20785 AND 20957 BAKER ROAD
CASTRO VALLEY, CALIFORNIA

REMEDIAL ACTION IMPLEMENTATION PLAN

SUBMITTED TO
Mr. Todd Deutscher
Catalyst Development Partners
18 Crow Canyon Court, Suite 190
San Ramon, CA 94583

PREPARED BY
ENGEO Incorporated

October 5, 2017
Revised December 21, 2017

PROJECT NO
13225.000.000

ENGEO
Expect Excellence

Project No.
13255.000.000

October 5, 2017
Revised December 21, 2017

Mr. Todd Deutscher
Catalyst Development Partners
18 Crow Canyon Court, Suite 190
San Ramon, CA 94583

Subject: 20785 and 20957 Baker Road
Castro Valley, California

REMEDIAL ACTION IMPLEMENTATION PLAN

Dear Mr. Deutscher:

ENGEO is pleased to present our Remedial Action Implementation Plan (RAIP) for the subject property (Site), located in Castro Valley, California. This document outlines the field activities necessary to complete the remediation of elevated concentrations of Chemicals of Potential Concern (COPCs) known to exist at the Site.

This RAIP is prepared and submitted to the Alameda County Department of Environmental Health (ACDEH) for review and approval under the Voluntary Remedial Action Program (VRAP) agreement between Catalyst Development Partners and ACDEH. A new case was opened on the ACDEH database on January 11, 2017 for the Property (Case No RO0003234).

If you have any questions regarding this report, please call and we will be glad to discuss them with you.

Sincerely,

ENGEO Incorporated

Divya Bhargava, PE

Jeffrey A. Adams, PhD, PE

Stephen Fallon
db/jaa/jf

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

1.0 INTRODUCTION

1.1 PURPOSE

This Remedial Action Implementation Plan (RAIP) has been prepared to describe the proposed procedures and protocols for remediation of the Chemicals of Potential Concern (COPCs) in soils associated with historical uses for the Baker Road redevelopment project located in Castro Valley, California (the Site). Based on the information developed during the historical and recent site characterization activities, remedial action is required to prepare the Site for redevelopment due to elevated concentrations of COPCs.

This RAIP is prepared and submitted to the Alameda County Department of Environmental Health (ACDEH) for review and approval under the Voluntary Remedial Action Program (VRAP) agreement between Catalyst Development Partners and ACDEH. A new case was opened on the ACDEH database on January 11, 2017, for the Property (Case No RO0003234).

1.2 SITE DESCRIPTION

The Site is located at 20785 and 20957 Baker Road, northeast of Rutledge Road, and southeast of Castro Valley Boulevard in Castro Valley, California (Figure 1). The Site consists of two parcels measuring approximately 1.12 acres in area and identified with Assessor's Parcel Numbers (APN) 84A-16-5-9 and 84A-16-6-4.

The Site is bound to the west by Rutledge Road and to the east by Baker Road. An equipment storage yard was formerly located at the southern portion of the Site. Multi-family housing is present to the north and south of the Site. An automotive shop is present to the west, and multi-family housing occupies the properties to the east of Baker Road.

Currently, a fence traversing the east-west direction is present on the Site. The northwestern portion of the Site is overgrown with vegetation, and a remnant concrete building is present. The northeastern portion is occupied with a home and detached garage. The southern portion of the Site is generally covered with asphalt concrete pavement.

1.2.1 Proposed Development

We understand that the proposed development will include construction of three-story townhome structures to provide 20 units with at-grade garage space, along with associated access, roadways, landscaping areas, and new underground utilities (Figure 2).

1.2.2 Current and Historical Use

According to aerial photographs, the parcel associated with APN 84A-16-6-4 was previously used for dry farming and then for storage of construction equipment. The parcel currently features two remnant building foundation slabs, and a majority of the parcel is dirt- or asphalt-covered with overgrown vegetation.

A fence traversing a northwest-southeast direction is present on the parcel associated with APN 84A-16-5-9. The western portion of this parcel is overgrown with vegetation, and a remnant concrete building is present. The eastern portion is currently occupied with a home and detached garage.

1.3 PROPERTY OWNERSHIP

The Site is currently owned by Catalyst Development Partners.

