UPDATED
REMEDIAL ACTION PLAN
1333 Martinez Street
San Leandro, California

December 2013

Prepared for

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SIGNATURE PAGE

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1.0 INTRODUCTION

This *Updated Remedial Action Plan* ("*Updated RAP*") has been prepared by West Environmental Services & Technology, Inc. (WEST), to update the January 2010 *Remedial Action Plan* (Iris, 2010) for 1333 Martinez Street in San Leandro, California ("the Site;" Figure 1-1) to reflect the change in Site use from residential to commercial. Consistent with the January 2010 *RAP*, this *Updated RAP* recommends soil excavation with Land Use Covenant (LUC) to address TPH in soil and groundwater. Details of the modifications to the January 2010 *RAP* are provided in this report.

1.1 BACKGROUND

The approximately 5-acre relatively flat triangular shaped Site is located along Martinez Street in San Leandro, California. The Site is located within a commercial/industrial area is currently undeveloped and unoccupied and bounded by Martinez Street to the northeast, Thornton Street to the southeast; Union Pacific Rail Road right-of-way to the southwest; and Estudillo Avenue to the northwest.

Up until the late 1980s, the Site was mainly used for industrial fruit and vegetable packing, pickling and canning operations (Stantec, 2008). In the 1990s, the buildings associated with the industrial operations were demolished. The Site has remained vacant and undeveloped since the 1990s.

Environmental investigations were conducted on the Site in 2008 and 2009. Soil, soil gas and groundwater samples were collected between 0.5-feet and 25-feet below ground surface from 21 borings, WP-1 to WP-5, WP3-S1, WP3-S2 and WP5-S1 to WP5-S8. The findings from the soil investigations revealed the presence of total petroleum hydrocarbons (TPH) as gasoline (TPHg), TPH as diesel (TPHd) and TPH as motor oil (TPHmo) up to 7.7 milligrams per kilogram (mg/kg;WP-5), 8,900 mg/kg (WP-5) and 5,100 mg/kg (WP-3), respectively.

The soil gas investigations revealed the presence of VOCs including: tetrachloroethene (PCE) up to 500 micrograms per cubic meter ($\mu g/m^3$; WP-7), toluene up to 208 $\mu g/m^3$ (WP-5); ethyl benzene up to 17 $\mu g/m^3$ (WP-6); and xylenes up to 267 $\mu g/m^3$ (WP-6).

TPH was also detected in the groundwater samples collected on the Site including: TPHg up to 2,800 micrograms per liter (µg/l); TPHd up to 21,000 µg/l; and TPHmo up to 11,000 µg/l, in the sample collected from boring WP-5. PCE was also detected in groundwater up to 38 µg/l in the sample collected from WP-2. Laboratory analysis of the groundwater samples collected from downgradient and off-Site borings SGW-2 and SGW-3 did not revealed TPH or VOCS above the laboratory-reporting limit; except for TPHd at 85 µg/l (SGW-3).

The conceptual site model (CSM) indicated that the extent of TPH in soil is limited to the areas near borings WP-3 and WP-5 and that the extent of TPH in groundwater appears limited to the Site. The Site is to be developed as a commercial business park with three multi-story buildings located on the northern portion with landscaping and paved parking areas on the southern portion. Based on the CSM and the proposed commercial development, TPH in shallow soil, i.e., less than 5-feet below ground surface, is present above commercial human-health protective screening criteria near borings WP-3 and WP-5. In addition, TPH and VOCs are present in groundwater; however, groundwater is not currently used as a drinking water supply. VOCs are also present in soil gas but at levels below commercial human-health screening levels for the protection of indoor air.

In January 2010, Westlake Development Partners, LLC (Westlake) submitted its *RAP* to address TPH in soil and groundwater based on residential of the Site. The January 2010 *RAP* proposed soil excavation near boring WP-5 to approximately 5-feet below ground surface, installation of concrete over soil containing TPH and LUCs restricting the use of groundwater as a drinking water supply. The January 2010 *RAP* proposed a vertical excavation limit of five-feet below ground surface to "preclude direct contact by future residents." VOCs detected in groundwater beneath the Site were attributed to a regional plume with multiple upgradient and off-Site

sources. Therefore, remedial actions were not proposed to address groundwater. Following the public comment period, the California Regional Water Quality Control Board-San Francisco Bay Region (Regional Water Board) approved the January 2010 *RAP* (Regional Water Board, 2010).

In 2013, the proposed development plan was modified from residential to commercial use. The proposed commercial development includes construction of three approximately 125,000-square-foot multi-story buildings on the northern portion of the Site with landscaping and paved parking areas on the southern portion of the Site (Appendix A). The *RAP* has been updated to reflect the change in Site use.

Consistent with the previously approved *RAP*, this *Updated RAP* includes excavation of soil containing TPH and LUCs restricting the use of groundwater as a drinking water supply. Based on the potential direct contact exposure for future commercial workers to soil containing TPH, the proposed vertical extent of soil removal has been modified to three-feet below ground surface. This *Updated RAP* provides details of the evaluations conducted and the modified approach for implementation of the proposed remediation.

1.2 RAP ORGANIZATION

The *RAP* has been organized as follows:

- Site Description (Section 2.0);
- Summary of Investigations (Section 3.0);
- Data Evaluation (Section 4.0); and
- Remedial Approach (Section 5.0).

2.0 SITE DESCRIPTION

The approximately 5.3-acre generally flat triangular-shaped Site is located at 1333 Martinez Avenue in San Leandro, California, at an elevation of approximately 45-feet above Mean Sea Level. The Site is current vacant and unoccupied. The Site is bounded by: West Estudillo Avenue to the north; Alvarado Street and Western Pacific Railway tracks to the west; Martinez Street, the Union Pacific Rail Road and Bay Area Rapid Transit (BART) right-of-ways to the east; and auto repair warehouse and businesses to the south. Previous features on the Site included various fruit and vegetable processing facilities (Stantec, 2008).

2.1 GEOLOGIC AND HYDROGEOLOGIC CONDITIONS

The geology encountered in borings advanced at the Site includes interbedded fine-grained and coarse-grained alluvial sediments. The fine-grained sediments are comprised of sandy clays and clays and have been encountered between approximately 5-feet and 20-feet below ground surface (Iris, 2009). The coarse-grained sediments are comprised of gravelly sands with clay, clayey sands and clayey sands with gravel. The gravelly sands with clay are present between the ground surface and approximately 5-feet below ground surface. Clayey sands to clayey sands with gravel have been encountered between approximately 20-feet and 32-feet below ground surface (Iris, 2009).

Shallow groundwater has been encountered in the borings within the clayey sands at approximately 25-feet below ground surface (Iris, 2010). The groundwater flow direction at nearby upgradient sites is primarily to the west-southwest (Figure 2-2).

2.2 HISTORICAL SITE USE

The Site was initially developed in 1889 for an iron and steel piping facility. Various cannery-processing facilities have occupied the Site between approximately 1911 and 1989 when the building structures were demolished (Stantec, 2008).

2.3 SURFACE WATER

San Leandro Creek is located approximately 2,000-feet north of the Site. San Leandro Creek is a tributary of San Leandro Bay, which is located approximately 1.5-miles northwest of the Site.

2.4 CURRENT USES OF ADJOINING PROPERTIES

Current uses of adjoining properties include commercial warehouse buildings, office buildings, the Union Pacific Rail Road and the Western Pacific Railway tracks, and the San Leandro BART Station and parking lot.

3.0 SUMMARY OF INVESTIGATIONS

Investigations have been conducted at and near the Site to characterize the potential presence of hazardous substances and petroleum hydrocarbons in soil from releases due to the historical activities at the Site and the neighboring properties. Summaries of the investigation findings are presented below. The soil, soil gas and groundwater analytical results are summarized in Tables 3-1 to 3-6. The sample locations and analytical results are depicted on Figure 3-1.

3.1 PHASE I ESA – OCTOBER 2008

In October 2008, Stantec Consulting Corporation (Stantec) prepared a Phase I Environmental Site Assessment Report (Phase I ESA) on behalf of Westlake Development Partners, LLC (Westlake) to identify recognized environmental conditions (RECs) or historical RECs (Stantec, 2008). Based on the review of historical records and Site observations by Stantec, no RECs or historical RECs were identified.

3.2 SOIL INVESTIGATIONS

In December 2008, Iris Environmental (Iris) of Oakland, California, conducted Phase II Environmental Site Assessment (Phase II ESA) investigations at the Site (Iris, 2009a). As part of the Phase II ESA investigations, 28 soil samples were collected from seven borings (WP-1 to WP-7) between approximately 0.5-feet and 10-feet below ground surface at the Site (Figure 3-1). Laboratory analysis of the soil samples revealed: total petroleum hydrocarbons (TPH) as diesel (TPH) up to 8,900 milligrams per kilogram (mg/kg; WP-5 at three-feet below ground surface); TPH as motor oil (TPHmo) up to 5,100 mg/kg (WP-3 at three-feet below ground surface); benzo(a)pyrene up to 40 micrograms per kilogram (µg/kg; WP-4 at 0.5-feet below ground surface); and arsenic up to 6.8 mg/kg (WP-6 at 0.5-feet below ground surface).

In February 2009, Iris collected 47 step-out soil samples from 10 borings (WP3-S1, WP3-S2 and WP5-S1 to WP5-S8) at depths ranging from three-feet to 25-feet below ground surface. The soil sampling was collected to further delineate the presence of TPH in the subsurface at the Site (Iris, 2009b). Laboratory analysis of the step out soil samples revealed: TPH as gasoline (TPHg) up to 190 mg/kg (WP5-S1 at 25-feet below ground surface); TPHd up to 6,900 mg/kg (WP5-S3 at five-feet below ground surface); and TPHmo up to 4,100 mg/kg (WP5-S3 at five-feet below ground surface). Benzene was not detected above its laboratory-reporting limits. A summary of the soil analytical results is included in Tables 3-1 to 3-3 and depicted on Figure 3-1.

3.3 SOIL GAS INVESTIGATIONS

In December 2008 as part of the Phase II ESA investigations, nine soil gas samples were collected from seven borings (WP-1 to WP-7) advanced at the Site. The laboratory analytical results revealed tetrachloroethene (PCE) up to 431 $\mu g/m^3$ collected at five-feet below ground surface (WP-7) and at 500 $\mu g/m^3$ in its duplicate sample. A summary of the soil analytical results is included in Table 3-4.

3.4 GROUNDWATER INVESTIGATIONS

Eight groundwater samples were collected from seven borings (WP-1 to WP-7) advanced at the Site in December 2008 as part of the Phase II ESA investigations. The laboratory analytical results revealed the highest concentrations of TPH in the sample collected from boring WP-5 with concentrations of TPHg, TPHd and TPHmo at 2,800 µg/l, 21,000 µg/l and 11,000 µg/l, respectively. Laboratory analysis of the groundwater samples also revealed PCE up to 38 µg/l (WP-2) and methyl tertiary-butyl ether (MTBE) up to 16 µg/l (WP-6) (Table 3-5 and Figure 3-1).

