 – Laboratory duplicate RPD above limits for STLC DI Lead at 33%. Sample site specific. Associated result flagged “J” for 1267-142-0 only.
- l. Batch B4L0830 – Laboratory duplicate RPD above limits for STLC DI Lead at 29%. Sample site specific. Associated result flagged “J” for 1267-147-0 only.
- m. 7471A batch B4L0528 - Laboratory duplicate RPD above limits for Mercury at 168%. Sample site specific. Associated result flagged “J” for 1267-102-2 only.
- n. Laboratory report 1403989; 6010B batch B4L0502 – Laboratory duplicate RPDs above limits $\pm 20\%$ for Lead at 28%. Sample site specific. Associated result flagged “J” for 1267-151-1 only.
- o. Batch B4L0830 – Laboratory duplicate RPD above limits for STLC DI Lead at 76%. Sample site specific. Associated result flagged “J” for 1267-154-0 only.

The RPD issues appear to be the result of natural sample heterogeneity. Out of control sample results are "J-flagged". Accuracy was verified by the LCS which was within control limits). No other corrective action was required.

8. Matrix Spike and Spike Duplicates: Matrix spike and duplicate samples were analyzed to assess accuracy and to evaluate matrix effects on data analysis. The percent recoveries and RPDs were found to within laboratory-determined control limits except:
 - a. Laboratory report 1403942; 6010B batch B4L0526 - %Rs below $\pm 40\%$ limit for Zinc at -137%. Associated result flagged "J" for 1267-102-0 only.
 - b. Laboratory report 1403989; 6010B batch B4L0738 - %Rs below $\pm 40\%$ limit for STLC Lead at 56%. Associated result flagged "J" for 1267-149-0 only.
 - c. Laboratory report 1403942; 7471A batch B4L0528 – Post digestion spike recovery for Mercury is above laboratory limit of 115% at 121%. Associated positive results flagged "J" for all samples in the laboratory report.

The RPD issues appear to be the result of natural sample heterogeneity. Out of control sample results are "J-flagged". Accuracy was verified by the LCS which was within control limits). No other corrective action was required.

Mercury results are considered biased high. Recoveries on lead and zinc may be the result of heterogeneity. The soluble lead results were reviewed and found to be in line with expected concentrations at the reported total lead concentration. Zinc concentration may be biased low, but is not considered a constituent of concern. Reported concentrations are an order of magnitude below thresholds.

9. Field duplicates Soil sample and duplicate sample results are presented in the following table:

Sample Identification	Lead Concentration (milligrams per kilogram [mg/kg])	Duplicate Lead Concentration (mg/kg)
1267-114-0 (Pair 1)	14	18
1267-120-2 (Pair 2)	44	14J
1267-139-0 (Pair 3)	11	10
1267-146-2 (Pair 4)	25J	200J

1267-147-0 (Pair 5)	300J	430J
---------------------	------	------

Field soil sample and duplicate concentrations show relatively good agreement. Differences are attributed to natural soil heterogeneity. The results of the duplicate samples are:

Pair 1 – ALL RPDs within limits.

Pair 2 – RPD above limits for Lead. Associated results flagged “J” for duplicate samples only.

Pair 3 – RPD within limits.

Pair 4 - RPD above limits for Lead. Associated results flagged “J” for duplicate samples only.

Pair 5 – All RPDs within limits except for total Lead. Associated results flagged “J” for duplicate samples only.

10. Data were considered “useable” and marked as such in the tables provided and that it was validated according to the EPA and scope of work. No data was qualified as “rejected”. The Data Validation Reports/Checklists summarize compounds that were qualified and are attached to this summary. Additionally, data qualifiers and the reason codes associated with the qualifier are in Table 1.

Stantec Analytical Validation Report/Checklist

Report No. 011315-EC-01

Project Name: Caltrans 07A TO-17	Project Number: 185831017		
Stantec Validator: Elizabeth Crowley	Laboratory: ATL, Signal Hill, CA		
Date Validated: 01/11/15	Laboratory Project Number: 1403942		
Sample Start-End Date: 12/10-12/11/14	Laboratory Report Date: 01/06/15		
Parameters Validated: Total Metals, TCLP Lead, SPLC Lead and STLC DI Lead by EPA SW-846 6010B, Mercury by 7470A/7471A and pH by 9045C.			
Samples Validated: 98 solid field samples, 1 Field Blank and 1 Equipment Blank			
VALIDATION CRITERIA CHECK			
Validation Flags Applicable to this Review:			
U	The analyte was analyzed for, but not detected above the reported sample quantitation limit.		
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.		
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.		
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".		
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.		
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.		
B	The analyte was detected in the method, field and/or trip blank.		
1.	Were all the analyses requested for the samples submitted with each COC completed by the lab?	Yes X	No
Comments: Initial analyses completed. Additional analyses are dependent on initial analyses results.			
2.	Did the laboratory identify any non-conformances related to the analytical result?	Yes X	No
Comments: Refer to laboratory report for dilution and minor issues.			
3.	Were sample Chain-of-Custody forms complete?	Yes X	No
Comments: All signatures and required items present.			
4.	Were samples received in good condition and at the appropriate temperature?	Yes X	No
Comments:			
5.	Were sample holding times met?	Yes X	No
Comments: All holding times met for all analyses.			
6.	Were correct concentration units reported?	Yes X	No
Comments: Results reported in both mg/Kg and mg/L depending on the analytical method.			
7.	Were detections found in laboratory blank samples?	Yes X	No

<p>Comments: 6010B batch B4L0526 – Chromium = 0.24 mg/Kg, Copper = 0.210 mg/Kg, Nickel = 0.16 mg/L and Zinc = 0.30 mg/Kg. Batch B4L0497 – Lead = 0.29 mg/Kg. Batch B4L0498 – Lead = 0.24 mg/Kg. Batch B4L0499 – Lead = 0.32 mg/Kg. Batch B4L0500 – Lead = 0.43 mg/Kg. Batch B4L0501 – Lead = 0.43 mg/Kg. Batch B4L0502 – Lead = 0.26 mg/Kg. Sample results greater than 10 times the blank concentration, no qualifying action required.</p> <p>6010B batch B4L0526 – Barium = 0.0012 mg/L, Chromium = 0.0013 mg/L, Cobalt = 0.0004 mg/L, Copper = 0.0031 mg/L, Nickel = 0.0018 mg/L and Zinc = 0.0043 mg/L. Batch B4L0737 – STLC Lead = 0.029 mg/L. Batch B4L0738 – STLC Lead = 0.32 mg/L. Sample results below the blank concentration are validated to non-detect and flagged “UJB”. Sample results greater than the blank concentration are flagged “JB”. The detection limit changed to the blank concentration. Sample results greater than 10 times the blank concentration require no qualifying action. Reason Code – MB</p>		
8. Were detections found in field blank, equipment rinse blank, and/or trip blank samples?	Yes X	No
<p>Comments: EB1 – Barium = 0.0014 mg/L, Copper = 0.0044 mg/L, and Zinc = 0.0063 mg/L. FB1 – Barium = 0.0014 mg/L, Chromium = 0.0015 mg/L, Copper = 0.0034 mg/L and Zinc = 0.0045 mg/L. Sample results greater than 10 times the blank concentration, no qualifying action required.</p>		
9. Were instrument calibrations within method criteria?	Yes NA	No
<p>Comments: Level II data package and validation, no data provided.</p>		
10. Were surrogate recoveries within control limits?	Yes NA	No
<p>Comments: No organic analyses requested.</p>		
11. Were laboratory control (LC/LD) sample recoveries within control limits?	Yes X	No
<p>Comments: All laboratory control sample recoveries are within limits.</p>		
12. Were site specific matrix spike (MS/MD) recoveries within control limits?	Yes	No X
<p>Comments: 6010B batch B4L0526 - %Rs below ±40% limit for Zinc at -137%. Associated result flagged “J” for 1267-102-0 only. Reason Code - MS</p>		
13. Were RPDs within control limits?	Yes	No X

Comments: 6010B batch B4L0526 – Laboratory duplicate RPDs above limits $\pm 20\%$ for Antimony at 133%, Copper at 30% and Zinc at 85%. Sample site specific. Associated result flagged “J” for 1267-102-0 only.

Batch B4L0497 – Laboratory duplicate RPD above limits for Lead at 21%. Samples site specific. Associated result flagged “J” for 1267-102-2 only.

Batch B4L0498 – Laboratory duplicate RPD above limits for Lead at 33%. Samples site specific. Associated result flagged “J” for 1267-117-2 only

Batch B4L0698 - Laboratory duplicate RPD above limits for Lead at 26%. Samples site specific. Associated result flagged “J” for 1255-112-2 only.

Batch B4L0499 – Laboratory duplicate RPD above limits for Lead at 95%. Samples site specific. Associated result flagged “J” for 1267-128-0 only.

Batch B4L0500 – Laboratory duplicate RPD above limits for Lead at 28%. Samples site specific. Associated result flagged “J” for 1267-133-0 only.

Batch B4L0736 - Laboratory duplicate RPD above limits for STLC Lead at 28%. Samples site specific. Associated result flagged “J” for 1267-113-2 only.

Batch B4L0738 – Laboratory duplicate RPD above limits for STLC Lead at 46%. Samples site specific. Associated result flagged “J” for 1267-142-0 only.

Batch B4L0827 – Laboratory duplicate RPD above limits for STLC DI Lead at 28%. Samples site specific. Associated result flagged “J” for 1267-112-0 only.

Batch B4L0829 – Laboratory duplicate RPD above limits for STLC DI Lead at 33%. Samples site specific. Associated result flagged “J” for 1267-142-0 only.

Batch B4L0830 – Laboratory duplicate RPD above limits for STLC DI Lead at 29%. Samples site specific. Associated result flagged “J” for 1267-147-0 only.

7471A batch B4L0528 - Laboratory duplicate RPD above limits for Mercury at 168%. Samples site specific. Associated result flagged “J” for 1267-102-2 only.

Reason Code – LDUP

14. Were dilutions required on any samples?	Yes	No
	X	

Comments: No action required.

15. Were Tentatively Identified Compounds (TIC) present?	Yes	No
	X	

Comments: Sample results below the reporting limit do not possess the degree of qualitative or quantitative confidence required. The value may be a false positive and is an estimated value and is flagged “NJ”. Reason Code – SQL

16. Were organic system performance criteria met?	Yes	No
	NA	

Comments: No organic analyses requested.			
17. Were GC/MS internal standards within method criteria?	NA	Yes	No
Comments: No organic analyses requested.			
18. Were inorganic system performance criteria met?		Yes	No X
Comments: 7471A batch B4L0528 – Post digestion spike recovery above $\pm 10\%$ limit at 121%. Sample site specific. All associated positive sample results flagged “J”.			
Reason Code – PDS			
19. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results.		Yes X	No
Duplicate Sample Nos.			
1267-DUP1 1267-114-0 (Pair 1)			
1267-DUP2 1267-120-2 (Pair 2)			
1267-DUP3 1267-139-0 (Pair 3)			
1267-DUP4 1267-146-2 (Pair 4)			
1267-DUP5 1267-147-0 (Pair 5)			
Comments: Pair 1 – ALL RPDs within limits.			
Pair 2 – RPD above limits for Lead. Associated results flagged “J” for duplicate samples only.			
Pair 3 – RPD within limits.			
Pair 4 - RPD above limits for Lead. Associated results flagged “J” for duplicate samples only.			
Pair 5 – All RPDs within limits except for total Lead. Associated results flagged “J” for duplicate samples only.			
Reason Code – FDUP			
20. Were at least 10 percent of the hard copy results compared to the Electronic Data Deliverable Results?		Yes X	No Initials EAC
Comments:			
21. Other:		Yes	No X
Comments:			
PRECISION, ACCURACY, METHOD COMPLIANCE AND COMPLETENESS ASSESSMENT			
Precision:	Acceptable X	Unacceptable	Initials EAC
Comments: Data usable as qualified.			
Sensitivity:	Acceptable X	Unacceptable	Initials EAC
Comments: Samples analyzed at lowest levels possible to achieve required screening limits.			
Accuracy:	Acceptable X	Unacceptable	Initials EAC
Comments: No data qualified for laboratory control issues.			

Representativeness:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Method Compliance:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Completeness:	Acceptable X	Unacceptable	Initials EAC
Comments: No data are rejected.			

Stantec Analytical Validation Report/Checklist

Report No. 011815-EC-01

Project Name: Caltrans 07A TO-17	Project Number: 185831017		
Stantec Validator: Elizabeth Crowley	Laboratory: ATL, Signal Hill, CA		
Date Validated: 01/11/15 – 01/18/15	Laboratory Project Number: 1403942		
Sample Start-End Date: 12/10-12/11/14	Laboratory Report Date: 01/06/15		
Parameters Validated: Total Metals, TCLP Lead, SPLC Lead and STLC DI Lead by EPA SW-846 6010B, Mercury by 7470A/7471A and pH by 9045C.			
Samples Validated: 98 solid field samples, 1 Field Blank and 1 Equipment Blank			
VALIDATION CRITERIA CHECK			
Validation Flags Applicable to this Review:			
U	The analyte was analyzed for, but not detected above the reported sample quantitation limit.		
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.		
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.		
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".		
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.		
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.		
B	The analyte was detected in the method, field and/or trip blank.		
1.	Were all the analyses requested for the samples submitted with each COC completed by the lab?	Yes X	No
Comments: Initial analyses completed. Additional analyses are dependent on initial analyses results.			
2.	Did the laboratory identify any non-conformances related to the analytical result?	Yes X	No
Comments: Refer to laboratory report for dilution and minor issues.			
3.	Were sample Chain-of-Custody forms complete?	Yes X	No
Comments: All signatures and required items present.			
4.	Were samples received in good condition and at the appropriate temperature?	Yes X	No
Comments:			
5.	Were sample holding times met?	Yes X	No
Comments: All holding times met for all analyses.			
6.	Were correct concentration units reported?	Yes X	No
Comments: Results reported in both mg/Kg and mg/L depending on the analytical method.			
7.	Were detections found in laboratory blank samples?	Yes X	No

Comments: 6010B batch B4L0526 – Chromium = 0.24 mg/Kg, Copper = 0.210 mg/Kg, Nickel = 0.16 mg/L and Zinc = 0.30 mg/Kg.

Batch B4L0497 – Lead = 0.29 mg/Kg.

Batch B4L0498 – Lead = 0.24 mg/Kg.

Batch B4L0499 – Lead = 0.32 mg/Kg.

Batch B4L0500 – Lead = 0.43 mg/Kg.

Batch B4L0501 – Lead = 0.43 mg/Kg.

Batch B4L0502 – Lead = 0.26 mg/Kg.

Batch B5A0091 – Lead = 0.27 mg/Kg.

Sample results greater than 10 times the blank concentration, no qualifying action required.

6010B batch B4L0526 – Barium = 0.0012 mg/L, Chromium = 0.0013 mg/L, Cobalt = 0.0004 mg/L, Copper = 0.0031 mg/L, Nickel = 0.0018 mg/L and Zinc = 0.0043 mg/L.

Batch B4L0737 – STLC Lead = 0.029 mg/L.

Batch B4L0738 – STLC Lead = 0.32 mg/L.

Sample results below the blank concentration are validated to non-detect and flagged “UJB”. Sample results greater than the blank concentration are flagged “JB”. The detection limit changed to the blank concentration. Sample results greater than 10 times the blank concentration require no qualifying action.

Reason Code – MB

8. Were detections found in field blank, equipment rinse blank, and/or trip blank samples?	Yes	No
	X	

Comments: EB1 – Barium = 0.0014 mg/L, Copper = 0.0044 mg/L, and Zinc = 0.0063 mg/L.

FB1 – Barium = 0.0014 mg/L, Chromium = 0.0015 mg/L, Copper = 0.0034 mg/L and Zinc = 0.0045 mg/L.

Sample results greater than 10 times the blank concentration, no qualifying action required.

9. Were instrument calibrations within method criteria?	Yes	No
	NA	

Comments: Level II data package and validation, no data provided.

10. Were surrogate recoveries within control limits?	Yes	No
	NA	

Comments: No organic analyses requested.

11. Were laboratory control (LC/LD) sample recoveries within control limits?	Yes	No
	X	

Comments: All laboratory control sample recoveries are within limits.

12. Were site specific matrix spike (MS/MD) recoveries within control limits?	Yes	No
		X

Comments: 6010B batch B4L0526 - %Rs below ±40% limit for Zinc at -137%. Associated result flagged “J” for 1267-102-0 only.

Reason Code – MS

13. Were RPDs within control limits?	Yes	No
		X

Comments: 6010B batch B4L0526 – Laboratory duplicate RPDs above limits $\pm 20\%$ for Antimony at 133%, Copper at 30% and Zinc at 85%. Sample site specific. Associated result flagged “J” for 1267-102-0 only.

Batch B4L0497 – Laboratory duplicate RPD above limits for Lead at 21%. Sample site specific. Associated result flagged “J” for 1267-102-2 only.

Batch B4L0498 – Laboratory duplicate RPD above limits for Lead at 33%. Sample site specific. Associated result flagged “J” for 1267-117-2 only

Batch B4L0698 - Laboratory duplicate RPD above limits for Lead at 26%. Sample site specific. Associated result flagged “J” for 1255-112-2 only.

Batch B4L0499 – Laboratory duplicate RPD above limits for Lead at 95%. Sample site specific. Associated result flagged “J” for 1267-128-0 only.

Batch B4L0500 – Laboratory duplicate RPD above limits for Lead at 28%. Sample site specific. Associated result flagged “J” for 1267-133-0 only.

Batch B4L0736 - Laboratory duplicate RPD above limits for STLC Lead at 28%. Sample site specific. Associated result flagged “J” for 1267-113-2 only.

Batch B4L0738 – Laboratory duplicate RPD above limits for STLC Lead at 46%. Sample site specific. Associated result flagged “J” for 1267-142-0 only.

Batch B5A0187 – Laboratory duplicate RPD above limits for STLC Lead at 39%. Sample site specific. Associated result flagged “J” for 1267-133-0 only.

Batch B4L0827 – Laboratory duplicate RPD above limits for STLC DI Lead at 28%. Sample site specific. Associated result flagged “J” for 1267-112-0 only.

Batch B4L0829 – Laboratory duplicate RPD above limits for STLC DI Lead at 33%. Sample site specific. Associated result flagged “J” for 1267-142-0 only.

Batch B4L0830 – Laboratory duplicate RPD above limits for STLC DI Lead at 29%. Sample site specific. Associated result flagged “J” for 1267-147-0 only.

7471A batch B4L0528 - Laboratory duplicate RPD above limits for Mercury at 168%. Sample site specific. Associated result flagged “J” for 1267-102-2 only.

Reason Code – LDUP

14. Were dilutions required on any samples?	Yes	No
	X	

Comments: No action required.

15. Were Tentatively Identified Compounds (TIC) present?	Yes	No
	X	

Comments: Sample results below the reporting limit do not possess the degree of qualitative or quantitative confidence required. The value may be a false positive and is an estimated value and is flagged “NJ”. Reason Code – SQL

16. Were organic system performance criteria met?	NA	Yes	No
Comments: No organic analyses requested.			
17. Were GC/MS internal standards within method criteria?	NA	Yes	No
Comments: No organic analyses requested.			
18. Were inorganic system performance criteria met?		Yes	No X
Comments: 7471A batch B4L0528 – Post digestion spike recovery above $\pm 10\%$ limit at 121%. Sample site specific. All associated positive sample results flagged "J". Reason Code – PDS			
19. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results.		Yes X	No
Duplicate Sample Nos. 1267-DUP1 1267-114-0 (Pair 1) 1267-DUP2 1267-120-2 (Pair 2) 1267-DUP3 1267-139-0 (Pair 3) 1267-DUP4 1267-146-2 (Pair 4) 1267-DUP5 1267-147-0 (Pair 5)			
Comments: Pair 1 – ALL RPDs within limits. Pair 2 – RPD above limits for Lead. Associated results flagged "J" for duplicate samples only. Pair 3 – RPD within limits. Pair 4 - RPD above limits for Lead. Associated results flagged "J" for duplicate samples only. Pair 5 – All RPDs within limits except for total Lead. Associated results flagged "J" for duplicate samples only. Reason Code – FDUP			
20. Were at least 10 percent of the hard copy results compared to the Electronic Data Deliverable Results?		Yes X	No Initials EAC
Comments:			
21. Other:		Yes	No X
Comments:			
PRECISION, ACCURACY, METHOD COMPLIANCE AND COMPLETENESS ASSESSMENT			
Precision:	Acceptable X	Unacceptable	Initials EAC
Comments: Data usable as qualified.			
Sensitivity:	Acceptable X	Unacceptable	Initials EAC
Comments: Samples analyzed at lowest levels possible to achieve required screening limits.			

Accuracy:	Acceptable X	Unacceptable	Initials EAC
Comments: No data qualified for laboratory control issues.			
Representativeness:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Method Compliance:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Completeness:	Acceptable X	Unacceptable	Initials EAC
Comments: No data are rejected.			

Stantec Analytical Validation Report/Checklist

Report No. 020315-EC-01

Project Name: Caltrans 07A TO-17	Project Number: 185831017		
Stantec Validator: Elizabeth Crowley	Laboratory: ATL, Signal Hill, CA		
Date Validated: 01/11/15 02/02/15	Laboratory Project Number: 1403942 and 1403942-2		
Sample Start-End Date: 12/10-12/11/14	Laboratory Report Date: 01/06/15 and 02/03/15		
Parameters Validated: Total Metals, TCLP Lead, SPLC Lead and STLC DI Lead by EPA SW-846 6010B, Mercury by 7470A/7471A and pH by 9045C.			
Samples Validated: 98 solid field samples, 1 Field Blank and 1 Equipment Blank			
VALIDATION CRITERIA CHECK			
Validation Flags Applicable to this Review:			
U	The analyte was analyzed for, but not detected above the reported sample quantitation limit.		
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.		
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.		
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".		
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.		
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.		
B	The analyte was detected in the method, field and/or trip blank.		
1.	Were all the analyses requested for the samples submitted with each COC completed by the lab?	Yes X	No
Comments: Initial analyses completed. Additional analyses are dependent on initial analyses results.			
2.	Did the laboratory identify any non-conformances related to the analytical result?	Yes X	No
Comments: Refer to laboratory report for dilution and minor issues.			
3.	Were sample Chain-of-Custody forms complete?	Yes X	No
Comments: All signatures and required items present.			
4.	Were samples received in good condition and at the appropriate temperature?	Yes X	No
Comments:			
5.	Were sample holding times met?	Yes X	No
Comments: All holding times met for all analyses.			
6.	Were correct concentration units reported?	Yes X	No
Comments: Results reported in both mg/Kg and mg/L depending on the analytical method.			
7.	Were detections found in laboratory blank samples?	Yes X	No

Comments: 6010B batch B4L0526 – Chromium = 0.24 mg/Kg, Copper = 0.210 mg/Kg, Nickel = 0.16 mg/L and Zinc = 0.30 mg/Kg.

Batch B4L0497 – Lead = 0.29 mg/Kg.

Batch B4L0498 – Lead = 0.24 mg/Kg.

Batch B4L0499 – Lead = 0.32 mg/Kg.

Batch B4L0500 – Lead = 0.43 mg/Kg.

Batch B4L0501 – Lead = 0.43 mg/Kg.

Batch B4L0502 – Lead = 0.26 mg/Kg.

Batch B5A0091 – Lead = 0.27 mg/Kg.

Sample results greater than 10 times the blank concentration, no qualifying action required.

6010B batch B4L0526 – Barium = 0.0012 mg/L, Chromium = 0.0013 mg/L, Cobalt = 0.0004 mg/L, Copper = 0.0031 mg/L, Nickel = 0.0018 mg/L and Zinc = 0.0043 mg/L.

Batch B4L0737 – STLC Lead = 0.029 mg/L.

Batch B4L0738 – STLC Lead = 0.32 mg/L.

Sample results below the blank concentration are validated to non-detect and flagged “UJB”. Sample results greater than the blank concentration are flagged “JB”. The detection limit changed to the blank concentration. Sample results greater than 10 times the blank concentration require no qualifying action.

