Appendix D Soils Management Plan

PARTNER

SOIL MANAGEMENT PLAN

Honolulu Terrace

APN 8126-033-025

Whittier, California 90603

December 9, 2022

Partner Project Number: ES22-356922

Prepared for:

Robert Salamone Sr.

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1.0 INTRODUCTION

Partner Engineering and Science, Inc. (Partner) was retained by Robert Salamone Sr. to prepare the following Soil Management Plan (SMP) for the property located at APN 8126-033-025, Whittier, Los Angeles County, California (herein referred to as the "subject property" or "Site").

1.1 Purpose

The purpose of the SMP is to outline protocol for ensuring the proper handling and/or disposal of impacted soil and/or subsurface features of concern that may be encountered during site redevelopment activities. The SMP was prepared to minimize potential exposure to impacted soil by construction, facility, and maintenance personnel; tenants; contractors and vendors; and the general public. This SMP only applies to the soil and/or subsurface features that may be encountered at the subject property.

1.1 Limitations

Conclusions and/or recommendations are based on the observations, laboratory analyses, and the governing regulations. Conclusions and/or recommendations beyond those stated and reported herein should not be inferred from this document.

Partner warrants that the environmental consulting services contained herein were accomplished in accordance with generally accepted practices in the environmental engineering, geology, and hydrogeology fields that existed at the time and location of work. No other warranties are implied or expressed.

1.2 User Reliance

Partner was engaged by Robert Salamone Sr. (the Addressee), or their authorized representative, to perform this management plan. The engagement agreement specifically states the scope and purpose of the management plan, as well as the contractual obligations and limitations of both parties. This plan and the information therein, are for the exclusive use of the Addressee. This plan has no other purpose and may not be relied upon, or used, by any other person or entity without the written consent of Partner. Third parties that obtain this plan, or the information therein, shall have no rights of recourse or recovery against Partner, its officers, employees, vendors, successors or assigns. Any such unauthorized user shall be responsible to protect, indemnify and hold Partner, the Addressee and their respective officers, employees, vendors, successors and assigns harmless from any and all claims, damages, losses, liabilities, expenses (including reasonable attorneys' fees) and costs attributable to such use. Unauthorized use of this plan shall constitute acceptance of, and commitment to, these responsibilities, which shall be irrevocable and shall apply regardless of the cause of action or legal theory pled or asserted.

This plan has been completed under specific Terms and Conditions relating to scope, relying parties, limitations of liability, indemnification, dispute resolution, and other factors relevant to any reliance on this plan. Any parties relying on this plan do so having accepted Partner's standard Terms and Conditions, a copy of which can be found at http://www.partneresi.com/terms-and-conditions.php.

2.0 SITE BACKGROUND

2.1 Site Description

The subject property consists of one parcel of land comprising 1.74 acres located on the southwest side of Honolulu Terrace and the north side of Beverly Drive within a mixed residential, commercial, and industrial area of Whittier, Los Angeles County, California. The subject property is currently undeveloped vacant land.

The subject property is bound by residential and commercial/industrial properties to the north and east across Honolulu Terrace, residential properties to the south across Beverly Drive, and residential properties to the west.

Refer to Figure 1 for a site vicinity map showing site features and surrounding properties.

2.2 Site History

Partner was provided with an EarthSafe Geological and Environmental Consulting (EarthSafe) *Environmental Investigation* for the subject property, dated January 25, 2021, on behalf of Steven Sayce. According to available historical sources, more than 90 years of oil well operations occurred on the eastern portion of the subject property. The eastern portion of the property had an oil well, a wash tank, a stock tank, an oil pick up pipe, an oil production, water disposal system draining the wash tank, and a spill containment berm. A 3,464 feet deep oil well, Chanchorena Number 1, API: 0403718425, was abandoned in 2020. Previous work done in 2004 revealed a release of crude oil in the eastern portion of the property. The western portion of the site was free of petroleum releases and has been protected by a spill containment berm. In 2020, EarthSafe conducted potholing in the vicinity of the former oil well and soil impacted with crude oil was observed at a depth of 5 feet below ground surface (bgs). A soil sample was collected which contained elevated concentrations of petroleum hydrocarbons, however volatile organic compounds (VOCs) were not detected. EarthSafe excavated impacted soil in the vicinity of the former oil well and oil tanks for off-site disposal and collected several rounds of confirmatory soil samples from the excavation limits until the laboratory results (as well as visual and olfactory evidence) indicated that the petroleum hydrocarbon-impacted soil had been adequately removed.

Partner performed a *Phase II Subsurface Investigation* (Phase II) as documented in a report dated March 7, 2022 to confirm the location of the former on-site oil well and/or other associated features and to evaluate the potential impact of petroleum hydrocarbons, VOCs, metals, and/or methane to soil and/or soil gas as a consequence of a release or releases from the historical on-site oil well operations. The scope of the Phase II included a geophysical survey and the advancement of six soil borings. Six soil samples were analyzed for carbon chain total petroleum hydrocarbons (TPH-cc), VOCs, and California Administrative Manual (CAM) 17 Metals, and six soil gas samples were analyzed for VOCs and methane.

The geophysical survey identified one anomaly consistent with a removed oil well. Partner also visually identified the previous EarthSafe potholing which confirmed the vicinity of the former oil well.

TPH-cc and VOCs were detected in the analyzed soil samples at concentrations below regulatory screening criteria. VOC impacts were identified in soil gas beneath the subject property and the impacts appear to be widespread. Various VOCs including benzene, ethylbenzene, xylenes, and tetrachloroethene (PCE) were detected in soil gas at concentrations exceeding regulatory screening criteria. As such, a potential vapor

intrusion concern exists for the occupants of future buildings located in areas with identified regulatory exceedances in soil gas.