Additional groundwater samples were collected in October 2009 near the former sample location WP-5 to confirm if the presence of TPH at the Site was also impacting groundwater downgradient and off-Site (Iris, 2010). The groundwater sampling consisted of collecting three

samples from borings SGW-1 to SGW-3 advanced adjacent and west of former sample location WP-5. The laboratory analytical results revealed TPHg, TPHd and TPHmo up to 680 µg/l, 2,000 µg/l and 1,200 µg/l, respectively. PCE was not detected in the groundwater samples above the laboratory-reporting limit of 2.5 µg/l. A summary of the groundwater analytical results is included in Tables 3-3 and depicted on Figure 3-1.

Groundwater sampling has also been conducted near the Site at 1696 Martinez Avenue as part of the Former Liquid Gold site investigations. Groundwater samples collected near the Site between 30- and 35-feet below ground surface revealed TPHd up to 160 µg/l and TPHmo up to 370 µg/l (SGI-1; Table 3-5 and Figure 3-1). Metals have also been detected in the groundwater samples collected as part of the Liquid Gold investigations with: barium up to 0.11 mg/l (SGI-5), molybdenum up to 0.019 mg/l (SGI-4) and nickel up to 0.022 mg/l (SGI-3; Table 3-6).

3.5 REMEDIAL ACTION PLAN – JANUARY 2010

In January 2010, Iris prepared a remedial action plan to address TPH in soil and groundwater beneath the Site based on a residential use scenario (Iris, 2010). The proposed remedial approach included: excavation of soil containing TPH to approximately 5-feet below ground surface near boring WP-5; installation of engineering controls, i.e., concrete cap; and institutional controls.

The vertical excavation limit of 5-feet below ground surface was determined to "preclude direct contact by future residents." The lateral extent of the excavations would be determined based on a combination of sidewall confirmation sampling and field observations for stained soil. The concrete cap would cover approximately 44,000-square-foot, capping the excavation area and additional areas beyond the excavation to further limit contact of remaining soil that contains TPH by future residents. The concrete cap would also function as an engineered foundation slab for the future residential structures. The proposed institutional controls included LUCs restricting the use of groundwater at the Site as a drinking water supply and limiting construction

of residential structures where VOCs in soil gas posed a potential vapor intrusion condition of concern.

The RAP concluded that actions to address VOCs in groundwater were not required due to the Site's presence of the regional groundwater plume containing petroleum hydrocarbons and VOCs with multiple upgradient and off-Site sources. In February 2010, the Regional Water Board approved the RAP (Regional Water Board, 2010).

4.0 DATA EVALUATION

Investigations have revealed the presence of TPH and PAHs in soil, VOCs in soil gas and TPH and VOCs in groundwater from off-Site sources. An assessment of the potential risks to human health and environment associated with the presence of TPH, PAHs and VOCs in the subsurface at the Site required an accurate conceptual site model (CSM) and comparison with appropriate evaluation criteria. A CSM was prepared, which incorporates all of the Site data and describes the fate and distribution of TPH, PAHs and VOCs in the subsurface.

The CSM identifies the general physical conditions at the Site that influence contaminant transport. The CSM was also used in identifying potential receptors to allow for selection of appropriate evaluation criteria. Through a comparison of Site data to the applicable criteria, the CSM was used to assess the adequacy of the Site characterization and identify whether more information is required to make decisions regarding appropriate response actions, i.e., data gaps.

4.1 CONCEPTUAL SITE MODEL

Pursuant to State Water Resources Control Board guidelines (Executive Order D-5-99 and Senate Bill 989) and Regional Board guidance (Regional Board, 2009), a CSM was developed to aid in evaluating the adequacy of the Site data. The CSM was developed based on: known historical operations at the Site; Site investigation data; chemical properties; suspected chemical release and transport mechanisms; and potential exposure scenarios (Figure 4-1).

4.2 SCREENING LEVEL ASSESSMENT

A screening level assessment was performed to assist in assessing the adequacy of the existing data for developing interim remedial measures. The screening level assessment consisted of the following components: (1) identification of potential exposure pathways; (2) identification of appropriate screening levels for each media; (3) a comparative analysis; and (4) a data gap

analysis. The screening level assessment has been used to evaluate conditions of potential concern and identify areas for additional investigations, i.e., data gaps and to evaluate the potential response actions.

4.2.1 Exposure Pathway Evaluation

Exposure pathways at the Site have been evaluated to assess the potential impacts to human health and environment. Potential human exposure to TPH, PAHs and metals in soil is limited to direct contact with soil within the upper two-feet by future Site workers (Regional Water Board, 2013).

Potential human exposure to soil gas was identified as a complete exposure pathway due to the potential migration of subslab VOC vapors to indoor air. Direct exposure to TPH and VOCs in groundwater at the Site was not identified as a complete exposure pathway, as the groundwater at the Site is not currently a drinking water source. However, as the groundwater is a designated beneficial use of municipal and domestic water supply (MUN). Therefore, groundwater conditions have been evaluated with respect to drinking water criteria.

4.2.1.1 ESTIMATED EXPOSURE CONCENTRATION

The maximum concentration detected in soil was used as the reasonable maximum exposure (RME) concentration. The California Environmental Protection Agency (CalEPA) recommends that maximum beneficial uses of a property be the basis for evaluation. The current and future uses of the Site are for commercial purposes. Therefore, conditions at the Site have been screened using the methods described below based on commercial Site use.

4.2.1.2 COMMERCIAL/INDUSTRIAL WORKER

The commercial/industrial scenario uses the conservative assumption that on-Site workers spend all or most their workday outdoors. The exposure for commercial/industrial workers is presumed

to include: (1) a full time employee of a company operating on-site who spends most of the work day conducting maintenance or manual labor activities outdoors or (2) a worker who is assumed to regularly perform grounds-keeping activities as part of his/her daily responsibilities (Regional Board, 2013). Exposure to surface and shallow subsurface soils (i.e., at depths of zero to two feet below ground surface) is expected to occur during moderate digging associated with routine maintenance and grounds-keeping. The commercial/industrial worker scenario is based on a worker that is exposed to chemicals at the Site for 24-hours per day during 250-days per year for 25-years.

4.2.2 Identification of Screening Levels

Based on the identified exposure pathways, screening levels were identified for chemicals in soil, soil gas and groundwater. The screening levels are not necessarily cleanup goals, but have been selected to evaluate Site conditions and identify the necessity for additional actions, e.g., supplemental investigations or interim actions. The screening levels are conservatively calculated threshold values below which particular chemicals are believed to "be below thresholds of concern for risks to human health." The presence of a chemical at concentrations in excess of a screening level does not indicate that adverse impacts to human health are occurring or will occur but suggests that further evaluation of potential human health concerns is warranted.

The results of the investigations have been compared with Environmental Screening Levels (ESLs) presented in the California Regional Water Quality Control Board – San Francisco Bay Region (Regional Water Board) *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater* (Regional Water Board, 2013).

4.2.2.1 REGIONAL WATER BOARD ESLS

The Regional Board has identified Environmental Screening Levels (ESLs) for TPH in soil, soil gas and groundwater (Regional Board, 2013). The Regional Board ESLs "are considered to be very conservative [and] the presence of a chemical at concentrations below the corresponding ESL can be assumed to not pose a significant threat to human health and the environment." While a chemical may be measured at concentrations above the Regional Board ESL, it "does not necessarily indicate that adverse impact to human health or the environment are occurring, [it] simply indicates that potential for adverse impacts may exist and that additional evaluation is warranted."

In developing the ESLs, the Regional Water Board has considered exposure pathways to humans including: direct contact, inhalation of vapors from soil gas migration and groundwater volatilization to indoor air; migration of soil leachate to groundwater; ingestion; and urban area eco-toxicity criteria.

4.2.2.1.1 Screening Levels – Commercial

Screening levels for TPH and PAHs in soil for direct contact were identified at: 2,400 mg/kg (TPHg), 1,100 mg/kg (TPHd); 100,000 mg/kg (TPHmo); and 45 μg/kg (benzo(a)pyrene [BaP)]). The screening level for arsenic was identified as the background concentration up to 11 mg/kg (Duverge, 2011).

The commercial worker indoor air protection soil gas screening ESL of 2,100 $\mu g/m^3$ for PCE has been used to evaluate Site soil gas conditions.

The groundwater conditions have been evaluated with respect to ESLs for TPH and VOCs of 100 μg/l for TPHg, TPHd and TPHmo; 5 μg/l for PCE; 1 μg/l for benzene; 40 μg/l for toluene; 30 μg/l for ethyl benzene; 20 μg/l for xylenes; 5 μg/l for MTBE and 70 μg/l for TCM.

4.3 COMPARATIVE ANALYSIS

Laboratory analytical results for the soil, soil gas and groundwater samples have been compared to the identified screening levels to assist in defining the areas of concern. A summary of the comparative analysis is discussed below.

4.3.1 Soil Conditions

Laboratory analysis revealed TPHg up to 7.7 mg/kg (WP5-S1 at 5-feet below ground surface), which is below its direct contact screening level ESL of 2,400 mg/kg. TPHd was detected in soil up to 8,900 mg/kg (WP-5 at 3-feet below ground surface), above the direct contact screening level of 1,100 mg/kg. TPHmo was detected in soil up to 5,100 mg/kg (WP-3 at 3-feet below ground surface), which is below its direct contact screening level of 100,000 mg/kg.

Laboratory analysis of the soil samples revealed BaP up to 40 μg/kg (WP5-S1 at 5-feet below ground surface), which is below its direct contact screening level of 45 μg/kg. Arsenic was detected up to 6.8 mg/kg, which is consistent with background arsenic concentrations ranging up to 11 mg/kg.

Therefore, consistent with the previously approved *RAP*, measures to control exposure to TPH in shallow soil are warranted. Based on the commercial use of the property, excavation of soil to three-feet should be adequately protective of future Site workers.

4.3.2 Soil Gas Conditions

PCE was detected in soil gas up to 500 $\mu g/m^3$ (WP-7 at 5-feet below ground surface), which is below its indoor air protection screening level of 2,100 $\mu g/m^3$. Other VOCs were not detected in soil gas above their respective laboratory-reporting limits. Based on the proposed commercial Site use and the presence of VOCs in soil gas at concentrations below applicable commercial

human-health screening levels, measures to control exposures to VOCs in soil gas are not warranted.

4.3.3 Groundwater Conditions

TPHg, TPHd and TPHmo were detected in groundwater up to 2,800 µg/l, 21,000 µg/l and 11,000 µg/l (WP-5), respectively, which are above their respective groundwater protection screening levels of 100 µg/l, 100 µg/l and 100 µg/l. PCE was detected in groundwater up to 38 µg/l (WP-2), which is above its groundwater protection screening level of 5 µg/l.