Reason Code – MB

8. Were detections found in field blank, equipment rinse blank, and/or trip blank samples?	Yes	No
	X	

Comments: EB1 – Barium = 0.0014 mg/L, Copper = 0.0044 mg/L, and Zinc = 0.0063 mg/L.

FB1 – Barium = 0.0014 mg/L, Chromium = 0.0015 mg/L, Copper = 0.0034 mg/L and Zinc = 0.0045 mg/L.

Sample results greater than 10 times the blank concentration, no qualifying action required.

9. Were instrument calibrations within method criteria?	Yes	No
	NA	

Comments: Level II data package and validation, no data provided.

10. Were surrogate recoveries within control limits?	Yes	No
	NA	

Comments: No organic analyses requested.

11. Were laboratory control (LC/LD) sample recoveries within control limits?	Yes	No
	X	

Comments: All laboratory control sample recoveries are within limits.

12. Were site specific matrix spike (MS/MD) recoveries within control limits?	Yes	No
		X

Comments: 6010B batch B4L0526 - %Rs below ±40% limit for Zinc at -137%. Associated result flagged “J” for 1267-102-0 only.

Reason Code – MS

13. Were RPDs within control limits?	Yes	No
		X

Comments: 6010B batch B4L0526 – Laboratory duplicate RPDs above limits $\pm 20\%$ for Antimony at 133%, Copper at 30% and Zinc at 85%. Sample site specific. Associated result flagged “J” for 1267-102-0 only.

Batch B4L0497 – Laboratory duplicate RPD above limits for Lead at 21%. Sample site specific. Associated result flagged “J” for 1267-102-2 only.

Batch B4L0498 – Laboratory duplicate RPD above limits for Lead at 33%. Sample site specific. Associated result flagged “J” for 1267-117-2 only

Batch B4L0698 - Laboratory duplicate RPD above limits for Lead at 26%. Sample site specific. Associated result flagged “J” for 1255-112-2 only.

Batch B4L0499 – Laboratory duplicate RPD above limits for Lead at 95%. Sample site specific. Associated result flagged “J” for 1267-128-0 only.

Batch B4L0500 – Laboratory duplicate RPD above limits for Lead at 28%. Sample site specific. Associated result flagged “J” for 1267-133-0 only.

Batch B4L0736 - Laboratory duplicate RPD above limits for STLC Lead at 28%. Sample site specific. Associated result flagged “J” for 1267-113-2 only.

Batch B4L0738 – Laboratory duplicate RPD above limits for STLC Lead at 46%. Sample site specific. Associated result flagged “J” for 1267-142-0 only.

Batch B5A0187 – Laboratory duplicate RPD above limits for STLC Lead at 39%. Sample site specific. Associated result flagged “J” for 1267-133-0 only.

Batch B4L0827 – Laboratory duplicate RPD above limits for STLC DI Lead at 28%. Sample site specific. Associated result flagged “J” for 1267-112-0 only.

Batch B4L0829 – Laboratory duplicate RPD above limits for STLC DI Lead at 33%. Sample site specific. Associated result flagged “J” for 1267-142-0 only.

Batch B4L0830 – Laboratory duplicate RPD above limits for STLC DI Lead at 29%. Sample site specific. Associated result flagged “J” for 1267-147-0 only.

7471A batch B4L0528 - Laboratory duplicate RPD above limits for Mercury at 168%. Sample site specific. Associated result flagged “J” for 1267-102-2 only.

Reason Code – LDUP

14. Were dilutions required on any samples?	Yes	No
	X	

Comments: No action required.

15. Were Tentatively Identified Compounds (TIC) present?	Yes	No
	X	

Comments: Sample results below the reporting limit do not possess the degree of qualitative or quantitative confidence required. The value may be a false positive and is an estimated value and is flagged “NJ”. Reason Code – SQL

16. Were organic system performance criteria met?	NA	Yes	No
Comments: No organic analyses requested.			
17. Were GC/MS internal standards within method criteria?	NA	Yes	No
Comments: No organic analyses requested.			
18. Were inorganic system performance criteria met?		Yes	No X
Comments: 7471A batch B4L0528 – Post digestion spike recovery above $\pm 10\%$ limit at 121%. Sample site specific. All associated positive sample results flagged “J”. Reason Code – PDS			
19. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results.		Yes X	No
Duplicate Sample Nos. 1267-DUP1 1267-114-0 (Pair 1) 1267-DUP2 1267-120-2 (Pair 2) 1267-DUP3 1267-139-0 (Pair 3) 1267-DUP4 1267-146-2 (Pair 4) 1267-DUP5 1267-147-0 (Pair 5)			
Comments: Pair 1 – ALL RPDs within limits. Pair 2 – RPD above limits for Lead. Associated results flagged “J” for duplicate samples only. Pair 3 – RPD within limits. Pair 4 - RPD above limits for Lead. Associated results flagged “J” for duplicate samples only. Pair 5 – All RPDs within limits except for total Lead. Associated results flagged “J” for duplicate samples only. Reason Code – FDUP			
20. Were at least 10 percent of the hard copy results compared to the Electronic Data Deliverable Results?		Yes X	No Initials EAC
Comments:			
21. Other:		Yes	No X
Comments:			
PRECISION, ACCURACY, METHOD COMPLIANCE AND COMPLETENESS ASSESSMENT			
Precision:	Acceptable X	Unacceptable	Initials EAC
Comments: Data usable as qualified.			
Sensitivity:	Acceptable X	Unacceptable	Initials EAC
Comments: Samples analyzed at lowest levels possible to achieve required screening limits.			

Accuracy:	Acceptable X	Unacceptable	Initials EAC
Comments: No data qualified for laboratory control issues.			
Representativeness:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Method Compliance:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Completeness:	Acceptable X	Unacceptable	Initials EAC
Comments: No data are rejected.			

Stantec Analytical Validation Report/Checklist

Report No. 011315-EC-02

Project Name: Caltrans 07A TO-17	Project Number: 185831017		
Stantec Validator: Elizabeth Crowley	Laboratory: ATL, Signal Hill, CA		
Date Validated: 01/12/15	Laboratory Project Number: 1403989 and 1403989part2		
Sample Start-End Date: 12/12/14	Laboratory Report Date: 01/07/15 and 12/30/15		
Parameters Validated: Total Metals, TCLP Lead, SPLC Lead and STLC DI Lead by EPA SW-846 6010B, Mercury by 7470A/7471A and pH by 9045C.			
Samples Validated: 12 solid field samples, 1 Field Blank and 1 Equipment Blank			
VALIDATION CRITERIA CHECK			
Validation Flags Applicable to this Review:			
U	The analyte was analyzed for, but not detected above the reported sample quantitation limit.		
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.		
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.		
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".		
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.		
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.		
B	The analyte was detected in the method, field and/or trip blank.		
1.	Were all the analyses requested for the samples submitted with each COC completed by the lab?	Yes X	No
Comments: Initial analyses completed. Additional analyses are dependent on initial analyses results.			
2.	Did the laboratory identify any non-conformances related to the analytical result?	Yes X	No
Comments: Refer to laboratory report for dilution and minor issues.			
3.	Were sample Chain-of-Custody forms complete?	Yes X	No
Comments: All signatures and required items present.			
4.	Were samples received in good condition and at the appropriate temperature?	Yes X	No
Comments:			
5.	Were sample holding times met?	Yes X	No
Comments: All holding times met for all analyses.			
6.	Were correct concentration units reported?	Yes X	No
Comments: Results reported in both mg/Kg and mg/L depending on the analytical method.			
7.	Were detections found in laboratory blank samples?	Yes X	No

<p>Comments: 6010B batch B4L0502 – Lead = 0.26 mg/Kg. Batch B4L0738 – STLC Lead = 0.36 mg/L. Batch B4L0739 – STLC Lead = 0.051 mg/L. Batch B4L0738 – STLC Lead = 0.036 mg/L. Sample results greater than 10 times the blank concentration, no qualifying action required.</p> <p>6010B batch B4L0563 – Barium = 0.0009 mg/L, Chromium = 0.0010 mg/L, Copper = 0.0023 mg/L, Molybdenum = 0.0007 mg/L, Nickel = 0.0016 mg/L and Zinc = 0.0054 mg/L. Sample results below the blank concentration are validated to non-detect and flagged “UJB”. Sample results greater than the blank concentration are flagged “JB”. The detection limit changed to the blank concentration. Sample results greater than 10 times the blank concentration require no qualifying action. Reason Code – MB</p>		
8. Were detections found in field blank, equipment rinse blank, and/or trip blank samples?	Yes X	No
<p>Comments: EB1 – Barium = 0.0010 mg/L, Chromium = 0.0011 mg/L, Cobalt = 0.0005 mg/L, Copper = 0.0041 mg/L, Molybdenum = 0.0024 mg/L, Silver = 0.0010 mg/L and Zinc = 0.0061 mg/L. FB1 – Chromium = 0.0012 mg/L, Copper = 0.0041 mg/L, Silver = 0.0013 mg/L and Zinc = 0.0072 mg/L. Sample results greater than 10 times the blank concentration, no qualifying action required.</p>		
9. Were instrument calibrations within method criteria?	Yes NA	No
<p>Comments: Level II data package and validation, no data provided.</p>		
10. Were surrogate recoveries within control limits?	Yes NA	No
<p>Comments: No organic analyses requested.</p>		
11. Were laboratory control (LC/LD) sample recoveries within control limits?	Yes X	No
<p>Comments: All laboratory control sample recoveries are within limits.</p>		
12. Were site specific matrix spike (MS/MD) recoveries within control limits?	Yes	No X
<p>Comments: 6010B batch B4L0738 - %Rs below ±40% limit for STLC Lead at 56%. Associated result flagged “J” for 1267-149-0 only. Reason Code – MS</p>		
13. Were RPDs within control limits?	Yes	No X
<p>Comments: 6010B batch B4L0502 – Laboratory duplicate RPDs above limits ±20% for Lead at 28%. Sample site specific. Associated result flagged “J” for 1267-151-1 only. Batch B4L0830 – Laboratory duplicate RPD above limits for STLC DI Lead at 76%. Samples site specific. Associated result flagged “J” for 1267-154-0 only. Reason Code – LDUP</p>		
14. Were dilutions required on any samples?	Yes X	No

Comments: No action required.			
15. Were Tentatively Identified Compounds (TIC) present?	Yes X	No	
Comments: Sample results below the reporting limit do not possess the degree of qualitative or quantitative confidence required. The value may be a false positive and is an estimated value and is flagged "NJ". Reason Code – SQL			
16. Were organic system performance criteria met?	NA	Yes	No
Comments: No organic analyses requested.			
17. Were GC/MS internal standards within method criteria?	NA	Yes	No
Comments: No organic analyses requested.			
18. Were inorganic system performance criteria met?	Yes X	No	
Comments:			
19. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results.	Yes	No X	
Duplicate Sample Nos.			
Comments:			
20. Were at least 10 percent of the hard copy results compared to the Electronic Data Deliverable Results?	Yes X	No	Initials EAC
Comments:			
21. Other:	Yes	No X	
Comments:			
PRECISION, ACCURACY, METHOD COMPLIANCE AND COMPLETENESS ASSESSMENT			
Precision:	Acceptable X	Unacceptable	Initials EAC
Comments: Data usable as qualified.			
Sensitivity:	Acceptable X	Unacceptable	Initials EAC
Comments: Samples analyzed at lowest levels possible to achieve required screening limits.			
Accuracy:	Acceptable X	Unacceptable	Initials EAC
Comments: No data qualified for laboratory control issues.			
Representativeness:	Acceptable X	Unacceptable	Initials EAC

Comments:			
Method Compliance:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Completeness:	Acceptable X	Unacceptable	Initials EAC
Comments: No data are rejected.			

Stantec Analytical Validation Report/Checklist

Report No. 011315-EC-01

Project Name: Caltrans 07A TO-17	Project Number: 185831017		
Stantec Validator: Elizabeth Crowley	Laboratory: ATL, Signal Hill, CA		
Date Validated: 01/11/15	Laboratory Project Number: 1403942		
Sample Start-End Date: 12/10-12/11/14	Laboratory Report Date: 01/06/15		
Parameters Validated: Total Metals, TCLP Lead, SPLC Lead and STLC DI Lead by EPA SW-846 6010B, Mercury by 7470A/7471A and pH by 9045C.			
Samples Validated: 98 solid field samples, 1 Field Blank and 1 Equipment Blank			
VALIDATION CRITERIA CHECK			
Validation Flags Applicable to this Review:			
U	The analyte was analyzed for, but not detected above the reported sample quantitation limit.		
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.		
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.		
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".		
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.		
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.		
B	The analyte was detected in the method, field and/or trip blank.		
1.	Were all the analyses requested for the samples submitted with each COC completed by the lab?	Yes X	No
Comments: Initial analyses completed. Additional analyses are dependent on initial analyses results.			
2.	Did the laboratory identify any non-conformances related to the analytical result?	Yes X	No
Comments: Refer to laboratory report for dilution and minor issues.			
3.	Were sample Chain-of-Custody forms complete?	Yes X	No
Comments: All signatures and required items present.			
4.	Were samples received in good condition and at the appropriate temperature?	Yes X	No
Comments:			
5.	Were sample holding times met?	Yes X	No
Comments: All holding times met for all analyses.			
6.	Were correct concentration units reported?	Yes X	No
Comments: Results reported in both mg/Kg and mg/L depending on the analytical method.			
7.	Were detections found in laboratory blank samples?	Yes X	No

<p>Comments: 6010B batch B4L0526 – Chromium = 0.24 mg/Kg, Copper = 0.210 mg/Kg, Nickel = 0.16 mg/L and Zinc = 0.30 mg/Kg. Batch B4L0497 – Lead = 0.29 mg/Kg. Batch B4L0498 – Lead = 0.24 mg/Kg. Batch B4L0499 – Lead = 0.32 mg/Kg. Batch B4L0500 – Lead = 0.43 mg/Kg. Batch B4L0501 – Lead = 0.43 mg/Kg. Batch B4L0502 – Lead = 0.26 mg/Kg. Sample results greater than 10 times the blank concentration, no qualifying action required.</p> <p>6010B batch B4L0526 – Barium = 0.0012 mg/L, Chromium = 0.0013 mg/L, Cobalt = 0.0004 mg/L, Copper = 0.0031 mg/L, Nickel = 0.0018 mg/L and Zinc = 0.0043 mg/L. Batch B4L0737 – STLC Lead = 0.029 mg/L. Batch B4L0738 – STLC Lead = 0.32 mg/L. Sample results below the blank concentration are validated to non-detect and flagged “UJB”. Sample results greater than the blank concentration are flagged “JB”. The detection limit changed to the blank concentration. Sample results greater than 10 times the blank concentration require no qualifying action. Reason Code – MB</p>		
8. Were detections found in field blank, equipment rinse blank, and/or trip blank samples?	Yes X	No
<p>Comments: EB1 – Barium = 0.0014 mg/L, Copper = 0.0044 mg/L, and Zinc = 0.0063 mg/L. FB1 – Barium = 0.0014 mg/L, Chromium = 0.0015 mg/L, Copper = 0.0034 mg/L and Zinc = 0.0045 mg/L. Sample results greater than 10 times the blank concentration, no qualifying action required.</p>		
9. Were instrument calibrations within method criteria?	Yes NA	No
<p>Comments: Level II data package and validation, no data provided.</p>		
10. Were surrogate recoveries within control limits?	Yes NA	No
<p>Comments: No organic analyses requested.</p>		
11. Were laboratory control (LC/LD) sample recoveries within control limits?	Yes X	No
<p>Comments: All laboratory control sample recoveries are within limits.</p>		
12. Were site specific matrix spike (MS/MD) recoveries within control limits?	Yes	No X
<p>Comments: 6010B batch B4L0526 - %Rs below ±40% limit for Zinc at -137%. Associated result flagged “J” for 1267-102-0 only. Reason Code - MS</p>		
13. Were RPDs within control limits?	Yes	No X

Comments: 6010B batch B4L0526 – Laboratory duplicate RPDs above limits $\pm 20\%$ for Antimony at 133%, Copper at 30% and Zinc at 85%. Sample site specific. Associated result flagged “J” for 1267-102-0 only.

Batch B4L0497 – Laboratory duplicate RPD above limits for Lead at 21%. Samples site specific. Associated result flagged “J” for 1267-102-2 only.

Batch B4L0498 – Laboratory duplicate RPD above limits for Lead at 33%. Samples site specific. Associated result flagged “J” for 1267-117-2 only.

Batch B4L0698 - Laboratory duplicate RPD above limits for Lead at 26%. Samples site specific. Associated result flagged “J” for 1255-112-2 only.

Batch B4L0499 – Laboratory duplicate RPD above limits for Lead at 95%. Samples site specific. Associated result flagged “J” for 1267-128-0 only.

Batch B4L0500 – Laboratory duplicate RPD above limits for Lead at 28%. Samples site specific. Associated result flagged “J” for 1267-133-0 only.

Batch B4L0736 - Laboratory duplicate RPD above limits for STLC Lead at 28%. Samples site specific. Associated result flagged “J” for 1267-113-2 only.

Batch B4L0738 – Laboratory duplicate RPD above limits for STLC Lead at 46%. Samples site specific. Associated result flagged “J” for 1267-142-0 only.

Batch B4L0827 – Laboratory duplicate RPD above limits for STLC DI Lead at 28%. Samples site specific. Associated result flagged “J” for 1267-112-0 only.

Batch B4L0829 – Laboratory duplicate RPD above limits for STLC DI Lead at 33%. Samples site specific. Associated result flagged “J” for 1267-142-0 only.

Batch B4L0830 – Laboratory duplicate RPD above limits for STLC DI Lead at 29%. Samples site specific. Associated result flagged “J” for 1267-147-0 only.

7471A batch B4L0528 - Laboratory duplicate RPD above limits for Mercury at 168%. Samples site specific. Associated result flagged “J” for 1267-102-2 only.

Reason Code – LDUP

14. Were dilutions required on any samples?	Yes	No
	X	

Comments: No action required.

15. Were Tentatively Identified Compounds (TIC) present?	Yes	No
	X	

Comments: Sample results below the reporting limit do not possess the degree of qualitative or quantitative confidence required. The value may be a false positive and is an estimated value and is flagged “NJ”. Reason Code – SQL

16. Were organic system performance criteria met?	Yes	No
	NA	

Comments: No organic analyses requested.			
17. Were GC/MS internal standards within method criteria?	NA	Yes	No
Comments: No organic analyses requested.			
18. Were inorganic system performance criteria met?		Yes	No X
Comments: 7471A batch B4L0528 – Post digestion spike recovery above ±10% limit at 121%. Sample site specific. All associated positive sample results flagged “J”.			
Reason Code – PDS			
19. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results.		Yes X	No
Duplicate Sample Nos. 1267-DUP1 1267-114-0 (Pair 1) 1267-DUP2 1267-120-2 (Pair 2) 1267-DUP3 1267-139-0 (Pair 3) 1267-DUP4 1267-146-2 (Pair 4) 1267-DUP5 1267-147-0 (Pair 5)			
Comments: Pair 1 – ALL RPDs within limits. Pair 2 – RPD above limits for Lead. Associated results flagged “J” for duplicate samples only. Pair 3 – RPD within limits. Pair 4 - RPD above limits for Lead. Associated results flagged “J” for duplicate samples only. Pair 5 – All RPDs within limits except for total Lead. Associated results flagged “J” for duplicate samples only.			
Reason Code – FDUP			
20. Were at least 10 percent of the hard copy results compared to the Electronic Data Deliverable Results?	Yes X	No	Initials EAC
Comments:			
21. Other:		Yes	No X
Comments:			
PRECISION, ACCURACY, METHOD COMPLIANCE AND COMPLETENESS ASSESSMENT			
Precision:	Acceptable X	Unacceptable	Initials EAC
Comments: Data usable as qualified.			
Sensitivity:	Acceptable X	Unacceptable	Initials EAC
Comments: Samples analyzed at lowest levels possible to achieve required screening limits.			
Accuracy:	Acceptable X	Unacceptable	Initials EAC
Comments: No data qualified for laboratory control issues.			

Representativeness:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Method Compliance:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Completeness:	Acceptable X	Unacceptable	Initials EAC
Comments: No data are rejected.			

Stantec Analytical Validation Report/Checklist

Report No. 011815-EC-01

Project Name: Caltrans 07A TO-17	Project Number: 185831017		
Stantec Validator: Elizabeth Crowley	Laboratory: ATL, Signal Hill, CA		
Date Validated: 01/11/15 – 01/18/15	Laboratory Project Number: 1403942		
Sample Start-End Date: 12/10-12/11/14	Laboratory Report Date: 01/06/15		
Parameters Validated: Total Metals, TCLP Lead, SPLC Lead and STLC DI Lead by EPA SW-846 6010B, Mercury by 7470A/7471A and pH by 9045C.			
Samples Validated: 98 solid field samples, 1 Field Blank and 1 Equipment Blank			
VALIDATION CRITERIA CHECK			
Validation Flags Applicable to this Review:			
U	The analyte was analyzed for, but not detected above the reported sample quantitation limit.		
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.		
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.		
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".		
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.		
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.		
B	The analyte was detected in the method, field and/or trip blank.		
1.	Were all the analyses requested for the samples submitted with each COC completed by the lab?	Yes X	No
Comments: Initial analyses completed. Additional analyses are dependent on initial analyses results.			
2.	Did the laboratory identify any non-conformances related to the analytical result?	Yes X	No
Comments: Refer to laboratory report for dilution and minor issues.			
3.	Were sample Chain-of-Custody forms complete?	Yes X	No
Comments: All signatures and required items present.			
4.	Were samples received in good condition and at the appropriate temperature?	Yes X	No
Comments:			
5.	Were sample holding times met?	Yes X	No
Comments: All holding times met for all analyses.			
6.	Were correct concentration units reported?	Yes X	No
Comments: Results reported in both mg/Kg and mg/L depending on the analytical method.			
7.	Were detections found in laboratory blank samples?	Yes X	No

Comments: 6010B batch B4L0526 – Chromium = 0.24 mg/Kg, Copper = 0.210 mg/Kg, Nickel = 0.16 mg/L and Zinc = 0.30 mg/Kg.

Batch B4L0497 – Lead = 0.29 mg/Kg.

Batch B4L0498 – Lead = 0.24 mg/Kg.

Batch B4L0499 – Lead = 0.32 mg/Kg.

Batch B4L0500 – Lead = 0.43 mg/Kg.

Batch B4L0501 – Lead = 0.43 mg/Kg.

Batch B4L0502 – Lead = 0.26 mg/Kg.

Batch B5A0091 – Lead = 0.27 mg/Kg.

Sample results greater than 10 times the blank concentration, no qualifying action required.

6010B batch B4L0526 – Barium = 0.0012 mg/L, Chromium = 0.0013 mg/L, Cobalt = 0.0004 mg/L, Copper = 0.0031 mg/L, Nickel = 0.0018 mg/L and Zinc = 0.0043 mg/L.

Batch B4L0737 – STLC Lead = 0.029 mg/L.

Batch B4L0738 – STLC Lead = 0.32 mg/L.

Sample results below the blank concentration are validated to non-detect and flagged “UJB”. Sample results greater than the blank concentration are flagged “JB”. The detection limit changed to the blank concentration. Sample results greater than 10 times the blank concentration require no qualifying action.

Reason Code – MB

8. Were detections found in field blank, equipment rinse blank, and/or trip blank samples?	Yes X	No
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Comments: EB1 – Barium = 0.0014 mg/L, Copper = 0.0044 mg/L, and Zinc = 0.0063 mg/L.

FB1 – Barium = 0.0014 mg/L, Chromium = 0.0015 mg/L, Copper = 0.0034 mg/L and Zinc = 0.0045 mg/L.

Sample results greater than 10 times the blank concentration, no qualifying action required.

9. Were instrument calibrations within method criteria?	Yes	No
	NA	

Comments: Level II data package and validation, no data provided.

10. Were surrogate recoveries within control limits?	Yes	No
	NA	

Comments: No organic analyses requested.

11. Were laboratory control (LC/LD) sample recoveries within control limits?	Yes X	No
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Comments: All laboratory control sample recoveries are within limits.