1.4 BACKGROUND

Based on previous investigations conducted at the Site, the following COPCs have been identified:

- Organochlorine pesticides (OCPs) and arsenic in shallow soil within portions of the Site.
- Petroleum hydrocarbons soil in the area of the former underground storage tanks (USTs).

1.5 REMEDIAL ACTION PROCESS

The Remedial action process, including the regulatory background and the objectives, is described in the following sections.

1.5.1 Objectives for the RAIP

The objective of this RAIP are to present proposed remedial actions in detail to provide field personnel with the procedures and protocols required to complete the remedial action alternative, chosen in the Draft Remedial Action Plan (RAP), dated June 29, 2017 (ENGEO, 2017). The approved remedial action alternative was determined to be “Soil Excavation with Offsite Disposal” in the RAP.

1.5.2 Elements of the RAIP

To accomplish the objectives stated in the preceding section and satisfy regulatory requirements, this Plan includes the following elements.

- Noted Environmental Impacts
- Remedial Action Objectives
- Permitting and Site Preparation
- Excavation and Materials Handling Plan
- Sampling and Analysis Plan
- Dust Control Plan
- Transportation Plan

2.0 SITE CHARACTERIZATION

As presented in the RAP, numerous environmental characterization studies have been performed at the Site. These studies have confirmed the existence of environmentally impacted Class II soil at the Site. Approximately 1,750 cubic yards of OCP- and arsenic-impacted soil would need to be excavated from the Site. An estimated volume of approximately 20 cubic yards of TPH-impacted soil will need to be off hauled from the Site as well. Previous environmental characterizations of the Site are summarized in the RAP.

2.1 GEOLOGY AND HYDROGEOLOGY

Review of published topographic maps found that the Site is situated at an approximate elevation of 163 feet above mean sea level. The relatively level Site has a gentle slope toward the south-southwest. A review of the 1997 Helley and Graymer, et al. Geologic Map (USGS 1997) found that the Site is primarily underlain by Pleistocene-age alluvial and fluvial fan deposits, (Qpaf).

Previous studies identified fill material to a depth of approximately 2 feet in two borings at the Site, both located near the former UST. Fill material was not encountered in the geotechnical borings advanced by ENGEO in 2017. Thus, fill material appears to be present in isolated areas of the Site up to a depth of 2 feet below ground surface (outside the UST excavation).

Silty clay is present to depths of 3 to 4 feet below the ground surface. This material is underlain by dark yellowish brown clayey silt, which grades into sand between 6 and 9 feet below the ground surface. Silty and gravelly sand is present to depths of 15 to 18 feet below the ground surfaces, where it is underlain by claystone bedrock.

During the recent site investigations, groundwater was encountered at the Site at depths of approximately 11 to 12 feet below ground surface. Historical records for the Site showed a depth of groundwater ranging from 8 to 11.56 feet below the ground surface. Based on a review of the 2007 and 2008 groundwater elevation data, there is a slight flow gradient generally directed toward the south-southwest.

2.2 NATURE AND EXTENT OF CONTAMINATION

Details on Site geology and hydrogeology are presented on Section 2.1. The nature and extent of environmental impacts is described below.

2.2.1 Surface Soil

Intermittent surface soil samples exhibited low levels of detectable concentrations of OCPs; these concentrations were below respective screening levels. However, cumulative concentrations of OCPs exceeded the risk level in two sample locations (SS-7 and SS-13) (Table A and Figure 5).

Lead concentrations in three samples (SS-7@0-12”, SS-11@0-12”, SS-13@12-24”) exceeded the corresponding residential ESL of 80 mg/kg. A statistical evaluation was conducted on the lead data set for the Site. A 95 percent upper confidence level (UCL) concentration was calculated for lead concentrations following the methods established by the USEPA. A 95 percent UCL represents a threshold concentration with the following characteristic: the true mean concentration of the analyte within the study area has a 95 percent probability of being less than or equal to the UCL concentration. The analysis was performed using USEPA’s ProUCL Version 5.00.00 software. The UCL value for lead was calculated to be 42.2 mg/kg, which is below its corresponding residential ESL. The UCL calculation worksheet is presented in Appendix A.

Arsenic concentrations in soil at the Site ranged between 2.47 to 27.3 mg/kg. A background concentration of 11 mg/kg will be used for the Site for screening purposes. Shallow samples (0 to 12 inches) at 12 locations exceeded this level, and deeper samples (12 to 24 inches) at

two locations (SS-7 and SS-11) exceeded this level (Table A). Samples exhibiting arsenic concentrations above this level would need to be mitigated prior to redevelopment.

