

# **BASELINE**

## **ENVIRONMENTAL CONSULTING**

4 April 2012  
Y8359-12.01817

Mr. Mark Arniola, P.G.  
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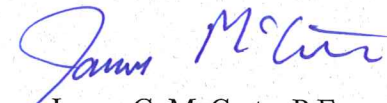
**Subject: Supplemental Phase II Environmental Site Assessment, 2521-2541 Seminary Avenue, Oakland, California**

Dear Mr. Arniola:


Please find enclosed our report documenting the activities and findings of a Supplemental Phase II Environmental Site Assessment ("ESA") performed at properties located at 2521 through 2541 Seminary Avenue in Oakland, California ("Project Site"). The purpose of the Supplemental Phase II ESA was to further characterize the Project Site based on the findings of a Phase II subsurface investigation performed by Winzler & Kelly, on behalf of the City of Oakland ("City"), at the Project Site in July 2008. The Project Site is part of the Foothill Boulevard/Seminary Avenue Redevelopment Area which the City is proposing to redevelop into a mixed-use retail center. The Supplemental Phase II ESA was performed under a Community-Wide Brownfield Assessment grant from the U.S. Environmental Protection Agency ("EPA") in accordance with *Sampling and Analysis Plan, 2521-2541 Seminary Avenue Oakland, California*, approved by EPA.

If you have any questions or comments, please do not hesitate to contact us at your convenience.

Sincerely,

  
James G. McCarty, P.E.  
Civil Engineer



  
Reginald Ramirez, P.E.  
Project Engineer



JM:RR

Enclosure

cc: Wallace Woo, U.S. EPA  
Eugenia E. McNaughton, Ph.D., U.S. EPA

# SUPPLEMENTAL PHASE II ENVIRONMENTAL SITE ASSESSMENT

APRIL 2012

2521-2541 Seminary Avenue  
Oakland, California

Prepared for:  
City of Oakland, Public Works Agency  
Environmental Services Division  
Oakland, California

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## ACRONYMS AND ABBREVIATIONS

Alameda County	Alameda County Assessor's Office
BASELINE	BASELINE Environmental Consulting
bgs	below ground surface
C&T	Curtis & Tompkins, Ltd.
Cal EPA	California Environmental Protection Agency
Cal West	Cal West Concrete Cutting, Inc.
CFR	Code of Federal Regulations
City	City of Oakland
EPA	U.S. Environmental Protection Agency
ESA	Environmental Site Assessment
HSP	Site-Specific Health and Safety Plan
LBNL	Lawrence Berkeley National Laboratory
mg/kg	milligrams per kilogram
ml	milliliter
µg	micrograms per liter
Water Board	San Francisco Bay Regional Water Quality Control Board
RPD	Relative Percent Difference
SAP	Sampling and Analysis Plan
STLC	Soluble Threshold Limit Concentration
TCLP	Toxicity Characteristic Leaching Procedure
TTLC	Total Threshold Limit Concentration
USA	Underground Service Alert
VOC	Volatile Organic Compound
WET	Waste Extraction Test

# **SUPPLEMENTAL PHASE II ENVIRONMENTAL SITE ASSESSMENT**

## **2521-2541 Seminary Avenue Oakland, California**

### **1. INTRODUCTION**

This report documents the activities and findings of a Supplemental Phase II Environmental Site Assessment (“ESA”) performed by BASELINE Environmental Consulting (“BASELINE”), on behalf of the City of Oakland, Public Works Agency (“City”), at properties located at 2521 through 2541 Seminary Avenue in Oakland, California (“Project Site”) (Figures 1 and 2). The Project Site is part of the Foothill Boulevard/Seminary Avenue Redevelopment Area (Figure 2) which the City is proposing to redevelop into a mixed-use retail center. The Supplemental Phase II ESA was performed under a Community-Wide Brownfield Assessment grant from the U.S. Environmental Protection Agency (“EPA”) in accordance with *Sampling and Analysis Plan, 2521-2541 Seminary Avenue Oakland, California* (“SAP”), prepared by BASELINE and approved by EPA. Any deviation from the SAP is discussed in Section 11, Field Variance, of this report.

The purpose of the Supplemental Phase II ESA was to further characterize the Project Site based on the findings of a Phase II subsurface investigation performed by Winzler & Kelly, on behalf of the City, at the Project Site in July 2008. Specifically, the Supplemental Phase II ESA was performed to define the area around a former shed that contains elevated levels of metals and to characterize soil within the upper 2.5 feet of the Project Site for waste disposal.

To obtain the information needed, the SAP proposed to: 1) collect ten soil samples within the upper 2.5 feet of the Project Site; 2) analyze the ten soil samples for Title 22 metals and hexavalent chromium; and 3) screen analytical results against California and federal hazardous waste thresholds. Based on the findings of the Supplemental Phase II ESA, recommendations regarding possible management options of shallow soil during construction were developed.

#### **1.1 Project Site Description**

The City is planning to redevelop the Foothill Boulevard/Seminary Avenue Redevelopment Area into a mixed-use area that will include housing and retail space (Figure 2). The Foothill Boulevard/Seminary Avenue Redevelopment Area is bounded by Foothill Boulevard to the north, Seminary Avenue to the east, Bancroft Avenue to the south, and private properties to the west (Figure 2). The two-acre Foothill Boulevard/Seminary Avenue Redevelopment Area is made up of 12 properties that have been used for various commercial activities, including a dry cleaner and an auto repair garage (BASELINE, 2009) (Figure 2).

The Project Site is located in Alameda County and is comprised of two parcels and a portion of a third (Alameda County, 2012). The Alameda County Assessor’s Office identified the two parcels as parcel numbers 38-3182-2 and 38-3182-3 with surface areas of 6,276 (0.14 acre) and 9,580 (0.22 acre) square feet, respectively (Figure 3) (Winzler & Kelly, 2008). These two

parcels are separated by a 6-foot by 61-foot rectangular area that is part of parcel number 38-3182-23 (Figure 3). Parcel numbers 38-3182-2 and 38-3182-3 are identified by postal addresses 2521 through 2541 Seminary Avenue (Figure 3).

The Project Site is bordered by other parcels that are part of the Foothill Boulevard/Seminary Avenue Redevelopment Area to the northeast and northwest (Figure 2), a former automotive garage to the southwest (BASELINE, 2009), and Seminary Avenue to the southeast (Figure 3). The entire Project Site is open and unpaved, except for the portion occupied by parcel number 38-3182-3, which is covered with pavement. The Project Site is secured by a chain link fence and can be accessed through a gate on Seminary Avenue.

Current land uses in the immediate vicinity of the Project Site are mostly residential and commercial. Commercial properties include office spaces, retail stores, neighborhood restaurants, an auto repair shop, and a supermarket.

## **1.2 Responsible Agency and Consultant**

The City is the agency responsible for managing the Community-Wide Brownfield Assessment grant and environmental assessments performed under the grant. The EPA provides technical review and advice to the City and ensures that assessments performed under the Community-Wide Brownfield Assessment grant meet EPA requirements.

The City retained BASELINE to perform an environmental assessment in accordance with the requirements of the EPA Brownfields Program. BASELINE is a multi-disciplinary environmental consulting firm established in 1985; its professional staff consists of engineers, geologists, and hydrogeologists. BASELINE retained Cal West Concrete Cutting, Inc. (“Cal West”), a California-licensed concrete contractor, to core through the paved portion of the Project Site and Curtis & Tompkins, Ltd (“C&T”), a California-certified analytical laboratory, to perform analyses on samples collected from the Project Site.

## **2. BACKGROUND**

This section presents information regarding the Project Site, including past and current uses, previous investigation, and potential environmental concerns.

### **2.1 Project Site History**

The Project Site history information presented in this section is from the Phase II subsurface investigation report prepared by Winzler & Kelly in July 2008. The Phase II report included background information for the Project Site obtained during a Phase I ESA performed by Winzler & Kelly in early 2008.

The first known use of the Project Site was in 1922. A single-family dwelling and shed was present on the paved portion of the Project Site between 1922 and at least 1969 (Figure 3). In addition to the dwelling and shed, a restaurant was also constructed on this portion of the Project Site after 1922 (Figure 3). Between 1966 and 1969, the restaurant was converted to a mower service (Figure 3). According to building permits, a fire occurred on the paved portion of the Project Site after 1969 destroying all buildings on the property. After 1974, a parking lot was

constructed on the paved portion of the Project Site; this was the last known use of the property. The property is now owned by the City.

Between 1925 and 1928, a commercial building was built on the unpaved portion of the Project Site, which appears to be comprised of the parcel number 38-3182-2 and the 6-foot by 61-foot rectangular area. The first identified uses of the commercial building in 1928 included a clothes cleaner, locksmith, barber, and office space. Additional uses of the commercial building included electrical supply, gift shop, restaurant, radio service, butcher shop, beauty shop, dance studio, tavern, mower service, upholstery shop, dressmaking shop, grocery store, the Seminary Press, and the East Oakland Parish Center. Since the Phase II subsurface investigation by Winzler & Kelly in July 2008, the commercial building has been demolished and the parcel has been purchased by the City.

## **2.2 Previous Investigation**

The previous investigation information presented in this section is from the 2008 Phase II report prepared by Winzler & Kelly (Winzler & Kelly, 2008).

The 2008 Phase II investigation by Winzler & Kelly involved advancement of four soil borings using a direct-push drill rig to 20 feet below ground surface (“bgs”) (SB-1 through SB-4 on Figure 4), advancement of two soil borings by hand to 2.5 feet bgs (SB-5 and SB-6 on Figure 4), and collection of 17 soil samples. Four borings (SB-1, SB-4, SB-5, and SB-6) were advanced on the former parking lot, three of which (SB-1, SB-5, and SB-6) were placed within the footprint of former buildings (Figures 3 and 4). SB-2 and SB-3 were advanced adjacent to the former commercial building on the unpaved portion of the Project Site (Figures 3 and 4). Of the 17 soil samples, 12 were submitted for laboratory analyses (the other five samples were submitted on “hold” basis). The 12 soil samples (two soil samples from SB-1 and SB-2 at 0.5 foot bgs; six soil samples from SB-3 and SB-4 at 0.5, 10, and 19.5 feet bgs; and four soil samples from SB-5 and SB-6 at 0.5 and 2.0 feet bgs) were analyzed for one or more of the following analytes: petroleum hydrocarbons and associated constituents, volatile organic compounds (“VOCs”), asbestos, and Title 22 metals.

Soil samples analyzed for petroleum hydrocarbons and associated constituents, VOCs, or asbestos did not contain any target analytes at or above laboratory reporting limits, except for one sample collected from SB-3 at 10 feet bgs. This sample contained tetrachloroethylene at 2.4 micrograms per kilogram (“µg/kg”), below the screening value for residential land use published by the San Francisco Bay Regional Water Quality Control Board (“Water Board”) (Water Board, 2008). Based on the analytical results, further investigation for VOC impact does not appear to be warranted.

The 12 soil samples contained at least one metal at or above laboratory reporting limits. The analytical results indicated that deeper soil (at 10 feet bgs) underlying the Project Site contained arsenic above the screening value for protection of commercial workers published by the California EPA (Cal EPA, 2005). Shallow soil samples (upper 2.5 feet) collected from the former parking lot contained arsenic, nickel, and vanadium at concentrations above screening values for residential land use by the Water Board or for protection of commercial workers by the California EPA. However, the concentrations for arsenic, nickel, and vanadium reported above health risk screening levels were all below background values for metals published by

Lawrence Berkeley National Laboratory (“LBNL”) for the San Francisco Bay Area (LBNL, 2009). Shallow soil samples collected from the Project Site also contained chromium and nickel at concentrations that could potentially cause shallow soil to be considered a hazardous waste, if excavated (Figure 4).

None of the shallow soil samples was analyzed for soluble metals; therefore, it is unknown whether shallow soil would be considered a hazardous waste, if excavated. The highest concentrations of chromium and nickel were identified in SB-1, indicating potential metals impact near the location of the former shed (Figures 3 and 4). Groundwater was not encountered in borings advanced to 20 feet bgs.

### **2.3 Project Site Lithology**

Lithologic information gathered during collection of ten soil samples as part of the Supplemental Phase II ESA indicated that the former parking lot is underlain by two distinct layers of asphalt cover, each approximately 0.3 foot thick. The bottom asphalt cover is underlain by base rock consisting of sand and gravel and up to approximately 0.4 foot thick. The base rock is underlain by fill consisting of low plasticity silts and high plasticity clays. Gravel, concrete, brick, sandstone, and charcoal pieces were also observed within the fill.

The unpaved portion of the Project Site is underlain by 0.5 foot of fill composed of fine-grained materials consisting predominantly of clay with gravel. The fill also includes trace amounts of silt and pieces of rock, concrete, brick, and other debris. The fill is underlain by fine-grained materials consisting predominantly of high plasticity clay.

The lithology information, presented above, indicates that the material underneath the former parking lot is different than the material underneath the unpaved portion of the Project Site. This may suggest that shallow soil within the two areas of the Project Site may have come from different sources and therefore may differ in chemical quality. The soil encountered during this Supplemental Phase II ESA was consistent with the soil encountered by Winzler & Kelly during the July 2008 Phase II investigation. Boring logs for potholes PH-01 through PH-10, completed during the Supplemental Phase II ESA, are included in Appendix A.

### **2.4 Impact on Human Health and/or the Environment**

The 2008 Winzler & Kelly Phase II investigation was conducted to assess potential subsurface impacts based on previous uses of the Project Site. The analytical results for the 2008 Phase II investigation identified metals in soil (up to 10 feet bgs) at concentrations above screening values for residential land use and commercial workers. However, the concentrations of metals reported above health risk screening values were all below background values published for the Bay Area region. The 2008 Phase II investigation also analyzed soil samples for petroleum hydrocarbons and associated constituents, VOCs, and asbestos. These analytes were not identified at or above laboratory reporting limits in soil samples collected from the Project Site, except for one VOC that was reported in one soil sample at a concentration below the screening value for residential land use. No potential impacts on the environment were identified in the 2008 Phase II investigation.

### **3. FIELD ACTIVITIES**

#### **3.1 Preparation for Field Sampling**

Prior to field sampling, BASELINE coordinated access to the Project Site with the City, retained Cal West to core through the asphalt layer covering the former parking lot, requested bottleware and other field sampling supplies from C&T, marked the sampling area with white paint for underground utility clearing, and notified Underground Service Alert (“USA”). USA did not identify any conflict within the sampling area. All field sampling activities, described below, were performed by BASELINE with assistance from Cal West on 30 December 2011.

#### **3.2 Soil Sampling**

BASELINE collected ten soil samples from ten pothole sampling locations (PH-01 through PH-10 on Figure 4) from the upper 2.5 feet of the Project Site. The location and depth of each sample were randomly selected by BASELINE using a random number generator spreadsheet, except for sample locations PH-01 through PH-03, which were located approximately 10 feet from the location of the 2008 Phase II investigation sampling location SB-1 and collected at 0.5 foot bgs or below the base rock material.

The ten soil samples were collected either by driving a 6-inch sample corer into the ground using a slide hammer or advancing an auger 6 inches into the ground by hand, except at PH-01 where refusal was encountered after driving the sample corer 3 inches into the ground (Photograph 1 in Appendix B). A combination of hand digging tools, including a post-hole digger, digging bar, and hand auger, was used to advance a pot hole to the desired depth (Photograph 2 in Appendix B). Asphalt pavement, covering sampling locations PH-01 through PH-07, was cored by Cal West (Photograph 3 in Appendix B). Using cuttings generated from each sampling location, the lithology of each sample location was logged by a BASELINE professional geologist in accordance with the Unified Soil Classification System. Boring logs for potholes PH-01 through PH-10 are included in Appendix A.

#### **3.3 Decontamination Procedures**

Sampling equipment that came in contact with soil (sample corer, stainless steel bowl, and digging tools) was decontaminated in between sample collection by washing in an Alconox and water solution followed by sequential rinsing in clean water and deionized water. Approximately 2 gallons of rinsate water were generated during field sampling (see Section 10, Disposal of Residual Materials, for a discussion of disposal procedures for investigation-derived wastes).

### **4. FIELD DOCUMENTATION**

#### **4.1 Field Log**

BASELINE documented field sampling activities and observations in a field log included in Appendix B. The field log was peer-reviewed to confirm that correct field procedures were adhered to and that field data were coherent. The field log contains the following information:

- Project Name;
- Logger;
- Weather conditions;
- Field date;
- Personnel on the Project Site;
- Time of arrival at the Project Site and time of departure from the Project Site;
- Personal protective equipment;
- Decontamination method;
- Soil sampling procedure; and
- Collection of quality control samples (equipment blank and duplicate sample).

## **4.2 Photograph Log**

BASELINE prepared a photographic log containing a brief description of subjects and activities photographed during field sampling. The photographic log and the photographs are included in Appendix B.

## **5. SAMPLE CONTAINERS, PACKAGING, AND SHIPPING**

### **5.1 Soil Samples**

Soil samples collected using a sample corer or hand auger were homogenized in a stainless steel bowl then placed into new glass jars supplied by C&T (Photograph 4 in Appendix B). The homogenized soil sample collected from PH-02 was split into two new glass jars. One of the glass jars was submitted blind to C&T as a field duplicate sample (sample identified as PH-Dup). The field duplicate sample was collected at PH-02 because this location was one of three sample locations located near SB-1. The sample collected from SB-1 in 2008 contained the highest concentrations of metals found in soil at the Project Site.

All glass jars containing homogenized samples were labeled with the sampler's initials, date and time of sample collection, and a unique sample identification. Immediately after labeling, each glass jar was placed in a cooler containing ice. No samples were composited either in the field or at the laboratory. No preservatives were required for samples collected for metals analyses.

### **5.2 Field Quality Control Sample**

Prior to collection of the soil sample from PH-07 (the last sample collected during field sampling), BASELINE collected an equipment blank (identified as EB-123011) by pouring laboratory-provided deionized water through the stainless steel bowl after it had been decontaminated. The equipment blank was collected in one 500-milliliter (“ml”) poly bottle with nitric acid for Title 22 metals analyses and one 500-ml poly bottle with no preservative for hexavalent chromium analysis (see Section 8, Data Quality Evaluation, for a discussion of the analytical results for the equipment blank). No trip blanks were included because analysis for VOCs was not required.



The equipment blank was labeled with the sampler's initials, date and time of collection, and a unique identification. The equipment blank was placed in the same cooler containing the standard and field duplicate samples immediately after labeling. The equipment blank was also packaged for shipping in the same manner they were received from the laboratory.