12. Were site specific matrix spike (MS/MD) recoveries within control limits?	Yes	No X
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Comments: 6010B batch B4L0526 - %Rs below ±40% limit for Zinc at -137%. Associated result flagged “J” for 1267-102-0 only.

Reason Code – MS

13. Were RPDs within control limits?	Yes	No X
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Comments: 6010B batch B4L0526 – Laboratory duplicate RPDs above limits $\pm 20\%$ for Antimony at 133%, Copper at 30% and Zinc at 85%. Sample site specific. Associated result flagged “J” for 1267-102-0 only.

Batch B4L0497 – Laboratory duplicate RPD above limits for Lead at 21%. Sample site specific. Associated result flagged “J” for 1267-102-2 only.

Batch B4L0498 – Laboratory duplicate RPD above limits for Lead at 33%. Sample site specific. Associated result flagged “J” for 1267-117-2 only

Batch B4L0698 - Laboratory duplicate RPD above limits for Lead at 26%. Sample site specific. Associated result flagged “J” for 1255-112-2 only.

Batch B4L0499 – Laboratory duplicate RPD above limits for Lead at 95%. Sample site specific. Associated result flagged “J” for 1267-128-0 only.

Batch B4L0500 – Laboratory duplicate RPD above limits for Lead at 28%. Sample site specific. Associated result flagged “J” for 1267-133-0 only.

Batch B4L0736 - Laboratory duplicate RPD above limits for STLC Lead at 28%. Sample site specific. Associated result flagged “J” for 1267-113-2 only.

Batch B4L0738 – Laboratory duplicate RPD above limits for STLC Lead at 46%. Sample site specific. Associated result flagged “J” for 1267-142-0 only.

Batch B5A0187 – Laboratory duplicate RPD above limits for STLC Lead at 39%. Sample site specific. Associated result flagged “J” for 1267-133-0 only.

Batch B4L0827 – Laboratory duplicate RPD above limits for STLC DI Lead at 28%. Sample site specific. Associated result flagged “J” for 1267-112-0 only.

Batch B4L0829 – Laboratory duplicate RPD above limits for STLC DI Lead at 33%. Sample site specific. Associated result flagged “J” for 1267-142-0 only.

Batch B4L0830 – Laboratory duplicate RPD above limits for STLC DI Lead at 29%. Sample site specific. Associated result flagged “J” for 1267-147-0 only.

7471A batch B4L0528 - Laboratory duplicate RPD above limits for Mercury at 168%. Sample site specific. Associated result flagged “J” for 1267-102-2 only.

Reason Code – LDUP

14. Were dilutions required on any samples?	Yes	No
	X	

Comments: No action required.

15. Were Tentatively Identified Compounds (TIC) present?	Yes	No
	X	

Comments: Sample results below the reporting limit do not possess the degree of qualitative or quantitative confidence required. The value may be a false positive and is an estimated value and is flagged “NJ”. Reason Code – SQL

16. Were organic system performance criteria met?	NA	Yes	No
Comments: No organic analyses requested.			
17. Were GC/MS internal standards within method criteria?	NA	Yes	No
Comments: No organic analyses requested.			
18. Were inorganic system performance criteria met?		Yes	No X
Comments: 7471A batch B4L0528 – Post digestion spike recovery above $\pm 10\%$ limit at 121%. Sample site specific. All associated positive sample results flagged "J". Reason Code – PDS			
19. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results.		Yes X	No
Duplicate Sample Nos. 1267-DUP1 1267-114-0 (Pair 1) 1267-DUP2 1267-120-2 (Pair 2) 1267-DUP3 1267-139-0 (Pair 3) 1267-DUP4 1267-146-2 (Pair 4) 1267-DUP5 1267-147-0 (Pair 5)			
Comments: Pair 1 – ALL RPDs within limits. Pair 2 – RPD above limits for Lead. Associated results flagged "J" for duplicate samples only. Pair 3 – RPD within limits. Pair 4 - RPD above limits for Lead. Associated results flagged "J" for duplicate samples only. Pair 5 – All RPDs within limits except for total Lead. Associated results flagged "J" for duplicate samples only. Reason Code – FDUP			
20. Were at least 10 percent of the hard copy results compared to the Electronic Data Deliverable Results?		Yes X	No Initials EAC
Comments:			
21. Other:		Yes	No X
Comments:			
PRECISION, ACCURACY, METHOD COMPLIANCE AND COMPLETENESS ASSESSMENT			
Precision:	Acceptable X	Unacceptable	Initials EAC
Comments: Data usable as qualified.			
Sensitivity:	Acceptable X	Unacceptable	Initials EAC
Comments: Samples analyzed at lowest levels possible to achieve required screening limits.			

Accuracy:	Acceptable X	Unacceptable	Initials EAC
Comments: No data qualified for laboratory control issues.			
Representativeness:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Method Compliance:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Completeness:	Acceptable X	Unacceptable	Initials EAC
Comments: No data are rejected.			

Stantec Analytical Validation Report/Checklist

Report No. 020315-EC-01

Project Name: Caltrans 07A TO-17	Project Number: 185831017		
Stantec Validator: Elizabeth Crowley	Laboratory: ATL, Signal Hill, CA		
Date Validated: 01/11/15 02/02/15	Laboratory Project Number: 1403942 and 1403942-2		
Sample Start-End Date: 12/10-12/11/14	Laboratory Report Date: 01/06/15 and 02/03/15		
Parameters Validated: Total Metals, TCLP Lead, SPLC Lead and STLC DI Lead by EPA SW-846 6010B, Mercury by 7470A/7471A and pH by 9045C.			
Samples Validated: 98 solid field samples, 1 Field Blank and 1 Equipment Blank			
VALIDATION CRITERIA CHECK			
Validation Flags Applicable to this Review:			
U	The analyte was analyzed for, but not detected above the reported sample quantitation limit.		
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.		
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.		
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".		
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.		
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.		
B	The analyte was detected in the method, field and/or trip blank.		
1.	Were all the analyses requested for the samples submitted with each COC completed by the lab?	Yes X	No
Comments: Initial analyses completed. Additional analyses are dependent on initial analyses results.			
2.	Did the laboratory identify any non-conformances related to the analytical result?	Yes X	No
Comments: Refer to laboratory report for dilution and minor issues.			
3.	Were sample Chain-of-Custody forms complete?	Yes X	No
Comments: All signatures and required items present.			
4.	Were samples received in good condition and at the appropriate temperature?	Yes X	No
Comments:			
5.	Were sample holding times met?	Yes X	No
Comments: All holding times met for all analyses.			
6.	Were correct concentration units reported?	Yes X	No
Comments: Results reported in both mg/Kg and mg/L depending on the analytical method.			
7.	Were detections found in laboratory blank samples?	Yes X	No

Comments: 6010B batch B4L0526 – Chromium = 0.24 mg/Kg, Copper = 0.210 mg/Kg, Nickel = 0.16 mg/L and Zinc = 0.30 mg/Kg.

Batch B4L0497 – Lead = 0.29 mg/Kg.

Batch B4L0498 – Lead = 0.24 mg/Kg.

Batch B4L0499 – Lead = 0.32 mg/Kg.

Batch B4L0500 – Lead = 0.43 mg/Kg.

Batch B4L0501 – Lead = 0.43 mg/Kg.

Batch B4L0502 – Lead = 0.26 mg/Kg.

Batch B5A0091 – Lead = 0.27 mg/Kg.

Sample results greater than 10 times the blank concentration, no qualifying action required.

6010B batch B4L0526 – Barium = 0.0012 mg/L, Chromium = 0.0013 mg/L, Cobalt = 0.0004 mg/L, Copper = 0.0031 mg/L, Nickel = 0.0018 mg/L and Zinc = 0.0043 mg/L.

Batch B4L0737 – STLC Lead = 0.029 mg/L.

Batch B4L0738 – STLC Lead = 0.32 mg/L.

Sample results below the blank concentration are validated to non-detect and flagged “UJB”. Sample results greater than the blank concentration are flagged “JB”. The detection limit changed to the blank concentration. Sample results greater than 10 times the blank concentration require no qualifying action.

Reason Code – MB

8. Were detections found in field blank, equipment rinse blank, and/or trip blank samples?	Yes X	No
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Comments: EB1 – Barium = 0.0014 mg/L, Copper = 0.0044 mg/L, and Zinc = 0.0063 mg/L.

FB1 – Barium = 0.0014 mg/L, Chromium = 0.0015 mg/L, Copper = 0.0034 mg/L and Zinc = 0.0045 mg/L.

Sample results greater than 10 times the blank concentration, no qualifying action required.

9. Were instrument calibrations within method criteria?	Yes	No
	NA	

Comments: Level II data package and validation, no data provided.

10. Were surrogate recoveries within control limits?	Yes	No
	NA	

Comments: No organic analyses requested.

11. Were laboratory control (LC/LD) sample recoveries within control limits?	Yes X	No
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Comments: All laboratory control sample recoveries are within limits.

12. Were site specific matrix spike (MS/MD) recoveries within control limits?	Yes	No X
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Comments: 6010B batch B4L0526 - %Rs below ±40% limit for Zinc at -137%. Associated result flagged “J” for 1267-102-0 only.

Reason Code – MS

13. Were RPDs within control limits?	Yes	No X
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Comments: 6010B batch B4L0526 – Laboratory duplicate RPDs above limits $\pm 20\%$ for Antimony at 133%, Copper at 30% and Zinc at 85%. Sample site specific. Associated result flagged “J” for 1267-102-0 only.

Batch B4L0497 – Laboratory duplicate RPD above limits for Lead at 21%. Sample site specific. Associated result flagged “J” for 1267-102-2 only.

Batch B4L0498 – Laboratory duplicate RPD above limits for Lead at 33%. Sample site specific. Associated result flagged “J” for 1267-117-2 only

Batch B4L0698 - Laboratory duplicate RPD above limits for Lead at 26%. Sample site specific. Associated result flagged “J” for 1255-112-2 only.

Batch B4L0499 – Laboratory duplicate RPD above limits for Lead at 95%. Sample site specific. Associated result flagged “J” for 1267-128-0 only.

Batch B4L0500 – Laboratory duplicate RPD above limits for Lead at 28%. Sample site specific. Associated result flagged “J” for 1267-133-0 only.

Batch B4L0736 - Laboratory duplicate RPD above limits for STLC Lead at 28%. Sample site specific. Associated result flagged “J” for 1267-113-2 only.

Batch B4L0738 – Laboratory duplicate RPD above limits for STLC Lead at 46%. Sample site specific. Associated result flagged “J” for 1267-142-0 only.

Batch B5A0187 – Laboratory duplicate RPD above limits for STLC Lead at 39%. Sample site specific. Associated result flagged “J” for 1267-133-0 only.

Batch B4L0827 – Laboratory duplicate RPD above limits for STLC DI Lead at 28%. Sample site specific. Associated result flagged “J” for 1267-112-0 only.

Batch B4L0829 – Laboratory duplicate RPD above limits for STLC DI Lead at 33%. Sample site specific. Associated result flagged “J” for 1267-142-0 only.

Batch B4L0830 – Laboratory duplicate RPD above limits for STLC DI Lead at 29%. Sample site specific. Associated result flagged “J” for 1267-147-0 only.

7471A batch B4L0528 - Laboratory duplicate RPD above limits for Mercury at 168%. Sample site specific. Associated result flagged “J” for 1267-102-2 only.

Reason Code – LDUP

14. Were dilutions required on any samples?	Yes	No
	X	

Comments: No action required.

15. Were Tentatively Identified Compounds (TIC) present?	Yes	No
	X	

Comments: Sample results below the reporting limit do not possess the degree of qualitative or quantitative confidence required. The value may be a false positive and is an estimated value and is flagged “NJ”. Reason Code – SQL

16. Were organic system performance criteria met?	NA	Yes	No
Comments: No organic analyses requested.			
17. Were GC/MS internal standards within method criteria?	NA	Yes	No
Comments: No organic analyses requested.			
18. Were inorganic system performance criteria met?		Yes	No X
Comments: 7471A batch B4L0528 – Post digestion spike recovery above $\pm 10\%$ limit at 121%. Sample site specific. All associated positive sample results flagged "J". Reason Code – PDS			
19. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results.		Yes X	No
Duplicate Sample Nos. 1267-DUP1 1267-114-0 (Pair 1) 1267-DUP2 1267-120-2 (Pair 2) 1267-DUP3 1267-139-0 (Pair 3) 1267-DUP4 1267-146-2 (Pair 4) 1267-DUP5 1267-147-0 (Pair 5)			
Comments: Pair 1 – ALL RPDs within limits. Pair 2 – RPD above limits for Lead. Associated results flagged "J" for duplicate samples only. Pair 3 – RPD within limits. Pair 4 - RPD above limits for Lead. Associated results flagged "J" for duplicate samples only. Pair 5 – All RPDs within limits except for total Lead. Associated results flagged "J" for duplicate samples only. Reason Code – FDUP			
20. Were at least 10 percent of the hard copy results compared to the Electronic Data Deliverable Results?		Yes X	No Initials EAC
Comments:			
21. Other:		Yes	No X
Comments:			
PRECISION, ACCURACY, METHOD COMPLIANCE AND COMPLETENESS ASSESSMENT			
Precision:	Acceptable X	Unacceptable	Initials EAC
Comments: Data usable as qualified.			
Sensitivity:	Acceptable X	Unacceptable	Initials EAC
Comments: Samples analyzed at lowest levels possible to achieve required screening limits.			

Accuracy:	Acceptable X	Unacceptable	Initials EAC
Comments: No data qualified for laboratory control issues.			
Representativeness:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Method Compliance:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Completeness:	Acceptable X	Unacceptable	Initials EAC
Comments: No data are rejected.			

Stantec Analytical Validation Report/Checklist
Report No. 011315-EC-02

Project Name: Caltrans 07A TO-17	Project Number: 185831017		
Stantec Validator: Elizabeth Crowley	Laboratory: ATL, Signal Hill, CA		
Date Validated: 01/12/15	Laboratory Project Number: 1403989 and 1403989part2		
Sample Start-End Date: 12/12/14	Laboratory Report Date: 01/07/15 and 12/30/15		
Parameters Validated: Total Metals, TCLP Lead, SPLC Lead and STLC DI Lead by EPA SW-846 6010B, Mercury by 7470A/7471A and pH by 9045C.			
Samples Validated: 12 solid field samples, 1 Field Blank and 1 Equipment Blank			
VALIDATION CRITERIA CHECK			
Validation Flags Applicable to this Review:			
U	The analyte was analyzed for, but not detected above the reported sample quantitation limit.		
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.		
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.		
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".		
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.		
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.		
B	The analyte was detected in the method, field and/or trip blank.		
1.	Were all the analyses requested for the samples submitted with each COC completed by the lab?	Yes X	No
Comments: Initial analyses completed. Additional analyses are dependent on initial analyses results.			
2.	Did the laboratory identify any non-conformances related to the analytical result?	Yes X	No
Comments: Refer to laboratory report for dilution and minor issues.			
3.	Were sample Chain-of-Custody forms complete?	Yes X	No
Comments: All signatures and required items present.			
4.	Were samples received in good condition and at the appropriate temperature?	Yes X	No
Comments:			
5.	Were sample holding times met?	Yes X	No
Comments: All holding times met for all analyses.			
6.	Were correct concentration units reported?	Yes X	No
Comments: Results reported in both mg/Kg and mg/L depending on the analytical method.			
7.	Were detections found in laboratory blank samples?	Yes X	No

<p>Comments: 6010B batch B4L0502 – Lead = 0.26 mg/Kg. Batch B4L0738 – STLC Lead = 0.36 mg/L. Batch B4L0739 – STLC Lead = 0.051 mg/L. Batch B4L0738 – STLC Lead = 0.036 mg/L. Sample results greater than 10 times the blank concentration, no qualifying action required.</p> <p>6010B batch B4L0563 – Barium = 0.0009 mg/L, Chromium = 0.0010 mg/L, Copper = 0.0023 mg/L, Molybdenum = 0.0007 mg/L, Nickel = 0.0016 mg/L and Zinc = 0.0054 mg/L. Sample results below the blank concentration are validated to non-detect and flagged “UJB”. Sample results greater than the blank concentration are flagged “JB”. The detection limit changed to the blank concentration. Sample results greater than 10 times the blank concentration require no qualifying action. Reason Code – MB</p>		
8. Were detections found in field blank, equipment rinse blank, and/or trip blank samples?	Yes X	No
<p>Comments: EB1 – Barium = 0.0010 mg/L, Chromium = 0.0011 mg/L, Cobalt = 0.0005 mg/L, Copper = 0.0041 mg/L, Molybdenum = 0.0024 mg/L, Silver = 0.0010 mg/L and Zinc = 0.0061 mg/L. FB1 – Chromium = 0.0012 mg/L, Copper = 0.0041 mg/L, Silver = 0.0013 mg/L and Zinc = 0.0072 mg/L. Sample results greater than 10 times the blank concentration, no qualifying action required.</p>		
9. Were instrument calibrations within method criteria?	Yes NA	No
<p>Comments: Level II data package and validation, no data provided.</p>		
10. Were surrogate recoveries within control limits?	Yes NA	No
<p>Comments: No organic analyses requested.</p>		
11. Were laboratory control (LC/LD) sample recoveries within control limits?	Yes X	No
<p>Comments: All laboratory control sample recoveries are within limits.</p>		
12. Were site specific matrix spike (MS/MD) recoveries within control limits?	Yes	No X
<p>Comments: 6010B batch B4L0738 - %Rs below ±40% limit for STLC Lead at 56%. Associated result flagged “J” for 1267-149-0 only. Reason Code – MS</p>		
13. Were RPDs within control limits?	Yes	No X
<p>Comments: 6010B batch B4L0502 – Laboratory duplicate RPDs above limits ±20% for Lead at 28%. Sample site specific. Associated result flagged “J” for 1267-151-1 only. Batch B4L0830 – Laboratory duplicate RPD above limits for STLC DI Lead at 76%. Samples site specific. Associated result flagged “J” for 1267-154-0 only. Reason Code – LDUP</p>		
14. Were dilutions required on any samples?	Yes X	No

Comments: No action required.			
15. Were Tentatively Identified Compounds (TIC) present?	Yes	No	
	X		
Comments: Sample results below the reporting limit do not possess the degree of qualitative or quantitative confidence required. The value may be a false positive and is an estimated value and is flagged "NJ". Reason Code – SQL			
16. Were organic system performance criteria met?	Yes	No	
	NA		
Comments: No organic analyses requested.			
17. Were GC/MS internal standards within method criteria?	Yes	No	
	NA		
Comments: No organic analyses requested.			
18. Were inorganic system performance criteria met?	Yes	No	
	X		
Comments:			
19. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results.	Yes	No	
		X	
Duplicate Sample Nos.			
Comments:			
20. Were at least 10 percent of the hard copy results compared to the Electronic Data Deliverable Results?	Yes	No	Initials
	X		EAC
Comments:			
21. Other:	Yes	No	
		X	
Comments:			
PRECISION, ACCURACY, METHOD COMPLIANCE AND COMPLETENESS ASSESSMENT			
Precision:	Acceptable	Unacceptable	Initials EAC
	X		
Comments: Data usable as qualified.			
Sensitivity:	Acceptable	Unacceptable	Initials EAC
	X		
Comments: Samples analyzed at lowest levels possible to achieve required screening limits.			
Accuracy:	Acceptable	Unacceptable	Initials EAC
	X		
Comments: No data qualified for laboratory control issues.			
Representativeness:	Acceptable	Unacceptable	Initials EAC
	X		

Comments:			
Method Compliance:	Acceptable X	Unacceptable	Initials EAC
Comments:			
Completeness:	Acceptable X	Unacceptable	Initials EAC
Comments: No data are rejected.			

Memorandum

*Serious drought.
Help Save Water!*

To: Asadour Terterian, STE
Office of Design A
Division of Design

Date: January 26, 2015

Attn: Richard Tran, P.E.
Project Engineer

File: 07-LA-5 PM 13.8/19.2
CAPM Roadway Rehab
5/710 Separation to Main
Street UC in Cities of
Commerce & Los
Angeles in Los Angeles
County

EA: 07-333-300701
PN: 1846-0713000492-1

From: DEPARTMENT OF TRANSPORTATION
OED-HAZARDOUS WASTE BRANCH, SOUTH REGION
DIVISION OF DESIGN

Subject: **ASBESTOS CONTAINING MATERIAL (ACM) SURVEY BRIDGE ASSESSMENT**

The Office of Environmental Design (OED) is hereby issuing this Asbestos-Containing Material (ACM) Survey and Assessment for proposed roadway and bridge rehabilitation work (total 5 bridges) for the I-5 Capital Preventive Maintenance Project from Routes 5/710 Separation to Main Street Undercrossing in Cities of Commerce and Los Angeles in Los Angeles County in California.

The existing pavement condition in this section of the roadway has deteriorated and has an overall PCS/PMS priority number 9 which characterizes the road as having pavement distress and bad ride. The purpose of this project is to preserve and extend the life of the existing pavement section and improve ride quality. This ACM Survey Assessment is in conjunction with the PS&E Hazardous Waste Assessment which will be issued at a later time.

ACM HAZARDOUS WASTE CONCERNS:

Historically, older bridge structures may contain asbestos that require abatement and special handling when disturbed. The objectives of the ACM Survey were to identify, estimate, quantities, and evaluate the condition/friability of asbestos in suspect structural components that will be removed and replaced. California Assembly Bill AB3713, Health and Safety Code Div. 20, Ch. 10.4, Sec. 25915-25924 requires owners, employers, lessees, etc. to notify tenants, employees, and contractors of the presence of asbestos in both friable and non-friable forms.

In California, potential asbestos exposure in construction is regulated when construction, alteration, repair, maintenance, or renovation of structures, substrates, or portions thereof contain asbestos (8CCR, §1529(a)(1)(C)). Additionally, in California, asbestos materials containing greater than one-tenth of one percent (>0.1%) asbestos are regulated as asbestos containing materials (ACMs).

Based on the latest 95% Quality Review plans provided by your office, the following four (4) bridges are subject to be rehabilitate which include joint seal removal and replacement, structure approach and departure slabs replacement, paving notch extension, clean expansion joints, remove unsound concrete and concrete spall patching,

BRIDGE LOCATIONS			
	Bridge No./PM	Bridge Name	Scope of Work
1	53-1390R/ 16.59	Soto Street UC	Joint Seal Removal, Structure Approach Slabs Replacement, Paving Notch Extension.
2	53-1304/ 17.53	Fourth Street UC	Remove Unsound Concrete.
3	53-1316/ 18.38	S5-E10 Connector UC	Joint Seal Removal, Structure Approach Slabs Replacement, Paving Notch Extension, Remove Unsound Concrete, Clean Expansion Joint.
4	53-1329/ 18.42	5/10 Separation	Joint Seal Removal, Structure Approach/Departure Slabs Replacement, Paving Notch Extension, Remove Unsound Concrete, Clean Expansion Joint.
5	53-1360/ 19.20	Main Street UC	Joint Seal Removal, Structure Approach/Departure Slabs Replacement, Paving Notch Extension.

Based on OED’s review of the bridge scope of work, discussion with District Structure Representative and review of Bridge Inspection Records Information System (BIRIS), bridge structures 53-1329 and 53-1390R were eliminated from ACM survey due to existing joint seals were installed in 2010 and 2013, respectively (no ACM joint seal material after 1960). Bridge structure 53-1304 does not involve joint seal replacement.

Caltrans contracted Stantec Consulting Services, Inc. (Consultant) to perform an ACM Survey on bridge structures 53-1360 (Main Street UC) and 53-1316 (S5-E10 Connector UC). The ACM survey was performed and completed on December 11, 2014. The ACM survey work is part of Task Order 07A3321-17.