For the shallow samples exhibiting elevated concentrations of OCPs and arsenic, the soil would be excavated to a depth of 1 foot (12 inches), and for the deeper samples exhibiting elevated concentrations of OCPs and arsenic, soil would be excavated to a depth of 2.5 feet (30 inches).

2.2.2 Subsurface Soil

At the time of UST removal (2004), soil samples collected from the resulting excavation exhibited elevated TPH-g, TPH-d, and xylene(s) concentrations. However, subsequent soil sampling of soil in 2005 and 2007 during site characterization and well installation events did not identify hydrocarbon impacts within soil at or near the former UST locations. Several of the samples collected were very close or corresponded to the locations of the 2004 samples.

In the samples collected in 2017 within and in the vicinity of the UST excavation, samples collected from B-7 exhibited elevated concentrations of TPH-d and naphthalene (Table A and Figure 9). Boring B-7 is located within the former UST excavation. Soil impacts were observed to a depth of approximately 10 feet below ground surface.

Based on these sampling events, it does not appear that soil hydrocarbon impact is present in subsurface soils, with the exception of one location. The soil at this sample location within the former UST excavation would need to be mitigated prior to redevelopment.

2.2.3 Groundwater

Groundwater samples were collected during the 2005 soil sampling program (Figure 6). Several samples exhibited detectable TPH-g and TPH-d concentrations above respective screening levels. However, when monitoring wells were installed at the Site in 2007, including wells at the locations of the 2005 sampling locations, none of the groundwater samples exhibited detectable concentrations of petroleum hydrocarbons, with the exception of a TPH-d concentration of 56 µg/L in one well. Subsequent sampling of the wells in 2008 did not identify detectable concentrations of TPH or related analytes.

Grab groundwater sampling was conducted at three locations of the Site in June 2017 (Table D and Figure 6). None of the three grab groundwater samples collected from the Site exhibited detectable concentrations of VOCs, TPH-g, TPH-d, or TPH-mo. Dissolved metals, including barium, cobalt, nickel, and zinc were detected at low concentrations in the grab groundwater samples.

Therefore, based on the previous investigations and the most recent sampling, groundwater at the Site does not appear to exhibit evidence of impact.

2.2.4 Soil Gas

Two soil gas samples collected in 2016 exhibited elevated concentrations of ethylbenzene. Each of the 2017 soil gas samples (all collected in the immediate vicinity of the former UST location) exhibited detectable target analyte concentrations (Figure 7); the detected analytes are typically associated with gasoline and/or other refined petroleum hydrocarbon product. However, concentrations were below the corresponding residential screening levels. All VOCs were detected at concentrations below their corresponding screening levels during the 2017 sampling

(Figure 8). Oxygen levels in the soil gas samples ranged between 1.5 to 15 percent. These levels of oxygen demonstrate that natural bio attenuation is likely to occur in the subsurface.

2.3 DISCUSSION OF BIOATTENUATION ZONE

Based on the results of the results of the investigations conducted at the Site, the Site meets the requirements for case closure outlined in the State Water Resources Control Board's (SWRCB) *Low-Threat Underground Storage Tank Case Closure Policy (LTCP).*

As discussed in Appendix 3 Scenario 3 and Appendix 4 Scenario 4 of the LTCP document, the Site meets the following criteria:

- Benzene is less than 1,000 mg/L in groundwater (Appendix 3 Scenario 3) and benzene, ethylbenzene, and naphthalene concentrations were below threshold levels in soil gas (Appendix 4 Scenario 4).

- There is more than 5 feet of separation between the groundwater and the foundation of the proposed buildings, and there was more than 5 feet of separation between the depth of soil gas sampling and the proposed foundations.

- As discussed in Section 2.2.4, oxygen concentrations of greater than 4 percent and up to 15 percent were prevalent in soil gas samples collected at the Site.

- TPH-g and TPH-d are less than 100 mg/kg throughout the entire depth of the bioattenuation zone. Although samples collected at B-7 exhibited combined total TPH concentrations greater than 100 mg/kg, these samples were collected at depths ranging from 7½ to 10 feet, below the bioattenuation zone depth.

