Appendix G4
Soil Management Plan

Soil Management Plan

Cypress Canyon Project
Assessor's Parcel Number 319-020-04
11495 Cypress Canyon Road
San Diego, California 92131

Prepared for:

The Phair Company
945 East J Street
Chula Vista, CA 91910

SCS ENGINEERS

01214253.06 | November 16, 2020

8799 Balboa Avenue, Suite 290
San Diego, CA 92123
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November 16, 2020
Number: 01214253.06

Mr. Austin Dias
The Phair Company
945 East J Street
Chula Vista, CA 91910

Subject: **Soil Management Plan (SMP)**

Site: **Cypress Canyon Project**
Assessor's Parcel Number 319-020-04
11495 Cypress Canyon Road
San Diego, California

Dear Mr. Dias:

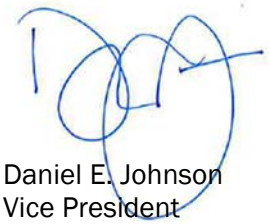
SCS Engineers (SCS) is pleased to present this SMP for the above-described Site. The SMP summarizes the previous Phase I Environmental Site Assessment and subsurface environmental site assessment activities conducted by SCS and others. This SMP describes how soil impacted with elevated concentrations of metals such as lead, total petroleum hydrocarbons, and other constituents of concern, if encountered during construction, will be properly segregated, managed, and reused beneath a 10-foot thick soil cap on-Site, and/or exported off-site to a properly licensed facility during the construction of a residential development project.

The work described in this Report was performed by SCS in general accordance with Agreement for Services 010317220 to the Consulting Agreement (Contract) between SCS and The Phair Company (Client). The Agreement for Services was fully executed on March 30, 2020. The Contract is dated August 20, 2014.

Should you have any questions regarding this Report, please do not hesitate to call the undersigned at (858) 571-5500.

Sincerely,

Luke Montague, MESM, PG 8071
Project Director
SCS ENGINEERS



Daniel E. Johnson
Vice President
SCS ENGINEERS

Table of Contents

Figures

Tables

Appendices

A Geotechnical Report for the Proposed Development

1 EXECUTIVE SUMMARY

SCS Engineers (SCS) understands that 11495 Cypress Canyon Road in San Diego, California consists of one parcel (APN 319-020-04) (Site, Figure 1) comprising approximately 40.76 acres of land developed with one single-family residence, several garage structures, and also is reported to contain approximately 407,000 cubic yards of undocumented fill soil and debris reportedly from former construction activities that occurred in the Site vicinity throughout the 1980s.

It was reported that The Phair Company (Client) is proposing to purchase and redevelop the Site with a residential land use (Figure 2). The proposed development will reportedly include the development of approximately 100 single-family residences (Figure 2), which are to be constructed with slab-on-grade foundations (Project).

According to the Project civil engineer for the Site, Hunsaker & Associates, approximately 18,500 cubic yards of soil is to be exported from the Site for soil balance purposes.

Previous reports include a geotechnical report and a Phase II Environmental Site Assessment (ESA) that was prepared for the Site by others in 2005. The geotechnical report estimated that the undocumented fill at the Site totaled approximately 300,000 cubic yards. The 2005 Phase II ESA report indicated that the undocumented fill in portions of the Site contained buried debris/material (e.g., cobbles, boulders, organic debris, construction materials, asphalt, etc). These fills were reportedly placed with end-dump trucks intermittently over a 3- to 5-year period in the mid-1980s and included miscellaneous export material from nearby grading sites in the Scripps Ranch areas.

SCS completed a Phase I ESA for the Site in April of 2019, and conducted subsurface investigation activities at the Site between March and November of 2019 to further assess the undocumented fill for environmental constituents of concern (CoCs).

In connection with the proposed redevelopment of the Site, geotechnical consultant Advanced Geotechnical Solutions, Inc. (AGS) has revised the estimate of the larger undocumented fill with debris that was placed to fill a canyon on the northern central portion of the Site to total approximately 407,000 cubic yards (Figure 3). Additionally, AGS reported three other smaller areas of undocumented fill to the north, northwest, and east (Figure 3) that have not been observed with obvious indications of debris. AGS is recommending that all of the undocumented fill be removed and recompacted during grading activities.

Soil and soil vapor sampling conducted at the Site by SCS to further assess the presence of CoCs in the fill material located at the Site have indicated the following.

- Soil types and composition appeared to be heterogeneous and varied due to the nature of placement via dump trucks in the 1980s. The concentrations of the various CoCs in the soil samples analyzed were similarly heterogeneous. Due to the presence of elevated concentrations of metals such as lead and arsenic, as well as various concentrations of total petroleum hydrocarbons (TPH) within the diesel range (TPHd) and oil range (TPHo) and other CoCs such as organochlorine pesticides (OCPs), a human health risk assessment was completed for the Site under a Board Certified Toxicologist, as further discussed below.

- Soil vapor samples were reported to have detectable concentrations of various volatile organic compounds (VOCs) including benzene, chloroform, and naphthalene, as well as

methane. A vapor intrusion human health risk assessment was completed under a Board Certified Toxicologist, which indicated potentially significant human health risks from these CoCs. However, due to geotechnical requirements for the proposed development that require the removal and recompaction of the undocumented fill soils, including the segregation and reburial and/or removal of excessive organic and other deleterious materials during grading, vapor intrusion conditions and the associated risks will likely be altered. Therefore, SCS recommended vapor concentrations and conditions be re-evaluated after grading at the Site is complete to assess for the possible need for vapor barriers in the affected residences at the Site.

This SMP was prepared based on the proposed redevelopment of the Site into a residential land use to guide both the reuse of CoC-bearing soil above Site-Specific Mitigation Criteria, as well as the export of lead-bearing soil that exceeds applicable hazardous waste criteria. This SMP presents the means and methods of how this material will be either excavated and disposed of off-Site, or alternatively could be kept on-Site and placed beneath an approximately 10-foot-thick soil cap that is to have concentrations of CoCs below Site-Specific Mitigation Criteria and hardscape (e.g., buildings, pavement, etc.) to minimize the potential for future contact/exposure. In addition, this SMP describes confirmation soil sampling procedures, which will involve analysis for primarily either lead and/or petroleum hydrocarbons.

The following Site-Specific Mitigation Criteria for the CoC previously detected above laboratory reporting limits at the Site were developed as a part of this SMP, and are based on existing regulatory criteria (as further described in the body of this SMP). The Site-Specific Mitigation Criteria will be used to demonstrate whether soil is either acceptable for free reuse on-Site or must be reused beneath a 10-foot-thick soil cap, or exported to an appropriately licensed facility as a regulated waste:

Mitigation Criteria/ Mitigation Measure	Constituent of Concern	Analyte (Lab method)	Regulatory Threshold
Soil Cap Mitigation Criteria (SCMC) Reuse below 10-foot-thick soil cap on-Site	Lead	Lead (EPA 6010B)	>80 mg/kg with Site-wide 95 UCL[1]
		WET Lead (CCR 66261.100)	<5 mg/L[2]
	Petroleum hydrocarbons	TPHo (EPA 8015B)	>1,600 mg/kg[3]
			<14,000 mg/kg[3]
		TPHd (EPA 8015B)	>260 mg/kg[3]
			<10,000 mg/kg[3]
		TPHg (EPA 8015B)	>100 mg/kg[3]
			<5,600 mg/kg[3]
Protection of Groundwater Export to Permitted Disposal Facility	Petroleum hydrocarbons	TPHd (EPA 8015B)	>10,000 mg/kg[4]
		TPHg (EPA 8015B)	>5,600 mg/kg[4]
Waste-Based Pertains to soil export only, non-hazardous regulated waste at a minimum	Previously detected CoCs at the Site	TPH (EPA 8015B)	Any detectable concentrations[5]
		SVOCs (EPA 8270C)	
		OCPs (EPA 8081A)	
		Title 22 metals (EPA 6010B)	Tier 1 SSLs with 90 UCL[5]

Notes:
mg/kg: milligrams per kilogram.
mg/L: milligrams per liter.
TPHg, TPHd, TPHo: Total petroleum hydrocarbons as gasoline, diesel, and oil.
SVOCs: Semi-volatile organic compounds.
OCPs: Organochlorine pesticides.
UCL: Upper confidence limit.
1: Per Department of Toxic Substances Control (DTSC) Human and Ecological Risk Office (HERO) Human Health Risk Assessment (HHRA) Note Number 3, June 2020.
2: Per the California Code of Regulations, Title 22 Article 3, July 20, 2005.
3: Per San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) Tier 1 Environmental Screening Levels (ESLs), 2019, Revision 2.
4: Per SFBRWQCB ESLs, Leaching to Groundwater Levels, Table S-3, 2019, Revision 2.
5: Per San Diego Regional Water Quality Control Board (RWQCB) Tier 1 Soil Screening Levels (SSLs), May 2019.

The following general mitigation measures are proposed for the Project during the proposed construction and grading activities:

- The grading of the area of the larger undocumented fill soil is to be monitored by an environmental professional(s). An environmental professional will analyze the soil using field instruments, lab results, as well as observational tools to segregate the soil appropriately based on human health risk screening criteria. In addition, the environmental professional will work with the geotechnical professionals to properly segregate and manage debris

observed during grading activities per the requirements in this SMP and per geotechnical requirements.

- A total of up to approximately 4,070 cubic yards of lead-bearing soil is estimated to be present that exceeds the Title 22 Regulatory Hazardous Waste Thresholds for lead and would be considered a California hazardous waste upon export from the Site. This material is proposed to be located during grading efforts, segregated, and exported from the Site to an appropriately licensed facility.

- CoC-bearing soil that exceeds the Soil Cap Mitigation Criteria, but is below Title 22 Regulatory Hazardous Waste Thresholds, will be excavated, segregated, and reused on-Site beneath an approximately 10-foot-thick soil cap comprised of soil that is known to be below the Soil Cap Mitigation Criteria, and covered with Project improvements (i.e. building foundations, hardscape, landscaping, etc).

- For finished lots that are situated within approximately 100 feet or less of compacted fill soils derived from the larger undocumented fill area, soil vapor sampling at least 60 days or greater after completion of grading is recommended on a lot-by-lot to assess for the need for a vapor barrier. For lots with soil vapor samples reported with either VOCs or methane above Soil Vapor Mitigation Criteria, a vapor intrusion mitigation system (i.e., vapor barrier) is proposed to be installed.

Excavation monitoring is to be conducted by qualified professionals. Although none are known to exist at the Site, any releases of hazardous substances or petroleum products discovered during the course of mass excavation activities will be segregated, and either exported from the Site to a properly licensed facility or reused beneath an approximately 10-foot-thick soil cap. Unless new and unforeseen conditions/releases of hazardous substances or petroleum products are discovered, no additional assessment or mitigation will be conducted at the Site beyond the proper handling and disposal of the soil within the construction excavation envelope that will be excavated as a part of mass grading activities.

2 SMP OBJECTIVES

The objectives of this SMP are to provide a dynamic strategy to properly manage CoC-bearing soil and to assess and mitigate, as necessary, releases of CoCs in a manner that is protective of human health for the proposed future residential land use and the beneficial uses of water resources of the Site and Site vicinity.

3 PROJECT INTRODUCTION

SCS understands that 11495 Cypress Canyon Road in San Diego, California consists of one parcel (APN 319-020-04) (Site, Figure 1) comprising approximately 40.76 acres of land developed with one single-family residence, several garage structures, and also is reported to contain approximately 407,000 cubic yards of undocumented fill soil and debris reportedly from former construction activities that occurred in the Site vicinity throughout the 1980s. It was reported that the Client is proposing to purchase and redevelop the Site with a residential land use (Figure 2). The proposed development will reportedly include the development of approximately 100 single-family residences (Figure 2), which are to be constructed with slab-on-grade foundations.

Previous reports include a geotechnical report that was prepared for the Site by C.W. La Monte Company in February 2005 (La Monte), and a Phase II ESA that was prepared for the Site in April of 2005 by Essentia Management Services (Essentia). C.W. La Monte estimated that the undocumented fill at the Site totaled approximately 300,000 cubic yards. Essentia reported the undocumented fill in portions of the Site contained buried debris/material (e.g., cobbles, boulders, organic debris, construction materials, asphalt, etc). These fills were reportedly placed with end-dump trucks intermittently over a 3- to 5-year period in the mid-1980s and included miscellaneous export material from nearby grading sites in the Scripps Ranch areas.

SCS completed a Phase I ESA for the Site, dated April 12, 2019, and conducted subsurface assessment activities at the Site between March 22, 2019 and November 15, 2019, to further assess the undocumented fill for environmental CoCs.

In connection with the proposed redevelopment of the Site, geotechnical consultant AGS has revised the estimate of the larger undocumented fill with debris that was placed to fill a canyon on the northern central portion of the Site to total approximately 407,000 cubic yards (Figure 3). Additionally, AGS reported three other smaller areas of undocumented fill to the north, northwest, and east (Figure 3) that have not been observed with obvious indications of debris. AGS is recommending that all of the undocumented fill be removed and recompacted during grading activities.

Soil and soil vapor sampling conducted at the Site by SCS to further assess the presence of CoCs in the fill material located at the Site have indicated the following.

- Soil types and composition appeared to be heterogeneous and varied due to the nature of placement via dump trucks in the 1980s. The concentrations of the various CoCs in the soil samples analyzed were similarly heterogeneous. Due to the presence of elevated concentrations of metals such as lead and arsenic, as well as various concentrations of TPHd and TPHo, and other CoCs such as organochlorine pesticides, a human health risk assessment was completed for the Site, as further discussed below.

- Soil vapor samples were reported to have detectable concentrations of various VOCs including benzene, chloroform, and naphthalene, as well as methane. A vapor intrusion human health risk assessment was completed under a Board Certified Toxicologist, which indicated potentially significant human health risks from these CoCs. However, due to geotechnical requirements for the proposed development that require the removal and recompaction of the undocumented fill soils, including the segregation and reburial and/or removal of excessive organic and other deleterious materials during grading, vapor intrusion conditions and the associated risks will likely be altered. Therefore, SCS recommends vapor concentrations and conditions be re-evaluated after grading at the Site is complete to assess for the possible need for vapor barriers in the affected residences at the Site.

This SMP details how mass grading in the area of the undocumented fill soil will be monitored by an environmental professional. An environmental professional will analyze the soil using field instruments, lab results, as well as observational tools to segregate the soil appropriately based on human health risk screening criteria. Procedures are also provided herein to properly manage the soil exceeding human health risk screening criteria if encountered during construction.

4 PROJECT INFORMATION/BACKGROUND

SITE DESCRIPTION SUMMARY

Site Name	Cypress Canyon
Site APN	319-020-04
Site Address	11495 Cypress Canyon Road
Land Area	Approximately 40.76 acres
Site Land Use	Currently occupied by a single-family residence, which includes the presence of several auto garages used for the collection of vehicles. The Client is proposing to purchase and redevelop the Site into approximately 100 single-family residences.
Occupant	Currently single-family residence owned and occupied by Tom Renzulli.
Project Developer / Client	The Phair Company 945 E. J Street Chula Vista, CA 91910 Contact: Mr. Austin Dias austinwdias@gmail.com
Environmental Consultant	SCS Engineers 8799 Balboa Avenue, Suite 290 San Diego, California 92123 Contact: Mr. Luke Montague 858-571-5500 x2919 lmontague@scsengineers.com

SITE-RELATED DOCUMENTS REVIEWED BY SCS

The following previous documents pertaining to the Site were prepared by others and are referred to in this SMP:

- *Essentia, Limited Phase II Environmental Site Assessment Report*, dated April 2005 (2005 Phase II ESA)
- *C.W. La Monte Company Inc, Report of Limited Geotechnical Investigation*, dated February 16, 2005

The following documents pertaining to the Site were prepared by SCS and are referred to in this SMP:

- *Phase I Environmental Site Assessment* prepared by SCS Engineers and dated April 12, 2019 (Phase I ESA)

- *Phase II Environmental Site Assessment* prepared by SCS Engineers and dated January 22, 2020 (2020 Phase II ESA)

The following construction plans and reports were provided to and reviewed by SCS, and are provided in Appendix A of this Report:

- *Summary of Preliminary Geotechnical Information & General Grading Recommendations for the Cypress Point Project*, prepared by AGS and dated January 11, 2020 (Geotechnical Report)

- *Renzulli Estates Design Base,* prepared by Hunsaker & Associates and provided to SCS on July 28, 2020

HISTORICAL SITE LAND USE

The Phase I and II ESAs provided a review of the historical land uses of the Site that is summarized below.

Interpreted Historical Site Land Use

Years	Interpreted Site Tenants	Interpreted Site Use
1903 - 1935	Unknown/Vacant	None/Residential
1940 - 2020	Single-Family Residence	Residential In addition, based on a review of previous reports and historic aerial photographs of the Site, dumping of primarily construction debris along the northeastern slopes of the Site occurred between approximately 1979 and 1989.

5 SCS' SUMMARY OF EXISTING DATA

Below is a summary of the assessment activities conducted at the Site. Previous soil and soil vapor sample locations are presented on Figures 3 and 4, and the sample data are summarized on Figure 5 (soil data) and Figure 6 (soil vapor data), as well as in Tables 1 through 3.

SOIL SAMPLING AND ANALYSIS – 2005 TO 2020

2005 Phase II ESA – Soil Sampling and Analysis

To assess the undocumented fill located at the Site, the 2005 Phase II ESA included the excavation of 4 trenches and the advancement of 6 soil borings, which included the collection of 27 soil samples. Essentia reported that the undocumented fill contains a large amount of buried debris/material (e.g., cobbles, boulders, organic debris, construction materials, asphalt, etc). These fills were reportedly placed with end-dump trucks intermittently over a 3- to 5-year period in the mid-1980s and included miscellaneous export material from nearby grading sites in the Scripps Ranch areas.

Various CoCs were reported within samples collected of the undocumented fill soil, including low to moderate concentrations of total petroleum hydrocarbons (reported by Essentia to be possibly derived from either decaying organic matter or asphalt debris), metals such as arsenic and lead, and relatively low concentrations of semi-volatile organic compounds (SVOCs), VOCs, and OCPs. Essentia recommended that a Health and Safety Plan be developed to address worker protection specific to management of soil during development of the Site, and preparation of a Soil Management Plan that would describe the characterization, management, and on-site reuse and disposal of excavated soil, as necessary. The Soil Management Plan should be prepared in consideration of the County of San Diego Department of Environmental Health (DEH) Site Assessment and Mitigation Manual.

2020 Phase II ESA – Soil Sampling and Analysis

To assess the possible presence and concentrations of petroleum products, VOCs, SVOCs, OCPs, polychlorinated biphenyls (PCBs), and Title 22 metals in the soil of the undocumented fill, in March and November of 2019, SCS advanced a total of 12 soil borings. The soil borings were advanced within the undocumented fill as portrayed in the C.W. La Monte and the Essentia reports in both the larger undocumented fill area toward the center of the Site, as well as two smaller undocumented fill areas in the northern and northwestern portions of the Site (Figures 3 and 4). It was intended to collect groundwater samples at the Site, however, groundwater was not encountered during the November subsurface assessment.

Based on the results of SCS' assessments, the smaller undocumented fill areas investigation were reported with non-detect to low concentrations of TPH below applicable human health screening levels and metals within naturally occurring background concentration ranges. Additionally, based on observations made during drilling, the undocumented fill soils in these smaller undocumented fill areas were interpreted to be native/formational soils that were graded and placed, and were not observed with significant amounts of debris. The Phase II ESA concluded that there is a low likelihood that the smaller undocumented fill locations investigated at the Site have significant impacts from CoCs.

The soil samples collected from the borings advanced in the larger undocumented fill area were observed to be heterogeneous and varied due to the nature of placement via dump trucks. The contents of the fill as documented in the boring logs included primarily soil, and also included cobbles and oversized rock, crushed gravel, metal debris, organic debris such as landscaping waste, concrete, asphalt, brick debris, and PVC debris. The concentrations of the various CoCs in the soil samples analyzed were similarly heterogeneous. The primary CoCs above their respective human health screening levels and/or naturally occurring background concentration ranges in the case of metals include arsenic, lead, and TPH.

A human health risk screening was conducted of the soil sample analytical data by a Board Certified Toxicologist assuming a residential land use. Cancer and non-cancer health risks related to direct soil contact and potential vapor intrusion were evaluated for a hypothetical future resident. Direct soil contact includes exposure via inadvertent soil ingestion, direct dermal contact with soil, and inhalation of vapors or resuspended soil in outdoor air. Consistent with current Department of Toxic Substances Control (DTSC) guidance regarding screening health risk assessments (DTSC, 2015), the maximum detected concentration of each chemical was used as the basis for the risk calculations, except for lead. For lead, consistent with DTSC risk guidance, potential health risks related to lead were evaluated by comparing the site-wide 95 percent upper confidence limit (UCL) of the mean (95 UCL) to the DTSC residential use screening level for lead of 80 milligrams per kilogram (mg/kg). As

an additional conservative step, the maximum soil concentration at any depth was used for the risk screen instead of the typically used maximum concentration between 0 and 10 feet. This additional conservative step was taken because it is expected that all of the undocumented fill at the Site is required to be removed and recompacted per geotechnical requirements, and undocumented fill soil from any depth could potentially be placed near the ground surface upon the completion of grading.

Regarding petroleum hydrocarbon impacts at the Site, TPHd exceeds its corresponding San Francisco Bay Regional Water Quality Control Board Tier 1 Environmental Screening Level (ESL) of 260 mg/kg in six of the samples analyzed from the Site, and TPHo is above the corresponding ecological risk-based ESL of 1,600 mg/kg in three of the samples analyzed from the Site. Based on our visual observations made during drilling and sampling, the petroleum hydrocarbon impacts appear to consist primarily of dumped asphalt debris. It is recommended that the petroleum hydrocarbon-bearing soil be segregated from the fill and properly managed during the proposed grading activities at the Site, and placed in accordance with the procedures stipulated in this SMP so that this soil is covered by a soil cap and not accessible for direct exposure by future occupants of the Site. In addition, none of the soil samples analyzed for TPH were reported to be above the DEH residual saturation criteria for TPHo, TPHd, and/or TPHg; therefore, groundwater has likely not been impacted by petroleum hydrocarbons from the Site.

Regarding arsenic, the screening human health risk assessment completed by the Board Certified Toxicologist indicated that arsenic concentrations are within the range of background, therefore this chemical was excluded from the risk calculations.

Regarding lead, the screening human health risk assessment indicates that the Site-wide 95 UCL for lead was 32 mg/kg, well below the DTSC residential screening level for lead of 80 mg/kg, indicating negligible health risks due to lead. Additionally, soil sample B2-15 that was reported with 358 mg/kg of total lead was further analyzed for leachability using the waste extraction test (WET) and toxicity characteristic leaching procedure (TCLP) test methods. The results of the leachability testing indicated an exceedance of the WET result to the soluble threshold limit concentration (STLC) lead for lead, but the TCLP result was below the Maximum Contaminant Concentration Threshold Concentration (MCCTC), indicating that soil represented by this sample would be considered a California hazardous waste if exported from the Site.

Soil Recommendations

- In connection with the proposed redevelopment of the Site, AGS is recommending that all of the undocumented fill be removed and recompacted during grading activities. Based on our experience with other large undocumented fill sites and our knowledge of the Site, it appears that at least one environmental monitor (and quite possibly two or more depending on the productivity of the graders) will be required during the grading of this Project in order to properly segregate and screen debris and potential impacts for the proper management of soil for the duration of grading of the undocumented fill. Extensive field observation and soil screening will most likely need to be conducted during grading as well.

- In SCS' experience working with regulatory agencies such as the DEH, with the possible exception of soils characterized as a hazardous waste, soils containing elevated concentrations of CoCs such as lead and petroleum hydrocarbons that exceed human health risk screening criteria that are expected to be excavated can be reused on-Site, provided that

these soils are covered by the placement of a clean soil cap 2- to 3-feet-thick or more to reduce possible exposure pathways to the subsurface. The excavation, segregation, reuse and recompaction of CoC-bearing soil at the Site will need to be monitored by an environmental professional.

- While typically and in our experience reuse of soils impacted with CoCs is allowed, for soils characterized as a hazardous waste (through exceedance to Title 22 Regulatory hazardous waste thresholds), it is often better to avoid possible disclosure or regulatory issues by excavating and exporting this soil. The lead-bearing soil with concentrations of lead in sample B2-15 exceed the STLC (but are below the MCCTC), which is a Title 22 Regulatory Hazardous Waste Threshold, and indicates this soil would be considered a California hazardous waste if exported from the Site. Based on conversations with the Client, it was decided to be proactive and during grading attempts will be made to locate and segregate this soil, and export this material during construction as a California hazardous waste to a properly licensed disposal facility to minimize environmental risk associated with this soil.

- This SMP was developed to account for Site development activities and integrate environmental issues into the Site development process. This SMP provides procedures for the environmental monitoring of CoC-bearing soil during grading, including the appropriate handling, characterization, and on-Site reuse or burial of soil beneath a soil cap to eliminate exposure pathways to this material by future residential occupants at the Site.

2020 PHASE II ESA – GROUNDWATER

Attempts were made to collect groundwater to assess for the possible presence of CoCs in soil borings B5, B9, B10, B11, and B12RR; however, no groundwater was encountered. As discussed further in the "Hydrogeology" section below, depth to shallow groundwater is interpreted to be greater than 100 feet bgs at the Site and for regionally continuous groundwater as much as approximately 200 feet or more below grade at the Site.

Without groundwater sampling and analysis, SCS evaluated the concentrations of the primary CoCs (i.e. TPH, arsenic, and lead) that exceed either human health risk screening criteria and/or background concentration ranges for metals in samples collected from the bottoms of the soil borings to assess the potential for migration of CoCs to groundwater. Under neutral pH conditions, metals are generally not leachable, and additionally, based on a review of the available data, the majority (with few exceptions) of metals concentrations reported in the bottom soil samples within the deeper soil borings (i.e., boring B-3 advanced by Essentia, and borings B4, B5, B10, and B11 advanced by SCS) are below San Diego Regional Water Quality Control Board Tier 1 SSLs (2019).

In addition, none of the soil samples analyzed for TPH were reported to be above the DEH residual saturation criteria for TPHo, TPHd, and/or TPHg. Therefore, based on the available datathere is a low likelihood that groundwater has been impacted from the undocumented fill present at the Site.

2020 PHASE II ESA – SOIL VAPOR SAMPLING AND ANALYSIS

Twelve soil vapor samples were collected from within or in the immediate vicinity of the undocumented fill areas at the Site and analyzed for VOCs and methane. VOCs including benzene, chloroform, and naphthalene were reported above their respective laboratory reporting limits, with methane reported above reporting limits as well. Because various CoCs were reported above the

laboratory reporting limits in the soil vapor at the Site, a human health risk screening was conducted by a Board Certified Toxicologist. Cancer and non-cancer health risks related to potential vapor intrusion were evaluated for a future resident.

With respect to vapor intrusion from VOCs, non-cancer health risks were negligible (i.e. a Hazard Index of 0.5, below the Significance[1] level). However, calculated cancer risks were Significant, as defined, at approximately 1E-05 for each soil vapor sampling location or an order of magnitude above the negligible cancer risk benchmark of 1E-06. Vapor intrusion cancer risk was due to benzene, chloroform, and naphthalene. However, the Phase II ESA stated that chloroform in soil vapor is most likely due to exterior irrigation with municipal water.

Methane concentrations at two sampling locations were sufficiently high to warrant further investigation or consideration of mitigation prior to development. Soil vapor sample SV7-5 was located in the northern portion of leveled undocumented fill, and SV9-5 was located in the southeast corner of leveled undocumented fill. SV8-25 and SV8-50, soil vapor samples collected at SV8 at depths of 25 and 50 feet below ground surface (bgs), respectively, were also reported with concentrations of methane (3,400 parts per million vapor [ppmv] and 9,600 ppmv, respectively).

If the estimated risks are representative of Site conditions, based on SCS' experience and review of published literature, the installation of a vapor intrusion mitigation system (VIMS) (i.e., vapor barrier) in areas of vapor impacts will be adequate to mitigate the potential human health risk resulting from vapor intrusion for the future Site use. However, SCS understands that geotechnical requirements for the proposed development require the removal and recompaction of the undocumented fill soils at the Site; as such, recommendations that account for these changed Site conditions are provided below.

Soil Vapor Recommendations

- SCS understands that geotechnical requirements for the proposed development require the removal and recompaction of the undocumented fill soils, including the segregation and likely removal of excessive organic and other deleterious materials during grading, which may either eliminate or, at a minimum, alter the vapor intrusion conditions and the associated risks and the need for VIMS at the Site. Therefore, SCS recommends that soil vapor sampling be reconducted at the Site after grading is complete to reassess for possible vapor intrusion risks and the associated possible need for VIMS beneath the proposed residences at the Site. The soil vapor sampling procedures to be completed after grading is completed are discussed in the "Soil Vapor Sampling of Finished Lots" section below, followed by a section on "Vapor Barrier Installation Recommendations."

[1] For the purposes of this assessment, Significant is defined as greater than one in 1,000,000 excess lifetime cancer risk or a hazard index of greater than 1.

CONSTITUENTS OF CONCERN

The following known CoCs have been identified within the larger undocumented fill area in soil and soil vapor at the Site in the previous subsurface assessment activities:

CoCs in Soil

- Petroleum hydrocarbons – the results of the soil sampling indicate several samples were reported with relatively low to moderate concentrations of TPH as diesel and oil, some of which are above residential screening levels.

  The 2020 Phase II ESA reported that based on observations made during drilling and sampling, visually the petroleum hydrocarbon impacts appeared to consist primarily of asphalt debris, which was recommended to be screened out from the fill that is reused at the Site during the proposed grading activities at the Site.

- Lead – the screening human health risk assessment indicates that the Site-wide 95 UCL for lead was 32 mg/kg, well below the DTSC residential screening level for lead of 80 mg/kg, indicating negligible health risks due to lead. Additionally, soil sample B2-15 was further analyzed for leachability using the WET and TCLP test methods, and was reported to exceed the STLC lead leachability threshold but was below the MCCTC, indicating that soil represented by this sample would be considered a California hazardous waste if exported from the site. Based on conversations with the Client, the California hazardous lead-bearing soil is proposed to be located during grading activities, segregated, and exported as a California hazardous waste.

Note that other chemical CoCs (i.e., VOCs, SVOCs, and OCPs) were reported in certain soil samples by the analytical laboratory with concentrations above laboratory reporting limits, and certain samples were reported with concentrations of the metals arsenic and cobalt above human health risk screening criteria. However, none of the reported chemical CoCs (VOCs, SVOCs, and OCPs) had concentrations above their respective residential health-risk based screening criteria. For the metals arsenic and cobalt, it was concluded in the 2020 Phase II ESA that these reported metals concentrations are within the range of background, therefore these constituents were excluded from the risk calculations.

CoCs in Soil Vapor

- VOCs – VOCs including benzene and naphthalene were reported in the 2020 Phase II ESA to exceed applicable screening criteria and warrant mitigation prior to development.

- Methane – reported in the 2020 Phase II ESA to exceed applicable screening criteria and to warrant further diagnostic work to assess possible building safety concerns or possibly mitigation prior to development.

6 ENVIRONMENTAL SETTING

TOPOGRAPHY

Reported Elevation	840 to 1040 feet above mean sea level
Reported Slope Direction	Generally to the northwest, and also slopes down to the north/northeast in the northeastern portion of the Site in the large undocumented fill area
Source	United States Geological Survey 7.5 Minute Topographic Map, Poway Quadrangle, California – San Diego County, 1967, photo-revised 1975

GEOLOGY AND GEOTECHNICAL RECOMMENDATIONS

The Geotechnical Report (see Appendix A) prepared by AGS was reviewed by SCS. The geological information and a summary of geotechnical recommendations provided by AGS as they relate to general removal and recompaction and fill efforts required for grading are summarized below.

Reported Formations

Undocumented Fills (Qafu); Documented Fill (Qafd); Colluvium (no map symbol); Alluvium (Qal); Slope Wash (no map symbol); Questionable landslide (Qls?); Residual Soil (no map symbol); and Poway Group (Tp, Tpm, Tmv).

Site-Specific Geology

Undocumented Fills – per AGS, the undocumented soils form a level pad that filled the area of the north central canyon. These fills were placed intermittently over a 3- to 5-year period and included miscellaneous export material from nearby grading projects in the Scripps Ranch and surrounding areas. The AGS investigation indicates the fills may exceed 85 feet in vertical thickness. The fills included loosely "end-dumped" material including silty sands and clayey sands with gravel, cobble and rock fragments, concrete and over-size rock fragments, and pockets of demolition debris, brush material, and timber. A significant screening operation will be necessary during excavation operations.

Documented Fill – The north end of the canyon was filled with documented fills placed under the observation and testing of Pacific Soils Engineering during and associated with the grading and construction of the adjacent residential subdivision to the north of the Site. These fills are estimate to obtain maximum thickness of 45 feet at the north central end of the property and may exceed 20 feet in maximum thickness where the controlled canyon fill abuts the toe of the undocumented fill slope near the center of the property. The upper 20 of these fills typically consist of tan, medium dense to dense, clayey sands with some gravel and cobble, interlayered with stiff, dark brown clays.

Colluvium – Colluvium occurs in localized areas on mid to lower canyon slopes. Colluvial soils are derived from erosion of the adjacent formational units and subsequent deposition by sheet flow and gravitational processes. Colluvium generally consists of relatively loose clayey sands, silt sands, and clays that are subject to creep and settle under fill or foundation loads.

Alluvium – Alluvium, relatively loose stream deposited sediment is present in the bottom of most major drainages. These materials are typically composed of loose sands and clayey sands that may reach a thickness of 10 to 20 feet at the bottom of the small reservoir located in the southern portion of the Site. Alluvium was reported to be removed from the north canyon bottom prior to filling.

Slope Wash – Most of the undisturbed canyon wall terrain is overlain with a thin veneer of natural ground slope wash. These materials typically range from approximately 1 to 3 feet in thickness and consist primarily of dark reddish brown, loose, silty sand with some gravel and cobble.

Questionable landslide – A small possible or "questionable" landslide is located near the base of the canyon slope in the northwestern portion of the Site. Because of the relatively small size of this feature and poor access, it was not verified by trenching or drilling.

Poway Group – Underlying the surficial deposits are sedimentary bedrock formations of the Poway Group. These formations include the Stadium Conglomerate, the Mission Valley Formation, the Pomerado Conglomerate, and the Miramar Sandstone. The formational materials generally consist of massively or horizontally bedded, very dense, tan and light brown, silty and clayey sandstone conglomerate.

Geotechnical Recommendations Pertaining to Removals

The following sections of this Report summarize the recommendations of AGS. As recommended in the Geotechnical Report, artificial fill, topsoil, alluvium, colluvium, highly weathered terrace deposits and highly weathered Pomerado and Mission Valley formations should be removed in areas planned to receive fill or where exposed at final grade.

AGS recommends that over-excavation of "cut" lots in hard rock, well-cemented sandstones, and/or cemented conglomerate be performed. The cut and any shallow fill portions of these lots should be over-excavated a minimum of three (3) feet and replaced to design grade with select compacted fill. No undercuts to mitigate the effects of claystone beds have been designated at this time; however, should such beds occur in the near surface, undercutting to depths of 5 to 10 feet and replacement with compacted fill may be warranted.

Where design or remedial grading activities create a cut/fill transition in areas of the formations that do not require blasting, AGS recommends that excavation of the cut or shallow fill portions should be performed such that at least three (3) feet of compacted fill exists over the pad. The undercut over-excavation should maintain a minimum one (1) percent gradient to the front of the lot.

AGS recommends that street undercuts in hard rock areas should be based on depth of utilities within the public right-of-way. The depth of undercut for streets should be at least one (1) foot below the deepest utility.

Additionally, based on follow-up conversations with AGS regarding various types of debris that is encountered within the undocumented fill, AGS indicated that the following general geotechnical requirements apply:

- Oversize material – (i.e., rock, boulders) can be reused within the compacted fill per geotechnical recommendations.

- Debris – inert debris (i.e., plastic, wood, metal, brick, concrete, asphalt) can be reused within the compacted fill. Decomposable wastes are to be segregated to the degree possible and disposed of as trash.

- Organic material – for excessive quantities of organic material that can be segregated from the soil, this material will be segregated, stockpiled, and reused as topsoil within the upper foot of soil placed on fill slopes.

HYDROGEOLOGY

Data regarding depth to groundwater and flow direction for the Site were not readily available. In the absence of Site-specific data, depth to groundwater and flow direction information was estimated by reviewing topographic maps and based on observations made during drilling.

The Site was reported to have an intermittent stream present on the southwestern portion of the Site; however it was not depicted on the topographic map reviewed (Figure 1). The possible intermittent stream likely results in ephemeral shallow groundwater measurements in this area; however, groundwater was not encountered during SCS' subsurface investigation (reported in the 2020 Phase II ESA) of the central/northeastern portions of the Site to the maximum depths drilled (i.e., 100 feet bgs) on the higher elevations at the Site.

The nearest intermittent stream or open water body to the Site depicted on the topographic map reviewed is Beeler Creek, situated approximately 0.8 mile to the east of the Site at an elevation of approximately 600 feet above mean sea level. Since the elevations at the Site are interpreted to range from approximately 840 to 1040 feet above mean sea level, groundwater is estimated to be greater than 100 feet bgs at the Site. Groundwater flow direction typically follows topography, which at the Site generally slopes down to the northwest, and also slopes down to the north/northeast in the northeastern portion of the Site in the large undocumented fill area.

WATER QUALITY SURVEY

The following table summarizes the reported water quality in the Site vicinity.

Reported Hydrologic Subarea	Not applicable
Reported Hydrologic Area	Poway (906.20)
Reported Hydrologic Unit	Penasquitos Hydrologic Unit (906.00)
Reported Beneficial Use	Municipal and agricultural (potential industrial)
Source	California RWQCB, San Diego Region, Water Quality Control Plan for the San Diego Basin, September 8, 1994, with amendments effective prior to April 25, 2007.

7 GENERAL MITIGATION CRITERIA

The need to remediate a site containing potentially hazardous substances is driven by a potential health risk to future users of the property or to the environment, as well as the remediation driven by soil excavation and export for development. For this Site, the driver for remediation is elevated concentrations of CoCs in the soil in the form of lead and petroleum hydrocarbons. SCS understands that excavated soil containing CoCs needs to be handled as a regulated non-hazardous and/or regulated hazardous waste based on its concentrations of CoCs - this applies to soil that is removed from the Site for exceeding health risk standards, and any soil exported as a result of grading and excavation activities for the proposed development.

Soil screening criteria are used in this Report for comparison of the reported soil sample results to applicable risk-based and waste-based soil for the detected CoCs, which include lead and TPH. The applicable soil screening used herein include the following:

For health risk-based screening purposes, to screen soil for possible risks to residential users and workers at the Site:

- For Lead, the DTSC Human and Ecological Risk Office (HERO) Human Health Risk Assessment (HHRA) Note Number 3, June 2020: Recommended Screening Levels (RSLs) for residential soil and cancer endpoint. For constituents where the DTSC RSLs are not established, the United States Environmental Protection Agency (EPA) Regional Screening levels (RSLs) for residential soil, May 2020 were used.

- For TPH, based on prior conversations with the DEH, SCS uses the San Francisco Bay Regional Water Quality Control Board (SFBRQCB) Tier 1 ESLs (2019, Revision 2), which provide conservative screening levels for soil impacted with petroleum hydrocarbons. The ESLs are intended to help expedite the identification and evaluation of potential environmental concerns.

For waste-based screening purposes, in the event that soil is exported from the Site. Also, based on our experience working with the DEH, it is recommended that soil that is classified as a hazardous waste be exported to an appropriately licensed facility rather than be left on-Site.

- For "clean"[2] (Clean) soil that is exported from the Site, the San Diego Regional Water Quality Control Board (RWQCB) Tier 1 SSLs established in the Waiver[3] are intended to be the criteria by which exported waste soil is judged to be clean, described within the Waiver as "inert waste soils that can be reused without restriction."

[2] Clean soil - For the purposes of this Report, Clean is defined as soil that does not contain detectable concentrations of organic compounds such as OCPs or TPH, or elevated concentrations of metals (in excess of the range of naturally occurring or background concentrations).

[3] The Tier 1 SSLs presented in RWQCB's *Order No. R9-2019-0005, Conditional Waivers of Waste Discharge Requirements for Low Threat Discharges in the San Diego Region* (Waiver) are intended to be the criteria by which soils are judged to be inert waste soils that can be reused without restriction.

- For chemical CoCs including OCPs and TPH, all soil containing any detectable concentrations of chemical CoCs proposed for export off Site would need to be disposed of as regulated, non-hazardous waste per the Tier 1 SSLs.

- For metals, which are naturally occurring, the Tier 1 SSL for the lead is 23.9 mg/kg. If soil was to be exported as "clean," excavated Site soils must be shown through the collection of soil samples and analysis for lead and other metals, with the 90% UCL, to be below the Tier 1 SSL.