Toluene was detected in groundwater up to 0.8 µg/l (SGI-5; off-Site and upgradient at 1696 Martinez Street), which is below its groundwater protection screening level of 40 µg/l. MTBE was detected up to 16 µg/l (WP-6), which is above its groundwater protection screening level of 5 µg/l. TCM was detected up to 5.7 µg/l (SGI-2) in upgradient groundwater, below its groundwater protection screening level of 70 µg/l. Ethanol and methanol were detected in upgradient groundwater samples up to 19 µg/l (SGI-5) and 52 µg/l (SGI-4), respectively. There are no current promulgated screening levels for ethanol and methanol.

Consistent with the previously approved January 2010 *RAP*, actions to address VOCs in Site groundwater were not required due to the regional groundwater plume containing petroleum hydrocarbons and VOCs with multiple upgradient and off-Site sources. Therefore, consistent with the previously approved *RAP*, LUCs to restrict the use of groundwater as a drinking water supply should be adequately protective of potential exposure to chemicals in groundwater.

5.0 REMEDIAL APPROACH

Consistent with the previously approved *RAP*, and the change in Site use to commercial, the remedial approach to address TPH in soil and groundwater at the Site has been updated to include soil excavation to three-feet below ground surface and adoption of LUCs for groundwater.

5.1 IMPLEMENTATION PLAN

The activities to be conducted prior to implementation of the remediation include the following: obtaining necessary permits and agency approvals; and conducting proper notification and obtaining approval from the Regional Water Board. Details of the other elements to be addressed as part of the implementation are presented below.

5.1.1 Permitting

Prior to implementation of the recommended remedial actions, appropriate permits will be obtained. The necessary approvals, permits and licenses required by local, state and federal agencies will be obtained. Necessary permits may include:

- Notice of Soil Excavation – Bay Area Air Quality Management District.

In addition, adjacent residents and businesses will be notified of the scheduled work dates approximately one week prior to commencing excavation.

5.1.2 Health and Safety, Utility Clearance

Prior to Site development activities, a *Health and Safety Plan* (HASP) should be prepared and followed by onsite personnel. The HASP should be prepared to address the requirements of the Occupational Health and Safety Administration (OSHA) 29 CFR 1910.120 guidelines and Title 8

CCR Section 5192. The HASP should be read by Site workers and visitors to apprise them of the Site conditions and provide instructions for implementing proper safety training and procedures during excavation activities. The contractor conducting the excavation activities should also use their Injury and Illness Prevention Program (IIPP) in conjunction with the HASP.

Pursuant to California Assembly Bill AB 73, USA will be contacted to locate utilities entering the Site. In addition, a private underground utility locating contractor will be used to identify subsurface utilities near the work areas. The utilities will be mapped and as applicable.

5.1.3 Site Control and Preparation

Access to the Site should be controlled by the contractor to prevent unauthorized entry. Fencing and other barricades, as warranted, should be maintained by the contractor to prevent entrance to the Site by unauthorized personnel.

Ground cover including pavement and concrete should be removed and recycled in accordance with California Assembly Bill AB 939. To the extent practicable, the excavation should be advanced to remove soil from the areas depicted on Figure 5-1.

5.1.4 Soil Excavation

Soil will be excavated using hydraulic earthmoving equipment. The excavation equipment will be operated by a licensed contractor. The soil will be excavated to a depth of approximately 3-feet below ground surface from the areas depicted on Figure 5-1.

It is anticipated that the excavated soil containing TPH will be direct loaded for off-Site disposal. The soil should be handled in a manner to minimize the potential for airborne dust and vapors to be generated. During soil handling, air monitoring should be conducted and used to confirm the efficacy of soil handling procedures. As appropriate, procedures should be modified to control emissions of dust and vapors. Disturbed areas that are inactive for seven days or more should

also be wetted to minimize potential airborne entrainment and generation of dust. In addition, trucks transporting soil off-Site should not be loaded above the side or rear of the truck bed. The truckload should be covered with a tarp prior to leaving the Site to prevent particulate emissions to the atmosphere.

5.1.4.1 AIR MONITORING

Monitoring for respirable dust and vapors should be performed during excavation and soil handling activities. The objective of the air-monitoring program is to document condition, and as appropriate, adjust work activities to protect the health and safety of the on-Site construction workers and nearby community. Real-time dust and vapor monitoring should be conducted at upwind and downwind locations. The upwind and downwind monitoring locations should be adjusted, a necessary, depending on the direction of the prevailing winds.

Real-time respirable dust air monitoring should be performed using a Monitoring Instruments for the Environment, Inc. (MIE) data logging real time monitor, model PDR-1000 respirable air monitor (RAM), or equivalent. The PDR 1000 is designed to measure the concentration of airborne particulate matter using a high sensitivity nephelometer (photometer) using a light scatter sensor. Sensitivity of the PDR 1000 is reported to range from 0.001 milligrams per cubic meter (mg/m^3) to 400 mg/m^3. The RAM should be calibrated daily. Details of the air monitoring and worker protection action levels will be included in the HASP.

Instrumentation used during real-time monitoring for TPH will include a PID, such as a Mini-Rae Model 2000 vapor monitor or equivalent. This instrument is capable of measuring organic vapors at a concentration of 0.1 ppm_v as isobutylene, with a range of 0 to 10,000 ppm_v, and is equipped with an adjustable internal alarm. The instrument can detect a wide range of VOCs; however, it cannot identify the specific compounds detected.

5.1.5 Dust and Vapor Control

Dust and vapor control will be performed by applying water with a low-pressure spray system. Low volumes of potable water should be routinely spread in areas where dust may be generated because of excavation activities. If monitoring indicates that the dust control measures are not adequate, then additional engineering control measures should be implemented. These additional measures will include, but are not limited to: 1) change of work procedures; 2) soil wetting during and excavation and loading; 3) tarping of trucks; and 4) covering of exposed excavations with plastic sheeting; 5) use of dust palliatives; and 6) use of odor suppressing foams.

5.1.6 Confirmation Sampling

Following soil removal, confirmation samples will be collected. The confirmation samples will be collected from the sidewalls of the excavation. The lateral extent of the excavations will be advanced based on field screening and visual observations. The lateral limits of the excavation will be determined based on the laboratory analysis of the sidewall samples. If TPH is present in the sidewall samples at concentrations exceeding the screening levels, then the excavation will be expanded until concentrations of TPH are below applicable screening levels. A summary of the soil sample collection methodology is presented below.

5.1.6.1 SOIL SAMPLE COLLECTION METHODOLOGY

Soil samples will be collected from the midpoints of the excavation sidewalls and in areas showing signs of contamination, e.g., odors and soil discoloration (USEPA, 1986). Soil samples will be collected using the excavation equipment by driving a 6-inch long by 2-inch diameter brass-lined tube into soil within the excavator bucket. The top three inches of soil within the excavator bucket will be removed prior to sample collection. The location at which the excavator bucket removed the soil sample will be recorded.

The ends of the brass-lined tubes will be covered with Teflon sheets and plastic end caps, labeled, sealed in a plastic bag and placed in a chilled ice chest. The soil samples will then be transported to a CDPH ELAP certified laboratory for chemical analysis following ASTM D 4840 chain-of-custody protocols. The confirmation samples will be analyzed for TPH using USEPA Method 8015M.

5.1.7 Backfilling and Site Restoration

Following completion, the excavation will be backfilled using imported soil and compacted to approximately 95-percent of the maximum dry density. Imported fill material may be used, as necessary, for backfilling. Soil samples should be collected from borrow areas for characterization prior to import and placement at the Site. The laboratory analytical results of the soil samples collected from the proposed imported fill material borrow areas should be compared to appropriate screening levels, such as the ESLs. A summary of the imported fill material soil sample collection methodology is presented below.

5.1.7.1 SOIL SAMPLE COLLECTION METHODOLOGY

The contractor should identify borrow areas and soil samples should be collected as appropriate. The frequency of sampling should be conducted in general following the California Department of Toxic Substances' (DTSC) *Information Advisory – Clean Imported Fill Material* (DTSC, 2001). The borrow area soil samples should be collected in pre-cleaned brass liners or glass jars, labeled and placed in a chilled cooler for transportation to a CDPH ELAP laboratory following ASTM D 4840 chain-of-custody protocols. The soil samples should be analyzed for the suite of analytes in accordance with DTSC's *Advisory for Clean Imported Fill Material*.

5.1.8 Soil Disposal

The excavated soil should be stockpiled, characterized and profiled for off-Site transportation and disposal. Procedures for characterizing the excavated soil are presented below.

5.1.8.1 DISPOSAL CHARACTERIZATION

Samples will be collected to properly characterize the soil prior to disposal. The final destination of excavated soil will be selected based on the waste analytical results and acceptance criteria provided by the waste management facilities. The soil samples results will be evaluated using the procedures outlined in *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (SW-846; USEPA, 2007). USEPA's SW-846 identifies that the statistically representative concentration should be used when characterizing solid wastes with potentially variable concentrations, i.e., the 90 percent upper confidence level (UCL) concentration. The 90 percent UCL concentration represents the concentration that it is expected that 90 out of 100 samples should have concentrations equal to or less than. The number of samples and suite of analytes should be determined based on the nature and source of the contamination and waste facility requirements.

A statistical analysis using a Student's "t-test" should be performed using the sample results to determine the 90 percent UCL concentration of the regulated constituents in the samples. The results of the sampling will also be evaluated to determine whether an appropriate number of samples have been collected to characterize the waste using methodologies as outlined in USEPA's SW-846. The results of the stockpile soil sampling and statistical analysis will be forwarded to landfills or other appropriate facilities for profiling and acceptance.

5.1.9 Off-Site Soil Transport

Following acceptance by the disposal facility, the soil will be directly loaded into trucks for off-Site disposal. Non-hazardous soils should be transported off-Site using licensed transporters and appropriate bills of lading. It is anticipated that the excavated soil will be disposed at a Class II waste management facility. Appropriately, designated and licensed trucks should be used to convey the soil from the Site to the disposal facilities.

5.1.10 Equipment Decontamination

Equipment used for excavation and loading of soil will be dry brushed before leaving the Site. Trucks and roll-off bins exiting the Site will be inspected and logged for compliance with the Site decontamination requirements. To minimize the spread of soil, equipment will be cleaned prior to movement out of active work zones. The trucks and roll-off bins will be dry brushed for removal of material prior to exiting the Site.

Prior to exiting the work zone and Site, e.g., crossing public thoroughfares or completion of contaminated material excavation, the equipment will be cleaned. Details of the decontamination procedures will be included in the HASP.

5.2 LAND USE COVENANTS

A *Land Use Covenant* (*LUC*) will be prepared and recorded after physical remedial measures are implemented and before the Site is certified by Regional Water Board as being remediated. The *LUC* will be recorded to preclude current and future owners or occupants of the Site from use or allow the use of shallow groundwater beneath the Site for drinking water purposes.

5.3 CONTINGENCY PLAN

Prior to the start of transport operations, the transportation contractors will contact an Emergency Response (ER) contractor to establish communication regarding the project. The Project Manager will work with the contractor to establish appropriate responses to any spills. The transportation company personnel will be briefed on means for contacting both the Project Manager and the ER contractor in the event of a mishap. All emergency spill response measures will be handled by the ER, including the cleanup and disposal of any spilled material.