### **5.3 Chain-of-Custody Record**

BASELINE completed a chain-of-custody record for soil and water samples submitted to C&T for chemical analyses. The samples included standard field samples and field quality control samples. Soil and water samples were submitted to C&T on 30 December 2011 under chain-of-custody procedures. A copy of the chain-of-custody record for soil and water samples is included in the laboratory report by C&T in Appendix C.

## **6. ANALYTICAL METHODS**

### **6.1 Soil Samples**

All soil samples collected from the Project Site, including the field duplicate sample, were analyzed for:

- Title 22 metals in accordance with EPA Methods 6010B and 7471A; and
- Hexavalent chromium in accordance with EPA Method 7196A.

## **7. ANALYTICAL RESULTS**

Soil analytical results for Title 22 metals and hexavalent chromium are summarized in Table 1. Analytical results for field quality control samples are discussed in Section 8, Data Quality Evaluation. Sampling locations for the 2008 investigation by Winzler & Kelly and the Supplemental Phase II ESA by BASELINE are shown on Figure 4. The laboratory report for the Supplemental Phase II ESA by C&T is included in Appendix C.

### **7.1 Soil Samples**

#### **7.1.1 *Title 22 Metals***

Arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, nickel, selenium, silver, vanadium, and zinc were identified at or above laboratory reporting limits in one or more soil samples, including the duplicate sample (Table 1).

#### **7.1.2 *Hexavalent Chromium***

Hexavalent chromium was not identified at or above the laboratory reporting limit of 0.40 milligrams per kilogram ("mg/kg") in all soil samples, including the duplicate sample (Table 1).

## **8. DATA QUALITY EVALUATION**

This section presents an evaluation of data quality indicators (i.e., precision, accuracy, representativeness, completeness, and comparability) for field and laboratory measurements to determine the viability and usability of the data.

## 8.1 Precision

Precision is a measure of the reproducibility of data when multiple samples are collected and analyzed under the same set of conditions. In accordance with the SAP for the Project Site, BASELINE collected a field duplicate sample from PH-02 to assess possible sample heterogeneity. The standard and field duplicate samples were collected following the same sampling technique and analyzed by one analytical laboratory for the same analytical suite.

BASELINE evaluated data precision by calculating the relative percent differences (“RPDs”) between the standard and field duplicate sample results for all analytes identified at or above laboratory reporting limits in at least one sample of the duplicate pair. An RPD of less than 50 percent for soil is considered acceptable. When an analyte is reported in one sample of the duplicate pair but is not reported in the other sample, the results are acceptable when the absolute difference between the reported result and the laboratory reporting limit is less than the laboratory reporting limit. The calculated RPDs for analytes identified at or above laboratory reporting limits in at least one sample of the duplicate pair are summarized in Table 2.

Out of 14 analytes identified at or above laboratory reporting limits in at least one sample of the duplicate pair, four did not meet the acceptance criteria for precision (Table 2), indicating that the soil at the Project Site is heterogeneous. Although some of the soil data did not meet the acceptance criteria for precision, those results are considered valid and represent the range of concentrations of metals that are present at the Project Site.

Laboratory precision is evaluated by comparing RPDs between laboratory quality control samples (e.g., blank spike, blank spike duplicate, matrix spike, and matrix spike duplicate) against acceptable limits determined by the analytical laboratory. BASELINE reviewed the laboratory report by C&T to evaluate laboratory precision and found that the RPDs between the spike and spike duplicates were within limits. No analytical problems were encountered. A Quality Control Checklist for Review of Laboratory Report is included in Appendix C.

## 8.2 Accuracy

Accuracy is the difference between a measured value and an accepted reference or true value. In accordance with the SAP for the Project Site, BASELINE collected an equipment blank (EB-123011) to assess the effectiveness of decontamination procedures. The equipment blank was analyzed for Title 22 metals in accordance with EPA Methods 6010B and 7470A and hexavalent chromium in accordance with EPA Method 7196A. If any of the target analytes are reported by the laboratory at or above the laboratory reporting limit, then any detection of that analyte in soil samples collected at less than ten times the equipment blank reported value will be considered an estimate and flagged accordingly. Any detection of that analyte in soil samples at concentrations equal to or more than ten times the reported value in the equipment blank will be considered representative.

The equipment blank did not contain any target analytes at or above laboratory reporting limits, indicating that the decontamination procedure was effective in preventing cross-contamination between samples and that the sampling procedure did not introduce any contaminants into the samples.

The accuracy of laboratory data is evaluated by measuring the recoveries in laboratory quality control samples (e.g., laboratory control sample, blank spike, blank spike duplicate, matrix spike, matrix spike duplicate, and surrogate spikes [as applicable]) spiked with a known amount of analyte. In addition, the analytical laboratory analyzes method blanks for each analytical method requested to assess laboratory contamination or false positives. The review of the laboratory report by C&T identified lead slightly above the laboratory reporting limit in the method blank. However, lead was identified in soil samples at concentrations greater than at least ten times the concentration identified in the method blank.

In addition, the review of the laboratory report by C&T indicated low recovery for hexavalent chromium in the matrix spike, which is the Project Site sample PH-01;1.0-1.3. However, the recovery for hexavalent chromium in the laboratory control sample was within laboratory limits. No other analytical problems were encountered. Therefore, the analytical results are considered valid and representative of Project Site conditions. The Quality Control Checklist for Review of Laboratory Report for the laboratory report by C&T is included in Appendix C.

### **8.3 Representativeness**

Representativeness is the degree to which data accurately and precisely represent an environmental condition. Representativeness is determined using a laboratory-prepared temperature blank to assess temperature-related sample preservation from the field to the laboratory. Project Site data is also considered representative if criteria affecting data quality (as discussed above) are met.

Bottleware and field supplies provided by C&T did not include a temperature blank. However, the temperature of the equipment blank was scanned by C&T upon receipt of samples using an infrared thermometer. The temperature measured was 2.7°C, within the acceptance criteria for temperature blank of 4°C ± 2°C (see cooler receipt checklist included in the laboratory report by C&T for sample temperature documentation). Based on the data quality evaluation, presented above, and the temperature of samples upon receipt by the analytical laboratory, BASELINE considers data gathered during field sampling representative of Project Site conditions.

### **8.4 Completeness**

Completeness is a measure of the amount of valid data collected from a location compared to the amount that would be expected to be obtained under normal conditions. Data are considered valid when none of the criteria affecting data quality is exceeded. The sampling completeness is calculated by dividing the number of usable data by the total number of data planned to be collected for this investigation, expressed in terms of percentage. The acceptance criteria for completeness established for the sampling activity is 90 percent or greater. The sampling completeness for the Supplemental Phase II ESA is 100 percent, within the acceptance criteria for completeness.

### **8.5 Comparability**

Comparability is a measure of the confidence with which one data set can be compared to another. The comparability of data can be affected by variations in sampling techniques, analytical methods, and environmental conditions (e.g., weather/seasonal variation). Data

comparability for the Supplemental Phase II ESA was ensured by using the same sampling technique, analytical method, and analytical laboratory for each sample matrix collected from the Project Site. Weather/seasonal variation is not expected to affect data comparability since collection of all samples was completed in 1 day.

## **9. EVALUATION OF RESULTS AND CONCLUSIONS**

This section presents an evaluation of analytical results to define the area around the former shed that contains elevated levels of metals and to characterize soil within the upper 2.5 feet of the Project Site for waste disposal.

A soil, once excavated, may be classified as a federal hazardous waste, a California hazardous waste, or a non-hazardous waste depending on its characteristics. A soil is considered a federal hazardous waste for toxicity characteristics if it contains a soluble concentration, determined by the Toxicity Characteristic Leaching Procedure (“TCLP”), equal to or greater than the regulatory thresholds established in Title 40 of the Code of Federal Regulations (“40 CFR”). The TCLP is a process to extract soluble metals from a waste using 20 parts of extraction solution per one part waste; therefore, a waste containing a metal with a total concentration equal to or greater than 20 times the federal hazardous waste threshold could be a federal hazardous waste, depending on the amount of the metal that is soluble. The federal hazardous waste thresholds for metals are contained in 40 CFR Part 261.24. No hazardous waste threshold for total concentration is specified at the federal level.

In California, a waste is considered hazardous if it contains total metals equal to or greater than the Total Threshold Limit Concentration (“TTLC”) or soluble metals, determined by the Waste Extraction Test (“WET”), equal to or greater than the Soluble Threshold Limit Concentration (“STLC”). The WET is a process to extract soluble metals from a waste using ten parts of extraction solution per one part of waste; therefore, a waste containing a metal with a total concentration equal to or greater than ten times the STLC could be a California hazardous waste, depending on the amount of the metal that is soluble. A waste that does not meet the STLC is considered unlikely to exceed the federal hazardous waste threshold due to a greater dilution ratio and a weaker extraction solution used in the TCLP compared to the WET. The TTLC and STLC values for metals are defined in Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24 of the California Code of Regulations.

A waste that does not meet the federal or the California hazardous waste criteria is considered non-hazardous. In California, federal and California hazardous wastes are acceptable for disposal at Class I designated landfills. Non-hazardous wastes are generally accepted at Class II and Class III designated landfills, depending on the landfill’s permit-to-operate requirements.

The analytical results for Title 22 metals and hexavalent chromium were screened against the federal and California hazardous waste thresholds, as applicable, to determine whether metals are present in shallow soils at the Project Site at levels of concern (i.e., exceed the federal or California hazardous waste thresholds, as applicable).

## **9.1 Soil**

### **9.1.1 *Title 22 Metals and Hexavalent Chromium***

None of the analytes identified at or above laboratory reporting limits equaled or exceeded the TTLCs (Table 1). However, lead and nickel were identified in two or more shallow soil samples at concentrations above ten times the respective STLCs (Table 1). In addition, chromium and lead were identified in one or more shallow soil samples at concentrations in excess of 20 times the respective federal hazardous waste thresholds (Table 2).

Hexavalent chromium was not identified at or above the laboratory reporting limit of 0.40 mg/kg, indicating that total chromium concentrations identified in shallow soil samples are trivalent chromium, which has an STLC value of 560 milligrams per liter (Table 1).

However, before the STLC for trivalent chromium can be used, it must be demonstrated first that the waste is not a federal hazardous waste. The hexavalent chromium results also indicate that the chromium results from the 2008 Phase II investigation by Winzler & Kelly are likely trivalent chromium. Soil samples that could contain hazardous waste levels of soluble metals were all collected from the former parking lot. At the request of the City, none of the soil samples that could contain hazardous waste levels of soluble metals was analyzed for soluble content either by WET or TCLP.

### **9.1.2 *Findings***

The analytical results for PH-02 appear to define the southwest extent of chromium and nickel impact near the former shed (Figure 4 and Table 1). However, the southeast extent of chromium and nickel impact near the former shed appears to extend beyond PH-03 but attenuate before PH-05 and SB-6 (Figure 4 and Table 1). The screening of analytical results for Title 22 metals indicates that shallow soil at the former parking lot (2521 Seminary Avenue) might be a California or federal hazardous waste, depending on the amount of chromium, lead, or nickel in the soil that is soluble. The screening evaluation also indicated that shallow soil at the unpaved portion of the Project Site (2541 Seminary Avenue) would likely be considered a non-hazardous waste, if excavated.

### **9.1.3 *Recommendations***

Based on the findings of the Supplemental Phase II ESA, BASELINE estimates the following possible soil disposal costs during development based on specific assumptions, provided as follows:

- Excavations will occur across the Project Site to a depth of up to 2.0 feet bgs;
- A multiplier of 1.7 is used to convert in-place volume of soil in cubic yards to excavated volume in tons;
- The cost of transportation and disposal of non-hazardous waste soil as cover at a Class II or Class III designated landfill is \$25/ton; and
- The cost of transportation and disposal of California hazardous waste soil at a Class I designated landfill is \$100/ton;

### Cost Estimate 1

This estimate considers 1,206 tons of soil from the former parking lot would be disposed of as a California hazardous waste and 790 tons of soil from the unpaved portion of the Project Site would be disposed of as a non-hazardous waste. The estimated cost of soil disposal would be \$140,350, \$120,600 for soil from the former parking lot (1,206 tons x \$100/ton) and \$19,750 for soil from the unpaved portion of the Project Site (790 tons x \$25/ton).

### Cost Estimate 2

This estimate assumes that 50 percent of soil from the former parking lot would be disposed of as a California hazardous waste and the rest would be disposed of as non-hazardous waste (including soil from the unpaved portion of the Project Site similar to Cost Estimate 1). The estimated cost of soil disposal would be \$95,125, \$75,375 for soil from the former parking lot (603 tons x \$100/ton + 603 tons x \$25/ton) and \$19,750 from the unpaved portion of the Project Site (790 tons x \$25/ton).

In either cost estimate, analysis for specific soluble metals would be required to determine the waste classification of shallow soil within the former parking lot (2521 Seminary Avenue) prior to acceptance of any waste by a landfill. Soil samples collected from the former parking lot during the Supplemental Phase II ESA may be analyzed for soluble metals up to 6 months from collection, after which the samples would be outside the hold time specified for the analysis.

## **10. DISPOSAL OF RESIDUAL MATERIALS**

After sample collection, BASELINE backfilled each open pothole with cuttings generated from the same location and tamped lightly. Therefore, the sampling activity did not generate any soil waste. Rinsate water derived from decontamination of sampling equipment was sufficiently low in volume and was considered to contain low concentrations of metals. Therefore, rinsate water was disposed of by pouring into the unpaved portion of the Project Site in accordance with EPA guidelines (EPA, 2009).

Used personal protective equipment (nitrile gloves) and disposable sampling supplies (empty glass bottles) were collected by BASELINE and placed in a municipal refuse dumpster. These wastes are not considered hazardous and can therefore be sent to a municipal landfill.

## **11. FIELD VARIANCE**

The Supplemental Phase II ESA was performed in general accordance with the SAP, with the following exception:

- Measurement of temperature using a temperature blank was not performed

However, the temperature of the equipment blank (EB-123011) was measured by the analytical laboratory upon receipt of samples using an infrared thermometer. As discussed in Section 5.2, Field Quality Control Sample, the equipment blank was placed in the same cooler containing standard and field duplicate samples. The cooler also contained ice to preserve the temperature of samples from the field to the laboratory. Therefore, soil samples collected during field

sampling were considered representative of conditions at the Project Site and the SAP deviation is considered to have no effect on the findings of the Supplemental Phase II ESA.

## **12. HEALTH AND SAFETY PROCEDURES**

Field sampling activities described in this report were performed in accordance with a Project Site-specific Health and Safety Plan (“HSP”) prepared by BASELINE. The HSP was prepared for BASELINE personnel engaged in field sampling activities. The elements of the HSP were reviewed by BASELINE prior to the start of work at the Project Site as part of a tail-gate safety meeting. Attendees of the tail-gate safety meeting are documented on the sign-in sheet included in the HSP. A copy of the HSP is included in Appendix D.

## **13. LIMITATION**

The Supplemental Phase II ESA has been conducted for the City. BASELINE’s interpretations and conclusions regarding this information and presented in this report are based on the expertise and experience of BASELINE in conducting similar assessments and current federal, state, and local regulations and standards.

BASELINE’s objective is to perform our work with care, exercising the customary thoroughness and competence of earth science, environmental, and engineering consulting professionals, in accordance with the standard for professional services for a consulting firm at the time these services were provided. It is important to recognize that even the most comprehensive scope of services may fail to detect environmental conditions and potential liability at a particular site. Therefore, BASELINE cannot act as insurers and cannot “certify or underwrite” that a site is free of environmental contamination, and no expressed or implied representation or warranty is included or intended in this report except that the work was performed within the limits prescribed with the customary thoroughness and competence of our profession.

The passage of time, manifestation of latent conditions, or occurrence of future events may require further exploration at the Project Site, analysis of the data, and re-evaluation of the findings, observations, conclusions, and recommendations expressed in this report.

The findings, observations, conclusions, and recommendations expressed by BASELINE in this report are limited by the scope of services and should not be considered an opinion concerning the compliance of any past or current owner or operator of the Project Site with any federal, state, or local law or regulation. No warranty or guarantee, whether expressed or implied is made with respect to the data reported or findings, observations, and conclusions expressed in this report.

## **14. REFERENCES**

Alameda County Assessor’s Office (“Alameda County”), 2012, Property Assessment Information, accessed 31 January 2012 at <http://www.acgov.org/MS/prop/index.aspx>

BASELINE Environmental Consulting (“BASELINE”), 2009, *Phase I Environmental Site Assessment and Hazardous Building Materials Assessment*, 5844 Bancroft Avenue, Oakland, California, December.

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Lawrence Berkeley National Laboratory (“LBNL”), 2009, *Analysis of Background Distributions of Metals in the Soil at Lawrence Berkeley National Laboratory*, Revised, April.

San Francisco Regional Water Quality Control Board (“Water Board”), 2008, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater*, May, interim final.