- For characterizing soil as hazardous waste, the California Code of Regulations, Title 22 Article 3, July 20, 2005 was used.

  - Soil is characterized as a California hazardous waste, at a minimum, upon exceedance of the total concentrations of a CoC to the TTLC, and/or by comparing the results of a WET to the STLC..

  - Soil is characterized as a federal or Resource, Conservation, and Recovery Act (RCRA) hazardous waste through an exceedance of TCLP laboratory results upon comparison to the respective MCCTC.

SITE-SPECIFIC MITIGATION CRITERIA

In SCS' experience working with regulatory agencies such as the DEH, soils containing elevated concentrations of CoCs that exceed human health risk screening criteria that are expected to be excavated can be reused on-Site, provided that these soils are covered by the placement of a clean soil cap 2- to 3-feet thick or more to reduce possible exposure pathways to the subsurface. The excavation, segregation, reuse, and recompaction of CoC-bearing soil at the Site will need to be monitored by an environmental professional. For the purposes of this Project, a 10-foot-thick soil cap is proposed in order to be conservative based on the proposed residential land use, and in the event that deep subsurface improvements are installed by future homeowners (i.e., swimming pools).

Soil Cap Mitigation Criteria (SCMC)

As part of this SMP, known CoC-bearing soil at the Site that exceeds the SCMC, but is below Title 22 Regulatory Hazardous Waste Thresholds, will be reused beneath a 10-feet-thick Soil Cap[4]. The Soil Cap will be composed of Clean Soil or soil with concentrations of CoCs that are below the SCMC. Note that additional Soil Cap thicknesses may be used in areas where planned excavation for subsurface features (e.g., sewer or storm water utility trenches) may extend into CoC-bearing soil, at the discretion of the construction team (i.e., graders, general contractor, utility contractor, etc.).

The discussion below presents the ranges of concentrations of the identified CoCs in soil (i.e., lead and petroleum hydrocarbons), and the mitigation of the above-mentioned CoCs to be excavated and either:

- Reused on Site within or under the Soil Cap;

[4] Soil Cap – to consist of soil known with no detectable concentrations of OCPs, and with arsenic and lead concentrations below SCMC.

- Reused under the Soil Cap only, or;

- Proposed to be exported from the Site as a California hazardous waste during grading.

The following SCMC for the CoCs previously detected above human health screening criteria at the Site were developed as a part of this SMP and are based on the existing regulatory criteria described above.

Lead Soil Cap Mitigation Criteria

A total of 105 soil samples collected at the Site between 2004 and 2019 were analyzed for lead by EPA Method 6010B. Three of the 78 samples analyzed for lead were reported to exceed the DTSC hero screening value of 80 mg/kg: B2-15 (358 mg/kg), B10-45 (99.8 mg/kg), and B11-25 (92.9 mg/kg). Sample B2-15 was further analyzed for leachibility using the WET and TCLP test methods, and was reported to exceed the STLC lead leachability threshold but was below the MCCTC, indicating that soil represented by this sample would be considered a California hazardous waste if exported from the Site.

Potential health risks related to lead were evaluated in the 2020 Phase II ESA by comparing the Site-wide 95 UCL to the DTSC residential use screening level for lead of 80 mg/kg. A lead 95 UCL of 32 mg/kg was calculated using the USEPA statistical software *ProUCL* (USEPA, 2015). Since this value is well below the DTSC lead screening level, lead was not considered to pose a significant health risk.

- Lead-Bearing Soil that Exceeds Title 22 Regulatory Hazardous Waste Thresholds – Although the results of the screening human health risk assessment indicated that the Site-wide 95 UCL for lead was 32 mg/kg, indicating negligible health risks due to lead, soil that is considered a California hazardous waste will attempt to be located during graded and excavated and exported as a California hazardous waste. While typically and in our experience reuse of soils impacted with CoCs is allowed, for soils characterized as a hazardous waste (through exceedance to Title 22 Regulatory hazardous waste thresholds), it is often better to avoid possible disclosure or regulatory issues by excavating and exporting this soil. Soil represented by sample B2-15 was reported with a WET lead result that exceeds the STLC for lead and indicates this soil would be considered a California hazardous waste if exported from the Site. The estimated volume of this soil is further discussed in the "Volume Estimate of the California Hazardous Lead-Bearing Soil to be Exported from the Site" section below.

  Further, if additional soil is discovered during grading to have a WET lead result that exceeds the STLC of 5.0 milligrams per liter (mg/L), this soil is also proposed to be exported from the Site as a California hazardous waste.

- Lead-bearing soil at the Site that exceeds the SCMC, but is below Title 22 Regulatory Hazardous Waste Thresholds – The SCMC for lead will be the DTSC RSL of 80 mg/kg, using the Site-wide 95 UCL.

Petroleum Hydrocarbon Soil Cap Mitigation Criteria

A total of 118 soil samples collected from the Site between 2004 and 2019 were analyzed for TPHg, TPHd, and TPHo by EPA Method 8015B. Of the 118 soil samples analyzed, 59 samples were reported with detectable concentrations of TPHg, TPHd, and/or TPHo. As reported in the 2020 Phase II ESA and based on our observations during drilling and the reported results, the petroleum hydrocarbons observed are interpreted to have been primarily derived from asphalt debris.

The table below depicts soil samples collected that were reported to exceed the applicable mitigation criteria. The SCMC to be used are the SFBRWQCB ESLs. Additional mitigation criteria for the protection of groundwater and waste-based screening criteria (i.e., for material exported from the Site) are presented at the bottom of the table as well.

Boring ID	Date Collected/ Consultant	Depth [feet bgs]	TPHo	TPHd	TPHg
			[mg/kg]		
B-1	Essentia 2004	10	1,084	**407.8**	ND
B-1	Essentia 2004	20	**6,640**	**2,417**	ND
B-2	Essentia 2004	20	**1,680**	**893**	75.3
B-6	Essentia 2004	20	603	**391.4**	7.16
B10	SCS 2019	65	**4,980**	**467**	<0.500
B11	SCS 2019	30	956	**279**	<0.500
B11	SCS 2019	40	**1,990**	**339**	<0.500
Mitigation Criteria					
SCMC – ESLs			1,600	260	100
Protection of Groundwater – ESLs			NE	7,300	4,900
Waste-Based – Tier 1 SSLs			Any detectable concentration		

Notes:* -
CoC: constituent of concern.
mg/kg: milligrams per kilogram.
bgs: below ground surface.
NE: Not established.
SCMC: Soil Cap Mitigation Criteria.
ESL: Environmental Screening Level, San Francisco Bay RWQCB (January 2019).
SSL: Tier 1 Soil Screening Level (2019).
TPH: Total Petroleum Hydrocarbons; also expressed as gasoline (TPHg), diesel (TPHd), and oil (TPHo).
BOLD RED font indicates the maximum concentration reported at the Site exceeds ESLs (Risk-based screening criteria).
ND: Non-detect above laboratory reporting limits.
<: Non-detect above the specified reporting limit.

A description of the three types of Site-Specific Mitigation Criteria are depicted in the table above are described below.

SCMC – Applies to soil that is left on-Site. Soil with concentrations of TPH below the SCMC can be freely graded and reused on-Site. Soil that is proposed to be graded as part of the Project that is found during soil sampling that exceeds the SCMC but is below the Protection of Groundwater Mitigation Criteria will need to be excavated, segregated, and must be properly placed below the 10-foot-thick Soil Cap.

Protection of Groundwater Mitigation Criteria – This criteria represents the maximum concentration of petroleum hydrocarbon-bearing soil to be reused on-Site. These concentrations are the State Water Resources Control Board (SWRCB) ESLs for soil related to leaching to groundwater (Table S-3). If soil to be excavated as a part of planned grading activities is reported at or exceeding these concentrations, soil represented by these exceedances must be excavated and exported from the Site in order to be protective of groundwater. Note that none of the soil samples collected and analyzed to date on the Site have been reported with TPH concentrations that exceed the Protection of Groundwater Mitigation Criteria.

Waste-Based Mitigation Criteria – Soil that is proposed to be exported from the Site that is reported with detectable concentrations of TPH must be exported to a properly licensed facility as a regulated waste. This mitigation criterion is the RWQCB Tier 1 SSLs, which applies to waste soils that are exported from the Site.

Overall, numerous soil samples have been collected to date at the Site from previous assessment activities, which are to be used to guide the planned excavation, segregation, and placement of petroleum hydrocarbon-bearing soils beneath the 10-foot-thick Soil Cap. Note that soil samples can also be collected as needed during grading in areas outside of the known petroleum hydrocarbon-bearing soil areas (further discussed in the "Soil Management Plan" section below) if indications of petroleum hydrocarbons are observed, as indicated by staining, odors, elevated field readings, or free product. The confirmation soil sampling would involve analysis for TPH in accordance with EPA Method 8015M. The confirmation soil sampling is further discussed in the "Confirmation Sampling and Field Screening" section below.

From our experience and based on the available data for the Site, for petroleum hydrocarbon releases, TPH is an acceptable criterion or surrogate for possible presence of VOCs; therefore, only TPH will be used as a mitigation criterion for known areas of petroleum hydrocarbon-bearing soil.

Summary of Site-Specific Mitigation Criteria

Based on the DTSC HERO Note 3 Screening Levels, Title 22 of the California Code of Regulations, SFBRWQCB Tier 1 ESLs, and the RWQCB Tier 1 SSLs, the table below summarizes the Site-Specific Mitigation Criteria for the CoCs and detected chemical constituents found during the subsurface activities conducted at the Site between 2004 and 2019.

Mitigation Criteria/ Mitigation Measure	Constituent of Concern	Analyte (Lab method)	Regulatory Threshold
Soil Cap Mitigation Criteria (SCMC) Reuse below 10-foot-thick soil cap on-Site	Lead	Lead (EPA 6010B)	>80 mg/kg with Site-wide 95 UCL[1]
		WET Lead (CCR 66261.100)	<5 mg/L[2]
	Petroleum hydrocarbons	TPHo (EPA 8015B)	>1,600 mg/kg[3]
			<14,000 mg/kg[3]
		TPHd (EPA 8015B)	>260 mg/kg[3]
			<10,000 mg/kg[3]
		TPHg (EPA 8015B)	>100 mg/kg[3]
			<5,600 mg/kg[3]
Protection of Groundwater Export to Permitted Disposal Facility	Petroleum hydrocarbons	TPHd (EPA 8015B)	>10,000 mg/kg[4]
		TPHg (EPA 8015B)	>5,600 mg/kg[4]
Waste-Based Pertains to soil export only, non-hazardous regulated waste at a minimum	Previously detected CoCs at the Site	TPH (EPA 8015B)	Any detectable concentrations[5]
		SVOCs (EPA 8270C)	
		OCPs (EPA 8081A)	
		Title 22 metals (EPA 6010B)	Tier 1 SSLs with 90 UCL[5]

Notes:
mg/kg: milligrams per kilogram.
mg/L: milligrams per liter.
TPHg, TPHd, TPHo: Total petroleum hydrocarbons as gasoline, diesel, and oil.
SVOCs: Semi-volatile organic compounds.
OCPs: Organochlorine pesticides.
UCL: Upper confidence limit.
1: Per Department of Toxic Substances Control (DTSC) Human and Ecological Risk Office (HERO) Human Health Risk Assessment (HHRA) Note Number 3, June 2020.
2: Per the California Code of Regulations, Title 22 Article 3, July 20, 2005.
3: Per San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) Tier 1 Environmental Screening Levels (ESLs), 2019, Revision 2.
4: Per SFBRWQCB ESLs, Leaching to Groundwater Levels, Table S-3, 2019, Revision 2.
5: Per San Diego Regional Water Quality Control Board (RWQCB) Tier 1 Soil Screening Levels (SSLs), May 2019.

Soil Vapor Mitigation Criteria

Methane in Soil Vapor

Methane poses two types of health hazards. First, at very high concentrations in indoor air it acts as an asphyxiant. Second, it is also explosive. Methane concentrations reported in soil vapor in the 2020 Phase II ESA ranged from 71 to 15,000 ppmv at 5' bgs. Hazards related to methane are evaluated by comparison to regulatory screening levels. DTSC methane guidance states that levels of 5,000 ppmv or higher may require a response action, for example, fixed gas sampling,

measurement of barometric pressures, periodic monitoring, or a removal action (DTSC, 2005). This value is approximately 10 percent of the Lower Explosive Limit (LEL) for methane (53,000 ppmv). On-Site levels of methane greatly exceed this level at two locations, SV8-50 (9,600 ppmv) and SV9-5 (15,000 ppmv), indicating a potential hazard due to methane that likely will require mitigation.

- The interim Soil Vapor Mitigation Criteria for methane will be 5,000 ppmv. Exceedance of this Mitigation Criteria will result in further diagnostic work to assess a possible safety hazard for occupied structures, in accordance with DTSC Methane Guidance[5], or require a VIMS.

Since geotechnical requirements state that undocumented fill soils must be removed and recompacted during grading, including the segregation and likely removal of excessive organic and other deleterious materials, SCS recommends that soil vapor sampling be reconducted of finished lots at least 60 days after grading of a respective lot is complete to reassess for possible vapor intrusion and methane risks and the associated possible need for VIMs beneath the proposed residences at the Site.

The soil vapor sampling procedures to be completed after grading is completed are discussed in the "Soil Vapor Sampling of Finished Lots" section below, followed by a section on "Vapor Barrier Installation Recommendations."

VOCs in Soil Vapor

As indicated in the "Methane in Soil Vapor" section above, soil vapor sampling be reconducted at the Site after grading is complete to reassess for possible vapor intrusion risks and the associated possible need for VIMs beneath the proposed residences at the Site.

- The VOC results of the soil vapor sampling will be compared against the DTSC-Modified Screening Levels (DTSC-SLs) provided in DTSC Human Health Risk Assessment (HHRA) Note 3,[6] or, for chemicals not listed in HHRA Note 3, the USEPA Regional Screening Levels (RSLs)[7] shall be used. The Vapor Intrusion Risk Screening (VIRS) will be conducted using the DTSC default Attenuation Factor (AF) of 0.001 (for future residential use).[8] However, SCS understands that vapor intrusion standards are currently in a state of transition; therefore SCS recommends using current DTSC methodology at the time the VIRS is to be completed.

[5] DTSC Methane Guidance - "*Evaluation of Biogenic Methane, A Guidance Prepared for the Evaluation of Biogenic Methane in Constructed Fills and Dairy Site*," prepared by the DTSC and dated March 28, 2012

[6] Human Health Risk Assessment Note 3 - DTSC-Modified Screening Levels (DTSC-SLs). Screening Levels for Ambient Air, June 2020 Update

[7] Regional Screening Level (RSL), provided by the United States Environmental Protection Agency (EPA) and updated as of May 2020.

[8] Attenuation Factors for Preliminary Screening Evaluations from the Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air, prepared by the DTSC and dated October 2011 (Final Guidance).

SOIL MANAGEMENT PLAN

This section describes the means and methods for the proper segregation, characterization, and management of CoC-bearing soil to be reused on-Site and/or exported to properly licensed facilities during construction activities.

CONSTRUCTION EXCAVATION ENVELOPE (CEE)

The construction excavation envelope is the total depth(s), width(s), and length(s) of excavation(s) required to build a project including any and all excavations for footings, foundations, and other below-grade improvements (e.g., retention basins, utilities, etc.).

The development plans indicate the construction of a residential development with up to 100 residential units, which will require removal and recompaction of the entirety of the undocumented fill at the Site, as well as incompetent formational materials. Buildings are to be constructed with slab-on-grade pads. Note that development plans have not been finalized for the Site at this time, although remedial grading quantities have been tabulated by AGS as follows:

- Large, central undocumented fill area – approximately 407,715 cubic yards, with maximum fill depths as deep as approximately 100 feet

- Three smaller undocumented fill areas to northwest, north, and east – approximately 5,979 cubic yards total.

The recommendations provided in the Geotechnical Report report by AGS require the removal and recompaction of the unsuitable earth materials including artificial fill, topsoil, alluvium, colluvium, highly weathered terrace deposits and highly weathered Pomerado and Mission Valley formations, which should be removed in areas planned to receive fill or where exposed at final grade.

Additionally, based on follow-up conversations with AGS regarding various types of debris that is encountered within the undocumented fill, the following general geotechnical requirements apply:

- Oversize material – can be reused within the compacted fill per geotechnical recommendations.

- Debris – inert debris (i.e., plastic, wood, metal, brick, concrete, asphalt) can be reused within the compacted fill. Decomposable wastes are to be segregated to the degree possible and disposed of as trash.

- Organic material – for excessive quantities of organic material that can be segregated from the soil, this material will be segregated, stockpiled, and reused as topsoil within the upper foot of soil placed on fill slopes.

During to the excavation of the known areas of CoC-bearing soils that exceed the Site-Specific Mitigation Criteria, as well as during excavation of the larger undocumented fill area, SCS will be on-Site to screen and segregate the CoC-bearing soils for placement under the 10-foot-thick Soil Cap, or export if required, and to collect confirmation soil samples as needed, as discussed in the "Confirmation Soil Sampling and Field Screening" section below.

Volume Estimate of California Hazardous Lead-Bearing Soil to Be Exported From the Site

In order to derive an estimate of the lead-bearing soil that will be excavated and exported as California hazardous waste during the proposed grading activities, the available soil data obtained by SCS was reviewed. This data is summarized in Table 2 and on Figure 5.

The known California hazardous waste lead-bearing soil within the CEE that exceed the Title 22 Regulatory Hazardous Waste Thresholds for lead to be excavated, segregated, and exported from the Site is estimated to be approximately 4,070 cubic yards. This soil is represented by the following soil sample:

- Soil sample B2-15 (358 mg/kg total lead, and 14 mg/L WET lead) collected from 15 feet bgs. Note that soil sample B2-15 was observed with petroleum hydrocarbon staining and odors, and was reported with a concentration of 3.68 mg/kg TPHg and 239 mg/kg TPHd.

The estimate of 4,070 cubic yards of California hazardous lead-bearing soil was derived using the following assumptions:

- Due to the heterogeneity of the undocumented fill, which was reported to have been placed via dump truck and therefore each load have had different contents, the standard methodology of splitting the lateral difference between samples that exceed and samples that are below the screening value (i.e., Title 22 Regulatory Hazardous Waste Thresholds) was not used.

- Based on the heterogeneity of the placed fill, the percentage of collected soil samples reported to be California hazardous was 1 sample out of 94 soil samples collected from the larger undocumented fill area and analyzed for lead, or approximately 1 percent. This percentage (1 percent) was applied to the total estimated volume of the larger undocumented fill soil of 407,000 cubic yards. This yields approximately 4,070 cubic yards of California hazardous soil, which is reported as a fraction of the total volume of the larger undocumented fill area.

- This estimate assumes that either the identified California hazardous soil comprises greater than one dump truck load of material, and/or other currently unknown areas of California hazardous lead-bearing soil may be present at the Site.

Based on conversations with the Client, this known area of soil represented by sample B2-15 is proposed to be located during grading and exported from the Site as a California hazardous regulated waste to a properly licensed facility, such as Copper Mountain Landfill in Wellton, Arizona. In addition, other suspect soils (i.e., stained and/or odorous soil) will be screened using field instruments such as the X-ray fluorescence (XRF) meter and a photoionization detector (PID). Any additional soils meeting the classification of California hazardous waste will also be segregated and exported as a California hazardous waste.

California hazardous waste will be excavated and transported off-Site under waste manifest.

SOIL MANAGEMENT BELOW A 10-FOOT-THICK SOIL CAP

Based on the presence of CoC-bearing soil that exceeds the SCMC, as well as the possible presence of currently unknown other CoC-bearing soil that may exceed the SCMC, the proper excavation, segregation, management, and reuse of CoC-bearing soil beneath a 10-foot-thick Soil Cap is proposed to support the proposed construction and redevelopment plans for the Site with a residential development.

Reuse of CoC-Bearing Soil Below the Soil Cap

Known CoC-bearing soil at the Site that exceeds the SSMC, but is below Title 22 Regulatory Hazardous Waste Thresholds, will be reused within a Soil Management Zone (SMZ) that is covered with an approximately 10-foot-thick Soil Cap. The Soil Cap will be comprised of Clean Soil or soil with concentrations of CoCs that are below the SCMC. Soil with concentrations of CoCs known to be above the SCMC will be placed as deeper fill beneath the Soil Cap. Environmental oversight will consist of the observation of grading activities, with screening of soils if staining and/or odors are observed with a PID or XRF meter. In addition, the collection of confirmation soil samples will be completed per the discretion of the Environmental Monitor as further discussed in the "Confirmation Soil Sampling and Field Screening" section below.

SCS anticipates the following general program will be followed (subject to input from the grading contractor concerning their means and methods):

- Upon completion of over-excavation activities and establishment of the top of the CoC-bearing soil and the bottom of the Soil Cap, this elevation should be recorded, either through the use of a grade checker or surveyor. The elevation data should then be kept for documentation purposes for creation of an As-Built plan.

- CoC-bearing soil will be covered with at least a 10-foot-thick minimum Soil Cap comprised of Clean Soil or soil with concentrations of CoCs that are known to be below the SCMC. This soil will be compacted per geotechnical recommendations.

- If spoils from the excavation of subsurface features (e.g., footings, utilities, etc.) are proposed for export, these spoils should be sampled for soil export characterization purposes. The soil samples should be analyzed for TPH (EPA 8015B), SVOCs (EPA 8270C), OCPs (EPA 8081A), and Title 22 metals (EPA 6010B). If concentrations of CoCs are above the Waste-Based Mitigation Criteria (per the "Summary of Site-Specific Mitigation Criteria" section above), the representative soils should be exported as a regulated waste to an appropriately permitted facility.

- Depth to shallow groundwater is interpreted to be greater than 100 feet bgs at the Site and for regionally continuous groundwater as much as approximately 200 feet or more below grade at the Site. Since the bottom of the planned excavation will be a maximum of approximately 100 feet below grade and is not anticipated to extend deeper than the lowest existing elevations at the Site, the bottoms of CoC-bearing soils will therefore be placed significantly above the water table.

An SCS representative will be on Site during the excavation and soil reuse activities. SCS will be empowered by the Client with sufficient project authority to monitor the placement of the material for

conformance with environmental components of this document as well as for health and safety compliance.

The Project civil and geotechnical engineers will be responsible for ensuring that the soil meets the appropriate design requirements and parameters from a geotechnical, civil, and structural engineering perspective. They will also be responsible for conformance with these standards when the soil is being placed by the general contractor or subcontractors.

Upon completion of the placement of CoC-bearing soil beneath the Soil Cap, the limits and depths of these areas will be presented in a Property Closure Report (PCR), which will be prepared after construction and mitigation activities have ended. The PCR is further discussed in the "Property Closure Report" section below.

Environmental Oversight and Monitoring of Larger Undocumented Fill Area

As indicated above, the larger undocumented fill area at the Site comprises approximately 407,000 cubic yards, and has been observed in soil samples to contain buried debris/material (e.g., cobbles, boulders, organic debris, construction materials, asphalt, etc). Project geotechnical consultant AGS is recommending that all of the undocumented fill be removed and recompacted during grading activities.

As recommended in the 2020 Phase II ESA, the grading of the area of the larger undocumented fill soil is to be monitored by an environmental professional(s). An environmental professional will analyze the soil using field instruments, lab results, as well as observational tools to segregate the soil appropriately based on human health risk screening criteria. Segregation of the following types of material to the extent practical are recommended:

- Asphalt and/or petroleum hydrocarbon-bearing soil – as indicated by either previous lab results, confirmation soil sampling, and/or indications of staining and odors. Material interpreted to be asphalt debris is proposed to be reused beneath the Soil Cap in accordance with geotechnical recommendations and is not proposed to be subject to confirmation soil sampling.

  Environmental oversight efforts will consist of visual observations for staining or odors, and screening with a PID. Petroleum hydrocarbon-bearing soil (that is not interpreted to be asphalt debris) with significant staining and/or odors will be subject to assessing previous lab results or collecting confirmation soil samples. Please see the "Confirmation Sampling and Field Screening" section below for further information on confirmation soil sampling practices.

  Provided this material exceeds Protection of Groundwater Mitigation Criteria, this material will be segregated, placed on plastic, and disposed of at a properly permitted facility;

- Aged landscaping debris and/or aged organics. Significant deposits of this material (i.e., greater than one excavator bucket and/or per geotechnical requirements) is proposed to be segregated, stockpiled, and reused as topsoil within the upper foot of soil placed on fill slopes. This material will be sprayed with an odor suppressant spray or foam as necessary

that is approved by the DEH. Alternatively, this material can be exported to an appropriately licensed disposal facility at the discretion of the owner and general contractor.

- Inert debris (i.e., oversize rock, concrete, asphalt, brick, metal, wood, plastic) – can be reused within the compacted fill, subject to geotechnical recommendations.

- Decomposable waste/trash – Decomposable refuse or trash is to be segregated to the degree possible, stockpiled, and disposed of as trash at a landfill under an approved waste profile with the receiving facility. Note that obvious indications of decomposable refuse or trash were not observed in the soil samples collected by SCS during previous subsurface investigations, since the debris observed appeared to be related to construction related sources.

Any previously unidentified CoC-impacted soil that is observed during grading operations that has obvious indications of staining and/or odors will be segregated from non-impacted soil by field screening with a PID and/or XRF, visual and olfactory observations, and ultimately by confirmation sampling. The existing data from previous assessments will assist us in identifying the initial areas and depths to excavate CoC-bearing soil.

If the results of the prior soil samples and confirmation sampling indicate the CoC-impacted soil has been removed or is demonstrated to be below the SCMC, then the remaining soil in that area will be considered non-impacted. If the confirmation sampling indicates CoC-impacted soil is still present, then additional rounds of excavation and confirmation sampling will be conducted until all the CoC-impacted soil has been removed. Excavation of non-impacted soil will continue to be monitored in case isolated pockets of CoCs not previously identified are present.

CONFIRMATION SAMPLING AND FIELD SCREENING

The known areas of CoC-bearing soil that exceed the SCMC summarized in the table below and depicted on Figures 3 and 4 will be excavated during mass grading activities. Field screening using an XRF meter and PID is proposed to be used to aid in excavation of CoC-bearing soils. Confirmation soil samples will be collected as needed at a frequency judged by the environmental professional (one sample per approximately 2,500 square feet or one sample per 500 cubic yards of stockpiled soil) provided that previous soil sample data with results below SCMC are judged to not be sufficient, for submittal to a fixed-base laboratory. If excavations extend 5 vertical feet or deeper in assessing CoCs, soil samples will be collected from the sidewalls of the excavation every 5 vertical feet. The SCMC and associated fixed-base laboratory test methods are summarized in the table within the "Summary of Site-Specific Mitigation Criteria" section above. The table below summarizes the known CoC-bearing soil zones and associated confirmation soil sample laboratory analysis, and the recommended mitigation measure.

CoC (Representative Previous Soil Sample)	Estimated Depth of CoC-Bearing Soil (feet bgs)	Confirmation Soil Sample Laboratory Analysis	Mitigation Measure
Lead (B2-15)	15	Lead (EPA Method 6010B)	Export as California hazardous waste
TPH (B-1-10)	10	TPH (EPA Method 8015B)	Reuse within compacted fill beneath Soil Cap in accordance with geotechnical recommendations
TPH (B-2-20)	20		
TPH (B-2-20)	20		
TPH (B-6-20)	20		
TPH (B10-65)	65		
TPH (B11-30)	30		
TPH (B11-40)	40		

With the exception of the lead-bearing California hazardous waste soils that are proposed to be exported to a properly permitted facility, excavated CoC-bearing soil will be reused beneath the 10-foot-thick Soil Cap discussed above. Provided that CoC concentrations reported by the laboratory are below the SCMC, the depth of this sample will establish the excavation depth in this zone.

Sidewalls are to be screened using the XRF and/or PID. Sidewall confirmation soil samples are not proposed to be collected, since the XRF and/or PID will be used to provide further lateral control of CoC-bearing soil. Additionally, in SCS' opinion there is sufficient prior data that is still considered representative of Site conditions that also will be relied upon to provide lateral control for the proposed CoC-bearing soil excavations.

A Priori Confirmation Soil Sampling

Note that the Client may elect to "pre" collect confirmation soil samples, also referred to as *a priori* confirmation soil sampling, in order to expedite the excavation and construction schedule. *A priori* confirmation soil sampling will follow the same confirmation sampling procedures as described in the SMP, by collecting bottom samples within the minimum sample area and depth frequencies and per the same screening criteria as specified above.

A priori samples will guide the excavation for the respective area, and additional confirmation bottom samples will not be considered necessary unless localized other portions of the area are observed/screened via XRF and/or PID during grading to extend significantly deeper than the *a priori* confirmation sample depth. SCS will still be on-Site during grading to observe for indications of fill (i.e., glass, brick, or other debris) and/or burn ash, and to observe/screen for fill soils below the depth of the *a priori* samples.

CLEAN FILL SOIL TO BE IMPORTED TO THE SITE

Based on conversations with the civil engineer Hunsaker & Associates, approximately 18,500 cubic yards of soil is proposed to be exported form the Site. Therefore, soil is not proposed to be imported to the Site.

However, if soil import is required, for potential import material for which the Client requests review by SCS, SCS will provide the following as-needed environmental services for the various export sites: document review, property investigation, soil sampling and laboratory analytical testing, and review

and comparison of laboratory analytical results to applicable regulatory standards and naturally occurring background concentration ranges.

Applicable local regulations for soil import for unrestricted free reuse soil are established by the Regional Water Quality Control Board (RWQCB) in the Waiver.[9] Depending on the available soil sample dataset that is available for potential export sites, applicable regulatory guidance that can also be used for this Project includes the California DTSC *Information Advisory, Clean Imported Fill Material*, dated October 2001 (DTSC Fill Guidance).

The Tier 1 SSLs are presented in the Waiver, which are intended to be the criteria by which soils are judged to be inert waste soils that can be reused without restriction, and will be used as the criteria for acceptance for imported soil material to the Site. Per the Waiver, all soil containing any detectable concentrations of CoCs not including metals (e.g., petroleum hydrocarbons, OCPs, VOCs) that is proposed for import will not be eligible per the Tier 1 SSLs. Tier 1 SSL threshold concentration values are also available for arsenic, lead, and all of the other Title 22 metals, and the 90 UCL of the respective metal concentrations are to be below the Tier 1 SSL thresholds to be eligible for import to the Site.

CLEAN FILL SOIL TO BE EXPORTED FROM THE SITE

According to conversations with the civil engineer Hunsaker & Associates, the export of approximately 18,500 cubic yards of soil export is estimated to be required for soil balance purposes. Approximately 4,070 cubic yards of California hazardous lead-bearing soil was estimated to require export, and will be a part of the required 18,500 cubic yards of export. Additional CoC-bearing soil export may also be required. The balance of soil export required is proposed to be Clean soil.

Clean soil will be comprised of either native/formational soil, and/or undocumented fill documented through confirmation soil sampling to be Clean. As summarized in the table within the "Summary of Site-Specific Mitigation Criteria" section above, the following laboratory analyses are recommended for soil samples collected from the undocumented fill proposed to be exported from the Site. Note that the below CoCs have been previously reported to be present at detectable concentrations at the Site.

- TPH (8015B)
- SVOCs (8270C)
- OCPs (8081A)
- Title 22 metals (EPA 6010B)

In accordance with the Waiver and the associated Tier 1 SSLs, soil samples must be non-detect above laboratory reporting limits for chemical CoCs including TPH, SVOCs, and OCPs. Metals must have concentrations below the Tier 1 SSL, using a 90 UCL.

Unexpected Discovery of Releases During Mitigation/Construction

Due to the inherent uncertainty associated with the assessment of subsurface conditions, it is anticipated that the extent and expected concentrations of contaminants will vary from what is

[9] California RWQCB, San Diego Region, *Order No. R9-2019-0005, Conditional Waivers of Waste Discharge Requirements for Low Threat Discharges in the San Diego Region*, issued May 8, 2019.

described in this SMP. This condition is not unusual in soil investigation and remediation efforts. The mitigation efforts will, therefore, be iterative in nature and be adjusted as excavation or other remediation efforts proceed. Additional assessment and confirmation samples will be collected and analyzed, as necessary, to evaluate the significance of any discovered releases and the need to mitigate the condition beyond the actions described in this SMP. Should conditions be encountered that vary significantly from those described or that cannot be addressed by the mitigation criteria proposed herein, the DEH will be contacted and consulted regarding assessment and/or mitigation.

SOIL VAPOR SAMPLING OF FINISHED LOTS

For finished lots that are situated within approximately 100 feet or less of compacted fill soils derived from the larger undocumented fill area, soil vapor sampling is recommended on a lot-by-lot basis to assess for the need for a vapor barrier. Soil vapor sampling will be conducted to assess lots overlying areas of recompacted undocumented fill for possible vapor intrusion risk as result of petroleum hydrocarbons, solvents, and/or methane that may be present in soil.

The soil vapor sampling is to occur at least 60 days or more after rough grading of an individual lot has been completed. Soil vapor probes are proposed to be approximately 5-feet deep, and are to be advanced through the use of either a direct push drill rig, or through the use of a hand held rotohammer.

Soil vapor sampling activities will be conducted in general accordance with the DTSC, Los Angeles RWQCB, and San Francisco RWQCB Advisory on Active Soil Gas Investigations, dated July 2015. A temporary vapor well, consisting of Nylaflow™ tubing attached to a soil gas probe tip, will be installed for sampling. An appropriate sand pack a minimum of 12 inches thick will be placed around the soil gas probe tip, with at least 6 inches of dry granular bentonite above the sand, topped with hydrated granular bentonite to the surface, to provide an appropriate seal. The soil vapor sampling probe will be allowed to stabilize for at least 2 hours prior to sampling, followed by pulling the DTSC default three purge volumes, and performing a shut-in test and leak test.

Soil vapor samples will be collected from the soil vapor sampling probes by placing soil vapor from the probes into either laboratory-supplied Summa canisters or glass syringes (if using a mobile laboratory) subsequent to purging the DTSC default of three volumes of soil vapor. In accordance with the DTSC guidance, at least one replicate sample will be analyzed per 20 samples or per batch. The soil vapor borings will be backfilled with hydrated bentonite grout subsequent to the removal of the soil vapor sampling probes and surfaced to match the surrounding ground surface.

Please note that while we will attempt to achieve our target depths, we may not be able to do so due to drilling “refusal” from rocks or the hardness/resistance of the soils.

The soil vapor samples will be delivered to a State-accredited laboratory for analysis. Samples will be analyzed for VOCs in general accordance with EPA Method 8260SV, and for methane in general accordance with EPA Method 8015M. Chain-of-custody procedures will be implemented for sample tracking. A final written analytical report will be provided by the laboratory within 7 days of submission of the samples for analysis.

The results of the soil vapor sampling will be compared to the Soil Vapor Mitigation Criteria, which are further discussed in the “Soil Vapor Mitigation Criteria” section above and summarized below:

- Methane – 5,000 ppmv. Exceedance of this Soil Vapor Mitigation Criteria will require additional diagnostic work (per the DTSC Methane Guidance[10]) or a VIMS. If additional diagnostic work for methane is proposed, a workplan will be prepared to provide a sampling and analysis plan, and will be submitted to summarize results and any proposed changes to the mitigation criteria.

  If further diagnostic work/ methane sampling is required due to an exceedance of the Mitigation Criteria, the sampling will be completed in accordance with the DTSC Methane Guidance and the approved workplan, and will involve sampling at different depths (i.e., 5 and 10 feet bgs). Soil vapor samples will be analyzed for fixed gases (oxygen, nitrogen, and carbon dioxide) by modified American Society for Testing and Materials (ASTM) Method D1945; and methane by EPA Method 8015M. Following vapor sample collection, SCS will conduct a differential pressure assessment on the shallow and deep probes. The pressure measurement protocol will generally follow the recommendations described in the DTSC Methane Guidance, with the period of measurement designed to encompass several barometric pressure cycles.

  SCS will continuously measure pressure in both the shallow and deep probes for a period of approximately 72 hours using data-logging pressure transducers set to record differential pressure every 10 minutes. SCS will check the data-loggers once a day throughout the test to download data and replace batteries as needed. During each daily visit, SCS will collect pressure readings at the soil vapor probes with a handheld digital manometer or magnehelic gauge.

  In the DTSC Methane Guidance, an acceptable methane gas concentration of 500 ppmv was established for indoor air. For methane in soil gas, an acceptable level can be deduced using site-specific information including pressure, as "only pressurized methane soil gas can achieve explosive concentrations in building space…" The results of the work conducted pursuant to our workplan will be compared to the DTSC Methane Guidance and recommendations will be made, as appropriate.

- VOCs — The VOC results of the soil vapor sampling will be compared against the DTSC-Modified Screening Levels (DTSC-SLs) provided in DTSC Human Health Risk Assessment (HHRA) Note 3,[11] or, for chemicals not listed in HHRA Note 3, the USEPA Regional Screening Levels (RSLs)[12] shall be used. The Vapor Intrusion Risk Screening (VIRS) will be conducted using the DTSC default Attenuation Factor (AF) of 0.001 (for future residential use).[13] However, SCS understands that vapor intrusion standards are currently in a state of transition; therefore SCS recommends using current DTSC methodology at the time the VIRS is to be completed.

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10 DTSC Methane Guidance - "*Evaluation of Biogenic Methane, A Guidance Prepared for the Evaluation of Biogenic Methane in Constructed Fills and Dairy Site*," prepared by the DTSC and dated March 28, 2012

11 Human Health Risk Assessment Note 3 - DTSC-Modified Screening Levels (DTSC-SLs). Screening Levels for Ambient Air, June 2020 Update

12 Regional Screening Level (RSL), provided by the United States Environmental Protection Agency (EPA) and updated as of May 2020.

13 Attenuation Factors for Preliminary Screening Evaluations from the Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air, prepared by the DTSC and dated October 2011 (Final Guidance).

VAPOR BARRIER INSTALLATION RECOMMENDATIONS

Based on the results of the soil vapor sampling, exceedance of either methane or VOCs to the Soil Vapor Mitigation Criteria for a respective lot will require the installation of a vapor barrier, per the recommendations described below.

Based on SCS' experience and review of published literature, it is SCS' professional opinion that the installation of a VIMS (i.e., vapor barrier), will be adequate to mitigate the potential human health risk resulting from vapor intrusion to the affected residential structure. Based on current regulatory standards and guidance, SCS recommends the proposed vapor barrier design consist of a passive-vented system with the option to convert to an active system should the future need arise.

The vapor barrier should conform to the general requirements and specifications presented by the DTSC in the Vapor Intrusion Mitigation Advisory Final Revision 1, dated October 2011. It is recommended that the VIMS design be provided on the foundation plans and approved by the appropriate agency.

See additional discussion below regarding the recommendation to have institutional controls in place for the VIMs after installation.

Institutional Controls for Vapor Barriers After Installation

Establishing institutional controls after the installation of a VIMS is recommended to be enacted by the Client or its agents or successors, so that the homeowners don't unknowingly perform activities that could impair or compromise the VIMS.

Institutional controls, as set forth by the US EPA document entitled, *Institutional Controls and Transfer of Real Property*, provide some applicable general guidelines for institutional controls during the life of a property. The document states, "The decision to clean up a site to less than unrestricted use or to otherwise restrict the use of the site must be balanced by the assurance that a system will be in place to monitor and enforce any required institutional controls." In other words, institutional controls are a term describing land use management strategies that do not rely solely on engineering approaches to reduce risk, but also seek to ensure that the Site is not used in an inappropriate way in the future. The primary goal of the installation of a VIMS is to protect human health and safety and the environment. We recommend that the Client develop an institutional control program to ensure that the VIMS are appropriately disclosed to homeowners and managed in the future to protect the integrity of these systems.

9 HEALTH AND SAFETY

SITE HEALTH AND SAFETY PLAN

The area surrounding the Site is anticipated to be in active use, so traffic and associated Site access controls will be of primary importance. It is anticipated that the Site will be secured by chain-link/construction fences, and access to the Site will be restricted to authorized personnel only.

Based on an analysis of the CoCs, it would appear that the principal health and safety issue associated with the implementation of this SMP is the proper control of dust during excavation and stockpiling. Excavations greater than 4 feet in depth also potentially represent a confined space and should not be entered by unqualified personnel. The presence of CoC-bearing soil may present a potential hazard to the on-Site construction workers through inhalation of dust or ingestion through direct contact with the impacted soil. Although not known to be present at the Site, if gasoline or other volatile compounds are present in soil, a flammable or explosive hazard could exist. SCS will prepare a Site-specific health and safety plan (HSP) to address these issues for SCS personnel and our subcontractors. Other contractors not working directly for SCS will be required to have and follow their own HSP.

A health and safety plan for work conducted at the Site and workers within the "exclusion zone" will be prepared pursuant to the regulations found in 29 Code of Federal Regulations Part 1910.120 and California Code of Regulations, Title 8, Section 5192. The plan will outline the potential chemical and physical hazards that may be encountered during the excavation, loading, sampling, and handling of soils containing hazardous substances. The appropriate personal protective equipment and emergency response procedures for the anticipated Site-specific chemical and physical hazards will be detailed in this plan. SCS and our contracted personnel involved with the proposed fieldwork will be required to sign this document in order to encourage proper health and safety practices. SCS's HSP will be available for agency review during Site mitigation activities.