Based on the planned residential development for the subject property, Partner recommended additional steps to further evaluate and/or mitigate the potential vapor intrusion concern. Partner also recommended development and implementation of a Soil Management Plan to address potential impacts and/or other unidentified subsurface features which may be encountered during future redevelopment activities at the subject property.

2.3 Proposed Development

Partner understands that the subject property is proposed for redevelopment, which involves the construction of four residential buildings (Residence 1 through Residence 4) on the subject property.

3.0 GEOLOGY AND HYDROGEOLOGY

Review of the United States Geological Survey (USGS) *Whittier, California* Quadrangle topographic map indicates the subject property is situated approximately 440 feet above mean sea level, and the local topography is sloping gently to the southwest.

Refer to Figure 2 for a topographic map of the site vicinity.

According to the California Geological Survey the subject property is situated in the Peninsular Ranges which are a series of ranges separated by northwest trending valleys, subparallel to faults branching from the San Andreas Fault. The trend of topography is similar to the Coast Ranges, but the geology is more like the Sierra Nevada, with granitic rock intruding the older metamorphic rocks. The Peninsular Ranges extend into lower California and are bound on the east by the Colorado Desert. The Los Angeles Basin and the island group (Santa Catalina, Santa Barbara, and the distinctly terraced San Clemente and San Nicolas islands), together with the surrounding continental shelf (cut by deep submarine fault troughs), are included in the province.

Based on borings advanced during the Phase II investigation, the underlying subsurface consists predominantly of dark brown, loose, damp, silty sand with gravel from the ground surface to approximately 15 feet bgs.

Groundwater was not encountered during the Phase II investigation and was not a part of the scope of work. According to the State Water Resources Control Board (SWRCB), a nearby Leaking Underground Storage Tank (LUST) site is T10000000561 at 10737 Beverly Boulevard in the city of Whittier, which is approximately 0.76 miles northwest of the subject property and is overseen by the Los Angeles Regional Water Quality Control Board (LARWQCB) as Case Number I-09407A. The site maintains twelve groundwater monitoring wells in the area. The most recent monitoring data available on the GeoTracker Website was for March 1, 2019, with depth to groundwater ranging from 86.72 to 124.7 feet bgs with an inferred direction of flow to the west.

4.0 CHEMICALS OF CONCERN

Based on the known on-site impacts, soil chemicals of concern (COCs) at the subject property include TPH-cc, VOCs including but not limited to ethylbenzene, 4-isopropyltoluene, and toluene, and metals including but not limited to barium, cadmium, molybdenum, and vanadium.

Refer to Tables 1 through 5 for the COCs detected during the Phase II investigation. Refer to Figure 3 for a map showing sample locations.

5.0 SOIL MANAGEMENT

This section outlines the protocols for identifying, handling, and/or disposing of COC-impacted soil that may be encountered during ground cover demolition, Site grading, and/or other earthmoving activities that may be performed on the subject property.

Partner understands that the subject property is proposed for redevelopment, which involves the construction of four residential buildings (Residence 1 through Residence 4) on the subject property.

5.1 Applicability

The SMP applies to ground cover removal and/or demolition and/or soil-disturbing activities associated with the Site redevelopment, including excavation, grading, trenching, utility installation, and/or other activities that could potentially generate COC-impacted soil. Field personnel directly involved with earthmoving activities should be familiar with the contents of the SMP.

5.2 Duration

Implementation of the SMP is intended to coincide with the start of ground cover removal and/or demolition and Site grading activities and shall remain in effect for the duration of the Site redevelopment involving soil-disturbing activities.

5.3 Key Roles and Responsibilities

The following is a list of key roles involved with the SMP and the respective general responsibilities:

- Client – Responsible for selecting and engaging the main contractor(s) and environmental consultants(s) involved with the subject property redevelopment and/or implementation of the SMP;
- General Contractor (GC) – Responsible for overseeing the subject property grading/redevelopment/construction activities, managing the associated subcontractors (including the dewatering subcontractor, if necessary), and the initial soil screening (refer to Section 5.9 for additional details); and,
- Environmental Consultant (EC) – Responsible for responsible for assisting with environmental issues as outlined in this SMP.

5.4 Work Area Control

Control of the work area (e.g., perimeter fencing) will be the responsibility of the GC. In general, the work area should be secured as to limit access only to the personnel qualified and authorized to be on-site.

5.5 Health and Safety

The EC will prepare a separate site-specific health and safety plan (HASP) that will be implemented in conjunction with the SMP when handling soil with suspected or confirmed COC impacts. At a minimum, the HASP will identify the potential COCs and/or other hazards of concern and establish guidelines and/or procedures for controlling/minimizing exposures to potential COCs/hazards, including the appropriate level(s) of personal protective equipment (PPE). The GC will be responsible for non-COC-related health and safety concerns associated with the excavation (e.g., excavation stability, stockpile placement, heavy equipment operation, etc.).

5.6 Permitting

If permits are required for specific tasks (e.g. stockpiling, disposal, onsite re-use), the GC will facilitate permits in accordance with applicable State and/or Federal regulations.

5.7 Pre-Construction Meeting

Prior to grading/redevelopment/construction activities, representatives of the Client, the GC, and EC should meet to review and discuss the contents of the SMP, roles and responsibilities, and the grading/redevelopment schedule.