In the event of a spill, the driver will stay with the truck until law enforcement or other assistance arrives. If the ER contractor has not been summoned, the driver should do so. In the interim, the

driver should place traffic cones around the spill and keep onlookers away from the area. In the event of rain, materials should be bermed as soon as possible to contain the extent of spillage.

In an accident involving others, aid and assistance to injured personnel will be the top priority. Notification will also be made to necessary State and local authorities.

5.4 REPORTING

A summary of the excavation activities will be included in a report submitted to the Regional Water Board. The report will include a summary of the soil removal activities including: quantity of soil removed; extent of excavation; post-excavation soil sample analytical results; field observations; and waste disposal documentation. Appendices to the report will include copies of the: field data forms; laboratory data certificates; and chain-of-custody forms. The reports will be prepared under the supervision of a California Professional Engineer and California Professional Geologist for submittal to the Regional Water Board.

5.4.1 Electronic Submittal – AB2886

The sampling data and reports will be submitted electronically as required by Assembly Bill 2886 (Water Code Sections 13195-13198) for the SWRCB Geotracker database. As outlined in the requirements by the SWRCB (Article 12, Chapter 16, Division 3, Title 23 of the California Code of Regulations), data generated from this investigation will be submitted in both hard copy and electronic format.

5.5 SCHEDULE

Implementation of the *Updated RAP* is anticipated to begin within approximately 60 days following approval by the Regional Water Board. It is anticipated that the soil excavation and backfilling will require approximately four-weeks to complete, including permitting, excavation

and restoration. In addition, *LUCs* would be recorded within 60 days following implementation of the *RAP*.

6.0 REFERENCES

California Regional Water Quality Control Board-San Francisco Bay Region, *Approval of Draft Remedial Action Plan, and Request for Technical Report, 1333 Martinez Street, San Leandro, California*, February 18, 2010 (Regional Water Board, 2010).

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United States Environmental Protection Agency (USEPA), *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Office of Emergency and Remedial Response, Office of Solid Waste and Emergency Response*, March 1988 (USEPA, 1988).

USEPA, *Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA*, December 1993 (USEPA, 1993).

7.0 DISTRIBUTION LIST

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TABLE 3-1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
1333 Martinez Street
San Leandro, California

Sample ID	Date	Depth (feet)	Petroleum Hydrocarbons			VOCs
			TPHg	TPHd	TPHmo	Benzene
			(mg/kg)	(mg/kg)	(mg/kg)	(µg/kg)
WP-1	12/8/08	3	--	1.5	<5	--
		5	--	<1	<5	--
		10	--	2.1	<5	--
WP-2	12/8/08	2.5	--	<0.99	<5	--
		5	--	1.1	<5	--
		10	--	1.5	<5	--
WP-3	12/8/08	0.5	--	2,100	5,100	--
		5	--	18	81	--
		10	--	1.3	<5	--
WP-4	12/8/08	3	--	<1	5.2	--
		5	--	<1	<5	--
		10	--	1.1	<5	--
WP-5	12/8/08	3	--	8,900	4,500	--
		5	--	8,700	4,300	--
		10	--	2,400	1,200	--
WP-6	12/6/08	3	--	<1	<5	--
		5	--	1.5	<5	--
		10	--	<1	<5	--
WP-7	12/6/08	3	--	<1	<5	--
		5	--	<1	<5	--
		9.5	--	<0.99	<5	--
WP3-S1	2/18/09	3	--	2	8.7	--
		5	<0.95	<0.99	<5.0	<4.8
WP3-S2	2/18/09	3	--	<0.99	<5.0	--
		5	<1.1	740	2,500	<5.3
WP5-S1	2/18/09	3	--	480	1,200	--
		5	7.7	3,600[a]	1,700[a]	<5.4
			--	3,100	1,500	--
		15	1.6	380[a]	180[a]	<5.0
			--	360	190	--
		20	--	730[a]	340[a]	--
			--	590	290	--
		25	190	5,400	2,700	<100
WP5-S2	2/18/09	5	<0.94	2.5	<5.0	<5.2
		10	--	1.3	<5.0	--
		15	<1.0	1.5	<5.0	<5.1
		20	--	<1.0	<5.0	--
		25	<1.0	<1.0	<5.0	<4.7
WP5-S3	2/18/09	5	3.4	6,900	4,100	<4.6
		10	--	1,700	1,100	--
		15	53	2,100	1,300	<4.9
		20	--	2,100	1,300	--
		25	92	3,800	2,100	<100

TABLE 3-1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
1333 Martinez Street
San Leandro, California

Sample ID	Date	Depth (feet)	Petroleum Hydrocarbons			VOCs
			TPHg	TPHd	TPHmo	Benzene
			(mg/kg)	(mg/kg)	(µg/kg)	(µg/kg)
WP5-S4	2/18/09	5	<1.0	1.0	<5.0	<5.4
		10	--	<1.0	<5.0	--
		15	<1.0	<1.0	<5.0	<5.1
		20	--	<1.0	<5.0	--
		25	<0.97	<1.0	<5.0	<4.9
WP5-S5	2/18/09	5	<1.1	<1.0	<5.0	<5.3
		10	--	<1.0	<5.0	--
		15	<0.92	<1.0	<5.0	<4.6
		20	--	1.0	<5.0	--
		25	<0.93	<1.0	<5.0	<4.7
WP5-S6	2/18/09	5	<0.96	<1.0	<5.0	<4.8
		10	--	<1.0	<5.0	--
		15	<1.0	<1.0	<5.0	<5.1
		20	--	1.2	<5.0	--
		25	<1.0	<0.99	<5.0	<5.2
WP5-S7	2/18/09	5	<0.96	<1.0	<5.0	<4.8
		10	--	2.3	<5.0	--
		15	<0.94	<1.0	<5.0	<4.7
		20	--	<1.0	<5.0	--
		25	29	2,900	1,300	<50
WP5-S8	2/18/09	5	<0.96	<1.0	<5.0	<4.8
		10	--	1.0	<5.0	--
		15	<1.0	<1.0	<5.0	<5.2
		20	--	<1.0	<5.0	--
		25	<1.0	840	490	<5.2
ESLs - Commercial			2,400	1,100	100,000	44

Notes:

TPHg: Total petroleum hydrocarbons as gasoline
TPHd: Total petroleum hydrocarbons as diesel
TPHmo: Total Petroleum Hydrocarbons as motor oil
mg/kg: milligrams per kilogram
µg/kg: micrograms per kilogram
<5: less than the laboratory-reporting limit of 5
--: Not analyzed/not available
[a]: Concentration prior to silica gel cleanup

TABLE 3-2
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - PAHS
1333 Martinez Street
San Leandro, California

Sample ID	Date	Depth (feet)	PAHs															
			Acenaphthene	Acenaphthylene	Anthracene	Benzo(a) anthracene	Benzo(a)pyrene	Benzo(b) fluoranthene	Benzo(g,h,I) perylene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd) pyrene	Naphthalene	Phenanthrene	Pyrene
			(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
WP-1	12/8/08	0.5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
		3	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
WP-4	12/8/08	0.5	<5	6.2	7.4	36	40	76	8.6	23	38	<5	44	<5	7.2	<5	9.8	46
		3	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
WP-7	12/6/08	0.5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
		3	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
ESLs - Commercial			16,000	13,000	2,800	45	45	45	27,000	45	4,500	130	40,000	8,900	450	1,200	11,000	85,000

Notes:

µg/kg: micrograms per kilogram

<5: less than the laboratory-reporting limit of 5

PAHs: Polycyclic aromatic hydrocarbons

TABLE 3-3
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - METALS
1333 Martinez Street
San Leandro, California

Sample ID	Date	Depth (feet)	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
WP-1	12/8/08	0.5	<0.5	2.1	0.38	<0.25	13	18	4.8	0.03	15	<0.5	<0.25	<0.5	61
		3	<0.5	4.4	0.28	<0.25	2.3	5.7	3	0.041	5.2	1.8	<0.25	<0.5	67
WP-2	12/8/08	0.5	<0.5	2.5	0.21	<0.25	13	5.9	4.7	0.031	15	<0.5	<0.25	<0.5	34
		2.5	<0.5	2.3	0.31	<0.25	3.6	15	2.9	0.077	6.8	<0.5	<0.25	<0.5	60
WP-3	12/8/08	0.5	<0.5	4.3	0.32	<0.25	3.4	32	4.4	0.1	5.1	2.4	<0.25	<0.5	73
		3	1.2	4.9	0.27	<0.25	6	34	29	0.15	4.9	2.5	<0.25	<0.5	66
WP-4	12/8/08	0.5	<0.5	1.2	0.35	<0.25	6.8	20	3.4	0.13	6.5	<0.5	<0.25	<0.5	63
		3	<0.5	3.9	0.5	0.37	38	36	65	0.19	38	<0.5	<0.25	<0.5	150
WP-5	12/8/08	0.5	<0.5	2.9	0.47	0.39	39	22	16	0.055	53	1.5	<0.25	<0.5	120
		3	<0.5	3	0.4	<0.25	36	19	20	0.059	47	<0.5	<0.25	<0.5	65
WP-6	12/6/08	0.5	<0.5	6.8	0.41	0.29	23	23	24	0.74	23	<0.5	<0.25	<0.5	94
		3	<0.5	3.4	0.35	<0.25	33	24	18	0.094	41	<0.5	<0.25	<0.5	56
WP-7	12/6/08	0.5	<0.5	3.4	0.35	0.35	29	12	9.5	0.12	34	1.4	<0.25	<0.5	41
		3	0.89	3.2	0.33	0.26	30	11	5.2	0.043	37	<0.5	<0.25	<0.5	37
ESLs - Commercial			410	bg	2,000	1,000	1,500,000	41,000	320	88	19,000	5,100	5,100	10	310,000

Notes:

mg/kg: milligrams per kilogram

<0.5: less than the laboratory-reporting limit of 0.5

TABLE 3-4
SUMMARY OF SOIL GAS SAMPLE ANALYTICAL RESULTS
1333 Martinez Street
San Leandro, California

Sample ID	Date	Depth (feet)	PCE	Toluene	Ethyl benzene	Xylenes	Acetone
			($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)
WP-1	12/5/08	5	<8	<8	<8	<8	--
WP-2	12/5/08	5	257	<8	<8	<8	--
WP-3	12/5/08	5	<8	<8	<8	<8	--
WP-4	12/5/08	5	<8	<8	<8	<8	--
WP-5	12/5/08	5	<8	208	<8	258	--
WP-6	12/5/08	5	<8	172	17	267	--
WP-7	12/5/08	5	431	<8	<8	<8	--
	12/5/08		500	16	<5.0	6.7	20
	12/5/08	15	83	97	<8	225	--
ESLs - Commercial			2,100	1,300,000	4,900	440,000	140,000,000

Notes:

PCE: Tetrachloroethene

$\mu g/m^3$: micrograms per cubic meter

<8: less than the laboratory-reporting limit of 8

--: not sampled/not available

TABLE 3-5
SUMMARY OF GROUNDWATER SAMPLE ANALYTICAL RESULTS - TPHS & VOCS
1333 Martinez Street
San Leandro, California

Sample ID	Depth (feet)	Date	Petroleum Hydrocarbons			Volatile Organic Compounds														
			TPHg	TPHd	TPHmo	PCE	TCE	cis-1,2-DCE	TCM	Benzene	Toluene	Ethyl benzene	Xylenes	MTBE	TMB	Isopropyl benzene	Propyl benzene	n-Butyl benzene	Ethanol	Methanol
			(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
1333 Martinez Street																				
WP-1	--	12/8/08	<50	<50	<300	5.9	<2.5	<2.5	<2.5	<0.5	<0.5	<0.5	<0.5	<2	<2.5	<2.5	<2.5	<2.5	--	--
WP-2	--	12/8/08	<50	<50	<300	38	3.4	3.7	<2.5	<0.5	<0.5	<0.5	<0.5	2.2	<2.5	<2.5	<2.5	<2.5	--	--
	--	12/8/08	<50	<50	<300	30	2.6	3.4	<2.5	<0.5	<0.5	<0.5	<0.5	2.2	<2.5	<2.5	<2.5	<2.5	--	--
WP-3	--	12/8/08	<50	<50	<300	3.6	<2.5	<2.5	<2.5	<0.5	<0.5	<0.5	<0.5	<2	<2.5	<2.5	<2.5	<2.5	--	--
WP-4	--	12/8/08	<50	<50	<300	4.1	<2.5	<2.5	4	<0.5	<0.5	<0.5	<0.5	<2	<2.5	<2.5	<2.5	<2.5	--	--
WP-5	--	12/8/08	2,800	21,000	11,000	<2.5	<2.5	<2.5	<2.5	<0.5	2.8	<0.5	<0.5	<2	<2.5	<2.5	<2.5	5.3	--	--
WP-6	--	12/6/08	920	480	<300	<2.5	<2.5	<2.5	<2.5	<0.5	2	11	16.3	16	23.8	2.9	11	5.2	--	--
WP-7	--	12/6/08	<50	<50	<300	<2.5	<2.5	<2.5	<2.5	<0.5	<0.5	<0.5	<0.5	<2	<2.5	<2.5	<2.5	<2.5	--	--
SGW-1	--	10/6/09	680	2,000	1,200	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	--	--
SGW-2	--	10/6/09	<50	<50	<300	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	--	--
SGW-3	--	10/6/09	<50	85	<300	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	--	--
1696 Martinez Street																				
SGI-1	30-35	3/21/12	<50	160	370	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<50
SGI-2	30-35	3/21/12	<50	<50	<10	<0.50	<0.50	<0.50	5.7	<0.50	0.68	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<50
SGI-3	30-35	3/21/12	<50	61	100	<0.50	<0.50	<0.50	2.5	<0.50	0.56	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<50
SGI-4	30-35	3/21/12	<50	<50	<100	<0.50	<0.50	<0.50	2.6	<0.50	0.69	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	52
SGI-5	30-35	3/21/12	<50	83	140	<0.50	<0.50	<0.50	2.6	<0.50	0.8	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	19	<50
ESLs - Commercial			100	100	100	5.0	5.0	6.0	70	1.0	40	30	20	5.0	--	--	--	--	--	--

Notes:

TPHg: Total petroleum hydrocarbons as gasoline
TPHd: Total petroleum hydrocarbons as diesel
TPHmo: Total Petroleum Hydrocarbons as motor oil
TCM: Trichloromethane
µg/l: micrograms per liter
<50: less than the laboratory-reporting limit of 50

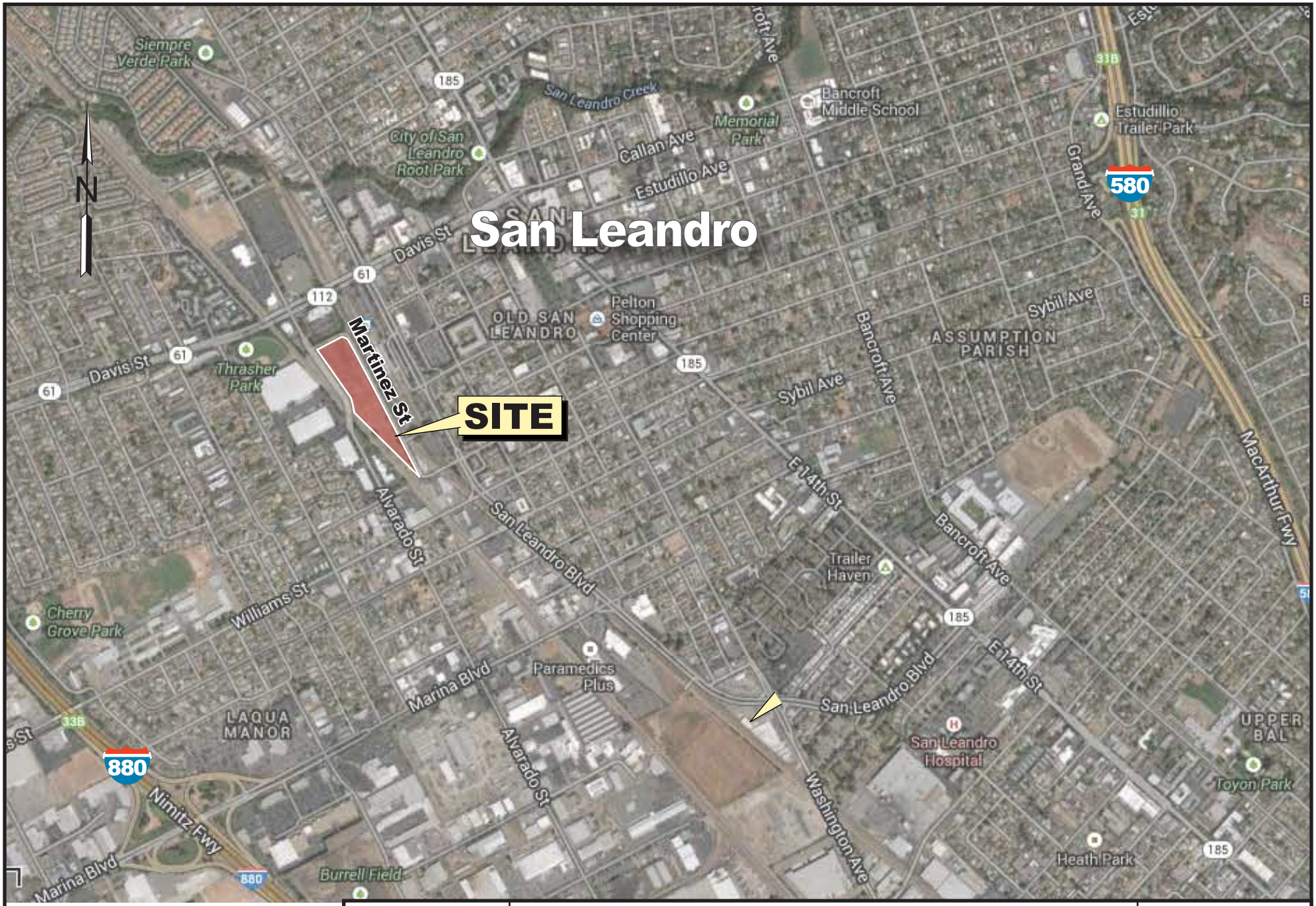
TABLE 3-6
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - METALS
1333 Martinez Street
San Leandro, California

Sample ID	Depth (feet)	Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
			(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
1696 Martinez Street																			
SGI-1	30-35	3/21/12	<0.015	<0.015	0.1	<0.0010	<0.0010	<0.0050	<0.0050	<0.0050	<0.0050	<0.00050	0.017	0.01	<0.015	<0.0050	<0.015	<0.0050	<0.010
SGI-2	30-35	3/21/12	<0.015	<0.015	0.098	<0.0010	<0.0010	<0.0050	<0.0050	<0.0050	<0.0050	<0.00050	0.016	0.0098	<0.015	<0.0050	<0.015	<0.0050	<0.010
SGI-3	30-35	3/21/12	<0.015	<0.015	0.1	<0.0010	<0.0010	<0.0050	<0.0050	<0.0050	<0.0050	<0.00050	0.016	0.022	<0.015	<0.0050	<0.015	<0.0050	<0.010
SGI-4	30-35	3/21/12	<0.015	<0.015	0.1	<0.0010	<0.0010	<0.0050	<0.0050	<0.0050	<0.0050	<0.00050	0.019	0.019	<0.015	<0.0050	<0.015	<0.0050	<0.010
SGI-5	30-35	3/21/12	<0.015	<0.015	0.11	<0.0010	<0.0010	<0.0050	<0.0050	<0.0050	<0.0050	<0.00050	0.015	0.014	<0.015	<0.0050	<0.015	<0.0050	<0.010
ESLs - Commercial			0.006	0.01	1.0	0.0005	0.0003	0.050	0.003	0.0031	0.0025	2.5E-05	0.18	0.0082	0.005	0.0002	0.002	0.015	0.081

Notes:

mg/l: milligrams per liter

--: Not available/not analyzed



0 FEET 2000

Figure 1-1	SITE LOCATION MAP
December 2013	1333 Martinez Street, San Leandro, California