COMMUNITY HEALTH AND SAFETY PLAN

The primary community health and safety concern for the Site is the potential generation of CoC-bearing dust. Dust will be controlled through the frequent use of water, and the Site will be surrounded by a secure fence by the time remedial activities begin. Grading is not proposed to occur off-Site, and CoC-bearing dust is not anticipated to be a concern outside the Site boundaries provided that the procedures above are followed.

UTILITY SEARCH AND MARKOUT

It is our understanding that all subsurface utilities at the Site will be disconnected from the Site and Underground Service Alert will be notified by the general contractor and/or its subcontractors, as required by state law.

10 CONSTRUCTION EXCAVATION MONITORING

It is anticipated that SCS will be the environmental consultant performing the monitoring of the construction excavation activities. During construction excavation activities, competent environmental consultant(s)[14] (Environmental Monitor[s]) working on behalf of the developer or the general contractor will observe the construction excavation activities of the known CoC-bearing soil areas at the Site. The environmental consultant performing these activities will be referred to as the

[14] A "competent environmental consultant" is person having demonstrated knowledge of and professional experience in the observation and documentation of environmental excavating activities, environmental and geologic conditions, including petroleum hydrocarbons and releases of petroleum hydrocarbon-containing materials in the Site, and recognition of and testing for hazardous materials and conditions. A competent person also must have current Occupational Safety and Health Administration (OSHA) training and certificates pertinent to this type of work, and the delegated authority to respond to changed conditions. A competent environmental consultant will be a state-licensed geologist or engineer with sufficient knowledge of local conditions and environmental regulations, or a person working under the direct supervision of such a professional geologist or engineer.

Environmental Monitor. If soil is exported, it is the responsibility of the Environmental Monitor to judge which soils can be exported off Site as "clean" on the basis of the history of the Site, the available environmental assessment and mitigation data, and the removal of any previously unknown releases of hazardous substances discovered during the monitoring of the construction excavation activities.

The extent and nature of the environmental monitoring to be conducted shall be based on the Environmental Monitor's knowledge of the Site being excavated. The Environmental Monitor shall be responsible for reviewing all available information for the Site including Phase I and Phase II reports, mitigation plans, and closure reports, when available. Different locations within the Site have been the subject of assessment performed by different parties. Based on the information known about the Site, the Environmental Monitor will use his/her best reasonable professional judgment to determine the necessary extent and nature of the environmental monitoring.

For example, visual monitoring of soils during excavation may be the appropriate level of monitoring for certain areas that have had extensive assessment versus areas with less assessment that may need field screening and additional sampling. The Environmental Monitor will document the monitoring activities identifying those soils judged to be below the mitigation criteria, based on the results of the monitoring.

The general contractor and the grading subcontractor (Contractor) for the project will have the primary responsibility of supervising all on-Site activities related to the construction activities. In addition to an Environmental Monitor being present to monitor suspect CoC-bearing soils excavated during construction activities, the Contractor will assist the Environmental Monitor by advising the construction workers involved in earthwork activities on recognizing subsurface conditions indicative of releases of hazardous substances and reporting such indications to the construction site supervisor or manager. These conditions may include evidence of contaminated soil (staining, odors, burn ash, etc.) and underground fuel storage tanks/piping or similar structures/vessels that may contain hazardous substances.

If hazardous conditions that present an immediate threat of injury to construction workers, human health, or the environment are encountered, then "9-1-1" shall be called by the appropriate Contractor's personnel to summon the County's Hazardous Incident Response Team. The Contractor's Site supervisor or manager shall then notify the DEH, the developer, the Environmental Monitor, and SCS.

If suspected hazardous substances that do not present an immediate health threat are encountered at the Site during construction activities, construction workers will immediately notify the Contractor's Site supervisor or manager and cease work in the area potentially affected by such substances. The Contractor's Site supervisor or manager will redirect or halt construction activities in that area and immediately notify the Environmental Monitor. The construction activities in the area of the suspected release of hazardous substances shall remain undisturbed, until an initial environmental assessment can be performed by the Environmental Monitor (construction activities may continue as long as the affected area is not disturbed). If the Environmental Monitor believes that the suspect soil needs further assessment, attempts will be made to segregate the soil so that construction activities in the affected area can resume as soon as possible.

Confirmation sampling of the surrounding soils must be conducted after segregation of suspect soils to confirm that all soils containing hazardous substance in excess of the free reuse standard have

been removed from the construction excavation envelope and that any residual soil containing hazardous substances is mitigated to the extent necessary to protect human health and water resources. Any such confirmation sampling must be conducted either by or with the approval of the Environmental Monitor and shall be conducted in accordance with the applicable DEH guidelines.

Once suspect soil or materials have been identified, at his/her discretion, the Environmental Monitor may use a PID, XRF meter, or other applicable field-screening techniques to screen for indications of potentially hazardous substances. If immediate determination of the material cannot be made using on-Site screening methods, the Environmental Monitor will collect material samples and have them analyzed by a state-certified laboratory. Mobile laboratories may be employed for expedited analysis, as necessary. Upon completion of the initial environmental assessment or immediately upon confirmation of a release of a potentially hazardous substance, the Environmental Monitor will notify the DEH, the Contractor, and the developer.

If, during these monitoring efforts, soil that initially was suspected to contain hazardous substances but later, through subsequent field screening or laboratory analysis, is determined by the Environmental Monitor not to contain detectable concentrations of hazardous substances or metals above the mitigation criteria detailed in the SMP and, therefore, is not considered waste, the Environmental Monitor will notify the Contractor's site supervisor or manager and release the soil for continued construction activity, export, or on-Site reuse. The observations and results of the initial environmental assessment will be documented by the Environmental Monitor and submitted to the Contractor and the developer.

After the soil has been monitored as described above, judged to not have any obvious indications of a release of hazardous substances and shown to meet the criteria for off-Site reuse, it can be exported off Site or reused at another location on Site as "clean" without further characterization.

DEWATERING

There is currently not dewatering anticipated in order to complete this Project.

If dewatering becomes necessary, representative samples of the water should be sampled for various CoCs (e.g., Title 22 metals, TPH, VOCs) to assess whether the water will need to be treated and whether the discharge will need to be properly permitted. Provided that CoCs are present in groundwater, during dewatering activities the groundwater may need to be filtered through appropriate media prior to discharging to the sanitary sewer system. Prior to dewatering activities, an NPDES Storm Drain General Discharge Permit will need to be obtained from RWQCB in addition to a discharge permit from the City of San Diego Metropolitan Wastewater Department's Industrial Wastewater Control Program. Additionally, as part of the discharge requirements, discharge water will need to be sampled on a pre-determined basis to ensure compliance. When disposing of filtration media during change-outs or at the end of dewatering activities, the filtration media may need to be disposed of as a regulated or hazardous waste, depending on the results of laboratory analysis.

PERMITS

Any required traffic control and encroachment permits will be obtained by the appropriate contractors for activities to be completed at the Site. If underground storage tanks (USTs) are encountered, the appropriate DEH and City of San Diego Fire Department permits will be obtained prior to proceeding with their removal.

CONSTRUCTION WORKER PROTECTION

The mitigation to be conducted is designed to protect the health and safety of construction workers and other personnel (personnel without Occupational Safety and Health Administration 40-hour Hazardous Waste Operations and Emergency Response [HAZWOPER] training) present during construction from the potentially significant exposure to hazardous substances or nuisance conditions.

Mitigation (i.e., excavation of CoC-impacted soil) is recommended to be conducted by HAZWOPER-trained crews pursuant to a Site health and safety plan, and, in accordance with the state of California Business and Professions Code, a licensed contractor with a "HAZ" endorsement on their contractor's license. Once mitigation is complete, if CoCs remain in the construction area, and other contractors without a HAZ endorsement to their licenses or crews without HAZWOPER training start work at the Site, then precautions will be taken to minimize worker exposure and hazard communication meetings will be held with the workers to educate them on how to minimize the risks.

STORMWATER CONTROLS

As required, a Stormwater Pollution Prevention Plan will be prepared for the Site-specific grading and development activities. Stormwater control measures will be implemented and maintained by the Site general contractor during the mitigation and subsequent stockpile maintenance program. Any CoC-bearing soil stockpiles generated during the mitigation process will be stored on and covered with plastic sheeting, which will be secured with sandbags. In addition, appropriate best management practices will be placed along the Site boundary. Any generated stockpiles will be maintained by the Site grading contractor representatives, unless they are being added to or loaded for off-Site disposal.

SOIL, GROUNDWATER, AND INVESTIGATION-DERIVED WASTE (IDW) MANAGEMENT

Since the majority of the Site mitigation effort consists of the grading and excavation of soil, it is not likely that investigation-derived waste (IDW) (i.e., CoC-bearing soil) will be generated. If IDW is generated, they will either be placed in Department of Transportation (DOT)-approved drums or appropriately stockpiled on-Site, pending characterization and disposal at an appropriate facility (if required).

11 PROPERTY CLOSURE REPORT

Based on the findings of the field investigation and laboratory results from the above scope of services, a Property Closure Report (PCR) will be prepared. The PCR will cover the various areas investigated at the Site including field observations, soil and soil vapor sampling, excavation, field screening, sampling activities, soil waste characterization, soil reuse activities, and any VIMS installation activities. Unanticipated discovery of hazardous substances during mass excavation will also be reported, if encountered, and mitigated prior to the completion of the PCR. The PCR will include any laboratory reports, chain-of-custody records, soil and soil vapor sample locations, tabulated analytical results, any waste manifests, and appropriate support documentation. The PCR will be peer reviewed and signed by appropriately licensed professionals. The work conducted at the Site will be overseen by a professional geologist as required by the state.

12 REPORT USAGE AND FUTURE SITE CONDITIONS

This SMP is intended for the sole usage of the Client and other parties designated by SCS. The methodology used during the referenced assessments by SCS was in general conformance with the requirements of the Client and the specifications and limitations presented in the agreement between the Client and SCS. This SMP contains information from a variety of public and other sources, and SCS makes no representation or warranty about the accuracy, reliability, suitability, or completeness of the information. Any use of this Report, whether by the Client or by a third party, shall be subject to the provisions of the agreement between the Client and SCS. Any misuse of or reliance upon the SMP shall be without risk or liability to SCS.

Subsurface assessments and soil management plans are not comprehensive in nature and may not identify all environmental problems or eliminate all risk. For every property, especially for properties in older downtown or urban areas, it is possible for there to be unknown, unreported recognized environmental conditions, underground storage tanks, or other features of concern that might become apparent through demolition, construction, or excavation activities, etc. In addition, the scope of services for this project was limited to those items specifically named in the scope of services for this SMP. Environmental issues not specifically addressed in the scope of services for this project are not included in this SMP.

Land use, condition of the properties within the Site, and other factors may change over time. The information and conclusions of this SMP are judged to be relevant at the time the work described in this SMP was conducted. This SMP should not be relied upon to represent future Site conditions unless a qualified consultant familiar with the practice of Phase II Environmental Site Assessments in San Diego County is consulted to assess the necessity of updating this SMP.

The property owners of the Site are solely responsible for notifying all governmental agencies and the public of the existence, release, or disposal of any hazardous materials/wastes or petroleum products at the Site, whether before, during, or after the performance of SCS' services. SCS assumes no responsibility or liability for any claim, loss of property value, damage, or injury that results from hazardous materials/wastes or petroleum products being present or encountered within the Site.

Although this SMP has attempted to assess the likelihood that the Site has been impacted by a hazardous material/waste release, potential sources of impact may have escaped detection for reasons that include, but are not limited to: 1) inadequate or inaccurate information rightfully provided to SCS by third parties, such as public agencies and other outside sources; 2) the limited scope of this SMP; and 3) the presence of undetected, unknown, or unreported environmental releases.

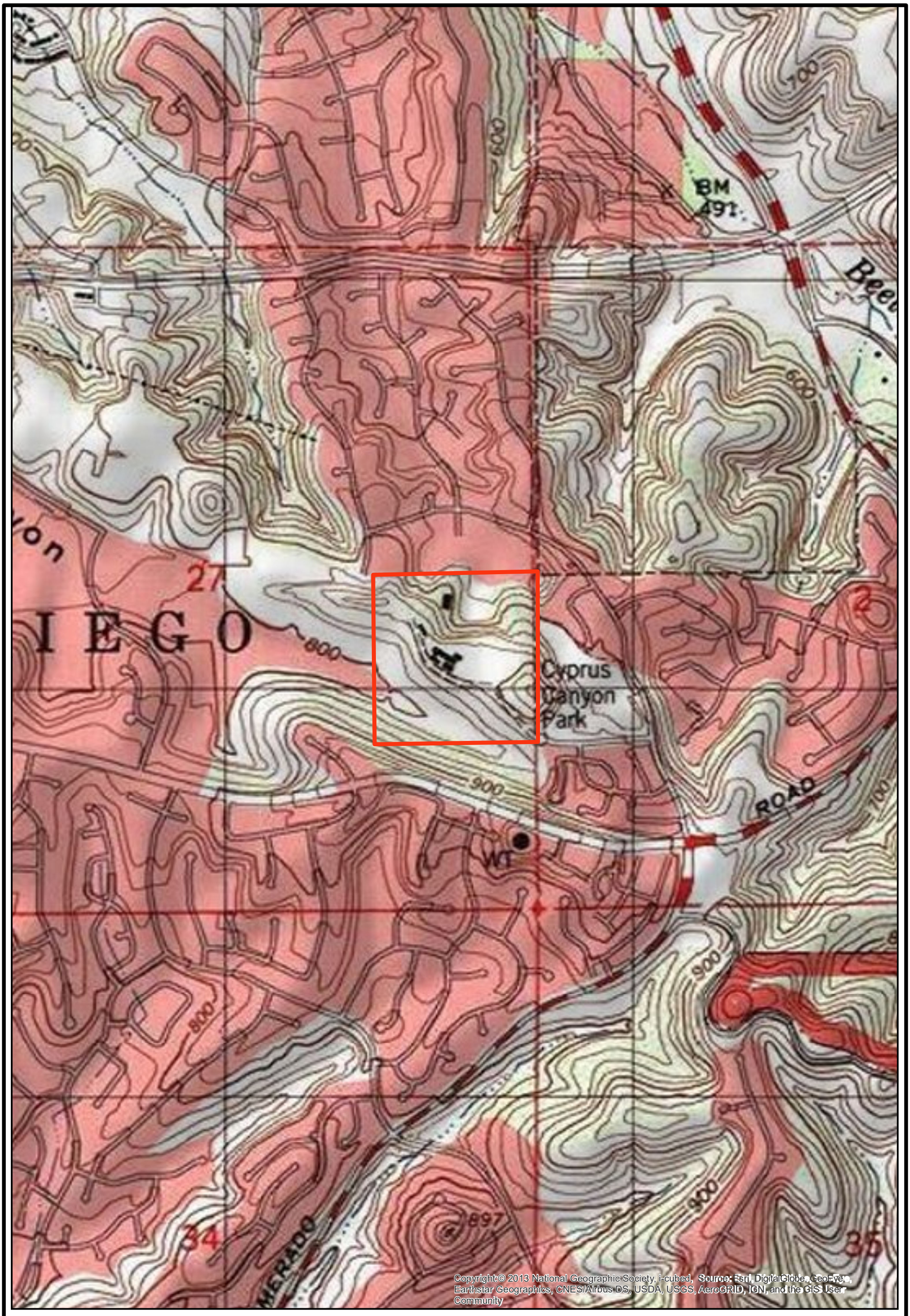
13 LIKELIHOOD STATEMENTS

Statements of "likelihood" have been made in this report. Likelihood statements are based on professional judgments of SCS. The term "likelihood," as used herein, pertains to the probability of a match between the prediction for an event and its actual occurrence. The likelihood statement assigns a measure for a "degree of belief" for the match between the prediction for the event and the actual occurrence of the event.

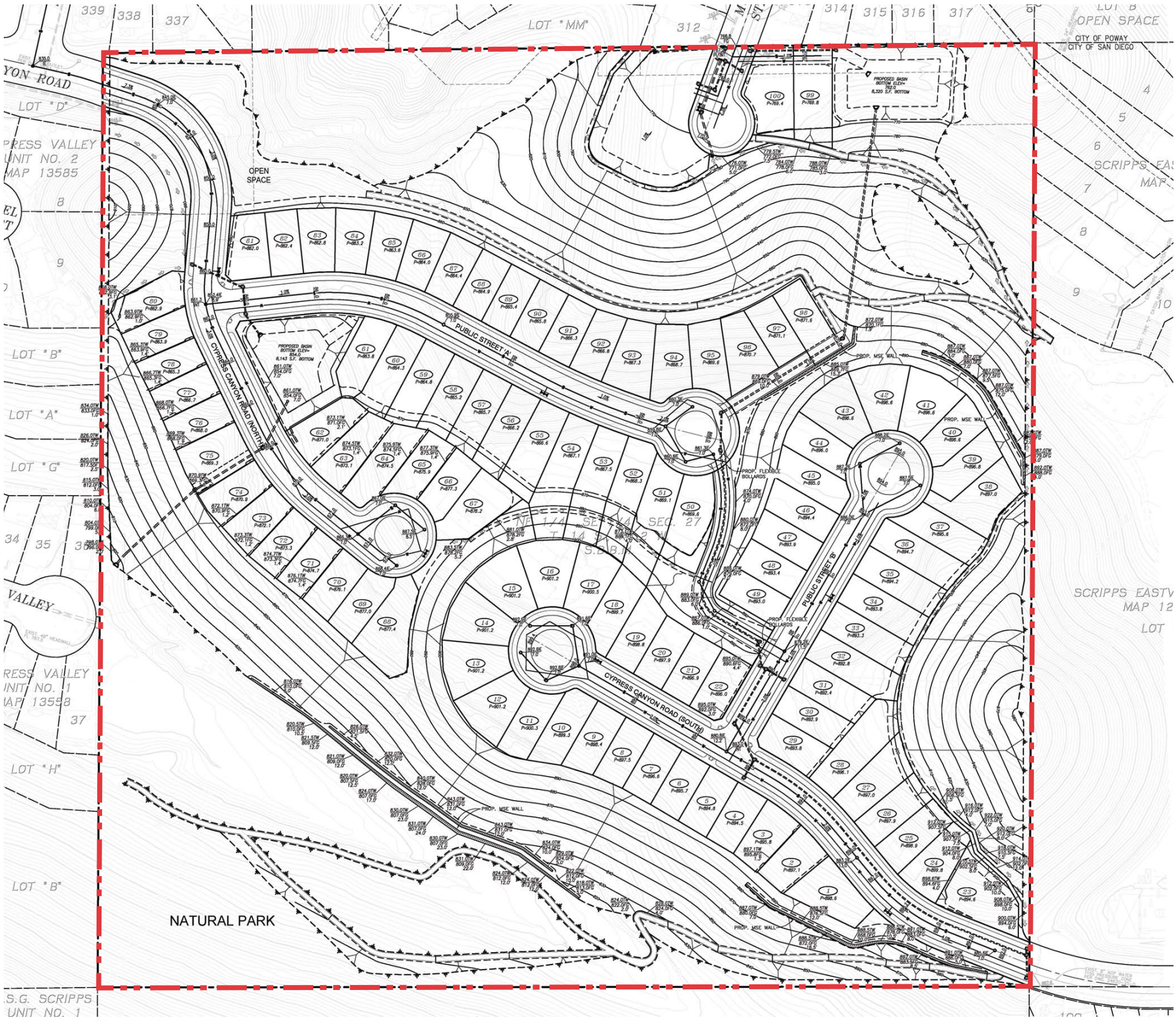
The likelihood statements in this SMP are made qualitatively (expressed in words). The qualitative terms can be approximately related to quantitative percentages. The term "low likelihood" is used by SCS to approximate a percentage range of 10 to 20 percent; the term "moderate likelihood" refers

to an approximate percentage range of 40 to 60 percent; and the term “high likelihood” refers to an approximate percentage range of 80 to 90 percent.

FIGURES



SCS ENGINEERS Environmental Consultants 8799 Balboa Avenue, Suite 290 San Diego, California 92123	**Site Location Map** The Phair Company 11495 Cypress Canyon Road San Diego, California	Project No.: 01214253.06 **Figure 1** Date Drafted: 5/1/2020



LEGEND

Approximate Site boundary

Disclaimer: This figure is based on a drawing provided by Hunsaker & Associates, dated September 11, 2020. Actual conditions may differ. All locations and dimensions are approximate.

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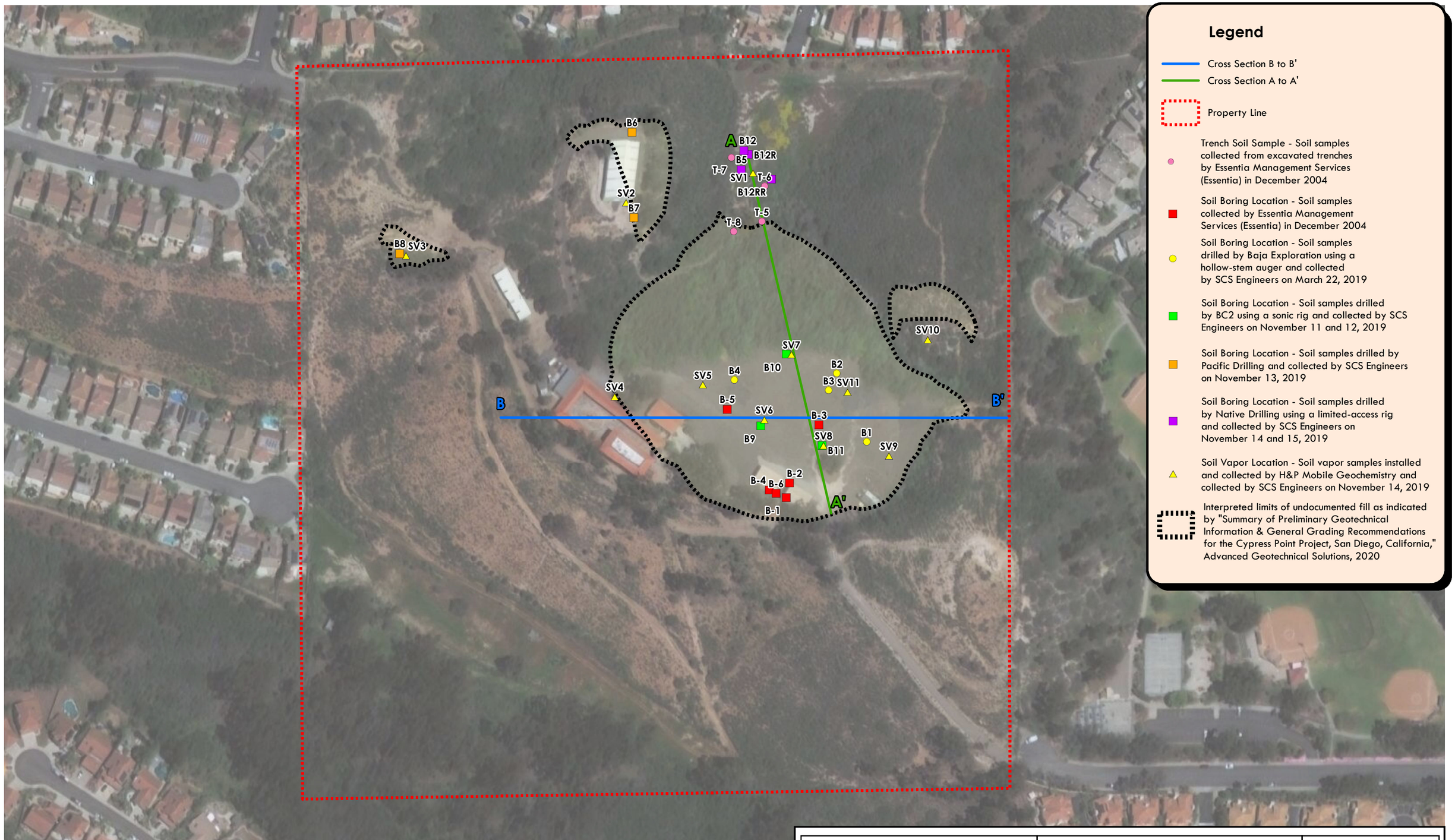
SITE DEVELOPMENT PLAN

The Phair Company
11495 Cypress Canyon Road
San Diego, California

Project No.: 01214253.06

Figure 2

Date Drafted: 8/12/20



Legend

- Cross Section B to B'
- Cross Section A to A'
- Property Line
- Trench Soil Sample - Soil samples collected from excavated trenches by Essentia Management Services (Essentia) in December 2004
- Soil Boring Location - Soil samples collected by Essentia Management Services (Essentia) in December 2004
- Soil Boring Location - Soil samples drilled by Baja Exploration using a hollow-stem auger and collected by SCS Engineers on March 22, 2019
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- Interpreted limits of undocumented fill as indicated by "Summary of Preliminary Geotechnical Information & General Grading Recommendations for the Cypress Point Project, San Diego, California," Advanced Geotechnical Solutions, 2020

0 120 240
Feet

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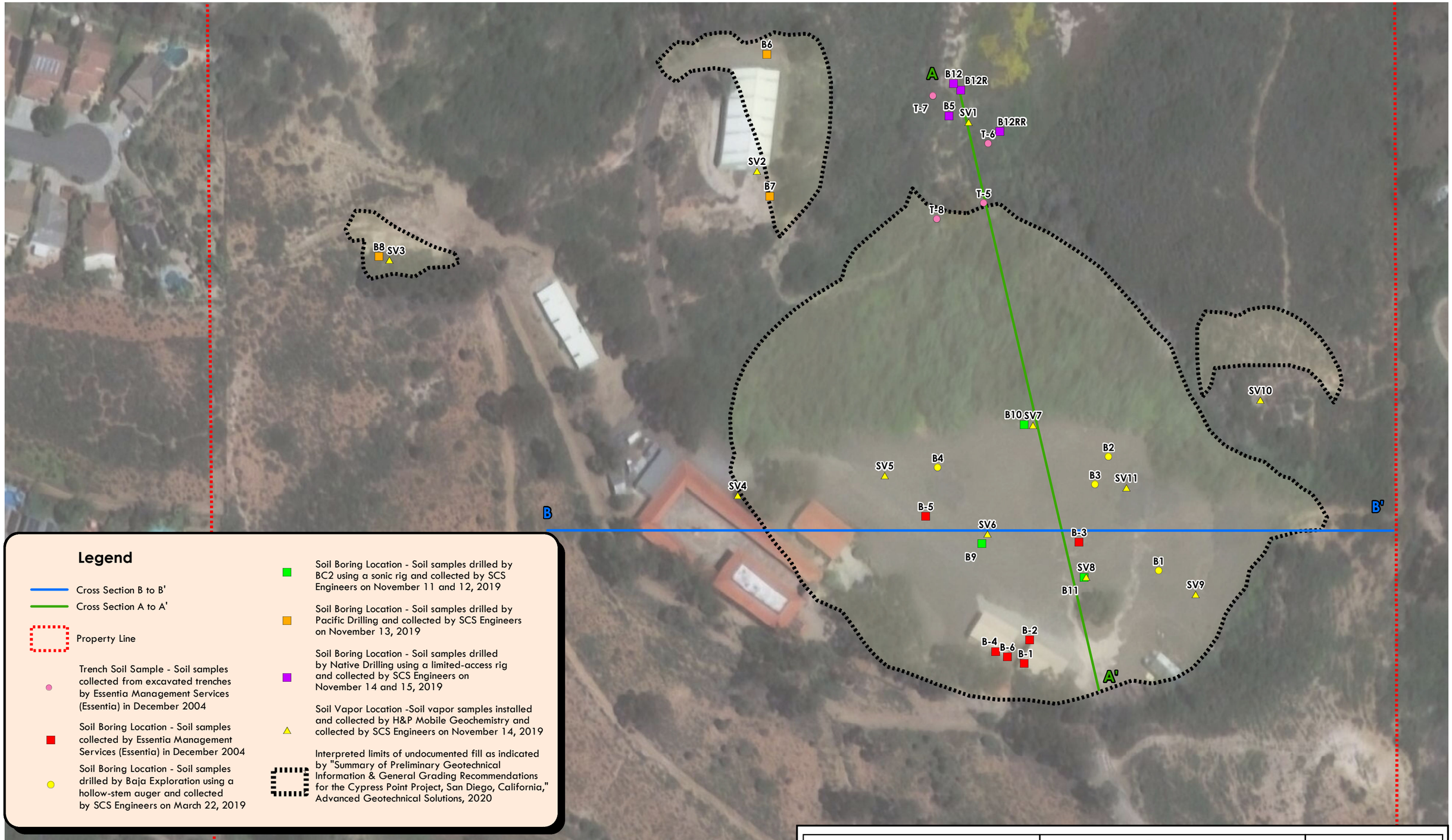
Existing Site and Site Vicinity With Boring Locations

The Phair Company
11495 Cypress Canyon Road
San Diego, California

Project No.: 01214253.06

Figure 3

Date Drafted: 8/31/2020



Legend

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Close-up Existing Site Plan With Boring Locations

The Phair Company
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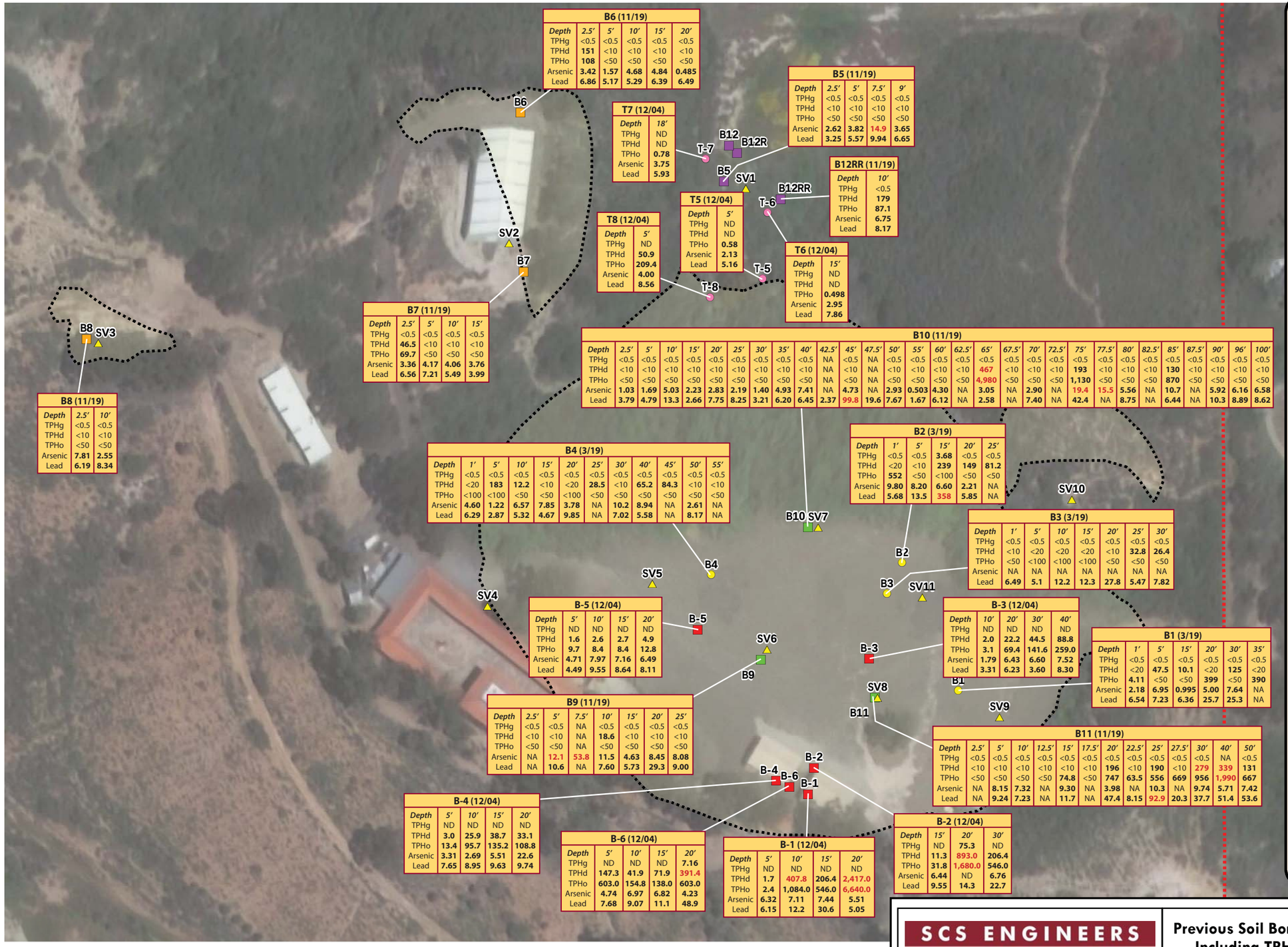
San Diego, California

Project No.: 01214253.06

Figure 4

Date Drafted: 8/31/2020



B6 (11/19)

Depth	2.5′	5′	10′	15′	20′
TPHg	<0.5	<0.5	<0.5	<0.5	<0.5
TPHd	**151**	<10	<10	<10	<10
TPHo	**108**	<50	<50	<50	<50
Arsenic	**3.42**	**1.57**	**4.68**	**4.84**	**0.485**
Lead	**6.86**	**5.17**	**5.29**	**6.39**	**6.49**

T7 (12/04)

Depth	18′
TPHg	ND
TPHd	ND
TPHo	**0.78**
Arsenic	**3.75**
Lead	**5.93**

B5 (11/19)

Depth	2.5′	5′	7.5′	9′
TPHg	<0.5	<0.5	<0.5	<0.5
TPHd	<10	<10	<10	<10
TPHo	<50	<50	<50	<50
Arsenic	**2.62**	**3.82**	**14.9**	**3.65**
Lead	**3.25**	**5.57**	**9.94**	**6.65**

B12RR (11/19)

Depth	10′
TPHg	<0.5
TPHd	**179**
TPHo	**87.1**
Arsenic	**6.75**
Lead	**8.17**

T5 (12/04)

Depth	5′
TPHg	ND
TPHd	ND
TPHo	**0.58**
Arsenic	**2.13**
Lead	**5.16**

T8 (12/04)

Depth	5′
TPHg	ND
TPHd	**50.9**
TPHo	**209.4**
Arsenic	**4.00**
Lead	**8.56**

T6 (12/04)

Depth	15′
TPHg	ND
TPHd	ND
TPHo	**0.498**
Arsenic	**2.95**
Lead	**7.86**

B7 (11/19)

Depth	2.5′	5′	10′	15′
TPHg	<0.5	<0.5	<0.5	<0.5
TPHd	**46.5**	<10	<10	<10
TPHo	**69.7**	<50	<50	<50
Arsenic	**3.36**	**4.17**	**4.06**	**3.76**
Lead	**6.56**	**7.21**	**5.49**	**3.99**

B8 (11/19)

Depth	2.5′	10′
TPHg	<0.5	<0.5
TPHd	<10	<10
TPHo	<50	<50
Arsenic	**7.81**	**2.55**
Lead	**6.19**	**8.34**

B10 (11/19)

Depth	2.5′	5′	10′	15′	20′	25′	30′	35′	40′	42.5′	45′	47.5′	50′	55′	60′	62.5′	65′	67.5′	70′	72.5′	75′	77.5′	80′	82.5′	85′	87.5′	90′	96′	100′
TPHg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	<0.5	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TPHd	<10	<10	<10	<10	<10	<10	<10	<10	<10	NA	<10	NA	<10	<10	<10	<10	**467**	<10	<10	<10	**193**	<10	<10	<10	**130**	<10	<10	<10	<10
TPHo	<50	<50	<50	<50	<50	<50	<50	<50	<50	NA	<50	NA	<50	<50	<50	<50	**4,980**	<50	<50	<50	**1,130**	<50	<50	<50	**870**	<50	<50	<50	<50
Arsenic	**1.03**	**1.69**	**5.03**	**2.23**	**2.83**	**2.19**	**1.40**	**4.93**	**7.41**	NA	**4.73**	NA	**2.93**	**0.503**	**4.30**	NA	**3.05**	NA	**2.90**	NA	**19.4**	**15.5**	**5.56**	NA	**10.7**	NA	**5.92**	**6.16**	**6.58**
Lead	**3.79**	**4.79**	**13.3**	**2.66**	**7.75**	**8.25**	**3.21**	**6.20**	**6.45**	**2.37**	**99.8**	**19.6**	**7.67**	**1.67**	**6.12**	NA	**2.58**	NA	**7.40**	NA	**42.4**	NA	**8.75**	NA	**6.44**	NA	**10.3**	**8.89**	**8.62**

B4 (3/19)

Depth	1′	5′	10′	15′	20′	25′	30′	40′	45′	50′	55′
TPHg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TPHd	<20	**183**	**12.2**	<10	<20	**28.5**	<10	**65.2**	**84.3**	<10	<10
TPHo	<100	<100	<50	<50	<100	<50	<50	<50	<50	<50	<50
Arsenic	**4.60**	**1.22**	**6.57**	**7.85**	**3.78**	NA	**10.2**	**8.94**	NA	**2.61**	NA
Lead	**6.29**	**2.87**	**5.32**	**4.67**	**9.85**	NA	**7.02**	**5.58**	NA	**8.17**	NA

B2 (3/19)

Depth	1′	5′	15′	20′	25′
TPHg	<0.5	<0.5	**3.68**	<0.5	<0.5
TPHd	<20	<10	**239**	**149**	**81.2**
TPHo	**552**	<50	<100	<50	<50
Arsenic	**9.80**	**8.20**	**6.60**	**2.21**	NA
Lead	**5.68**	**13.5**	**358**	**5.85**	NA

B3 (3/19)

Depth	1′	5′	10′	15′	20′	25′	30′
TPHg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TPHd	<10	<20	<20	<20	<10	**32.8**	**26.4**
TPHo	<50	<100	<100	<100	<50	<50	<50
Arsenic	NA	NA	NA	NA	NA	NA	NA
Lead	**6.49**	**5.1**	**12.2**	**12.3**	**27.8**	**5.47**	**7.82**

B-5 (12/04)

Depth	5′	10′	15′	20′
TPHg	ND	ND	ND	ND
TPHd	**1.6**	**2.6**	**2.7**	**4.9**
TPHo	**9.7**	**8.4**	**8.4**	**12.8**
Arsenic	**4.71**	**7.97**	**7.16**	**6.49**
Lead	**4.49**	**9.55**	**8.64**	**8.11**

B-3 (12/04)

Depth	10′	20′	30′	40′
TPHg	ND	ND	ND	ND
TPHd	**2.0**	**22.2**	**44.5**	**88.8**
TPHo	**3.1**	**69.4**	**141.6**	**259.0**
Arsenic	**1.79**	**6.43**	**6.60**	**7.52**
Lead	**3.31**	**6.23**	**3.60**	**8.30**

B1 (3/19)

Depth	1′	5′	15′	20′	30′	35′
TPHg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TPHd	<20	**47.5**	**10.1**	<20	**125**	<20
TPHo	**4.11**	<50	<50	**399**	<50	**390**
Arsenic	**2.18**	**6.95**	**0.995**	**5.00**	**7.64**	NA
Lead	**6.54**	**7.23**	**6.36**	**25.7**	**25.3**	NA

B9 (11/19)

Depth	2.5′	5′	7.5′	10′	15′	20′	25′
TPHg	<0.5	<0.5	NA	<0.5	<0.5	<0.5	<0.5
TPHd	<10	<10	NA	**18.6**	<10	<10	<10
TPHo	<50	<50	NA	<50	<50	<50	<50
Arsenic	NA	**12.1**	**53.8**	**11.5**	**4.63**	**8.45**	**8.08**
Lead	NA	**10.6**	NA	**7.60**	**5.73**	**29.3**	**9.00**

B11 (11/19)

Depth	2.5′	5′	10′	12.5′	15′	17.5′	20′	22.5′	25′	27.5′	30′	40′	50′
TPHg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	<0.5
TPHd	<10	<10	<10	<10	<10	<10	**196**	<10	**190**	<10	**279**	**339**	**131**
TPHo	<50	<50	<50	<50	**74.8**	<50	**747**	**63.5**	**556**	**669**	**956**	**1,990**	**667**
Arsenic	NA	**8.15**	**7.32**	NA	**9.30**	NA	**3.98**	NA	**10.3**	NA	**9.74**	**5.71**	**7.42**
Lead	NA	**9.24**	**7.23**	NA	**11.7**	NA	**47.4**	**8.15**	**92.9**	**20.3**	**37.7**	**51.4**	**53.6**

B-4 (12/04)

Depth	5′	10′	15′	20′
TPHg	ND	ND	ND	ND
TPHd	**3.0**	**25.9**	**38.7**	**33.1**
TPHo	**13.4**	**95.7**	**135.2**	**108.8**
Arsenic	**3.31**	**2.69**	**5.51**	**22.6**
Lead	**7.65**	**8.95**	**9.63**	**9.74**

B-6 (12/04)

Depth	5′	10′	15′	20′
TPHg	ND	ND	ND	**7.16**
TPHd	**147.3**	**41.9**	**71.9**	**391.4**
TPHo	**603.0**	**154.8**	**138.0**	**603.0**
Arsenic	**4.74**	**6.97**	**6.82**	**4.23**
Lead	**7.68**	**9.07**	**11.1**	**48.9**

B-1 (12/04)

Depth	5′	10′	15′	20′
TPHg	ND	ND	ND	ND
TPHd	**1.7**	**407.8**	**206.4**	**2,417.0**
TPHo	**2.4**	**1,084.0**	**546.0**	**6,640.0**
Arsenic	**6.32**	**7.11**	**7.44**	**5.51**
Lead	**6.15**	**12.2**	**30.6**	**5.05**

B-2 (12/04)

Depth	15′	20′	30′
TPHg	ND	**75.3**	ND
TPHd	**11.3**	**893.0**	**206.4**
TPHo	**31.8**	**1,680.0**	**546.0**
Arsenic	**6.44**	ND	**6.76**
Lead	**9.55**	**14.3**	**22.7**

Legend

- Property Line
- Trench Soil Sample - Soil samples collected from excavated trenches by Essentia Management Services (Essentia) in December 2004
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B5 (11/19)

Depth	2.5′	5′	7.5′	9′
TPHg	<0.5	<0.5	<0.5	<0.5
TPHd	<10	<10	<10	<10
TPHo	<50	<50	<50	<50
Arsenic	**2.62**	**3.82**	**14.9**	**3.65**
Lead	**3.25**	**5.57**	**9.94**	**6.65**

Soil samples, with depth in feet below grade, analyzed for gasoline-, diesel-, and oil-range total petroleum hydrocarbons (TPHg, TPHd, TPHo, respectively) by EPA Method 8015B; Results for TPH reported in milligrams per kilogram (mg/kg). Results for VOCs reported in micrograms per kilogram (µg/kg). **Bold** font indicates sample results above the laboratory reporting limit. **Red** font for arsenic indicates sample results above naturally occurring background concentrations. **Red** font for TPH indicates sample results exceeds applicable screening critera for San Francisco Bay Regional Water Quality Control Board, Environmental Screening Levels, 2019 (Rev 2). **Red** font for lead indicates sample result exceeds Department of Toxic Substances Control (DTSC) Human Environmental Risk Office (HERO), Note 3, threshold for total lead and/or leachability.
< indicates results less than the laboratory reporting limit; number indicates individual analyte reporting limit. ND indicates concentration not detected above laboratory detection limits. NA indicates sample not analyzed.