5.8 Undocumented Subsurface Features

The GC should cordon off and halt construction activities in the immediate area(s) of undocumented subsurface features of potential environmental concern (e.g., underground storage tanks, clarifiers, buried drums, residual impacted soil) if encountered during the course of ground cover removal and/or demolition, Site grading, and/or other earthmoving activities. The GC must promptly notify the Client and EC. The following general approach will be applied by the EC to address such subsurface features:

1) Notify the relevant regulatory oversight agency or agencies involved with the subsurface feature decommissioning / residual impacted soil and file the necessary permit(s), when applicable;
2) Decontamination and decommission the subsurface feature(s) via removal (if practical) in accordance with generally accepted industry practices and the requirements of the filed permit(s) (where applicable);
3) Collect and analyze soil samples to evaluate potential chemical impacts to the subsurface due to a historical release or releases from subsurface feature(s), and assess the lateral and vertical extent of residual impacted soil; and
4) Document the decommissioning activities and soil handling / removal activities and findings in a summary report.

EC will provide specific protocols to address encountered subsurface features on a case-by-case basis based on the Site conditions and the nature of the subsurface features.

5.9 General Decision Process for Handling Disturbed Soil

Evaluating whether excavated soil is suitable for reuse on the Site and selecting which off-site facility or facilities are suitable for receiving exported soil will be based on up to three criteria: (1) field observations (e.g., evidence of staining, odor); (2) soil monitoring readings with an organic vapor analyzer (OVA); and/or (3) laboratory analysis results, as applicable. Refer to Appendix A for the general decision process for handling disturbed soil. The process steps are discussed in detail in the proceeding Sections.

5.10 Initial Soil Monitoring and Segregation

At this time, handling of VOC-impacted soil is <u>not</u> anticipated during the soil disturbing activities considering the results of the previous subsurface investigation results. Therefore, the primary initial criterion for segregating soil generated during soil-disturbing activities will be the field observations of the GC excavation personnel. Soil devoid of evident impacts (e.g., staining, odor) will be deemed suitable for unrestricted use and may be reused on-site as backfill material or exported off-site. Handling, exporting,

and management of unrestricted soil will defer to the GC. In the event that soil exhibiting discoloration and/or odor is encountered during soil-disturbing activities, it will be segregated in separate stockpiles for EC assessment and off-site disposal.

5.11 Handling of VOC-Impacted Soil

Despite the fact that VOC-impacted soil is not anticipated during soil disturbing activities, if such are encountered, then such a contingency during excavation and grading at the Site will be managed under an Air Quality Management District (AQMD) plan.

To monitor for unanticipated VOC-impacted soil, the EC will provide an OVA that has been calibrated by the manufacturer within three months of the date of fieldwork. The OVA will be calibrated prior to the start of fieldwork using hexane calibration gas (or the OVA readings will be correlated and expressed as hexane using equivalency factors provided by the manufacturer if a calibration gas other than hexane is used). During the course of the project, the GC will perform periodic soil screening and will notify the EC in the event that suspect VOC-impacted soils are encountered during general grading activities. Moreover, the EC will be present on-site for soil-disturbing activities in the immediate area(s) identified as possible VOC-impacted soil. Disturbed soil will be monitored with the OVA at a minimum frequency of one reading for every two cubic yards of soil excavated, not to exceed 15 minutes between readings. Readings will be collected no later than three minutes after excavation and at a distance of no more than three inches between the OVA intake and the soil surface.

If possible, VOC-impacted soils are encountered based on the OVA monitoring results, excavated soil will be segregated into soil registering OVA readings less than 1,000 parts per million (ppm) and soil registering OVA readings equal to or greater than 1,000 ppm. Refer to Sections 5.12.1 and 5.12.2 for stockpile management protocol for the two respective categories of soil. Stockpiled excavated soil classified as non-VOC-impacted will be exported off-site (see Section 5.16 for details).

5.12 Soil Stockpile Management

Each category of VOC-impacted soil and non-VOC-impacted soil must be segregated and stored separately. Stockpile management procedures for the three categories are discussed in the following Sections.

5.12.1 VOC-Impacted Soil (<1,000 ppm)

Potential VOC-impacted soil registering OVA readings less than 1,000 ppm can be immediately loaded onto trucks and transported to an AQMD-approved off-site treatment/disposal facility (refer to Section 5.15.1 for details regarding disposal of VOC-impacted soil) or can be temporarily stockpiled on-site prior to exporting.

Each individual stockpile must not contain more than 400 cubic yards of soil. With the exception of the stockpile work face (i.e., portion of the stockpile where excavated soil is added), stockpiles must be placed on and covered while on-site with 6-millimeter polyethylene sheeting so that no portion of the VOC-impacted soil is exposed to the atmosphere. The polyethylene sheeting seams must overlap a minimum of 24 inches and be secured with duct tape. The stockpile work face(s) should be similarly covered/secured during periods of inactivity longer than one hour and stockpiles, including the work face(s), must be completely covered and securely anchored at the end of each workday.

Once covered and secured, the stockpiles should remain undisturbed and should not be reshaped or relocated as much as feasible until the soil is exported from the Site. The soil must be transported to an AQMD-approved off-site treatment/disposal facility within 30 calendar days of excavation.

5.12.2 VOC-Impacted Soil (≥1,000 ppm)

VOC-impacted soil registering OVA readings equal to or greater than 1,000 ppm cannot be stockpiled on-site. If encountered, the AQMD must be notified within one hour of detection; the work area must be immediately sprayed with water; and the VOC-impacted soil must be directly loaded onto trucks, sprayed with additional water, covered, and transported to an AQMD-approved off-site treatment/disposal facility (refer to Section 5.15.1 for details regarding disposal of VOC-impacted soil). If VOC-impacted soil registering OVA readings equal to or greater than 1,000 ppm is encountered, but trucks for immediate exporting are not available, soil disturbance in the immediate area must cease and may only resume once the excavation can proceed with direct loading of soil onto trucks.