WEST
Environmental Services & Technology

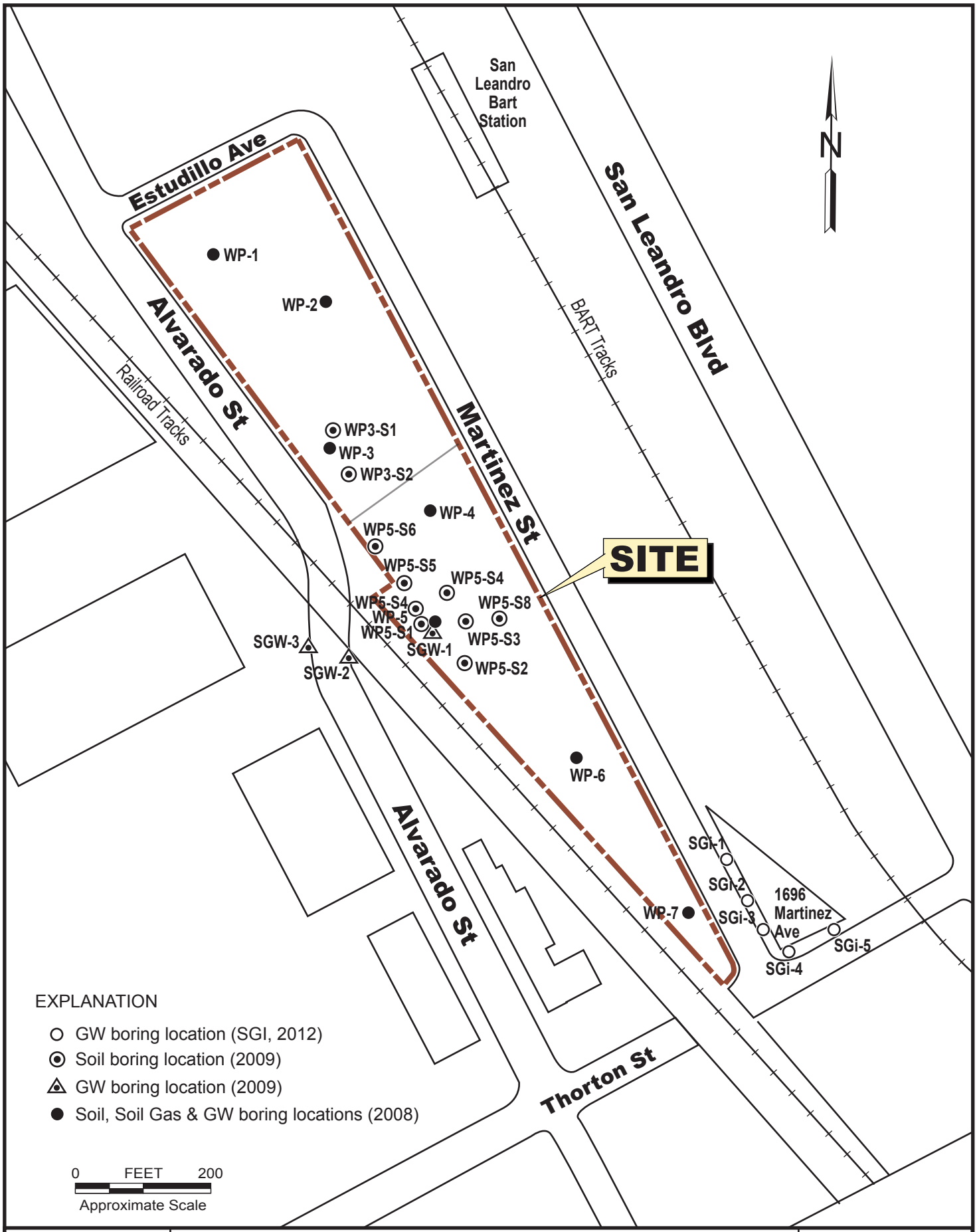


Figure 2-1	**SITE PLAN**	WEST Environmental Services & Technology
December 2013	1333 Martinez Street, San Leandro, California	

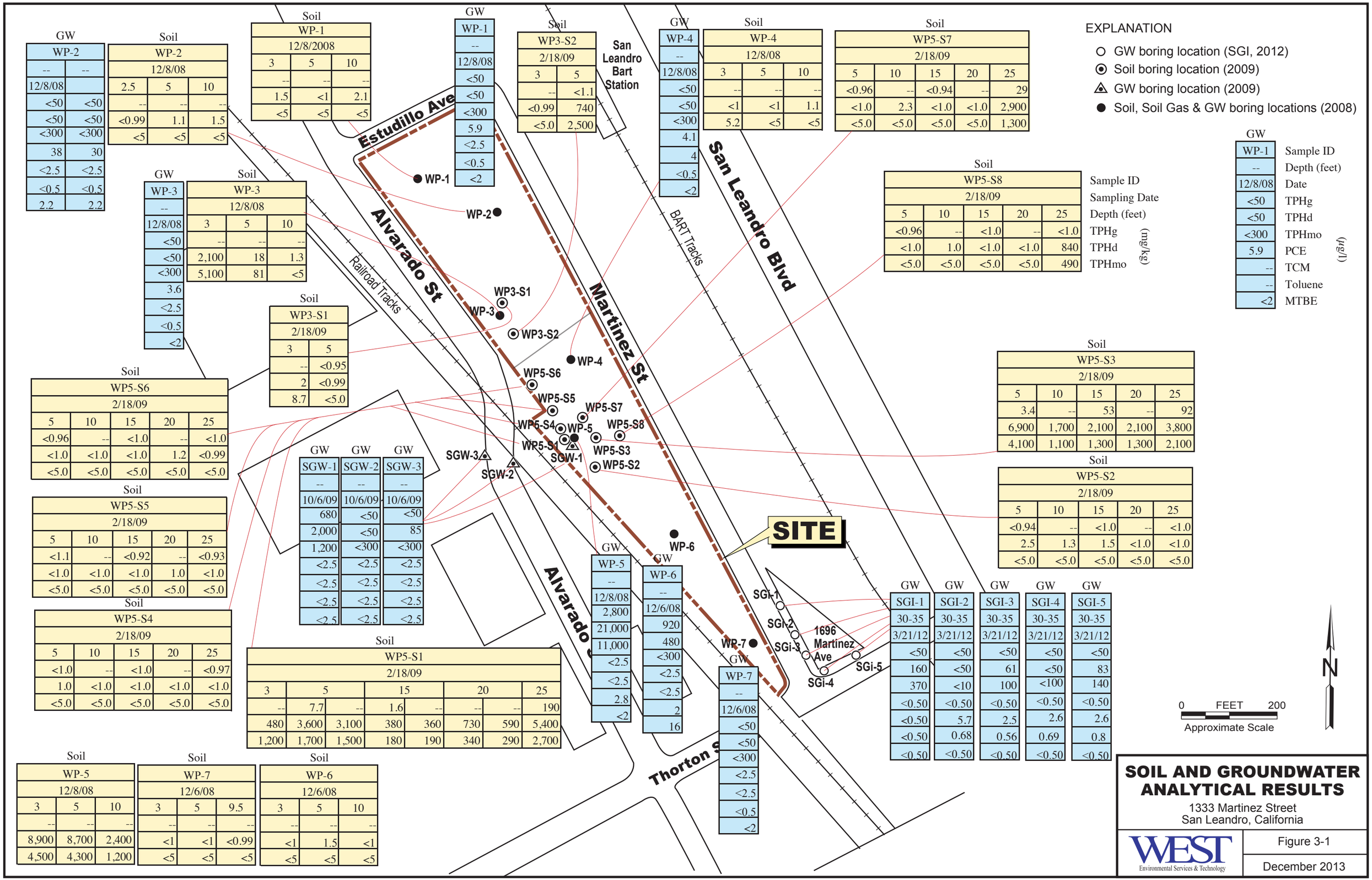
GROUNDWATER FLOW DIRECTIONS

1333 Martinez Street
San Leandro, California

WEST
Environmental Services & Technology

Figure 2-2

December 2013



GW

WP-2	
--	--
12/8/08	
<50	<50
<50	<50
<300	<300
38	30
<2.5	<2.5
<0.5	<0.5
2.2	2.2

Soil

WP-2		
12/8/08		
2.5	5	10
--	--	--
<0.99	1.1	1.5
<5	<5	<5

Soil

WP-1		
12/8/2008		
3	5	10
--	--	--
1.5	<1	2.1
<5	<5	<5

GW

WP-1
--
12/8/08
<50
<50
<300
5.9
<2.5
<0.5
<2

Soil

WP3-S2	
2/18/09	
3	5
--	<1.1
<0.99	740
<5.0	2,500

GW

WP-4
--
12/8/08
<50
<50
<300
4.1
4
<0.5
<2

Soil

WP-4		
12/8/08		
3	5	10
--	--	--
<1	<1	1.1
5.2	<5	<5

Soil

WP5-S7				
2/18/09				
5	10	15	20	25
<0.96	--	<0.94	--	29
<1.0	2.3	<1.0	<1.0	2,900
<5.0	<5.0	<5.0	<5.0	1,300

GW

WP-1	Sample ID
--	Depth (feet)
12/8/08	Date
<50	TPHg
<50	TPHd
<300	TPHmo
5.9	PCE
--	TCM
--	Toluene
<2	MTBE

(µg/l)

Soil

WP5-S8				
2/18/09				
5	10	15	20	25
<0.96	--	<1.0	--	<1.0
<1.0	1.0	<1.0	<1.0	840
<5.0	<5.0	<5.0	<5.0	490

Sample ID
Sampling Date
Depth (feet)
TPHg
TPHd
TPHmo
(mg/kg)

GW

WP-3
--
12/8/08
<50
<50
<300
3.6
<2.5
<0.5
<2

Soil

WP-3		
12/8/08		
3	5	10
--	--	--
2,100	18	1.3
5,100	81	<5

Soil

WP3-S1	
2/18/09	
3	5
--	<0.95
2	<0.99
8.7	<5.0

Soil

WP5-S6				
2/18/09				
5	10	15	20	25
<0.96	--	<1.0	--	<1.0
<1.0	<1.0	<1.0	1.2	<0.99
<5.0	<5.0	<5.0	<5.0	<5.0

Soil

WP5-S5				
2/18/09				
5	10	15	20	25
<1.1	--	<0.92	--	<0.93
<1.0	<1.0	<1.0	1.0	<1.0
<5.0	<5.0	<5.0	<5.0	<5.0

Soil

WP5-S4				
2/18/09				
5	10	15	20	25
<1.0	--	<1.0	--	<0.97
1.0	<1.0	<1.0	<1.0	<1.0
<5.0	<5.0	<5.0	<5.0	<5.0

GW GW GW

SGW-1	SGW-2	SGW-3
--	--	--
10/6/09	10/6/09	10/6/09
680	<50	<50
2,000	<50	85
1,200	<300	<300
<2.5	<2.5	<2.5
<2.5	<2.5	<2.5
<2.5	<2.5	<2.5
<2.5	<2.5	<2.5

Soil

WP5-S1							
2/18/09							
3	5		15		20		25
--	7.7	--	1.6	--	--	--	190
480	3,600	3,100	380	360	730	590	5,400
1,200	1,700	1,500	180	190	340	290	2,700

GW

WP-5
--
12/8/08
2,800
21,000
11,000
<2.5
<2.5
2.8
<2

GW

WP-6
--
12/6/08
920
480
<300
<2.5
<2.5
2
16

GW

WP-7
--
12/6/08
<50
<50
<300
<2.5
<2.5
<0.5
<2

Soil

WP5-S3				
2/18/09				
5	10	15	20	25
3.4	--	53	--	92
6,900	1,700	2,100	2,100	3,800
4,100	1,100	1,300	1,300	2,100

Soil

WP5-S2				
2/18/09				
5	10	15	20	25
<0.94	--	<1.0	--	<1.0
2.5	1.3	1.5	<1.0	<1.0
<5.0	<5.0	<5.0	<5.0	<5.0

GW GW GW GW GW

SGI-1	SGI-2	SGI-3	SGI-4	SGI-5
30-35	30-35	30-35	30-35	30-35
3/21/12	3/21/12	3/21/12	3/21/12	3/21/12
<50	<50	<50	<50	<50
160	<50	61	<50	83
370	<10	100	<100	140
<0.50	<0.50	<0.50	<0.50	<0.50
<0.50	5.7	2.5	2.6	2.6
<0.50	0.68	0.56	0.69	0.8
<0.50	<0.50	<0.50	<0.50	<0.50