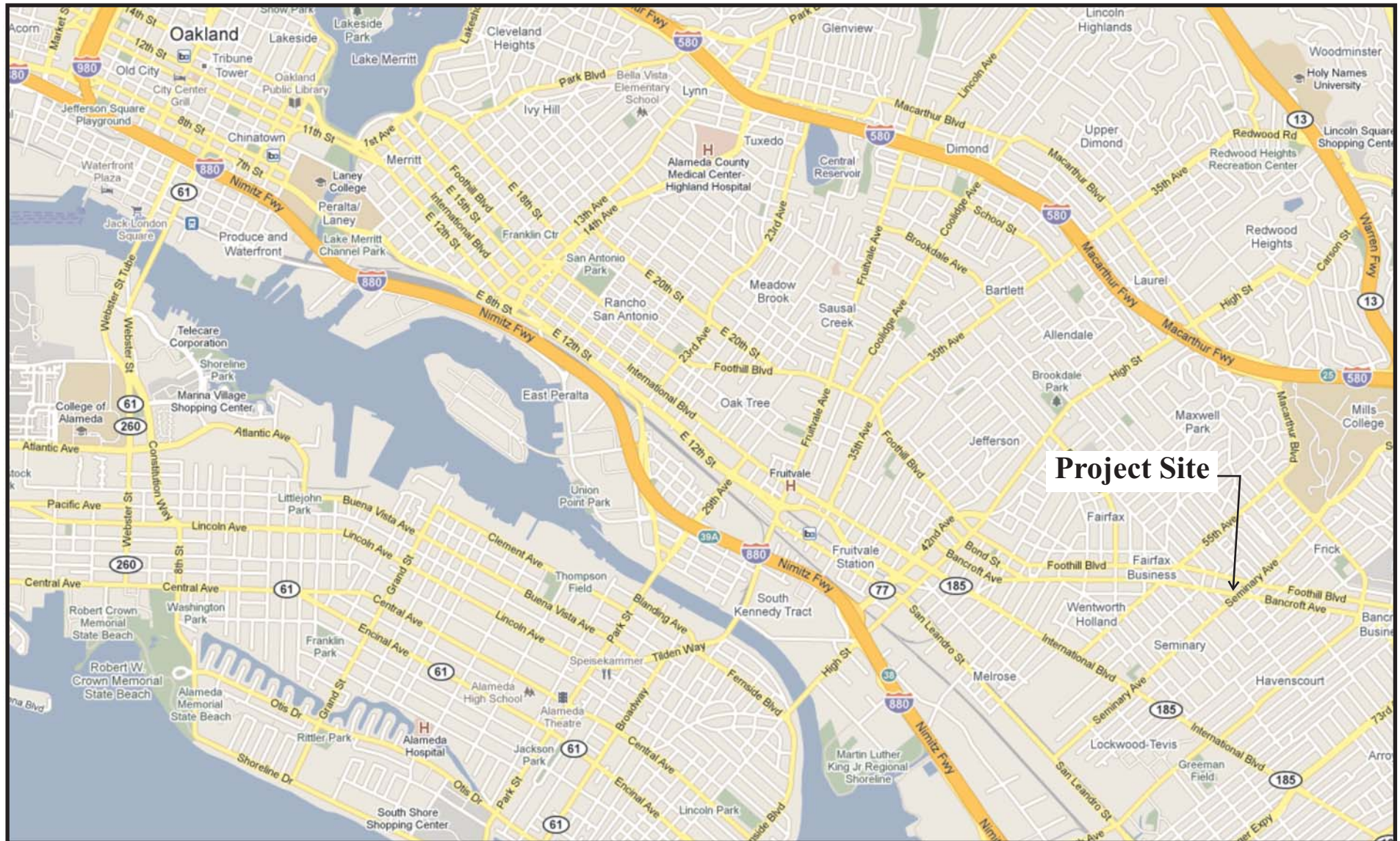
Winzler & Kelly, 2008, *Phase II Subsurface Soil Investigation*, 2529 Seminary Avenue, Oakland, California, 8 July.



## **FIGURES**

# VICINITY MAP

Figure 1



**2521-2541 Seminary Avenue  
Oakland, California**

Y8359-12.01817.Fig1.cdr 2/10/12







# FOOTHILL BOULEVARD/SEMINARY AVENUE REDEVELOPMENT AREA

Figure 2



## Legend

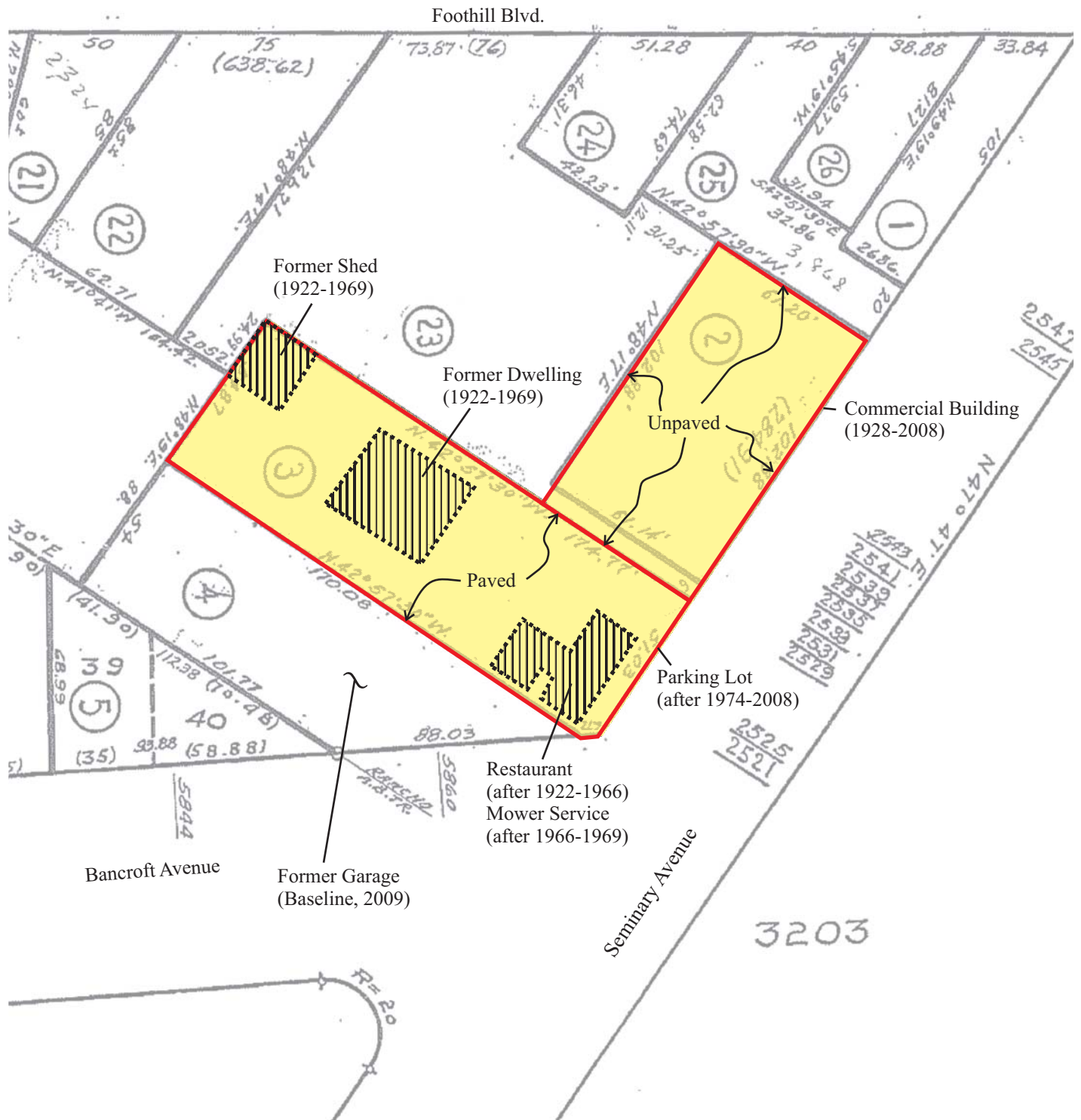
-  Foothill Boulevard/Seminary Avenue Redevelopment Area
-  Project Site

**2521-2541 Seminary Avenue  
Oakland, California**



# SITE MAP AND PREVIOUS LAND USE

Figure 3



## Legend

- Project Site
- Former Building Footprint (Winzler & Kelly, 2008)

## 2521-2541 Seminary Avenue Oakland, California

Base Map Source: (Alameda County, 2012)

Y8359-12.01817.Fig3.cdr 2/10/12



**B**ASELINE **E**



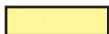
# TOTAL CONCENTRATIONS THAT COULD EXCEED HAZARDOUS WASTE THRESHOLDS FOR SOLUBLE CONCENTRATIONS

Figure 4

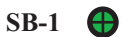
Foothill Boulevard



## Legend



Project Site



Sample Location by Winzler & Kelly, 2008



Sample Location by BASELINE, 2011

Note: Only analytes with total concentrations greater than ten times the Soluble Threshold Limit Concentration or 20 times the federal hazardous waste thresholds are presented (see Table 1). Soluble metals analysis for affected samples was not performed as requested by the City of Oakland.

**2521-2541 Seminary Avenue**  
**Oakland, California**

Base Map Source: (Alameda County, 2012)

Y8359-12.01817.Fig4.cdr 2/15/12

PH-01@1.0-1.3	
Chromium	320

Sample location at depth interval (feet below ground surface)

Analyte

Concentration in milligrams per kilogram



**BASELINE**

## **TABLES**

TABLE 1: Soil Analytical Results - Title 22 Metals and Hexavalent Chromium (mg/kg, except as noted)  
2521-2541 Seminary Avenue  
Oakland, California

Sample Location	Sample ID	Sample Depth Interval (feet bgs)	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Hexavalent Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
Former Parking Lot																					
PH-01	PH-01@1.0-1.3	1.0-1.3	12/30/2011	<0.53	4.5	190	0.23	1.0	320	<0.40 UJ	36	82	130 J	0.49	<0.26	590	2.5	0.43	<0.53	51	210
PH-02	PH-02@1.0-1.5	1.0-1.5	12/30/2011	<0.50	3.2	350	0.42	1.1	75	<0.40 UJ	16	64	380 J	0.78	<0.25	120	1.1	0.45	<0.50	47	280
PH-03	PH-03@0.5-1.0	0.5-1.0	12/30/2011	<0.55	1.7	210	0.27	0.70	240	<0.40 UJ	31	39	99 J	0.35	<0.27	460	2.1	0.35	<0.55	43	150
PH-04	PH-04@1.5-2.0	1.5-2.0	12/30/2011	<0.50	3.9	240	0.45	0.64	47	<0.40 UJ	11	42	130 J	0.097	<0.25	62	<0.50	0.27	<0.50	48	190
PH-05	PH-05@0.8-1.3	0.8-1.3	12/30/2011	<0.52	1.8	200	0.32	0.57	87	<0.40 UJ	38	35	120 J	0.068	<0.26	190	2.7	<0.26	<0.52	47	140
PH-06	PH-06@0.5-1.0	0.5-1.0	12/30/2011	<0.47	4.9	200	0.36	0.58	44	<0.40 UJ	13	36	95 J	0.091	<0.24	69	<0.47	<0.24	<0.47	41	120
PH-07	PH-07@1.6-2.1	1.6-2.1	12/30/2011	<0.52	4.3	220	0.46	0.51	61	<0.40 UJ	18	34	80 J	0.077	<0.26	96	<0.52	<0.26	<0.52	53	150
Former Commercial Building Footprint																					
PH-08	PH-08@1.4-1.9	1.4-1.9	12/30/2011	<0.49	3.3	170	0.46	<0.24	59	<0.40 UJ	14	29	4.9 J	0.040	<0.24	96	<0.49	<0.24	<0.49	45	48
PH-09	PH-09@2.3-2.8	2.3-2.8	12/30/2011	<0.47	1.3	150	0.37	<0.24	52	<0.40 UJ	7.5	26	3.6 J	0.043	<0.24	88	<0.47	<0.24	<0.47	33	43
PH-10	PH-10@0.8-1.3	0.8-1.3	12/30/2011	<0.53	3.6	220	0.42	0.29	62	<0.40 UJ	21	31	16 J	0.061	<0.26	110	1.4	<0.26	<0.53	53	57
CA Hazardous Waste Threshold -TTLC <sup>1</sup>				500	500	10,000	75	100	2,500	500	8,000	2,500	1,000	20	3,500	2,000	100	500	700	2,400	5,000
10 times STLC Screening Threshold (mg/L) <sup>2</sup>				150	50	1,000	7.5	10	5,600 <sup>3</sup>	50	800	250	50	2.0	3,500	200	10	50	70	240	2,500
20 times Federal Hazardous Waste Threshold (mg/L) <sup>4</sup>				NE	100	2,000	NE	20	100	NE	NE	NE	100	4.0	NE	NE	20	100	NE	NE	NE

Notes:

See Figure 4 for sample locations.

The laboratory report is included in Appendix C.

Values shown in bold indicate that the analyte was identified at or above laboratory reporting limits.

Title 22 metals analyses by EPA Methods 6010B and 7471A.

Hexavalent chromium analysis by EPA Method 7196A.

Gray-shaded cells indicate concentration greater than or equal to ten times the respective STLC. These samples were not subsequently analyzed for soluble metals by WET.

Cells with bold border indicate concentration greater than 20 times the respective federal hazardous waste threshold. These samples were not subsequently analyzed for soluble metals by TCLP.

Soluble metals analysis by WET or TCLP was not performed as requested by the City of Oakland.

<#.# = analyte not identified at or above the laboratory reporting limit of #.#.

bgs = below ground surface.

EPA = U.S. Environmental Protection Agency.

J = analyte positively identified but considered an estimate because the analyte was identified slightly above the laboratory reporting limit in the method blank. However, the analyte was identified in soil samples at concentrations greater than at least ten times the concentration identified in the method blank. The results are considered valid and representative.

mg/kg = milligrams per kilogram.

mg/L = milligrams per liter.

NE = not established.

STLC = Soluble Threshold Limit Concentration.

TCLP = Toxicity Characteristic Leaching Procedure.

Title 22 metals = the 17 inorganic analytes listed under Title 22 of the California Code of Regulations.

TTLC = Total Threshold Limit Concentration.

representative.

WET = Waste Extraction Test.

<sup>1</sup> A soil, once excavated, is considered a California hazardous waste if it contains total metals equal to or greater than the TTLC.

<sup>2</sup> A soil, once excavated, is considered a California hazardous waste if it contains soluble metals by WET equal to or greater than the STLC. The WET is a process to extract soluble metals from a waste using ten parts of extraction solution per one part of waste; therefore, a waste containing a metal with a total concentration equal to or greater than ten times the STLC could be a California hazardous waste, depending on the amount of the metal that is soluble. A waste that does not meet the STLC is considered unlikely to exceed the federal hazardous waste threshold due to a greater dilution ratio and a weaker extraction solution used in the TCLP compared to the WET.

<sup>3</sup> If soluble chromium, as determined by TCLP, is less than 5 mg/L, and soluble chromium, as determined by WET, equals or exceeds 560 mg/L and the waste is not otherwise identified as a federal hazardous waste, then the waste is a California hazardous waste. Before the STLC for trivalent chromium of 560 mg/L can be used, it must be demonstrated first that the waste is not a federal hazardous waste.

<sup>4</sup> A soil, once excavated, is considered a federal hazardous waste if it contains soluble metals, as determined by TCLP, at or above the federal hazardous waste threshold. The TCLP is a process to extract soluble metals from a waste using 20 parts of extraction solution per one part of waste; therefore, a waste containing a metal with a total concentration equal to or greater than 20 times the federal hazardous waste threshold could be a federal hazardous waste, depending on the amount of the metal that is soluble.

**TABLE 2: Duplicate Sample Results Evaluation**  
**2521-2541 Seminary Avenue**  
**Oakland, California**

Analyte	PH-02@1.0-1.5 (mg/kg)	PH-DUP (mg/kg)	RPD	Within Acceptable Limit
Arsenic	3.2	3.1	3%	YES
Barium	350	390	11%	YES
Beryllium	0.42	0.39	7%	YES
Cadmium	1.1	1.2	9%	YES
Chromium	75	73	3%	YES
Cobalt	16	17	6%	YES
Copper	64	210	107%	NO
Lead	380	450	17%	YES
Mercury	0.78	0.19	122%	NO
Nickel	120	130	8%	YES
Selenium	1.1	<0.50	75%	NO
Silver	0.45	1.3	97%	NO
Vanadium	47	46	2%	YES
Zinc	280	310	10%	YES

Notes:

See Figure 4 for sample locations.

The laboratory report is included in Appendix C.

An RPD of <50% is considered acceptable for soil.

See Table 1 for Title 22 metals results.

Analytes identified below laboratory reporting limits in both the standard and field duplicate samples are not presented.

mg/kg = milligrams per kilogram.

RPD = relative percent difference, equal to  $100[(X - X_{dup}) / \{(X + X_{dup})/2\}]$ .



**APPENDIX A**  
**LOGS FOR PH-01 THROUGH PH-10**

# SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS  MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS  MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS  (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES  (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS  MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS  (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES  (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS  MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS  LIQUID LIMIT LESS THAN 50			ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS  LIQUID LIMIT GREATER THAN 50			MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS	

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

<b>CLIENT</b> <u>City of Oakland</u>	<b>PROJECT NAME</b> <u>2521-2541 Seminary Avenue</u>
<b>PROJECT NUMBER</b> <u>Y8359-12</u>	<b>PROJECT LOCATION</b> <u>Oakland, California</u>
<b>DATE STARTED</b> <u>12/30/11</u> <b>COMPLETED</b> <u>12/30/11</u>	<b>GROUND ELEVATION</b> _____ <b>HOLE SIZE</b> <u>4 inches</u>
<b>DRILLING CONTRACTOR</b> <u>NA</u>	<b>GROUND WATER LEVELS:</b>
<b>DRILLING METHOD</b> <u>NA</u>	<b>AT TIME OF DRILLING</b> <u>--- Not observed</u>
<b>LOGGED BY</b> <u>WK Scott, P.G.</u> <b>CHECKED BY</b> <u>RMR</u>	<b>AT END OF DRILLING</b> <u>--- Not observed</u>
<b>NOTES</b> <u>Hole manually dug</u>	<b>AFTER DRILLING</b> <u>--- Not observed</u>

DEPTH (ft)	SAMPLES	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0					Asphalt cover top
		Cal West cored through asphalt using 8-in core.		0.3	
0.5					Second layer of asphalt
		Refusal at 15 inches bgs		0.6	
1.0			CH		GRAVELLY CLAY, (CH), dark brown, 1/3- to 1.5-inch angular clasts of rock, brick, and concrete (Fill)
		Hole was backfilled with cuttings from the same location		1.3	
		Concrete slab with brick			Bottom of borehole at 1.3 feet bgs.



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Emeryville, CA 94608  
Telephone: (510) 420-8686  
Fax: (510) 420-1707

# POT HOLE NUMBER PH-02

PAGE 1 OF 1

CLIENT	City of Oakland	PROJECT NAME	2521-2541 Seminary Avenue
PROJECT NUMBER	Y8359-12	PROJECT LOCATION	Oakland, California
DATE STARTED	12/30/11	COMPLETED	12/30/11
DRILLING CONTRACTOR	NA	GROUND ELEVATION	
DRILLING METHOD	NA	HOLE SIZE	4 inches
LOGGED BY	WK Scott, P.G.	CHECKED BY	RMR
NOTES	Hole manually dug		
		GROUND WATER LEVELS:	
		AT TIME OF DRILLING	--- Not observed
		AT END OF DRILLING	--- Not observed
		AFTER DRILLING	--- Not observed

DEPTH (ft)	SAMPLES	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0					
		Cal West cored through asphalt using 8-in core.			Asphalt cover top
					0.2 Second layer of asphalt
0.5					0.4 (GP), Base rock, gray, sand and gravel, 1/3- to 3/4-inch angular to rounded clasts
			GP		0.8 GRAVELLY CLAY, (CH), dark greenish gray, high plasticity, 1/3- to > 2-inch clasts (Fill)
1.0		Collected duplicate sample (PH-DUP) Hole was backfilled with cuttings from the same location	CH		1.2 SILT, (ML), very dark gray-black, trace gravel, 1/3-inch subangular clasts, moist
1.5			ML		1.5 Bottom of borehole at 1.5 feet bgs.