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 120 240 Feet

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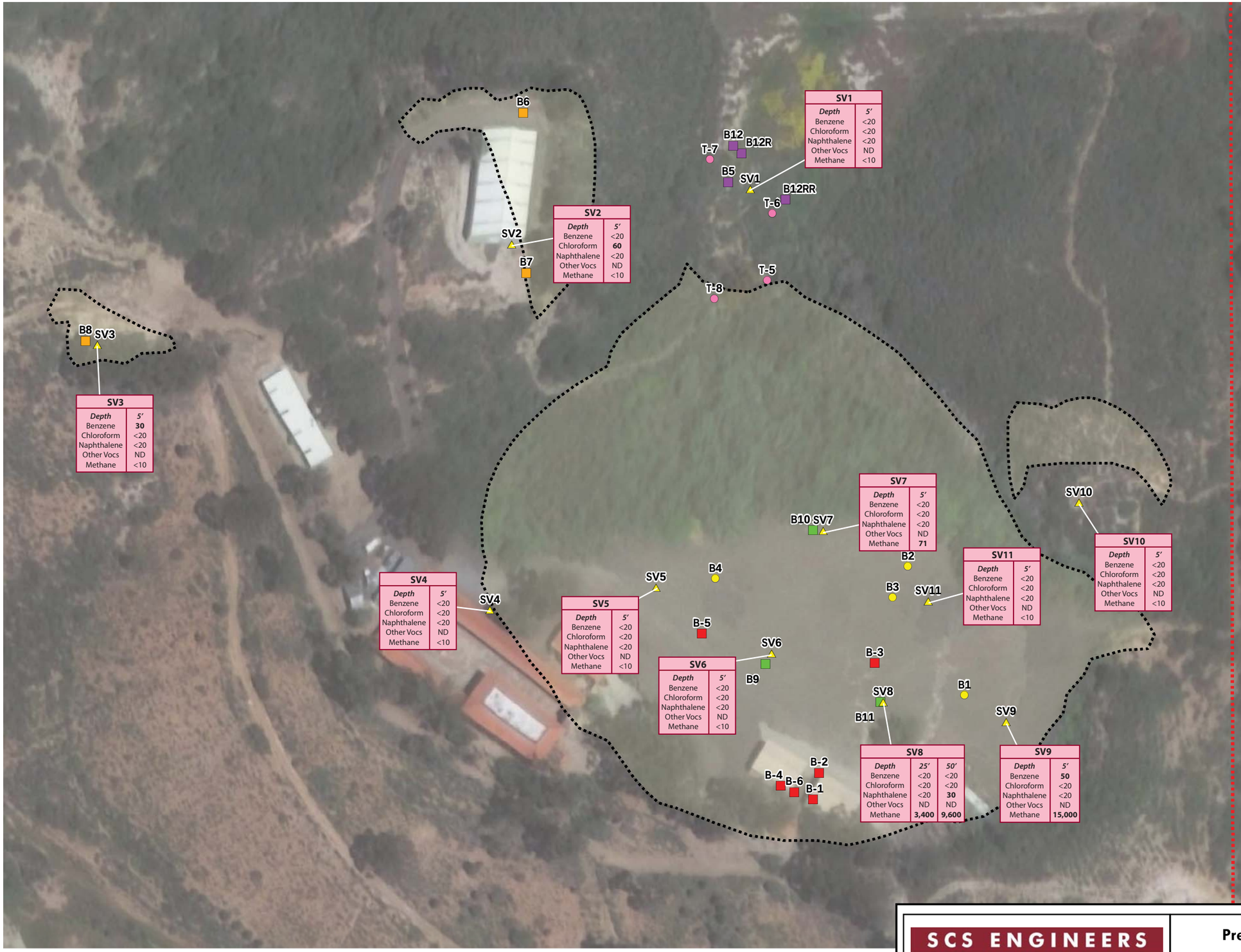
Previous Soil Boring Analytical Results Including TPH, Lead, and Arsenic

The Phair Company
11495 Cypress Canyon Road
San Diego, California

Project No.: 01214253.06

Figure 5

Date Drafted: 8/31/2020



Legend

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SV7	
Depth	*5′*
Benzene	<20
Chloroform	<20
Naphthalene	<20
Other Vocs	ND
Methane	**71**

Soil vapor samples, with depth in feet below grade, analyzed for volatile organic compounds (VOCs) by EPA Method 8260SV and for methane by EPA Method 8015M. Results for VOCs reported in micrograms per cubic meter ($\mu g/m^3$) and in parts per million in vapor (ppmv) for methane. **Bold** font indicates sample results above the laboratory reporting limit. < indicates results less than the laboratory reporting limit; number indicates individual analyte reporting limit. ND indicates concentration not detected above laboratory detection limits.

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 120 240 Feet

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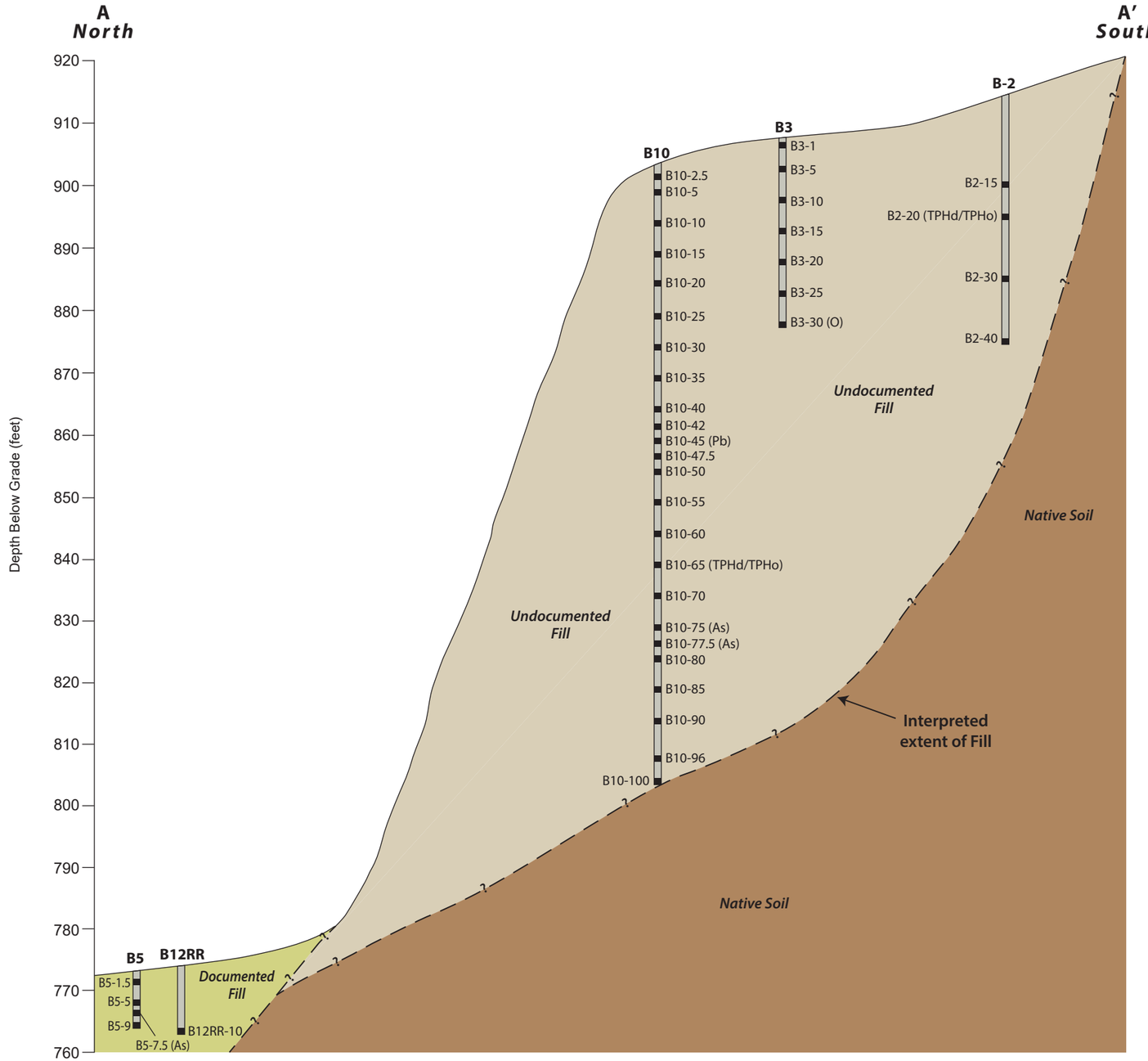
Previous Soil Vapor Sample Analytical Results

The Phair Company
11495 Cypress Canyon Road
San Diego, California

Project No.: 01214253.06

Figure 6

Date Drafted: 8/31/2020



LEGEND

B3
B3-5 Location and designation of soil boring with sample collected at indicated depth

TPHd/TPHo = Total petroleum hydrocarbon concentrations exceeding San Francisco Regional Water Quality Control Board (SFRWQCB) Environmental Screening Levels (ESLs), 2019.

Pb = Sample reported with lead concentrations above the Department of Toxic Substances Control (DTSC) Human Environmental Risk Office (HERO) Note 3, Recommended Soil Screening Level (April 2019), of 80 milligrams per kilogram (mg/kg).

As = Sample reported with arsenic concentrations above the natural background levels (12 mg/kg).

O = Organic material was observed.

? = Queried where inferred

0 50 100 150
Approximate Horizontal Graphic Scale in Feet
1 inch = 100 feet

0 10 20 30
Approximate Vertical Graphic Scale in Feet
1 inch = 20 feet

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

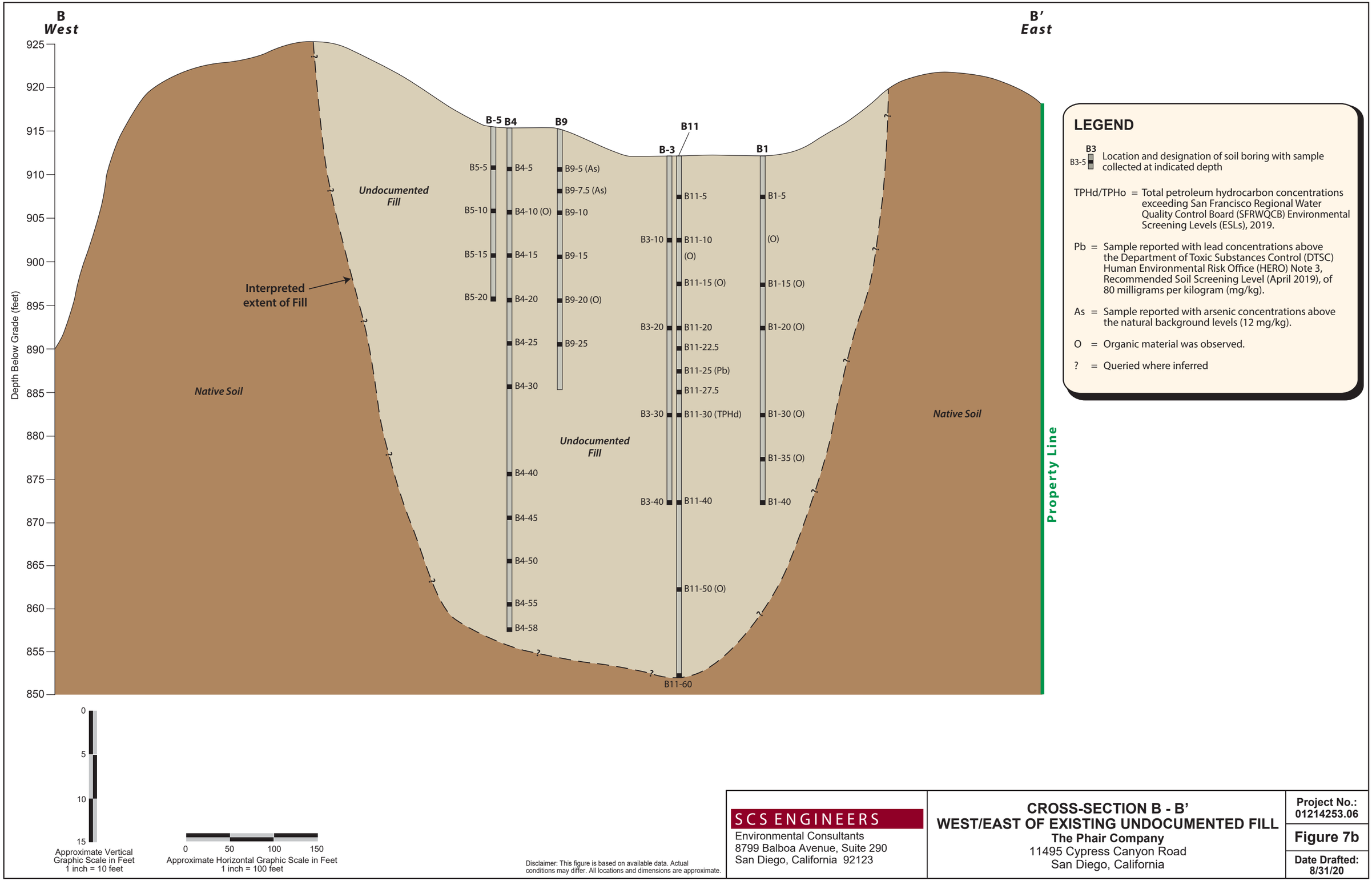
SCS ENGINEERS
Environmental Consultants
8799 Balboa Avenue, Suite 290
San Diego, California 92123

CROSS-SECTION A - A'
NORTH/SOUTH OF EXISTING UNDOCUMENTED FILL
The Phair Company
11495 Cypress Canyon Road
San Diego, California

Project No.: 01214253.06

Figure 7a

Date Drafted: 8/31/20



LEGEND

B3-5 (B3) Location and designation of soil boring with sample collected at indicated depth

TPHd/TPHo = Total petroleum hydrocarbon concentrations exceeding San Francisco Regional Water Quality Control Board (SFRWQCB) Environmental Screening Levels (ESLs), 2019.

Pb = Sample reported with lead concentrations above the Department of Toxic Substances Control (DTSC) Human Environmental Risk Office (HERO) Note 3, Recommended Soil Screening Level (April 2019), of 80 milligrams per kilogram (mg/kg).

As = Sample reported with arsenic concentrations above the natural background levels (12 mg/kg).

O = Organic material was observed.

? = Queried where inferred

0 5 10 15
Approximate Vertical Graphic Scale in Feet
1 inch = 10 feet

0 50 100 150
Approximate Horizontal Graphic Scale in Feet
1 inch = 100 feet

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

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CROSS-SECTION B - B'
WEST/EAST OF EXISTING UNDOCUMENTED FILL
The Phair Company
11495 Cypress Canyon Road
San Diego, California

Project No.: 01214253.06

Figure 7b

Date Drafted: 8/31/20

TABLES

Table 1
Soil Analytical Data for TPH,
OCPs, VOCs, SVOCs, and PCBs
11495 Cypress Canyon Road
San Diego, California

Sample	Date	Depth	TPHg	TPHd	TPHo	OCPs							VOCs				SVOCs							PCBs	
						gamma-Chlordane	alpha-Chlordane	4,4'-DDD	4,4'-DDE	4,4'-DDT	Dieldrin	Other OCPs	Acetone	2-Butanone	Toluene	Other VOCs	3/4 Methyl-phenol	Benzoic Acid	Phenol	Butyl Benzyl Phthalate	Phen-anthrene	Bis (2-Ethylhexyl) Phalate	Other SVOCs	Aroclor 1254	Other PCBs
			mg/kg			µg/kg							µg/kg				µg/kg							µg/kg	
Samples collected by Essentia in December 2004																									
T-5-5	12/6/2004	5	ND	ND	**0.58**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
T-6-15	12/6/2004	15	ND	ND	**0.498**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
T-7-18	12/6/2004	18	ND	ND	**0.78**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
T-8-5	12/6/2004	5	ND	**50.9**	**209.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-1-5	12/7/2004	5	ND	**1.7**	**2.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-1-10	12/7/2004	10	ND	**407.8**	**1,084.0**	ND	ND	ND	**5.1**	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B-1-15	12/7/2004	15	ND	**206.4**	**546.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-1-20	12/7/2004	20	ND	**2,417.0**	**6,640.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-2-15	12/9/2004	15	ND	**11.3**	**31.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-2-20	12/9/2004	20	**75.3**	**893.0**	**1,680.0**	--	--	--	--	--	--	--	<50.0	**150**	**8.1**	ND	**13**	<0.50	<0.50	**0.7**	<0.50	<0.50	ND	--	--
B-2-30	12/9/2004	30	ND	**206.4**	**546.0**	--	--	--	--	--	--	--	**420**	**100**	<50.0	ND	<0.50	<0.50	**0.7**	<0.50	<0.50	<0.50	ND	--	--
B-2-40	12/9/2004	40	--	--	--	--	--	--	--	--	--	--	**170**	**59**	<50.0	ND	<0.50	<0.50	<0.50	<0.50	<0.50	**0.6**	ND	--	--
B-3-10	12/9/2004	10	ND	**2.0**	**3.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-3-20	12/9/2004	20	ND	**22.2**	**69.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-3-30	12/9/2004	30	ND	**44.5**	**141.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-3-40	12/9/2004	40	ND	**88.8**	**259.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-4-5	12/7/2004	5	ND	**3.0**	**13.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-4-10	12/7/2004	10	ND	**25.9**	**95.7**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-4-15	12/7/2004	15	ND	**38.7**	**135.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-4-20	12/7/2004	20	ND	**33.1**	**108.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-5-5	12/7/2004	5	ND	**1.6**	**9.7**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-5-10	12/7/2004	10	ND	**2.6**	**8.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-5-15	12/7/2004	15	ND	**2.7**	**8.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-5-20	12/7/2004	20	ND	**4.9**	**12.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-6-5	12/7/2004	5	ND	**147.3**	**603.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-6-10	12/7/2004	10	ND	**41.9**	**154.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-6-15	12/7/2004	15	ND	**71.9**	**138.0**	--	--	--	--	--	--	--	**82**	<50.0	<50.0	ND	--	--	--	--	--	--	--	--	--
B-6-20	12/7/2004	20	**7.16**	**391.4**	**603.0**	--	--	--	--	--	--	--	<50.0	**100**	<50.0	ND	--	--	--	--	--	--	--	--	--
Samples Collected by SCS Engineers in March 2019																									
B1-1	3/22/2019	1	< 0.500	< 20.0	**411**	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	**4.34**	ND	< 50.0	< 50.0	< 2.00	ND	< 1,320	< 6,800	< 1,320	< 1,320	< 1,320	< 1,320	ND	< 33.0	ND
B1-5	3/22/2019	5	< 0.500	**47.5**	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B1-15	3/22/2019	15	< 0.500	**10.1**	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B1-20	3/22/2019	20	< 0.500	< 20.0	**399**	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	< 50.0	< 50.0	< 2.00	ND	**2,520**	<6,800	<1,320	<1,320	< 1,320	< 1,320	ND	--	--
B1-30	3/22/2019	30	< 0.500	**125**	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	**683**	**57.9**	< 2.00	ND	**3,920**	**7,940**	**1,140**	< 330	< 330	< 330	ND	--	--
B1-35	3/22/2019	35	< 0.500	< 20.0	**390**	--	--	--	--	--	--	--	**497**	< 50.0	< 2.00	ND	**3,100**	**16,200**	**1,010**	< 990	< 990	< 990	ND	--	--
B2-1	3/22/2019	1	< 0.500	< 20.0	**552**	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	< 50.0	< 50.0	< 2.00	ND	< 1,320	< 6,800	< 1,320	< 1,320	< 1,320	< 1,320	ND	< 33.0	ND
B2-5	3/22/2019	5	< 0.500	< 10.0	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B2-15	3/22/2019	15	**3.68**	**239**	< 100	< 2.00	< 2.00	< 4.00	**15.6**	**13.2**	< 4.00	ND	**306**	<50.0	< 2.00	ND	<330	<1,700	<330	<330	<330	<330	ND	< 33.0	ND
B2-20	3/22/2019	20	< 0.500	**149**	< 50.0	< 2.00	< 2.00	< 4.00	**28.2**	**5.97**	< 4.00	ND	<50.0	<50.0	< 2.00	ND	<330	<1,700	<330	<330	<330	<330	ND	--	--
B2-25	3/22/2019	25	< 0.500	**81.2**	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B3-1	3/22/2019	1	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B3-5	3/22/2019	5	< 0.500	< 20.0	< 100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B3-10	3/22/2019	10	< 0.500	< 20.0	< 100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B3-15	3/22/2019	15	< 0.500	< 20.0	< 100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B3-20	3/22/2019	20	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B3-25	3/22/2019	25	< 0.500	**32.8**	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B3-30	3/22/2019	30	< 0.500	**26.4**	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B4-1	3/22/2019	1	< 0.500	< 20.0	< 100	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B4-5	3/22/2019	5	< 0.500	**183**	< 100	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	<50.0	<50.0	< 2.00	ND	<330	<1,700	<330	**509**	<330	<330	ND	--	--
B4-10	3/22/2019	10	< 0.500	**12.2**	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B4-15	3/22/2019	15	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 1
Soil Analytical Data for TPH,
OCPs, VOCs, SVOCs, and PCBs
11495 Cypress Canyon Road
San Diego, California

Sample	Date	Depth	TPHg	TPHd	TPHo	OCPs							VOCs				SVOCs							PCBs	
						gamma-Chlordane	alpha-Chlordane	4,4'-DDD	4,4'-DDE	4,4'-DDT	Dieldrin	Other OCPs	Acetone	2-Butanone	Toluene	Other VOCs	3/4 Methyl-phenol	Benzoic Acid	Phenol	Butyl Benzyl Phthalate	Phen-anthrene	Bis (2-Ethylhexyl) Phalate	Other SVOCs	Aroclor 1254	Other PCBs
B4-20	3/22/2019	20	< 0.500	< 20.0	< 100	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B4-25	3/22/2019	30	< 0.500	**28.5**	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B4-30	3/22/2019	40	< 0.500	< 10.0	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B4-40	3/22/2019	40	< 0.500	**65.2**	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B4-45	3/22/2019	45	< 0.500	**84.3**	< 50.0	--	--	--	--	--	--	--	<50.0	<50.0	< 2.00	ND	<1,320	<6,800	<1,320	<1,320	<1,320	<1,320	ND	--	--
B4-50	3/22/2019	50	< 0.500	< 10.0	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B4-55	3/22/2019	55	< 0.500	< 10.0	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
Samples Collected by SCS Engineers in November 2019																									
B5-2.5	11/14/2019	2.5	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B5-5	11/14/2019	5	< 0.500	< 10.0	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	< 50.0	< 50.0	< 2.00	ND	< 330	< 1,700	< 330	< 330	< 330	< 330	ND	--	--
B5-7.5	11/14/2019	7.5	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	< 50.0	< 50.0	< 2.00	ND	< 330	< 1,700	< 330	< 330	< 330	< 330	ND	< 33.0	ND
B5-9	11/14/2019	9	< 0.500	< 10.0	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	< 50.0	< 50.0	< 2.00	ND	< 330	< 1,700	< 330	< 330	< 330	< 330	ND	< 33.0	ND
B6-2.5	11/13/2019	2.5	< 0.500	**151**	**108**	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	< 50.0	< 50.0	< 2.00	ND	< 330	< 1,700	< 330	< 330	< 330	< 330	ND	--	--
B6-5	11/13/2019	5	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B6-10	11/13/2019	10	< 0.500	< 10.0	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	< 50.0	< 50.0	< 2.00	ND	< 330	< 1,700	< 330	< 330	< 330	< 330	ND	< 33.0	ND
B6-15	11/13/2019	15	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B6-20	11/13/2019	20	< 0.500	< 10.0	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B7-2.5	11/13/2019	2.5	< 0.500	**46.5**	**69.7**	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	< 50.0	< 50.0	< 2.00	ND	< 8,250	< 42,500	< 8,250	< 8,250	< 8,250	< 8,250	ND	< 33.0	ND
B7-5	11/13/2019	5	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B7-10	11/13/2019	10	< 0.500	< 10.0	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	< 50.0	< 50.0	< 2.00	ND	< 330	< 1,700	< 330	< 330	< 330	< 330	ND	--	--
B7-15	11/13/2019	15	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B8-2.5	11/13/2019	2.5	< 0.500	< 10.0	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	< 50.0	< 50.0	< 2.00	ND	< 330	< 1,700	< 330	< 330	< 330	< 330	ND	< 33.0	ND
B8-10	11/13/2019	10	< 0.500	< 10.0	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B9-2.5	11/12/2019	2.5	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B9-5	11/12/2019	5	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	< 50.0	< 50.0	< 2.00	ND	< 330	< 1,700	< 330	< 330	< 330	< 330	ND	--	--
B9-10	11/12/2019	10	< 0.500	**18.6**	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	< 33.0	ND
B9-15	11/12/2019	15	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B9-20	11/12/2019	20	< 0.500	< 10.0	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	< 50.0	< 50.0	< 2.00	ND	< 330	< 1,700	< 330	< 330	< 330	< 330	ND	--	--
B9-25	11/12/2019	25	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B10-2.5	11/11/2019	2.5	< 0.500	< 10.0	< 50.0	**3.33**	**8.34**	< 4.00	**25.4**	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B10-5	11/11/2019	5	< 0.500	< 10.0	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B10-10	11/11/2019	10	< 0.500	< 10.0	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	< 50.0	< 50.0	< 2.00	ND	< 330	< 1,700	< 330	< 330	< 330	< 330	ND	< 33.0	ND
B10-15	11/11/2019	15	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B10-20	11/11/2019	20	< 0.500	< 10.0	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B10-25	11/11/2019	25	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B10-30	11/11/2019	30	< 0.500	< 10.0	< 50.0	< 2.00	**2.54**	< 4.00	< 4.00	< 4.00	< 4.00	ND	< 50.0	< 50.0	< 2.00	ND	< 330	< 1,700	< 330	< 330	< 330	< 330	ND	--	--
B10-35	11/11/2019	35	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B10-40	11/11/2019	40	< 0.500	< 10.0	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B10-45	11/11/2019	45	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B10-50	11/11/2019	50	< 0.500	< 10.0	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B10-55	11/11/2019	55	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B10-57.5	11/11/2019	57.5	--	--	--	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B10-60	11/11/2019	60	< 0.500	< 10.0	< 50.0	< 2.00	**2.04**	< 4.00	**11.2**	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B10-62.5	11/11/2019	62.5	< 0.500	< 10.0	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B10-65	11/11/2019	65	< 0.500	**467**	**4,980**	--	--	--	--	--	--	--	< 50.0	< 50.0	< 2.00	ND	< 330	< 1,700	< 330	< 330	< 330	< 330	ND	< 33.0	ND
B10-67.5	11/11/2019	67.5	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B10-70	11/11/2019	70	< 0.500	< 10.0	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B10-72.5	11/11/2019	72.5	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B10-75	11/11/2019	75	< 0.500	**193**	**1,130**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B10-77.5	11/11/2019	77.5	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B10-80	11/11/2019	80	< 0.500	< 10.0	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B10-82.5	11/11/2019	82.5	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B10-85	11/11/2019	85	< 0.500	**130**	**870**	--	--	--	--	--	--	--	< 50.0	< 50.0	< 2.00	ND	< 1320	< 6,800	< 1,320	< 1,320	< 1,320	< 1,320	ND	--	--

Table 1
Soil Analytical Data for TPH, OCPs, VOCs, SVOCs, and PCBs

11495 Cypress Canyon Road
San Diego, California

Sample	Date	Depth	TPHg	TPHd	TPHo	OCPs							VOCs				SVOCs							PCBs	
						gamma-Chlordane	alpha-Chlordane	4,4'-DDD	4,4'-DDE	4,4'-DDT	Dieldrin	Other OCPs	Acetone	2-Butanone	Toluene	Other VOCs	3/4 Methyl-phenol	Benzoic Acid	Phenol	Butyl Benzyl Phthalate	Phen-anthrene	Bis (2-Ethylhexyl) Phalate	Other SVOCs	Aroclor 1254	Other PCBs
B10-87.5	11/11/2019	87.5	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B10-90	11/11/2019	90	< 0.500	< 10.0	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B10-96	11/11/2019	96	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B10-100	11/11/2019	100	< 0.500	< 10.0	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B11-2.5	11/12/2019	2.5	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B11-5	11/12/2019	5	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B11-10	11/12/2019	10	< 0.500	< 10.0	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	< 50.0	< 50.0	< 2.00	ND	< 330	< 1,700	< 330	< 330	< 330	< 330	ND	--	--
B11-12.5	11/12/2019	12.5	< 0.500	< 10.0	< 50.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B11-15	11/12/2019	15	< 0.500	< 10.0	**74.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B11-17.5	11/12/2019	17.5	< 0.500	< 10.0	< 50.0	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B11-20	11/12/2019	20	< 0.500	**196**	**747**	< 2.00	< 2.00	< 4.00	**27.1**	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	< 33.0	ND
B11-22.5	11/12/2019	22.5	< 0.500	< 10.0	**63.5**	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
B11-25	11/12/2019	25	< 0.500	**190**	**556**	--	--	--	--	--	--	--	< 50.0	< 50.0	< 2.00	ND	< 1320	< 6,800	< 1,320	< 1,320	< 1,320	< 1,320	ND	--	--
B11-27.5	11/12/2019	27.5	< 0.500	< 10.0	**669**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B11-30	11/12/2019	30	< 0.500	279	**956**	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	--	--	--	--	< 330	< 1,700	< 330	< 330	< 330	< 330	ND	< 33.0	ND
B11-37.5	11/12/2019	37.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 33.0	ND
B11-40	11/12/2019	40	< 0.500	339	**1,990**	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	< 50.0	< 50.0	< 2.00	ND	< 330	< 1,700	< 330	< 330	**3,010**	< 330	ND	**120**	ND
B11-50	11/12/2019	50	< 0.500	**131**	**667**	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	< 50.0	< 50.0	< 2.00	ND	< 1320	< 6,800	< 1,320	< 1,320	**1,970**	< 1,320	ND	--	--
B12RR-10	11/15/2019	10	< 0.500	**179**	**87.1**	< 2.00	< 2.00	< 4.00	< 4.00	< 4.00	< 4.00	ND	< 50.0	< 50.0	< 2.00	ND	< 330	< 1,700	< 330	< 330	< 330	< 330	ND	<33.0	ND
SFRWQCB ESLs (Residential) or EPA RSLs (Residential)[1] *			**100**	**260**	**1,600**	**1,700***	**1,700***	**1,900**	**2,000**	**1,900**	**34**		**61,000,000**	**27,000,000**	**4,900,000**		**NE**	**250,000,000**	**19,000,000**	**290,000**	**NE**	**39,000**		**240**	
DEH Residual Saturation			**5,600**	**10,000**	**14,000**																				

Notes :

Soil samples collected by SCS Engineers on March 22, and November 11 through November 15, 2019, and analyzed for total petroleum hydrocarbons as gasoline (TPHg), as diesel (TPHd) and as oil (TPHo) in general accordance with EPA Method 8015B, for volatile organic compounds (VOCs) in general accordance with EPA Method 8260, for semi-volatile organic compounds (SVOCs) in general accordance with 8270C, for organochlorine pesticides (OCPs) in general accordance with EPA Method 8081, and for polychlorinated biphenyls (PCBs) in general accordance with EPA Method 8082.
TPHg, TPHd, and TPHo are provided in milligrams per kilogram (mg/kg), and OCPs, VOCs, SVOCs, and PCBs are provided in micrograms per kilogram (µg/kg)
< : result less than the indicated laboratory reporting limit.
Bold font indicates sample above the laboratory reporting limit.
ND = [Group of] constituents not reported above each respective laboratory limit. Please refer to the laboratory analytical report for a full listing of analytes and corresponding laboratory reporting limits.
-- indicates sample was not analyzed for the constituent or group of constituents.
NE: Not established.
ESLs: San Francisco Bay Regional Water Quality Control Board, Environmental Screening Levels, 2019 (Rev. 2).
DEH Residual Saturation - Petroleum residual non-aqueous phase liquids (NAPL) saturation levels for silty sand, from the County of San Diego Department of Environmental Health Site Assessment and Mitigation (SAM) Manual, Section 5, dated 1/20/2000.
Red font = Reported concentration exceeds applicable screening criteria for ESLs.
1: SFRWQCB ESLs were used for TPHg, TPHd, and TPHo thresholds
*: With the exception of the TPHg, TPHd, and TPHo values, Environmental Protection Agency Regional Screening Levels (EPA RSLs) for residential users, November 2019 were applied to the other constituents
^: Constituents gamma-chlordane and alpha-chlordane were not listed on RSLs. The Soil Tier 1 ESL for chlordane was used (8.5 mg/kg)

Table 2
Soil Analytical Data for Title 22 Metals
11495 Cypress Canyon Road

Sample	Date	Depth	Antimony	Arsenic	Beryllium	Barium	Chromium	Cobalt	Copper	Lead	Molyb-denum	Nickel	Vanadium	Zinc	Other Metals	STLC, Lead	TCLP, Lead	STLC, Arsenic
			mg/kg													mg/L	mg/L	mg/L
Samples collected by Essentia in December 2004																		
T-5-5	12/6/2004	5	ND	**2.13**	**1.18**	**80.0**	**3.18**	**4.85**	**3.96**	**5.16**	ND	**3.16**	**6.23**	**20.2**	ND	--	--	--
T-6-15	12/6/2004	15	ND	**2.95**	**0.957**	**178**	**3.48**	**3.18**	**3.52**	**7.86**	ND	**3.24**	**8.47**	**20.3**	ND	--	--	--
T-7-18	12/6/2004	18	ND	**3.75**	**0.986**	**430**	**3.10**	**2.38**	**3.30**	**5.93**	ND	**2.60**	**6.79**	**17.0**	ND	--	--	--
T-8-5	12/6/2004	5	ND	**4.00**	**0.913**	**149**	**5.87**	**5.44**	**6.77**	**8.56**	ND	**4.69**	**19.1**	**83.0**	ND	--	--	--
B-1-5	12/7/2004	5	ND	**6.32**	**0.412**	**88.9**	**4.16**	**3.79**	**4.56**	**6.15**	ND	**2.87**	**19.3**	**21.2**	ND	--	--	--
B-1-10	12/7/2004	10	ND	**7.11**	**0.309**	**62.7**	**12.4**	**4.24**	**7.82**	**12.2**	ND	**6.18**	**21.4**	**33.9**	ND	--	--	--
B-1-15	12/7/2004	15	ND	**7.44**	**0.523**	**104**	**7.64**	**4.13**	**21.2**	**30.6**	ND	**5.74**	**20.3**	**40.9**	ND	--	--	--
B-1-20	12/7/2004	20	ND	**5.51**	ND	**101**	**6.11**	**3.79**	**4.00**	**5.05**	**0.269**	**10.8**	**17.8**	**22.8**	ND	--	--	--
B-2-15	12/9/2004	15	ND	**6.44**	**0.934**	**155**	**4.59**	**6.69**	**7.41**	**9.55**	ND	**4.86**	**20.2**	**30.0**	ND	--	--	--
B-2-20	12/9/2004	20	ND	ND	ND	**33.3**	**10.1**	**3.02**	**4.22**	**14.3**	ND	**3.29**	**31.7**	**35.7**	ND	--	--	--
B-2-30	12/9/2004	30	ND	**6.76**	**0.371**	**84.5**	**7.91**	**5.40**	**7.32**	**22.7**	ND	**3.94**	**35.5**	**49.3**	ND	--	--	--
B-3-10	12/9/2004	10	ND	**1.79**	ND	**95.3**	**11.5**	**10.9**	**23.1**	**3.31**	ND	**7.82**	**51.2**	**28.8**	ND	--	--	--
B-3-20	12/9/2004	20	ND	**6.43**	**0.316**	**117**	**9.08**	**6.61**	**16.9**	**6.23**	ND	**5.95**	**31.8**	**26.1**	ND	--	--	--
B-3-30	12/9/2004	30	ND	**6.60**	**0.477**	**72.2**	**17.2**	**5.28**	**15.6**	**3.60**	**1.98**	**5.45**	**20.3**	**30.4**	ND	--	--	--
B-3-40	12/9/2004	40	ND	**7.52**	ND	**90.1**	**10.4**	**6.60**	**13.9**	**8.30**	ND	**6.16**	**30.6**	**29.4**	ND	--	--	--
B-4-5	12/7/2004	5	ND	**3.31**	**0.417**	**137**	**8.40**	**5.16**	**13.1**	**7.65**	ND	**4.64**	**22.5**	**27.1**	ND	--	--	--
B-4-10	12/7/2004	10	ND	**2.69**	**0.899**	**76.1**	**4.42**	**7.78**	**5.48**	**8.95**	ND	**5.32**	**11.0**	**25.6**	ND	--	--	--
B-4-15	12/7/2004	15	ND	**5.51**	**0.991**	**103**	**7.51**	**7.59**	**10.4**	**9.63**	ND	**6.27**	**20.0**	**43.6**	ND	--	--	--
B-4-20	12/7/2004	20	ND	**22.6**	**0.809**	**118**	**8.32**	**4.84**	**8.31**	**9.74**	**0.255**	**4.85**	**20.6**	**36.0**	ND	--	--	--
B-5-5	12/7/2004	5	ND	**4.71**	**0.468**	**64.2**	**6.03**	**3.97**	**4.44**	**4.49**	ND	**3.58**	**21.5**	**20.7**	ND	--	--	--
B-5-10	12/7/2004	10	ND	**7.97**	**0.594**	**124**	**3.56**	**5.72**	**4.87**	**9.55**	ND	**4.58**	**22.5**	**26.1**	ND	--	--	--
B-5-15	12/7/2004	15	ND	**7.16**	**0.703**	**122**	**5.43**	**5.65**	**5.66**	**8.64**	ND	**4.47**	**19.1**	**28.9**	ND	--	--	--
B-5-20	12/7/2004	20	ND	**6.49**	**0.665**	**107**	**4.85**	**5.11**	**5.32**	**8.11**	ND	**4.44**	**18.3**	**27.7**	ND	--	--	--
B-6-5	12/7/2004	5	ND	**4.74**	**0.309**	**58.4**	**4.97**	**3.05**	**4.90**	**7.68**	ND	**2.97**	**14.3**	**34.4**	ND	--	--	--
B-6-10	12/7/2004	10	ND	**6.97**	**0.953**	**99.4**	**4.79**	**6.24**	**5.52**	**9.07**	ND	**4.86**	**18.5**	**27.7**	ND	--	--	--
B-6-15	12/7/2004	15	ND	**6.82**	**0.702**	**93.1**	**6.24**	**6.16**	**7.78**	**11.1**	ND	**4.58**	**25.3**	**35.0**	ND	--	--	--
B-6-20	12/7/2004	20	ND	**4.23**	**0.331**	**92.4**	**11.5**	**5.84**	**8.62**	**48.9**	ND	**5.76**	**29.8**	**65.1**	ND	--	--	--
Samples Collected by SCS Engineers in March 2019																		
B1-1	3/22/2019	1	< 0.500	**2.18**	< 0.500	**73.7**	**12.8**	**7.38**	**16.2**	**6.54**	< 0.500	**7.23**	**35.3**	**31.8**	**Cadmium (0.768)**	--	--	--
B1-5	3/22/2019	5	< 0.500	**6.95**	**0.848**	**75.3**	**5.72**	**6.59**	**6.84**	**7.23**	< 0.500	**4.55**	**17.9**	**22.8**	**Cadmium (0.568)**	--	--	--
B1-15	3/22/2019	15	--	**0.995**	--	--	--	--	--	**6.36**	--	--	--	--	--	--	--	--
B1-20	3/22/2019	20	< 0.500	**5.00**	< 0.500	**221**	**23.1**	**5.06**	**14.9**	**25.7**	**2.01**	**6.74**	**29.4**	**49.9**	**Cadmium (0.893)**	--	--	--
B1-30	3/22/2019	30	**0.962**	**7.64**	**0.506**	**107**	**8.43**	**4.12**	**11.8**	**25.3**	**0.601**	**4.12**	**28.4**	**42.5**	**Cadmium (0.919)**	--	--	--
B2-1	3/22/2019	1	**1.22**	**9.80**	< 0.500	**192**	**9.86**	**5.08**	**10.7**	**5.68**	**0.509**	**5.62**	**29.3**	**27.7**	**Cadmium (0.854)**	--	--	--
B2-5	3/22/2019	5	**0.600**	**8.20**	< 0.500	**125**	**27.1**	**5.82**	**69.3**	**13.5**	**2.16**	**10.4**	**32.2**	**41.6**	**Cadmium (1.05)**	--	--	--
B2-15	3/22/2019	15	**0.766**	**6.60**	< 0.500	**416**	**15.1**	**5.11**	**13.6**	**358**	**0.898**	**5.78**	**31.1**	**384**	**Cadmium (1.99)**	**14.0**	< 0.500	--
B2-20	3/22/2019	20	< 0.500	**2.21**	< 0.500	**197**	**6.12**	**5.99**	**15.2**	**5.85**	< 0.500	**2.55**	**38.9**	**40.8**	**Cadmium (0.988)**	--	--	--