Soil

WP-5		
12/8/08		
3	5	10
--	--	--
8,900	8,700	2,400
4,500	4,300	1,200

Soil

WP-7		
12/6/08		
3	5	9.5
--	--	--
<1	<1	<0.99
<5	<5	<5

Soil

WP-6		
12/6/08		
3	5	10
--	--	--
<1	1.5	<1
<5	<5	<5

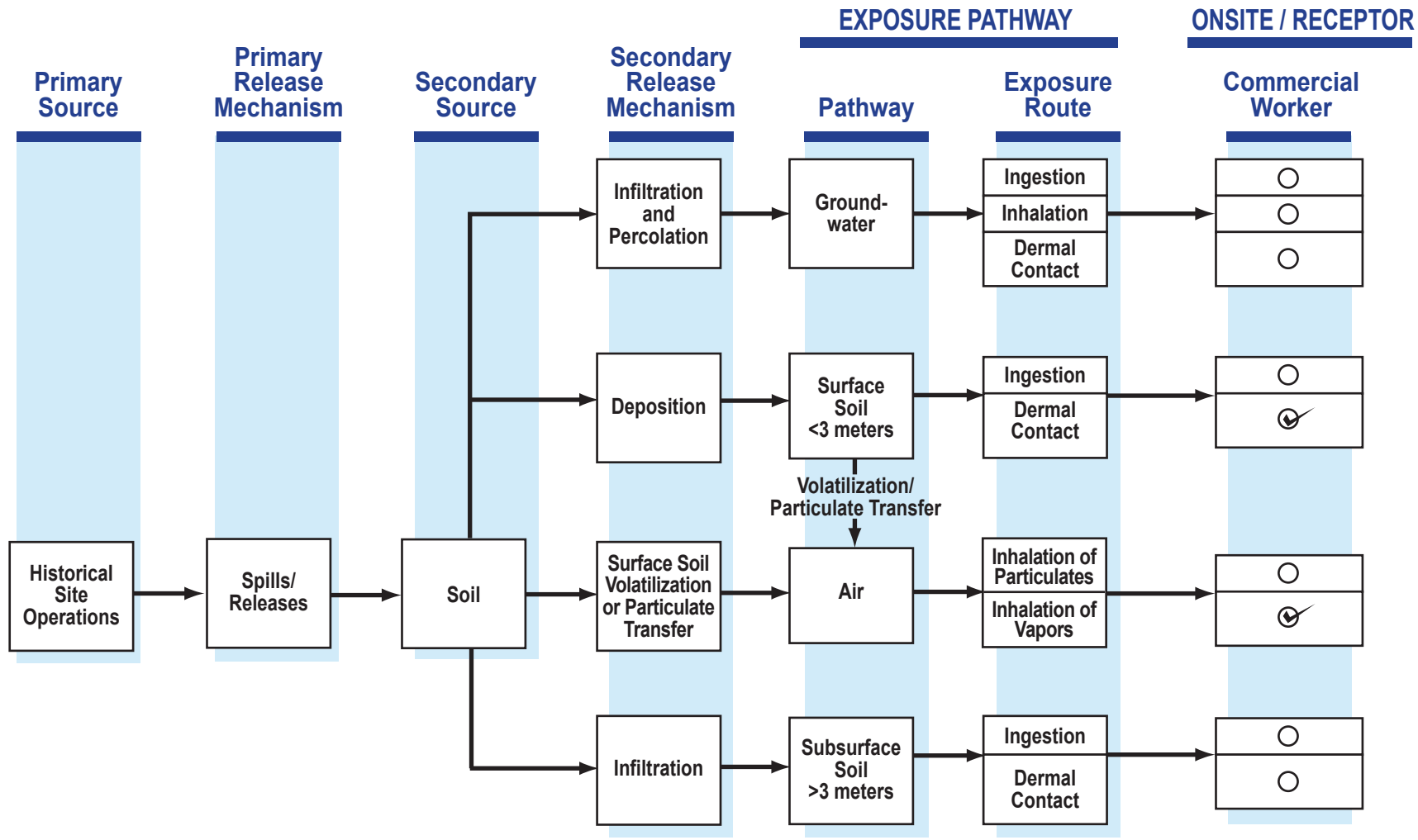
SOIL AND GROUNDWATER ANALYTICAL RESULTS

1333 Martinez Street
San Leandro, California

WEST Environmental Services & Technology

Figure 3-1

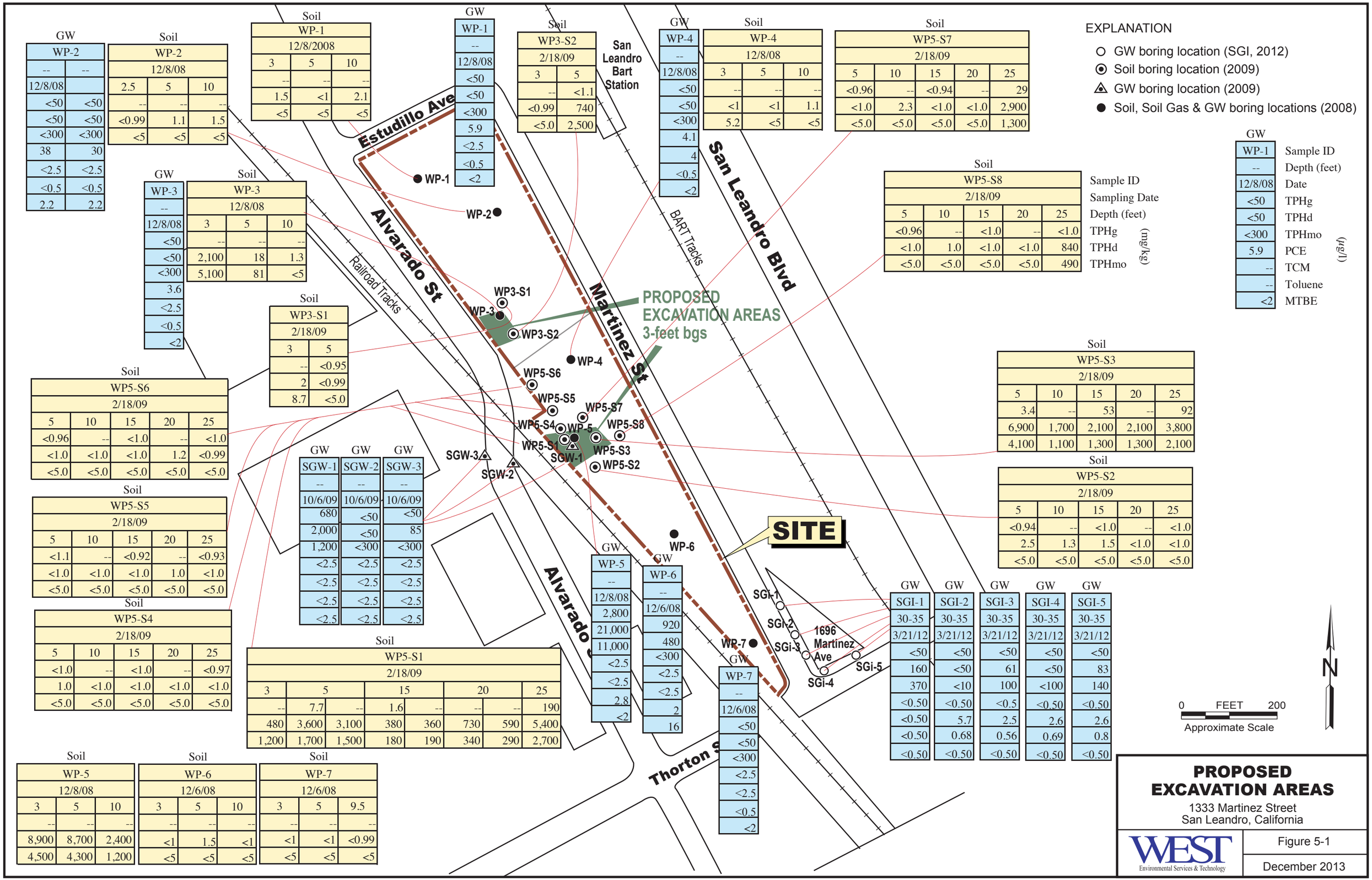
December 2013



○ Incomplete exposure pathway

✓ Complete exposure pathway

Figure 4-1	CONCEPTUAL SITE MODEL CHART	WEST Environmental Services & Technology
December 2013	1333 Martinez Street, San Leandro, California	



GW

WP-2	
--	--
12/8/08	
<50	<50
<50	<50
<300	<300
38	30
<2.5	<2.5
<0.5	<0.5
2.2	2.2

Soil

WP-2		
12/8/08		
2.5	5	10
--	--	--
<0.99	1.1	1.5
<5	<5	<5

Soil

WP-1		
12/8/2008		
3	5	10
--	--	--
1.5	<1	2.1
<5	<5	<5

GW

WP-1
--
12/8/08
<50
<50
<300
5.9
<2.5
<0.5
<2

Soil

WP3-S2	
2/18/09	
3	5
--	<1.1
<0.99	740
<5.0	2,500

GW

WP-4
--
12/8/08
<50
<50
<300
4.1
4
<0.5
<2

Soil

WP-4		
12/8/08		
3	5	10
--	--	--
<1	<1	1.1
5.2	<5	<5

Soil

WP5-S7				
2/18/09				
5	10	15	20	25
<0.96	--	<0.94	--	29
<1.0	2.3	<1.0	<1.0	2,900
<5.0	<5.0	<5.0	<5.0	1,300

GW

WP-3
--
12/8/08
<50
<50
<300
3.6
<2.5
<0.5
<2

Soil

WP-3		
12/8/08		
3	5	10
--	--	--
2,100	18	1.3
5,100	81	<5

Soil

WP3-S1	
2/18/09	
3	5
--	<0.95
2	<0.99
8.7	<5.0

Soil

WP5-S8				
2/18/09				
5	10	15	20	25
<0.96	--	<1.0	--	<1.0
<1.0	1.0	<1.0	<1.0	840
<5.0	<5.0	<5.0	<5.0	490

Sample ID
Sampling Date
Depth (feet)
TPHg
TPHd
TPHmo
(mg/kg)

GW

WP-1	Sample ID
--	Depth (feet)
12/8/08	Date
<50	TPHg
<50	TPHd
<300	TPHmo
5.9	PCE
--	TCM
--	Toluene
<2	MTBE

(µg/l)

Soil

WP5-S6				
2/18/09				
5	10	15	20	25
<0.96	--	<1.0	--	<1.0
<1.0	<1.0	<1.0	1.2	<0.99
<5.0	<5.0	<5.0	<5.0	<5.0

Soil

WP5-S5				
2/18/09				
5	10	15	20	25
<1.1	--	<0.92	--	<0.93
<1.0	<1.0	<1.0	1.0	<1.0
<5.0	<5.0	<5.0	<5.0	<5.0

Soil

WP5-S4				
2/18/09				
5	10	15	20	25
<1.0	--	<1.0	--	<0.97
1.0	<1.0	<1.0	<1.0	<1.0
<5.0	<5.0	<5.0	<5.0	<5.0

GW

SGW-1	SGW-2	SGW-3
--	--	--
10/6/09	10/6/09	10/6/09
680	<50	<50
2,000	<50	85
1,200	<300	<300
<2.5	<2.5	<2.5
<2.5	<2.5	<2.5
<2.5	<2.5	<2.5
<2.5	<2.5	<2.5