<b>CLIENT</b> <u>City of Oakland</u>		<b>PROJECT NAME</b> <u>2521-2541 Seminary Avenue</u>	
<b>PROJECT NUMBER</b> <u>Y8359-12</u>		<b>PROJECT LOCATION</b> <u>Oakland, California</u>	
<b>DATE STARTED</b> <u>12/30/11</u>	<b>COMPLETED</b> <u>12/30/11</u>	<b>GROUND ELEVATION</b> _____	<b>HOLE SIZE</b> <u>4 inches</u>
<b>DRILLING CONTRACTOR</b> <u>NA</u>		<b>GROUND WATER LEVELS:</b>	
<b>DRILLING METHOD</b> <u>NA</u>		<b>AT TIME OF DRILLING</b> --- Not observed	
<b>LOGGED BY</b> <u>WK Scott, P.G.</u>		<b>AT END OF DRILLING</b> --- Not observed	
<b>CHECKED BY</b> <u>RMR</u>		<b>AFTER DRILLING</b> --- Not observed	
<b>NOTES</b> <u>Hole manually dug</u>			

DEPTH (ft)	SAMPLES	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0					
					Asphalt cover top
					0.2
					Second layer of asphalt
					0.4
0.5			GW		0.5 (GW), Base Rock
					GRAVELLY CLAY, (CH), dark greenish gray, high plasticity, 1/3- to <2-inch angular clasts, moist (Fill)
			CH		
1.0					1.0
		Cal West cored through asphalt using 8-in core.			
		Used slide hammer to collect sample			
		Hole was backfilled with cuttings from the same location			
					Bottom of borehole at 1.0 feet bgs.

<b>CLIENT</b> <u>City of Oakland</u>		<b>PROJECT NAME</b> <u>2521-2541 Seminary Avenue</u>	
<b>PROJECT NUMBER</b> <u>Y8359-12</u>		<b>PROJECT LOCATION</b> <u>Oakland, California</u>	
<b>DATE STARTED</b> <u>12/30/11</u>	<b>COMPLETED</b> <u>12/30/11</u>	<b>GROUND ELEVATION</b> _____	<b>HOLE SIZE</b> <u>4 inches</u>
<b>DRILLING CONTRACTOR</b> <u>NA</u>		<b>GROUND WATER LEVELS:</b>	
<b>DRILLING METHOD</b> <u>NA</u>		<b>AT TIME OF DRILLING</b> <u>--- Not observed</u>	
<b>LOGGED BY</b> <u>WK Scott, P.G.</u>	<b>CHECKED BY</b> <u>RMR</u>	<b>AT END OF DRILLING</b> <u>--- Not observed</u>	
<b>NOTES</b> <u>Hole manually dug</u>		<b>AFTER DRILLING</b> <u>--- Not observed</u>	

DEPTH (ft)	SAMPLES	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0					
		Cal West cored through asphalt using 8-in core.			Asphalt cover top
					0.3
0.5		Post hole to 17 inches			Second layer of asphalt
			GP		0.5
					(GP), Base Rock, pale brown, gravel with sand
					0.8
1.0					GRAVELLY CLAY, (CH), brown, clasts of sandstone, concrete, brick, and charcoal pieces, high plasticity, (Fill)
			CH		
1.5					
		Used slide hammer used to collect sample			
		Hole was backfilled with cuttings from the same location			
2.0					2.0
					Bottom of borehole at 2.0 feet bgs.

<b>CLIENT</b> <u>City of Oakland</u>	<b>PROJECT NAME</b> <u>2521-2541 Seminary Avenue</u>
<b>PROJECT NUMBER</b> <u>Y8359-12</u>	<b>PROJECT LOCATION</b> <u>Oakland, California</u>
<b>DATE STARTED</b> <u>12/30/11</u> <b>COMPLETED</b> <u>12/30/11</u>	<b>GROUND ELEVATION</b> _____ <b>HOLE SIZE</b> <u>4 inches</u>
<b>DRILLING CONTRACTOR</b> <u>NA</u>	<b>GROUND WATER LEVELS:</b>
<b>DRILLING METHOD</b> <u>NA</u>	<b>AT TIME OF DRILLING</b> <u>--- Not observed</u>
<b>LOGGED BY</b> <u>WK Scott, P.G.</u> <b>CHECKED BY</b> <u>RMR</u>	<b>AT END OF DRILLING</b> <u>--- Not observed</u>
<b>NOTES</b> <u>Hole manually dug</u>	<b>AFTER DRILLING</b> <u>--- Not observed</u>

DEPTH (ft)	SAMPLES	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0					
		Cal West cored through asphalt using 8-in core.			Asphalt cover top
					0.2
					Second layer of asphalt
					0.4
0.5		Post hole to 10 inches			Hint of Base Rock
					GRAVELLY CLAY, (CH), brown mottled with greenish gray, 1/3- to 3/4-inch angular clasts of rock (Fill)
1.0		Used slide hammer used to collect sample	CH		
		Hole was backfilled with cuttings from the same location			1.3
					Bottom of borehole at 1.3 feet bgs.

CLIENT City of Oakland PROJECT NAME 2521-2541 Seminary Avenue  
PROJECT NUMBER Y8359-12 PROJECT LOCATION Oakland, California  
DATE STARTED 12/30/11 COMPLETED 12/30/11 GROUND ELEVATION \_\_\_\_\_ HOLE SIZE 4 inches  
DRILLING CONTRACTOR NA GROUND WATER LEVELS:  
DRILLING METHOD NA AT TIME OF DRILLING --- Not observed  
LOGGED BY WK Scott, P.G. CHECKED BY RMR AT END OF DRILLING --- Not observed  
NOTES Hole manually dug AFTER DRILLING --- Not observed

DEPTH (ft)	SAMPLES	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0					
		Cal West cored through asphalt using 8-in core.			Asphalt top
					Second layer of asphalt
0.5					
			CH		GRAVELLY CLAY, (CH), yellowish brown, 1/3- to 1.5-inch subangular to angular clasts (Fill)
1.0		Hole was backfilled with cuttings from the same location			
					Bottom of borehole at 1.0 feet bgs.



<b>CLIENT</b> <u>City of Oakland</u>		<b>PROJECT NAME</b> <u>2521-2541 Seminary Avenue</u>	
<b>PROJECT NUMBER</b> <u>Y8359-12</u>		<b>PROJECT LOCATION</b> <u>Oakland, California</u>	
<b>DATE STARTED</b> <u>12/30/11</u>	<b>COMPLETED</b> <u>12/30/11</u>	<b>GROUND ELEVATION</b> _____	<b>HOLE SIZE</b> <u>4 inches</u>
<b>DRILLING CONTRACTOR</b> <u>NA</u>		<b>GROUND WATER LEVELS:</b>	
<b>DRILLING METHOD</b> <u>NA</u>		<b>AT TIME OF DRILLING</b> --- Not observed	
<b>LOGGED BY</b> <u>WK Scott, P.G.</u>	<b>CHECKED BY</b> <u>RMR</u>	<b>AT END OF DRILLING</b> --- Not observed	
<b>NOTES</b> <u>Hole manually dug</u>		<b>AFTER DRILLING</b> --- Not observed	

DEPTH (ft)	SAMPLES	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0					
		Cal West cored through asphalt using 8-in core. Post hole and hand augered to depth			Asphalt top
					0.2 Second layer of asphalt
0.5			CH		0.4 GRAVELLY CLAY, (CH), yellowish brown, 1/3- to 1.5-subangular to angular clasts (Fill)
					0.8 CLAY, (CH), very dark gray, trace of gravel, high plasticity, moist
1.0					
1.5			CH		
2.0		Collected sample from auger Hole was backfilled with cuttings from the same location			
					2.1 Bottom of borehole at 2.1 feet bgs.



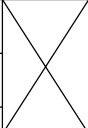


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Telephone: (510) 420-8686  
Fax: (510) 420-1707



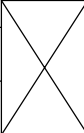
# POT HOLE NUMBER PH-08

PAGE 1 OF 1

CLIENT	City of Oakland	PROJECT NAME	2521-2541 Seminary Avenue
PROJECT NUMBER	Y8359-12	PROJECT LOCATION	Oakland, California
DATE STARTED	12/30/11	COMPLETED	12/30/11
DRILLING CONTRACTOR	NA	GROUND ELEVATION	
DRILLING METHOD	NA	HOLE SIZE	4 inches
LOGGED BY	WK Scott, P.G.	CHECKED BY	RMR
NOTES	Hole manually dug		
GROUND WATER LEVELS:		AT TIME OF DRILLING	
		--- Not observed	
		AT END OF DRILLING	
		--- Not observed	
		AFTER DRILLING	
		--- Not observed	

DEPTH (ft)	SAMPLES	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0					
		Post hole and hand augered to 17 inches	CL		GRAVELLY CLAY, (CL), with silt, dark brown, 1/3- to 1.5-inch angular clasts of concrete and rock (Fill)
0.5				0.4	
			CH		CLAY, (CH), very dark gray, high plasticity, moist
1.0					
1.5		Used slide hammer to collect sample Hole was backfilled with cuttings from the same location		1.9	
					Bottom of borehole at 1.9 feet bgs.

<b>CLIENT</b> <u>City of Oakland</u>		<b>PROJECT NAME</b> <u>2521-2541 Seminary Avenue</u>	
<b>PROJECT NUMBER</b> <u>Y8359-12</u>		<b>PROJECT LOCATION</b> <u>Oakland, California</u>	
<b>DATE STARTED</b> <u>12/30/11</u>	<b>COMPLETED</b> <u>12/30/11</u>	<b>GROUND ELEVATION</b> _____	<b>HOLE SIZE</b> <u>4 inches</u>
<b>DRILLING CONTRACTOR</b> <u>NA</u>		<b>GROUND WATER LEVELS:</b>	
<b>DRILLING METHOD</b> <u>NA</u>		<b>AT TIME OF DRILLING</b> <u>--- Not observed</u>	
<b>LOGGED BY</b> <u>WK Scott, P.G.</u>	<b>CHECKED BY</b> <u>RMR</u>	<b>AT END OF DRILLING</b> <u>--- Not observed</u>	
<b>NOTES</b> <u>Hole manually dug</u>		<b>AFTER DRILLING</b> <u>--- Not observed</u>	

DEPTH (ft)	SAMPLES	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0					
		Post hole and hand augered to 28 inches	CL		GRAVELLY CLAY, (CL), with silt, dark brown, 1/3- to 1.5-inch angular clasts of concrete and rock (Fill)
0.5				0.4	CLAY, (CH), very dark gray, high plasticity, moist
1.0					
1.5			CH		
2.0					
2.5		Used slide hammer to collect sample Hole was backfilled with cuttings from the same location		2.8	
					Bottom of borehole at 2.8 feet bgs.

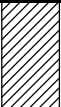



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# POTHOLE NUMBER PH-10

PAGE 1 OF 1

CLIENT	City of Oakland	PROJECT NAME	2521-2541 Seminary Avenue
PROJECT NUMBER	Y8359-12	PROJECT LOCATION	Oakland, California
DATE STARTED	12/30/11	COMPLETED	12/30/11
DRILLING CONTRACTOR	NA	GROUND ELEVATION	
DRILLING METHOD	NA	HOLE SIZE	4 inches
LOGGED BY	WK Scott, P.G.	CHECKED BY	RMR
NOTES	Hole manually dug		
		GROUND WATER LEVELS:	
		AT TIME OF DRILLING	--- Not observed
		AT END OF DRILLING	--- Not observed
		AFTER DRILLING	--- Not observed

DEPTH (ft)	SAMPLES	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0					
		Post hole and hand augered to depth	CL		GRAVELLY CLAY, (CL), with silt, dark brown, 1/3- to 1.5-inch clasts of concrete, rock, brick, and metal (iron) pieces, damp-dry (Fill)
0.5				0.4	
			CH		CLAY, (CH), very dark gray, high plasticity, moist
1.0		2-in by 6-in corer driven with slide hammer Hole was backfilled with cuttings from the same location		1.3	
					Bottom of borehole at 1.3 feet bgs.

**APPENDIX B**  
**FIELD LOG, PHOTOGRAPH LOG, AND PHOTOGRAPHS**

# FIELD LOG

page 1 of 2

Project name: 2521 82529 Seminary Avenue

Project no.: Y8359-12

Logger: RR

Date: 12-30-11

Weather conditions: Drizzle, cloudy

Site personnel: BASELINE and Cal West


Time	Field Activities
6:30	Arrival Time:
	- Mark sample locations
	- Don PPE (hard hat, eye protection, vest, gloves, knee pads, & boots)
7:20	- Dig pothole 10 using manual tools (digging bar, shovel, and post-hole digger). Collected sample at 10 inches bgs using slide hammer with 6-inch cone
7:50	- Dig pothole 9 using digging bar, PHD, and hand auger. Collected sample at 28 inches bgs using hand auger. Homogenized sample in bowl then transferred into glass jar.
8:20	- Dig pothole 8 to 17 inches bgs using following the same method at pothole 9. Cal West has arrived and <sup>is</sup> setting up at pothole 1. Collected sample using slide hammer.
8:45	- Cal West cored <del>8"</del> through asphalt <sup>using 8" cone</sup> . Dug to 12" bgs using digging bar and PHD. Collected sample using slide hammer. Refusal at 15" bgs. Concrete and bricks observed.
9:10	- Cal West cored through 2 inches of asphalt. Dug <sup>pothole 2</sup> to 12" bgs using digging bar and PHD. Collected sample at 12" bgs using slide hammer. Collected duplicate sample.
9:30	- Cal West cored through asphalt. Dug to <sup>pothole 3</sup> 6" bgs using digging bar and PHD. Gravelly clay material observed at 6" bgs. Collected sample using slide hammer from 6" to 12" bgs.
10:00	- Cal West cored through asphalt. Dug <sup>4</sup> pothole to 18" bgs using digging bar & PHD. Collected sample at 18" bgs using slide hammer. Backfilled hole with cuttings.
	Departure Time: <u>e</u>

FIELDLOG.XLS (2/22/10)


# **BASELINE**

## **FIELD LOG**

Page 2 of 2

Project:		Job No:	
Logger:		Date: <u>12-30-11</u> 	
Weather Conditions:			
Site Personnel:			
Time	Field Activities		
<u>10:20</u>	<u>Arrival Time</u> Cal West cored through asphalt.		
	Dug pothole <sup>5</sup> to 10" bgs. collected sample at		
	10" bgs using slide hammer.		
<u>10:40</u>	Cal West cored through asphalt.		
	Dug pothole 6 to 6" bgs then collected		
	sample using slide hammer.		
<u><del>11:10</del> 10:50</u>	collected equipment blank		
<u>11:10</u>	Cal West cored through asphalt. Dug		
	pothole 7 to 19" bgs <del>to</del> using		
	digging bar, PHD, and hand auger.		
	collected sample <del>to</del> using hand auger.		
	The sample core, stainless steel bowl, and digging		
	tools were decontaminated in between sample		
	collection by washing in alconox solution followed		
	by rinsing with clean water and deionized		
	water.		
<u>11:30</u>	Departure Time		

# PHOTOGRAPH LOG

Project #: Y8359-12  
 Project Name: 2521-2541 Seminary Avenue, Oakland  
 Photograph Date: 12/30/2011  
 Logged by: WKS and RR 

Photograph #	Location / Description
1	Refusal at 15 inches below ground surface
2	BASELINE staff wearing PPE during manual digging.
3	Cal West coring through asphalt on former parking lot.
4	Homogenization of sample using stainless steel bowl.



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## PHOTOGRAPHS FROM FIELD SAMPLING DECEMBER 30, 2011



Photograph 1: Refusal at PH-01 at 15 inches below ground surface.



Photograph 2: BASELINE staff wearing PPE during manual digging at PH-01.

**2521-2541 Seminary Avenue  
Oakland, California**

**B<sup>ASELINE</sup>E**

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## PHOTOGRAPHS FROM FIELD SAMPLING DECEMBER 30, 2011



Photograph 3: Cal West coring through asphalt on the former parking lot.



Photograph 4: Homogenization of sample from PH-10 using stainless steel bowl.