5.12.3 Non-VOC-Impacted Soil

In general, the management of non-VOC-impacted soil (e.g., stockpile sizes, cover requirements) will defer to the GC. However, management of non-VOC-impacted soil that is visually or olfactory impacted (e.g. staining or odors), should be handled by stockpiling on polyethylene sheeting, covered, and sampled in accordance with the procedures detailed in Section 5.15 for off-site disposal or may be loaded directly into trucks for disposal.

5.13 Vapor Suppression and Dust Control

To suppress vapor emissions during soil disturbances of potential VOC-impacted soil, excavations should be kept moist by periodically spraying the work area with water. In addition, exposed soil surfaces of stockpiles of potential VOC-impacted soil should be kept moist with water.

Dust control during the site redevelopment will defer to the protocol established by the GC.

5.14 Surface Water Protection

Responsibility for surface water protection (e.g., prevention of sediment runoff into storm drains) and implementation of best management practices (BMPs), if required for the site redevelopment, will defer to the GC.

5.15 Soil Stockpile Sampling

Stockpiled soil classified as VOC-impacted through OVA screening or visually or olfactory impacted (staining, odors) that is designated for off-site disposal must be characterized through the collection and analysis of samples to evaluate whether the material meets the acceptance requirements of the receiving facility or facilities. A set of laboratory analysis data for waste profiling must be generated for each exported soil designation category (excluding unrestricted soil).

5.15.1 Sampling Frequency

For exported soil, the sampling frequency will default to the sampling frequency specified by each selected receiving facility to meet the respective acceptance requirements. For visually- or olfactory-impacted soil

and for exported soil for which the receiving facility has not specified a sampling frequency, the sampling frequency will default to the procedures set forth in the most recently promulgated edition of the United States Environmental Protection Agency (EPA) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (EPA SW-846). In general, EPA SW-846 provides a method for assessing the mean concentration of a given chemical within a soil mass and the number of samples necessary to calculate this mean to within an acceptable confidence level.

The following sampling schedule may be used to estimate the minimum number of samples necessary to meet the statistical requirements set forth in EPA SW-846:

- Stockpiles less than 500 cubic yards: One sample for every 25 cubic yards;
- Stockpiles from 500 to 1,000 cubic yards: Twenty samples plus one sample for every 100 cubic yards in excess of the initial 500 cubic yards;
- Stockpiles from 1,000 to 10,000 cubic yards: Twenty-five samples plus one sample for every 500 cubic yards in excess of the initial 1,000 cubic yards; and
- Stockpiles greater than 10,000 cubic yards: Forty-three samples plus one sample for every 5,000 cubic yards in excess of the initial 10,000 cubic yards.

Note that the above schedule is only a guide and that more or less samples than specified may be required to meet the statistical requirements set forth in EPA SW-846. In addition, it is not necessary to consider each individual stockpile separately. Soils in separate stockpiles that are expected to exhibit similar conditions of COC impacts can be considered part of the same soil mass for the purposes of EPA SW-846 sampling.

5.15.2 Sampling Protocol

The method for selecting the soil stockpile sample locations (e.g., simple random sampling, systematic random sampling) will be based on the professional judgment of the EC and/or field-screening results.

In general, discrete soil samples should be analyzed. However, composite sampling may be acceptable depending on the receiving facility requirements, the professional judgment of the EC, and/or the target analytes. Compositing should be performed by the laboratory and no more than four discrete samples should comprise a composite sample. Composite samples should not be analyzed for target analytes that are volatile or semi-volatile.

Samples should be collected in pre-cleaned, analysis-appropriate containers; preserved (e.g., sodium bisulfate, ice) as required for the specified analysis method; labeled with unique sample identifications; and transported to the laboratory under proper chain-of-custody protocol.

Sampling equipment should be decontaminated between sampling points to reduce the potential for cross-contamination.

5.15.3 Laboratory Analyses

The laboratory analysis suite for soil that will be exported will default to the laboratory analysis suite specified by each selected receiving facility to meet the respective acceptance requirements. However, at a minimum, samples should be analyzed for TPH, VOCs, and lead (as appropriate).

The laboratory or laboratories conducting the sample analyses should be state-certified and run surrogate samples and method blanks as part of the Quality Assurance/Quality Control (QA/QC) program. Analyses should be performed within the accepted method hold times.

5.16 Exporting Soil Off-Site

Three exported soil designation categories are anticipated: VOC-impacted, unrestricted, non-hazardous, and hazardous. Procedures for exporting each soil designation category are discussed in the following sections.

5.16.1 Exporting of VOC-Impacted Soil

Excavated soil classified as VOC-impacted through OVA monitoring that has been further sampled and determined to be not permitted to be reused on the Site as backfill must be exported off-site. Soil classified as VOC-impacted should be profiled based on the laboratory analysis results and transported under waste manifest documentation to an AQMD-approved facility or facilities permitted to receive the waste for treatment and/or disposal. The EC will be responsible for selecting the appropriate receiving facility for VOC-impacted soil. Note that although the soil will be designated as VOC-impacted, the soil is anticipated to be classified as non-hazardous [as opposed to Resource Conservation & Recovery Act (RCRA) or non-RCRA hazardous] for waste disposal purposes given the historical usage of the Site and the results of the previous subsurface investigation.

5.16.2 Exporting of Unrestricted Soil

The GC will be responsible for selecting and complying with the requirements of the facility or facilities that will receive the exported unrestricted soil. Note that other factors beyond the scope of the SMP (e.g., soil parameters such as pH) may affect whether a receiving facility is able to accept the unrestricted soil.