Table 2
Soil Analytical Data for Title 22 Metals
11495 Cypress Canyon Road

Sample	Date	Depth	Antimony	Arsenic	Beryllium	Barium	Chromium	Cobalt	Copper	Lead	Molyb-denum	Nickel	Vanadium	Zinc	Other Metals	STLC, Lead	TCLP, Lead	STLC, Arsenic
			mg/kg													mg/L	mg/L	mg/L
B3-1	3/22/2019	1	--	--	--	--	--	--	--	6.49	--	--	--	--	--	--	--	--
B3-5	3/22/2019	5	--	--	--	--	--	--	--	5.1	--	--	--	--	--	--	--	--
B3-10	3/22/2019	10	--	--	--	--	--	--	--	12.2	--	--	--	--	--	--	--	--
B3-15	3/22/2019	15	--	--	--	--	--	--	--	12.3	--	--	--	--	--	--	--	--
B3-20	3/22/2019	20	--	--	--	--	--	--	--	27.8	--	--	--	--	--	--	--	--
B3-25	3/22/2019	25	--	--	--	--	--	--	--	5.47	--	--	--	--	--	--	--	--
B3-30	3/22/2019	30	--	--	--	--	--	--	--	7.82	--	--	--	--	--	--	--	--
B4-1	3/22/2019	1	< 0.500	4.60	0.968	110	6.73	5.05	6.87	6.29	< 0.500	4.21	21.8	15.9	Cadmium (0.549)	--	--	--
B4-5	3/22/2019	5	0.902	1.22	< 0.500	270	10.3	7.95	15.2	2.87	< 0.500	5.76	37.5	24.9	Cadmium (0.764)	--	--	--
B4-10	3/22/2019	10	< 0.500	6.57	< 0.500	118	9.30	5.82	11.3	5.32	0.612	4.92	28.2	29.0	Cadmium (0.776)	--	--	--
B4-15	3/22/2019	15	--	7.85	--	--	--	--	--	4.67	--	--	--	--	ND	--	--	--
B4-20	3/22/2019	20	< 0.500	3.78	< 0.500	55.1	15.2	3.57	7.42	9.85	1.83	3.50	21.2	25.4	Cadmium (0.652)	--	--	--
B4-25	3/22/2019	30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B4-30	3/22/2019	40	--	10.2	--	23.0	--	--	--	7.02	--	--	--	--	--	--	--	--
B4-40	3/22/2019	40	< 0.500	8.94	0.909	88.9	5.88	3.80	6.86	5.58	< 0.500	3.61	21.3	25.2	Cadmium (0.71)	--	--	--
B4-45	3/22/2019	45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B4-50	3/22/2019	50	< 0.500	2.61	0.612	224	7.02	4.40	14.2	8.17	< 0.500	3.98	22.1	26.4	Cadmium (0.631)	--	--	--
B4-55	3/22/2019	55	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Samples Collected by SCS Engineers in November 2019																		
B5-2.5	11/14/2019	2.5	--	2.62	--	--	--	--	--	3.25	--	--	--	--	--	--	--	--
B5-5	11/14/2019	5	< 0.500	3.82	1.24	181	2.69	2.17	3.75	5.57	< 0.500	2.11	4.95	10.3	ND	--	--	--
B5-7.5	11/14/2019	7.5	--	14.9	--	--	--	--	--	9.94	--	--	--	--	--	--	--	--
B5-9	11/14/2019	9	< 0.500	3.65	0.512	55.3	3.71	2.58	2.7	6.65	< 0.500	2.27	8.24	10.6	ND	--	--	--
B6-2.5	11/13/2019	2.5	< 0.500	3.42	< 0.500	110	60.5	3.30	15.1	6.86	8.64	9.78	8.75	19.4	ND	--	--	--
B6-5	11/13/2019	5	--	1.57	--	--	--	--	--	5.17	--	--	--	--	--	--	--	--
B6-10	11/13/2019	10	< 0.500	4.68	< 0.500	49.5	6.47	3.85	5.39	5.29	< 0.500	2.39	15.6	16.1	ND	--	--	--
B6-15	11/13/2019	15	--	4.84	--	--	--	--	--	6.39	--	--	--	--	--	--	--	--
B6-20	11/13/2019	20	< 0.500	0.485	1.30	186	2.63	3.14	2.20	6.49	< 0.500	1.66	5.80	13.5	ND	--	--	--
B7-2.5	11/13/2019	2.5	1.03	3.36	< 0.500	46.4	8.20	1.96	6.33	6.56	0.707	2.80	11.4	10.8	ND	--	--	--
B7-5	11/13/2019	5	--	4.17	--	--	--	--	--	7.21	--	--	--	--	--	--	--	--
B7-10	11/13/2019	10	1.22	4.06	< 0.500	136	8.86	2.17	5.11	5.49	1.13	2.22	8.75	16.7	ND	--	--	--
B7-15	11/13/2019	15	--	3.76	--	--	--	--	--	3.99	--	--	--	--	--	--	--	--
B8-2.5	11/13/2019	2.5	1.70	7.81	< 0.500	458	3.6	2.55	4.31	6.19	< 0.500	2.17	7.43	14.8	ND	--	--	--
B8-10	11/13/2019	10	< 0.500	2.55	< 0.500	168	4.69	2.34	4.97	8.34	< 0.500	2.87	5.96	18.0	ND	--	--	--
B9-5	11/12/2019	5	--	12.1	--	--	--	--	--	10.6	--	--	--	--	--	--	--	--
B9-7.5	11/12/2019	7.5	--	53.8	--	--	--	--	--	--	--	--	--	--	--	--	--	0.993
B9-10	11/12/2019	10	< 0.500	11.5	< 0.500	84.7	8.28	5.92	7.16	7.60	< 0.500	4.10	33.4	25.3	ND	--	--	--
B9-15	11/12/2019	15	--	4.63	--	--	--	--	--	5.73	--	--	--	--	--	--	--	--
B9-20	11/12/2019	20	0.790	8.45	< 0.500	184	7.65	2.93	8.69	29.3	0.759	3.40	21.9	29.9	ND	--	--	--
B9-25	11/12/2019	25	--	8.08	--	--	--	--	--	9.00	--	--	--	--	--	--	--	--

Table 2
Soil Analytical Data for Title 22 Metals
11495 Cypress Canyon Road

Sample	Date	Depth	Antimony	Arsenic	Beryllium	Barium	Chromium	Cobalt	Copper	Lead	Molyb-denum	Nickel	Vanadium	Zinc	Other Metals	STLC, Lead	TCLP, Lead	STLC, Arsenic
			mg/kg													mg/L	mg/L	mg/L
B10-2.5	11/11/2019	2.5	--	**1.03**	**--**	**--**	**--**	**--**	**--**	**3.79**	**--**	**--**	**--**	**--**	ND	--	--	--
B10-5	11/11/2019	5	--	**1.69**	**--**	--	--	--	--	**4.79**	--	--	--	--	ND	--	--	--
B10-10	11/11/2019	10	< 0.500	**5.03**	< 0.500	**104**	**13.3**	**5.86**	**13.3**	**13.3**	< 0.500	**5.47**	**34.0**	**41.9**	ND	--	--	--
B10-15	11/11/2019	15	**--**	**2.23**	**--**	--	--	--	--	**2.66**	--	--	--	--	ND	--	--	--
B10-20	11/11/2019	20	**1.90**	**2.83**	< 0.500	**87.1**	**14.7**	**3.59**	**9.69**	**7.75**	**0.644**	**5.24**	**24.9**	**55.5**	ND	--	--	--
B10-25	11/11/2019	25	--	**2.19**	**--**	--	--	--	--	**8.25**	--	--	--	--	ND	--	--	--
B10-30	11/11/2019	30	< 0.500	**1.40**	< 0.500	**81.7**	**8.52**	**6.47**	**10.5**	**3.21**	< 0.500	**3.44**	**45.7**	**27.3**	ND	--	--	--
B10-35	11/11/2019	35	--	**4.93**	**--**	--	--	--	--	**6.20**	--	--	--	--	ND	--	--	--
B10-40	11/11/2019	40	< 0.500	**7.41**	< 0.500	**126**	**4.25**	**2.88**	**5.95**	**6.45**	**0.733**	**2.22**	**14.5**	**23.0**	ND	--	--	--
B10-42.5	11/11/2019	42.5	--	--	--	--	--	--	--	**2.37**	**--**	**--**	**--**	**--**	**--**	--	--	--
B10-45	11/11/2019	45	--	**4.73**	**--**	--	--	--	--	**99.8**	--	--	--	--	--	**1.62**	< 0.500	--
B10-47.5	11/11/2019	47.5	--	--	--	--	--	--	--	**19.6**	**--**	**--**	**--**	**--**	**--**	--	--	--
B10-50	11/11/2019	50	< 0.500	**2.93**	< 0.500	**99.7**	**11.4**	**5.01**	**11.6**	**7.67**	**0.966**	**4.54**	**30.1**	**33.0**	ND	--	--	--
B10-55	11/11/2019	55	--	**0.503**	**--**	--	--	--	--	**1.67**	--	--	--	--	--	--	--	--
B10-60	11/11/2019	60	< 0.500	**4.30**	< 0.500	**72.2**	**11.0**	**2.70**	**5.16**	**6.12**	**0.550**	**3.63**	**23.0**	**420**	ND	--	--	--
B10-65	11/11/2019	65	--	**3.05**	**--**	--	--	--	--	**2.58**	--	--	--	--	--	--	--	--
B10-70	11/11/2019	70	< 0.500	**2.90**	< 0.500	**82.4**	**12.5**	**4.11**	**6.55**	**7.40**	< 0.500	**3.05**	**44.9**	**20.6**	ND	--	--	--
B10-75	11/11/2019	75	--	**19.4**	**--**	--	--	--	--	**42.4**	--	--	--	--	--	--	--	--
B10-77.5	11/11/2019	77.5	--	**15.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B10-80	11/11/2019	80	**0.519**	**5.56**	< 0.500	**77.5**	**4.82**	**4.17**	**6.04**	**8.75**	< 0.500	**3.73**	**19.6**	**27.4**	ND	--	--	--
B10-85	11/11/2019	85	--	**10.7**	**--**	--	--	--	--	**6.44**	--	--	--	--	--	--	--	--
B10-90	11/11/2019	90	< 0.500	**5.92**	< 0.500	**106**	**9.04**	**4.82**	**10.5**	**10.3**	< 0.500	**4.11**	**27.9**	**34.1**	ND	--	--	--
B10-96	11/11/2019	96	--	**6.16**	**--**	--	--	--	--	**8.89**	--	--	--	--	--	--	--	--
B10-100	11/11/2019	100	< 0.500	**6.58**	< 0.500	**103**	**16.2**	**5.06**	**10.3**	**8.62**	**2.58**	**5.35**	**25.6**	**46.6**	ND	--	--	--
B11-5	11/12/2019	5	--	**8.15**	**--**	--	--	--	--	**9.24**	--	--	--	--	--	--	--	--
B11-10	11/12/2019	10	< 0.500	**7.32**	< 0.500	**97.6**	**15.5**	**4.34**	**19.7**	**7.23**	**0.863**	**7.65**	**27.4**	**31.8**	ND	--	--	--
B11-15	11/12/2019	15	--	**9.30**	**--**	--	--	--	--	**11.7**	--	--	--	--	--	--	--	--
B11-20	11/12/2019	20	< 0.500	**3.98**	< 0.500	**111**	**26.1**	**10.2**	**15.6**	**47.4**	**0.509**	**8.14**	**62.6**	**130**	ND	--	--	--
B11-22.5	11/12/2019	22.5	--	--	--	--	--	--	--	**8.15**	--	--	--	--	--	--	--	--
B11-25	11/12/2019	25	--	**10.3**	**--**	--	--	--	--	**92.9**	--	--	--	--	--	**3.79**	< 0.500	--
B11-27.5	11/12/2019	27.5	--	--	--	--	--	--	--	**20.3**	--	--	--	--	--	--	--	--
B11-30	11/12/2019	30	< 0.500	**9.74**	< 0.500	**121**	**17.1**	**4.54**	**11.5**	**37.7**	**2.92**	**9.60**	**32.2**	**40.6**	ND	--	--	--
B11-40	11/12/2019	40	**2.51**	**5.71**	< 0.500	**56.4**	**9.43**	**3.29**	**14.7**	**51.4**	**0.720**	**8.16**	**16.3**	**30.8**	**Cadmium (0.578)**	--	--	--
B11-50	11/12/2019	50	< 0.500	**7.42**	< 0.500	**93.4**	**16.3**	**6.60**	**16.7**	**53.6**	**1.29**	**11.5**	**31.9**	**48.9**	**Cadmium (0.549)**	--	--	--
B12RR-10	11/15/2019	10	< 0.500	**6.75**	**1.56**	**188**	**21.4**	**6.06**	**5.46**	**8.17**	**0.893**	**5.82**	**9.62**	**18.3**	**Selenium (0.675)**	--	--	--
[1] EPA RSLs (Residential)			**31**	**0.68**	**160**	**15,000**	**120,000**	**23**	**3,100**	**80***	**390**	**840**	**390**	**23,000**				

Table 2
Soil Analytical Data for Title 22 Metals
11495 Cypress Canyon Road

Sample	Date	Depth	Antimony	Arsenic	Beryllium	Barium	Chromium	Cobalt	Copper	Lead	Molyb-denum	Nickel	Vanadium	Zinc	Other Metals	STLC, Lead	TCLP, Lead	STLC, Arsenic
			mg/kg													mg/L	mg/L	mg/L

Notes :

Soil samples collected by SCS Engineers on March 22, and November 11 through November 15, 2019, and analyzed for Title 22 Metals in general accordance with EPA Method 6010.

Title 22 Metals results provided in milligrams per kilogram (mg/kg).

STLC: Soluble Threshold Limit Concentration.

TCLP: Toxicity Characteristic Leaching Procedure.

< : result less than the indicated laboratory reporting limit.

Bold font indicates sample above the laboratory reporting limit.

ND = [Group of] constituents not reported above each respective laboratory limit. Please refer to the laboratory analytical report for a full listing of analytes and corresponding laboratory reporting limits.

-- indicates sample was not analyzed or not applicable for the constituent or group of constituents.

* = For lead, DTSC Human and Ecological Risk Office (HERO) Human Health Risk Assessment (HHRA) Note, HERO HHRA Note Number: 3, June 2020 is used in lieu of an RSL.

Red font indicates sample above naturally occurring background concentrations for arsenic.

Highlighted cells indicate sample is above the DTSC HERO Note 3 threshold for total lead and/or lead leachibility (i.e. STLC) where indicated.

1: EPA RSLs = Environmental Protection Agency Regional Screening Levels for residential users, November 2019.

With the exception of samples B9-5, B9-7.5,B10-75, and B10-77.5, reported arsenic detections are below 12 mg/kg and considered within naturally occurring background concentrations as a determination in the Southern California Regional Background Arsenic Concentration in Soil, by G. Chernoff, W. Bosan, D. Oudiz, and California Department of Toxic Substances Control, 2008 Society of Toxicology Annual Meeting.

Table 3
Soil Vapor Sample Analytical Results for VOCs and Methane
11495 Cypress Canyon Road
San Diego, California

Sample ID	Depth	Date	Benzene	Chloroform	Naphthalene	Other VOCs	Methane
			µg/m3				ppmv
SV1-5	5	11/14/2019	< 20	< 20	< 20	ND	< 10
SV2-5	5	11/14/2019	< 20	**60**	< 20	ND	< 10
SV3-5	5	11/14/2019	**30**	< 20	< 20	ND	< 10
SV4-5	5	11/14/2019	< 20	< 20	< 20	ND	< 10
SV5-5	5	11/14/2019	< 20	< 20	< 20	ND	< 10
SV6-5	5	11/14/2019	< 20	< 20	< 20	ND	< 10
SV7-5	5	11/14/2019	< 20	< 20	< 20	ND	**71**
SV8-25	25	11/14/2019	< 20	< 20	< 20	ND	**3,400**
SV8-50	50	11/14/2019	< 20	< 20	**30**	ND	**9,600**
SV9-5	5	11/14/2019	**50**	< 20	< 20	ND	**15,000**
SV10-5	5	11/14/2019	< 20	< 20	< 20	ND	< 10
SV11-5	5	11/14/2019	< 20	< 20	< 20	ND	< 10

Notes :
Soil vapor samples collected by SCS Engineers on November 14, 2019, and analyzed for volatile organic compounds (VOCs) in general accordance with EPA Method 8260SV. Soil vapor samples were also analyzed for methane in general accordance with EPA Method 8015M
Results provided in micrograms per cubic meter (µg/m3) for VOCs and parts per million in vapor (ppmv) for methane.
< : results less than the indicted laboratory reporting limit
Bold font indicates sample above the laboratory reporting limit.
ND = group of constituents not reported above each respective laboratory limit. Please refer to the laboratory analytical report for a full listing of analytes and corresponding laboratory reporting limits.

APPENDIX A

Geotechnical Report for the Proposed Development

ADVANCED GEOTECHNICAL SOLUTIONS, INC.
485 Corporate Drive, Suite B
Escondido, CA 92029
Telephone: (619) 867-0487

LM Summit Partners, LLC
3330 Bonita Road
Chula Vista, CA 91910

January 11, 2020
P/W 1902-06
Report No. 1902-06-B-4

Attention: Austin Dias

Subject: **Summary of Preliminary Geotechnical Information & General Grading Recommendations for the Cypress Point Project, San Diego, California**

References: *Report Of Limited Geotechnical Investigation Scripps Cypress Point, Cypress Canyon Road San Diego, Ca Job No. 04-4744 February 16, 2005 as prepared by C W La Monte Company, Inc*

Gentlemen,

Based upon our recent discussions Advanced Geotechnical Solutions, Inc. (AGS) has prepared this summary report summarizing the geologic units encountered during our recent studies and the previous studies conducted by C W La Monte Company (reference). Utilizing the onsite and a geologic map with general grading recommendations for the Cypress Point Project, City of San Diego, California. This preliminary report is intended to summarize the anticipated removal depths of the unsuitable soils onsite and provide a general description of the various geologic units which will be encountered during the grading of the site.

As you are aware the site was used as a "dump" site for inert construction debris for several decades. It is our understanding that the "dump" site filled the large canyon fill along the northern portion of the project. Recently, AGS obtained the referenced Geotechnical Investigation Prepared by C. W. Lamont (2/16/2005). AGS has utilized the Geologic Map and Exploration Plan from the original report to depict the recent locations of the *Environmental* boring locations (SCS Environmental Engineers) and AGS's recent subsurface exploration locations. In addition, AGS retained Southwest Geophysics to conduct seismic refraction studies and high-resolution electrical resistivity tomographic modeling. This map also depicts C. W. La Montes mapped geologic units, locations of their previous subsurface exploration locations and topography. AGS and SCS conducted eight (8) Continuous Flight Auger borings, three (3) Sonic borings and four (4) Tri-Pod continuous flight auger. AGS has put the most recent abbreviated test pit logs and borings logs on this base map. Available subsurface data and logs is presented in Appendix B with subsurface exploration locations presented on Plate 1.

1.0 GEOLOGIC UNITS

The project is situated in the coastal section of the Peninsular Ranges Geomorphic Province. The site is underlain with Tertiary-aged sedimentary bedrock of the Poway Group with associated residual soils. Other surficial deposits encountered at the site include slope wash, colluvium and alluvium. Two major episodes of grading have resulting in the filling of the northerly canyon. The major soil types are described individually below in order of increasing age. Refer to the attached Geologic Reconnaissance report for a more detailed description of the individual geologic units.

Undocumented Fills (Qafu) : The undocumented fill soils form a level pad, which has filled the area of the north central canyon, easterly of the existing residence. These fills were placed intermittently over a 3 to 5 year period and included miscellaneous export material from nearby grading projects in the Scripps Ranch and surrounding areas. Our site reconnaissance and investigation indicates the fills may exceed 85 feet in maximum vertical thickness. The fills encountered in our test excavations and borings typically consisted of loosely "end-dumped" material including silty sands and clayey sands and sandy clays with some gravel, cobble and rock fragments, concrete and over-size rock debris, and occasional pockets of construction demolition debris, brush material and timber. Other minor undocumented fills are scattered over the site and were used to construct building pads and roads. These other fills are typically derived from on- site excavations into the native materials. The undocumented fill soils are not suitable to support proposed structures and improvements in their present loose condition and require removal and/or recompaction from areas to receive improvements. A significant screening operation will be necessary during excavation operations to remove and segregate unsuitable debris and over-size material from the central fill mass. It should be assumed that all of the documented fills will be unsuitable for support of settlement sensitive structures and will removal and require recompaction

Documented Fill (Map symbol: Qafd): The north end of the canyon was filled with documented fills placed under the observation and testing of Pacific Soils Engineering. These fills are estimated to obtain a maximum thickness of 45 feet at the north central end of the property and may exceed 20 feet in maximum thickness were the controlled canyon fill abuts the toe of the undocumented fill slope near the center of the property. The upper 20 of these fills typically consist of tan, medium dense to dense, clayey sands with some gravel and cobble. At depth these materials are interlayered with stiff, dark brown and clays. In-place surficial deposits were encountered underlying the fill along the walls of the filled canyon. Minimally, it should be assumed that the upper 3 to 5 feet of the documented fills will be unsuitable for support of settlement sensitive structures and will require recompaction

Colluvium (no map symbol): Colluvium occurs in localized areas on mid- to lower canyon slopes as depicted on Figure 2. Colluvial soils are derived from erosion of the adjacent formational units and subsequent deposition by sheet flow and gravitational processes. Colluvium generally consists of relatively loose clayey sands, silts ands, and clays that are subject to creep and excessive settlement under fill or foundation loads. Because of the poor exposures of this unit, the thickness of these soils is not known but may reach exceed 5 feet in some areas.

Alluvium (Map symbol:Qal): Alluvium, relatively loose stream deposited sediment is present in the bottom of most major drainages. These materials are typically composed of loose sands and clayey sands that may reach a thickness of 10 to 20 feet at the bottom of the small reservoir located in the southern portion of the site. Alluvium was reported to be removed from the north canyon bottom prior to filling.

Slope Wash (no map symbol): Most of the undisturbed canyon wall terrain is overlain with a thin veneer of natural ground slope wash. These materials typically range from approximately 1 to 3feet in thickness and consist primarily of dark reddish brown loose, silty sand with some gravel and cobble. The slope wash materials are not suitable to support proposed structures and improvements in their present loose condition and require removal and/or recompaction from areas to receive improvements.

Questionable Landslide (Map symbol: Qls?): A small possible or "questionable" landslide is located near the base of the canyon slope in the northwestern portion of the site. Because of the relatively small size of this feature and poor access, it was not verified by trenching or drilling.

Residual Soil (no map symbol): The below described bedrock materials are mantled with an intermittent layer of residual materials. The residuum ranges from about 1 to 5 feet in thickness and consists of dark brown, firm to stiff, sandy clay. The residual clays are very highly expansive and require specialized foundation recommendations if present near finish grade elevations.

Poway Group (Map symbols: Tp, Tpm,Tmv): Underling the surficial deposits are sedimentary bedrock formations of the Poway Group. These formations include the Stadium Conglomerate, the Mission Valley Formation, the Pomerado Conglomerate, and the Miramar Sandstone. The formational materials generally consist of massively or horizontally bedded, very dense, tan and light brown, silty and clayey sandstones conglomerate.

2.0 GENERAL GRADING RECOMMENDATIONS

Development of the subject property as proposed is considered feasible, from a geotechnical standpoint, provided that the conclusions and recommendations presented herein are incorporated into the design and construction of the project. Presented below are issues identified by this study or previous studies as possibly impacting site development. Recommendations to mitigate these issues and geotechnical recommendations for use in planning and design are presented in the following sections of this report.

2.1. Site Preparation and Removals/Overexcavation

Grading should be accomplished under the observation and testing of the project soils engineer and engineering geologist or their authorized representative in accordance with the recommendations contained herein, the current Municipal Code of the City of San Diego. Existing vegetation, trash, debris and other deleterious materials should be removed and wasted from the site prior to removal of unsuitable soils and placement of compacted fill. Artificial fill, topsoil, alluvium, colluvium, highly weathered terrace deposits and highly weathered Pomerado and Mission Valley formations should be removed in areas planned to receive fill or where exposed at final grade. The resulting undercuts should be replaced with engineered fill. Estimated depths of removals based upon the geologic unit are presented in Table 2.1, it should be noted that local variations can be expected requiring an increase in the depth of removal for unsuitable and weathered deposits. The extent of removals can best be determined in the field during grading when observation and evaluation can be performed by the soil engineer and/or engineering geologist. Removals should expose competent terrace deposits, Otay Formation, Tertiary Fanglomerate or Santiago Peak Volcanics and be observed and mapped by the engineering geologist prior to fill placement. In general, soils removed during remedial grading will be suitable for reuse in compacted fills provided they are properly moisture conditioned and do not contain deleterious materials.

The northwest-trending tunnels that currently contain the large-diameter aqueduct should be properly mitigated prior to improvement construction. Mitigation methods include excavation to expose the tunnel and then infill with engineered, compacted fill or infill with lightweight sand/cement grout. A combination of these methodologies may be employed depending upon the depth of the tunnel below the design ground surface.

TABLE 2.1
ESTIMATED DEPTH OF REMOVAL

Geologic Unit (Map Symbol)	Estimated Removal Depth
Undocumented Artificial Fill (af(u))	3-85 feet
Documented Artificial Fill (af(d))	3-5 feet
Topsoil (No Map Symbol)	2-5 feet
Alluvium (Qal)	4-15 feet
Weathered Pomerado/Mission Valley Formation (Tp/Tm)	3-6 feet

2.2. Overexcavation of Building Pads

It is recommended that overexcavation of "cut" lots in hard rock, well cemented sandstones and/or cemented conglomerate (Pomerado/Mission Valley Formation) be performed. The cut and any shallow fill portions of these lots should be overexcavated a minimum of three (3) feet and replaced to design grade with select compacted fill. The undercut should be excavated such that a gradient of at least one percent be maintained toward the front of the pad. Replacement fill should be eight inch minus in particle size and compacted to project specifications. Preliminarily, anticipated rock undercuts are indicated by a "circled R" (see legend, Plate 1). It is possible that relatively thin (i.e. less than one (1) foot) bentonitic claystone beds may be exposed at pad grade. Review of the data and design indicate that most of the recognized beds will not be exposed at pad grades. This includes the single-family lots and larger pads areas. Accordingly, no undercuts to mitigate the effects of claystone beds have been designated at this time; however should such beds occur in the near-surface, undercutting to depths of 5 to 10 feet and replacement with compacted fill may be warranted.

Where design or remedial grading activities create a cut/fill transition in areas of the Otay or other formations that do not require blasting, excavation of the cut or shallow fill portion should be performed such that at least three (3) feet of compacted fill exits over the pad. The undercut overexcavation should maintain a minimum one (1) percent gradient to the front of the lot. In addition, where steep cut/fill transitions are created, additional overexcavation and flattening of the transitions are recommended.

Undercuts for the larger sheet graded pads should be deferred until actual product types and finished grades are determined.

2.3. Overexcavation of Streets

Street undercuts in hard rock areas should be based on depth of utilities within "public right of way". The depth of undercut for streets should be at least one (1) feet below the deepest utility. Final determination of undercut depths should be dependent upon review of more detailed plans once they become available.

2.4 Slope Stability and Remediation

Typically, the Pomerado/Mission Valley Formation are grossly stable in cut and natural slopes owing to their induration. Local wedge-type failures are not likely, but should be assessed by geologic mapping during grading. The Otay Formation in many places possesses only moderate to weak shear strengths, particularly where bentonite beds are present. The wetting of the bentonite can lead to further reduction in shear strengths both along and across bedding. Review of the subsurface data and proposed design indicates that bentonitic claystone beds could possibly daylight on the face of proposed cut slopes. The Fanglomerate and terrace deposits are anticipated to be grossly and surficially stable in cut and natural slopes owing to their lack of defined bedding and the granular nature of these deposits.

2.6. Settlement Monitoring

Fills are subject to post-grading settlement. It is recommended that all fills greater than fifty (50) feet in thickness be monitored prior to release for construction. The monitoring can be accomplished by installation of surface monuments.

2.7. Subsurface Drainage

Six- (6) and eight- (8) inch canyon subdrains are recommended onsite in canyon areas that will receive compacted fill. The drains should be placed along the lowest alignment of canyon removals. Final determination of drain locations will be made in the field, based on exposed conditions. All drains should be constructed in accordance with the details shown on Detail 1 and 2 (Appendix A).

In some instances post-grading irrigation practices and rainfall patterns can create seepage in cut and fill slopes. This seepage is more prevalent in cut slopes excavated in Santiago Peak Volcanics or fill slopes constructed out of shot rock. Where nuisance seepage is observed, drains are typically installed to collect this water and outlet it into suitable surface or subsurface drainage devices. These drains, if required, should be installed on a case by case basis per the geotechnical consultant's recommendations.

The infiltration of standing water into all BMP's could potentially be detrimental to improvements such as slopes, foundations, utility trenches, retaining walls and pavement sections. Geotechnical review of grading plans should be performed when available to determine which storm drain infiltration devices may require mitigation such as collecting and discharging accumulated subsurface water away from improvements.

2.8. Excavation and Temporary Cut Slopes

All excavations should be shored or laid back in accordance with applicable Cal-OSHA standards. Formational materials can be considered a Type "A" soil. Fill can be considered Type "B" soil. Any temporary excavation greater than 5 feet in height should be laid back with a 3/4:1 (horizontal: vertical) gradient in formational material or 1:1 in fill soils. These excavations should not become saturated or allowed to dry out. Surcharge loads should not be permitted within a distance equal to the height of the excavation from the top of the excavation. The top of the excavation should be a minimum of 10 feet from the edge of existing improvements. Excavations steeper than those recommended or closer than 10 feet from an existing surface improvement should be temporarily shored in accordance with applicable OSHA codes and regulations.

2.9 Compaction Standards

New: All fills should be compacted at least 90 percent of the maximum dry density as determined by ASTM D1557. All loose and or deleterious soils should be removed to expose firm older alluvium or bedrock. Prior to the placement of fill, the upper 6 to 8 inches should be ripped, moisture conditioned to optimum moisture or slightly above optimum, and compacted to a minimum of 90 percent of the maximum dry density (ASTM D1557) or a minimum of 93 percent for fill deeper than fifty (50) feet from ultimate grade. Fill should be placed in thin (6 to 8-inch) lifts, moisture conditioned to optimum moisture or slightly above, and compacted to 90 (or 93 for fill deeper than 50 feet) percent of the maximum dry density (ASTM D1557) until the desired grade is achieved.

Care should be taken that the ultimate grade be considered when determining the compaction requirements for disposal fill and "super pad" areas. Compaction shall be achieved at slightly above the optimum moisture content, and as generally discussed in the attached Earthwork Specifications (Appendix B).

2.10 Benching

Where the natural slope is steeper than 5-horizontal to 1-vertical and where determined by the project Geotechnical Engineer or Engineering Geologist, compacted fill material shall be keyed and benched into competent materials.

2.11. Mixing and Moisture Control

In order to prevent layering of different soil types and/or different moisture contents, mixing and moisture control of materials may be necessary. The preparation of the earth materials through mixing and moisture control should be accomplished prior to and as part of the compaction of each fill lift. Water trucks or other water delivery means may be necessary for moisture control. Discing may be required when either excessively dry or wet materials are encountered.

2.12. Haul Roads

All haul roads, ramp fills, and tailing areas shall be removed prior to engineered fill placement.

2.13. Import Soils

Import soils, if required, should consist of clean, structural quality, compactable materials similar to the on-site soils and should be free of trash, debris or other objectionable materials. Import soils should be tested and approved by the geotechnical consultant prior to importing. At least three working days should be allowed in order for the geotechnical consultant to sample and test the potential import material.

2.14. Oversize Rock

Oversized rock material [i.e., rock fragments greater than eight (8) inches] will be produced during the excavation of the design cuts and undercuts. Provided that the procedure is acceptable to the developer and governing agency, this rock may be incorporated into the compacted fill section to within three (3) feet of finish grade within residential areas and to two (2) foot below the deepest utility in street and house utility connection areas. Maximum rock size in the upper portion of the hold-down zone is restricted to eight (8) inches. Disclosure of the above rock hold-down zone should be made to prospective homebuyers explaining that excavations to accommodate swimming pools, spas, and other appurtenances will likely encounter oversize rock [i.e., rocks greater than eight (8) inches] below three (3) feet. Rock disposal details are presented on Detail 10 Rocks in excess of eight (8) inches in maximum dimension may be placed within

the deeper fills, provided rock fills are handled in a manner described below. In order to separate oversized materials from the rock hold-down zones, the use of a rock rake may be necessary.

2.15 Rock Blankets

Rock blankets consisting of a mixture of gravel, sand and rock to a maximum dimension of two (2) feet may be constructed. The rocks should be placed on prepared grade, mixed with sand and gravel, watered and worked forward with bulldozers and pneumatic compaction equipment such that the resulting fill is comprised of a mixture of the various particle sizes, contains no significant voids, and forms a dense, compact, fill matrix.

Rock blankets may be extended to the slope face provided the following additional conditions are met: 1) no rocks greater than twelve (12) inches in diameter are allowed within six (6) horizontal feet of the slope face; 2) 50 percent (by volume) of the material is three-quarter- (3/4) inch minus; and 3) backrolling of the slope face is conducted at four- (4) foot vertical intervals and satisfies project compaction specifications.

2.16 Rock Windrows

Rocks to maximum dimension of four (4) feet may be placed in windrows in deeper fill areas in accordance with the details on Detail 10. The base of the windrow should be excavated an equipment-width into the compacted fill core with rocks placed in single file within the excavation. Sands and gravels should be added and thoroughly flooded and tracked until voids are filled. Windrows should be separated horizontally by at least fifteen (15) feet of compacted fill, be staggered vertically, and separated by at least four (4) vertical feet of compacted fill. Windrows should not be placed within ten (10) feet of finish grade, within two (2) vertical feet of the lowest buried utility conduit in structural fills, or within fifteen (15) feet of the finish slope surface unless specifically approved by the developer, geotechnical consultant, and governing agency.

2.17. Individual Rock Burial

Rocks in excess of four (4) feet, but no greater than eight (8) feet may be buried in the compacted fill mass on an individual basis. Rocks of this size may be buried separately within the compacted fill by excavating a trench and covering the rock with sand/gravel, and compacting the fines surrounding the rock. Distances from slope face, utilities, and building pad areas (i.e., hold-down depth) should be the same as windrows.

2.18. Rock Disposal Logistics

The grading contractor should consider the amount of available rock disposal volume afforded by the design when excavation techniques and grading logistics are formulated. Rock disposal techniques should be discussed and approved by the geotechnical consultant and developer prior to implementation.

2.19. Utility Trench Excavation and Backfill

All utility trenches should be shored or laid back in accordance with applicable Cal/OSHA standards. Excavations in bedrock areas should be made in consideration of underlying geologic structure. The geotechnical consultant should be consulted on these issues during construction.

Mainline and lateral utility trench backfill should be compacted to at least 90 percent of maximum dry density as determined by ASTM D 1557. Onsite soils will not be suitable for use as bedding material but will be suitable for use in backfill, provided oversized materials are removed. No surcharge loads should

be imposed above excavations. This includes spoil piles, lumber, concrete trucks or other construction materials and equipment. Drainage above excavations should be directed away from the banks. Care should be taken to avoid saturation of the soils.

Compaction should be accomplished by mechanical means. Jetting of native soils will not be acceptable.

To reduce moisture penetration beneath the slab-on-grade areas, shallow utility trenches should be backfilled with lean concrete or concrete slurry where they intercept the foundation perimeter. As an alternative, such excavations can be backfilled with native soils, moisture-conditioned to over optimum, and compacted to a minimum of 90 percent relative compaction.

Should you have questions or need additional information please contact the undersigned

Respectfully Submitted,
Advanced Geotechnical Solutions, Inc.

JEFFREY A. CHANEY, President
RCE 46544/GE 2314 Exp.6/30/21
Distribution: (2) Addressee
(2) Terra Development Inc. Att: Bob Greninger

Attachments:
APPENDIX A – SUBSURFACE LOGS
APPENDIX B – EARTHWORK SPECIFICATIONS
PLATE 1 – GEOLOGIC MAP AND EXPLORATION LOCATION PLAN

APPENDIX A
SUBSURFACE EXPLORATION

AGS

GEOTECHNICAL BORING LOG

Project No. 1902-06
Project Name Scripps Cypress Canyon
Boring Designation B-1
Date Started 3/22/19
Ground Elev.
Logged By AB
Date Finished
GW. Depth
Drive Weights
Driller Baja Ex.
Drop
Type of Rig

DEPTH (ft)	SAMPLE (R, B, S)	BLOWS/ft	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION
				Asphalt pieces at surface
				Dark brown clayey sand with gravel
				@ 1' grades to light brown reddish rounded gravel asphalt and concrete fragments moist
5	S	12 15 8		same
10	S	3 3 3		same 2,3" inch rock in shoe, no sample
15				@ 15 dark gray silty sand, w organics, roots urea, ammonia smell
20	S	5 5 8		same dark gray to black, strong urea odor
				@ 22' metal pieces
25	S	10 11		same no metal

Attitudes: J-Joint, B-Bedding, F-Fault, S-Shear, RS-Rupture Surface

1902-06 Scripps Cypress Canyon

AGS

GEOTECHNICAL BORING LOG

Project No. 1902-06
Project Name Scripps Cypress Canyon
Boring Designation B-1
Date Started 3/22/19
Ground Elev.
Logged By AB
Date Finished
GW. Depth
Drive Weights
Driller Baja Ex.
Drop
Type of Rig

DEPTH (ft)	SAMPLE (R, B, S)	BLOWS/ft	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION
30	S	10 10 12		same
35				
40	S	50/01		@40 grinding on obstruction concrete? Refusal at 40' No GW Backfilled with hydrated bentonite chips
45				
50				

Attitudes: J-Joint, B-Bedding, F-Fault, S-Shear, RS-Rupture Surface

AGS

Page 1 of 1

GEOTECHNICAL BORING LOG

Project No. 1902-06
Project Name Scripps Cypress Canyon
Boring Designation B-2
Date Started 3/22/19
Ground Elev.
Logged By AB
Date Finished
GW. Depth
Drive Weights
Driller Baja Ex.
Drop
Type of Rig

DEPTH (ft)	SAMPLE (R, B, S)	BLOWS/ft	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION
	B	0-5'		Asphalt fragments on surface Reddish brown clayey sand with abundant asphalt fragments
5				@ 5' coarse gravel to cobbly silty sand dry to damp orange brown no sample no recovery
10	R	8 8 8		
				@ 12' clayey sand light reddish brown moist w/ gravel and cobbles
15	R	8 6 7		no recovery @ 15' with brick fragments
20	R	5 6 7		same with concrete fragments
25	R	6 7 50/5"		same 3" concrete fragment abundant brick fragments

Attitudes: J-Joint, B-Bedding, F-Fault, S-Shear, RS-Rupture Surface

@ 27 Refusal grinding on concrete
No GW. Backfilled with hydrated bentonite chips.