Bulk samples of suspect ACM bridge materials were collected and analyzed by Polarized Light Microscopy (PLM). The United States Environmental Protection Agency (US EPA) and State of California, Division of Occupational Safety and Health (DOSH) define an ACM as any material containing more than one percent asbestos (>1%). The laboratory results are summarized in Table 1 of the final ACM Survey Report. Assessments are made by the consultant as to the condition of each material and whether or not the materials are “friable”. The US EPA NESHAP regulation defines “friable” and “non-friable” materials are:

- Materials that, when dry, can be crumbled, pulverized or reduced to a powder using hand pressure. Conversely, a non-friable material cannot, when dry, be crumbled, pulverized or reduced to a powder. NESHAP classifies “non-friable” ACMs in two categories:
 - ✓ Category 1- asbestos-containing packing, gaskets, asphalt roofing products and resilient floor coverings;

- ✓ Category 2- all remaining types of non-friable ACM not included in Category 1 that when dry cannot be crumbled, pulverized, or reduced to powder by hand pressure.

ACM SURVEY RESULTS

Bulk material samples were collected from representative homogeneous bridge materials and analyzed by PLM. Sample locations are shown on attached figures. The sampled materials included:

- Concrete,
- Asphalt,
- Expansion Joint Felt,
- Adhesives (bridge reflective markers, deck reflective markers),
- Joint Seals,
- Paper associated with expansion joint felt at bridge railing seams/joints, and
- Weep hole pipe lining.

Asbestos was not detected in any of the materials analyzed from the two bridges.

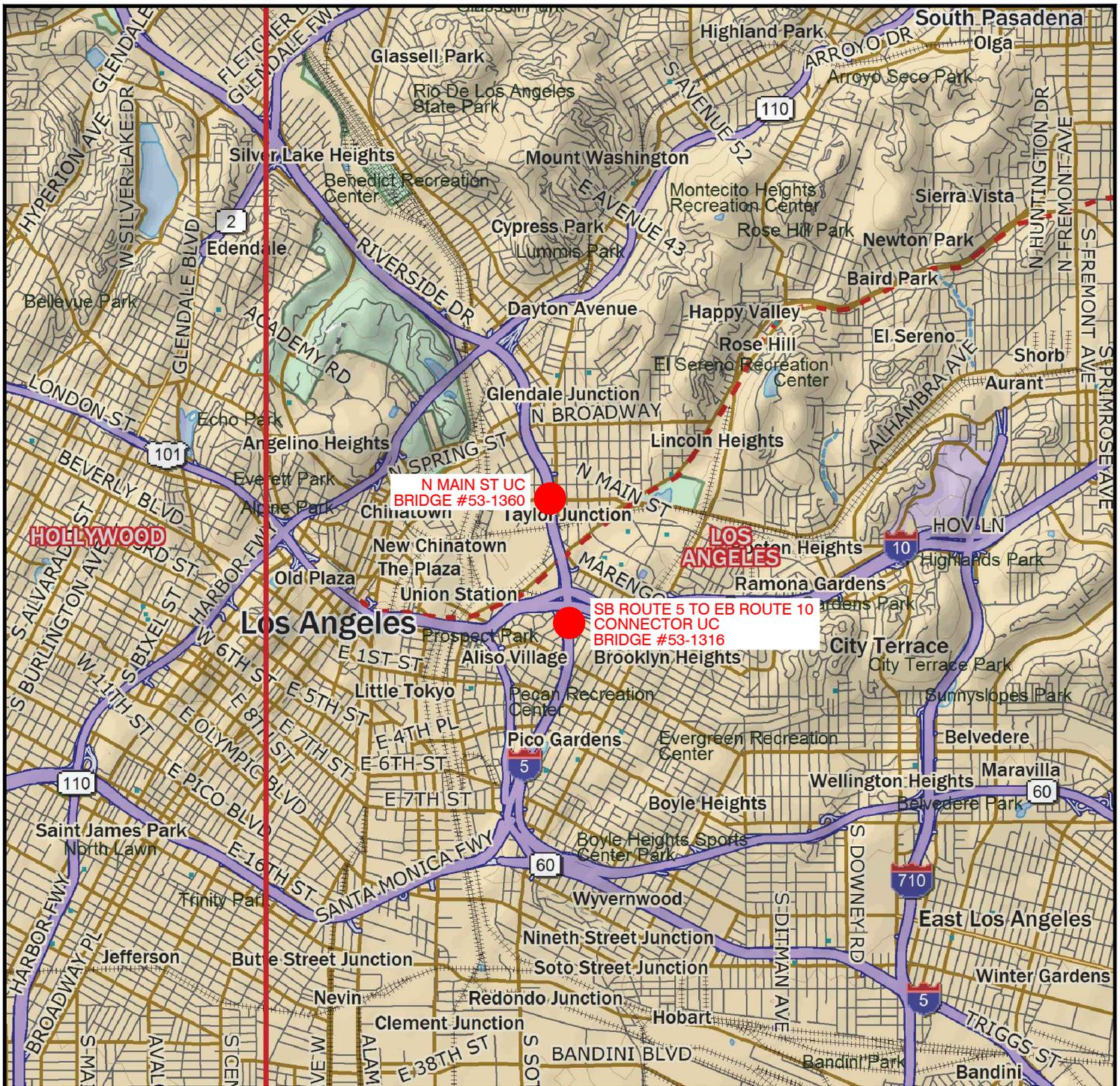
If you need additional clarification, I can be reached at 213-897-3646 steve.chan@dot.ca.gov or contact ANM (Wasim) Choudhury of my staff at 213-897-4058 anm.choudhury@dot.ca.gov.



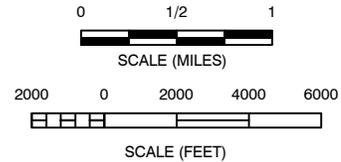
Steve Chan, P.E., STE
District Hazardous Waste Branch (South Region)
Office of Environmental Design
Division of Design

File
District Office Engineer

Attachments: *Asbestos-Containing Materials Survey Report Pavement Rehabilitation Project- ADA Curb Ramp Reconstruction, Construction of Concrete Safety Barrier, Construction of MVPs and replacement of Bridge Approach and Departure Pavement Slabs from Route 5/710 Separation to Main Street Undercrossing, Location: LA-5 PM 13.8/19.2, Los Angeles County, California, PN 0713000492-1, EA 300701, Task Order 17, Contract 07A3321, prepared by Stantec Consulting Services, Inc., January 2015.*



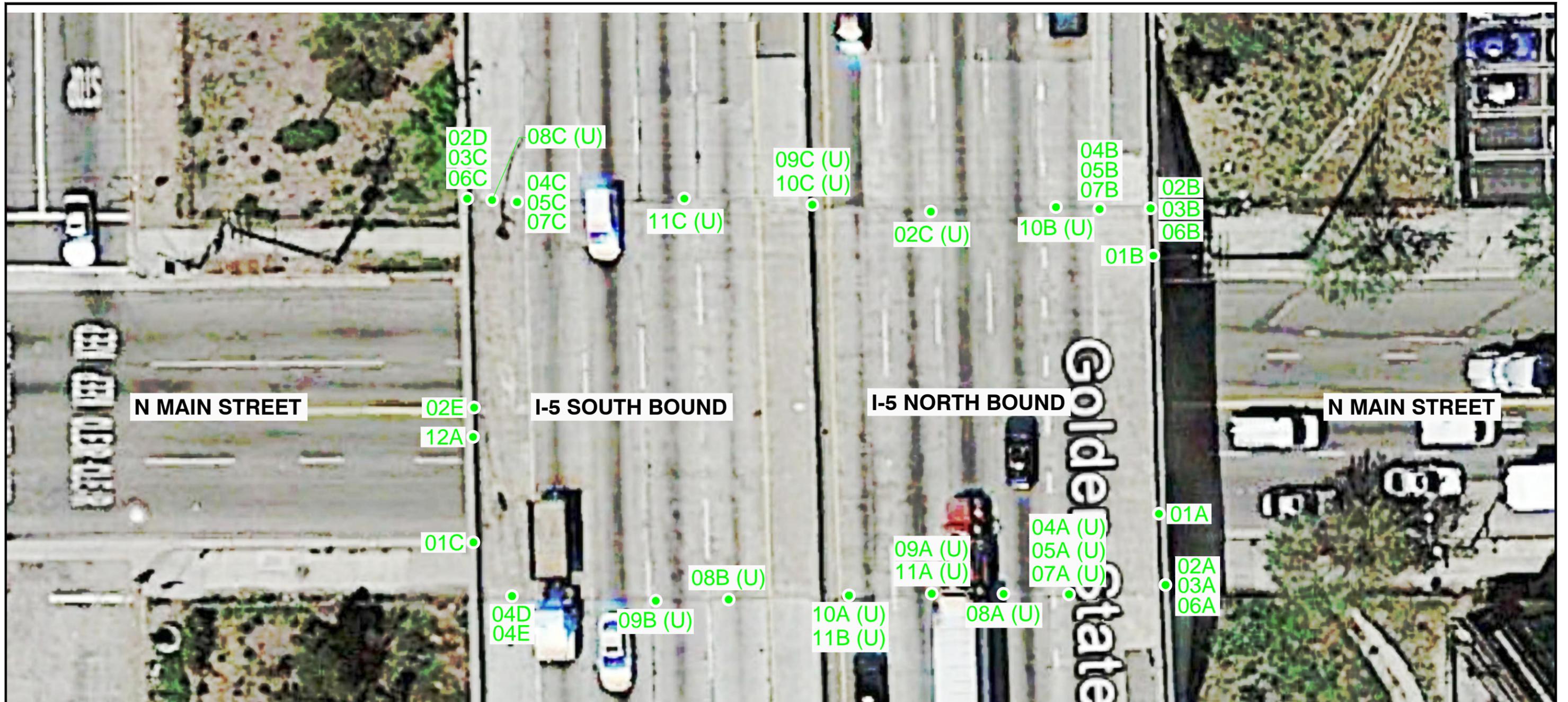
CALIFORNIA



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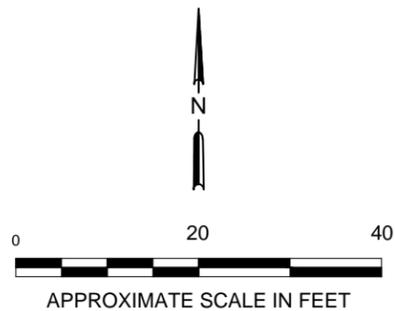
REFERENCE: DELORME TOPO MAP, LOS ANGELES, CALIFORNIA

	State of California Department of Transportation Asbestos Survey Pavement Rehabilitation LA-5 13.8/19.2 Project ID: 0713000 492-1, EA 300701			SITE LOCATION MAP		FIGURE: <h1 style="text-align: center;">1</h1>
	JOB NUMBER: 185831017	DRAWN BY: STA	CHECKED BY: JS	APPROVED BY: AP	DATE: 01/07/15	



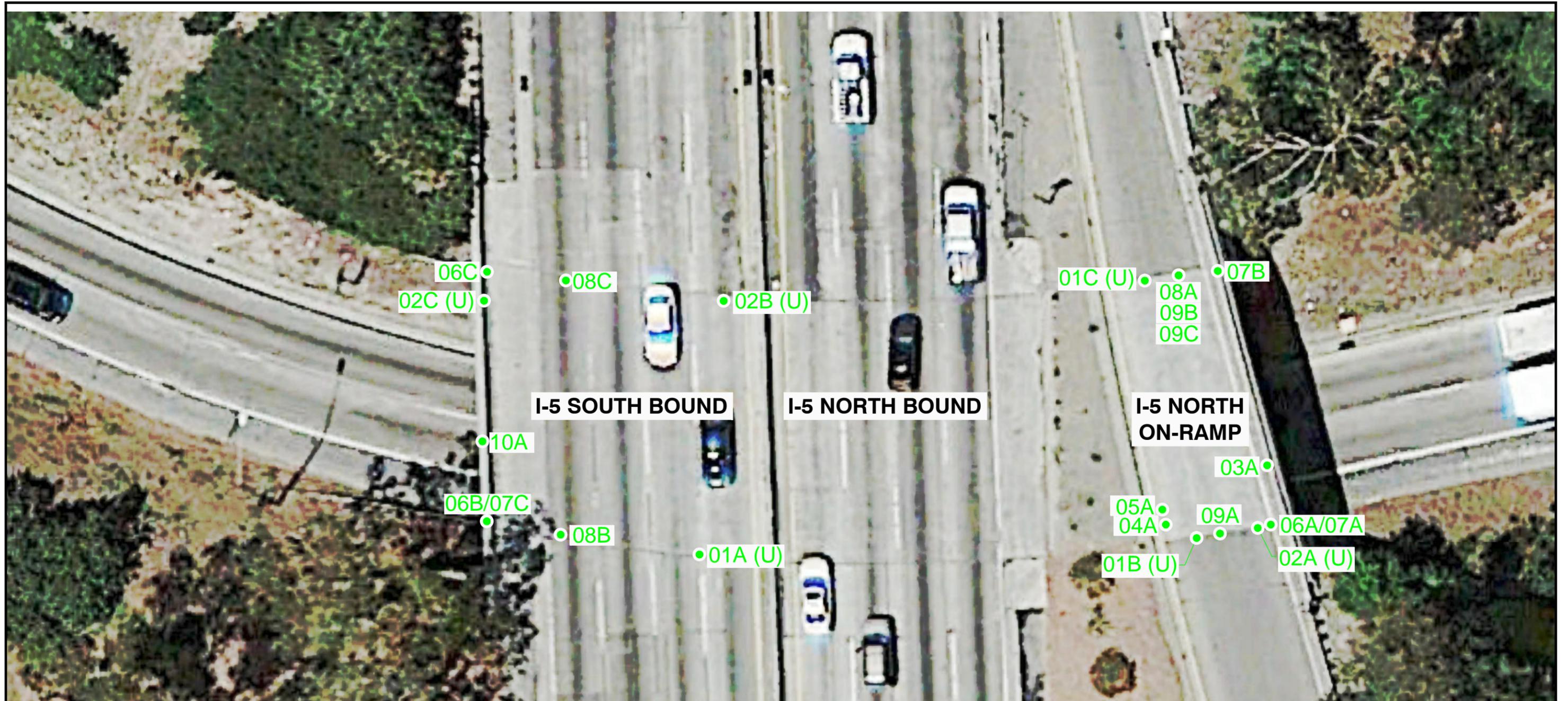
KEY:

- SAMPLE LOCATION
- (U) UNDERSIDE
- 01 ADHESIVE - BRIDGE REFLECTIVE MARKER
- 02 CONCRETE - BRIDGE RAILING AND ABUTMENTS BELOW DECK
- 03 EXPANSION JOINT FELT - BRIDGE RAILING SEAMS/ JOINTS
- 04 CONCRETE - BRIDGE DECK
- 05 JOINT SEAL - DECK LEVEL
- 06 PAPER - BRIDGE RAILING SEAMS/ JOINTS (BETWEEN FELT)
- 07 JOINT SEAL - DECK LEVEL (PATCH)
- 08 DRAIN PIPE - WEEPING HOLE LINING
- 09 CONCRETE - ABUTMENT WALLS BELOW BRIDGE DECK (TEXTURED)
- 10 EXPANSION JOINT FELT - ABUTMENT JOINTS/ SEAMS BELOW BRIDGE DECK
- 11 SEAL - ABUTMENT JOINTS/ SEAMS AT WALLS BELOW BRIDGE DECK
- 12 ADHESIVE - BRIDGE REFLECTIVE MARKERS



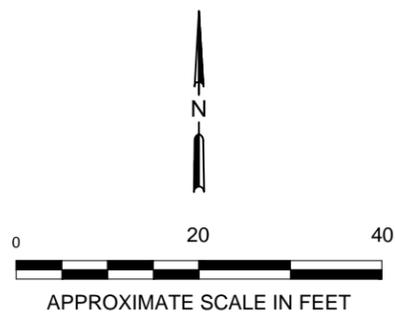
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 25864-F BUSINESS CENTER DRIVE REDLANDS, CALIFORNIA 92374 PHONE: (909) 335-6116 FAX: (909) 556-6516	State of California Department of Transportation Asbestos Survey Pavement Rehabilitation LA-5 13.8/19.2 Project ID: 0713000 492-1, EA 300701		ACM SAMPLE LOCATIONS BR NO. 53-1360 MAIN STREET UC		FIGURE: 2
	JOB NUMBER: 185831017	DRAWN BY: STA	CHECKED BY: JS	APPROVED BY: AP	DATE: 01/07/15



KEY:

- SAMPLE LOCATION
- (U) UNDERSIDE
- 01 EXPANSION JOINT FELT - ABUTMENT JOINTS/ SEAMS BELOW DECK
- 02 CONCRETE - ABUTMENT WALLS BELOW BRIDGE DECK
- 03 ADHESIVE - BRIDGE REFLECTIVE MARKER
- 04 ADHESIVE - DECK REFLECTOR
- 05 ADHESIVE - DECK REFLECTOR
- 06 CONCRETE - BRIDGE RAILING
- 07 EXPANSION JOINT FELT - BRIDGE RAILING SEAMS/ JOINTS
- 08 CONCRETE - DECK
- 09 ASPHALT - DECK
- 10 ADHESIVE - BRIDGE REFLECTIVE MARKER



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 25864-F BUSINESS CENTER DRIVE REDLANDS, CALIFORNIA 92374 PHONE: (909) 335-6116 FAX: (909) 556-6516	State of California Department of Transportation Asbestos Survey Pavement Rehabilitation LA-5 13.8/19.2 Project ID: 0713000 492-1, EA 300701		ACM SAMPLE LOCATIONS BR NO. 53-1316 SB ROUTE 5 TO EB ROUTE 10 CONNECTOR UC		FIGURE: 3
	JOB NUMBER: 185831017	DRAWN BY: STA	CHECKED BY: JS	APPROVED BY: AP	DATE: 01/07/15

TABLE 1
ASBESTOS SAMPLE LOG AND ANALYSIS RESULTS
TWO BRIDGES ALONG ROUTE 5
LA-5 13.8 /19.2
LOS ANGELES COUNTY, CALIFORNIA
PN: 0713000492-1; EA #300701
TASK ORDER #17; CONTRACT 07A3321

FIELD SAMPLE ID	SAMPLE DATE	LABORATORY SAMPLE ID	SAMPLE LOCATION / MATERIAL LOCATION	MATERIAL DESCRIPTION	ANALYSIS RESULTS	CONDITION FRIABLE YES/NO	IF ACM, ESTIMATED SQUARE FOOTAGE
MAIN STREET UC - BRIDGE #53-1360							
01A	12/11/2014	0149792-001	BRIDGE RAILING / EAST RAIL - SE	BRIDGE REFLECTIVE MARKER ADHESIVE, TAN	ND	NO	--
01B	12/11/2014	0149792-002	BRIDGE RAILING / EAST RAIL - NE	BRIDGE REFLECTIVE MARKER ADHESIVE, TAN	ND	NO	--
01C	12/11/2014	0149792-003	BRIDGE RAILING / WEST RAIL - SW	BRIDGE REFLECTIVE MARKER ADHESIVE, TAN	ND	NO	--
02A	12/11/2014	0149792-004	BRIDGE RAILING AND ABUTMENT WALLS BELOW BRIDGE / BRIDGE RAIL - SE	CONCRETE, BEIGE/GRAY	ND	NO	--
02B	12/11/2014	0149792-005	BRIDGE RAILING AND ABUTMENT WALLS BELOW BRIDGE / BRIDGE RAIL - NE	CONCRETE, BEIGE/GRAY	ND	NO	--
02C	12/11/2014	0149792-006	BRIDGE RAILING AND ABUTMENT WALLS BELOW BRIDGE / ABUTMENT WALL BELOW BRIDGE - NE	CONCRETE, BEIGE/GRAY	ND	NO	--
02D	12/11/2014	0149792-007	BRIDGE RAILING AND ABUTMENT WALLS BELOW BRIDGE / BRIDGE RAIL - NW	CONCRETE, BEIGE/GRAY	ND	NO	--
02E	12/11/2014	0149792-008	BRIDGE RAILING AND ABUTMENT WALLS BELOW BRIDGE / BRIDGE RAIL - WEST CENTER	CONCRETE, BEIGE/GRAY	ND	NO	--
03A	12/11/2014	0149792-009	BRIDGE RAILING SEAMS/JOINTS / SE	EXPANSION JOINT FELT, BLACK	ND	YES	--
03B	12/11/2014	0149792-010	BRIDGE RAILING SEAMS/JOINTS / NE	EXPANSION JOINT FELT, BLACK	ND	YES	--
03C	12/11/2014	0149792-011	BRIDGE RAILING SEAMS/JOINTS / NW	EXPANSION JOINT FELT, BLACK	ND	YES	--
04A	12/11/2014	0149792-012	DECK / SE (AT ABUTMENT)	CONCRETE, BEIGE/GRAY	ND	NO	--
04B	12/11/2014	0149792-013	DECK / NE (AT ABUTMENT)	CONCRETE, BEIGE/GRAY	ND	NO	--
04C	12/11/2014	0149792-014	DECK / NW (AT ABUTMENT)	CONCRETE, BEIGE/GRAY	ND	NO	--
04D	12/11/2014	0149792-015	DECK / SW (AT ABUTMENT)	CONCRETE, BEIGE/GRAY	ND	NO	--
04E	12/11/2014	0149792-016	DECK / SW (AT ABUTMENT)	CONCRETE, BEIGE/GRAY	ND	NO	--
05A	12/11/2014	0149792-017	DECK (JOINT SEAL AT DECK LEVEL) / SE	DECK SEALANT, GRAY	ND	NO	--
05B	12/11/2014	0149792-018	DECK (JOINT SEAL AT DECK LEVEL) / NE	DECK SEALANT, GRAY	ND	NO	--
05C	12/11/2014	0149792-019	DECK (JOINT SEAL AT DECK LEVEL) / NW	DECK SEALANT, GRAY	ND	NO	--
06A	12/11/2014	0149792-020	BRIDGE RAILING SEAMS/JOINTS BETWEEN FELT SHEETS / SE	PAPER, BLACK	ND	NO	--
06B	12/11/2014	0149792-021	BRIDGE RAILING SEAMS/JOINTS BETWEEN FELT SHEETS / NE	PAPER, BLACK	ND	NO	--
06C	12/11/2014	0149792-022	BRIDGE RAILING SEAMS/JOINTS BETWEEN FELT SHEETS / NW	PAPER, BLACK	ND	NO	--
07A	12/11/2014	0149792-023	DECK (JOINT SEAL AT DECK LEVEL) / SE	DECK SEALANT, BLACK (PATCH)	ND	NO	--
07B	12/11/2014	0149792-024	DECK (JOINT SEAL AT DECK LEVEL) / NE	DECK SEALANT, BLACK (PATCH)	ND	NO	--
07C	12/11/2014	0149792-025	DECK (JOINT SEAL AT DECK LEVEL) / NW	DECK SEALANT, BLACK (PATCH)	ND	NO	--
08A	12/11/2014	0149792-026	WEEP HOLES ON ABUTMENT WALLS BELOW BRIDGE / SE	DRAIN PIPE (WEEP HOLE), LINING, BLACK	ND	NO	--
08B	12/11/2014	0149792-027	WEEP HOLES ON ABUTMENT WALLS BELOW BRIDGE / SW	DRAIN PIPE (WEEP HOLE), LINING, BLACK	ND	NO	--
08C	12/11/2014	0149792-028	WEEP HOLES ON ABUTMENT WALLS BELOW BRIDGE / NW	DRAIN PIPE (WEEP HOLE), LINING, BLACK	ND	NO	--
09A	12/11/2014	0149792-029	ABUTMENT WALLS BELOW BRIDGE DECK / SOUTH WALL - CENTER	CONCRETE, BEIGE/GRAY (TEXTURED)	ND	NO	--
09B	12/11/2014	0149792-030	ABUTMENT WALLS BELOW BRIDGE DECK / SOUTH WALL - WEST	CONCRETE, BEIGE/GRAY (TEXTURED)	ND	NO	--
09C	12/11/2014	0149792-031	ABUTMENT WALLS BELOW BRIDGE DECK / NORTH WALL - CENTER	CONCRETE, BEIGE/GRAY (TEXTURED)	ND	NO	--
10A	12/11/2014	0149792-032	ABUTMENT JOINTS/SEAMS BELOW THE BRIDGE / SOUTH WALL - CENTER	EXPANSION JOINT FELT, BLACK	ND	YES	--