5.16.3 Exporting of Non-Hazardous Soil

Exported soil will be classified as non-hazardous if soil monitoring results designate the soil as non-VOC-impacted, but the soil exhibits an odor and/or discoloration and/or laboratory analysis results indicate the presence of target analytes above the soil screening criteria or arsenic above background levels (i.e., not meeting the acceptance requirements of the unrestricted soil receiving facility).

Soil classified as non-hazardous should be profiled based on the laboratory analysis results and transported under proper bill of lading or waste manifest documentation to an appropriate off-site facility that is permitted to receive the waste for treatment and/or disposal (typically a soil recycler and/or landfill). The EC or the EC in conjunction with the GC will be responsible for selecting the appropriate receiving facility for non-hazardous soil.

5.16.4 Soil Classified as Hazardous Waste

Given the findings of the previous subsurface investigations, the generation of soil classified as RCRA or non-RCRA hazardous (i.e., meeting Federal or State hazardous waste criteria, respectively) is not anticipated during soil disturbance/grading/redevelopment/construction activities. However, if identified through the laboratory analysis results, soil classified as RCRA or non-RCRA hazardous should be profiled based on the laboratory analysis results and transported under waste manifest documentation to an off-site facility permitted to receive the waste for treatment and/or disposal (typically a landfill or incinerator). Hazardous

waste must be transported by a hauler licensed to transport hazardous waste. The EC will be responsible for selecting the appropriate receiving facility for RCRA and/or non-RCRA hazardous soil.

6.0 SUMMARY AND CONCLUSIONS

The EC will prepare a summary report for submittal to the Client, if needed. At a minimum, the report will include a summary of field activities, laboratory analysis reports, and off-site disposal documentation (if soil was exported, excluding unrestricted soil). The EC will also be responsible for complying with regulatory agency reporting requirements if VOC-impacted soil was encountered.

SIGNATURES OF PARTICIPATING PROFESSIONALS

Thank you for the opportunity to be of service. If you have questions regarding this SMP, please contact Bryan Campbell at (925) 250-5256.

Sincerely,

Bryan Campbell, PG, CHG
Senior Project Manager

Joe Mangine, PG
Senior Project Manager

TABLES

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Table 1: Summary of Investigation Scope
APN 8126-033-025
Whittier, California 90603
Partner Project Number ES22-356922
February 18, 2022

Boring Identification	REC/Issue	Location	Terminal Depth (feet bgs)	Matrix Sampled	Sampling Depths* (feet bgs)	Target Analytes
B1	Former on-site oil well operations	Former oil AST area in the north portion of Residence 3 future building footprint	15	Soil Gas	5	VOCs, Methane
				Soil	2, 5, 10, 15	TPH-cc, VOCs, Metals
B2		Former oil well area in the south portion of Residence 3 future building footprint	15	Soil Gas	5	VOCs, Methane
				Soil	2, 5, 10, 15	TPH-cc, VOCs, Metals
B3		North portion of Residence 4 future building footprint	15	Soil Gas	5	VOCs, Methane
				Soil	2, 5, 10, 15	TPH-cc, VOCs, Metals
B4		South portion of Residence 4 future building footprint	15	Soil Gas	5	VOCs, Methane
				Soil	2, 5, 10, 15	TPH-cc, VOCs, Metals
B5		Central portion of Residence 1 future building footprint	15	Soil Gas	5	VOCs, Methane
				Soil	2, 5, 10, 15	TPH-cc, VOCs, Metals
B6		Central portion of Residence 2 future building footprint	15	Soil Gas	5	VOCs, Methane
				Soil	2, 5, 10, 15	TPH-cc, VOCs, Metals

Notes:
*Depths in bold analyzed for carbon chain total petroleum hydrocarbons (TPH-cc) [collectively total petroleum hydrocarbons as diesel and oil (TPH-d and TPH-o, respectively) via United States Environmental Protection Agency (EPA) Method 8015M and total petroleum hydrocarbons as gasoline (TPH-g) via EPA Method 8260B], volatile organic compounds (VOCs) via EPA Method 8260B, and for California Administrative Manual (CAM) 17 Metals via EPA Method 6010B/7471A. Each soil gas sample was analyzed for VOCs via EPA Method 8260B and for methane using field instruments (GEM 5000 Gas Analyzer).

REC = recognized environmental condition

bgs = below ground surface

AST = aboveground storage tank

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Table 2: Soil Sample TPH-cc Laboratory Results

APN 8126-033-025

Whittier, California 90603

Partner Project Number ES22-356922

February 18, 2022

EPA Method	TPH-cc via 8015M/8260B						
Units	(mg/kg)						
Analyte	ESL	B1-5	B2-10	B3-5	B4-5	B5-15	B6-10
TPH-g	100	<20	<20	<20	<20	<20	<20
TPH-d	260	109	<10	<10	<10	<10	<10
TPH-o	1,600	1,430	<10	<10	<10	<10	<10

Notes:

TPH-cc = carbon chain total petroleum hydrocarbons

EPA = United States Environmental Protection Agency

TPH-g = total petroleum hydrocarbons as gasoline

TPH-d = total petroleum hydrocarbons as diesel

TPH-o = total petroleum hydrocarbons as oil

mg/kg = milligrams per kilogram

ESL = Environmental Screening Level (San Francisco Bay Regional Water Quality Control Board) - Tier 1 ESLs 2019 (Rev.2)

< = not detected at or above indicated laboratory Reporting Limit (RL)

Values in bold exceed laboratory RLs

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Table 3: Soil Sample VOCs Laboratory Results