**2521-2541 Seminary Avenue  
Oakland, California**

**APPENDIX C**  
**LABORATORY REPORT**  
**233540**



**QUALITY CONTROL CHECKLIST  
FOR REVIEW OF LABORATORY REPORT**

**Job No.** Y8359-12  
**Laboratory:** Curtis & Tompkins, Ltd.  
**Report Date:** 9 January 2012

**Site:** 2521-2541 Seminary Avenue  
**Laboratory Report No.:** 233540  
**BASELINE Reviewer:** RR

	Yes	No	NA
<b>GENERAL QUESTIONS</b> (Describe “no” responses below in “comments” section. Contact the laboratory, as required, for further explanation or action on “no” responses; document discussion in comments section.)			
1a. Does the report include a case narrative? ( <i>A case narrative MUST be prepared by the lab for all analytical work requested by BASELINE</i> )	X		
1b. Is the number of pages for the lab report as indicated on the case narrative/lab transmittal consistent with the number of pages that are included in report?	X		
1c. Does the case narrative indicate which samples were analyzed by a subcontractor and the subcontractor’s name?			X
1d. Does the case narrative summarize subsequent requests not shown on the chain-of-custody (e.g., additional analyses requested, release of “hold” samples)?			X
1e. Does the case narrative explain why requested analyses could not be performed by the laboratory (e.g., insufficient sample)?			X
1f. Does the case narrative explain all problems with the QA/QC data as identified in the checklist (as applicable)?	X		
2a. Is the laboratory report format consistent and legible throughout the report?	X		
2b. Are the sample and reported dates shown in the laboratory report correct?	X		
3a. Does the lab report include a copy of the original chain-of-custody form?	X		
3b. Were all samples appropriately analyzed as requested on the chain-of-custody form?	X		
4. Was the lab report signed and dated as being reviewed by the laboratory director, QA manager, or other appropriate personnel? (Some lab reports have signature spaces for each page). (This requirement also applies to any analyses subcontracted out by the laboratory)	X		
5a. Are preparation methods, cleanup methods (if applicable), and laboratory methods indicated for all analyses?	X		
5b. If additional analytes were requested as part of the reporting of the data for an analytical method, were these included in the lab report?			X
6. Are the units in the lab report provided for each analysis consistent throughout the report?	X		
7. Are the detection limits (DL) appropriate based on the intended use of the data (e.g., DL below applicable MCLs for water quality issues)?	X		

**Quality Control Checklist - continued**

	Yes	No	NA
8a. Are detection limits appropriate based on the analysis performed (i.e., not elevated due to dilution effects)?	X		
8b. If no, is an explanation provided by the laboratory?			X
9a. Were the samples analyzed within the appropriate holding time (generally 2 weeks for volatiles, and up to 6 months for total metals)?	X		
9b. If no, was it flagged in the report?			X
10. If samples were composited prior to analysis, does the lab report indicate which samples were composited for each analysis?			X
11a. Do the chromatograms confirm quantitative laboratory results (petroleum hydrocarbons)?			X
11b. Is a standard chromatogram(s) included in the laboratory report?			X
11c. Do the chromatograms confirm laboratory notes, if present (e.g., sample exhibits lighter hydrocarbon than standard)?			X
12. Are the results consistent with previous analytical results from the site? <i>(If no, contact the lab and request review/reanalysis of data, as appropriate.)</i>			X
13a. REVISED LAB REPORTS ONLY. Is the revised lab report or revised pages to a lab report signed and dated as being reviewed by the laboratory director, QA manager, or other appropriate personnel?			X
13b. REVISED LAB REPORTS ONLY. Does the case narrative indicate the date of revision and provide an explanation for the revision?			X
13c. REVISED LAB REPORTS ONLY. Does the revised lab report adequately address the problem(s) that triggered the need for a revision?			X
13d. REVISED LAB REPORTS ONLY. Are the data included in the revised report the same as the data reported in the original report, except where the report was revised to correct incorrectly reported data?			X
<b>QA/QC Questions</b> Field/Laboratory Quality Control - Groundwater Analyses			
14. Are field blanks reported as "ND" (groundwater samples)? <i>A field blank is a sample of DI water that is prepared in the field using the same collection and handling procedures as the other samples collected, and used to demonstrate that the sampling procedure has not contaminated the sample.</i>			X
14a. Are rinsate blanks reported as "ND" (soil samples)? <i>A rinsate blank is a sample of DI water that is prepared in the field by collecting DI rinse water after it has been poured over decontaminated sampling equipment. The rinsate blank is collected to demonstrate that the decontamination procedure has removed all the contaminants from the sampling equipment and that the sampling equipment has not contaminated the sample.</i>	X		

**Quality Control Checklist - continued**

	Yes	No	NA
15. Are trip blanks reported as “ND” (groundwater samples/volatile analyses)? <i>A trip blank is a sample of contaminant free matrix placed in an appropriate container by the lab and transported with the field samples collected. Provides information regarding positive interference introduced during sample transport, storage, preservation, and analysis. The sample is NOT opened in the field.</i>			X
16. Are duplicate sample results consistent with the original sample (groundwater samples)? <i>Field duplicates consist of two independent samples collected at the same sampling location during a single sampling event. Used to evaluate precision of the analytical data and sampling technique. (Differences between the duplicate and sample results may also be attributed to environmental variability.)</i>	X		
<b>Batch Quality Control</b> (Samples are batched together by matrix [soil, water] and analyses requested. A batch generally consists of 20 or fewer samples of the same matrix type, and is prepared using the same reagents, standards, procedures, and time frame as the samples. QC samples are run with each batch to assess performance of the entire measurement process.)			
17. Do the sample batch numbers and corresponding laboratory QA/QC batch numbers match?	X		
18a. Are method blanks (MB) for the analytical method(s) below the laboratory reporting limits? <i>Used to assess lab contamination and prevent false positive results.</i>		X	
18b. If no, is an explanation provided in the case narrative to validate the data?	X		
18c. Are analytes that may be considered laboratory contaminants reported below the laboratory reporting limit? <i>Common lab contaminants include acetone, methylene chloride, 2-butanone, diethylhexyl phthalate, and di-n-octyl phthalate.</i>			X
18d. If no, was the laboratory contacted to determine whether the reported analyte could be a potential laboratory contaminant and was an explanation included in the case narrative?			X
19. Are laboratory control samples (LCS) and LCS duplicate (LCSD) [a.k.a., Blank Spike (BS) and BS duplicates (BSD)] within laboratory reporting limits? Limits should be provided on the report. <i>LCS is a reagent blank spike with a representative selection of target analyte(s) and prepared in the same manner as the samples analyzed. The LCS should be spiked with the same analytes as the matrix spike (below). The LCS is free from interferences from the sample matrix and demonstrates the ability of the lab instruments to recover the target analytes. Accuracy (recovery information) is generally reported as % spike recovery; precision (reproducibility of results) between the LCS and LCSD is generally reported as the relative percent difference (RPD). LCS/LCSD can be run in addition to or in lieu of matrix QC data.</i>	X		
20a. Are the Matrix QC data (i.e., MS/MSD) within laboratory limits? Limits should be provided on the lab report. <i>The lab selects a sample from the batch and analyzes a spike and a spike duplicate of that sample. Matrix QC data is used to obtain precision and accuracy information and is reported in the same manner as LCS/LCSD. If the MS/MSD fails, the results may still be considered valid if the MB and either the LCS/LCSD or BS/BSD is within the lab’s limits (failure is probably due to matrix interference).</i>		X	

***Quality Control Checklist - continued***

	Yes	No	NA
20b. If no, is the MB and either LCS/LCSD or BS/BSD within lab limits to validate the data?	X		
<b><i>Sample Quality Control</i></b>			
21a. Are the surrogate spikes reported within the lab's acceptable recovery limits? <i>A surrogate is a non-target analyte, which is similar in chemical structure to the analyte(s) being analyzed for, and which is not commonly found in environmental samples. A known concentration of the surrogate is spiked into the sample or QA "sample" prior to extraction or sample preparation. Results are usually reported as % recovery of the spike. Failure to meet lab's limits for primary and secondary surrogates results in rebatching and reanalysis of the sample; failure of only the primary or the secondary surrogate may be acceptable under certain circumstances. Failure generally is due to coelution with the sample matrix.</i>			X
21b. If no, is an explanation given in the case narrative to validate the data?			X

**Comments:**

18a. Lead was identified above the laboratory reporting limit in the method blank. However, the analyte was identified in project samples at concentrations greater than at least ten times the concentration identified in the method blank. Therefore, the lead results are representative and no further action is required.

20a. Low recovery for hexavalent chromium was observed in the MS, which is the project sample PH-01;1.0-1.3. However, the recovery for hexavalent chromium in the LCS was within limit. Therefore, the hexavalent chromium data for soil are valid and no further action is required.





Curtis & Tompkins, Ltd.

Analytical Laboratories, Since 1878





Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

**Laboratory Job Number 233540**  
**ANALYTICAL REPORT**

Baseline Environmental  
5900 Hollis Street  
Emeryville, CA 94608

Project : Y8359-12  
Location : 2529 Seminary  
Level : II

<u>Sample ID</u>	<u>Lab ID</u>
PH-01@1.0-1.3	233540-001
PH-02@1.0-1.5	233540-002
PH-03@0.5-1.0	233540-003
PH-04@1.5-2.0	233540-004
PH-05@0.8-1.3	233540-005
PH-06@0.5-1.0	233540-006
PH-07@1.6-2.1	233540-007
PH-08@1.4-1.9	233540-008
PH-09@2.3-2.8	233540-009
PH-10@0.8-1.3	233540-010
PH-DUP	233540-011
EB-123011	233540-012

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: \_\_\_\_\_

Project Manager

Date: 01/09/2012

NELAP # 01107CA

## CASE NARRATIVE

Laboratory number: 233540  
Client: Baseline Environmental  
Project: Y8359-12  
Location: 2529 Seminary  
Request Date: 12/30/11  
Samples Received: 12/30/11

This data package contains sample and QC results for eleven soil samples and one water sample, requested for the above referenced project on 12/30/11. The samples were received cold and intact.

**Metals (EPA 6010B and EPA 7470A) Water:**

No analytical problems were encountered.

**Metals (EPA 6010B and EPA 7471A) Soil:**

Lead was detected above the RL in the method blank for batch 182537; this analyte was detected in samples at a level at least 10 times that of the blank. No other analytical problems were encountered.

**Hexavalent Chromium (EPA 7196A):**

No analytical problems were encountered.

**Hexavalent Chromium (EPA 3060/7196):**

Low recovery was observed for hexavalent chromium in the matrix spike of PH-01@1.0-1.3 (lab # 233540-001); the LCS was within limits. No other analytical problems were encountered.

## CHAIN OF CUSTODY RECORD

**Tel: (510) 420-8686 Fax: (510) 420-1707**

**BASELINE Contact Person Redgy Ramirez**

COC.xlsx - 12/29/2011

# COOLER RECEIPT CHECKLIST



Curtis & Tompkins, Ltd.

Login # 233540 Date Received 12/30/11 Number of coolers 1  
 Client BASELINE Project 48359-12

Date Opened 12/20/11 By (print) I. CHOI (sign) [Signature]  
 Date Logged in ✓ By (print) ✓ (sign) ✓

1. Did cooler come with a shipping slip (airbill, etc) YES NO  
 Shipping info \_\_\_\_\_

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☒ NO  
 How many \_\_\_\_\_ Name \_\_\_\_\_ Date \_\_\_\_\_

2B. Were custody seals intact upon arrival? \_\_\_\_\_ YES NO N/A

3. Were custody papers dry and intact when received? \_\_\_\_\_ YES NO

4. Were custody papers filled out properly (ink, signed, etc)? \_\_\_\_\_ YES NO

5. Is the project identifiable from custody papers? (If so fill out top of form) \_\_\_\_\_ YES NO

6. Indicate the packing in cooler: (if other, describe) \_\_\_\_\_

☐ Bubble Wrap ☐ Foam blocks ☐ Bags ☐ None  
☐ Cloth material ☒ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: \* Notify PM if temperature exceeds 6°C

Type of ice used: ☒ Wet ☐ Blue/Gel ☐ None Temp(°C) 2.7°C

☒ Samples Received on ice & cold without a temperature blank temp taken w/ IR gun

☒ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? \_\_\_\_\_ YES NO

If YES, what time were they transferred to freezer? \_\_\_\_\_

9. Did all bottles arrive unbroken/unopened? \_\_\_\_\_ YES NO

10. Are there any missing / extra samples? \_\_\_\_\_ YES NO

11. Are samples in the appropriate containers for indicated tests? \_\_\_\_\_ YES NO

12. Are sample labels present, in good condition and complete? \_\_\_\_\_ YES NO

13. Do the sample labels agree with custody papers? \_\_\_\_\_ YES NO

14. Was sufficient amount of sample sent for tests requested? \_\_\_\_\_ YES NO

15. Are the samples appropriately preserved? \_\_\_\_\_ YES NO N/A

16. Did you check preservatives for all bottles for each sample? \_\_\_\_\_ YES NO N/A

17. Did you document your preservative check? \_\_\_\_\_ YES NO N/A

18. Did you change the hold time in LIMS for unpreserved VOAs? \_\_\_\_\_ YES NO N/A

19. Did you change the hold time in LIMS for preserved terracores? \_\_\_\_\_ YES NO N/A

20. Are bubbles > 6mm absent in VOA samples? \_\_\_\_\_ YES NO N/A

21. Was the client contacted concerning this sample delivery? \_\_\_\_\_ YES NO

If YES, Who was called? \_\_\_\_\_ By \_\_\_\_\_ Date: \_\_\_\_\_

## COMMENTS

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Curtis & Tompkins Sample Preservation for 233540

Sample	pH: <2	>12	Other
-012a	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
b	<input type="checkbox"/>	<input type="checkbox"/>	_____

Analyst: ISC  
Date: 12/30/11

### California Title 22 Metals

Lab #:	233540	Project#:	Y8359-12
Client:	Baseline Environmental	Location:	2529 Seminary
Field ID:	EB-123011	Diln Fac:	1.000
Lab ID:	233540-012	Sampled:	12/30/11
Matrix:	Water	Received:	12/30/11
Units:	ug/L		

Analyte	Result	RL	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	10	182593	01/04/12	01/05/12	EPA 3010A	EPA 6010B
Arsenic	ND	6.1	182593	01/04/12	01/05/12	EPA 3010A	EPA 6010B
Barium	ND	5.0	182593	01/04/12	01/05/12	EPA 3010A	EPA 6010B
Beryllium	ND	2.0	182593	01/04/12	01/05/12	EPA 3010A	EPA 6010B
Cadmium	ND	5.0	182593	01/04/12	01/05/12	EPA 3010A	EPA 6010B
Chromium	ND	5.0	182593	01/04/12	01/05/12	EPA 3010A	EPA 6010B
Cobalt	ND	5.0	182593	01/04/12	01/05/12	EPA 3010A	EPA 6010B
Copper	ND	5.0	182593	01/04/12	01/05/12	EPA 3010A	EPA 6010B
Lead	ND	5.0	182593	01/04/12	01/05/12	EPA 3010A	EPA 6010B
Mercury	ND	0.20	182548	01/03/12	01/03/12	METHOD	EPA 7470A
Molybdenum	ND	5.0	182593	01/04/12	01/05/12	EPA 3010A	EPA 6010B
Nickel	ND	5.0	182593	01/04/12	01/05/12	EPA 3010A	EPA 6010B
Selenium	ND	10	182593	01/04/12	01/05/12	EPA 3010A	EPA 6010B
Silver	ND	5.0	182593	01/04/12	01/05/12	EPA 3010A	EPA 6010B
Thallium	ND	10	182593	01/04/12	01/05/12	EPA 3010A	EPA 6010B
Vanadium	ND	5.0	182593	01/04/12	01/05/12	EPA 3010A	EPA 6010B
Zinc	ND	20	182593	01/04/12	01/05/12	EPA 3010A	EPA 6010B

ND= Not Detected  
RL= Reporting Limit

## Batch QC Report

California Title 22 Metals			
Lab #:	233540	Location:	2529 Seminary
Client:	Baseline Environmental	Prep:	METHOD
Project#:	Y8359-12	Analysis:	EPA 7470A
Analyte:	Mercury	Diln Fac:	1.000
Type:	BLANK	Batch#:	182548
Lab ID:	QC623830	Prepared:	01/03/12
Matrix:	Water	Analyzed:	01/03/12
Units:	ug/L		

Result	RL
ND	0.20

ND= Not Detected  
RL= Reporting Limit

## Batch QC Report

California Title 22 Metals			
Lab #:	233540	Location:	2529 Seminary
Client:	Baseline Environmental	Prep:	METHOD
Project#:	Y8359-12	Analysis:	EPA 7470A
Analyte:	Mercury	Batch#:	182548
Matrix:	Water	Prepared:	01/03/12
Units:	ug/L	Analyzed:	01/03/12
Diln Fac:	1.000		

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC623831	2.500	2.480	99	79-120		
BSD	QC623832	2.500	2.530	101	79-120	2	29

RPD= Relative Percent Difference



## Batch QC Report

California Title 22 Metals			
Lab #:	233540	Location:	2529 Seminary
Client:	Baseline Environmental	Prep:	METHOD
Project#:	Y8359-12	Analysis:	EPA 7470A
Analyte:	Mercury	Batch#:	182548
Field ID:	EB-123011	Sampled:	12/30/11
MSS Lab ID:	233540-012	Received:	12/30/11
Matrix:	Water	Prepared:	01/03/12
Units:	ug/L	Analyzed:	01/03/12
Diln Fac:	1.000		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
MS	QC623833	<0.03605	2.500	2.530	101	59-123		
MSD	QC623834		2.500	2.440	98	59-123	4	51

RPD= Relative Percent Difference

## Batch QC Report

California Title 22 Metals			
Lab #:	233540	Location:	2529 Seminary
Client:	Baseline Environmental	Prep:	EPA 3010A
Project#:	Y8359-12	Analysis:	EPA 6010B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC624009	Batch#:	182593
Matrix:	Water	Prepared:	01/04/12
Units:	ug/L	Analyzed:	01/05/12

Analyte	Result	RL
Antimony	ND	10
Arsenic	ND	6.1
Barium	ND	5.0
Beryllium	ND	2.0
Cadmium	ND	5.0
Chromium	ND	5.0
Cobalt	ND	5.0
Copper	ND	5.0
Lead	ND	5.0
Molybdenum	ND	5.0
Nickel	ND	5.0
Selenium	ND	10
Silver	ND	5.0
Thallium	ND	10
Vanadium	ND	5.0
Zinc	ND	20

ND= Not Detected

RL= Reporting Limit

# Batch QC Report

California Title 22 Metals			
Lab #:	233540	Location:	2529 Seminary
Client:	Baseline Environmental	Prep:	EPA 3010A
Project#:	Y8359-12	Analysis:	EPA 6010B
Matrix:	Water	Batch#:	182593
Units:	ug/L	Prepared:	01/04/12
Diln Fac:	1.000	Analyzed:	01/05/12

Type: BS Lab ID: QC624010

Analyte	Spiked	Result	%REC	Limits
Antimony	500.0	421.9	84	72-120
Arsenic	100.0	91.04	91	80-130
Barium	2,000	1,727	86	80-120
Beryllium	50.00	46.47	93	80-120
Cadmium	50.00	42.60	85	80-120
Chromium	200.0	172.4	86	80-120
Cobalt	500.0	427.8	86	80-120
Copper	250.0	205.4	82	78-120
Lead	100.0	81.24	81	78-120
Molybdenum	400.0	362.8	91	80-120
Nickel	500.0	432.3	86	80-120
Selenium	100.0	89.86	90	78-122
Silver	50.00	43.98	88	79-120
Thallium	100.0	84.60	85	80-124
Vanadium	500.0	436.3	87	80-120
Zinc	500.0	412.0	82	80-120

Type: BSD Lab ID: QC624011

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Antimony	500.0	434.1	87	72-120	3	20
Arsenic	100.0	93.34	93	80-130	2	20
Barium	2,000	1,776	89	80-120	3	20
Beryllium	50.00	47.27	95	80-120	2	20
Cadmium	50.00	43.82	88	80-120	3	20
Chromium	200.0	178.0	89	80-120	3	20
Cobalt	500.0	439.3	88	80-120	3	20
Copper	250.0	214.5	86	78-120	4	20
Lead	100.0	86.95	87	78-120	7	20
Molybdenum	400.0	379.6	95	80-120	5	20
Nickel	500.0	444.5	89	80-120	3	20
Selenium	100.0	89.02	89	78-122	1	23
Silver	50.00	44.33	89	79-120	1	21
Thallium	100.0	88.87	89	80-124	5	20
Vanadium	500.0	451.0	90	80-120	3	20
Zinc	500.0	421.8	84	80-120	2	20