TABLE 1
ASBESTOS SAMPLE LOG AND ANALYSIS RESULTS
TWO BRIDGES ALONG ROUTE 5
LA-5 13.8 /19.2
LOS ANGELES COUNTY, CALIFORNIA
PN: 0713000492-1; EA #300701
TASK ORDER #17; CONTRACT 07A3321

FIELD SAMPLE ID	SAMPLE DATE	LABORATORY SAMPLE ID	SAMPLE LOCATION / MATERIAL LOCATION	MATERIAL DESCRIPTION	ANALYSIS RESULTS	CONDITION FRIABLE YES/NO	IF ACM, ESTIMATED SQUARE FOOTAGE
10B	12/11/2014	0149792-033	ABUTMENT JOINTS/SEAMS BELOW THE BRIDGE / SOUTH WALL - EAST	EXPANSION JOINT FELT, BLACK	ND	YES	--
10C	12/11/2014	0149792-034	ABUTMENT JOINTS/SEAMS BELOW THE BRIDGE / NORTH WALL - CENTER	EXPANSION JOINT FELT, BLACK	ND	YES	--
11A	12/11/2014	0149792-035	ABUTMENT JOINTS/SEAMS BELOW THE BRIDGE / SOUTH WALL - EAST	SEALANT, BEIGE/GRAY/TAN	ND	NO	--
11B	12/11/2014	0149792-036	ABUTMENT JOINTS/SEAMS BELOW THE BRIDGE / SOUTH WALL - CENTER	SEALANT, BEIGE/GRAY/TAN	ND	NO	--
11C	12/11/2014	0149792-037	ABUTMENT JOINTS/SEAMS BELOW THE BRIDGE / NORTH WALL - WEST	SEALANT, BEIGE/GRAY/TAN	ND	NO	--
12A	12/11/2014	0149792-038	BRIDGE RAILING / WEST RAIL - CENTER	BRIDGE REFLECTIVE MARKER ADHESIVE, WHITE/YELLOW	ND	NO	--

TABLE 1
ASBESTOS SAMPLE LOG AND ANALYSIS RESULTS
TWO BRIDGES ALONG ROUTE 5
LA-5 13.8 /19.2
LOS ANGELES COUNTY, CALIFORNIA
PN: 0713000492-1; EA #300701
TASK ORDER #17; CONTRACT 07A3321

FIELD SAMPLE ID	SAMPLE DATE	LABORATORY SAMPLE ID	SAMPLE LOCATION / MATERIAL LOCATION	MATERIAL DESCRIPTION	ANALYSIS RESULTS	CONDITION FRIABLE YES/NO	IF ACM, ESTIMATED SQUARE FOOTAGE
S5-E10 CONNECTOR UC - BRIDGE #53-1316							
01A	12/11/2014	0149793-001	ABUTMENT JOINTS/SEAMS BELOW THE BRIDGE / SOUTH WALL - SW	EXPANSION JOINT FELT, BLACK/BROWN	ND	NO	--
01B	12/11/2014	0149793-002	ABUTMENT JOINTS/SEAMS BELOW THE BRIDGE / SOUTH WALL - SE	EXPANSION JOINT FELT, BLACK/BROWN	ND	NO	--
01C	12/11/2014	0149793-003	ABUTMENT JOINTS/SEAMS BELOW THE BRIDGE / NORTH WALL - NE	EXPANSION JOINT FELT, BLACK/BROWN	ND	NO	--
02A	12/11/2014	0149793-004	ABUTMENT WALLS BELOW BRIDGE / SOUTH WALL - EAST	CONCRETE, GRAY	ND	NO	--
02B	12/11/2014	0149793-005	ABUTMENT WALLS BELOW BRIDGE / NORTH WALL -NW	CONCRETE, GRAY	ND	NO	--
02C	12/11/2014	0149793-006	ABUTMENT WALLS BELOW BRIDGE / NORTH WALL -NW	CONCRETE, GRAY	ND	NO	--
03A	12/11/2014	0149793-007	BRIDGE RAILING / EAST RAIL - CENTER	BRIDGE REFLECTIVE MARKER ADHESIVE, BEIGE/WHITE	ND	NO	--
04A	12/11/2014	0149793-008	DECK / SE	DECK REFLECTOR ADHESIVE, BLACK	ND	NO	--
05A	12/11/2014	0149793-009	DECK / SE	DECK REFLECTOR ADHESIVE, GRAY	ND	NO	--
06A	12/11/2014	0149793-010	BRIDGE RAILING / SE	CONCRETE, GRAY	ND	NO	--
06B	12/11/2014	0149793-011	BRIDGE RAILING / SW	CONCRETE, GRAY	ND	NO	--
06C	12/11/2014	0149793-012	BRIDGE RAILING / NW	CONCRETE, GRAY	ND	NO	--
07A	12/11/2014	0149793-013	BRIDGE RAILING SEAMS/JOINTS / SE	EXPANSION JOINT FELT, BLACK/BROWN	ND	YES	--
07B	12/11/2014	0149793-014	BRIDGE RAILING SEAMS/JOINTS / NE	EXPANSION JOINT FELT, BLACK/BROWN	ND	YES	--
07C	12/11/2014	0149793-015	BRIDGE RAILING SEAMS/JOINTS / SW	EXPANSION JOINT FELT, BLACK/BROWN	ND	YES	--
08A	12/11/2014	0149793-016	DECK / NE	CONCRETE, GRAY	ND	NO	--
08B	12/11/2014	0149793-017	DECK / SW (AT ABUTMENT)	CONCRETE, GRAY	ND	NO	--
08C	12/11/2014	0149793-018	DECK / NW (AT ABUTMENT)	CONCRETE, GRAY	ND	NO	--
09A	12/11/2014	0149793-019	DECK / SE (AT ABUTMENT)	ASPHALT, BLACK	ND	NO	--
09B	12/11/2014	0149793-020	DECK / NE (AT ABUTMENT)	ASPHALT, BLACK	ND	NO	--
09C	12/11/2014	0149793-021	DECK / NE (AT ABUTMENT)	ASPHALT, BLACK	ND	NO	--
10A	12/11/2014	0149793-022	WEST RAIL / CENTER	BRIDGE REFLECTIVE MARKER ADHESIVE, CREAM	ND	NO	--

NOTES:

ND = No asbestos detected.

Asbestos sample locations are depicted on attached Figures.

Bulk sample analyses completed by polarized light microscopy (PLM).

NA = Not applicable since no asbestos was detected

Analytical documentation is in Appendix C

The laboratory provides a unique description of the sampled material based upon their observations under a microscope or interpretation of the chain of custody.

For an accurate description of the materials sampled, please refer to the field sample logs included in Appendix C.

TABLE 2
 ACM INSPECTION AND SAMPLING SUMMARY
 TWO BRIDGES ALONG ROUTE 5
 LA-5 13.8 /19.2
 LOS ANGELES COUNTY, CALIFORNIA
 PN: 0713000492-1; EA #300701
 TASK ORDER #17; CONTRACT 07A3321

ACM INSPECTION AND SAMPLING SUMMARY - EA#300701											
BRIDGE ID											
Bridge name	Bridge Number	Concrete	Asphalt	Adhesives		Seals		Weep Hole/Drain Piping	Expansion Joint Felt		Paper (Bridge Railing Seams/Joints)
				Deck Reflectors	Bridge Reflective Marker	Deck (Joint Seal at Deck Level)	Abutment Joints/Seams (Below the Bridge)		Bridge Railing Seams/Joints	Abutment Joints/Seams (Below the Bridge)	
Main Street UC	53-1360	13	D	B	4	6	3	3 ^A	3	3 ^A	3
S5-E10 Connector UC	53-1316	9	3	2	2	E	C	B	3	3 ^A	D

NOTES:

Number indicates the number of samples of that material collected.

A - In addition to the sampled materials, other similar materials were observed but could not be sampled due to access constraints.

B - Material was observed, but not sampled due to access constraints.

C - Due to access constraints the existence or absence of this material cannot be verified.

D - Looked for, but not observed to exist.

E - Hard rubber stripping observed; not considered to be suspect ACM.

Access will need to be provided to sample and characterize suspect ACMs indicated with an A, B, or C.

E:\DWG NET\3\23\92

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION



DESIGN OVERSIGHT
GLORIA GWYNNE

CALCULATED/
DESIGNED BY
CHECKED BY

DATE REVISION
DATE REVISION

DATE REVISION
DATE REVISION

PROJECT NOTES

1. INSTALL TYPE III-BF SERVICE EQUIPMENT ENCLOSURE ON NEW FOUNDATION
2. INSTALL CAMERA POLE (TYPE 15) ON EXISTING HIGH STRUCTURE POLE. SEE STRUCTURES SHEETS FOR DETAILS. INSTALL CAMERA ON POLE. SEE SHEET E-75 FOR CAMERA INSTALLATION DETAILS.
3. INSTALL CAMERA POLE (TYPE 30) AND FOUNDATION. SEE STRUCTURES SHEETS FOR DETAILS. INSTALL CAMERA ON POLE. SEE SHEET E-75 FOR CAMERA INSTALLATION DETAILS.
4. INSTALL CAMERA POLE (TYPE 40) AND FOUNDATION. SEE STRUCTURES SHEETS FOR DETAILS. INSTALL CAMERA ON POLE. SEE SHEET E-75 FOR CAMERA INSTALLATION DETAILS.
5. INSTALL CAMERA POLE (TYPE 45) AND FOUNDATION. SEE STRUCTURES SHEETS FOR DETAILS. INSTALL CAMERA ON POLE. SEE SHEET E-75 FOR CAMERA INSTALLATION DETAILS.
6. INSTALL NO. 6(T) PB (MODIFIED) WITH TWISTED PAIR SPUR CLOSURE. SEE DETAIL B, SHEET E-69.
7. INSTALL TYPE 334-TV CABINETS (2) ON NEW FOUNDATION. CABINETS TO INCLUDE CAMERA CONTROL RECEIVER, EQUIPMENT AT DATA NODE AND EQUIPMENT AT VIDEO NODE. SEE DETAIL B, SHEET E-74.
8. INSTALL TYPE 334-TV CABINET ON NEW FOUNDATION. CABINET TO INCLUDE CAMERA CONTROL RECEIVER, VIDEO TRANSMITTER AND VIDEO REPEATER. SEE DETAIL A, SHEET E-74.
9. INSTALL TYPE 334-TV CABINET ON NEW FOUNDATION. CABINET TO INCLUDE CAMERA CONTROL RECEIVER AND VIDEO TRANSMITTER. SEE DETAIL A, SHEET E-73.
10. INSTALL TYPE 334-TV CABINET ON NEW FOUNDATION. CABINET TO INCLUDE CAMERA CONTROL RECEIVER, VIDEO TRANSMITTER AND EQUIPMENT AT DATA NODE. SEE DETAIL C, SHEET E-73.
11. INSTALL TYPE 334-TV CABINET ON NEW FOUNDATION. CABINETS TO INCLUDE CAMERA CONTROL RECEIVER AND EQUIPMENT AT VIDEO NODE. SEE DETAIL B, SHEET E-73.
12. JACK 4" GALVANIZED STEEL CONDUIT BENEATH ROADWAY. SEE DETAIL B, SHEET E-65.
13. INSTALL CONDUIT(S) IN 6" WIDE TRENCH IN DIRT OFF SHOULDER, WITHIN 10' OF EDGE OF SHOULDER. SEE SHEETS E-61 AND E-64 FOR DETAILS.
14. INSTALL CONDUIT(S) IN 6" WIDE TRENCH IN ASPHALT SHOULDER, MAINTAINING 4" MINIMUM DISTANCE FROM EDGE OF TRAVELWAY. SEE SHEETS E-62 AND E-64 FOR DETAILS.
15. JACK TWO 4" GALVANIZED STEEL CONDUITS BENEATH ROADWAY. SEE DETAIL C, SHEET E-65.
16. INSTALL COMMUNICATIONS TERMINAL BLOCK AND TELEPHONE BRIDGE IN EXISTING CONTROLLER CABINET. SEE SHEET E-71 FOR DETAILS.
17. PRUNE PLANTS AFTER CAMERA IS INSTALLED AND OPERATING. ENGINEER TO VERIFY THAT FINAL VIEW IS UNOBSCURED.
18. INSTALL BD-3 PEDESTAL FOR COMMUNICATIONS. SEE SHEET E-72 FOR DETAILS.
19. INSTALL CONDUIT(S) IN 6" WIDE SAWCUT TRENCH IN CONCRETE SIDEWALK, MAINTAINING 4" MINIMUM DISTANCE FROM EDGE OF TRAVELWAY. SEE SHEETS E-63 AND E-64 FOR DETAILS.
23. INSTALL 3" STL CONDUIT. ELECTRIC UTILITY COMPANY TO INSTALL 3 #2 CONDUCTORS.
29. ELECTRIC UTILITY COMPANY TO INSTALL METER.
30. INSTALL 3" CONDUIT TYPE H SERVICE RISER ON POWER POLE.
31. INSTALL 240V/120V STEP DOWN TRANSFORMER IN PULL BOX.
32. JACK 2" GALVANIZED STEEL CONDUIT BENEATH ROADWAY. SEE DETAIL A, SHEET E-65.
33. ADD SERVICE (AND COMMUNICATIONS) CONDUCTORS IN EXISTING CONDUIT.
34. INSTALL 15A, 120V CIRCUIT BREAKER FOR CAMERA AND TYPE 334-TV CABINET.
35. REMOVE EXISTING SERVICE RISER FROM POWER POLE.
36. INSTALL 20A, 120V CIRCUIT BREAKER FOR CONTROLLER CABINET.
37. INSTALL 2 15A, 120V CIRCUIT BREAKERS FOR CAMERAS AND TYPE 334-TV CABINETS.
39. ADD COMMUNICATIONS CABLE(S) TO EXISTING CONDUIT.

39. INSTALL 15A, 240V CIRCUIT BREAKER FOR CAMERA AND TYPE 334-TV CABINET.
40. INSTALL 40A, 120V CIRCUIT BREAKER FOR CONTROLLER CABINET.
41. INSTALL 20A, 120V CIRCUIT BREAKER FOR CONTROLLER CABINET.
42. INSTALL 40A, 240V CIRCUIT BREAKER FOR FREEWAY LIGHTING.
43. INSTALL 40A, 240V CIRCUIT BREAKER FOR FREEWAY SIGN(S).
51. ATTACH RISER CONDUIT TO FACE OF ABUTMENT WALL WITH TWO-HOLE PIPE STRAPS. LOCATE IN LINE WITH CONDUIT LOCATION ON STRUCTURE. SEE DETAIL A, SHEET E-87.
52. ATTACH RISER CONDUIT TO FACE OF COLUMN OR PIER WALL WITH TWO-HOLE PIPE STRAPS. LOCATE RISER IN LINE WITH CONDUIT LOCATION ON STRUCTURE. SEE DETAIL B, SHEET E-88.
53. ATTACH RISER CONDUIT TO FACE OF WING WALL AND/OR ABUTMENT WALL WITH TWO-HOLE PIPE STRAPS. LOCATE IN LINE WITH CONDUIT LOCATION ON STRUCTURE. SEE DETAIL C, SHEET E-88.
54. SAW CUT AND TRENCH IN CONCRETE SIDEWALK. INSTALL CONDUIT(S) IN TRENCH AND REPLACE CONCRETE. SEE DETAIL R, SHEET E-91.
55. SAW CUT AND TRENCH IN CONCRETE SIDEWALK. INSTALL CONDUIT(S) IN TRENCH AND REPLACE CONCRETE. SEE DETAIL J, SHEET E-91.
56. CORE HOLE IN CONCRETE WALL AT LOCATION REQUIRED BY PLACEMENT OF CONDUIT ON STRUCTURE. DIAMETER OF CORED HOLE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT PLUS 1/2 INCH. SEE DETAIL D, SHEET E-89.
57. INSTALL CONDUIT(S) IN NEW CONCRETE PAVEMENT AT FACE OF TYPE 9 RAIL ON WING WALL. TRANSITION CONDUIT(S) FROM NEW CONCRETE SECTION TO TRENCH IN BACKFILL NEAR END OF WING WALL. SEE RAIL MODIFICATIONS SAN FERNANDO ROAD OVERHEAD BARRIER DETAILS.
58. SAW CUT AND TRENCH IN CONCRETE SIDEWALK. INSTALL CONDUIT(S) IN TRENCH AND REPLACE CONCRETE. SEE DETAIL E, SHEET E-90.
59. SAW CUT AND TRENCH IN CONCRETE SIDEWALK. INSTALL CONDUIT(S) IN TRENCH AND REPLACE CONCRETE. SEE DETAIL P, SHEET E-90.
60. SAW CUT AND TRENCH IN CONCRETE SIDEWALK. INSTALL CONDUIT(S) IN TRENCH AND REPLACE CONCRETE. SEE DETAIL L, SHEET E-90.
61. ATTACH CONDUIT WITH PIPE HANGER STRAPS TO BOTTOM SOFFIT OF BRIDGE DECK SLAB IN INTERIOR BAY. LOCATE CONDUIT TO CLEAR BRACING. SEE DETAIL I, SHEET E-92.
66. ATTACH CONDUIT TO OUTSIDE OF BRIDGE RAIL. INSTALL COVER OVER CONDUIT. SEE DETAIL O, SHEET E-93.
68. DRILL AND BOND REINFORCING STEEL IN HORIZONTAL SURFACE BEHIND TYPE 27 RAIL. PLACE CONDUIT(S) ON HORIZONTAL OR VERTICAL POSITION TO CLEAR EXISTING FACILITIES. ENCASE CONDUITS IN CONCRETE. SEE DETAIL N, SHEET E-92.
70. SAW CUT AND TRENCH IN CONCRETE SIDEWALK. INSTALL CONDUIT(S) IN TRENCH AND REPLACE CONCRETE. SEE DETAIL F, SHEET E-90.
71. SAW CUT AND TRENCH IN CONCRETE SIDEWALK. INSTALL CONDUIT(S) IN UTILITY VOID AND REPLACE CONCRETE. SEE DETAIL G, SHEET E-90.
72. ATTACH CONDUIT WITH ONE-HOLE PIPE STRAPS TO OUTSIDE OF RAIL POST. LOCATE CONDUIT AT SAME ELEVATION AS BOTTOM CHANNEL OF RAIL. SEE DETAIL H, SHEET E-90.
73. CONSTRUCT TYPE 25M-9 BARRIER AT FACE OF EXISTING TYPE 9 BARRIER RAIL. INSTALL CONDUIT IN NEWLY CONSTRUCTED RAIL. SEE MODIFICATIONS SAN FERNANDO ROAD OVERHEAD BARRIER DETAILS.
74. SAW CUT AND TRENCH IN CONCRETE SIDEWALK. INSTALL CONDUIT(S) IN TRENCH AND REPLACE CONCRETE. SEE DETAIL M, SHEET E-91.
75. SAW CUT AND TRENCH IN CONCRETE SIDEWALK. INSTALL CONDUIT(S) IN TRENCH AND REPLACE CONCRETE. SEE DETAIL K, SHEET E-89.
76. SAW CUT AND TRENCH IN CONCRETE SIDEWALK. INSTALL CONDUIT(S) IN TRENCH AND REPLACE CONCRETE. SEE DETAIL S, SHEET E-89.
79. CONNECT NEWLY INSTALLED CONDUIT TO EXISTING CONDUIT.

GENERAL NOTES

1. THE LOCATIONS OF UNDERGROUND FACILITIES SHOWN ON PLAN WERE OBTAINED FROM OWNER'S RECORDS AND/OR OWNER'S PLANS.
2. THE LOCATION OF UNDERGROUND FACILITIES SHOWN ON PLAN ARE APPROXIMATE.
3. BLANK
4. THE LOCATIONS OF EXISTING CONTROLLER CABINETS, EXISTING SERVICE ENCLOSURES, POWER POLES AND EXISTING DEMARCATION BOXES ARE APPROXIMATE.
5. THE LOCATIONS OF PROPOSED CCTV POLES AND TOWERS SHALL BE VERIFIED IN THE FIELD BY THE ENGINEER PRIOR TO PLACEMENT OF FOUNDATIONS.
6. THE LOCATIONS OF PROPOSED CABINETS, PULL BOXES, SPICE VAULTS AND DEMARCATION BOXES ARE APPROXIMATE AND MAY BE CHANGED TO SUIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
7. TYPE 334-TV CABINET DOOR SWING SHOWN ON NEW CABINETS INDICATES FRONT DOOR.
8. EXISTING DETECTOR LOOPS AND CONDUITS ARE SHOWN IN THE VICINITY OF PROPOSED CONDUIT TRENCHES. CONTRACTOR SHALL EXERCISE CARE TO AVOID DAMAGE TO EXISTING CONDUITS. TRENCHING WITH HAND TOOLS MAY BE REQUIRED.
9. BEFORE REMOVING OR MODIFYING ANY EXISTING ELECTRICAL FACILITIES, THE CONTRACTOR SHALL PROVIDE 72 HOUR ADVANCED WRITTEN NOTICE TO ALL AGENCIES CONCERNED.
10. FOR SUPPLEMENTAL LEGEND, SEE STANDARD PLANS ES-1A AND ES-1B.
11. UNLESS OTHERWISE NOTED, ALL CONDUIT BENDS SHALL BE 4 FOOT RADIUS FACTORY BENDS.
12. ALL CONDUITS IN CONDUCTOR SCHEDULE TABLES ARE EXISTING UNLESS MARKED (N) INDICATING PROPOSED NEW CONDUIT. ALL CONDUCTORS IN PROPOSED NEW CONDUITS ARE NEW. ALL CONDUCTORS IN EXISTING CONDUITS ARE EXISTING UNLESS MARKED (N).
13. PVC, WHERE CALLED OUT IN THESE PLANS, SHALL MEAN RIGID NON-METALLIC CONDUIT AS DEFINED IN THE STANDARD SPECIFICATIONS.
14. ALL NO. 5 AND NO. 6 PULLBOXES ARE THE TRAFFIC TYPE WHETHER OR NOT THE PULLBOX IS IDENTIFIED WITH A (T) MODIFIER.