3.0 REMEDIAL ACTION OBJECTIVES

Soil characterization has revealed the presence of COPCs above acceptable levels at the Site. The removal action objective (RAO) is to reduce the human health risks associated with the COPCs within Site soil to a level that is acceptable for the planned future redevelopment and to allow for unrestricted future use of the Site.

A review of pertinent laws, regulations, and other criteria was performed to identify applicable or relevant and appropriate requirements (ARARs) and other criteria to be considered (TBC) for remediating the Site. Based on the RAO, soil cleanup levels were developed that establish specific concentrations of chemicals in soil that are protective of both human health and the environment. The soil cleanup levels have been developed for the Site from: (1) information obtained during soil characterizations conducted at the Site; and (2) risk management decisions based upon the current and proposed future use of the Site.

3.1 DEVELOPMENT OF REMEDIAL ACTION OBJECTIVES

The following criterion was applied for the development of the Site-specific RAOs:

- Individual Maximum Exposure Point Concentrations (EPC_{max}) for OCPs, TPH-d, and TPH-g
- Background concentrations for arsenic

3.1.1 Maximum Exposure Point Concentration

The RWQCB Environmental Screening Level (ESL)[1] for the COPCs is applied for the Site as the EPC_{max} as follows:

TABLE 3.1.1-1: Potential RAOs Based on EPC_{max}

COPC	EPC_{max}
Arsenic	11 mg/kg[2]
Dieldrin	38 µg/kg[3]
Chlordane	480 µg/kg
TPH-g	740 mg/kg
TPH-d	230 mg/kg

3.2 REMEDIAL ACTION OBJECTIVE

The remedial action objectives for the Site are summarized in the following table:

TABLE 3.2-1: Respective RAO for Remedial Action

COPC	BASIS FOR CLEANUP LEVEL	CLEANUP LEVEL
Arsenic	Established background concentration	11 mg/kg
Dieldrin	RWQCB Direct Exposure Human Health Risk Level	38 µg/kg
Chlordane	RWQCB Direct Exposure Human Health Risk Level	480 µg/kg
TPH-d	RWQCB Direct Exposure Human Health Risk Level	230 mg/kg
TPH-g	RWQCB Direct Exposure Human Health Risk Level	740 mg/kg

4.0 REMOVAL ACTION IMPLEMENTATION

Implementation of the removal action consists of a series of separate tasks. The following sections discuss each task and the activities of which they consist: Selecting excavation locations (Section 4.3); permits, notifications, and Site preparation (Section 4.1); excavation methodology (Section 4.4); and field variances (Section 4.5). The Dust Control Plan is presented as Appendix B, and the Transportation Plan is presented as Appendix D.

[1] San Francisco Regional Water Quality Control Board; Soil Tier 1 Environmental Screening Level; Table S-1; 22 February 2016, Revision 3.

[2] Based on background concentrations established for the Site.

[3] San Francisco Regional Water Quality Control Board; Direct Exposure Human Health Risk Screening Levels for Soil (Residential Land Use), Table S-1; 22 February 2016, Revision 3.

4.1 PERMITTING AND SITE PREPARATION

The removal action will be conducted in accordance with all applicable California Code of Regulations, including Cal/OSHA regulations. All of the excavations required to complete the remediation of the Site will be completed under the developer's grading permit, obtained from Alameda County. If required, the Transportation Plan will be submitted to the City prior to work activities. Since no volatile constituents are present at the Site, no permits/notifications are required from Bay Area Air Quality Management District (BAAQMD) for the removal action.

4.2 CONTROL MEASURES

The Site will be cordoned off to be protective of the general public, and access to the Site will be through a specific locked entrance. Dust control measures will be performed in accordance with applicable BAAQMD Standards. The applicable guidelines are available in Tables 8-1 and 8-2 of the California Environmental Quality Act - Air Quality Guidelines (updated May 2011). Dust control procedures are described in Appendix B. Onsite health and safety measures are detailed in Appendix F.

Because the anticipated disturbance area will be greater less than 1 acre in area, a Construction Stormwater Pollution Prevention Plan will be prepared by the contractor prior to work activities.