RPD= Relative Percent Difference

## Batch QC Report

California Title 22 Metals			
Lab #:	233540	Location:	2529 Seminary
Client:	Baseline Environmental	Prep:	EPA 3010A
Project#:	Y8359-12	Analysis:	EPA 6010B
Field ID:	ZZZZZZZZZZ	Batch#:	182593
MSS Lab ID:	233555-011	Sampled:	01/03/12
Matrix:	Water	Received:	01/03/12
Units:	ug/L	Prepared:	01/04/12
Diln Fac:	1.000	Analyzed:	01/05/12

Type: MS Lab ID: QC624012

Analyte	MSS Result	Spiked	Result	%REC	Limits
Antimony	<2.386	500.0	409.4	82	66-122
Arsenic	2.370	100.0	94.84	92	70-136
Barium	51.71	2,000	1,798	87	74-120
Beryllium	<0.2364	50.00	46.47	93	80-122
Cadmium	<1.000	50.00	42.39	85	76-120
Chromium	1.670	200.0	178.3	88	73-120
Cobalt	<0.5262	500.0	427.9	86	75-120
Copper	<1.136	250.0	208.6	83	70-122
Lead	<1.425	100.0	80.08	80	62-120
Molybdenum	2.279	400.0	367.3	91	77-120
Nickel	<0.8294	500.0	431.2	86	71-120
Selenium	<3.189	100.0	86.97	87	63-131
Silver	<0.6196	50.00	44.67	89	61-124
Thallium	<2.373	100.0	86.92	87	69-129
Vanadium	8.172	500.0	454.0	89	76-120
Zinc	<4.355	500.0	424.5	85	75-124

Type: MSD Lab ID: QC624013

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Antimony	500.0	397.8	80	66-122	3	21
Arsenic	100.0	97.40	95	70-136	3	31
Barium	2,000	1,838	89	74-120	2	28
Beryllium	50.00	47.66	95	80-122	3	22
Cadmium	50.00	43.74	87	76-120	3	20
Chromium	200.0	179.3	89	73-120	1	21
Cobalt	500.0	434.1	87	75-120	1	20
Copper	250.0	207.4	83	70-122	1	25
Lead	100.0	82.06	82	62-120	2	29
Molybdenum	400.0	381.2	95	77-120	4	29
Nickel	500.0	439.2	88	71-120	2	21
Selenium	100.0	89.54	90	63-131	3	33
Silver	50.00	44.79	90	61-124	0	28
Thallium	100.0	89.38	89	69-129	3	22
Vanadium	500.0	455.8	90	76-120	0	20
Zinc	500.0	430.4	86	75-124	1	25

RPD= Relative Percent Difference

### California Title 22 Metals

Lab #:	233540	Project#:	Y8359-12
Client:	Baseline Environmental	Location:	2529 Seminary
Field ID:	PH-01@1.0-1.3	Basis:	as received
Lab ID:	233540-001	Sampled:	12/30/11
Matrix:	Soil	Received:	12/30/11
Units:	mg/Kg		

Analyte	Result	RL	Diln	Fac	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	0.53	1.000		182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Arsenic	4.5	0.26	1.000		182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Barium	190	0.26	1.000		182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Beryllium	0.23	0.11	1.000		182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Cadmium	1.0	0.26	1.000		182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Chromium	320	0.26	1.000		182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Cobalt	36	0.26	1.000		182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Copper	82	0.27	1.000		182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Lead	130	2.6	10.00		182537	12/30/11	01/04/12	EPA 3050B	EPA 6010B
Mercury	0.49	0.018	1.000		182551	01/03/12	01/03/12	METHOD	EPA 7471A
Molybdenum	ND	0.26	1.000		182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Nickel	590	2.6	10.00		182537	12/30/11	01/04/12	EPA 3050B	EPA 6010B
Selenium	2.5	0.53	1.000		182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Silver	0.43	0.26	1.000		182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Thallium	ND	0.53	1.000		182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Vanadium	51	0.26	1.000		182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Zinc	210	11	10.00		182537	12/30/11	01/04/12	EPA 3050B	EPA 6010B

ND= Not Detected  
RL= Reporting Limit

### California Title 22 Metals

Lab #:	233540	Project#:	Y8359-12
Client:	Baseline Environmental	Location:	2529 Seminary
Field ID:	PH-02@1.0-1.5	Basis:	as received
Lab ID:	233540-002	Diln Fac:	1.000
Matrix:	Soil	Sampled:	12/30/11
Units:	mg/Kg	Received:	12/30/11

Analyte	Result	RL	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	0.50	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Arsenic	3.2	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Barium	350	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Beryllium	0.42	0.099	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Cadmium	1.1	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Chromium	75	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Cobalt	16	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Copper	64	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Lead	380	0.25	182537	12/30/11	01/04/12	EPA 3050B	EPA 6010B
Mercury	0.78	0.017	182551	01/03/12	01/03/12	METHOD	EPA 7471A
Molybdenum	ND	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Nickel	120	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Selenium	1.1	0.50	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Silver	0.45	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Thallium	ND	0.50	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Vanadium	47	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Zinc	280	0.99	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B

ND= Not Detected  
RL= Reporting Limit

### California Title 22 Metals

Lab #:	233540	Project#:	Y8359-12
Client:	Baseline Environmental	Location:	2529 Seminary
Field ID:	PH-03@0.5-1.0	Basis:	as received
Lab ID:	233540-003	Diln Fac:	1.000
Matrix:	Soil	Sampled:	12/30/11
Units:	mg/Kg	Received:	12/30/11

Analyte	Result	RL	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	0.55	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Arsenic	1.7	0.27	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Barium	210	0.27	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Beryllium	0.27	0.11	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Cadmium	0.70	0.27	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Chromium	240	0.27	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Cobalt	31	0.27	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Copper	39	0.28	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Lead	99	0.27	182537	12/30/11	01/04/12	EPA 3050B	EPA 6010B
Mercury	0.35	0.017	182551	01/03/12	01/03/12	METHOD	EPA 7471A
Molybdenum	ND	0.27	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Nickel	460	0.27	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Selenium	2.1	0.55	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Silver	0.35	0.27	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Thallium	ND	0.55	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Vanadium	43	0.27	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Zinc	150	1.1	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B

ND= Not Detected  
RL= Reporting Limit

### California Title 22 Metals

Lab #:	233540	Project#:	Y8359-12
Client:	Baseline Environmental	Location:	2529 Seminary
Field ID:	PH-04@1.5-2.0	Basis:	as received
Lab ID:	233540-004	Diln Fac:	1.000
Matrix:	Soil	Sampled:	12/30/11
Units:	mg/Kg	Received:	12/30/11

Analyte	Result	RL	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	0.50	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Arsenic	3.9	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Barium	240	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Beryllium	0.45	0.10	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Cadmium	0.64	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Chromium	47	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Cobalt	11	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Copper	42	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Lead	130	0.25	182537	12/30/11	01/04/12	EPA 3050B	EPA 6010B
Mercury	0.097	0.017	182551	01/03/12	01/03/12	METHOD	EPA 7471A
Molybdenum	ND	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Nickel	62	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Selenium	ND	0.50	182537	12/30/11	01/04/12	EPA 3050B	EPA 6010B
Silver	0.27	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Thallium	ND	0.50	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Vanadium	48	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Zinc	190	1.0	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B

ND= Not Detected  
RL= Reporting Limit



### California Title 22 Metals

Lab #:	233540	Project#:	Y8359-12
Client:	Baseline Environmental	Location:	2529 Seminary
Field ID:	PH-05@0.8-1.3	Basis:	as received
Lab ID:	233540-005	Diln Fac:	1.000
Matrix:	Soil	Sampled:	12/30/11
Units:	mg/Kg	Received:	12/30/11

Analyte	Result	RL	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	0.52	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Arsenic	1.8	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Barium	200	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Beryllium	0.32	0.10	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Cadmium	0.57	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Chromium	87	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Cobalt	38	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Copper	35	0.27	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Lead	120	0.26	182537	12/30/11	01/04/12	EPA 3050B	EPA 6010B
Mercury	0.068	0.018	182551	01/03/12	01/03/12	METHOD	EPA 7471A
Molybdenum	ND	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Nickel	190	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Selenium	2.7	0.52	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Silver	ND	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Thallium	ND	0.52	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Vanadium	47	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Zinc	140	1.0	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B

ND= Not Detected  
RL= Reporting Limit

### California Title 22 Metals

Lab #:	233540	Project#:	Y8359-12
Client:	Baseline Environmental	Location:	2529 Seminary
Field ID:	PH-06@0.5-1.0	Basis:	as received
Lab ID:	233540-006	Diln Fac:	1.000
Matrix:	Soil	Sampled:	12/30/11
Units:	mg/Kg	Received:	12/30/11

Analyte	Result	RL	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	0.47	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Arsenic	4.9	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Barium	200	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Beryllium	0.36	0.094	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Cadmium	0.58	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Chromium	44	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Cobalt	13	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Copper	36	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Lead	95	0.24	182537	12/30/11	01/04/12	EPA 3050B	EPA 6010B
Mercury	0.091	0.018	182551	01/03/12	01/03/12	METHOD	EPA 7471A
Molybdenum	ND	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Nickel	69	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Selenium	ND	0.47	182537	12/30/11	01/04/12	EPA 3050B	EPA 6010B
Silver	ND	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Thallium	ND	0.47	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Vanadium	41	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Zinc	120	0.94	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B

ND= Not Detected  
RL= Reporting Limit

### California Title 22 Metals

Lab #:	233540	Project#:	Y8359-12
Client:	Baseline Environmental	Location:	2529 Seminary
Field ID:	PH-07@1.6-2.1	Basis:	as received
Lab ID:	233540-007	Diln Fac:	1.000
Matrix:	Soil	Sampled:	12/30/11
Units:	mg/Kg	Received:	12/30/11

Analyte	Result	RL	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	0.52	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Arsenic	4.3	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Barium	220	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Beryllium	0.46	0.10	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Cadmium	0.51	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Chromium	61	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Cobalt	18	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Copper	34	0.27	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Lead	80	0.26	182537	12/30/11	01/04/12	EPA 3050B	EPA 6010B
Mercury	0.077	0.017	182551	01/03/12	01/03/12	METHOD	EPA 7471A
Molybdenum	ND	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Nickel	96	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Selenium	ND	0.52	182537	12/30/11	01/04/12	EPA 3050B	EPA 6010B
Silver	ND	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Thallium	ND	0.52	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Vanadium	53	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Zinc	150	1.0	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B

ND= Not Detected  
RL= Reporting Limit

### California Title 22 Metals

Lab #:	233540	Project#:	Y8359-12
Client:	Baseline Environmental	Location:	2529 Seminary
Field ID:	PH-08@1.4-1.9	Basis:	as received
Lab ID:	233540-008	Diln Fac:	1.000
Matrix:	Soil	Sampled:	12/30/11
Units:	mg/Kg	Received:	12/30/11

Analyte	Result	RL	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	0.49	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Arsenic	3.3	0.24	182537	12/30/11	01/04/12	EPA 3050B	EPA 6010B
Barium	170	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Beryllium	0.46	0.097	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Cadmium	ND	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Chromium	59	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Cobalt	14	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Copper	29	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Lead	4.9	0.24	182537	12/30/11	01/04/12	EPA 3050B	EPA 6010B
Mercury	0.040	0.017	182551	01/03/12	01/03/12	METHOD	EPA 7471A
Molybdenum	ND	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Nickel	96	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Selenium	ND	0.49	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Silver	ND	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Thallium	ND	0.49	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Vanadium	45	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Zinc	48	0.97	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B

ND= Not Detected  
RL= Reporting Limit

### California Title 22 Metals

Lab #:	233540	Project#:	Y8359-12
Client:	Baseline Environmental	Location:	2529 Seminary
Field ID:	PH-09@2.3-2.8	Basis:	as received
Lab ID:	233540-009	Diln Fac:	1.000
Matrix:	Soil	Sampled:	12/30/11
Units:	mg/Kg	Received:	12/30/11

Analyte	Result	RL	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	0.47	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Arsenic	1.3	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Barium	150	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Beryllium	0.37	0.094	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Cadmium	ND	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Chromium	52	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Cobalt	7.5	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Copper	26	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Lead	3.6	0.24	182537	12/30/11	01/04/12	EPA 3050B	EPA 6010B
Mercury	0.043	0.017	182551	01/03/12	01/03/12	METHOD	EPA 7471A
Molybdenum	ND	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Nickel	88	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Selenium	ND	0.47	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Silver	ND	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Thallium	ND	0.47	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Vanadium	33	0.24	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Zinc	43	0.94	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B

ND= Not Detected  
RL= Reporting Limit

### California Title 22 Metals

Lab #:	233540	Project#:	Y8359-12
Client:	Baseline Environmental	Location:	2529 Seminary
Field ID:	PH-10@0.8-1.3	Basis:	as received
Lab ID:	233540-010	Diln Fac:	1.000
Matrix:	Soil	Sampled:	12/30/11
Units:	mg/Kg	Received:	12/30/11

Analyte	Result	RL	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	0.53	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Arsenic	3.6	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Barium	220	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Beryllium	0.42	0.11	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Cadmium	0.29	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Chromium	62	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Cobalt	21	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Copper	31	0.27	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Lead	16	0.26	182537	12/30/11	01/04/12	EPA 3050B	EPA 6010B
Mercury	0.061	0.018	182551	01/03/12	01/03/12	METHOD	EPA 7471A
Molybdenum	ND	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Nickel	110	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Selenium	1.4	0.53	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Silver	ND	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Thallium	ND	0.53	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Vanadium	53	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Zinc	57	1.1	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B

ND= Not Detected  
RL= Reporting Limit

### California Title 22 Metals

Lab #:	233540	Project#:	Y8359-12
Client:	Baseline Environmental	Location:	2529 Seminary
Field ID:	PH-DUP	Basis:	as received
Lab ID:	233540-011	Diln Fac:	1.000
Matrix:	Soil	Sampled:	12/30/11
Units:	mg/Kg	Received:	12/30/11

Analyte	Result	RL	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	0.50	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Arsenic	3.1	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Barium	390	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Beryllium	0.39	0.10	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Cadmium	1.2	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Chromium	73	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Cobalt	17	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Copper	210	0.26	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Lead	450	0.25	182537	12/30/11	01/04/12	EPA 3050B	EPA 6010B
Mercury	0.19	0.018	182551	01/03/12	01/03/12	METHOD	EPA 7471A
Molybdenum	ND	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Nickel	130	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Selenium	ND	0.50	182537	12/30/11	01/04/12	EPA 3050B	EPA 6010B
Silver	1.3	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Thallium	ND	0.50	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Vanadium	46	0.25	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B
Zinc	310	1.0	182537	12/30/11	01/03/12	EPA 3050B	EPA 6010B

ND= Not Detected  
RL= Reporting Limit

## Batch QC Report

California Title 22 Metals			
Lab #:	233540	Location:	2529 Seminary
Client:	Baseline Environmental	Prep:	EPA 3050B
Project#:	Y8359-12	Analysis:	EPA 6010B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC623777	Batch#:	182537
Matrix:	Miscell.	Prepared:	12/30/11
Units:	mg/Kg	Analyzed:	01/03/12

Analyte	Result	RL
Antimony	ND	0.50
Arsenic	ND	0.25
Barium	ND	0.25
Beryllium	ND	0.10
Cadmium	ND	0.25
Chromium	ND	0.25
Cobalt	ND	0.25
Copper	ND	0.25
Lead	0.33 b	0.25
Molybdenum	ND	0.25
Nickel	ND	0.25
Selenium	ND	0.50
Silver	ND	0.25
Thallium	ND	0.50
Vanadium	ND	0.25
Zinc	ND	1.0

b= See narrative

ND= Not Detected

RL= Reporting Limit



## Batch QC Report

California Title 22 Metals			
Lab #:	233540	Location:	2529 Seminary
Client:	Baseline Environmental	Prep:	EPA 3050B
Project#:	Y8359-12	Analysis:	EPA 6010B
Matrix:	Miscell.	Batch#:	182537
Units:	mg/Kg	Prepared:	12/30/11
Diln Fac:	1.000	Analyzed:	01/03/12

Type: BS Lab ID: QC623778

Analyte	Spiked	Result	%REC	Limits
Antimony	100.0	92.04	92	80-120
Arsenic	50.00	51.20	102	80-121
Barium	100.0	94.06	94	80-120
Beryllium	2.500	2.681	107	80-120
Cadmium	10.00	9.540	95	80-120
Chromium	100.0	95.58	96	80-120
Cobalt	25.00	23.57	94	80-120
Copper	12.50	11.96	96	80-120
Lead	100.0	93.01	93	80-120
Molybdenum	20.00	18.99	95	80-120
Nickel	25.00	23.29	93	80-120
Selenium	50.00	46.07	92	80-120
Silver	10.00	9.503	95	80-120
Thallium	50.00	47.26	95	80-120
Vanadium	25.00	24.12	96	80-120
Zinc	25.00	23.62	94	80-120

Type: BSD Lab ID: QC623779

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Antimony	100.0	93.78	94	80-120	2	20
Arsenic	50.00	53.64	107	80-121	5	20
Barium	100.0	95.44	95	80-120	1	20
Beryllium	2.500	2.783	111	80-120	4	20
Cadmium	10.00	9.578	96	80-120	0	20
Chromium	100.0	95.02	95	80-120	1	20
Cobalt	25.00	23.67	95	80-120	0	20
Copper	12.50	11.87	95	80-120	1	20
Lead	100.0	93.10	93	80-120	0	20
Molybdenum	20.00	19.50	97	80-120	3	20
Nickel	25.00	23.40	94	80-120	0	20
Selenium	50.00	46.66	93	80-120	1	20
Silver	10.00	9.418	94	80-120	1	20
Thallium	50.00	47.45	95	80-120	0	20
Vanadium	25.00	23.93	96	80-120	1	20
Zinc	25.00	23.35	93	80-120	1	20

RPD= Relative Percent Difference

# Batch QC Report

California Title 22 Metals			
Lab #:	233540	Location:	2529 Seminary
Client:	Baseline Environmental	Prep:	EPA 3050B
Project#:	Y8359-12	Analysis:	EPA 6010B
Field ID:	ZZZZZZZZZZ	Batch#:	182537
MSS Lab ID:	233528-004	Sampled:	12/12/11
Matrix:	Soil	Received:	12/14/11
Units:	mg/Kg	Prepared:	12/30/11
Basis:	as received	Analyzed:	01/03/12
Diln Fac:	10.00		