APN 8126-033-025

Whittier, California 90603

Partner Project Number ES22-356922

February 18, 2022

EPA Method	VOCs via 8260B						
Units	(µg/kg)						
Analyte	ESL	B1-5	B2-10	B3-5	B4-5	B5-15	B6-10
Ethylbenzene	430	<1.0	4.3	<1.0	<1.0	<1.0	<1.0
4-Isopropyltoluene	NE	<1.0	2.3	<1.0	<1.0	<1.0	<1.0
Toluene	3,200	<1.0	1.8	<1.0	<1.0	<1.0	<1.0
Other VOCs	Varies	ND	ND	ND	ND	ND	ND

Notes:

VOCs = volatile organic compounds

EPA = United States Environmental Protection Agency

µg/kg = micrograms per kilogram

ESL = Environmental Screening Level (San Francisco Bay Regional Water Quality Control Board) - Tier 1 ESLs 2019 (Rev.2)

< = not detected at or above indicated laboratory Reporting Limit (RL)

ND = not detected at or above laboratory RL

NE = not established

Values in bold exceed laboratory RLs

PARTNER

Table 4: Soil Sample CAM 17 Metals Laboratory Results (mg/kg)
APN 8126-033-025
Whittier, California 90603
Partner Project Number ES22-356922
February 18, 2022

Element	ESL	Background Concentrations*	B1-5	B2-10	B3-5	B4-5	B5-15	B6-10
Antimony (Sb)	11	0.21 - 0.99	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Arsenic (As)	0.067	12**	<5.0	7.6	<5.0	<5.0	<5.0	<5.0
Barium (Ba)	390	299 - 719	107	1,870	255	198	157	140
Beryllium (Be)	5.0	0.76 - 1.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cadmium (Cd)	1.9	0.05 - 0.67	1.8	2.3	2.3	2.7	8.9	1.8
Chromium (Cr)	120,000	0 - 345	44.2	25.4	22.8	9.8	15.6	13.6
Cobalt (Co)	23	5.7 - 24.1	8.0	9.4	7.3	8.4	4.4	7.7
Copper (Cu)	180	9.4 - 48	20.2	30.8	24.2	24.7	15.2	16.5
Lead (Pb)	32	10.1 - 37.7	14.8	5.3	4.6	3.9	<0.5	10.1
Mercury (Hg)	13	0.05 - 0.47	0.055	0.037	0.071	0.068	0.050	0.038
Molybdenum (Mo)	6.9	0 - 2.8	2.3	12.4	1.7	3.6	2.9	0.9
Nickel (Ni)	86	0 - 137	29.1	35	18.9	36.6	38.8	13.4
Selenium (Se)	2.4	0 - 0.142	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Silver (Ag)	25	0 - 2.23	<0.5	<0.5	<0.5	<0.5	1.2	<0.5
Thallium (Tl)	0.78	0.37 - 0.75	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Vanadium (V)	18	59 - 165	35.7	75	46.7	66.4	49.3	29.6
Zinc (Zn)	340	117 - 181	68	71.2	53.7	62.8	36.9	45.9

Notes:

*From Kearney Foundation of Soil Science March 1996 report *Background Concentrations of Trace and Major Elements in California Soils.* Background concentrations of metals are considered to be within one standard deviation from the mean metal concentrations determined by the study. Concentrations indicated in milligrams per kilogram (mg/kg).

**From Department of Toxic Substance Control (DTSC) March 2008 report *Determination of a Southern California Regional Background Arsenic Concentration in Soil* .

CAM = California Administrative Manual

ESL = Environmental Screening Level (San Francisco Bay Regional Water Quality Control Board) - Tier 1 ESLs 2019 (Rev.2)

< = not detected at or above indicated laboratory Reporting Limit (RL)

Values in bold exceed laboratory RLs

Highlighted values exceed one or more regulatory guidelines

PARTNER

Table 5: Soil Gas Sample VOCs Laboratory Results
APN 8126-033-025
Whittier, California 90603
Partner Project Number ES22-356922
February 18, 2022

EPA Method	VOCs via 8260B							
Units	($\mu g/m^3$)							
Analyte	Residential SGSL^	Commercial/ Industrial SGSL^	B1-SG	B2-SG	B3-SG	B4-SG	B5-SG	B6-SG
Benzene	3.2	14	11	15	18	<8.0	60	26
Tert-Butylbenzene	14,000	60,000	<12	<12	27	96	<12	<12
Chloroform	4.0	18	9.0	<8.0	<8.0	<8.0	<8.0	<8.0
Ethylbenzene	37	163	198	3,260	400	98	201	35
Isopropylbenzene	14,000	60,000	<8.0	100	1,300	22	<8.0	<8.0
4-Isopropyltoluene	NE	NE	<8.0	<8.0	219	56	<8.0	<8.0
n-Propylbenzene	NE	NE	<8.0	21	<8.0	<8.0	18	21
Styrene	31,333	130,000	<8.0	<8.0	<8.0	40	63	<8.0
PCE	15	67	20	9.0	<8.0	<8.0	<8.0	<8.0
Toluene	10,333	43,333	46	56	57	9.0	298	110
1,2,4-Trimethylbenzene	2,100	8,667	11	36	21	20	80	210
1,3,5-Trimethylbenzene	2,100	8,667	<8.0	<8.0	<8.0	<8.0	12	61
m,p-Xylene	3,333	14,667	866	15,500	1,710	516	939	204
o-Xylene	3,333	14,667	304	5,790	600	222	368	90
Other VOCs	Varies	Varies	ND	ND	ND	ND	ND	ND

Notes:

^Calculated soil gas screening levels (SGSLs) for soil gas concentrations were derived by dividing the June 2020 Department of Toxic Substances Control (DTSC) or November 2021 United States Environmental Protection Agency (EPA) Regional Screening Level (RSL) for each compound using the more conservative 2015 attenuation factor of 0.03 regardless of depth. DTSC RSLs are provided in the June 2020 DTSC Human and Ecological Risk Office (HERO) Human Health Risk Assessment (HHRA) Note 3. Where DTSC RSLs were not available, EPA RSLs were utilized.