AGS

Page 1 of 2

GEOTECHNICAL BORING LOG

Project No. 1902-06
Project Name Scripps Cypress Canyon
Boring Designation B-3
Date Started 3/22/19
Ground Elev.
Logged By AB
Date Finished
GW. Depth
Drive Weights
Driller Baja Ex.
Drop
Type of Rig CME-95

DEPTH (ft)	SAMPLE (R, B, S)	BLOWS/ft	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION
				Asphalt fragments on surface
				Light reddish brown clayey sand with gravel/ moist
5	R	15 15 17		same
10	R	17 10 20		same
15	R	9 12 18		abundant gravel 3"
20	R	28 50/3"		abundant gravel to 3"
	B 20-25'			@ 23½' organics grades to dark brown
25	R	13 11 25		abundant gravel/

Attitudes: J-Joint, B-Bedding, F-Fault, S-Shear, RS-Rupture Surface

AGS

GEOTECHNICAL BORING LOG

Project No. 1902-06 | Project Name Scripps Cypress Canyon | Boring Designation B-3
Date Started 3/22/19 | Ground Elev. | Logged By AB
Date Finished | GW. Depth | Drive Weights
Driller Baja Ex. | Drop
Type of Rig

DEPTH (ft)	SAMPLE (R, B, S)	BLOWS/ft	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION
	B	27'-32'		
30	R	38 16 16		abundant wood fragments
				Refusal @ 32' Grinding on cobble
				No GW.
35				Backfilled with hydrated bentonite chips.

Attitudes: J-Joint, B-Bedding, F-Fault, S-Shear, RS-Rupture Surface

AGS

GEOTECHNICAL BORING LOG

Project No. 1902-06 | Project Name Scripps Cypress Canyon | Boring Designation B-4
Date Started 3/22/19 | Ground Elev. | Logged By AB
Date Finished | GW. Depth | Drive Weights
Driller Manny Baja Ex. | Drop
Type of Rig CME-95

DEPTH (ft)	SAMPLE (R, B, S)	BLOWS/ft	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION
				Asphalt fragments on surface
	B	0'-5'		Light reddish brown clayey sand with gravel, moist
				some roots
		9		
5	S	5		Light gray silty sand micaceous moist
		5		
10	S	5		
		5		
		8		
				Light reddish brown silty sand brick fragments
				moist with gravel
15	R	12		
		9		
		9		
20	S	24		same no brick fragments with gravel
		15		
		28		
				@ 23 grinding on cobble, pulled steel fence piece
25	R	10		
		13		Yellowish brown clayey to silty sand moist
		23		w gravel

Attitudes: J-Joint, B-Bedding, F-Fault, S-Shear, RS-Rupture Surface

AGS

GEOTECHNICAL BORING LOG

Project No. 1902-06 | Project Name Scripps Cypress Canyon | Boring Designation B-4
Date Started 3/22/19 | Ground Elev. | Logged By AB
Date Finished | GW. Depth | Drive Weights
Driller Baja Ex. | Drop
Type of Rig

DEPTH (ft)	SAMPLE (R, B, S)	BLOWS/ft	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION
30	R	16 16 20		same
	B	30'-35'		
35	S	14 8 8		Reddish brown clayey sand moist some gravel Brown to black silty sand in shoe
40	S	5 5 20		some oil or asphalt contamination reddish gravel fragments
				@ 44' grinding
45	S	14 16 20		silty clay with gravel moist grey
50	R	19 14 28		@ 50 grinding

Attitudes: J-Joint, B-Bedding, F-Fault, S-Shear, RS-Rupture Surface

AGS

GEOTECHNICAL BORING LOG

Project No. 1902-06 | Project Name Scripps ~~Cypress~~ Canyon | Boring Designation B-4
Date Started 3/22/19 | Ground Elev. | Logged By AB
Date Finished | GW. Depth | Drive Weights
Driller Baja Ex. | Drop
Type of Rig

DEPTH (ft)	SAMPLE (R, B, S)	BLOWS/ft	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION
	B	50-5S		Added water to cool augers
5S	R	19 14 28		Clayey sand with gravel reddish gray Grinding at 58' Refusal at 58' No GW Backfilled with hydrated bentonite chips.

Attitudes: J-Joint, B-Bedding, F-Fault, S-Shear, RS-Rupture Surface

AGS

Page 1 of 1

GEOTECHNICAL BORING LOG

Project No. 1902-06 | Project Name Cypress Canyon | Boring Designation B-5
Date Started 11/14/19 | Ground Elev. | Logged By AB
Date Finished | GW. Depth | Drive Weights 140 lbs.
Driller Native / Gabriel | Drop 30" Cat and Rope
Type of Rig Tripod

DEPTH (ft)	SAMPLE (R, B, S)	BLOWS/ft	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION
0				Light brown to tan silty sand with gravel and cobbles to 4" moist
2.5	S	5/5/5		Light gray mottled red with iron oxide silty to clayey sand with gravel some red gravel pieces leaching red
5	S	5/5/8		grades to reddish brown clayey sand with gravel at bottom 6"
7.5	S	5/15/17		Yellowish brown clayey sand with 3" gravel lens near bottom
9	S	7/10/15		Light yellowish brown to tan silty sand with gravel iron oxide stain, moist
				Auger bouncing on rock @ 9'
				Attempted B-12 40' North of B-5
				Drilled to 0' no sampling. Refusal on rock
				Attempted B-12R 10' East of B-12
				Drilled to 7.5' no sampling. Refusal on rock
				11/15/19 Attempted B-12RR 100' E of B-12R
				Drilled to 6' no sampling.

Attitudes: J-Joint, B-Bedding, F-Fault, S-Shear, RS-Rupture Surface

AGS

Page 1 of 1

GEOTECHNICAL BORING LOG

Project No. 1902-06 | Project Name _____ | Boring Designation B-6
Date Started 11/13/19 | Ground Elev. _____ | Logged By AB
Date Finished _____ | GW. Depth _____ | Drive Weights —
Driller Pacific (Miguel / Toby) | Drop 30" Auto trip
Type of Rig Mobile M10 - 6" augers

DEPTH (ft)	SAMPLE (R, B, S)	BLOWS/ft	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION
				1" AC fragments FILL
			SM	Light yellow brown silty sand with gravel, damp to moist
				1" clayey sand lens, rust stain
2.5	S	4/5/6		
5	S	9/7/5		same, moist
7.5	S	9/8/7		1½" gravel fragment in shoe, partial recovery
				Sink to
10	S	8/9/8		Light reddish brown clayey sand, some gravel, damp to moist, iron oxide sandstone clast (2")
12.5	S	26/0"		No recovery
				Difficult drilling grinding on rock
15	S	29/50/4"		Light reddish brown silty to clayey sand, oxide stains, some gravel, damp
17.5	S	25/0"		Bouncing on rock - no recovery
20		45/35/ 50/4"		Light yellow gray, silty sandstone, highly weathered, friable 1" gravel on top, trace oxide
22.5		44/ 50/1"		Bouncing on rock. Flattened SPT shoe. No recovery
				TD = 23.1' No GW

Attitudes: J-Joint, B-Bedding, F-Fault, S-Shear, RS-Rupture Surface

AGS

Page 1 of 1

GEOTECHNICAL BORING LOG

Project No. 1982-06 | Project Name Cypress Layout | Boring Designation B-7
Date Started 11/3/19 | Ground Elev. | Logged By AB
Date Finished | GW. Depth | Drive Weights 140#
Driller Pacific / Maxwell | Drop 30" Auto Trip
Type of Rig Mobil M10

DEPTH (ft)	SAMPLE (R, B, S)	BLOWS/ft	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION
0				reddish brown silty sand with gravel and cobbles to 4"
				damp some clay
2.5		5/4/4		
5		4/4/6		same, no cobbles
7.5		46/50/1.4"		Gravel fragment in shoe
				Light tan silty sand with gravel, damp
10		32/50/2"		Light reddish brown to tan silty sand with abundant gravel, damp
12.5		50/5"		No recovery
15		12/47/50/4"		Light reddish brown clayey to silty sand top 6" transitions to yellowish brown clayey sand with gravel to light reddish brown sandstone at bottom, trace oxide stain
				TD = 16.3'

Attitudes: J-Joint, B-Bedding, F-Fault, S-Shear, RS-Rupture Surface

AGS

Page 1 of 1

GEOTECHNICAL BORING LOG

Project No. 1902-06 | Project Name Cypress Canyon | Boring Designation B-8
Date Started 11/13/19 | Ground Elev. | Logged By AB
Date Finished | GW. Depth | Drive Weights 140 lb
Driller Pacific / Miguel | Drop 30" |
Type of Rig MAZE M10 |

DEPTH (ft)	SAMPLE (R, B, S)	BLOWS/ft	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION
0				Light yellowish brown silty sand with gravel and cobbles to 4" size
2.5	S	6/9/8		Light reddish brown, some gravel
5	S	16/14/12		No recovery
7.5	S	6/8/7		6" layer of topsoil with roots, organic content 2" layer of reddish brown sandstone at bottom
10	S	8/10/11		Light reddish brown silty sandstone, iron oxide staining.
12.5	S	9/23/37		Light gray brown sandstone, micaceous, iron oxide staining, friable, yellow to red nodules (iron?)
				TD = 14'

Attitudes: J-Joint, B-Bedding, F-Fault, S-Shear, RS-Rupture Surface

AGS

Page 1 of 1

GEOTECHNICAL BORING LOG

Project No. 1902-06 | Project Name Scripps Cypress | Boring Designation B-9
Date Started 11/12/19 | Ground Elev. ~913 | Logged By AS
Date Finished | GW. Depth | Drive Weights —
Driller BC2 Marcos | Drop
Type of Rig Sonic

DEPTH (ft)	SAMPLE (R, B, S)	BLOWS/ft	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION
0				0'-1' AC fragments
				1' silty to clayey sand reddish brown with gravel
				gray clayey sand pieces moist
				2' light yellow brown SC with rounded gravel
				up to 3" size
				6' same with 4" cobble
				9' same reddish brown
				10½' AC fragments
				11' SC reddish brown with gravel, 4" cobble
				some organic content
				12' grades to sandy clay dark reddish brown with gravel and
				organics moist to wet
				13½' grades to orange brown, SC/SM moist with gravel
				15½ red-brown with some organic content and
				brick, AC fragments
				17' more clay, SC, w brick and gravel
				19' wet roots, black, oil odor with gravel
				core barrel hot, drilled to 25'
				20' dark gray to black, oil impregnated sand, some wood, abundant AC
				fragments & gravel
				21½' gray SM with gravel and cobbles to 4" oil odor
				23½' cobbles granitic rock difficult drilling to 25'
				hot rods and core, drilled to 30'
				@25' gray silty sand with cobbles
				27' dark gray silty sand with oil, wood, gravel, AC fragments
				damp to wet (probably from upper organic layer - pulled

Attitudes: J-Joint, B-Bedding, F-Fault, S-Shear, RS-Rupture Surface

core out and dropped

30-31 dark gray silty sand with cobble fragments

TD = 31'

AGS

GEOTECHNICAL BORING LOG

Project No. 1902-06 | Project Name Cypress Canyon | Boring Designation B-10
Date Started 11/11/19 | Ground Elev. ~913 | Logged By
Date Finished | GW. Depth | Drive Weights
Driller | Drop
Type of Rig Sonic Rig

DEPTH (ft)	SAMPLE (R, B, S)	BLOWS/ft	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION
0				3" Asphalt debris
				Clayey sand with gravel, reddish brown moist
				@ 9" light gray clayey sand
				@ 12" reddish brown clayey sand
				@ 27" cobble layer (6" size)
				@ 3' dark reddish brown clayey sand with gravel and cobbles
				@ 5' reddish brown silty sand with gravel some asphalt fragments
				@ 6' gravel layer gray
				@ 7' 6" cobble
				@ 8' reddish brown silty sand, asphalt and concrete fragments
				@ 11' concrete debris up to 4" size, iron bolt
				@ 13' clayey sand layer
				@ 13½' concrete debris up to 6" size
				@ 15' brick fragments in clayey sand with rounded gravel yellowish brown moist
				@ 18½' concrete debris up to 6" size
				@ 20½ asphalt debris up to 4" size
				@ 22' concrete debris up to 6" size
				@ 25½' concrete debris in clayey sand
				@ 27' clayey sand reddish brown moist
				@ 28' asphalt debris up to 6" size in clayey sand
				@ 30' concrete and asphalt debris in silty sand, some plastic fragments
				@ 34' clayey sand gray wet with concrete fragments and rounded gravel

Attitudes: J-Joint, B-Bedding, F-Fault, S-Shear, RS-Rupture Surface

AGS

GEOTECHNICAL BORING LOG

Project No. 1902-06 | Project Name Cypress Canyon | Boring Designation B-10
Date Started 11/11/19 | Ground Elev. ~ 913 | Logged By
Date Finished | GW. Depth | Drive Weights
Driller B2C | Drop
Type of Rig Sonic

DEPTH (ft)	SAMPLE (R, B, S)	BLOWS/ft	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION
				@36' concrete and asphalt up to 6"
				@37' brick fragments in clayey sand
				@38' clayey sand with rounded gravel up to 3" some asphalt pieces
				@40' concrete, plastic and asphalt fragments in clayey sand up to 4"
				@45' granite cobbles ~~up to~~ 6" in silty sand concrete fragments
				@47' concrete fragments 10" long 6" diameter
				@48' clayey sand layer reddish brown
				@49' concrete fragments metal bolt
				@50' concrete, asphalt and brick fragments in silty sand gray brown
				@51½' concrete fragments
				@52½ reddish brown clayey sand with rounded gravel some concrete fragments
				@53' granite cobbles up to 8" length in silty sand
				@56' yellowish brown clayey sand with rounded gravel up to 3"
				@58' some organic content clayey sand yellow to gray
				@59' steel plate 4" in gray silty sand rounded gravel and cobbles to 4" silty clay at bottom gray
				@61' concrete fragments 6" core
				@62' dark brown clayey sand
				@62½ asphalt stabilized sand and gravel dark brown to black with clayey sand
				@64½' gray clayey sand with gravel

Attitudes: J-Joint, B-Bedding, F-Fault, S-Shear, RS-Rupture Surface

AGS

GEOTECHNICAL BORING LOG

Project No. 1902-06 | Project Name Cypress Canyon | Boring Designation B-10
Date Started 11/11/19 | Ground Elev. 913 | Logged By AB
Date Finished | GW. Depth GW ~ 76' | Drive Weights
Driller SCZ | Drop
Type of Rig Sonic

DEPTH (ft)	SAMPLE (R, B, S)	BLOWS/ft	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION
				@ 66' dark gray clayey sand with brick and concrete fragments slight to no asphalt odor w rounded gravel
				@ 69' dark reddish gray clayey sand with concrete and brick fragments wood fragments
				@ 70 gray sandy clay, wet, w/ concrete and asphalt fragments some organic content
				@ 76½ concrete fragments
				@ 78' yellowish gray clayey sand with concrete fragments with 6" cobbles
				@ 80 gray clayey sand w/ rounded gravel to 3" size asphalt fragments, moist to wet
				@ 85' asphalt fragments
				@ 87' gray clay sand with rounded gravel and 4" cobbles and brick fragments
				@ 89' some organic content
				@ 96' partial sample large cobble in bit, saturated gray clayey sand with rounded gravel and cobbles to 6"
				wet at 79'-80'
				@ 98' - 100' Stadium Conglomerate? Rounded gravel and cobble in reddish brown clayey sand matrix
				@ 100' refusal
				11/12/19 Set bailer to 100'. No groundwater
				TD = 100'

Attitudes: J-Joint, B-Bedding, F-Fault, S-Shear, RS-Rupture Surface

AGS

GEOTECHNICAL BORING LOG

Project No. 1902-06 | Project Name Cypress Canyon | Boring Designation B-11
Date Started 11/12/19 | Ground Elev. ~913 | Logged By
Date Finished | GW. Depth | Drive Weights
Driller BCZ | Drop
Type of Rig Sonic

DEPTH (ft)	SAMPLE (R, B, S)	BLOWS/ft	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION
				2" AC crushed
0				Light yellowish brown silty sand with rounded gravel and asphalt fragments
				@ 6" reddish brown silty sand with gravel moist
				@ 1 1/2" sand with brick fragments
				@ 2 1/2" light tan silty sand with gravel and cobbles to 4" size
				@ 4' clayey sand with gravel gray brown moist
				@ 6' same light red brown
				@ 7 1/2' dark reddish brown, some organic content, steel wire
				@ 9 1/2' light gray with cobbles to 6", trace brick
				@ 10' asphalt concrete fragments with gravel
				@ 11' light brown silty sand with brick fragments and gravel
				@ 11 1/2' dark brown silty sand with abundant roots and organic content, brick and rounded gravel, decomposed odor
				@ 13 1/2' concrete fragments up to 6", in silty sand light gray
				@ 14 1/2' sandy clays to clayey sand dark gray to olive
				@ 15' ~~dark~~ reddish brown silty sand with abundant roots
				@ 16 1/2' dark reddish brown no roots
				@ 17 1/2' cobbles and concrete fragments in silty sand light gray
				@ 18' dark gray brown clayey sand with asphalt sand (or oil) and rounded gravel
				@ 20' gray brown silty sand with rounded gravel, some concrete and asphalt fragments, cobbles to 6" size
				@ 22 1/2' dark brown SM with AC fragments and oil odor

Attitudes: J-Joint, B-Bedding, F-Fault, S-Shear, RS-Rupture Surface

AGS

GEOTECHNICAL BORING LOG

Project No. 1902-06 | Project Name Cypress Comm | Boring Designation B-11
Date Started 11/12/19 | Ground Elev. | Logged By
Date Finished | GW. Depth | Drive Weights
Driller BC2 Marcos | Drop
Type of Rig Bore

DEPTH (ft)	SAMPLE (R, B, S)	BLOWS/ft	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION
				@23' clayey sand with AC fragments and oil odor dark brown
				@ 24' same with brick and AC fragments no brown
				@ 26' concrete fragments with wire reinforcement up to 6" size
				@ 27½' dark r-b clayey sand with concrete fragments and AC pieces
				@ 29' gray SC with concrete damp to moist
				30'-40' partial recovery ~3' damp to dry concrete fragments to 6" with cobbles, light brown silty sand
				40'-50' same, recovery ~3'
				Switching to 4" core barrel Drilled to 60' core is hot / steaming
				50-60' partial recovery ~1' Granite cobbles core barrel melted / destroyed
				Stadium Conglomerate?
				TD = 60'

Attitudes: J-Joint, B-Bedding, F-Fault, S-Shear, RS-Rupture Surface

B-12, B-12R no boring log
(similar to B-5)

AGS

GEOTECHNICAL BORING LOG

Project No. 1902-06
Date Started 11/15/19
Date Finished
Driller Native/Gabriel
Type of Rig Tripod

Project Name Cypress Canyon
Ground Elev.
GW. Depth
Drop 30'

Boring Designation B-12RR
Logged By AB
Drive Weights 140 lb

DEPTH (ft)	SAMPLE (R, B, S)	BLOWS/ft	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION
0				Drilled to 10' no sample.
5				
10	S	30/50/4"		Brown clayey sand, partial sample, wet may have hit rock at bottom Grinding on rock TD = 11'

Attitudes: J-Joint, B-Bedding, F-Fault, S-Shear, RS-Rupture Surface

GEOPHYSICAL EVALUATION
11495 CYPRESS CANYON ROAD
SAN DIEGO, CALIFORNIA

PREPARED FOR:

Advanced Geotechnical Solutions, Inc.
485 Corporate Drive, Suite B
Escondido, California 92029

PREPARED BY:

Southwest Geophysics, LLC
6280 Riverdale Street, Suite 200
San Diego, CA 92120

March 28, 2019
Project No. 119139

SOUTHWEST GEOPHYSICS LLC
YOUR SUBSURFACE SOLUTION

March 28, 2019
Project No. 119139

Mr. Jeff Chaney
Advanced Geotechnical Solutions, Inc.
485 Corporate Drive, Suite B
Escondido, California 92029

Subject: Geophysical Evaluation
11495 Cypress Canyon Road
San Diego, California

Dear Mr. Chaney:

In accordance with your request, we have conducted geophysical services pertaining to the property located at 11495 Cypress Canyon Road in San Diego, California. The purpose of our study was to characterize the subsurface geologic conditions in the study area through the collection of high resolution electrical resistivity tomography (Sting) and seismic P-wave refraction data at preselected areas of the project site. This report presents the methodology, equipment used, analysis, and findings.

We appreciate the opportunity to be of service on this project. Should you have any questions related to this report, please contact the undersigned at your convenience.

Sincerely,
SOUTHWEST GEOPHYSICS, LLC

Aaron T. Puente
Project Geologist/Geophysicist

Patrick F. Lehrmann, P.G., P.Gp.
Principal Geologist/Geophysicist

REGISTERED GEOPHYSICIST
PATRICK F. LEHRMANN
No. 1043
Exp. 1/31/20
STATE OF CALIFORNIA

PFL/ATP/pfl
Distribution: Addressee (electronic)

TABLE OF CONTENTS

Page

Figures

1. INTRODUCTION

In accordance with your request, we have conducted geophysical services pertaining to the property located at 11495 Cypress Canyon Road in San Diego, California (Figure 1). The purpose of our study was to characterize the subsurface geologic conditions in the study area through the collection of high-resolution electrical resistivity tomography (Sting) and seismic P-wave refraction data at preselected areas of the project site. This report presents the methodology, equipment used, analysis, and findings.

2. SCOPE OF SERVICES

Our scope of services included:

- Performance of two Sting profiles, STL-1 and STL-2.
- Performance of a seismic P-wave refraction profile, SL-1.
- Compilation and geophysical analysis of the data collected.
- Preparation of this report presenting our findings and conclusions.

3. SITE AND PROJECT DESCRIPTION

The project site is located at the northwest end of Cypress Canyon Road just west of Cypress Canyon Park in San Diego, California (Figure 1). In general, the study area is a vacant lot with mostly graded soil with a layer of unconsolidated crushed asphalt on the surface. Specifically, the Sting and seismic P-wave refraction lines were conducted in east to west and north to south directions across the site. Figures 2 and 3 illustrate the general site conditions and line locations.

Based on our discussions with you, it is our understanding that the site was once a landfill and that your office is conducting a geologic evaluation of the property. The results from our study are to aid in the characterization of the subsurface geologic conditions.

4. METHODOLOGY

Our evaluation included the performance of high resolution electrical resistivity (Sting) and seismic P-wave refraction surveys. The following is a brief description of the methods used.

4.1. Sting

An AGI Super Sting R8 resistivity meter was used to collect electrical resistivity measurements along two profiles, STL-1 and STL-2, at the project site. STL-1 crosses the site in an east-west direction and STL-2 crosses the site in a north-south direction (see Figure 2). The purpose of the Sting data collection was to characterize the electrical properties of the subsurface materials through the formulation of an apparent electrical resistivity model.

The Super Sting injects current into the ground through stainless steel electrodes and the electric potential difference between multiple electrodes is measured simultaneously. The spacing between the current and potential electrodes changes between readings to preprogrammed values. The measurements were collected using a Dipole-Dipole configuration.

Fifty-six electrodes were used for our study with electrode spacings of 8 feet for STL-1 and 5 feet for STL-2. This resulted in line lengths of 440 feet for STL-1 and 275 feet for STL-2, respectively. The locations of the lines and the general lengths (lineal coverage) were designated by you. The electrodes were driven into the soil approximately 6 to 12 inches, and the soil around the electrode was moistened with water.

Data processing and analysis was accomplished using EarthImager™, V2.4.4, a two-dimensional resistivity inversion software. The plot of the measured resistivity at each set of electrodes was recorded and displayed according to the dipole-dipole resistivity model. Resistivity values were calculated for the points beneath the Sting line and then integrated into a color resistivity model section.

4.2. Seismic P-Wave Refraction

A seismic P-wave (compression wave) refraction study was conducted in the study area along a traverse labeled SL-1 on Figure 2. The seismic line was generally parallel to and approximately 10 feet east of the Sting line STL-2. The purpose of the P-wave refraction study was to characterize the subsurface conditions through the development of a P-wave velocity model.

The seismic refraction method uses first-arrival times of refracted seismic waves to estimate the thicknesses and seismic velocities of subsurface layers. Seismic P-waves generated at the surface, using a 20-pound sledge hammer and plate, are refracted at boundaries separating materials of contrasting velocities. These refracted seismic waves are then detected by a series of surface vertical component 14-Hz geophones and recorded with a 24-channel Geometrics Geode seismograph. The travel times of the seismic P-waves are used in conjunction with the shot-to-geophone distances to obtain thickness and velocity information on the subsurface materials.

A geophone spacing of 12 feet was used for SL-1 resulting in a spread length of 288 feet (includes a 6-foot shot offset at each end of the spread). Shots were conducted at the ends, midpoint and intermediate points along the line.

The collected data were processed using SIPwin (Rimrock Geophysics, 2003), a seismic interpretation program, and analyzed using SIPwin and SeisOpt Pro (Optim, 2008). SeisOpt Pro uses first arrival picks and elevation data to produce subsurface velocity models through a nonlinear optimization technique called adaptive simulated annealing. The resulting velocity model provides a tomography image of the estimated geologic conditions. Both vertical and lateral velocity information is contained in the tomography model. Changes in layer velocity are revealed as gradients rather than discrete contacts, which typically are more representative of actual conditions.

5. FINDINGS AND CONCLUSIONS

As previously discussed, the purpose of our study was to characterize the subsurface conditions in the study area as part of your geologic evaluation of the property. Our evaluation included the collection of Sting and seismic P-wave refraction data. The Sting results are presented in Figures 4a and 4b and the P-wave refraction results are presented in Figure 5. In general, the quality of the Sting and P-wave data was very good.

The Sting results reveal the presence of a conductive layer near the surface overlying more resistive materials at depth. The contact between these two units is gradational with the most resistive material approximately 55 feet below the ground surface (bgs) and is illustrated on Figures 4a and 4b. The seismic P-wave results also reveal the presence of contacts or zones of significant changes in velocity (density). One of these contacts occurs roughly at 55 feet (bgs) and coincides with the more resistive contact detected in the Sting results. This electrical and density change could represent the landfill/native contact. As noted in the P-wave profiles a relatively substantial increase in P-wave velocity also occurs near the 4,000 feet per second contour line. It is possible this contact could be related to the presence of concrete or rock debris fill.

6. LIMITATIONS

The field evaluation and geophysical analyses presented in this report have been conducted in general accordance with current practice and the standard of care exercised by consultants performing similar tasks in the project area. No warranty, express or implied, is made regarding the conclusions and opinions presented in this report. There is no evaluation detailed enough to reveal every subsurface condition. Variations may exist and conditions not observed or described in this report may be present. Uncertainties relative to subsurface conditions can be reduced

through additional subsurface exploration. Additional subsurface evaluation will be performed upon request.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Southwest Geophysics, LLC should be contacted if the reader requires additional information or has questions regarding the content, interpretations presented, or completeness of this document. This report is intended exclusively for use by the client. Any use or reuse of the findings, conclusions, and/or recommendations of this report by parties other than the client is undertaken at said parties' sole risk.

7. SELECTED REFERENCES

Advanced Geosciences, Inc., 2016, EarthImager, 2D Resistivity and IP Inversion Software: Version 2.4.4.

Burger, H.R., Sheehan, A.F., and Jones, C.H., 2006, Introduction to Applied Geophysics; Exploring the Shallow Subsurface, W.W. Norton & Company, Inc.

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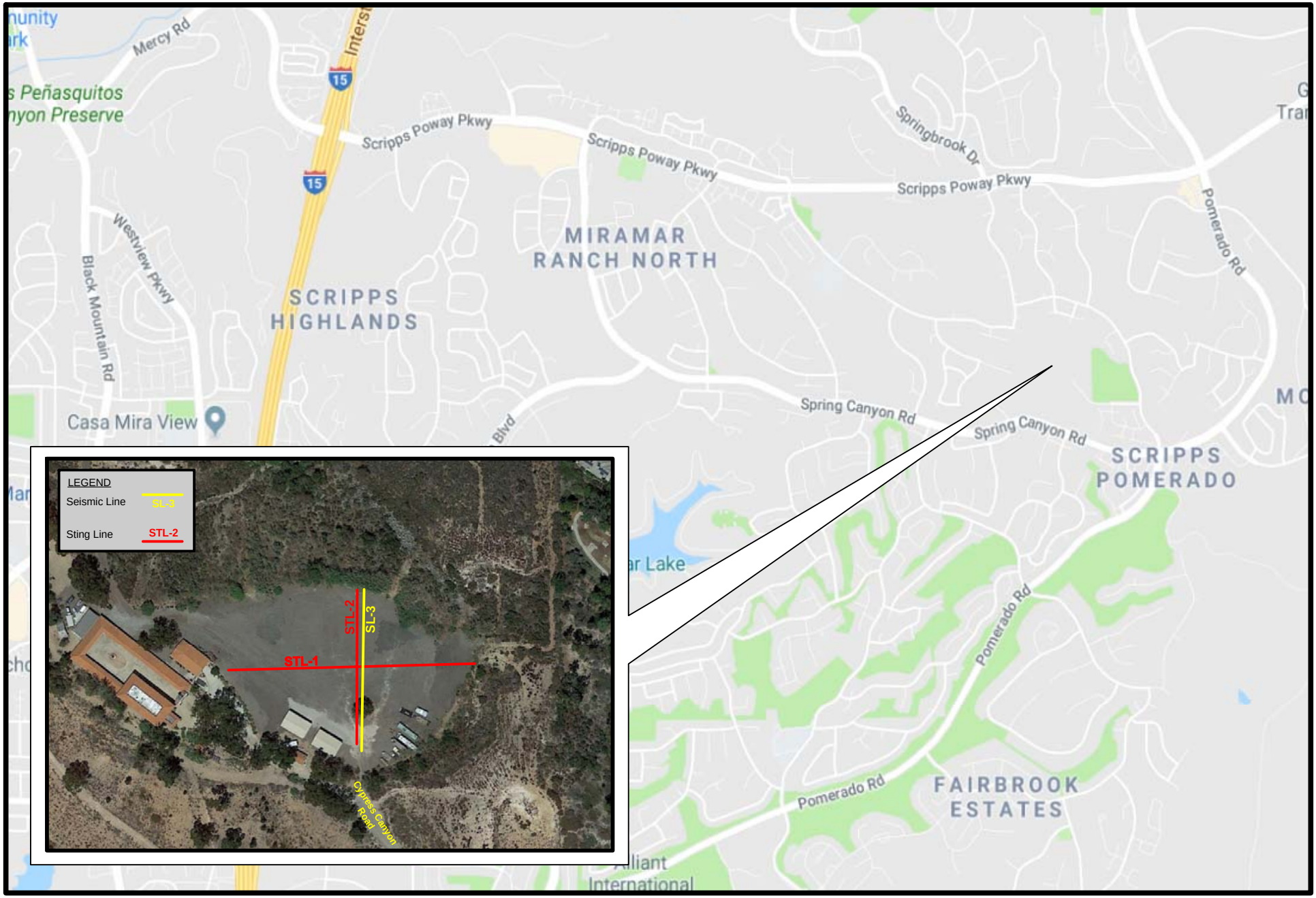


SITE LOCATION MAP

N

11495 Cypress Canyon Road
San Diego, California

Project No.: 119139 | Date: 03/19

SOUTHWEST GEOPHYSICS

Figure 1

LINE LOCATION MAP

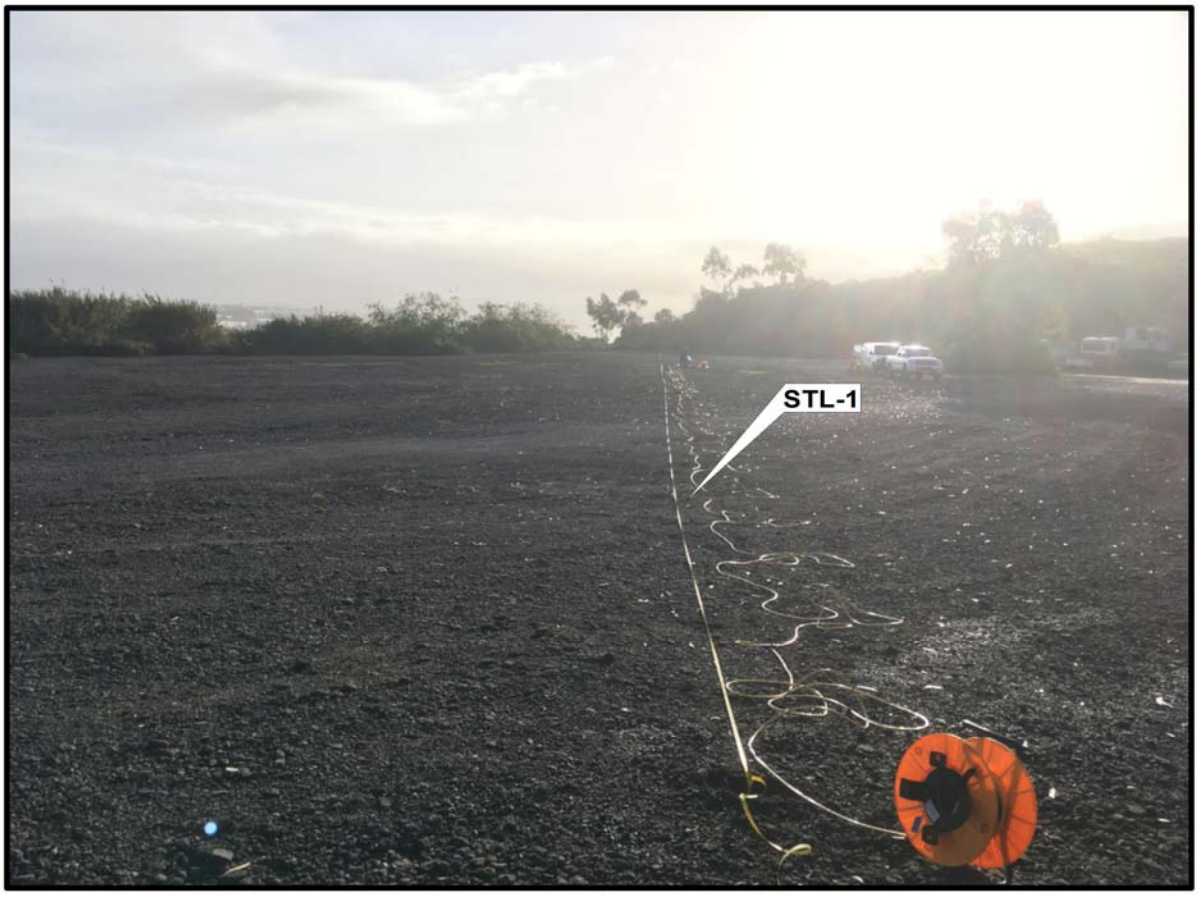
N

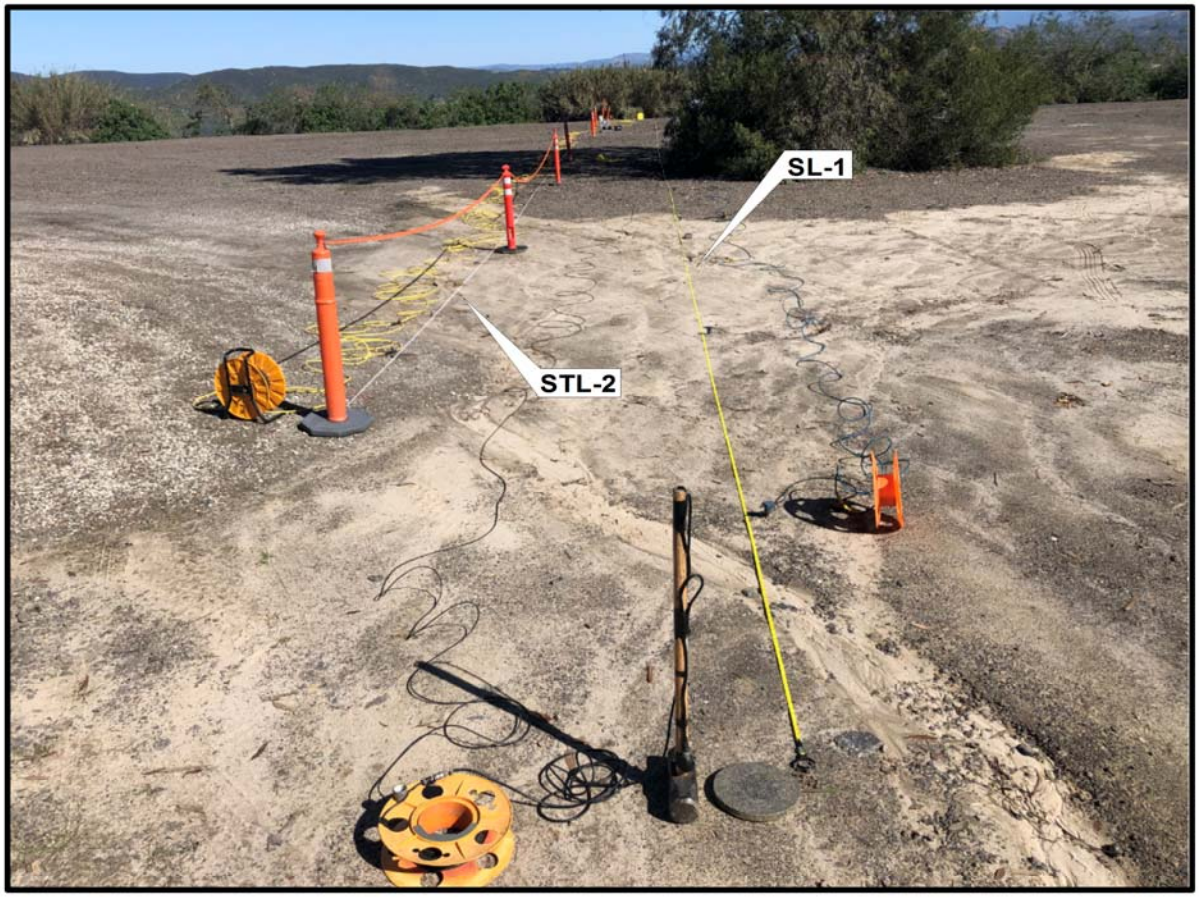
11495 Cypress Canyon Road
San Diego, California

Project No.: 119139 | Date: 03/19

SOUTHWEST GEOPHYSICS INC

Figure 2





SITE PHOTOGRAPHS

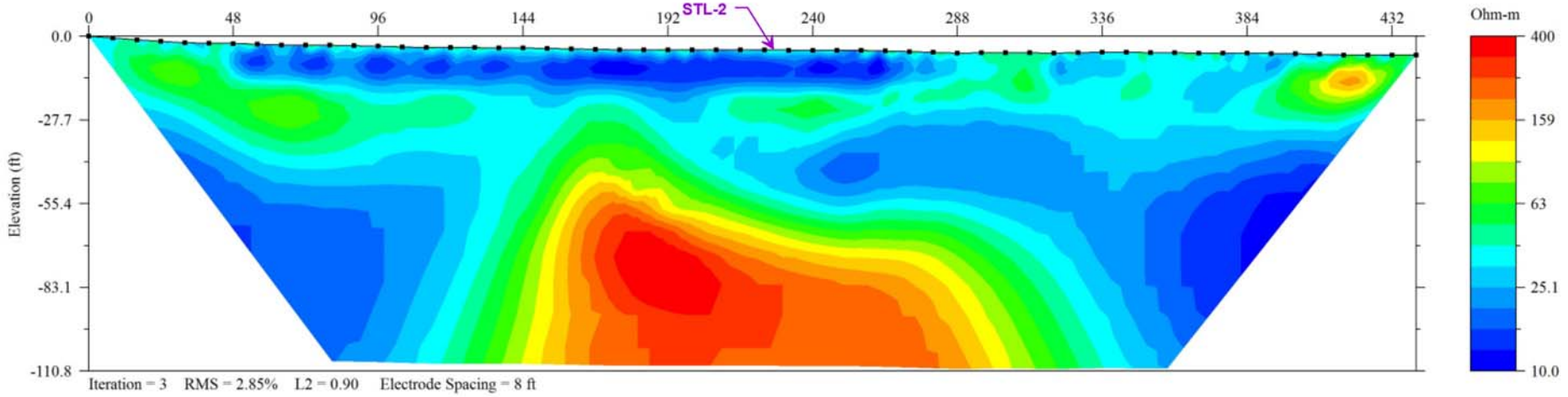
11495 Cypress Canyon Road
San Diego, California