Soil

WP5-S1							
2/18/09							
3	5		15		20		25
--	7.7	--	1.6	--	--	--	190
480	3,600	3,100	380	360	730	590	5,400
1,200	1,700	1,500	180	190	340	290	2,700

GW

WP-5
--
12/8/08
2,800
21,000
11,000
<2.5
<2.5
2.8
<2

GW

WP-6
--
12/6/08
920
480
<300
<2.5
<2.5
2
16

GW

WP-7
--
12/6/08
<50
<50
<300
<2.5
<2.5
<0.5
<2

Soil

WP5-S3				
2/18/09				
5	10	15	20	25
3.4	--	53	--	92
6,900	1,700	2,100	2,100	3,800
4,100	1,100	1,300	1,300	2,100

Soil

WP5-S2				
2/18/09				
5	10	15	20	25
<0.94	--	<1.0	--	<1.0
2.5	1.3	1.5	<1.0	<1.0
<5.0	<5.0	<5.0	<5.0	<5.0

GW

SGI-1	SGI-2	SGI-3	SGI-4	SGI-5
30-35	30-35	30-35	30-35	30-35
3/21/12	3/21/12	3/21/12	3/21/12	3/21/12
<50	<50	<50	<50	<50
160	<50	61	<50	83
370	<10	100	<100	140
<0.50	<0.50	<0.5	<0.50	<0.50
<0.50	5.7	2.5	2.6	2.6
<0.50	0.68	0.56	0.69	0.8
<0.50	<0.50	<0.50	<0.50	<0.50

Soil

WP-5		
12/8/08		
3	5	10
--	--	--
8,900	8,700	2,400
4,500	4,300	1,200

Soil

WP-6		
12/6/08		
3	5	10
--	--	--
<1	1.5	<1
<5	<5	<5

Soil

WP-7		
12/6/08		
3	5	9.5
--	--	--
<1	<1	<0.99
<5	<5	<5

PROPOSED EXCAVATION AREAS

1333 Martinez Street
San Leandro, California

WEST Environmental Services & Technology

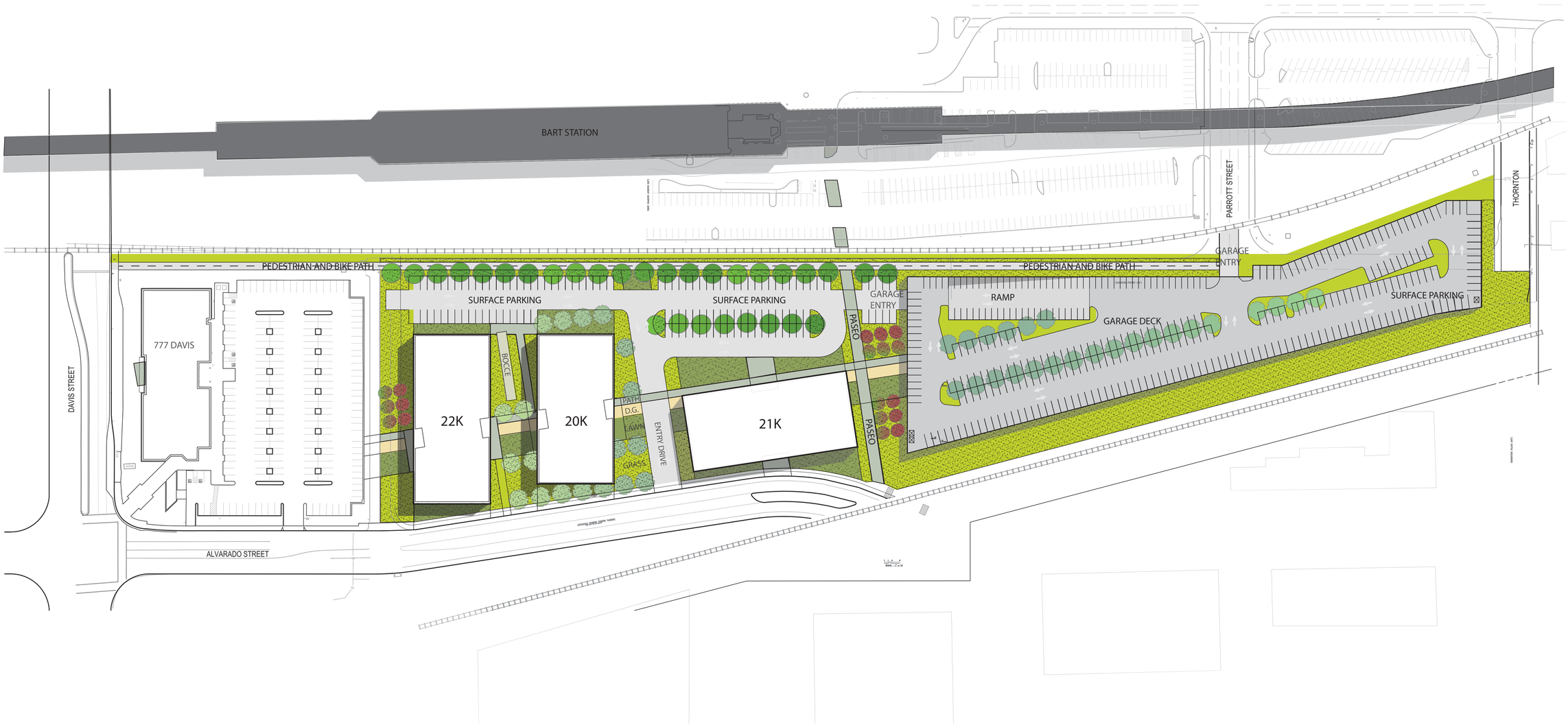
Figure 5-1

December 2013

APPENDIX A

DEVELOPMENT PLANS

PHASE 3 - 378K SQ FT OFFICE
22K BUILDING FOOT PRINT @ 6 LEVELS = 132K SF
21K BUILDING FOOT PRINT @ 6 LEVELS = 126K SF
20K BUILDING FOOT PRINT @ 6 LEVELS = 120K SF



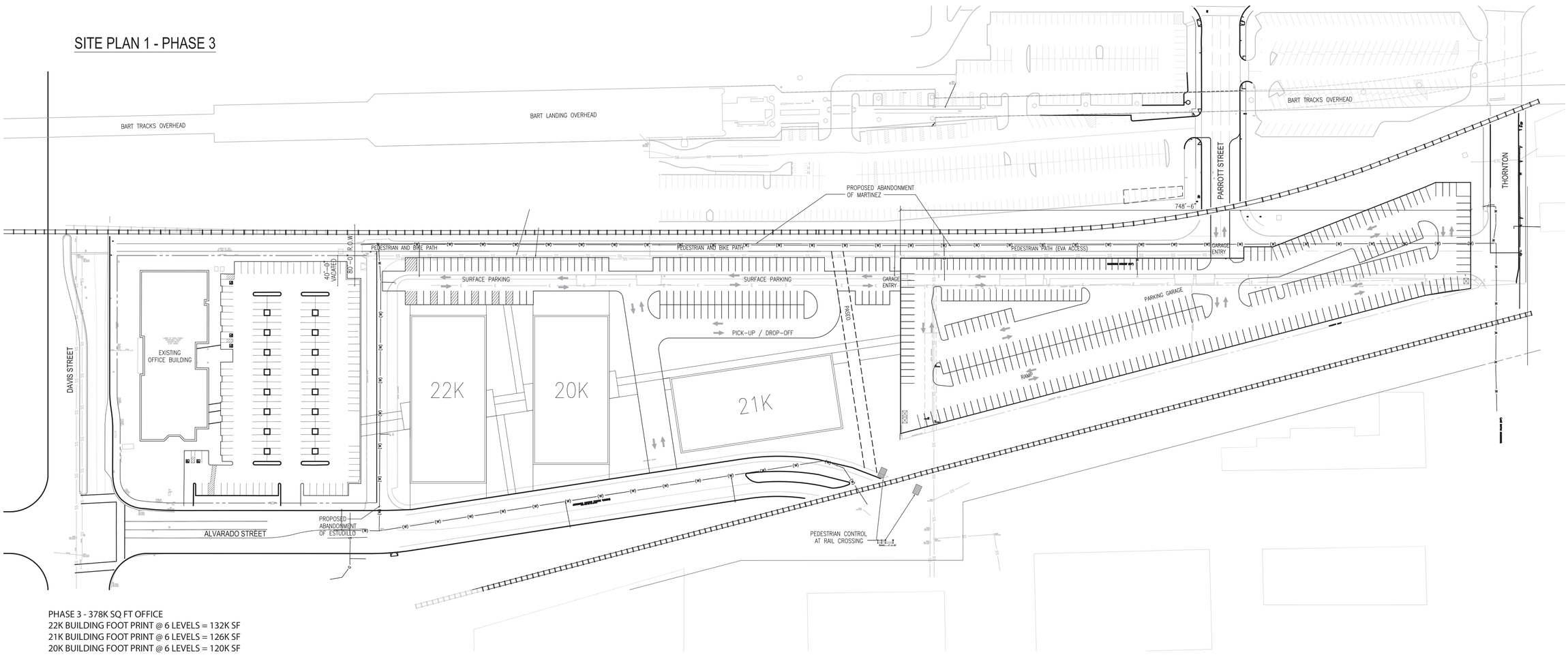
WESTLAKE DEVELOPMENT PARTNERS

SAN LEANDRO CROSSINGS - SITE PLAN -PHASE 3

N

RMW architecture & interiors
vision
function
space
culture
ideas
experience
think
listen
build
speak
learn

SITE PLAN 1 - PHASE 3



PHASE 3 - 378K SQ FT OFFICE
22K BUILDING FOOT PRINT @ 6 LEVELS = 132K SF
21K BUILDING FOOT PRINT @ 6 LEVELS = 126K SF
20K BUILDING FOOT PRINT @ 6 LEVELS = 120K SF

797 STALLS TOTAL
340 STALLS - 1ST LEVEL GARAGE
340 STALLS - GARAGE DECK
117 STALLS - NORTH LOT

@ 3/1000 = 1134 STALLS REQ. (+2 PARKING LEVELS)
@ 2.5/1000 = 945 STALLS REQ. (+1.5 PARKING LEVELS)
@ 2/1000 = 756 STALLS REQ. (+1 PARKING LEVEL)

FAR: 1.14 (333,000 SF. LAND AREA)

WESTLAKE DEVELOPMENT PARTNERS

SAN LEANDRO CROSSINGS - SITE PLAN -PHASE 3 WITH CIVIL

RMW architecture & interiors
vision function space culture ideas experience think listen build speak learn