VOCs = volatile organic compounds

EPA = United States Environmental Protection Agency

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

PCE = tetrachloroethene

< = not detected at or above indicated laboratory Reporting Limit (RL)

ND = not detected at or above laboratory RLs

NE = not established

Values in bold exceed laboratory RLs

Highlighted values exceed residential regulatory guideline

Highlighted values exceed commercial/industrial and residential regulatory guidelines

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FIGURES



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2154 Torrance Boulevard, Suite 200
Torrance, California 90501
Project Number: ES22-356922

N

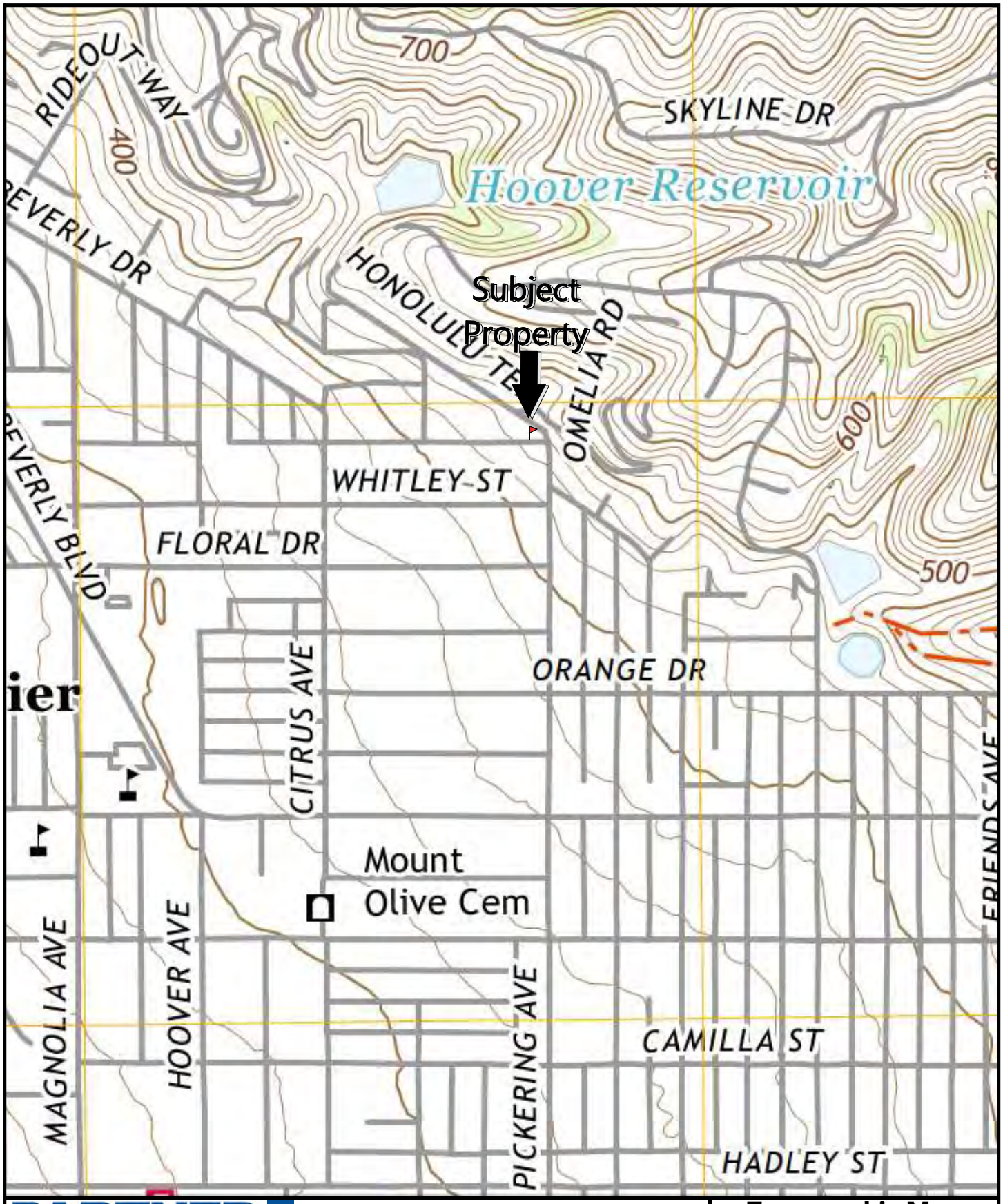
Legend

Subject Property

Site Vicinity Map

Figure	Prepared By	Date
1	H. Gutierrez	March 2022

APN 8126-033-025
Whittier, California 90603



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2154 Torrance Boulevard, Suite 200
Torrance, California 90501
Project Number: ES22-356922