Project No.: 119139 | Date: 03/19

SOUTHWEST GEOPHYSICS INC

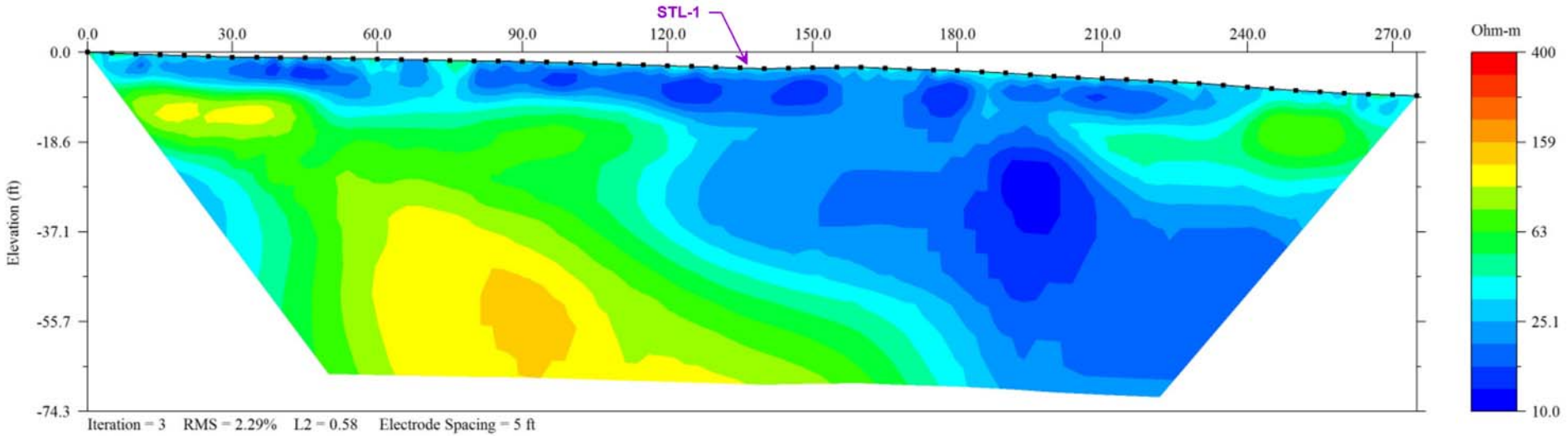
Figure 3

Inverted Resistivity Section
STL-1



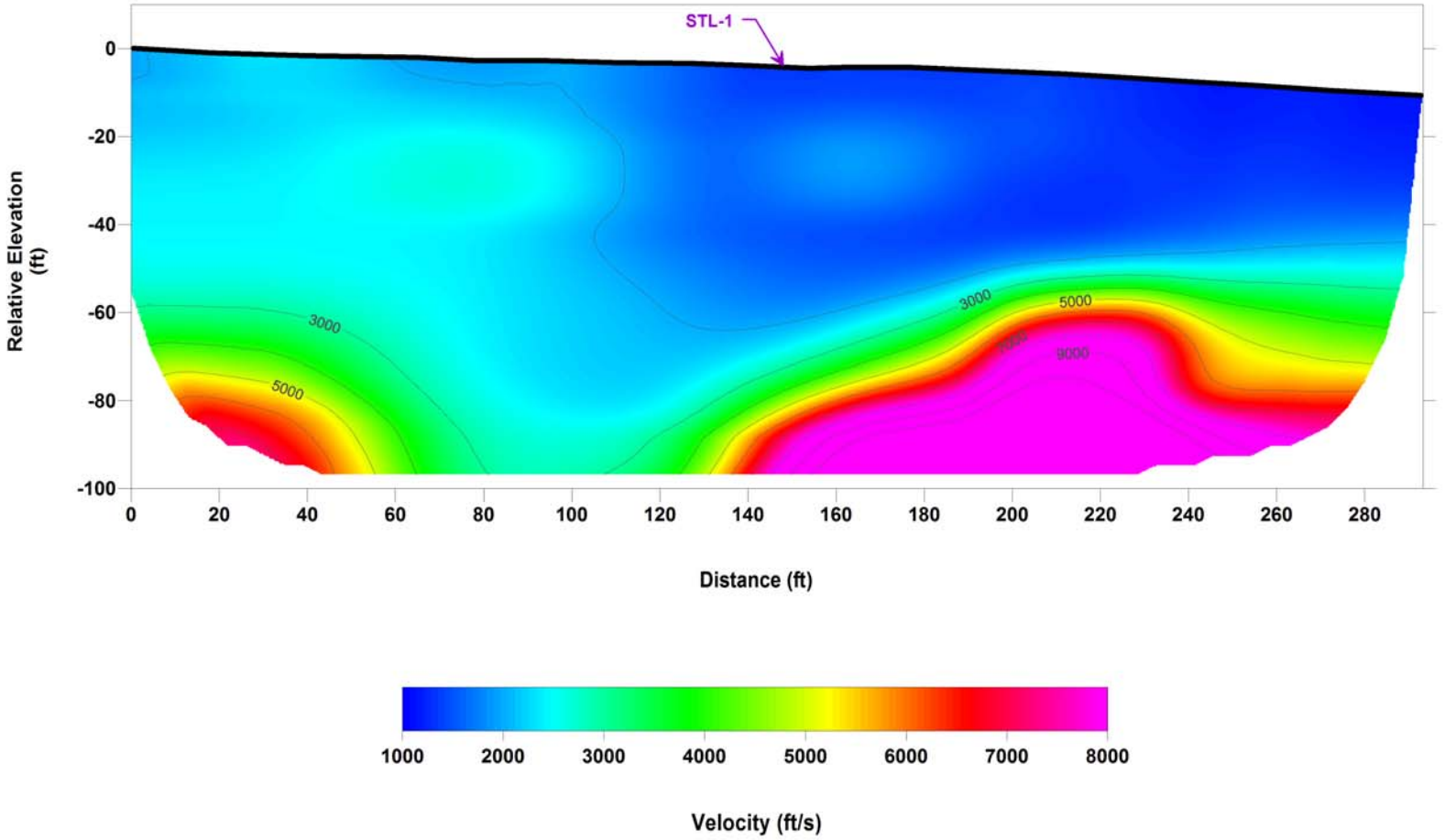
STING PROFILE **STL-1**	N	11495 Cypress Canyon Road San Diego, California	SOUTHWEST GEOPHYSICS INC Figure 4a
		Project No.: 119139 / Date: 03/19	

Inverted Resistivity Section
STL-2



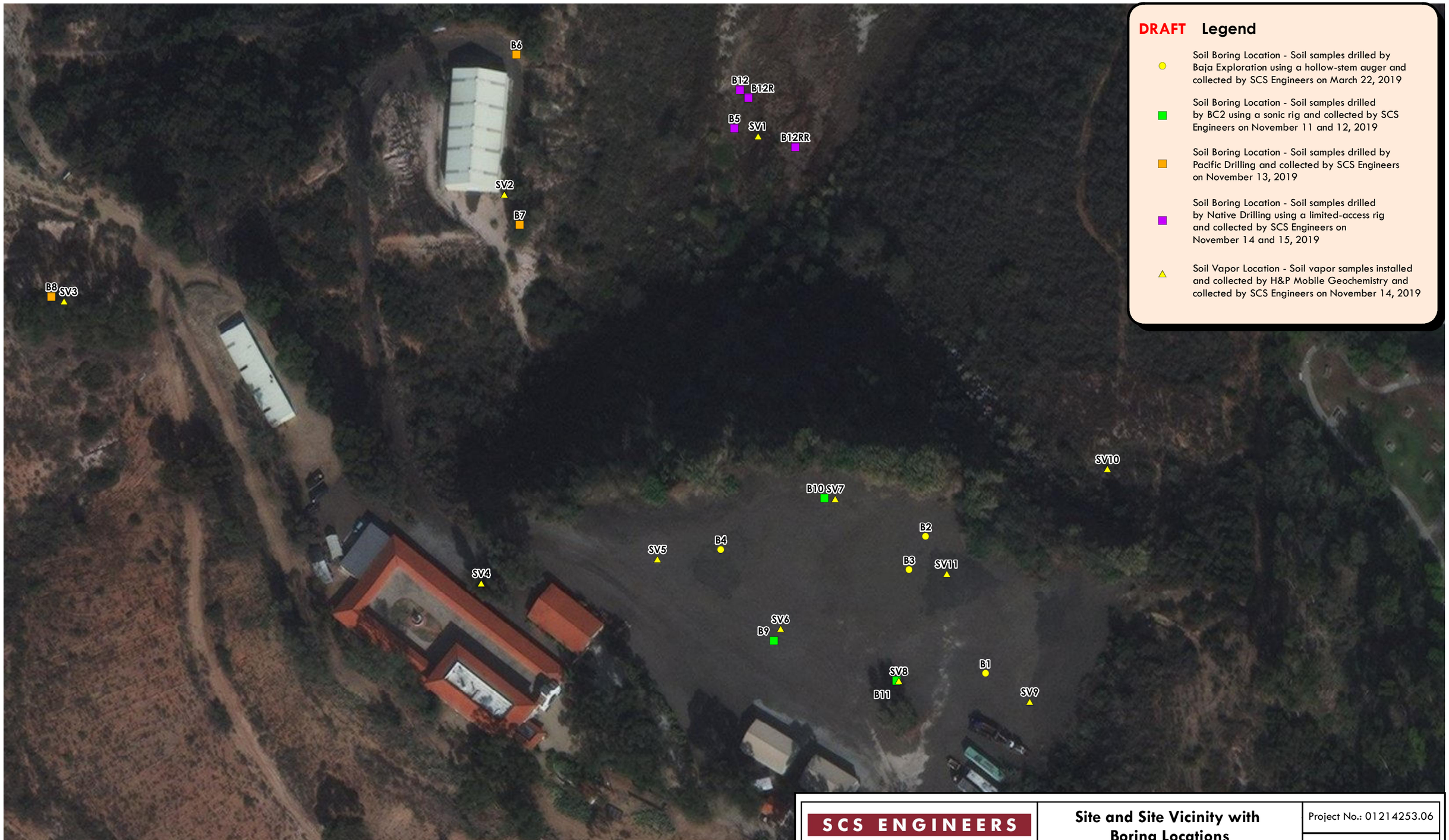
STING PROFILE STL-2	N	11495 Cypress Canyon Road San Diego, California	SOUTHWEST GEOPHYSICS
		Project No.: 119139 / Date: 03/19	Figure 4b

TOMOGRAPHY MODEL



P-WAVE PROFILE SL-1	11495 Cypress Canyon Road San Diego, California	SOUTHWEST GEOPHYSICS INC
	Project No.: 119139 / Date: 03/19	Figure 5

Note: Contour Interval = 1,000 feet per second



DRAFT Legend

- Soil Boring Location - Soil samples drilled by Baja Exploration using a hollow-stem auger and collected by SCS Engineers on March 22, 2019
- Soil Boring Location - Soil samples drilled by BC2 using a sonic rig and collected by SCS Engineers on November 11 and 12, 2019
- Soil Boring Location - Soil samples drilled by Pacific Drilling and collected by SCS Engineers on November 13, 2019
- Soil Boring Location - Soil samples drilled by Native Drilling using a limited-access rig and collected by SCS Engineers on November 14 and 15, 2019
- Soil Vapor Location - Soil vapor samples installed and collected by H&P Mobile Geochemistry and collected by SCS Engineers on November 14, 2019

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics,

0 50 100 200 Feet

N

SCS ENGINEERS
Environmental Consultants
8799 Balboa Avenue, Suite 290
San Diego, California 92123

Site and Site Vicinity with Boring Locations
The Phair Company
11495 Cypress Canyon Road
San Diego, California

Project No.: 01214253.06

DRAFT Figure 2

Date Drafted: 11/20/2019

APPENDIX B
EARTHWORK SPECIFICATIONS

GENERAL EARTHWORK SPECIFICATIONS

I. General

A. General procedures and requirements for earthwork and grading are presented herein. The earthwork and grading recommendations provided in the geotechnical report are considered part of these specifications, and where the general specifications provided herein conflict with those provided in the geotechnical report, the recommendations in the geotechnical report shall govern. Recommendations provided herein and in the geotechnical report may need to be modified depending on the conditions encountered during grading.

B. The contractor is responsible for the satisfactory completion of all earthwork in accordance with the project plans, specifications, applicable building codes, and local governing agency requirements. Where these requirements conflict, the stricter requirements shall govern.

C. It is the contractor's responsibility to read and understand the guidelines presented herein and in the geotechnical report as well as the project plans and specifications. Information presented in the geotechnical report is subject to verification during grading. The information presented on the exploration logs depicts conditions at the particular time of excavation and at the location of the excavation. Subsurface conditions present at other locations may differ, and the passage of time may result in different subsurface conditions being encountered at the locations of the exploratory excavations. The contractor shall perform an independent investigation and evaluate the nature of the surface and subsurface conditions to be encountered and the procedures and equipment to be used in performing his work.

D. The contractor shall have the responsibility to provide adequate equipment and procedures to accomplish the earthwork in accordance with applicable requirements. When the quality of work is less than that required, the Geotechnical Consultant may reject the work and may recommend that the operations be suspended until the conditions are corrected.

E. Prior to the start of grading, a qualified Geotechnical Consultant should be employed to observe grading procedures and provide testing of the fills for conformance with the project specifications, approved grading plan, and guidelines presented herein. All remedial removals, clean-outs, removal bottoms, keyways, and subdrain installations should be observed and documented by the Geotechnical Consultant prior to placing fill. It is the contractor's responsibility to apprise the Geotechnical Consultant of their schedules and notify the Geotechnical Consultant when those areas are ready for observation.

F. The contractor is responsible for providing a safe environment for the Geotechnical Consultant to observe grading and conduct tests.

II. Site Preparation

A. Clearing and Grubbing: Excessive vegetation and other deleterious material shall be sufficiently removed as required by the Geotechnical Consultant, and such materials shall be properly disposed of offsite in a method acceptable to the owner and governing agencies. Where applicable, the contractor may obtain permission from the Geotechnical Consultant, owner, and governing agencies to dispose of vegetation and other deleterious materials in designated areas onsite.

B. Unsuitable Soils Removals: Earth materials that are deemed unsuitable for the support of fill shall be removed as necessary to the satisfaction of the Geotechnical Consultant.

C. Any underground structures such as cesspools, cisterns, mining shafts, tunnels, septic tanks, wells, pipelines, other utilities, or other structures located within the limits of grading shall be removed and/or abandoned in accordance with the requirements of the governing agency and to the satisfaction of the Geotechnical Consultant.

D. Preparation of Areas to Receive Fill: After removals are completed, the exposed surfaces shall be scarified to a depth of approximately 8 inches, watered or dried, as needed, to achieve a generally uniform moisture content that is at or near optimum moisture content. The scarified materials shall then be compacted to the project requirements and tested as specified.

E. All areas receiving fill shall be observed and approved by the Geotechnical Consultant prior to the placement of fill. A licensed surveyor shall provide survey control for determining elevations of processed areas and keyways.

III. Placement of Fill

A. Suitability of fill materials: Any materials, derived onsite or imported, may be utilized as fill provided that the materials have been determined to be suitable by the Geotechnical Consultant. Such materials shall be essentially free of organic matter and other deleterious materials, and be of a gradation, expansion potential, and/or strength that is acceptable to the Geotechnical Consultant. Fill materials shall be tested in a laboratory approved by the Geotechnical Consultant, and import materials shall be tested and approved prior to being imported.

B. Generally, different fill materials shall be thoroughly mixed to provide a relatively uniform blend of materials and prevent abrupt changes in material type. Fill materials derived from benching should be dispersed throughout the fill area instead of placing the materials within only an equipment-width from the cut/fill contact.

C. Oversize Materials: Rocks greater than 8 inches in largest dimension shall be disposed of offsite or be placed in accordance with the recommendations by the Geotechnical Consultant in the areas that are designated as suitable for oversize rock placement. Rocks that are smaller than 8 inches in largest dimension may be utilized in the fill provided that they are not nested and are their quantity and distribution are acceptable to the Geotechnical Consultant.

D. The fill materials shall be placed in thin, horizontal layers such that, when compacted, shall not exceed 6 inches. Each layer shall be spread evenly and shall be thoroughly mixed to obtain near uniform moisture content and uniform blend of materials.

E. Moisture Content: Fill materials shall be placed at or above the optimum moisture content or as recommended by the geotechnical report. Where the moisture content of the engineered fill is less than recommended, water shall be added, and the fill materials shall be blended so that near uniform moisture content is achieved. If the moisture content is above the limits specified by the Geotechnical Consultant, the fill materials shall be aerated by discing, blading, or other methods until the moisture content is acceptable.

F. Each layer of fill shall be compacted to the project standards in accordance to the project specifications and recommendations of the Geotechnical Consultant. Unless otherwise specified by the Geotechnical Consultant, the fill shall be compacted to a minimum of 90 percent of the maximum dry density as determined by ASTM Test Method: D1557-09.

G. Benching: Where placing fill on a slope exceeding a ratio of 5 to 1 (horizontal to vertical), the ground should be keyed or benched. The keyways and benches shall extend through all unsuitable materials into suitable materials such as firm materials or sound bedrock or as recommended by the Geotechnical Consultant. The minimum keyway width shall be 15 feet and extend into suitable materials, or as recommended by the geotechnical report and approved by the Geotechnical Consultant. The minimum keyway width for fill over cut slopes is also 15 feet, or as recommended by the geotechnical report and approved by the Geotechnical Consultant. As a general rule, unless otherwise recommended by the Geotechnical Consultant, the minimum width of the keyway shall be equal to 1/2 the height of the fill slope.

H. Slope Face: The specified minimum relative compaction shall be maintained out to the finish face of fill and stabilization fill slopes. Generally, this may be achieved by overbuilding the slope and cutting back to the compacted core. The actual amount of overbuilding may vary as field conditions dictate. Alternately, this may be achieved by back rolling the slope face with suitable equipment or other methods that produce the designated result. Loose soil should not be allowed to build up on the slope face. If present, loose soils shall be trimmed to expose the compacted slope face.

I. Slope Ratio: Unless otherwise approved by the Geotechnical Consultant and governing agencies, permanent fill slopes shall be designed and constructed no steeper than 2 to 1 (horizontal to vertical).

J. Natural Ground and Cut Areas: Design grades that are in natural ground or in cuts should be evaluated by the Geotechnical Consultant to determine whether scarification and processing of the ground and/or overexcavation is needed.

K. Fill materials shall not be placed, spread, or compacted during unfavorable weather conditions. When grading is interrupted by rain, filing operations shall not resume until the Geotechnical Consultant approves the moisture and density of the previously placed compacted fill.

IV. Cut Slopes

A. The Geotechnical Consultant shall inspect all cut slopes, including fill over cut slopes, and shall be notified by the contractor when cut slopes are started.

B. If adverse or potentially adverse conditions are encountered during grading; the Geotechnical Consultant shall investigate, evaluate, and make recommendations to mitigate the adverse conditions.

C. Unless otherwise stated in the geotechnical report, cut slopes shall not be excavated higher or steeper than the requirements of the local governing agencies. Short-term stability of the cut slopes and other excavations is the contractor's responsibility.

V. Drainage

A. Back drains and Subdrains: Back drains and subdrains shall be provided in fill as recommended by the Geotechnical Consultant and shall be constructed in accordance with the governing agency and/or recommendations of the Geotechnical Consultant. The location of subdrains, especially outlets, shall be surveyed and recorded by the Civil Engineer.

B. Top-of-slope Drainage: Positive drainage shall be established away from the top of slope. Site drainage shall not be permitted to flow over the tops of slopes.

C. Drainage terraces shall be constructed in compliance with the governing agency requirements and/or in accordance with the recommendations of the Geotechnical Consultant.

D. Non-erodible interceptor swales shall be placed at the top of cut slopes that face the same direction as the prevailing drainage.

VI. Erosion Control

A. All finish cut and fill slopes shall be protected from erosion and/or planted in accordance with the project specifications and/or landscape architect's recommendations. Such measures to protect the slope face shall be undertaken as soon as practical after completion of grading.

B. During construction, the contractor shall maintain proper drainage and prevent the ponding of water. The contractor shall take remedial measures to prevent the erosion of graded areas until permanent drainage and erosion control measures have been installed.

VII. Trench Excavation and Backfill

A. Safety: The contractor shall follow all OSHA requirements for safety of trench excavations. Knowing and following these requirements is the contractor's responsibility. All trench excavations or open cuts in excess of 5 feet in depth shall be shored or laid back. Trench excavations and open cuts exposing adverse geologic conditions may require further evaluation by the Geotechnical Consultant. If a contractor fails to provide safe access for compaction testing, backfill not tested due to safety concerns may be subject to removal.

B. Bedding: Bedding materials shall be non-expansive and have a Sand Equivalent greater than 30. Where permitted by the Geotechnical Consultant, the bedding materials can be densified by jetting.

C. Backfill: Jetting of backfill materials is generally not acceptable. Where permitted by the Geotechnical Consultant, the bedding materials can be densified by jetting provided the backfill materials are granular, free-draining and have a Sand Equivalent greater than 30.

VIII. Geotechnical Observation and Testing During Grading

A. Compaction Testing: Fill shall be tested by the Geotechnical Consultant for evaluation of general compliance with the recommended compaction and moisture conditions. The tests shall be taken in the compacted soils beneath the surface if the surficial materials are disturbed. The contractor shall assist the Geotechnical Consultant by excavating suitable test pits for testing of compacted fill.

B. Where tests indicate that the density of a layer of fill is less than required, or the moisture content not within specifications, the Geotechnical Consultant shall notify the contractor of the unsatisfactory conditions of the fill. The portions of the fill that are not within specifications shall be reworked until the required density and/or moisture content has been attained. No additional fill shall be placed until the last lift of fill is tested and found to meet the project specifications and approved by the Geotechnical Consultant.

C. If, in the opinion of the Geotechnical Consultant, unsatisfactory conditions, such as adverse weather, excessive rock or deleterious materials being placed in the fill, insufficient equipment, excessive rate of fill placement, results in a quality of work that is unacceptable, the consultant shall notify the contractor, and the contractor shall rectify the conditions, and if necessary, stop work until conditions are satisfactory.

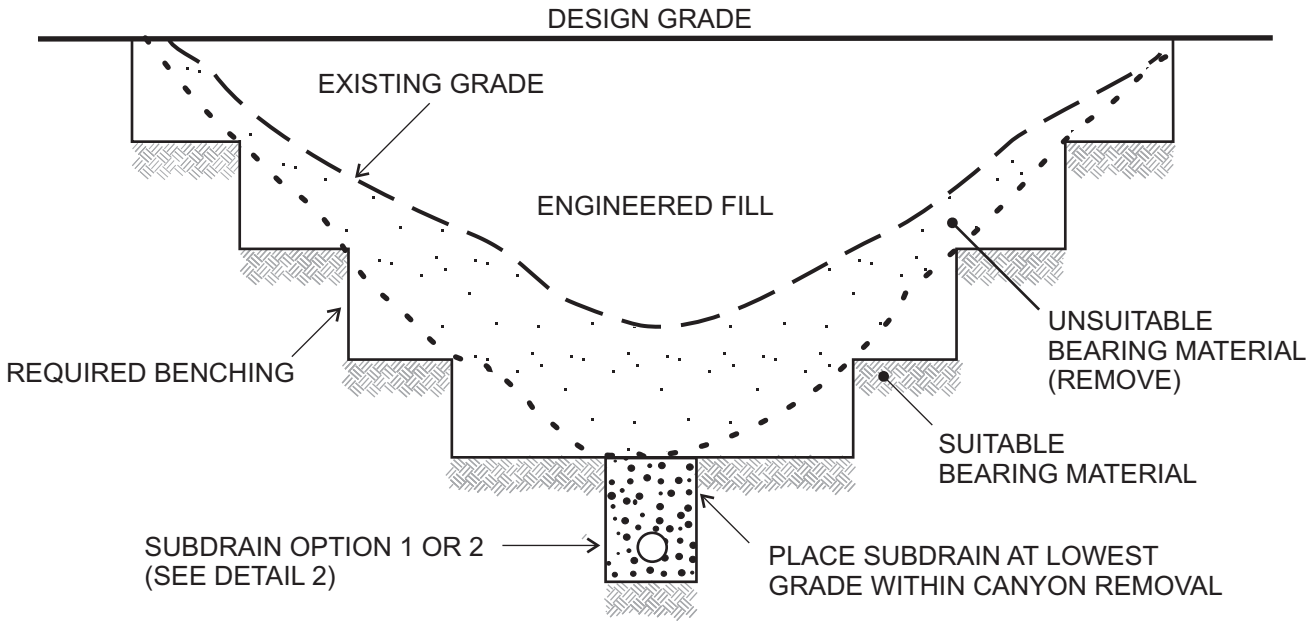
D. Frequency of Compaction Testing: The location and frequency of tests shall be at the Geotechnical Consultant's discretion. Generally, compaction tests shall be taken at intervals not exceeding two feet in fill height and 1,000 cubic yards of fill materials placed.

E. Compaction Test Locations: The Geotechnical Consultant shall document the approximate elevation and horizontal coordinates of the compaction test locations. The contractor shall coordinate with the surveyor to assure that sufficient grade stakes are established so that the Geotechnical Consultant can determine the test locations. Alternately, the test locations can be surveyed and the results provided to the Geotechnical Consultant.

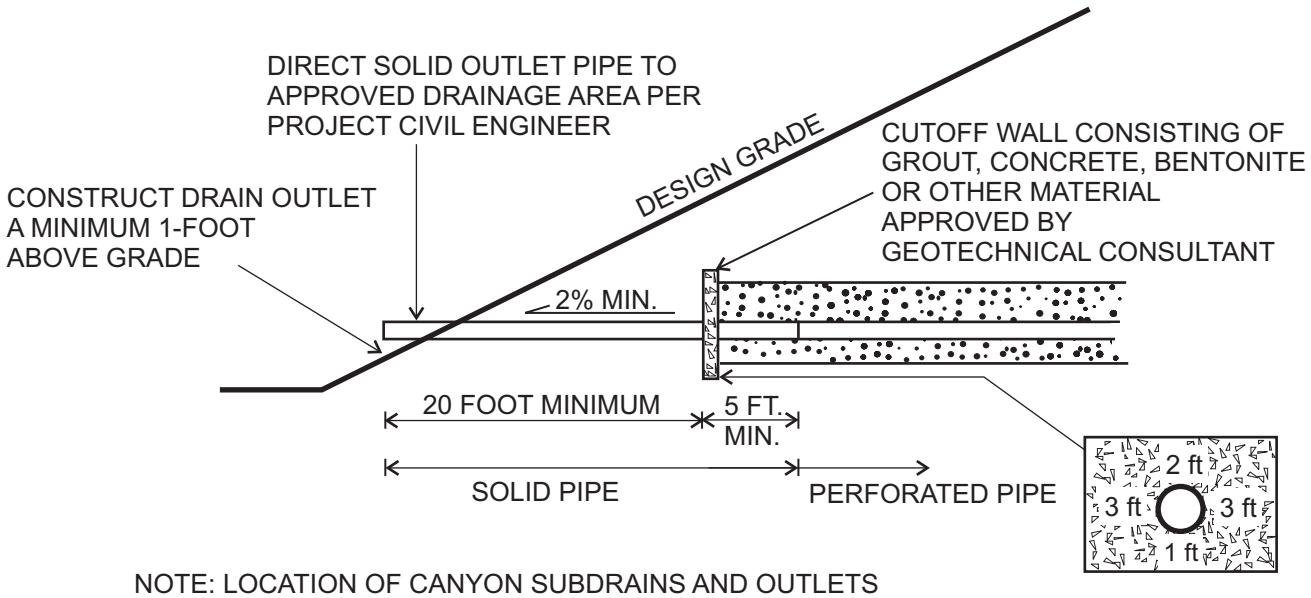
F. Areas of fill that have not been observed or tested by the Geotechnical Consultant may have to be removed and recompacted at the contractor's expense. The depth and extent of removals will be determined by the Geotechnical Consultant.

G. Observation and testing by the Geotechnical Consultant shall be conducted during grading in order for the Geotechnical Consultant to state that, in his opinion, grading has been completed in accordance with the approved geotechnical report and project specifications.

H. Reporting of Test Results: After completion of grading operations, the Geotechnical Consultant shall submit reports documenting their observations during construction and test results. These reports may be subject to review by the local governing agencies.



CANYON SUBDRAIN PROFILE



NOTE: LOCATION OF CANYON SUBDRAINS AND OUTLETS SHOULD BE DOCUMENTED BY PROJECT CIVIL ENGINEER. OUTLETS MUST BE KEPT UNOBSTRUCTED AT ALL TIMES.

CANYON SUBDRAIN TERMINUS

VER 1.0

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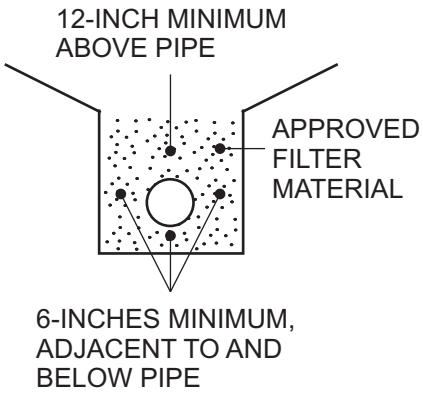
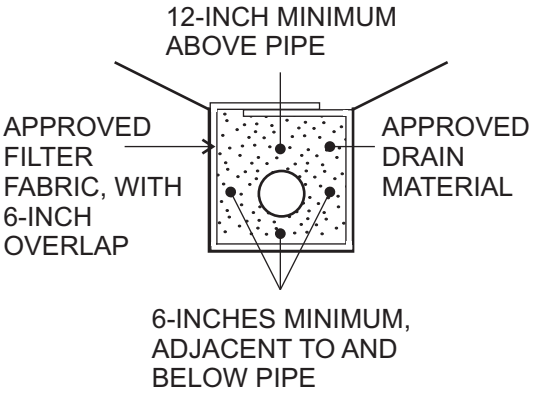
AGS ADVANCED GEOTECHNICAL SOLUTIONS	CANYON SUBDRAIN	DETAIL 1



OPTION 1

FILTER MATERIAL: MINIMUM VOLUME OF 9 CUBIC FEET PER LINEAL FOOT OF CALTRANS CLASS 2 PERMEABLE MATERIAL



OPTION 2

DRAIN MATERIAL: MINIMUM VOLUME OF 9 CUBIC FEET PER LINEAL FOOT OF 3/4-INCH MAX ROCK OR APPROVED EQUIVALENT SUBSTITUTE

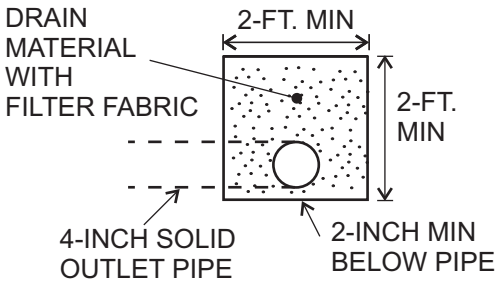
FILTER FABRIC: MIRAFI 140 FILTER FABRIC OR APPROVED EQUIVALENT SUBSTITUTE

PIPE: 6 OR 8-INCH ABS OR PVC PIPE OR APPROVED SUBSTITUTE WITH A MINIMUM OF 8 PERFORATIONS (1/4-INCH DIAMETER) PER LINEAL FOOT IN BOTTOM HALF OF PIPE

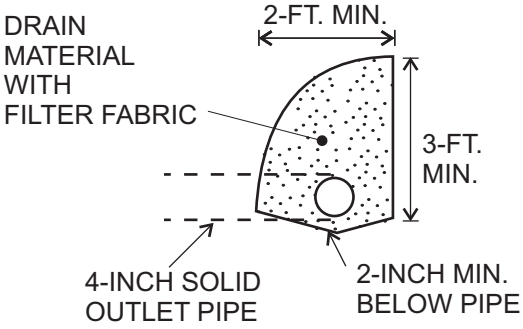
(ASTM D2751, SDR-35 OR ASTM D3034, SDR-35
ASTM D1527, SCHD. 40 OR ASTM D1785, SCHD. 40)

NOTE: CONTINUOUS RUN IN EXCESS OF 5OO FEET REQUIRES 8-INCH DIAMETER PIPE (ASTM D3034, SDR-35, OR ASTM D1785, SCHD. 40)

CANYON SUBDRAIN



OPTION 1



OPTION 2

DRAIN MATERIAL: GRAVEL TRENCH TO BE FILLED WITH 3/4-INCH MAX ROCK OR APPROVED EQUIVALENT SUBSTITUTE

FILTER FABRIC: MIRAFI 140 FILTER FABRIC OR EQUIVALENT SUBSTITUTE WITH A MINIMUM 6-INCH OVERLAP

PIPE: 4-INCH ABS OR PVC PIPE OR APPROVED EQUIVALENT SUBSTITUTE WITH A MINIMUM OF 8 PERFORATIONS (1/4-INCH DIAMETER) PER LINEAL FOOT IN BOTTOM HALF OF PIPE

(ASTM D2751, SDR-35 OR ASTM D3034, SDR-35
ASTM D1527, SCHD. 40 OR ASTM D1785, SCHD. 40)

BUTTRESS/STABILIZATION DRAIN

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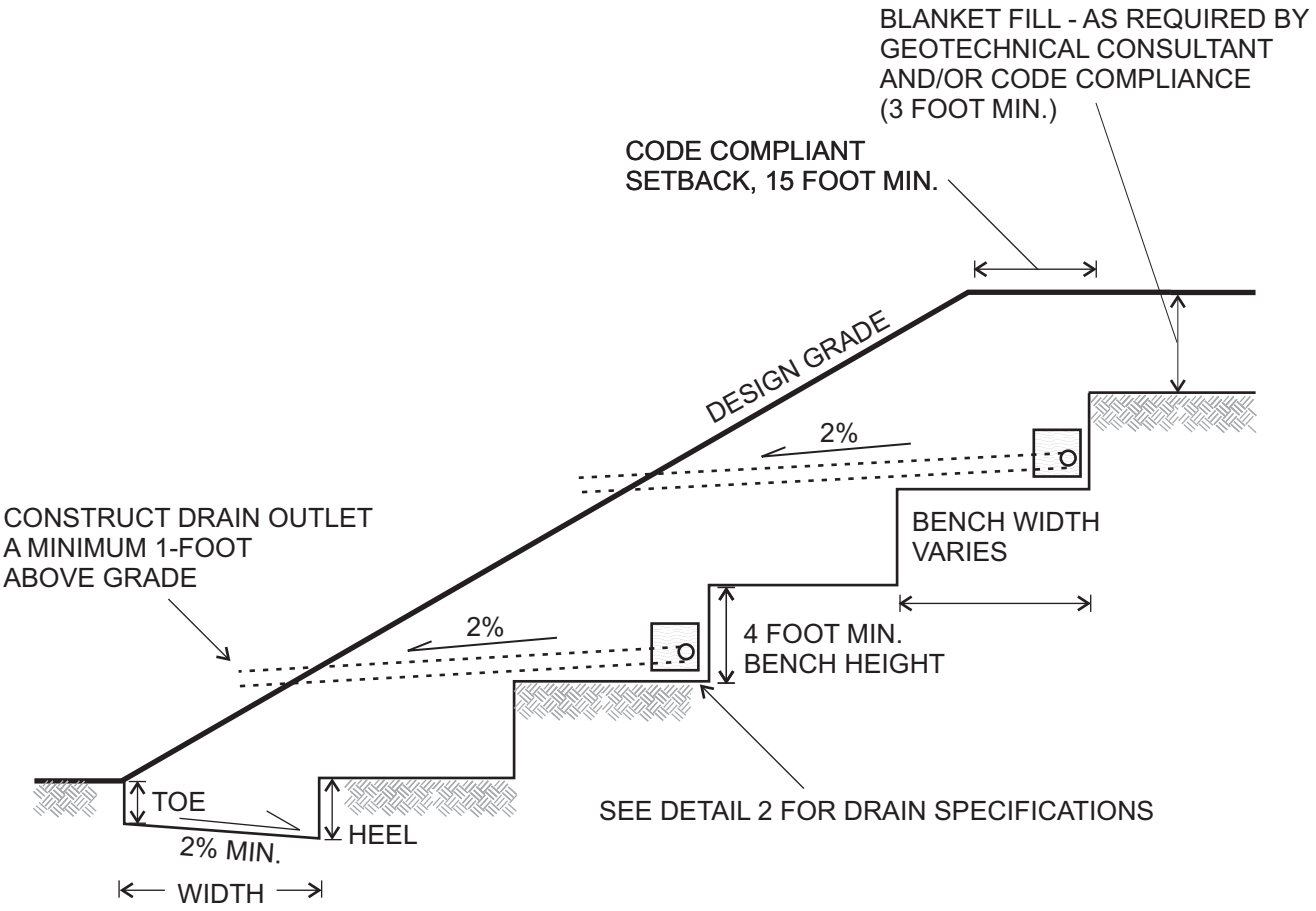
ADVANCED GEOTECHNICAL SOLUTIONS

DRAIN SPECIFICATIONS

DETAIL 2



CODE COMPLIANT KEYWAY
WITH MINIMUM DIMENSIONS:

TOE 2 FOOT MIN.
HEEL 3 FOOT MIN.
WIDTH 15 FOOT MIN.

NOTES:

1. DRAIN OUTLETS TO BE PROVIDED EVERY 100 FEET CONNECT TO PERFORATED DRAIN PIPE BY “L” OR “T” AT A MINIMUM 2% GRADIENT.

2. THE NECESSITY AND LOCATION OF ADDITIONAL DRAINS SHALL BE DETERMINED IN THE FIELD BY THE GEOTECHNICAL CONSULTANT. UPPER STAGE OUTLETS SHOULD BE EMPTIED ONTO CONCRETE TERRACE DRAINS.

3. DRAIN PIPE TO EXTEND FULL LENGTH OF STABILIZATION/BUTTRESS WITH A MINIMUM GRADIENT OF 2% TO SOLID OUTLET PIPES.

4. LOCATION OF DRAINS AND OUTLETS SHOULD BE DOCUMENTED BY PROJECT CIVIL ENGINEER. OUTLETS MUST BE KEPT UNOBSTRUCTED AT ALL TIMES.

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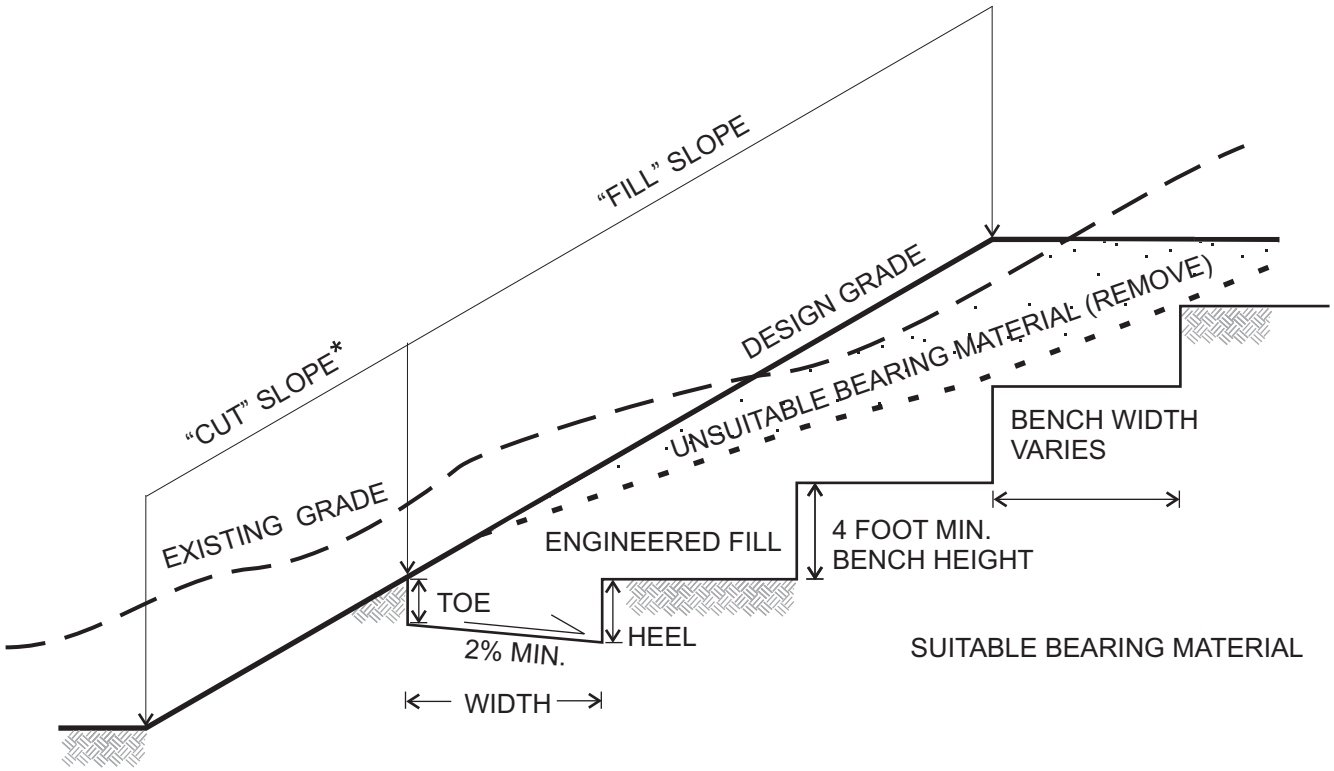
ADVANCED GEOTECHNICAL SOLUTIONS

STABILIZATION/BUTTRESS FILL

DETAIL 3

* THE “CUT” PORTION OF THE SLOPE SHALL BE EXCAVATED AND EVALUATED BY THE GEOTECHNICAL CONSULTANT PRIOR TO CONSTRUCTING THE “FILL” PORTION



CODE COMPLIANT KEYWAY
WITH MINIMUM DIMENSIONS:

TOE: 2 FOOT MIN.
HEEL: 3 FOOT MIN.
WIDTH: 15 FOOT MIN.