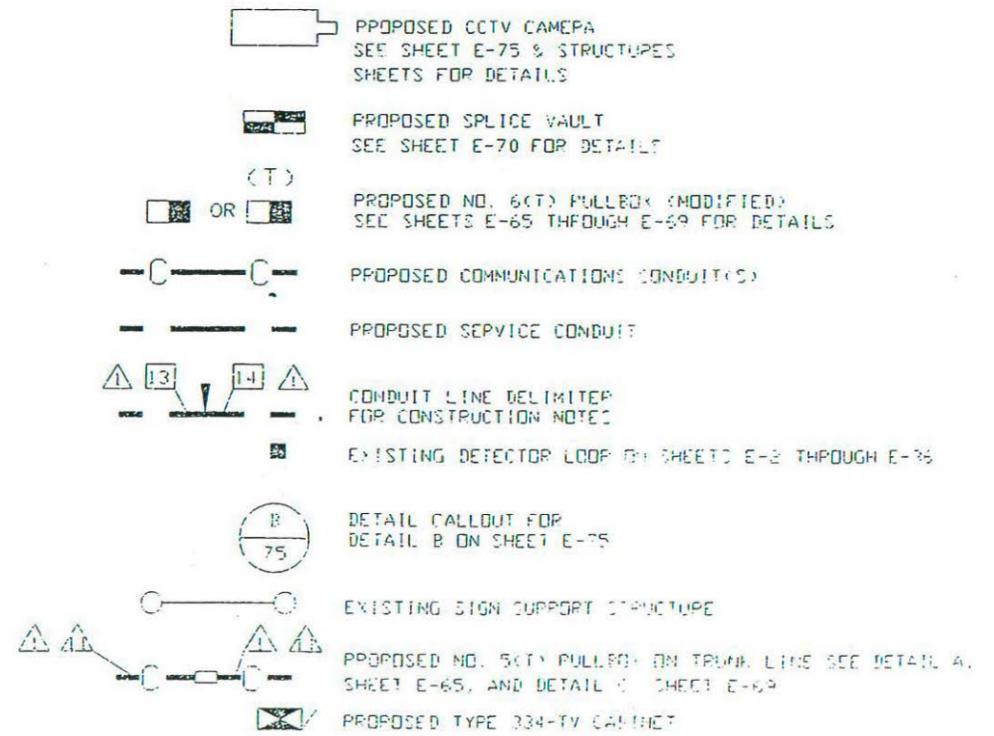
DIST.	COUNTY	ROUTE	POST MILES	TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5,10	16.9/46.2, S.O.I.	23	153	

Joseph A. Mannaa 3/23/92
REGISTERED ELECTRICAL ENGINEER (State)

8-31-92
PLANS APPROVAL EX-32

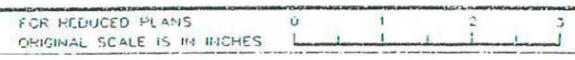
NATIONAL ENGINEERING TECHNOLOGY
18700 VALLEY VIEW AVE., SUITE 200
LA MIRADA, CA 90678
IN ASSOCIATION WITH
EBASCO SERVICES INCORPORATED
KATZ, HITSU & ASSOCIATES
WACHS ENGINEERING & SURVEY, INC
CONTROL DESIGN SYSTEMS

LEGEND



AS BUILT
Contract No. 07-116634
Resident Engineer: Hassan Mannaa
Completion Date: June 13, 1997

LEGEND AND NOTES

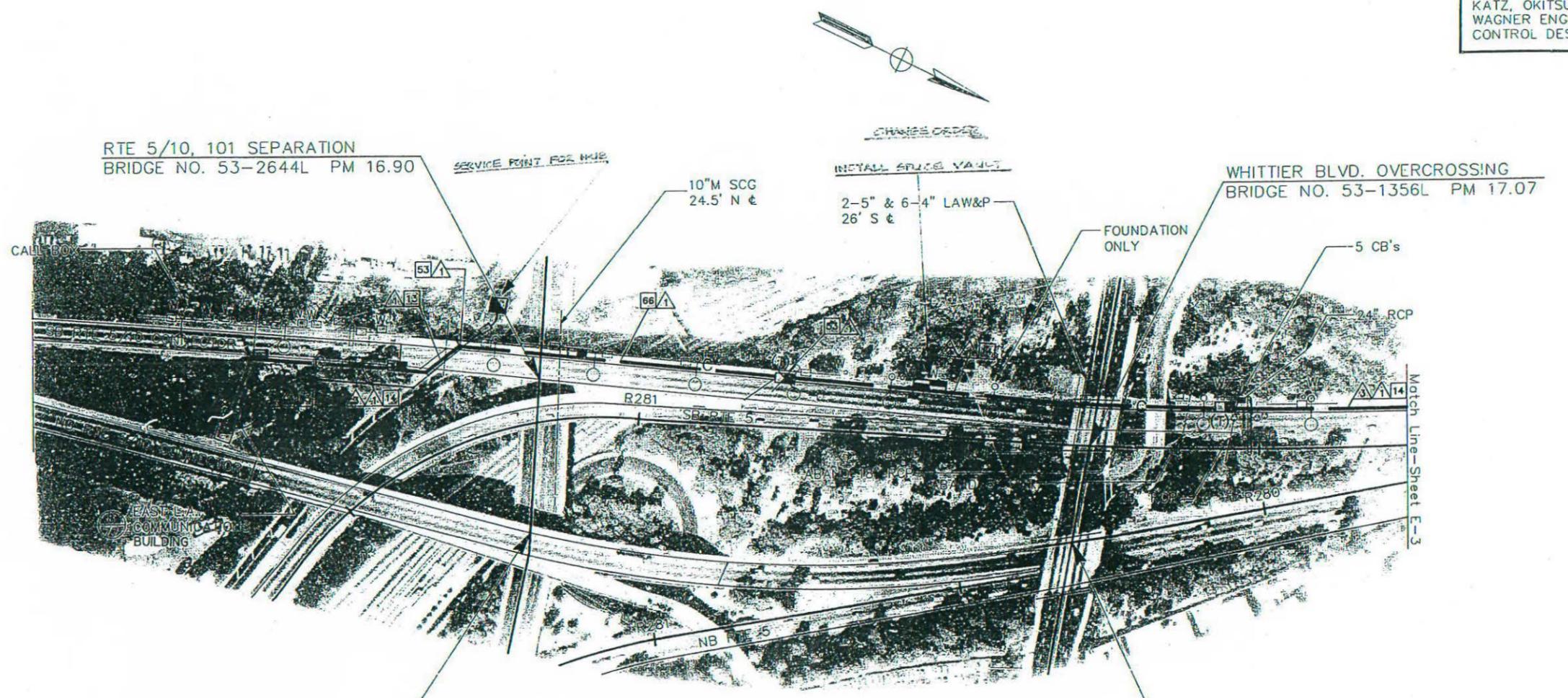


DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5,10	16.9/46.2,50.1	24	153

Joseph A. Kwak
 REGISTERED ELECTRICAL ENGINEER
 8-31-92
 PLANS APPROVAL DATE

NATIONAL ENGINEERING TECHNOLOGY
 16700 VALLEY VIEW AVE., SUITE 260
 LA MIRADA, CA 90638
 IN ASSOCIATION WITH:
 EBASCO SERVICES INCORPORATED
 KATZ, OKITSU & ASSOCIATES
 WAGNER ENGINEERING & SURVEY, INC.
 CONTROL DESIGN SYSTEMS

1:663E02.DWG HLN 05/15/92
 STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 DESIGN OVERSIGHT
 GLORIA GWYNNE
 REVISIONS:
 DATE 3/23
 REVISOR JK
 DATE REVISED 5/12
 CHECKED BY JK



CONDUCTOR SCHEDULE		
CONDUCTOR TYPE	FUNCTION	RUN
50P22 CABLE	PHONE LINES	1
48SMFO CABLE	MUX VID/DATA	1
8MMFO CABLE	SHORT HAUL VIDEO	1
	CONDUIT SIZE	4" (N) 4" (N)

AS BUILT
 Contract No. 07- **116634**
 Resident Engineer: *Hassan Mannaa*
 Completion Date *June 13, 1997*

APPROX. SCALE: 1"=100'
 REFERENCE GRADUATIONS ARE AT APPROX. 500' INTERVALS
 REFERENCE CALIBRATIONS INDICATE APPROXIMATE
 RELATIVE DISTANCE IN THOUSANDS OF FEET.

**CCTV AND COMMUNICATIONS SYSTEM
 (LAYOUT) E-2**

FOR LEGEND AND PROJECT NOTES SEE SHEET E-1

NOTE: FOR COMPLETE R/W AND ACCURATE ACCESS DATA, SEE R/W RECORD MAPS AT THE DISTRICT OFFICE.

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL AND CONFLICTING UTILITIES ONLY



Joseph A. Kwak
 PROFESSIONAL ENGINEER
 No. 10591
 Exp. 6/30/05
 8-31-92
 PLANS APPROVAL DATE

NATIONAL ENGINEERING TECHNOLOGY
 16700 VALLEY VIEW AVE., SUITE 260
 LA MIRADA, CA 90638
 IN ASSOCIATION WITH:
 EBASCO SERVICES INCORPORATED
 KATZ, ORTIS & ASSOCIATES
 WAGNER ENGINEERING & SURVEY, INC.
 CONTROL DESIGN SYSTEMS

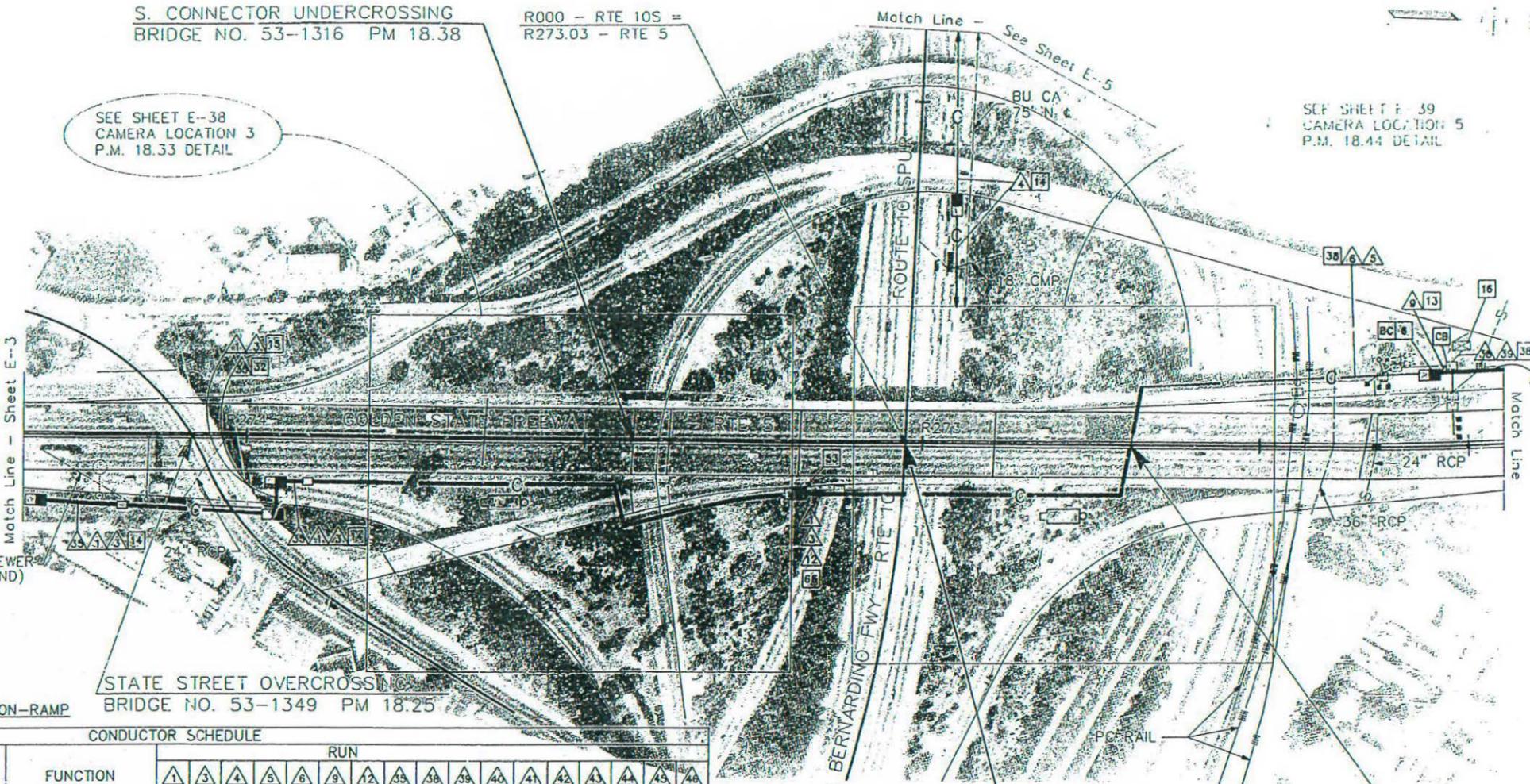
AS BUILT 116634
 Contract No. 07-
 Resident Engineer: *Hassan Mannaa*
 Completion Date: June 13, 1997

S. CONNECTOR UNDERCROSSING
 BRIDGE NO. 53-1316 PM 18.38

R000 - RTE 10S =
 R273.03 - RTE 5

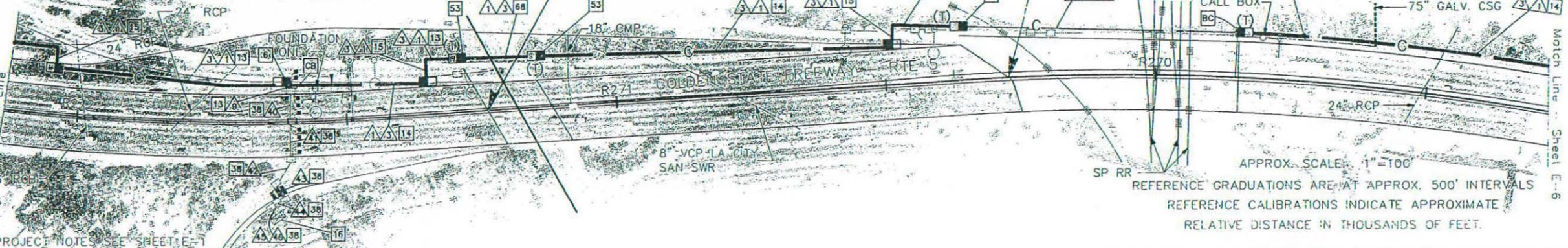
SEE SHEET E-38
 CAMERA LOCATION 3
 P.M. 18.33 DETAIL

SEE SHEET E-39
 CAMERA LOCATION 5
 P.M. 18.44 DETAIL



CONDUCTOR SCHEDULE

CONDUCTOR TYPE	FUNCTION	RUN															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
50P22 CABLE	PHONE LINES	1				1(N)											
6P19 CABLE	PHONE LINES			1													
12P22 CABLE	PHONE LINES						1										
48SMFO CABLE	MUX VID/DATA	1				1(N)											
8MMFO CABLE	SHORT HAUL VIDEO	1				1(N)											
2MMFO B/O CABLE	SHORT HAUL VIDEO			1													
#4	POWER										2						
#2	POWER									2	2						
#8	GROUND									1	1						
#14 EXIST.	METER ON																6
#12 EXIST.	DLC																
#10 EXIST.	COMMON																
#6 EXIST.	SERVICE RMS																
#18 EXIST.	SHIELDED TEL. CABLE																
	CONDUIT SIZE	4" (N)	4" (N)	3" (N)	4"	4"	2" (N)	2" (N)	2" (N)	3"	3"	2"	2"	2"	2"	3"	3"



CCTV AND COMMUNICATIONS SYSTEM (LAYOUT)

DATE REVISED BY JK 5/2/92
 CHECKED BY JK 3/23 DATE REVISED 5/2/92

DESIGN OVERSIGHT GLORIA GWYNNE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 116634-01.DWG HLN 05/15/92

NOTE: FOR COMPLETE R/W AND ACCURATE ACCESS DATA, SEE R/W RECORD MAPS AT THE DISTRICT OFFICE.

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL AND CONFLICTING UTILITIES ONLY

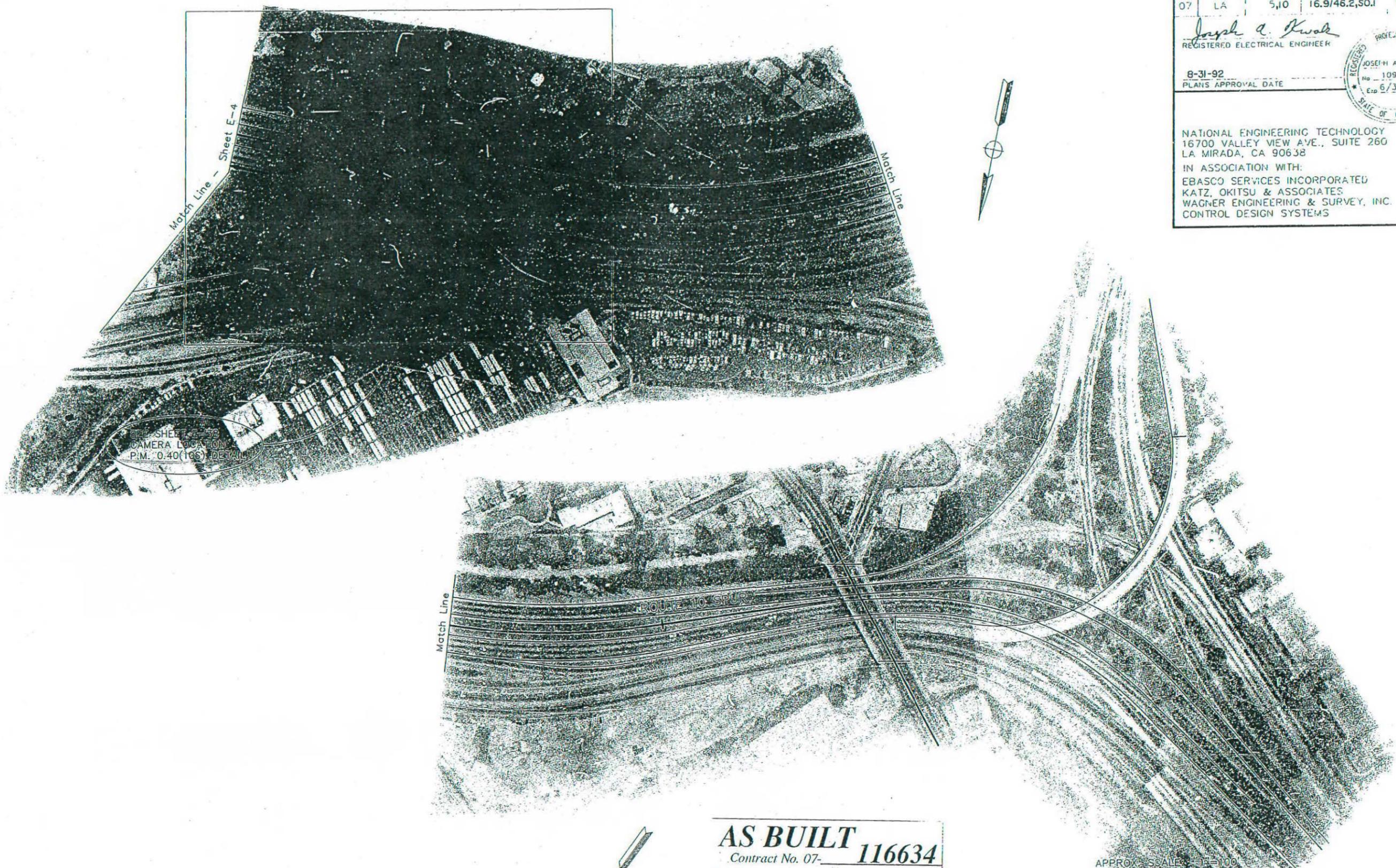
FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES

1:663505.DWG PH 03/17/92
 STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

DESIGN OVERSIGHT
 GLORIA GWYNNE

CALCULATED/DESIGNED BY
 CHECKED BY JK

DATE REVISED BY
 3/23 JK DATE REVISED



DIST	COUNTY	ROUTE	POST MILE TOTAL PROJECT	SHEET TOTAL
07	LA	5,10	16.9/46.2,SO.1	27 153

Joseph A. Kwak
 REGISTERED ELECTRICAL ENGINEER

8-31-92
 PLANS APPROVAL DATE

PROFESSIONAL ENGINEER
 JOSEPH A. KWAK
 No. 10991
 Exp. 6/30/95
 STATE OF CALIFORNIA

NATIONAL ENGINEERING TECHNOLOGY
 16700 VALLEY VIEW AVE., SUITE 260
 LA MIRADA, CA 90638

IN ASSOCIATION WITH:
 EBASCO SERVICES INCORPORATED
 KATZ, OKITSU & ASSOCIATES
 WAGNER ENGINEERING & SURVEY, INC.
 CONTROL DESIGN SYSTEMS

FOR LEGEND AND PROJECT NOTES SEE SHEET E-1

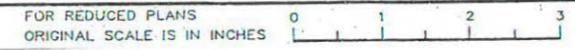
NOTE: FOR COMPLETE R/W AND ACCURATE ACCESS DATA, SEE R/W RECORD MAPS AT THE DISTRICT OFFICE.

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL AND CONFLICTING UTILITIES ONLY

AS BUILT
 Contract No. 07-116634
 Resident Engineer: *Hassan Mannaa*
 Completion Date: June 13, 1997

APPROX. SCALE = 1"=100'
 REFERENCE GRADUATIONS ARE AT APPROX. 500' INTERVALS
 REFERENCE CALIBRATIONS INDICATE APPROXIMATE RELATIVE DISTANCE IN THOUSANDS OF FEET.

CCTV AND COMMUNICATIONS SYSTEM (LAYOUT) E-5



Joseph A. Kwok

8-31-92

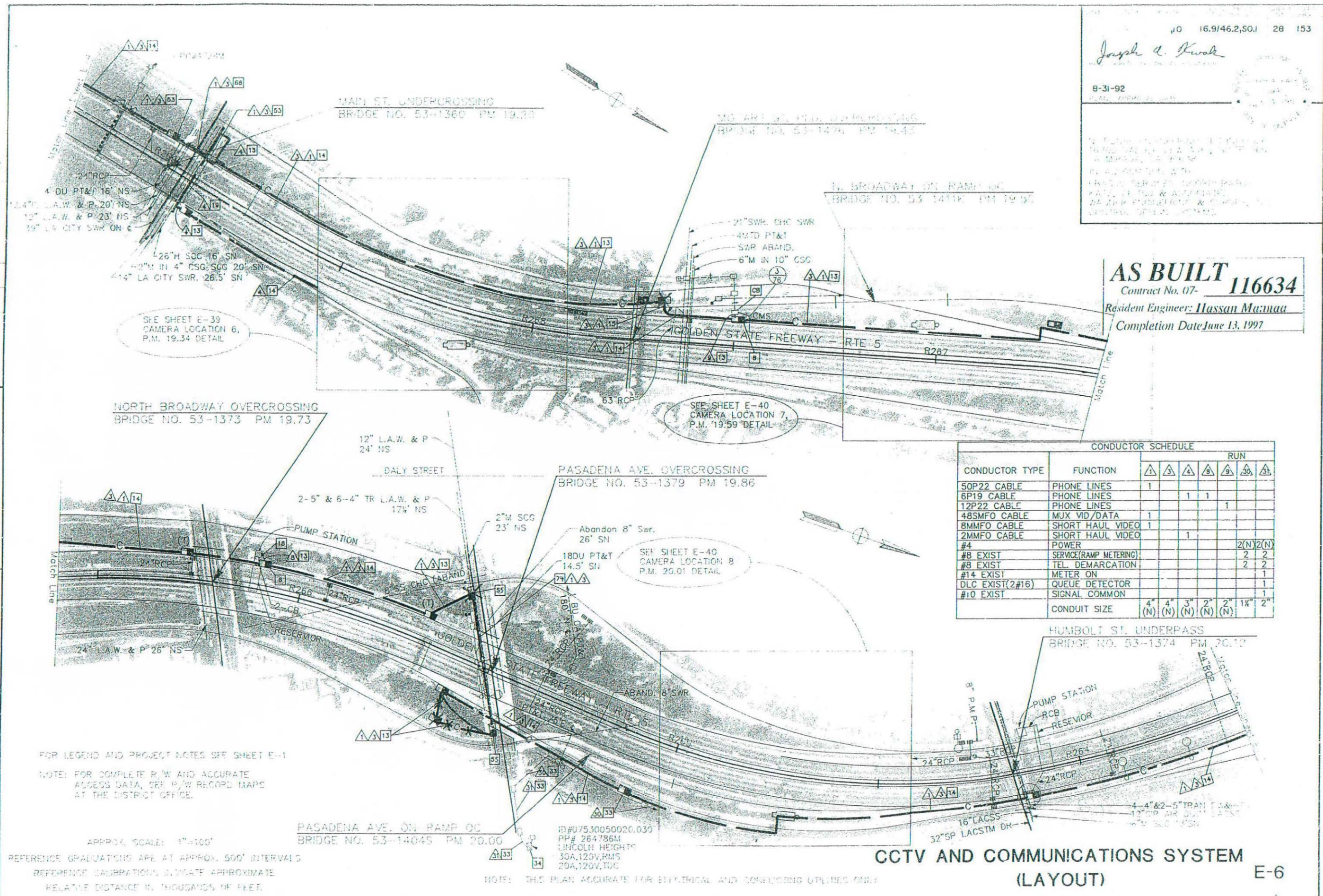
AS BUILT
Contract No. 07-116634

Resident Engineer: Hassan Maanaa
Completion Date June 13, 1997

DATE REVISION BY
3/23/92 JK
CHECKED BY JK
DESIGNED BY JK
CALCULATED BY JK

DESIGN OVERSIGHT
GLORIA GWYNNE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans



CONDUCTOR TYPE	FUNCTION	CONDUCTOR SCHEDULE						
		1	3	4	8	9	10	11
50P22 CABLE	PHONE LINES	1						
6P19 CABLE	PHONE LINES		1	1				
12P22 CABLE	PHONE LINES					1		
48SMFO CABLE	MUX VID/DATA	1						
8MMFO CABLE	SHORT HAUL VIDEO	1						
2MMFO CABLE	SHORT HAUL VIDEO		1					
#4	POWER						2(N)2(N)	
#8 EXIST	SERVICE (RAMP METERING)						2	2
#8 EXIST	TEL. DEMARCATION						2	2
#14 EXIST	METER ON							1
DLC EXIST(2#16)	QUEUE DETECTOR							1
#10 EXIST	SIGNAL COMMON						1	1
	CONDUIT SIZE	4" (N)	4" (N)	3" (N)	2" (N)	2" (N)	1 1/2"	2"

FOR LEGEND AND PROJECT NOTES SEE SHEET E-1
NOTE: FOR COMPLETE R/W AND ACCURATE ACCESS DATA, SEE R/W RECORD MAPS AT THE DISTRICT OFFICE.