Noise control measures implemented within the Site will be undertaken in accordance with applicable Alameda County requirements. Alameda County requires that construction activities are conducted between 7 a.m. and 7 p.m. on any day, except Saturday or Sunday. Work conducted on Saturday or Sunday must be completed between 8 a.m. and 5 p.m. Noise control measures will include but are not limited to the following:

- All equipment driven by internal combustion engines will be equipped with appropriate mufflers in good operating condition.
- When feasible, "quiet" models of stationary equipment such as air compressors, generators, and other noise sources.
- Stationary noise-generating equipment will be located as far as possible from sensitive receptors.
- No unnecessary idling of internal combustion engines will occur onsite.

4.3 SELECTING EXCAVATION LOCATIONS

Figure 10 shows the proposed excavation area and depth of excavation. The anticipated depth of excavation in the areas of the OCP and arsenic-impacted soil is approximately 12 inches and 30 inches (in two areas). The anticipated depth of excavation in the areas of the TPH-impacted soil is approximately 11 feet.

The impacted portions of the Site that exhibit COPC concentrations in excess of the soil cleanup would be divided into 30-foot-square grids. An ENGEO representative will mark the proposed excavation grids at the Site prior to the completion of any remedial excavations. ENGEO personnel will also observe the excavation activities, providing oversight and coordination when

necessary. The initial excavation areas have been determined based on the results of the site investigations performed in 2016 and 2017 (refer to Figure 10 for proposed depths).

4.4 EXCAVATION METHODOLOGY

Excavation work will be conducted by a licensed grading contractor with current hazardous substance removal certifications. Excavations will be performed using a combination of scrapers, track-mounted excavators, and/or loaders. The approximate extent of the proposed excavation area is shown on Figure 10. Shoring, if necessary, will comply with applicable Alameda County and Cal/OSHA requirements.

Upon completion of the excavation work and confirmation sampling, the excavations will be backfilled with clean import fill that, following confirmation testing as appropriate, exhibits COPC concentrations below the below the RAOs. Import fill will be tested in accordance with DTSC requirements, prior to acceptance, as discussed in Section 4.8.

4.5 FIELD VARIANCES

Variances from the work plan will be recorded, including emergency actions (when an immediate response is required). The field variances will also be documented in the Removal Action Completion Report prepared for the project.

4.6 MANAGEMENT OF IMPACTED SOIL

All excavated soil at the Site is anticipated to be Class II material. The excavated soil from the Site will likely be disposed of at the Altamont Landfill in Livermore, California or Vasco Road Landfill in Livermore, California.

The excavation/offsite disposal remedial action will consist of removing COPC-impacted soil from the Site. The excavated soil will be stockpiled on Site, sampled, and properly disposed of by loading it into trucks for transport to a landfill. Excavation includes using loaders, scrapers, and/or other appropriate equipment. Approximately 1,750 cubic yards of OCP and arsenic- impacted soil would need to be excavated from the Site. For the TPH-impacted soil around B-7 (Figure 10), the overburden is assumed clean and can be excavated and stockpiled on Site. The soil below the overburden will be excavated to a depth of approximately 11 feet below ground surface. This would yield a volume of approximately 20 cubic yards of TPH-impacted soil to be off hauled from the Site.

The impacted portions of the Site that exhibit COPC concentrations in excess of the soil cleanup would be divided into 30-foot-square grids. An ENGEO representative will observe the excavation activities, providing oversight and coordination when necessary. The initial excavation areas have been determined based on the results of the site investigations performed in 2016 and 2017 (refer to Figure 10 for proposed depths). Confirmation sampling will be conducted, as discussed in Section 5.1.

Excavation operations would generate dust emissions. Suppressant, water spray, monitoring, and other forms of dust control may be required during excavation, and workers would be required to use personal protective equipment (PPE) to reduce exposure to the COPCs. Sloping excavation sidewalls may result in increased volume of soil requiring excavation. Confirmation soil sampling and analysis would be conducted to verify that cleanup criteria were met at the excavation bottom

and sidewall perimeter and excavation would proceed until the confirmation samples show the removal goal has been achieved.

The excavated soil will be temporarily stockpiled onsite. As necessary, the soil stockpiles would be covered with 10-mil plastic sheeting and secured to prevent dust or runoff during storm events. Stockpiles would be managed in accordance with the Dust Control Plan (Appendix B). The soil stockpiles would be sampled, as discussed in Section 5.2, and will be maintained at the Site until transported offsite.