NOTES:

1. THE NECESSITY AND LOCATION OF DRAINS SHALL BE DETERMINED IN THE FIELD BY THE GEOTECHNICAL CONSULTANT

2. SEE DETAIL 2 FOR DRAIN SPECIFICATIONS

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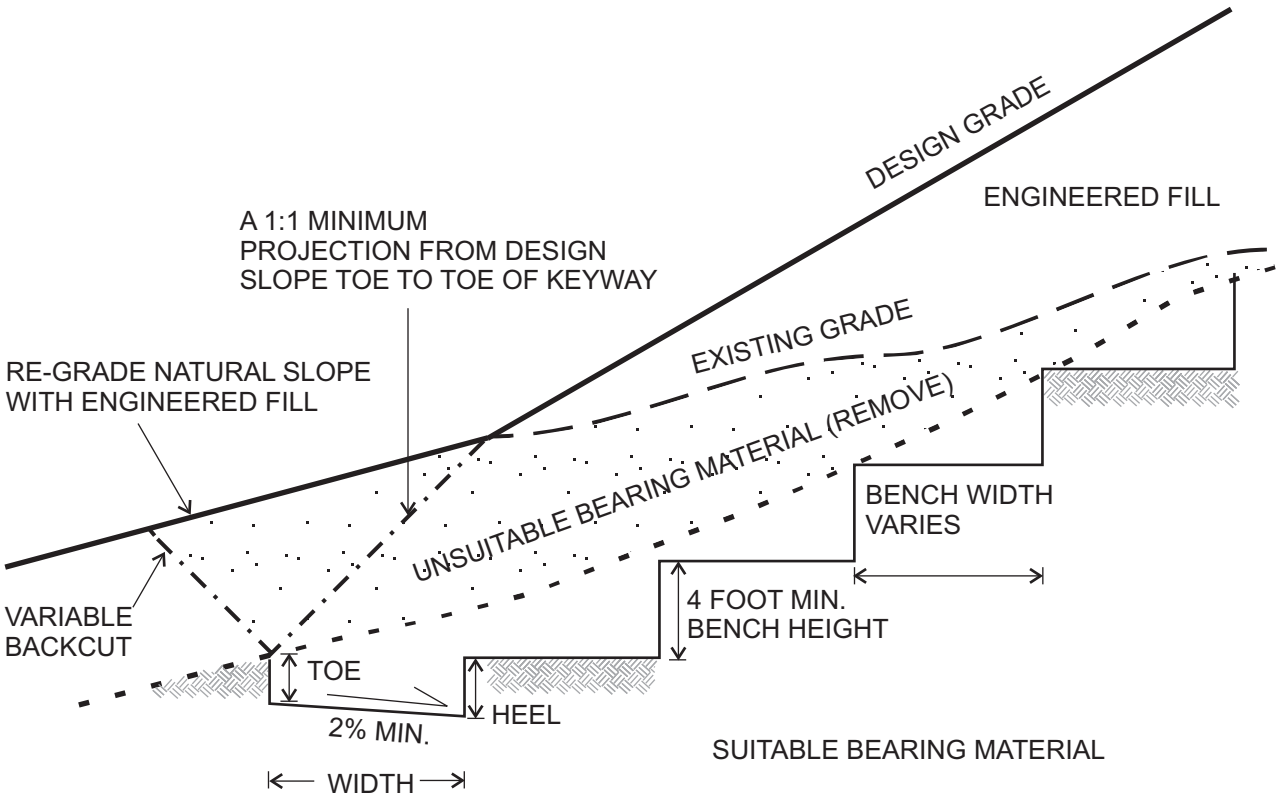
ADVANCED GEOTECHNICAL SOLUTIONS

FILL OVER CUT SLOPE

DETAIL 4



CODE COMPLIANT KEYWAY
WITH MINIMUM DIMENSIONS:

TOE: 2 FOOT MIN.
HEEL: 3 FOOT MIN.
WIDTH: 15 FOOT MIN.

NOTES:

1. WHEN THE NATURAL SLOPE APPROACHES OR EXCEEDS THE DESIGN GRADE SLOPE RATIO, SPECIAL RECOMMENDATIONS ARE NECESSARY BY THE GEOTECHNICAL CONSULTANT

2. THE GEOTECHNICAL CONSULTANT WILL DETERMINE THE REQUIREMENT FOR AND LOCATION OF SUBSURFACE DRAINAGE SYSTEMS.

3. MAINTAIN MINIMUM 15 FOOT HORIZONTAL WIDTH FROM FACE OF SLOPE TO BENCH/BACKCUT

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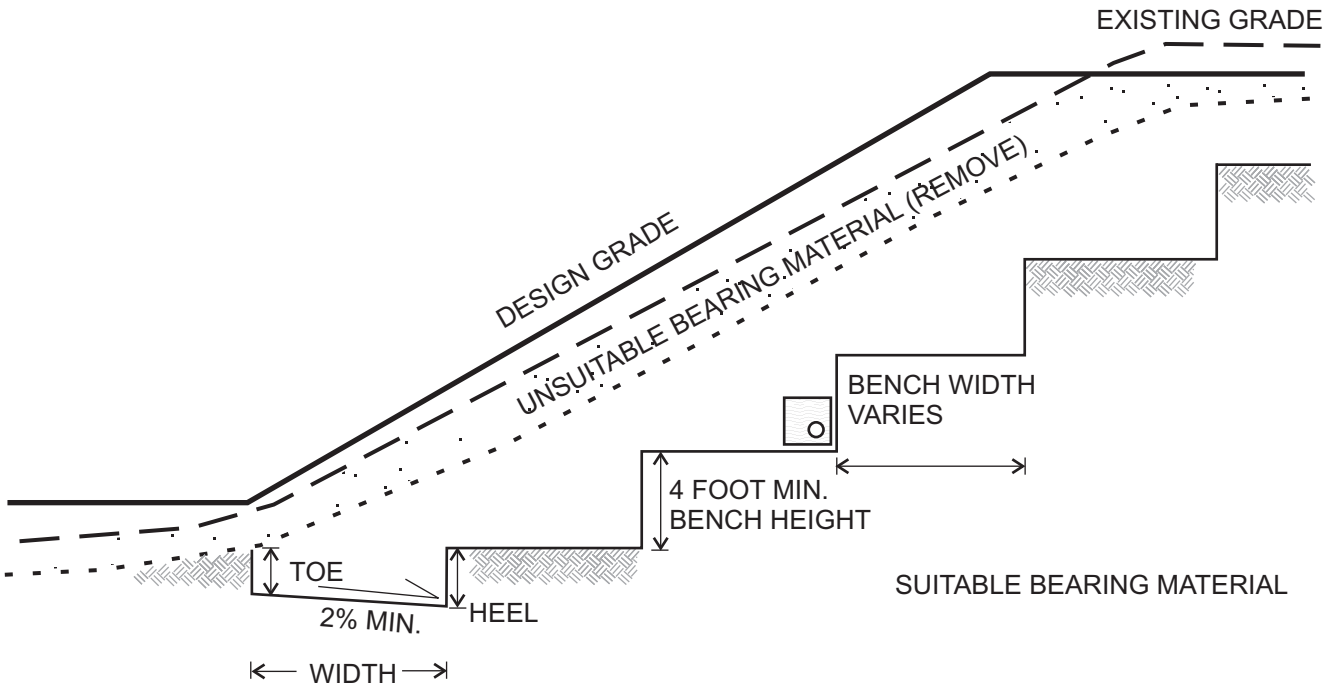
FILL OVER NATURAL SLOPE

DETAIL 5



CODE COMPLIANT KEYWAY
WITH MINIMUM DIMENSIONS:

TOE: 2 FOOT MIN.
HEEL: 3 FOOT MIN.
WIDTH: 15 FOOT MIN.

NOTES:

1. MAINTAIN MINIMUM 15 FOOT HORIZONTAL WIDTH FROM FACE OF SLOPE TO BENCH/BACKCUT

2. SEE DETAIL 2 FOR DRAIN SPECIFICATIONS

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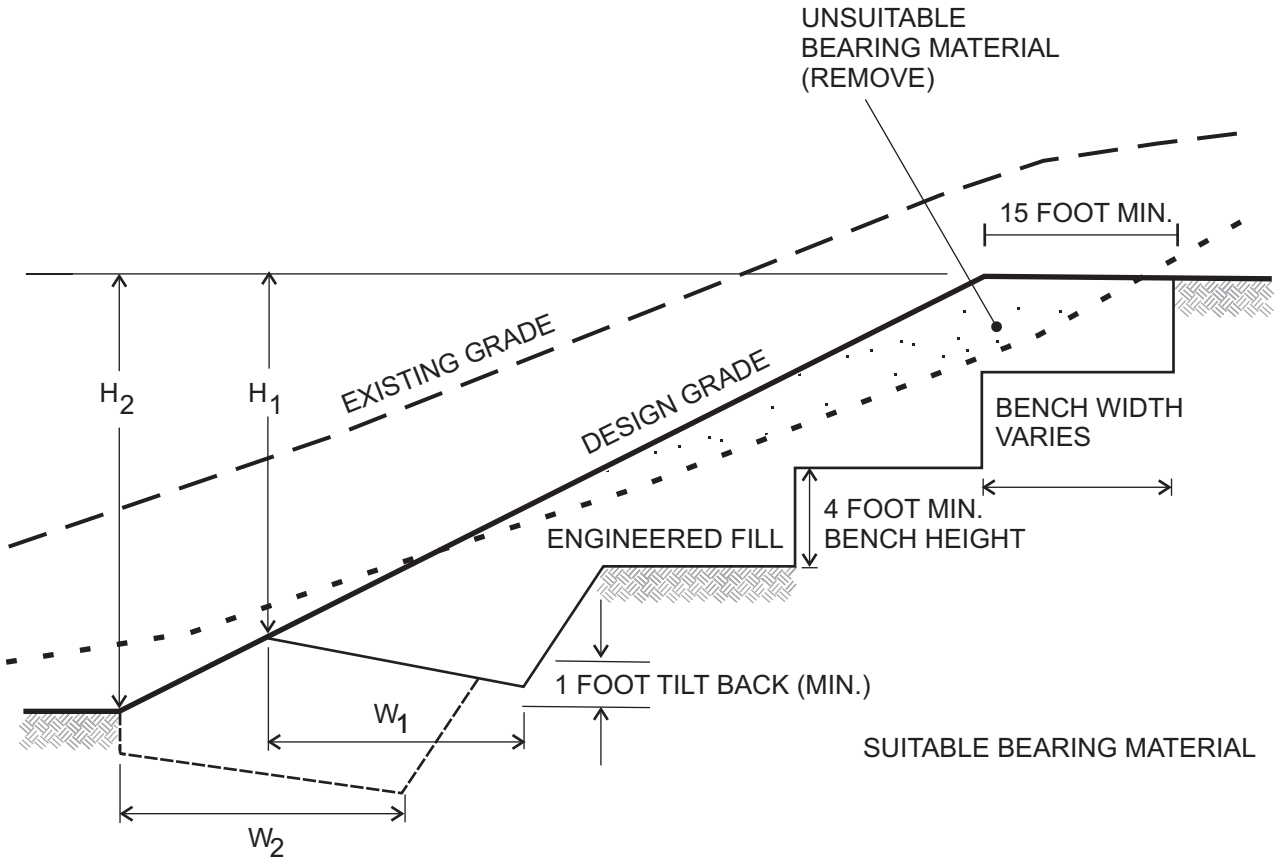
SKIN FILL CONDITION

DETAIL 6



NOTES:

1. IF RECOMMENDED BY THE GEOTECHNICAL CONSULTANT, THE REMAINING CUT PORTION OF THE SLOPE MAY REQUIRE REMOVAL AND REPLACEMENT WITH AN ENGINEERED FILL

2. "W" SHALL BE EQUIPMENT WIDTH (15 FEET) FOR SLOPE HEIGHT LESS THAN 25 FEET. FOR SLOPES GREATER THAN 25 FEET, "W" SHALL BE DETERMINED BY THE GEOTECHNICAL CONSULTANT. AT NO TIME SHALL "W" BE LESS THAN H/2

3. DRAINS WILL BE REQUIRED (SEE DETAIL 2)

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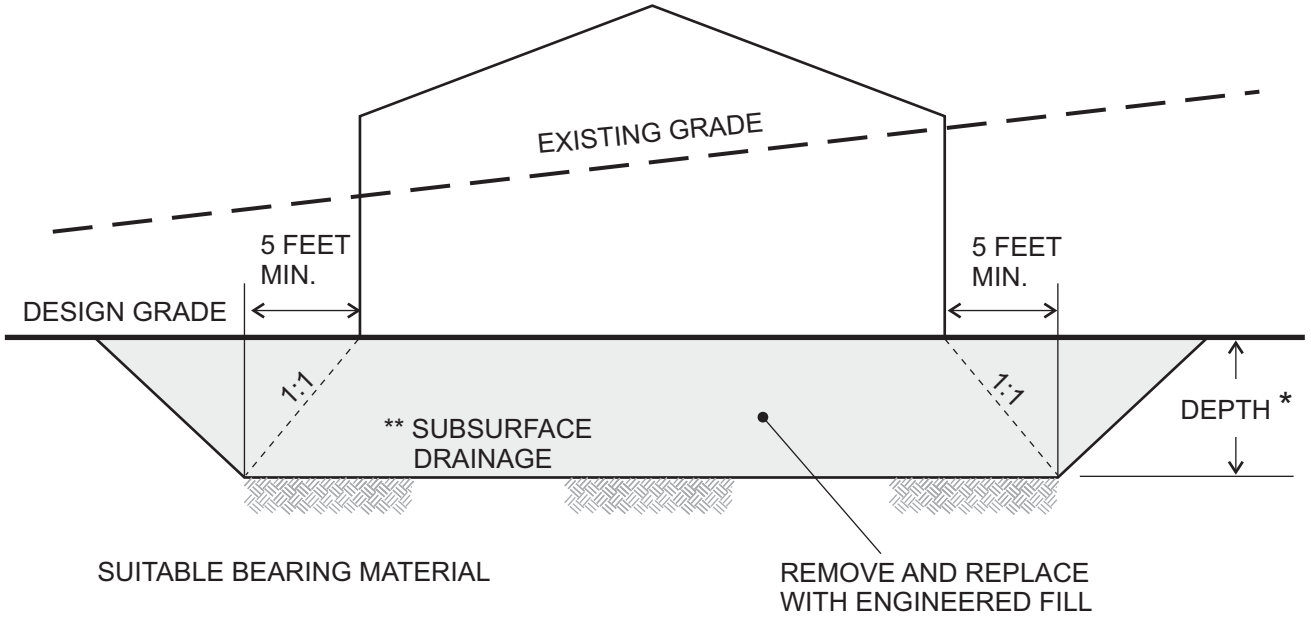
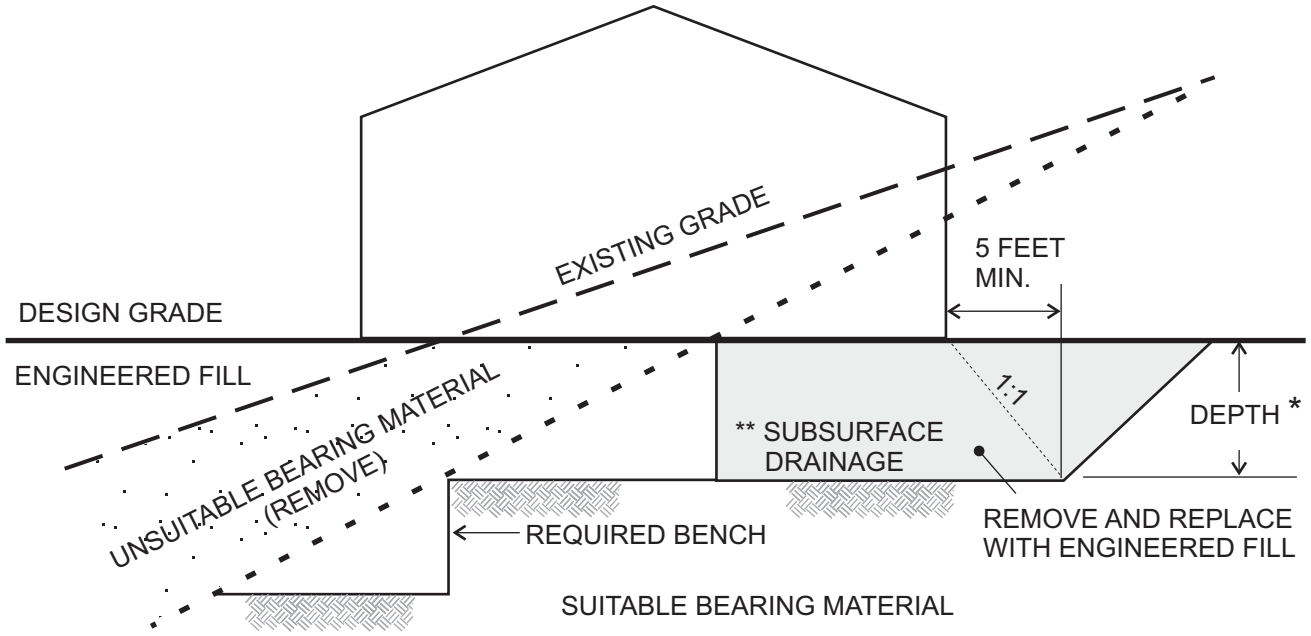
PARTIAL CUT SLOPE STABILIZATION

DETAIL 7



CUT LOT OVEREXCAVATION



CUT-FILL LOT OVEREXCAVATION

NOTES:

* SEE REPORT FOR RECOMMENDED DEPTHS, DEEPER OVEREXCAVATION MAY BE REQUIRED BY THE GEOTECHNICAL CONSULTANT BASED ON EXPOSED FIELD CONDITIONS

** CONSTRUCT EXCAVATION TO PROVIDE FOR POSITIVE DRAINAGE TOWARDS STREETS, DEEPER FILL AREAS OR APPROVED DRAINAGE DEVICES BASED ON FIELD CONDITIONS

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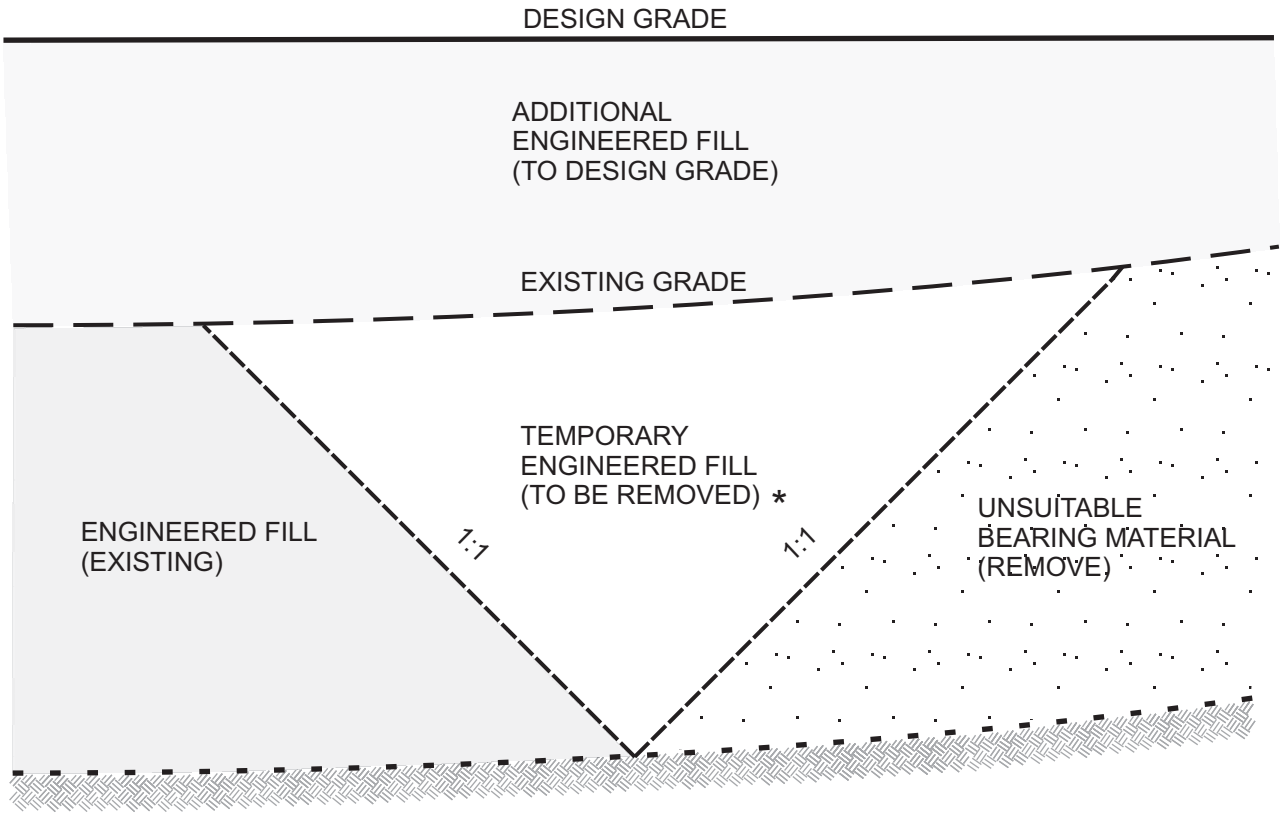
AGS ADVANCED GEOTECHNICAL SOLUTIONS	CUT & CUT-FILL LOT OVEREXCAVATION	DETAIL 8



* REMOVE BEFORE PLACING ADDITIONAL ENGINEERED FILL

TYPICAL UP-CANYON PROFILE

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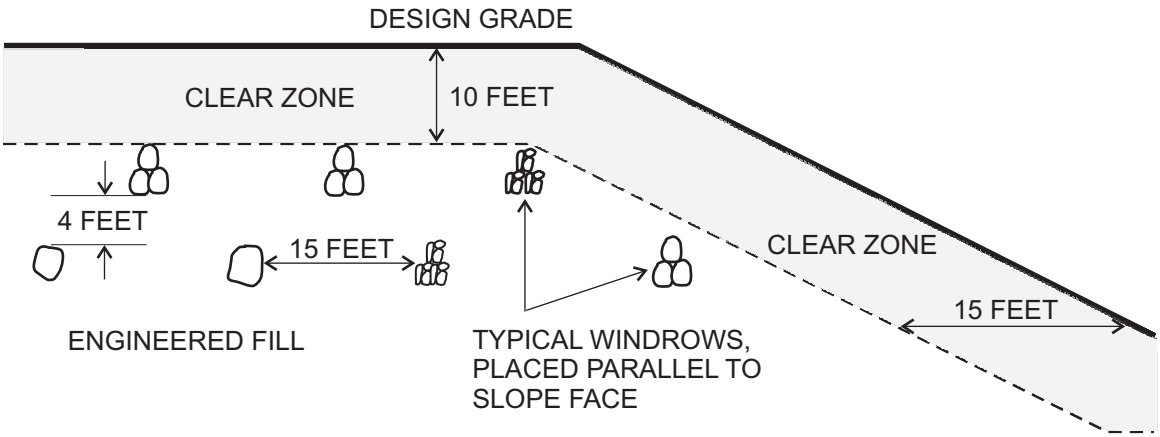
ADVANCED GEOTECHNICAL SOLUTIONS

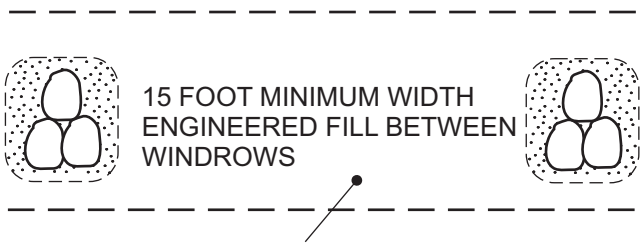
REMOVAL ADJACENT TO EXISTING FILL

DETAIL 9



CLEAR ZONE DIMENSIONS FOR REFERENCE ONLY, ACTUAL DEPTH, WIDTH, WINDROW LENGTH, ETC. TO BE BASED ON ELEVATIONS OF FOUNDATIONS, UTILITIES OR OTHER STRUCTURES PER THE GEOTECHNICAL CONSULTANT OR GOVERNING AGENCY APPROVAL

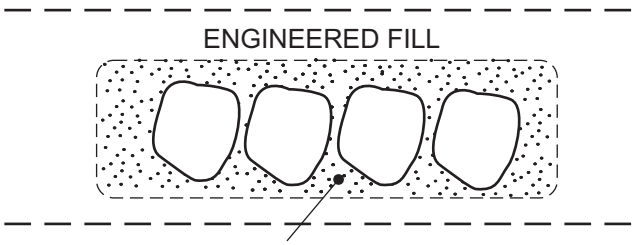
OVERSIZED MATERIAL DISPOSAL PROFILE



HORIZONTALLY PLACED ENGINEERED FILL, FREE OF OVERSIZED MATERIALS AND COMPACTED TO MINIMUM PROJECT STANDARDS

COMPACT ENGINEERED FILL ABOVE OVERSIZED MATERIALS TO FACILITATE "TRENCH" CONDITION PRIOR TO FLOODING GRANULAR MATERIALS

WINDROW CROSS-SECTION



WINDROW PROFILE

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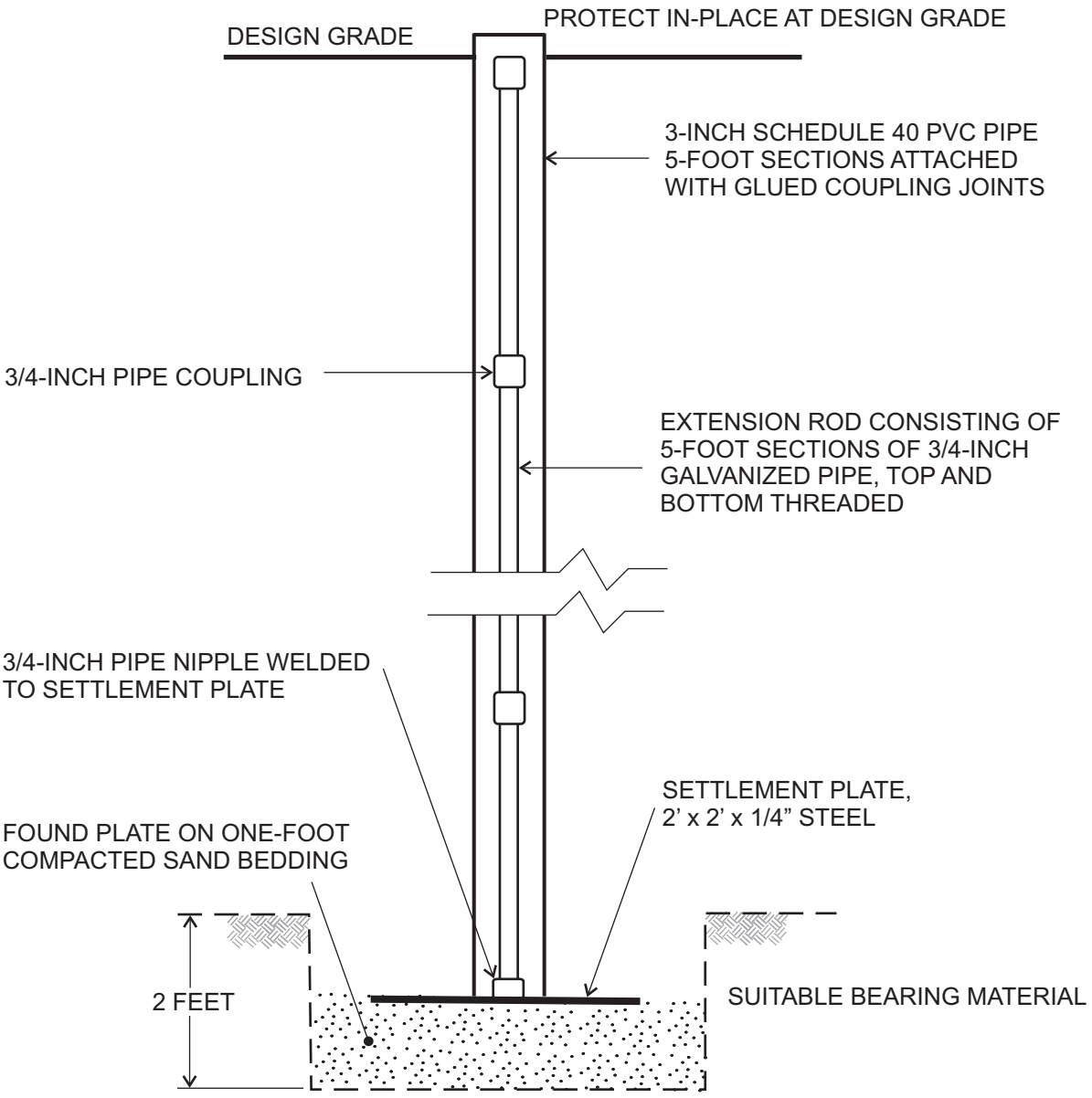
OVERSIZED MATERIAL DISPOSAL CRITERIA

DETAIL 10



NOTES:

1. SETTLEMENT PLATE LOCATIONS SHALL BE SUFFICIENTLY IDENTIFIED BY THE CONTRACTOR AND BE READILY VISIBLE TO EQUIPMENT OPERATORS.

2. CONTRACTOR SHALL MAINTAIN ADEQUATE HORIZONTAL CLEARANCE FOR EQUIPMENT OPERATION AND SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE TO SETTLEMENT PLATE DURING SITE CONSTRUCTION.

3. A MINIMUM 5-FOOT ZONE ADJACENT TO SETTLEMENT PLATE/EXTENSION RODS SHALL BE ESTABLISHED FOR HAND-HELD MECHANICAL COMPACTION OF ENGINEERED FILL. ENGINEERED FILL SHALL BE COMPACTED TO MINIMUM PROJECT STANDARD.

4. ELEVATIONS OF SETTLEMENT PLATE AND ALL EXTENSION ROD PLACEMENT SHALL BE DOCUMENTED BY PROJECT CIVIL ENGINEER OR SURVEYOR.

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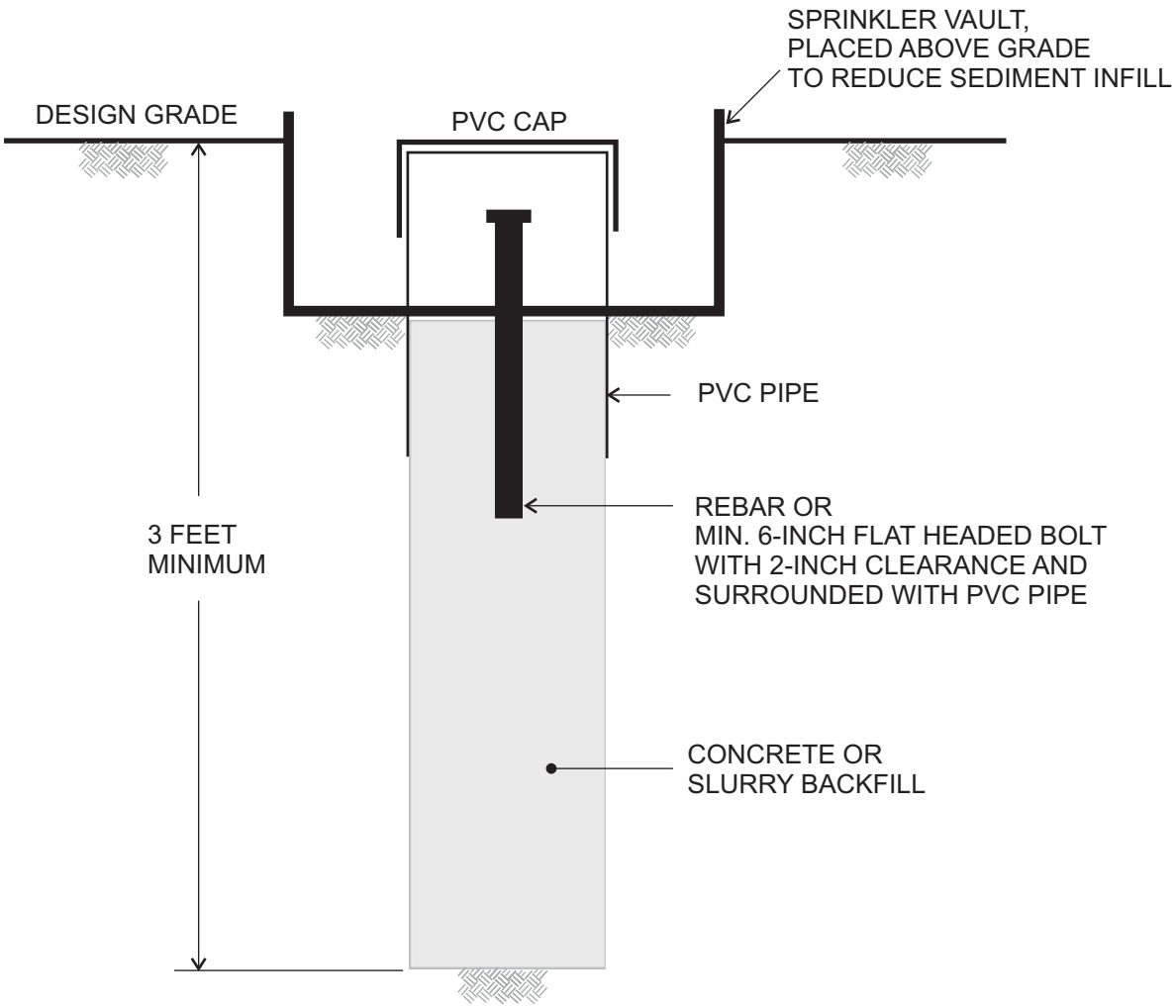
SETTLEMENT PLATE

DETAIL 11



NOTES:

1. SETTLEMENT MONUMENT LOCATIONS SHALL BE SUFFICIENTLY IDENTIFIED AND BE READILY VISIBLE TO EQUIPMENT OPERATORS.

2. ELEVATIONS OF SURFACE MONUMENTS SHALL BE DOCUMENTED BY PROJECT CIVIL ENGINEER OR SURVEYOR.

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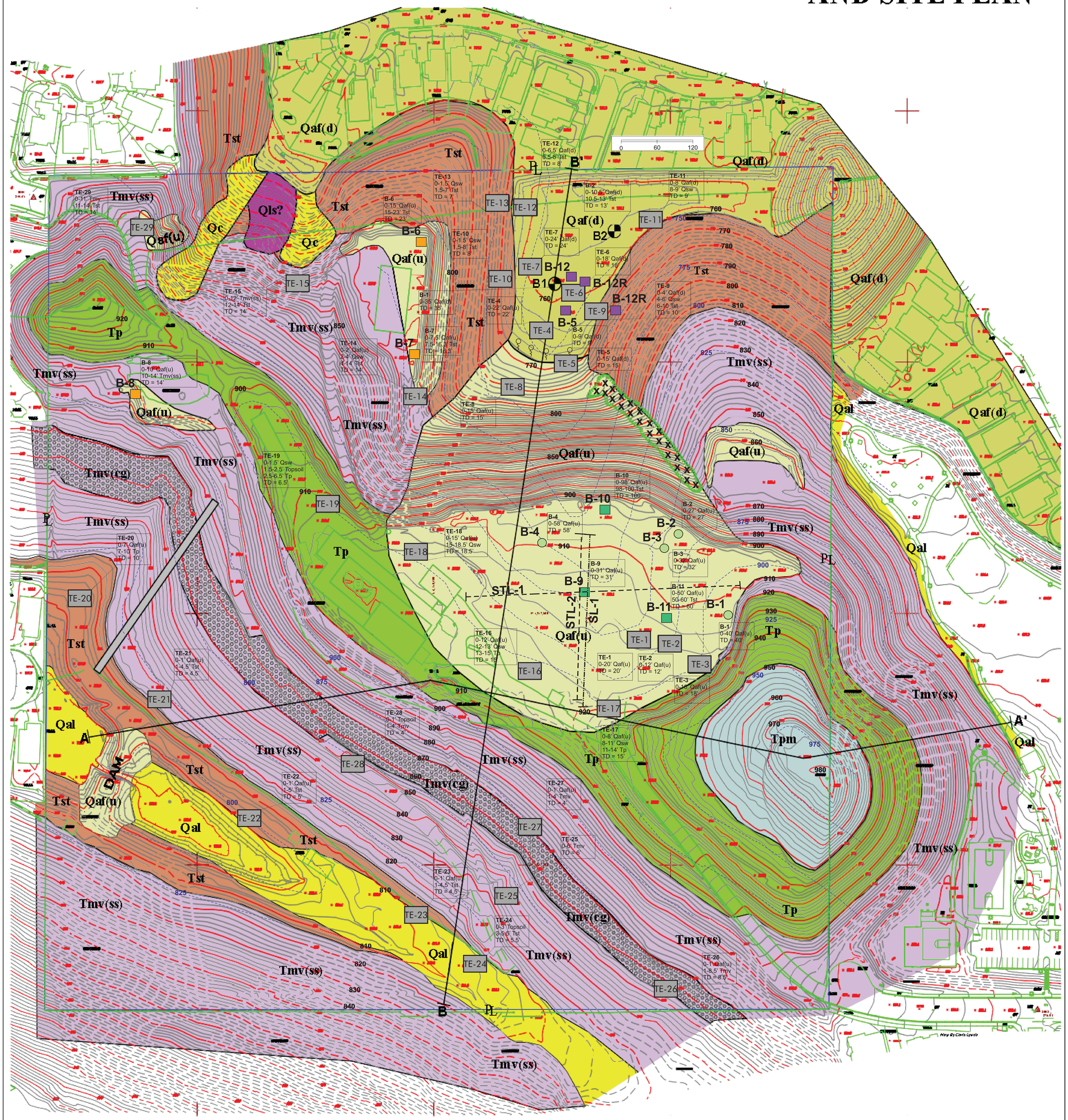
SETTLEMENT MONUMENT

DETAIL 12

GEOLOGIC MAP AND SITE PLAN



LEGEND

Geologic Units (CWLM)

Qaf = Artificial Fill
(d) = Documented Fill
(u) = Undocumented Fill
(x) = Oversized rock 6'-8' diameter
Qal = Alluvium
Qc = Colluvium
Qls = Questionable Landlside

Tp = Pomarado Formation
Tpm = Miramar Sandstone member

Qls = Mission Valley Formation
(cg) = Conglomorate part
(ss) = Sandstone Part
Tst = Standstone Conglomerate
♀ = Seepage

Geologic Contact (All Contacts Approximate CWLM)

Approximate Location of Test Excavation (CWLM) — TE-26

Approximate Location of Test Boring (CWLM) — B1

Geologic Cross Section — A — A'

Approximate Location of Hollow Stem Boring (AGS) — HS-1

"Sting" Resistivity Line (AGS) — STL-2

Seismic Refraction Line (AGS) — SL-1

Approximate location and elevation of original topography (excerpt from 1950's 200-scale topo map) — 900

B-1 - B-4
Hollow-Stem boring (SCS 2019)

B-6 - B-8
Hollow-Stem boring(SCS 2019)

B-9 - B-11
Sonic boring (SCS 2019)

B-5, B-12
Tri-Pod boring (SCS 2019)

N

0 60 120
Scale: 1" = 60'
(Approximately)

PLATE 1
Geologic Map and Exploration Location Plan

AGS
ADVANCED GEOTECHNICAL SOLUTIONS, INC.

Project:	Report:	Date:
P/W 1902-06		Jan. 2020