APPROX. SCALE: 1"=100'

REFERENCE GRADUATIONS ARE AT APPROX. 500' INTERVALS
REFERENCE GRADUATIONS INDICATE APPROXIMATE RELATIVE DISTANCE IN THOUSANDS OF FEET.

ID# 07530050020.030
PP# 264786M
LINCOLN HEIGHTS
30A, 120V, RMS
20A, 120V, TDC

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL AND CONDUITING UTILITIES ONLY

CCTV AND COMMUNICATIONS SYSTEM (LAYOUT) E-6

CALIFORNIA DEPARTMENT OF TRANSPORTATION
 TRAFFIC DESIGN
 DESIGN OVERSIGHT
 GREGORY B DAMICO
 DATE 4/92
 REVISED BY
 CHECKED BY
 CALCULATED/DESIGNED BY
 CBF 10
 DATE REVISED
 10/92

GENERAL NOTES:

1. CCTV LOCATION PLANS ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY THE SCOPE AND GENERAL ARRANGEMENT OF EQUIPMENT AND CONDUIT. THE LOCATION OF ITEMS NOT DIMENSIONED ARE APPROXIMATIONS ONLY. THE OPTIMUM LOCATIONS SHALL BE DETERMINED AT THE PROJECT SITE AND SHALL HAVE THE APPROVAL OF THE ENGINEER BEFORE BEING INSTALLED.
2. CONDUITS BEING PLACED TO EXISTING RAMP METER CONTROLLERS, CMS CONTROLLERS, AND TELEPHONE COMPANY/CALTRANS DEMARCATION BOXES TERMINATE IN EXISTING ADJACENT PULL BOX. IF NONE EXIST, PLACE CALTRANS PULL BOX 5 OR 5(T), AS LOCATION WARRANTS AND AS DIRECTED BY THE ENGINEER.
3. ALL 2" AND 4" POLYVINYL CHLORIDE CONDUIT SHALL BE CONSIDERED RIGID NON-METALLIC CONDUIT.

CONDUIT AND CONDUCTOR SCHEDULE

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
CAMERA VIDEO INTERFACE CABLE																				1
PAN/TILT CONTROL CABLE																				
LENS CONTROL CABLE																				
CAMERA POWER CABLE																				1
CAMERA GROUND CABLE																				
SINGLE MODE FIBERS		2	2	72	72	72	12	6	12											
MULTI MODE FIBERS							6	18	6	6	2							2	6	2
COPPER TRUNK CABLE TWISTED PAIR							25	100		50	50									
2 PAIR COMMUNICATION DISTRIBUTION CABLE																				
INNER DUCT				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
CONDUIT DIAMETER (INCHES)	(MT) 4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

LEGEND (SHEETS E-1 THROUGH E-74)

- NX NO CROSSCONNECT
- ZW 2-WIRE CIRCUIT
- 4W 4-WIRE CIRCUIT (4WTO)
- FXS FOREIGN EXCHANGE SUBSCRIBER
- FXO FOREIGN EXCHANGE OFFICE
- CCTV CAMERA LOCATION (100 SCALE)
- CCTV CAMERA AND POLE
- SPLICE BOX SEE E-48 AND E-49
- 2 1/2' x 4' x 3' PULL BOX SEE E-48 AND E-49
- EXISTING CONTROLLER CABINET WITH CIRCUIT IDENTIFICATION (FOR INFORMATION ONLY)
- CCTV 334 CABINET
- COMMUNICATION CONDUIT
- POWER SERVICE CONDUIT
- EXISTING TELEPHONE DEMARCATION CABINET WITH CIRCUIT IDENTIFICATION (FOR INFORMATION ONLY)
- EXISTING 4-INPUT 4-WIRE AUDIO BRIDGE (TELLABS 4445) LOCATED IN CONTROLLER CABINET (XXX INDICATES CABINET NUMBER)
- TELEPHONE BRIDGE DUAL 5-WAY ACTIVE BRIDGE (X INDICATES SHELF NUMBER)
- SURGE PROTECTOR
- EQUIPMENT GROUND
- CIRCUIT BREAKER
- DUPLEX RECEPTACLE
- EXISTING DETECTOR LOOPS
- VIDEO SWITCH KEYPAD
- CAMERA CONTROL KEYPAD
- MONITOR RACK
- EQUIPMENT RACK
- OPTICAL TO ELECTRICAL
- ELECTRICAL TO OPTICAL
- MULTIMODE FIBER
- CCTV IDENTIFICATION NUMBER: PLACE ON STRUCTURE WITH RAISED OR RECESSED FIGURES OR ON POLE ABOVE 10', IN 3" CHARACTERS
 - SA 069 (SANTA ANA, PM)
 - SA SB0 (SANTA ANA, SPUR, PM)
 - HO 012 (HOLLYWOOD, PM)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5,101	6.8/16.9, 0.0/1.8	31	133

REGISTERED CIVIL ENGINEER
 3-15-93
 PLANS APPROVAL DATE
 DeLouw, Cather and Company
 100 W. Walnut Street
 Pasadena, CA 91124

AS BUILT 118604
 Contract No. 07-
 Resident Engineer: *[Signature]*
 Completion Date: September 17, 1997

**CCTV COMMUNICATION SYSTEM
 CONDUIT AND CONDUCTOR
 SCHEDULE AND LEGEND**

NO SCALE **E-1**

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES

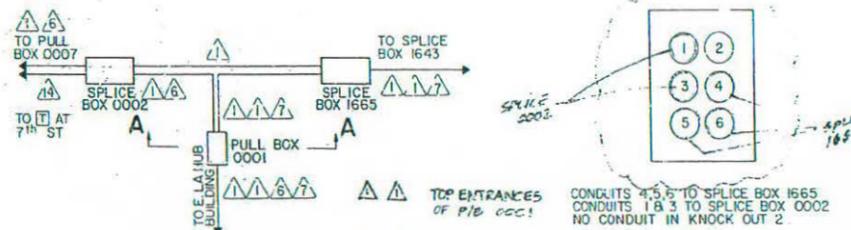
CU 07387 EA 118601



FOR EXISTING UTILITIES
SEE SHEET U 5

- PROJECT NOTES:
- 1 INSTALL CONDUIT IN SLOPED EMBANKMENT.
 - 2 INSTALL CONDUIT IN SLOPED EMBANKMENT.
 - 3 JACK CONDUIT UNDER FREEWAY

NOTE: FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.



DETAIL "A"
CONDUIT ROUTING
FOR BOXES 0001, 0002, & 1665
AT E.L.A. HUB LOCATION

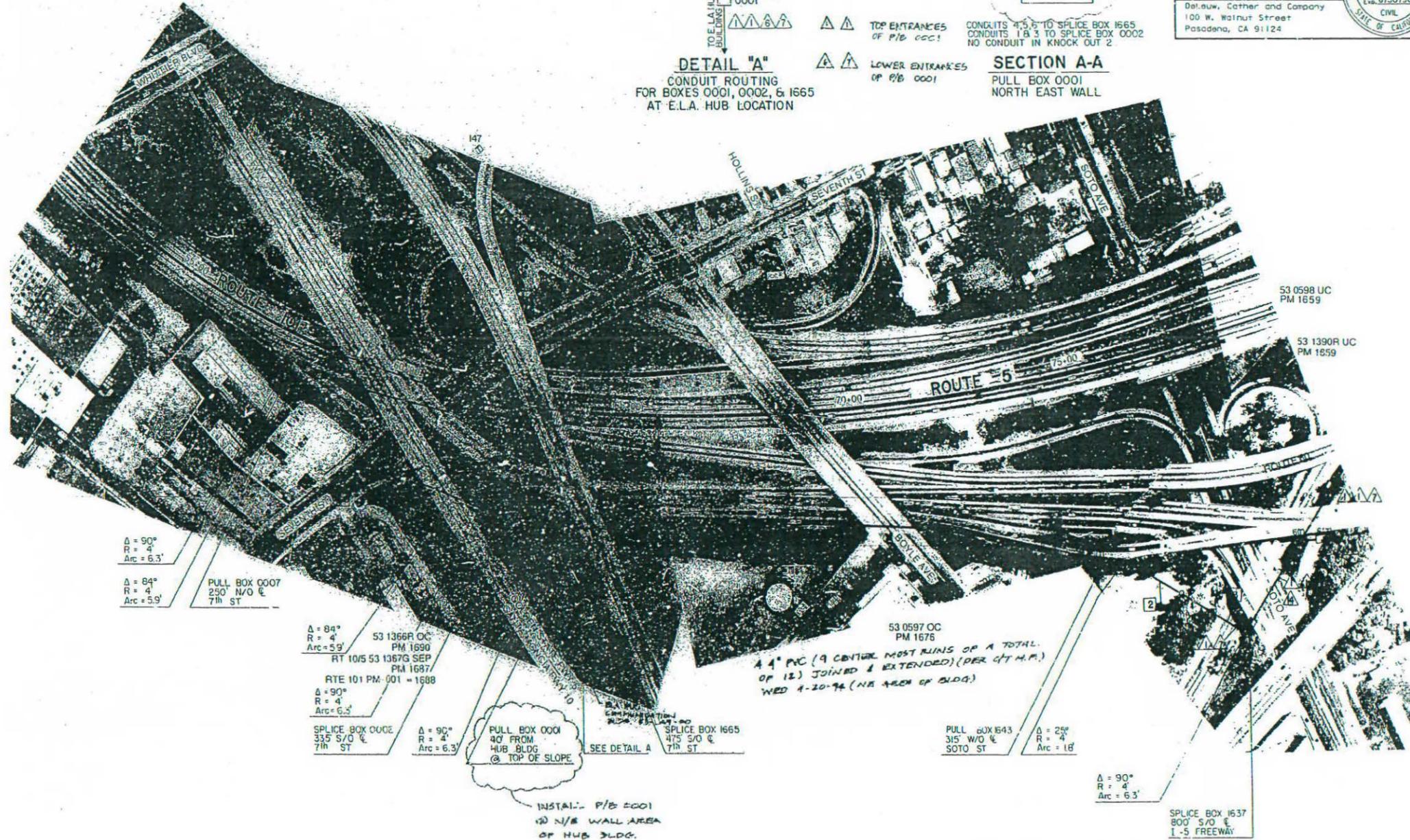
SECTION A-A
PULL BOX 0001
NORTH EAST WALL

DIST	COUNTY	ROUTE	POS. TOTAL PROJECT	MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5,191	6.8/16.9	0.0/1.8	36	133

REGISTERED CIVIL ENGINEER
T.M. WILSON
No. 43580
Exp. 6/30/96
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE: 12-25-93
DeLew, Cather and Company
100 W. Walnut Street
Pasadena, CA 91124

DESIGN OVERSIGHT: GLORIA GWYNNE
 CALCULATED/DESIGNED BY: E.C.
 CHECKED BY: E.C.
 DATE: _____
 REVISIONS: _____
 DATE REVISED: _____



4" PVC (9 CENTER MOST RUNS OF A TOTAL OF 12) JOINED & EXTENDED (PER QTY M.P.)
WED 4-20-94 (NE AREA OF BLDG.)

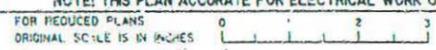
AS BUILT 118604
Contract No. 07-**118604**
Resident Engineer: **Luke Nguyen**
Completion Date: **September 17, 1997**

COMMUNICATION ROUTING PLAN

SCALE 1"=100'

E-6

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY



CU 07387 EA 118601

DESIGN OVERSIGHT: GLORIA GYNNIE
 CALCULATED/DESIGNED BY: []
 CHECKED BY: []
 DATE: []
 REVISIONS: []
 DATE REVISED: []

FOR EXISTING UTILITIES
SEE SHEET U 7

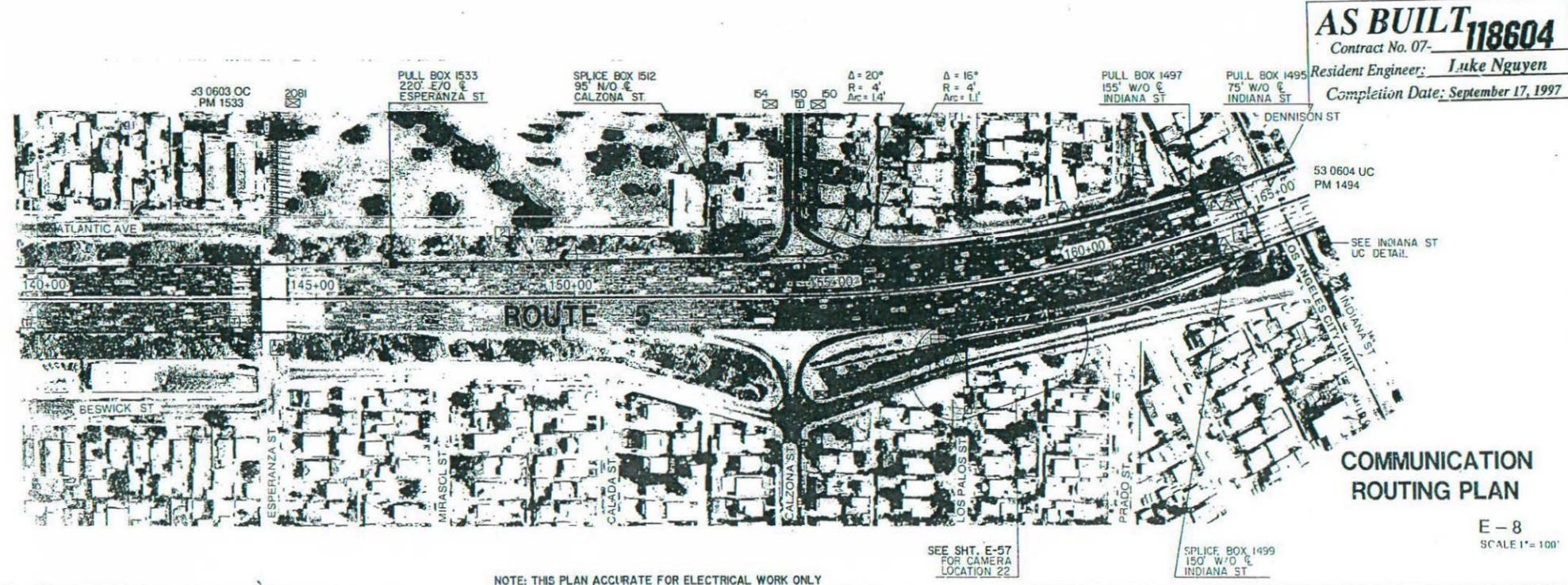
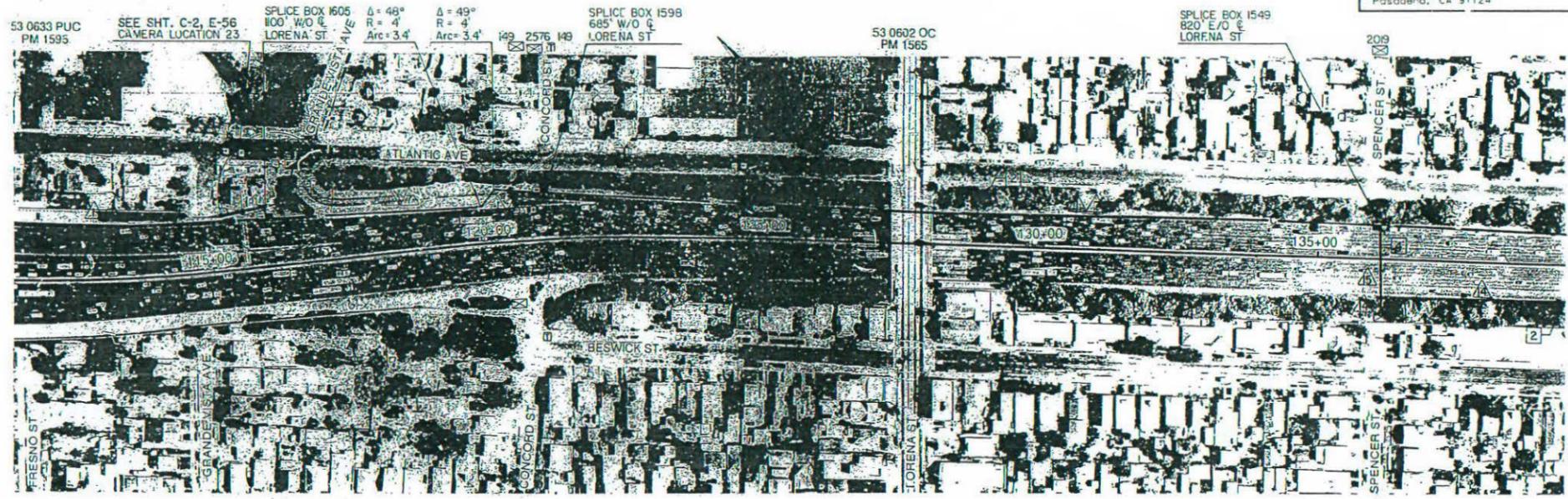
NOTE: FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

- PROJECT NOTES:
1. INSTALL CONDUIT IN NON PAVED AREA
 2. INSTALL CONDUIT OUTSIDE CURB IN NON PAVED AREA
 3. INSTALL CONDUIT IN SLOPED EMBANKMENT UNDER INDIANA ST. UC STRUCTURE.
 4. JACK CONDUIT UNDER FREEWAY.
 5. SEE DRAWINGS FOR CAMERA LOCATIONS 22 & 23 FOR POWER WIRING TO BE PROVIDED IN []

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5, 101	6.81159, 0.011.8	38	133

REGISTERED CIVIL ENGINEER
 3-15-93
 PLANS APPROVAL DATE
 DeLew, Cather and Company
 100 W. Walnut Street
 Pasadena, CA 91124

T.M. WILSON
 No. 43580
 Exp. 6/30/95
 CIVIL
 STATE OF CALIFORNIA



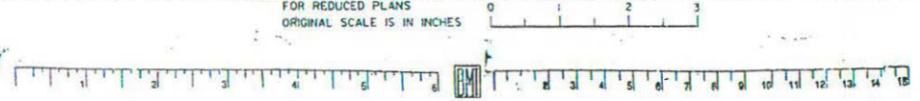
AS BUILT 118604
 Contract No. 07-118604
 Resident Engineer: Luke Nguyen
 Completion Date: September 17, 1997

COMMUNICATION ROUTING PLAN

E-8
SCALE 1" = 100'

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY

FOR REDUCED PLANS
ORIGINAL SCALE IS IN INCHES



CU 07387 EA 118601

FOR EXISTING UTILITIES
SEE SHEET U 9

NOTE: FOR COMPLETE RIGHT OF WAY AND
ACCURATE ACCESS DATA, SEE RIGHT
OF WAY RECORD MAPS AT DISTRICT OFFICE.

- PROJECT NOTES: 1. INSTALL CONDUIT IN PAVEMENT
2. ADD ONE (1) COMMUNICATION DISTRIBUTION CABLE
IN EXISTING CONDUIT.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5,101	6,816.9, 0,011.6	40	133

Tom Wilson 4/17/93
REGISTERED CIVIL ENGINEER

3-15-93
PLANS APPROVAL DATE

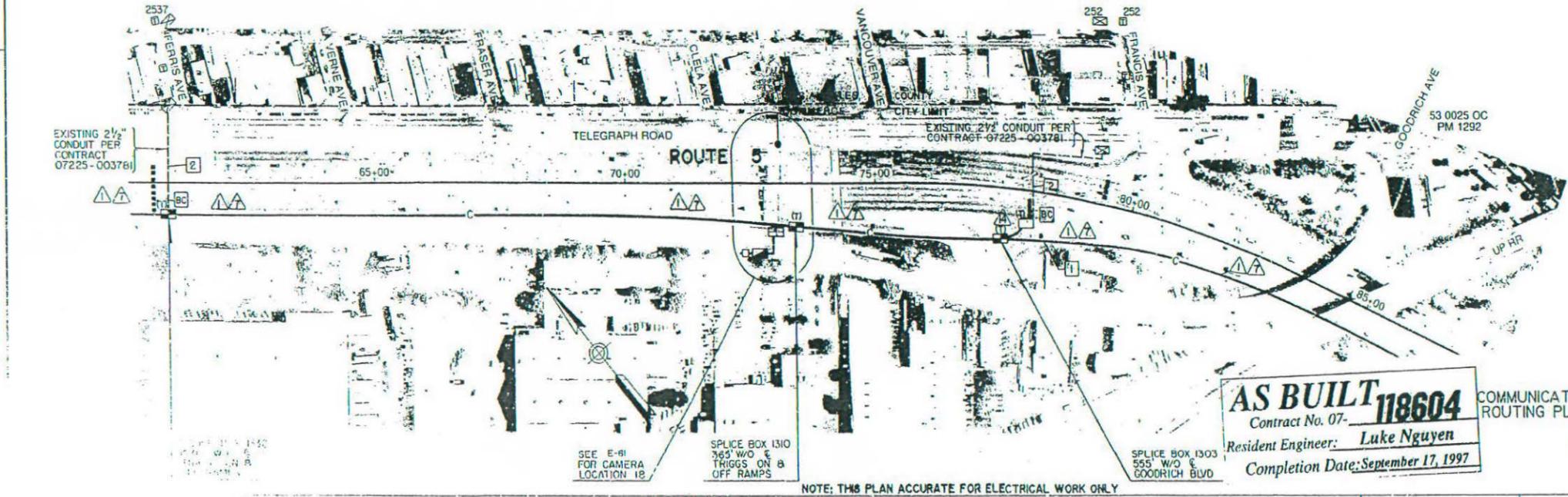
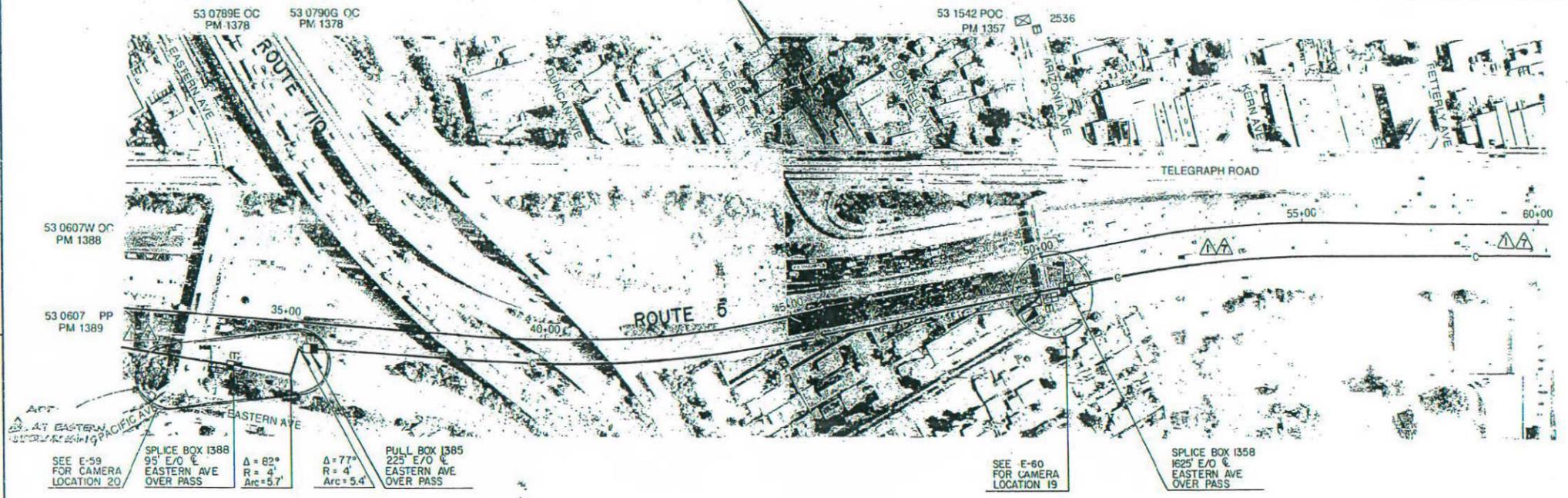
DeLew, Cather and Company
100 W. Walnut Street
Pasadena, CA 91124

DESIGN OVERSIGHT
GLORIA GWYNNE

CALCULATED/
DESIGNED BY
CHECKED BY

D.R. DATE
REVISED BY
DATE REVISED

DEPARTMENT OF TRANSPORTATION
TRAFFIC DESIGN



AS BUILT 118604
Contract No. 07-118604
Resident Engineer: **Luke Nguyen**
Completion Date: **September 17, 1997**

COMMUNICATION
ROUTING PLAN

E-10
SCALE 1"=100'

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY

FOR REDUCED PLANS
ORIGINAL SCALE IS IN INCHES

CU 07387 EA 118601

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5, 10	16.9/18.5, SO. 0/31.1	69	159

Teri Parola 9/18/95
REGISTERED ELECTRICAL ENGINEER (Date)

12-30-96
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
TERI J. PAROLA
14898
Exp. 6/30/99
ELECTRICAL
STATE OF CALIFORNIA

NATIONAL ENGINEERING TECHNOLOGY
14320 FIRESTONE BLVD., SUITE 100
LA MIRADA, CA 90638

IN ASSOCIATION WITH:
KAWES AND ASSOCIATES, INC.