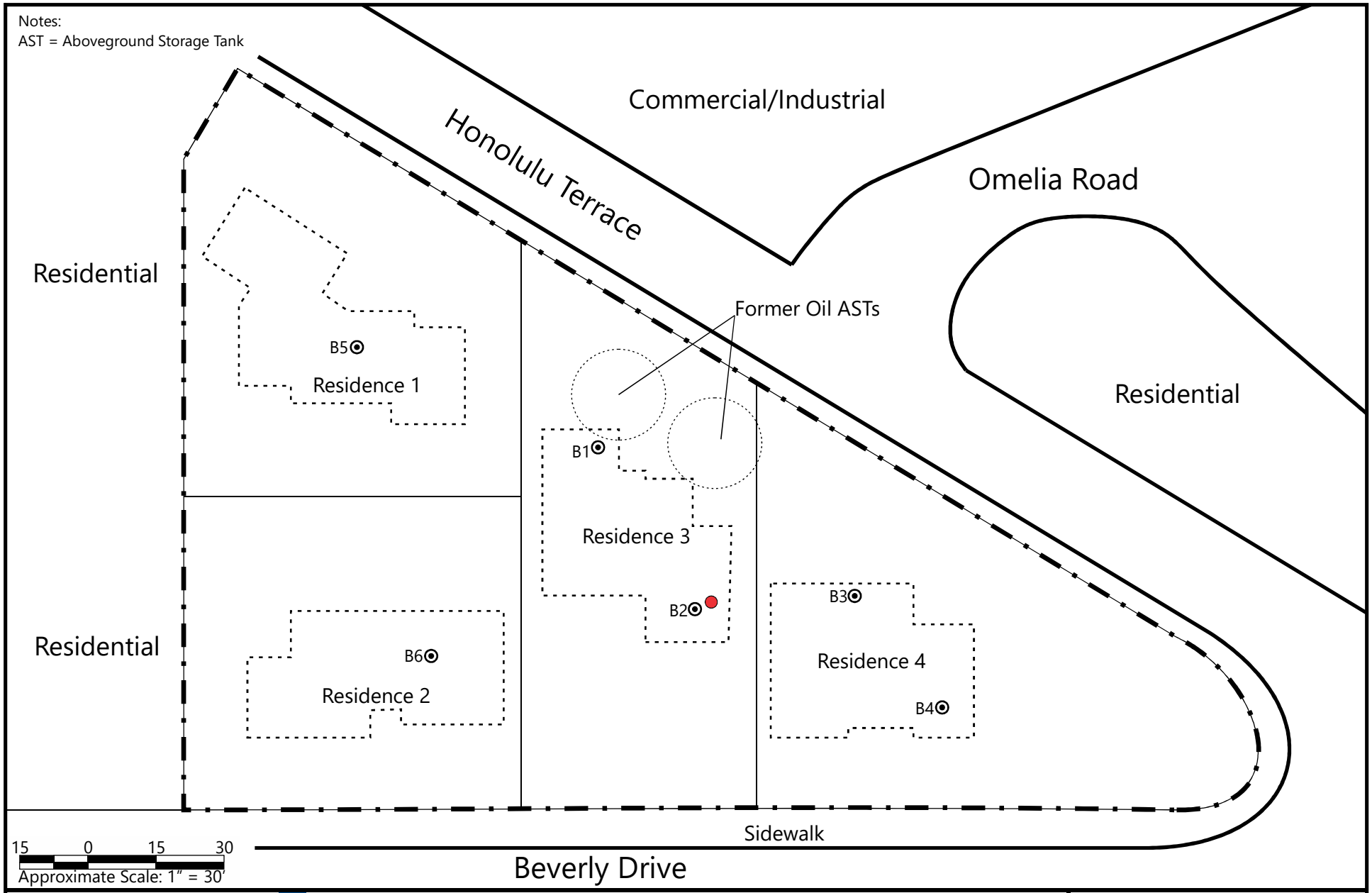
N

USGS *Whittier, California* Quadrangle
Version: 2021 Current as of: 2019

Topographic Map

Figure	Prepared By	Date
2	H. Gutierrez	March 2022

APN 8126-033-025
Whittier, California 90603



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2154 Torrance Boulevard, Suite 200
Torrance, California 90501
Project Number: ES22-356922

N

Legend

- Subject Property
- Boring Location
- Former Oil Well Location
- Future Building Footprint

Sample Location Map

Figure	Prepared By	Date
3	H. Gutierrez	March 2022

APN 8126-033-025
Whittier, California 90603

APPENDIX A: GENERAL DECISION PROCESS FOR HANDLING DISTURBED SOIL

PARTNER

Legend:
-OVA = organic vapor analyzer
-ppm = parts per million
-VOC = volatile organic compound
-AQMD = Air Quality Management District
-GC = general contractor

Start

Observe the soil for impacts (e.g., evidence of staining, odor) **(Section 5.9)**

Does the disturbed soil exhibit potential impacts? **(Section 5.9)**

No → Suitable for unrestricted use. GC responsible for soil handling, reuse, export, management. **(Sections 5.9)**

Yes → Monitor the soil with the OVA. **(Section 5.10)**

What is the OVA reading?

<50 ppm → Will the soil remain on-site?

Yes → Stockpile on-site and collect/analyze samples. **(Sections 5.11.3/5.14)**

No → What is the soil designation? **(Section 5.15)**

Non-Hazardous → Transport to non-hazardous soil receiving facility. **(Section 5.15.3)**

>50 ppm → Is the OVA reading ≥1,000 ppm?

No → Stockpile on-site and collect/analyze samples for waste characterization. **(Sections 5.11.1/5.14)**

Yes → Soil cannot be stockpiled on-site. **(Section 5.11.2)**

Have samples been collected/ analyzed for waste characterization? **(Section 5.14)**

No → Cease excavation and collect/analyze samples for waste characterization. **(Section 5.14)**

Yes → Are trucks available for immediate loading and exporting? **(Section 5.11.2)**

No → Cease excavation in the area until direct loading of soil onto trucks is possible.

Yes → What is the soil designation? **(Section 5.15)**

Hazardous → Transport to hazardous waste receiving facility. **(Section 5.15.4)**

Transport to AQMD-approved receiving facility. **(Section 5.15.1)**

End

General Decision Process for Handling Disturbed Soil