Type: MS Lab ID: QC623780

Analyte	MSS Result	Spiked	Result	%REC	Limits
Antimony	<1.410	93.46	48.97	52	11-120
Arsenic	1.677	46.73	45.63	94	71-123
Barium	32.73	93.46	129.3	103	48-139
Beryllium	0.1981	2.336	2.610	103	77-120
Cadmium	<0.2406	9.346	9.400	101	72-120
Chromium	9.689	93.46	104.2	101	60-125
Cobalt	2.189	23.36	25.93	102	57-124
Copper	1.879	11.68	13.37	98	46-155
Lead	5.613	93.46	94.09	95	57-126
Molybdenum	0.5541	18.69	17.77	92	68-120
Nickel	3.886	23.36	28.09	104	45-139
Selenium	<1.507	46.73	43.33	93	68-120
Silver	<0.3761	9.346	9.155	98	72-120
Thallium	<1.325	46.73	45.84	98	66-120
Vanadium	14.78	23.36	38.40	101	51-142
Zinc	<0.5292	23.36	20.50	88	41-148

Type: MSD Lab ID: QC623781

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Antimony	104.2	51.52	49	11-120	6	36
Arsenic	52.08	49.52	92	71-123	2	38
Barium	104.2	130.0	93	48-139	8	46
Beryllium	2.604	2.740	98	77-120	5	22
Cadmium	10.42	9.839	94	72-120	6	30
Chromium	104.2	106.8	93	60-125	7	34
Cobalt	26.04	26.84	95	57-124	7	36
Copper	13.02	13.51	89	46-155	8	37
Lead	104.2	98.39	89	57-126	6	43
Molybdenum	20.83	18.44	86	68-120	7	24
Nickel	26.04	28.52	95	45-139	8	37
Selenium	52.08	44.00	84	68-120	9	28
Silver	10.42	9.803	94	72-120	4	31
Thallium	52.08	49.03	94	66-120	4	22
Vanadium	26.04	37.90	89	51-142	8	32
Zinc	26.04	18.06	69	41-148	23	38

RPD= Relative Percent Difference

## Batch QC Report

California Title 22 Metals			
Lab #:	233540	Location:	2529 Seminary
Client:	Baseline Environmental	Prep:	METHOD
Project#:	Y8359-12	Analysis:	EPA 7471A
Analyte:	Mercury	Diln Fac:	1.000
Type:	BLANK	Batch#:	182551
Lab ID:	QC623844	Prepared:	01/03/12
Matrix:	Soil	Analyzed:	01/03/12
Units:	mg/Kg		

Result	RL
ND	0.017

ND= Not Detected  
RL= Reporting Limit

## Batch QC Report

California Title 22 Metals			
Lab #:	233540	Location:	2529 Seminary
Client:	Baseline Environmental	Prep:	METHOD
Project#:	Y8359-12	Analysis:	EPA 7471A
Analyte:	Mercury	Batch#:	182551
Matrix:	Soil	Prepared:	01/03/12
Units:	mg/Kg	Analyzed:	01/03/12
Diln Fac:	1.000		

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC623845	0.2083	0.2230	107	80-121		
BSD	QC623846	0.2083	0.2207	106	80-121	1	31

RPD= Relative Percent Difference

## Batch QC Report

California Title 22 Metals			
Lab #:	233540	Location:	2529 Seminary
Client:	Baseline Environmental	Prep:	METHOD
Project#:	Y8359-12	Analysis:	EPA 7471A
Analyte:	Mercury	Diln Fac:	1.000
Field ID:	ZZZZZZZZZZ	Batch#:	182551
MSS Lab ID:	233539-002	Sampled:	12/30/11
Matrix:	Soil	Received:	12/30/11
Units:	mg/Kg	Prepared:	01/03/12
Basis:	as received	Analyzed:	01/03/12

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
MS	QC623847	0.01831	0.2119	0.2518	110	65-142		
MSD	QC623848		0.2119	0.2634	116	65-142	5	35

RPD= Relative Percent Difference

Hexavalent Chromium			
Lab #:	233540	Location:	2529 Seminary
Client:	Baseline Environmental	Prep:	METHOD
Project#:	Y8359-12	Analysis:	EPA 7196A
Analyte:	Hexavalent Chromium	Batch#:	182535
Field ID:	EB-123011	Sampled:	12/30/11 10:56
Matrix:	Water	Received:	12/30/11
Units:	mg/L	Analyzed:	12/30/11 12:40
Diln Fac:	1.000		

Type	Lab ID	Result	RL
SAMPLE	233540-012	ND	0.01
BLANK	QC623768	ND	0.01

ND= Not Detected  
RL= Reporting Limit

## Batch QC Report

Hexavalent Chromium			
Lab #:	233540	Location:	2529 Seminary
Client:	Baseline Environmental	Prep:	METHOD
Project#:	Y8359-12	Analysis:	EPA 7196A
Analyte:	Hexavalent Chromium	Diln Fac:	1.000
Field ID:	EB-123011	Batch#:	182535
MSS Lab ID:	233540-012	Sampled:	12/30/11 10:56
Matrix:	Water	Received:	12/30/11
Units:	mg/L	Analyzed:	12/30/11 12:40

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
LCS	QC623769		1.000	0.9570	96	90-110		
MS	QC623770	<0.01000	1.000	0.8600	86	85-115		
MSD	QC623771		1.000	0.9090	91	85-115	6	34

RPD= Relative Percent Difference

Hexavalent Chromium			
Lab #:	233540	Location:	2529 Seminary
Client:	Baseline Environmental	Prep:	EPA 3060
Project#:	Y8359-12	Analysis:	EPA 3060/7196
Analyte:	Hexavalent Chromium	Batch#:	182636
Matrix:	Soil	Sampled:	12/30/11
Units:	mg/Kg	Received:	12/30/11
Basis:	as received	Prepared:	01/05/12
Diln Fac:	1.000	Analyzed:	01/06/12

Field ID	Type	Lab ID	Result	RL
PH-01@1.0-1.3	SAMPLE	233540-001	ND	0.40
PH-02@1.0-1.5	SAMPLE	233540-002	ND	0.40
PH-03@0.5-1.0	SAMPLE	233540-003	ND	0.40
PH-04@1.5-2.0	SAMPLE	233540-004	ND	0.40
PH-05@0.8-1.3	SAMPLE	233540-005	ND	0.40
PH-06@0.5-1.0	SAMPLE	233540-006	ND	0.40
PH-07@1.6-2.1	SAMPLE	233540-007	ND	0.40
PH-08@1.4-1.9	SAMPLE	233540-008	ND	0.40
PH-09@2.3-2.8	SAMPLE	233540-009	ND	0.40
PH-10@0.8-1.3	SAMPLE	233540-010	ND	0.40
PH-DUP	SAMPLE	233540-011	ND	0.40
	BLANK	QC624167	ND	0.40

ND= Not Detected  
RL= Reporting Limit



## Batch QC Report

Hexavalent Chromium			
Lab #:	233540	Location:	2529 Seminary
Client:	Baseline Environmental	Prep:	EPA 3060
Project#:	Y8359-12	Analysis:	EPA 3060/7196
Analyte:	Hexavalent Chromium	Diln Fac:	1.000
Field ID:	PH-01@1.0-1.3	Batch#:	182636
MSS Lab ID:	233540-001	Sampled:	12/30/11
Matrix:	Soil	Received:	12/30/11
Units:	mg/Kg	Prepared:	01/05/12
Basis:	as received	Analyzed:	01/06/12

Type	Lab ID	MSS Result	Spiked	Result	RL	%REC	Limits	RPD	Lim
LCS	QC624168		38.76	34.40		89	80-120		
SDUP	QC624169	<0.4000		<0.4000	0.4000			NC	30
SSPIKE	QC624170	<0.4000	39.37	12.67		32 *	75-125		

\*= Value outside of QC limits; see narrative

NC= Not Calculated

RL= Reporting Limit

RPD= Relative Percent Difference

**APPENDIX D**  
**SITE-SPECIFIC HEALTH AND SAFETY PLAN**

## SITE HEALTH & SAFETY PLAN

PROJECT/CLIENT INFORMATION			
Project No:	Project Manager:	Site Health and Safety Manager:	Field Activities Date:
Y8359-12	James McCarty, P.E.	Reginald Ramirez, P.E.	December 2011
Client:	City of Oakland Public Works Agency	Site Address: 2521-2541 Seminary Avenue Oakland, CA	
Contact Persons:	Mark Arniola, City of Oakland (510) 238-7371		Subcontractor (for field work only): Cal West Concrete Cutting, Inc.
<p><b>PROJECT DESCRIPTION:</b> The City of Oakland is planning to redevelop approximately two acres of land located near Foothill Boulevard and Seminary Avenue (Foothill Boulevard/Seminary Avenue Redevelopment Area) in Oakland, California. The Foothill Boulevard/Seminary Avenue Redevelopment Area consists of 12 parcels which will be transformed into a mixed-use retail center, with shops at the ground level and residential units above. The site is comprised of two parcels and a portion of a third. The site is identified by postal addresses 2521 through 2541 Seminary Avenue.</p> <p>In July 2008, a Phase II subsurface investigation was performed at the site based on the findings of a Phase I ESA performed for the site. The purpose of the Phase II ESA was to assess potential subsurface impacts based on previous uses of the site. The Phase II results indicated possible metals impact in soil in the upper 2.5 feet of the site and in the vicinity of a former shed. The purpose of this supplemental Phase II investigation is to define the area near the former shed that contains elevated levels of metals and to characterize soil within the upper 2.5 feet of the site for disposal.</p> <p>The supplemental Phase II investigation will involve collection of 10 soil samples within the upper 2.5 feet of the site for Title 22 metals and hexavalent chromium analyses. Soil samples will be collected by BASELINE either by a driving a six-inch by two-inch sample corer into the ground using a slide hammer or advancing an auger by hand. A combination of hand digging tools will be used to advance a pothole to the desired depth. All samples will be submitted to Curtis &amp; Tompkins, Ltd. under chain-of-custody procedures.</p> <p>This site-specific health and safety plan (Plan) has been prepared to describe the health and safety requirements that must be followed during sampling. No confined space entry is included in the scope of work. No borings will be advanced; therefore, a soil boring permit from the Alameda County Public Works Agency is not required. Nighttime illumination is not expected to be required as all field activities are expected to be performed during daylight hours. The sampling locations are located in a property that is not open to the public; therefore, traffic control and other site control measures are not required during sampling. The site is accessible from Seminary Avenue.</p>			
<p><b>KEY PERSONNEL AND RESPONSIBILITIES:</b> Yane Nordhav, P.G., is the principal-in-charge. James McCarty, P.E. is the project manager. Reginald Ramirez, P.E. is the site Health and Safety Manager. The project manager shall be available by telephone during on-site work and have overall responsibility for preparation, implementation, and modifications to this Plan. The responsibilities of the site Health and Safety Manager include: 1) enforcing this Plan; 2) stopping field operations if personnel safety and health may be jeopardized; 3) requesting site evacuation, if necessary; and 4) designating other qualified personnel to work under the direction of the site Health and Safety Manager, for the purpose of implementing this Plan.</p>			

**TRAINING REQUIREMENTS:** All on-site workers, including subcontractors, entering any area of the site with suspected contamination must be 40-hour trained in accordance with the Federal and State OSHA HAZWOPER Standard (including 3 days of supervised field experience and annual refresher training), and must be medically surveilled and have received annual respirator training and fit testing in accordance with this Standard and the requirements of their company's health and safety plan. All visitors entering the site will be informed that suspected contamination may be present in soil, that work is being conducted under this Plan, and that they are responsible for their own health and safety.

A copy of this Plan will be provided at the site and will be reviewed by the site Health and Safety Manager prior to the start of work at the site, as part of a tailgate safety meeting. This Plan applies to all BASELINE employees engaged in hazardous materials activities on-site. All on-site personnel will be asked to sign a consent form included in this Plan, prior to the beginning of field activities, indicating that they have read the Plan, have participated in the tailgate safety meeting, meet the training requirements, and agree to all Plan conditions. Should other employers elect to adopt this Plan, BASELINE shall be held harmless and indemnified against any claims associated with this Plan.

This Plan is intended to act as an extension of BASELINE's in-house Health and Safety Program, including Medical Surveillance Program, Hazard Communication Program, Hearing Conservation Program, Respiratory Protection Program, Personal Protective Equipment Program, Injury and Illness Prevention Program, Emergency Action Plan, and Fire Prevention Plan. BASELINE employees receive initial and annual training in these programs.

#### CHEMICAL HAZARDS

Chemical	Description	Health and Safety Standards/Odor Threshold (OT)	Persons Exposed* and Potential Exposure Routes	Target Organs	Symptoms of Acute Exposure
Antimony CAS 7440-36-0	Silver-white, lustrous, hard, brittle solid; scale-like crystals; or a dark-gray, lustrous powder. UEL=NA LEL=NA FP=NA	PEL=0.5 mg/m <sup>3</sup> REL=0.5 mg/m <sup>3</sup> STEL=-- IDLH=50 mg/m <sup>3</sup>	Inhalation, ingestion, skin and/or eye contact	Eyes, skin, respiratory system, and cardiovascular system	Irritation eyes, skin, nose, throat, mouth; cough; dizziness; headache; nausea, vomiting, diarrhea; stomach cramps; insomnia; anorexia; and unable to smell properly
Arsenic CAS 7440-38-2	Silver-gray or white metal, brittle, odorless solid. UEL=NA LEL=NA FP=NA	PEL=0.01 mg/m <sup>3</sup> REL=-- C=0.002 mg/m <sup>3</sup> (15-minute) (NIOSH) STEL=-- IDLH=5 mg/m <sup>3</sup>	Inhalation, skin absorption, skin and/or eye contact ingestion	Liver, kidneys, skin, lungs, lymphatic system	Ulceration of nasal septum, dermatitis, gastrointestinal disturbances, peripheral neuropathy, respiratory irritation, hyperpigmentation of skin
Barium CAS 10022-31-8	White, odorless solid. UEL=NA LEL=NA FP=NA	PEL=0.5 mg/m <sup>3</sup> REL=0.5 mg/m <sup>3</sup> STEL=-- IDLH=50 mg/m <sup>3</sup>	Inhalation, ingestion, skin and/or eye contact	Eyes, skin, respiratory system, heart, and central nervous system	Irritation eyes, skin, upper respiratory system; skin burns; gastroenteritis; muscle spasm; slow pulse, extrasystoles; and hypokalemia
Beryllium 7440-41-7	A hard, brittle, gray-white solid. UEL=NA LEL=NA FP=NA	PEL=0.002 mg/m <sup>3</sup> REL=-- C=0.005 mg/m <sup>3</sup> (NIOSH and OSHA) with a maximum peak of 0.025 mg/m <sup>3</sup> (OSHA) STEL=-- IDLH=4 mg/m <sup>3</sup>	Inhalation, skin and/or eye contact	Eyes, skin, respiratory system	Berylliosis (chronic exposure): anorexia, weight loss, lassitude (weakness, exhaustion), chest pain, cough, clubbing of fingers, cyanosis, pulmonary insufficiency; irritation eyes; dermatitis
Cadmium CAS 7440-43-9	Silver-white, blue-tinged lustrous, odorless solid. UEL=NA LEL=NA FP=NA	PEL=0.005 mg/m <sup>3</sup> REL=-- STEL=-- IDLH=9 mg/m <sup>3</sup>	Inhalation and ingestion	Respiratory system, kidneys, prostate, and blood	Pulmonary edema, dyspnea (breathing difficulty), cough, chest tightness, substernal (occurring beneath the sternum) pain; headache; chills, muscle aches; nausea, vomiting, diarrhea; anosmia (loss of the sense of smell), emphysema, proteinuria, mild anemia