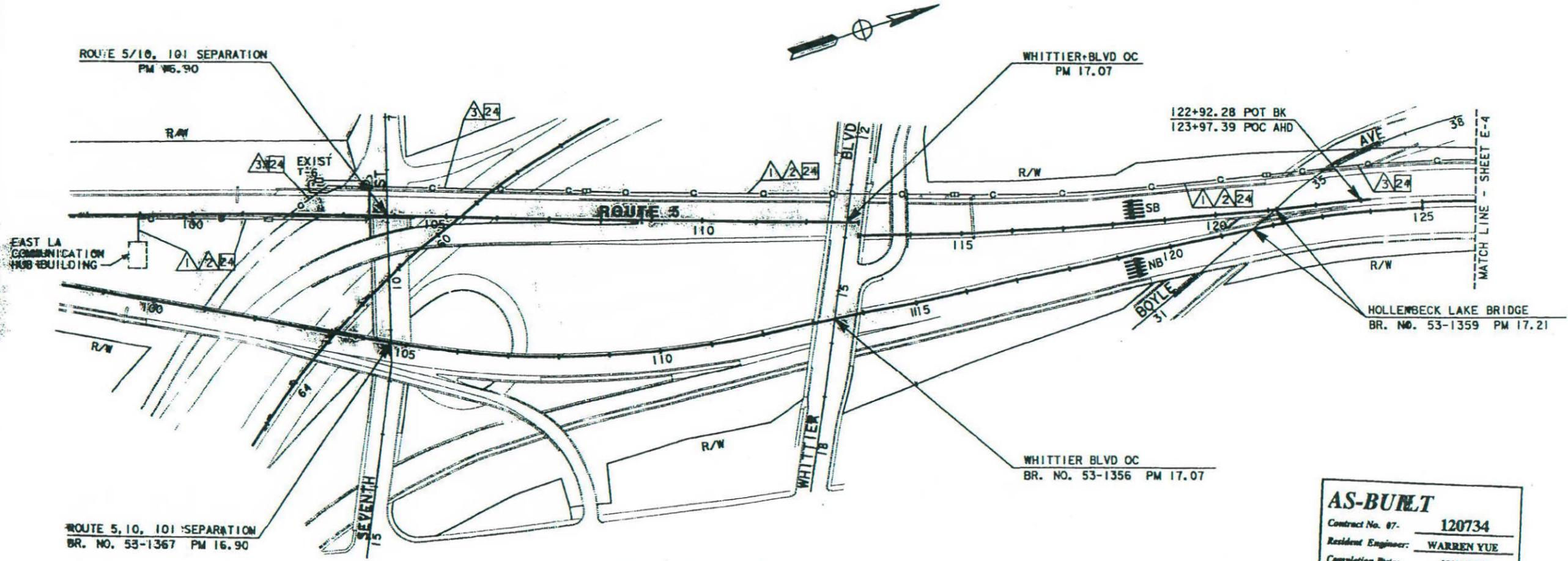
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

CONDUCTOR TYPE	FUNCTION	RUN		
		1	2	3
750 OHM CABLE	VIDEO DATA			
750 OHM CABLE	VIDEO DATA			(E)
750 OHM CABLE	SHORT RUN VIDEO	(E)		(E)
50 OHM CABLE	DATA PHONE	(E)		(E)
	INNERDUCT	1/4" (E)	1/4" (E)	1/4" (E)
	CONDUIT SIZE	1" (E)	1" (E)	1" (E)

(E) - EXISTING CONDUIT OR CONDUCTOR

PROJECT NOTES (THIS SHEET ONLY)
24 ADD CABLES TO EXISTING CONDUIT.

DESIGNED BY IP 9/95 REVISOR BY JZ 9/95 DATE REVISED
CHECKED BY PAT SULLIVAN



AS-BUILT
Contract No. 07- 120734
Resident Engineer: WARREN YUE
Completion Date: 09/18/2000

COMMUNICATION SYSTEM ROUTING
SCALE: 1"=100'

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY.
FOR LEGEND AND PROJECT NOTES SEE SHEETS E-1 AND E-2.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5,10	16.9/18.5 50.0/31.1	70	159

Teri Parola 9/18/95
REGISTERED ELECTRICAL ENGINEER (Date)

12-30-96
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
TERI J. PAROLA
No. 14898
Exp. 6/30/99
ELECTRICAL
STATE OF CALIFORNIA

NATIONAL ENGINEERING TECHNOLOGY
14320 FIRESTONE BLVD., SUITE 100
LA MIRADA, CA 90638

IN ASSOCIATION WITH:
KAWES AND ASSOCIATES, INC.

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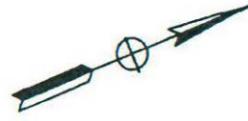
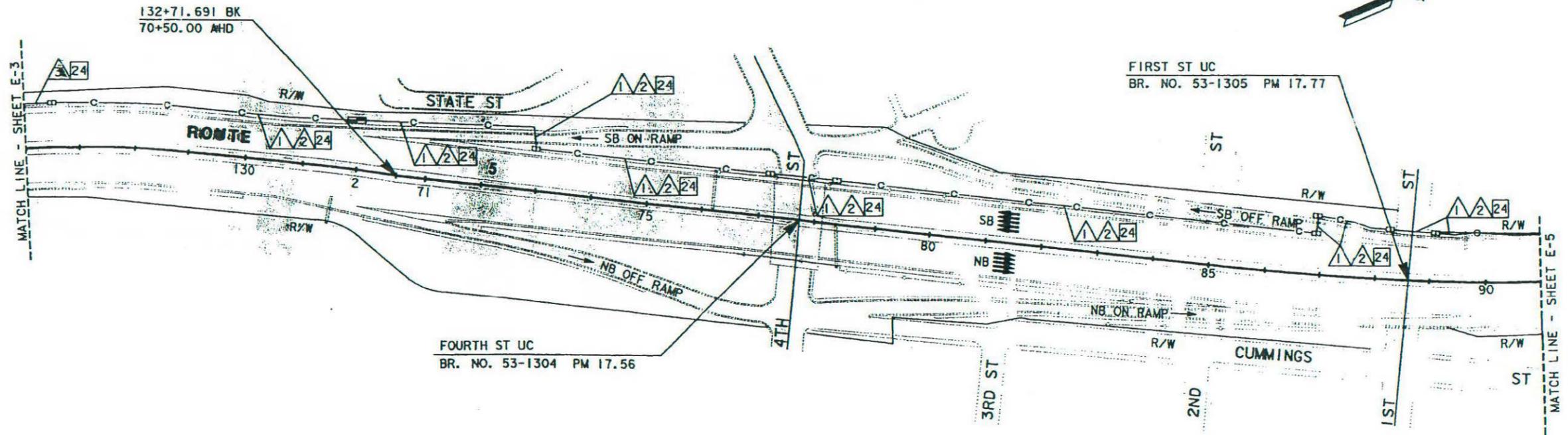
CONDUIT AND CONDUCTOR SCHEDULE (THIS SHEET ONLY)					
CONDUCTOR TYPE	FUNCTION	RUN			
		1	2	3	
72SMFO CABLE	VIDEO/DATA				
48SMFO CABLE	VIDEO/DATA		1(E)	1(E)	
8MMFO CABLE	SHORT HAUL VIDEO	1(E)		1(E)	
50P22 CABLE	DATA/PHONE			1(E)	
	INNERDUCT	1/2" (E)	1/2" 1/4" 1/4" 1/4" 1/4"	1/2" 1/2"	
	CONDUIT SIZE	4" (E)	4" (E)	4" (E)	

(E) - EXISTING CONDUIT OR CONDUCTOR

PROJECT NOTES: (THIS SHEET ONLY)
24 ADD CABLES TO EXISTING CONDUIT.

DESIGNED BY IF 9/95 REVISION D1
CHECKED BY JZ 9/95 DATE REVISED

PAT SULLIVAN



AS-BUILT
Contract No. 07- 120734
Resident Engineer: WARREN YUE
Completion Date: 09/18/2000

COMMUNICATION SYSTEM ROUTING
SCALE: 1"=100'

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY.
FOR LEGEND AND PROJECT NOTES SEE SHEETS E-1 AND E-2.

E-4

DIST	COUNTY	ROUTE	POST MILES	SHEET TOTAL
07	LA	5, 10	TOTAL PROJECT 16.9/18.5 50.0/31.1	NO. SHEETS 71 159

TERI J. PAROLA 9/18/95
REGISTERED ELECTRICAL ENGINEER (Cote)

12-30-96
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
TERI J. PAROLA
No. 14898
Exp. 6/30/99
ELECTRICAL
STATE OF CALIFORNIA

NATIONAL ENGINEERING TECHNOLOGY
14320 FIRESTONE BLVD., SUITE 100
LA MIRADA, CA 90638

IN ASSOCIATION WITH:
KAWES AND ASSOCIATES, INC.

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PROJECT NOTES: (THIS SHEET ONLY)

- 6 ADD 2#2 POWER CONDUCTORS TO EXISTING CONDUIT. EXIST
- 24 ADD CABLES TO EXISTING CONDUIT.
- 45 INSTALL 1-40A, 120V SINGLE POLE CIRCUIT BREAKER FOR VIDEO NODE.

CONDUCTOR TYPE	FUNCTION	RUN		
		1	2	4
72SMFO CABLE	VIDEO/DATA		1	
48SMFO CABLE	VIDEO/DATA		1 (E)	
60SMFO CABLE	SHORT HAUL VIDEO	1 (E)		
50P22 CABLE	DATA/PHONE	1 (E)		
2MMFO B/O CABLE	SHORT HAUL VIDEO			1 (E)
6P19 CABLE	DATA/PHONE			1 (E)
	INNERDUCT	1 1/4" (E)	1 1/4" (E)	1 1/4" (E)
	CONDUIT SIZE	4" (E)	4" (E)	3" (E)

(E) - EXISTING CONDUIT OR CONDUCTOR

DESIGNED BY
CHECKED BY

PAT SULLIVAN



BROOKLYN AVE OC
BR. NO. 53-1314 PM 18.06

AS-BUILT
Contract No. 07- 120734
Resident Engineer: WARREN YUE
Completion Date: 09/18/2000

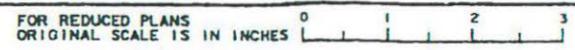
STATE ST OC
BR. NO. 53-1349 PM 18.25

45 EXISTING TYPE-III BF
120/240V SERVICE
SERVING UTILITY: DWP
ID# 0753005R18.331
ADDRESS: 543 1/2 SAN BENITO ST
EXISTING BREAKERS:
1-15A 120V, 1P CCTV
1-15A 120V, 1P 334-TV CABINET

COMMUNICATION SYSTEM ROUTING

SCALE: 1"=100'

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY.
FOR LEGEND AND PROJECT NOTES SEE SHEETS E-1 AND E-2.



USERNAME => HHuynh
DGN FILE => 712073u0526105956

CU 07396

EA 120731

DATE PLOTTED: 10/15/00 10:00 AM

CONDUIT AND CONDUCTOR SCHEDULE (THIS SHEET ONLY)		RUN															
CONDUCTOR TYPE	FUNCTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
50P22 CABLE	DATA /PHONE																1 (E)
6P22 CABLE	DATA /PHONE																
72SMFO CABLE	DATA / VIDEO																
12SMFO CABLE	SH VIDEO																
25SMFO CABLE	VIDEO / DATA																
25P22 CABLE	DATA / PHONE																
8MMFO	SH VIDEO																1 (E)
48SMFO	VIDEO / DATA																1 (E)
2*2	POWER								2								
DLC	RAMP/COUNT											15	11	15			
	INNERDUCT																
	CONDUIT SIZE	1/4" 1/4"	4"	4"	2"	4"	3"	3"	3"	3"	4"	3"	2"	2"	4" (E)	4" (E)	2"

(E) - EXISTING CONDUIT OR CONDUCTOR

DIST	COUNTY	ROUTE	TOTAL MILES	SHEET NO.	TOTAL SHEETS
07	LA	5, 10	6.9/18.5	73	159

9/ 8/95
 REGISTERED ELECTRICAL ENGINEER (DATE)

17-30-96
 PLANS APPROVAL DATE

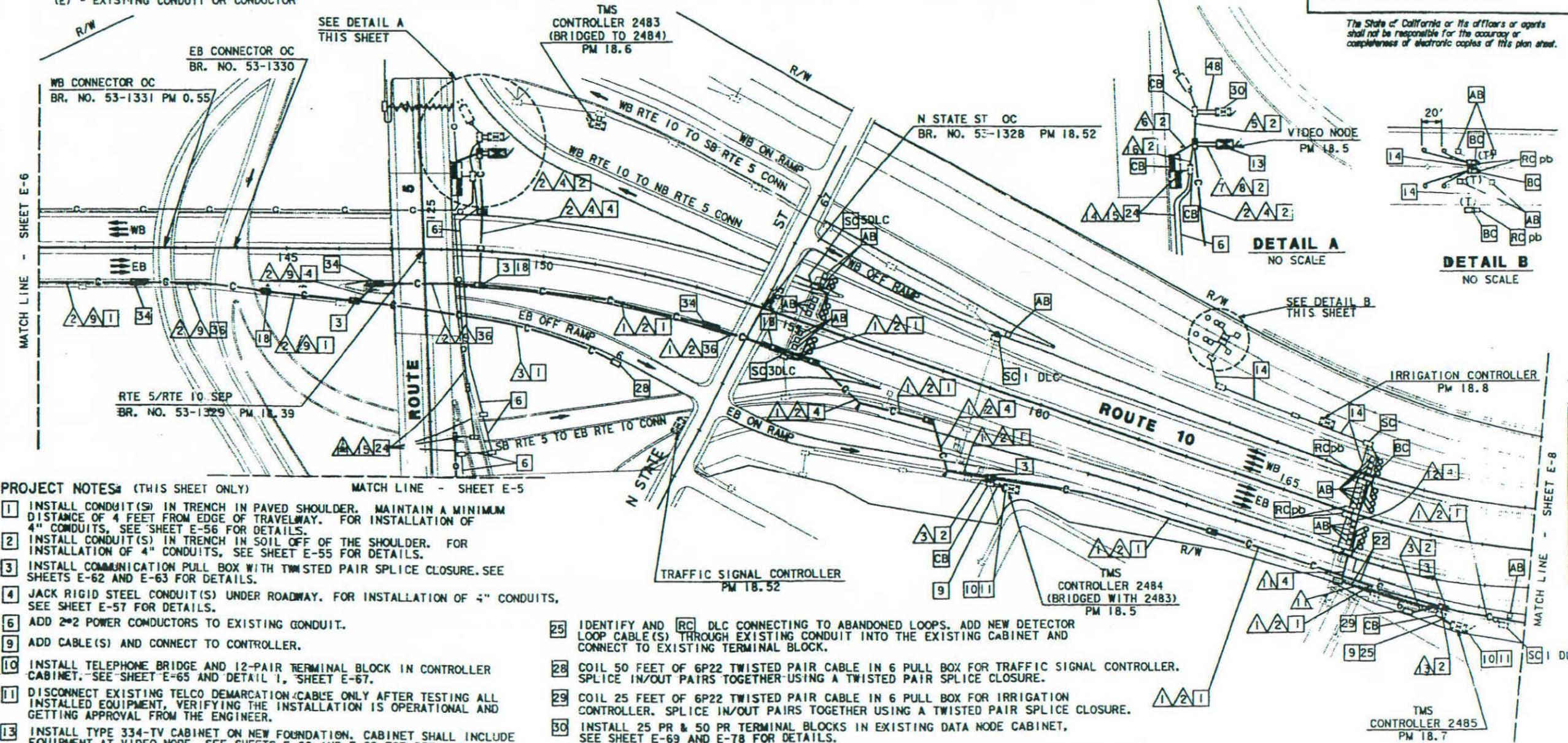
TERI J. PAROLA
 No. 14898
 Exp. 6/30/99
 ELECTRICAL ENGINEER
 STATE OF CALIFORNIA

NATIONAL ENGINEERING TECHNOLOGY
 4320 FIRESTONE BLVD., SUITE 100
 LA MIRADA, CA 90638

IN ASSOCIATION WITH:
 KAWES AND ASSOCIATES, INC.

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REVISIONS: REVISED BY TP 9/95, CHECKED BY JZ 9/95, DATE REVISED
 PROJECT ENGINEER: PAT SULLIVAN
 DESIGNER: PAT SULLIVAN
 CHECKED BY: JZ 9/95
 DATE REVISED: 9/95



- PROJECT NOTES (THIS SHEET ONLY)**
- INSTALL CONDUIT(S) IN TRENCH IN PAVED SHOULDER. MAINTAIN A MINIMUM DISTANCE OF 4 FEET FROM EDGE OF TRAVELWAY. FOR INSTALLATION OF 4" CONDUITS, SEE SHEET E-56 FOR DETAILS.
 - INSTALL CONDUIT(S) IN TRENCH IN SOIL OFF OF THE SHOULDER. FOR INSTALLATION OF 4" CONDUITS, SEE SHEET E-55 FOR DETAILS.
 - INSTALL COMMUNICATION PULL BOX WITH TWISTED PAIR SPLICE CLOSURE. SEE SHEETS E-62 AND E-63 FOR DETAILS.
 - JACK RIGID STEEL CONDUIT(S) UNDER ROADWAY. FOR INSTALLATION OF 4" CONDUITS, SEE SHEET E-57 FOR DETAILS.
 - ADD 2*2 POWER CONDUCTORS TO EXISTING CONDUIT.
 - ADD CABLE(S) AND CONNECT TO CONTROLLER.
 - INSTALL TELEPHONE BRIDGE AND 12-PAIR TERMINAL BLOCK IN CONTROLLER CABINET. SEE SHEET E-65 AND DETAIL 1, SHEET E-67.
 - DISCONNECT EXISTING TELCO DEMARCATION CABLE ONLY AFTER TESTING ALL INSTALLED EQUIPMENT, VERIFYING THE INSTALLATION IS OPERATIONAL AND GETTING APPROVAL FROM THE ENGINEER.
 - INSTALL TYPE 334-TV CABINET ON NEW FOUNDATION. CABINET SHALL INCLUDE EQUIPMENT AT VIDEO NODE. SEE SHEETS E-68 AND E-69 FOR DETAILS.
 - EXISTING DLC. INSTALL NEW DLC IN THE EXISTING CONDUIT.
 - INSTALL COMMUNICATION PULL BOX 15 FEET FROM EDGE OF STRUCTURE.
 - INSTALL CONDUITS IN THE SAME TRENCH. SEE SHEETS E-55 AND E-56 FOR DETAILS.
 - ADD CABLES TO EXISTING CONDUIT.

- IDENTIFY AND [RC] DLC CONNECTING TO ABANDONED LOOPS. ADD NEW DETECTOR LOOP CABLE(S) THROUGH EXISTING CONDUIT INTO THE EXISTING CABINET AND CONNECT TO EXISTING TERMINAL BLOCK.
- COIL 50 FEET OF 6P22 TWISTED PAIR CABLE IN 6 PULL BOX FOR TRAFFIC SIGNAL CONTROLLER. SPLICE IN/OUT PAIRS TOGETHER USING A TWISTED PAIR SPLICE CLOSURE.
- COIL 25 FEET OF 6P22 TWISTED PAIR CABLE IN 6 PULL BOX FOR IRRIGATION CONTROLLER. SPLICE IN/OUT PAIRS TOGETHER USING A TWISTED PAIR SPLICE CLOSURE.
- INSTALL 25 PR & 50 PR TERMINAL BLOCKS IN EXISTING DATA NODE CABINET, SEE SHEET E-69 AND E-78 FOR DETAILS.
- INSTALL SPLICE VAULT 15 FEET FROM EDGE OF STRUCTURE, WITHOUT TWISTED PAIR AND FIBER OPTIC SPLICE CLOSURES. FIGURE 8 100 FEET OF ALL CABLES IN THE SPLICE VAULT.
- INSTALL RIGID STEEL CONDUIT(S) IN TRENCH IN PAVED SHOULDER. CONDUIT(S) SHALL BE INSTALLED AS CLOSE TO THE EDGE OF TRAVELWAY AS POSSIBLE.
- INSTALL 50P22 AND 25P22 TWISTED PAIR CABLES IN THE EXISTING CONDUIT.

NOTE: THIS PLAN ACCURATE FOR ELECTRICAL WORK ONLY. FOR LEGEND AND PROJECT NOTES SEE SHEETS E-1 AND E-2.

LOOP DETECTOR VIDEO NODE AND COMMUNICATION SYSTEM ROUTING

SCALE: 1"=100'

E-7

AS-BUILT
 Contract No. 07-120754
 Retainer Engineer: WARREN YUR
 Completion Date: 09/18/2000

LOCAL LABOR SUMMARY

for the Pay Period of _____, 201__

No.	Full Name	Address	Social Security No.	Work Classification	Worker's Total Local Labor Hours
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

Total Local Labor Hours for the Pay Period:

Total Qualified Local Labor Hours for the Pay Period:

(Local labor that exceeds 10% of the Total Local Labor Hours for the Pay Period):

Total Local Labor Hours to Date:

Total Qualified Local Labor Hours to Date:

LOCAL HIRE RESIDENCY CERTIFICATION FORM

I, _____, certify the following is true and correct:

Current Employer Name: _____

Trade: _____ Employment Period: _____

Residency Certification within the following cities:

Los Angeles, Commerce, East Los Angeles, Vernon, Bell, Maywood, Huntington Park,
Cudahy, Bell Gardens, Pico Rivera, and Montebello

I reside at _____
(Address, City, Street, Zip)

I have lived there for _____ years/months

CERTIFICATION

I understand that this certification is subject to audit by Caltrans or their designee, and that all statements made herein are true and correct. Attached are two appropriate items for proof of residency in the above following cities.

The foregoing is true and correct under penalty of Perjury of the laws of the State of California

Signature:

Date: _____

CERTIFYING OFFICIAL USE ONLY

The applicant/worker is approved for certification as a Local Hire.

_____ Caltrans
(Print Name)

Signature: _____ Date: _____