CHEMICAL HAZARDS					
Chemical	Description	Health and Safety Standards/Odor Threshold (OT)	Persons Exposed* and Potential Exposure Routes	Target Organs	Symptoms of Acute Exposure
Chromium CAS 7440-47-3	Blue-white to steel-gray, lustrous, brittle, hard, odorless solid. UEL=NA LEL=NA FP=NA	PEL=1 mg/m <sup>3</sup> REL=0.5 mg/m <sup>3</sup> STEL=-- IDLH=250 mg/m <sup>3</sup>	Inhalation, ingestion, skin and/or eye contact	Eyes, skin, and respiratory system	Irritation eyes, skin; lung fibrosis (histologic)
Cobalt CAS 7440-48-4	Odorless, silver-gray to black solid. UEL=NA LEL=NA FP=NA	PEL=0.1 mg/m <sup>3</sup> REL=0.05 mg/m <sup>3</sup> STEL=-- IDLH=20 mg/m <sup>3</sup>	Inhalation, ingestion, skin and/or eye contact	Skin and respiratory system	Cough, dyspnea (breathing difficulty), wheezing, decreased pulmonary function; weight loss; dermatitis; diffuse nodular fibrosis; respiratory hypersensitivity, and asthma
Copper CAS 7440-50-8	Reddish, lustrous, malleable, odorless solid. UEL=NA LEL=NA FP=NA	PEL=1 mg/m <sup>3</sup> REL=1 mg/m <sup>3</sup> STEL=-- IDLH=100 mg/m <sup>3</sup>	Inhalation, ingestion, skin and/or eye contact	Eyes, skin, respiratory system, liver, kidneys	Irritation eyes, nose, pharynx; nasal septum perforation; metallic taste; dermatitis
Lead CAS 7439-92-1	A heavy, ductile, soft, gray solid. UEL=NA LEL=NA FP=NA	PEL=0.05 mg/m <sup>3</sup> REL=0.05 mg/m <sup>3</sup> TWA (8-hour) STEL=-- IDLH=100 mg/m <sup>3</sup>	Inhalation, ingestion, skin and/or eye contact	Eyes, gastrointestinal tract, central nervous system, kidneys, blood, gingival tissue	Lassitude (weakness, exhaustion), insomnia; facial pallor; anorexia, weight loss, malnutrition; constipation, abdominal pain, colic; anemia; gingival lead line; tremor; paralysis wrist, ankles; encephalopathy; kidney disease; irritation eyes; hypertension
Mercury CAS 7439-97-6	Silver-white metal, heavy, odorless liquid. LEL=NA UEL=NA VP=0.0012 mmHg (low) FP=NA	REL=0.05 mg/m <sup>3</sup> PEL=0.1 mg/m <sup>3</sup> C=0.1 mg/m <sup>3</sup> (NIOSH) IDLH=10 mg/m <sup>3</sup>	Inhalation, skin absorption, ingestion, skin and/or eye contact	Eyes, skin, respiratory system, central nervous system, kidneys	Irritation eyes, skin; cough, chest pain, dyspnea (breathing difficulty), bronchitis, pneumonitis; tremor, insomnia, irritability, indecision, headache, lassitude (weakness, exhaustion); stomatitis, salivation; gastrointestinal disturbance, anorexia, weight loss; proteinuria
Molybdenum CAS 7439-98-7	Dark gray or black powder with a metallic luster. LEL=NA UEL=NA FP=NA	PEL=15 mg/m <sup>3</sup> REL=-- STEL=-- IDLH=5,000 mg/m <sup>3</sup>	Inhalation, ingestion, skin and/or eye contact	Eyes, respiratory system, liver, kidneys	Irritation eyes, nose, throat; anorexia, diarrhea, weight loss; listlessness; liver, kidney damage
Nickel CAS 7440-02-0	Lustrous, silvery, odorless solid. UEL=NA LEL=NA FP=NA	REL=0.015 mg/m <sup>3</sup> PEL=1 mg/m <sup>3</sup> IDLH=10 mg/m <sup>3</sup>	Inhalation, ingestion, skin and/or eye contact	Nasal cavities, lungs, skin	Sensitization dermatitis, allergic asthma, pneumonitis
Selenium CAS 7782-49-2	Amorphous or crystalline, red to gray solid. [Note: Occurs as an impurity in most sulfide ores.] LEL=NA UEL=NA FP=NA	PEL=0.2 mg/m <sup>3</sup> REL=0.2 mg/m <sup>3</sup> STEL=-- IDLH=1 mg/m <sup>3</sup>	Inhalation, ingestion, skin and/or eye contact	Eyes, skin, respiratory system, liver, kidneys, blood, and spleen	Irritation eyes, skin, nose, throat; visual disturbance; headache; chills, fever; dyspnea (breathing difficulty), bronchitis; metallic taste, garlic breath, gastrointestinal disturbance; dermatitis; eye, skin burns
Silver 7440-22-4	White, lustrous solid. LEL=NA UEL=NA FP=NA	PEL=0.01 mg/m <sup>3</sup> REL=0.01 mg/m <sup>3</sup> STEL=-- IDLH=10 mg/m <sup>3</sup>	Inhalation, ingestion, skin and/or eye contact	Nasal septum, skin, eyes	Blue-gray eyes, nasal septum, throat, skin; irritation, ulceration skin; gastrointestinal disturbance
Thallium	Appearance and odor vary depending upon the specific soluble thallium compound. LEL=NA UEL=NA FP=NA	PEL=0.1 mg/m <sup>3</sup> REL=0.1 mg/m <sup>3</sup> STEL=-- IDLH=15 mg/m <sup>3</sup>	Inhalation, skin absorption, ingestion, skin and/or eye contact	Eyes, respiratory system, central nervous system, liver, kidneys, gastrointestinal tract, body hair	Nausea, diarrhea, abdominal pain, vomiting; ptosis, strabismus; peri neuritis, tremor; retrosternal (occurring behind the sternum) tightness, chest pain, pulmonary edema; convulsions, chorea, psychosis; liver, kidney damage; alopecia; paresthesia legs
Vanadium CAS 1314-62-1	Yellow-orange powder or dark-gray, odorless flakes dispersed in air. LEL=NA UEL=NA FP=NA	PEL=-- REL=-- STEL=-- IDLH=35 mg/m <sup>3</sup> C=0.5 mg/m <sup>3</sup> (OSHA); 0.05 mg/m <sup>3</sup> (NIOSH)	Inhalation, ingestion, skin and/or eye contact	Eyes, skin, and respiratory system	Irritation eyes, skin, throat; green tongue, metallic taste, eczema; cough; fine rales, wheezing, bronchitis, dyspnea (breathing difficulty)



CHEMICAL HAZARDS					
Chemical	Description	Health and Safety Standards/Odor Threshold (OT)	Persons Exposed* and Potential Exposure Routes	Target Organs	Symptoms of Acute Exposure
Zinc CAS 557-05-1	Soft, white powder with a slight, characteristic odor. LEL=NA UEL=NA FP=530 °F	PEL=15 mg/m <sup>3</sup> REL=10 mg/m <sup>3</sup> STEL=-- IDLH=--	Inhalation, ingestion, skin and/or eye contact	Eyes, skin, respiratory system	Irritation eyes, skin, upper respiratory system; cough

**Notes:**

Health and safety standards refer to airborne concentrations to which nearly all workers may be repeatedly exposed daily without harmful effects. The concentrations are time-weighted averages (TWAs) for a normal 8-hour work period.

UEL = Upper Explosive Limit. The upper limit of the flammable range. The richest mixture of a gas that will support combustion.

LEL = Lower Explosive Limit. The lower limit of the flammable range. The leanest mixture of a gas that is still flammable.

FP=Flash Point. The minimum temperature at which a chemical will emit flammable vapors. An FP less than 100°F is considered flammable and presents a fire hazard.

NA = Not Applicable.

IDLH = Immediately Dangerous to Life and Health; a condition that would cause permanent damage or death within 30 minutes.

PEL = Permissible Exposure Limit. TWA concentrations for a normal 8-hour work period for a 40-hour work week.

REL = Recommended Exposure Limit. TWA concentrations for up to a 10-hour day during a 40-hour work week. RELs are recommended by NIOSH, but are not enforceable by a regulatory agency.

STEL = Short-Term Exposure Limit. A 15-minute TWA exposure that is not to be exceeded at any time during a workday even if the 8-hour TWA is below the PEL; regulated by OSHA.

OSHA = Occupational Safety and Health Administration.

NIOSH = National Institute for Occupational Safety and Health.

mg/m<sup>3</sup> = milligram per cubic meter.

\* BASELINE, drillers, and regulatory agency personnel.

PHYSICAL HAZARDS:
<p>Potential physical hazards at the site include fire and explosion, heavy equipment, heat/cold stress, over- and under-ground utilities, tripping and falling, and noise. BASELINE's employees will follow standard operating procedures (SOPs) for sampling and quality assurance quality control, as found in BASELINE's <i>Quality Assurance Program Plan (QAPP)</i>.</p> <p>Employees covered under this Plan shall observe the following precautions:</p> <ol style="list-style-type: none"> <li>1) Watch for slippery or uneven ground;</li> <li>2) All unattended boreholes must be adequately covered or marked with high visibility paint;</li> <li>3) Wear required personal protective equipment (PPE) at all times (see below);</li> <li>4) Prevent strain injuries by using a table or platform to process soil samples (use the tailgate of the field truck if possible);</li> <li>5) Avoid heat/cold stress by taking regular work breaks, liquids intake, and appropriate attire, as needed;</li> <li>6) Watch for traffic and heavy equipment while sampling; and</li> <li>7) Wear traffic safety vests at all times.</li> </ol> <p><b>PERSONAL PROTECTIVE EQUIPMENT REQUIRED:</b> SOPs shall be implemented to minimize exposure to hazardous materials and physical hazards potentially occurring at the site. However, it is anticipated that SOPs cannot completely prevent exposures to all hazardous materials at the site. Potential hazards include inhalation and dermal contact with contaminated materials during sampling. Ingestion of hazardous materials is assumed to be negligible if personal hygiene measures discussed below are implemented. The following equipment and supplies must be available at all times: hard hats, nitrile gloves, water supply for washing, for decontamination, and for drinking, disposable overalls (non-coated), first-aid kit, noise protection (ear plugs), and fire extinguisher. Rain gear may also be warranted.</p>

Field personnel will not be allowed to wear contact lenses during field work. On-site workers must be trained on at least an annual basis, as provided by their employer, in PPE care, use, and maintenance. All PPE must be properly maintained and stored to ensure it is in good working condition at the time of use. All PPE must be inspected prior to and following use (BASELINE's PPE Program is included in BASELINE's Health and Safety Program).

The rationale for selection of the PPE above is based on the known and/or suspected hazardous materials and physical hazards at the site, the anticipated amount of contact with potentially contaminated materials as part of site-specific tasks, and PPE performance characteristics. The need for respiratory protection is not anticipated during field work. If respiratory protection is deemed necessary by the designated site Health and Safety Manager, on-site personnel will be asked to leave the area immediately by the site Health and Safety Manager and the Manager will notify the BASELINE project manager to determine future actions. If PPE is deemed to be ineffective by the site Health and Safety Manager, the Manager or his/her designee shall take immediate action to mitigate the problem.

**AIR MONITORING STRATEGY:** Air monitoring for dust or contaminant levels in the atmosphere of the immediate sampling area will not be performed during field sampling since there are no known site conditions that would present a respiratory hazard to on-site workers. If conditions at the sampling area becomes dusty, engineering or administrative control may be implemented to protect workers from dust inhalation.

No IDLH, oxygen deficient, thermal extreme conditions, or explosive or flammable gases are expected at the site.

**SITE CONTROL MEASURES:** The sampling area or the site is secured from unauthorized access by the public. Access to the site will be coordinated by BASELINE with the City of Oakland. The sampling area is located inside a private property which is completely fenced. The sampling area will be accessed through the property's entrance gate.

Avoid kicking up dust while sampling, and avoid skin and eye contact with soil to the maximum extent possible. No eating shall be permitted at the sampling area. Personal hygiene is imperative to prevent prolonged skin contact with site soils and dusts.

In the event of a minor (incidental) release of a hazardous material, the spill will be immediately cleaned up by on-site BASELINE personnel, and spill cleanup materials placed in labeled containers. In the event of a larger than incidental (major) spill of hazardous materials, follow emergency procedures below.

**DECONTAMINATION PROCEDURES (PERSONAL AND EQUIPMENT):** All personal and equipment decontamination procedures shall be implemented prior to leaving the site. Decontaminate boots, non-disposable PPE, and sampling equipment on-site using a TSP (or Alcanox) solution; rinse with potable water; and finally rinse with DI water (sampling equipment only).

Dispose of disposable PPE and sampling equipment in sealed bags and place in a municipal refuse dumpster. Antiseptic (alcohol) towelettes will be used for cleaning respirators and washing hands and arms. The site Health and Safety Manager shall monitor decontamination procedures to determine their effectiveness. The site Health and Safety Manager shall take appropriate action to immediately correct any deficiencies if decontamination procedures are found to be ineffective.

**OTHER:** Long-term illumination is not expected to be required, as majority of the work will be performed during daylight hours. Portable lighting, such as flash lights or headlights, will be used to provide short-term illumination for the portion of work performed before sunrise.

Drums (labeled or unlabeled) shall not be handled under any circumstances. If drums have to be moved to perform site activities, the site Health and Safety Manager shall consult with the principal-in-charge prior to movement. Storage of drums or other containers preventing access to the sampling locations is not anticipated.

If the site Health and Safety Manager identifies any deficiencies in this Plan, they shall be immediately corrected. On-site workers have Stop-Work authority if unsafe conditions or deficiencies in the Plan are identified. Any deficiencies in this Plan shall be immediately communicated to the site Health and Safety Manager.



**EMERGENCY PROCEDURES:** A cellular phone is carried by BASELINE personnel. In the event of a major emergency (e.g., fire, major spill, medical, explosion), the site Health and Safety Manager or his designee shall use the cellular phone to contact "911," Yane Nordhav (510-420-8686), the client (phone number listed above), and other emergency numbers listed below, as applicable. The designated BASELINE site Health and Safety Manager shall verbally request evacuation of site personnel (personnel must first go through decontamination prior to evacuation).

Evacuation shall be requested by repeatedly honking the horn of a vehicle for personnel who are not within voice range. The honking will continue until personnel can be verbally notified of the emergency and the need for evacuation. Personnel shall evacuate the site to the reassembly area. **The site Health and Safety Manager will be responsible for notifying personnel and any visitors of an appropriate evacuation route and reassembly area prior to the field work during the tailgate safety meeting.** An evacuation route and reassembly area are therefore not included in this Plan. Any injured personnel shall be brought to the decontamination area prior to evacuation, and shall be assisted in decontamination, according to the procedures above, unless the transport or decontamination may cause further injury. The designated site Health and Safety Manager shall account for all on-site personnel following evacuation.

Rescue and medical duties (other than first aid/CPR by trained personnel), as required, shall be provided by off-site emergency responders (e.g., paramedics, fire fighters). Injured personnel may only be transported to the Hospital Emergency Room if the injury is non-threatening and does not require immediate attention (e.g., scrapes, minor cuts). (The hospital emergency route is included below.)

Following evacuation, the designated BASELINE Health and Safety Manager shall request on-site personnel to maintain security of the site (by preventing unauthorized entry) until the site has been released to off-site emergency responders (e.g., fire fighters, police, etc.). Evacuated personnel will direct emergency responders to the emergency and inform them of site hazards and the emergency. Other emergency notifications may be required, for example, the Emergency Management System (911), the Office of Emergency Services (800 852-7550), and the U.S. Environmental Protection Agency, Region IX (415 744-2000). The need for emergency notifications will be determined by the designated BASELINE Health and Safety Manager and project manager, based on the emergency at hand. All notifications will be documented.

Following the emergency, the designated site Health and Safety Manager shall be responsible for preparing a post-incident critique, for the purpose of identifying the cause of the emergency, response initiated, and need for additional training, procedures, or equipment. The designated site Health and Safety Manager and project manager shall take corrective action to prevent reoccurrence of the emergency. At any time, if any deficiencies in these Emergency Procedures are identified, they shall be immediately corrected by the site Health and Safety Manager. On-site workers identifying any deficiencies in the emergency procedures shall immediately notify the site Health and Safety Manager of such deficiencies.

Prepared by: Reginald Ramirez, P.E.  
Date: 28 December 2011

Reviewed/Approved by: *Jama McLean*  
Date: 12/28/11

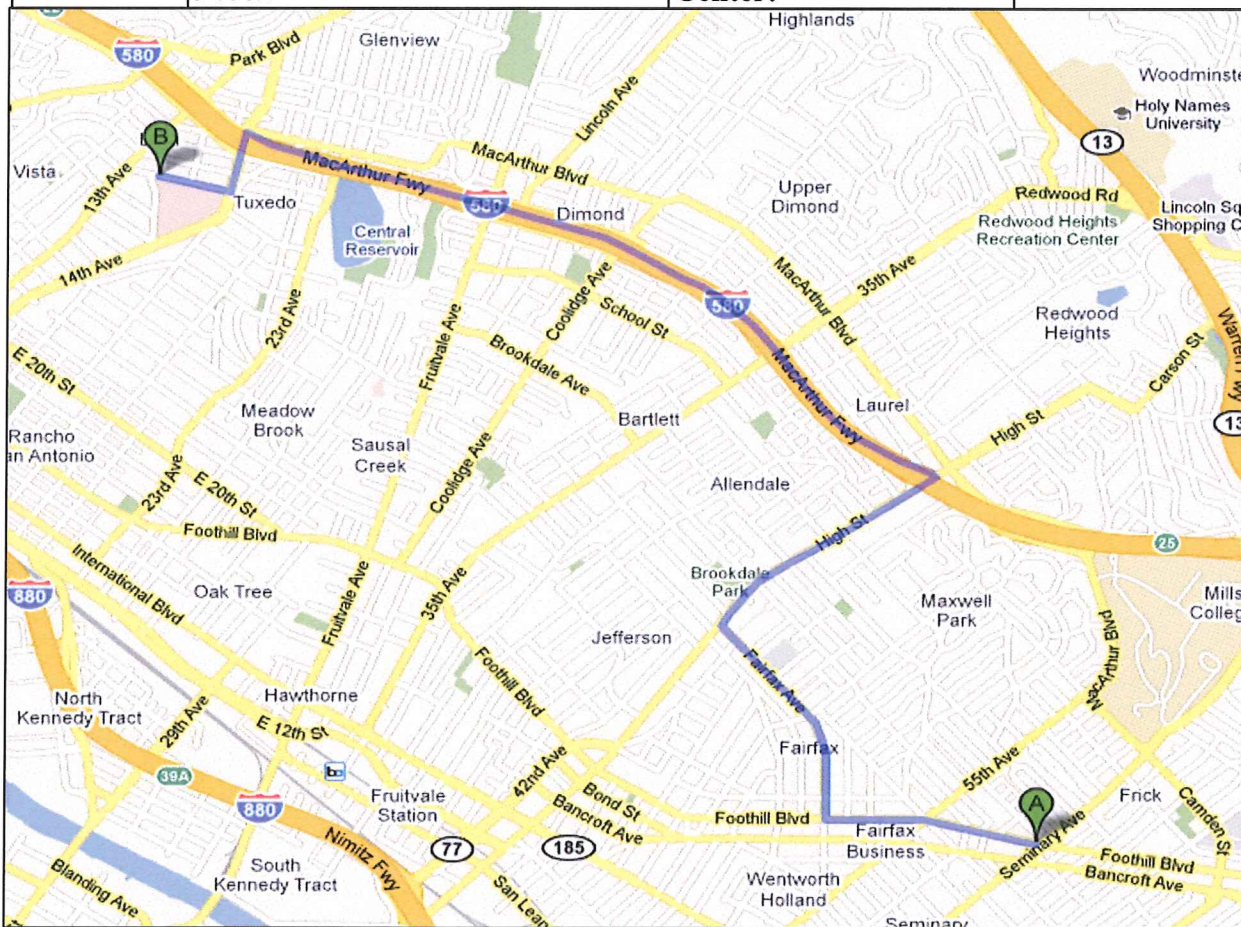
Read by/Date:

<u><i>Melissa K. Long</i></u>	<u>12-30-11</u>
<u><i>Reginald Ramirez</i></u>	<u>12-30-11</u>
_____	<u>1</u> _____
_____	<u>1</u> _____
_____	<u>1</u> _____



### Hospital Route and Map Directions

<b>Name:</b>	Highland Hospital	<b>General Information:</b>	(510) 522-3700
<b>Address:</b>	1411 East 31 Street, Oakland, CA 94602	<b>Emergency Care Center:</b>	(510) 523-4357



### Directions from Site:

- |   |                                 |                 |
|---|---------------------------------|-----------------|
| 1. Head west on Foothill Blvd toward Mason St | 0.6 miles                       |                 |
| 2. Turn right at Fairfax Ave                  | 0.7 miles                       | total 1.2 miles |
| 3. Turn right at High St                      | go 0.7 miles                    | total 1.9 miles |
| 4. Turn left to merge onto I-580 West         | go 1.9 miles                    | total 3.8 miles |
| 5. Take the exit toward 14th Ave/Park Blvd    | go 0.2 miles                    | total 4.1 miles |
| 6. Turn left at Beaumont Ave                  | go 0.2 miles                    | total 4.2 miles |
| 7. Turn right at E 31st St                    | Destination will be on the left | total 4.4 miles |