Soil remaining within the Site, which has been shown to contain COPCs concentrations below the soil cleanup levels, could be used to backfill the contaminated soil excavations.

4.7 SOIL MANAGEMENT PLAN

A soil management plan (SMP) has been prepared for the Site (Appendix E). The purpose of this SMP is to describe the procedures and protocols that may be needed if soil impacts and other environmental conditions are encountered at the Site during demolition and grading activities. Implementation of the SMP will manage residual contaminants in the subsurface at the Site in a manner that is both protective of human health and the environment and compatible with current and future land uses. The extent of soil, soil gas, and groundwater impacts is discussed in Section 2.

4.8 BACKFILL OF EXCAVATIONS

Upon completion of excavation work and confirmation sampling, the excavation will be backfilled with clean onsite soil or clean import fill. Import fill will be tested in general accordance with the *CAL-EPA Department of Toxic Substances Control (DTSC) Information Advisory – Clean Imported Fill Material*" document (DTSC, 2001), prior to acceptance. The source and corresponding analytical testing would be provided to ACDEH prior to import to the Site. Import soil will be placed in accordance with the project Geotechnical Engineer's recommendations.

5.0 SAMPLING AND ANALYSIS PLAN

The proposed removal action will require the collection and analysis of samples to confirm the removal of impacted soil. Sampling will be conducted in general accordance with the applicable field procedures presented in Appendix C. In the following sections, confirmation sampling and sampling of stockpiles for landfill disposal are discussed.

5.1 CONFIRMATION SAMPLING OF EXCAVATED AREAS

The impacted areas of the Site (Figure 10) will initially be excavated to a depth of 1 foot below ground surface, and 2.5 feet below ground surface in certain areas of the OCP and arsenic impacts.

Following excavation, each of the excavated grids would be sampled by the collection of one discrete soil sample from the center-base of the grid and one sample from the mid-point of the grid's corresponding sidewalls. The confirmation samples recovered from the grids would be analyzed for OCPs (EPA Method 8081) and arsenic (EPA Method 6010). Grids with base confirmation sampling concentrations exceeding the soil cleanup level would be re-excavated an additional 12 inches and resampled. Grids with sidewall confirmation sampling concentrations exceeding the soil cleanup levels would be re-excavated laterally an additional 10 feet and

resampled. An additional base sample will be collected from the additional 10-foot lateral section. If the sidewall needs further excavation, no additional base samples would be collected, unless subsequent sidewall excavations exceeded 30 feet in cumulative lateral distance from the original sidewall. Additional base samples will only be collected if lateral excavations exceed the new 30-foot by 30-foot grid.

Excavation would proceed until the soil cleanup levels are achieved. The excavated soil will be managed in accordance with Section 4.6. Areas with confirmation samples below the soil cleanup levels would be considered complete with no further excavation conducted.

The area with the TPH impacts will be excavated to a depth of 11 feet below ground surface (Figure 10). Following excavation, the excavated area would be sampled by the collection of one discrete soil sample from the center-base of the grid and one sample from the mid-point of the grid's corresponding sidewalls. The confirmation samples recovered from the former UST excavation would be analyzed for TPH-g and VOCs (EPA Method 8260) and TPH-d and TPH-mo (EPA Method 8015 with silica gel cleanup).

5.2 SAMPLING OF STOCKPILES FOR LANDFILL DISPOSAL

As appropriate and necessary, to prevent potential impact to underlying soils or surfaces, stockpiles will be placed on 10-mil plastic sheeting. The soil stockpiles will be covered with 10-mil plastic sheeting and secured to prevent dust or runoff during storm events. Appropriate dust control and stormwater best management practices (BMPs) will be implemented during the soil mitigation activities.

The soil stockpiles will be profiled for landfill disposal. The specific laboratory profile will be determined prior to excavation activities; however, it is anticipated as a minimum, the stockpile samples will be analyzed for TPH-g and VOCs (EPA 8260), TPH-d and TPH-mo (EPA 8015 with silica gel cleanup), and CAM 17 metals (EPA 6010B). Samples will be collected at an approximate density of 1 sample per every 250 cubic yards of soil.

6.0 HEALTH AND SAFETY PLAN

All contractors will be responsible for operating in accordance with the most current requirements of State and Federal Standards for Hazardous Waste Operations and Emergency Response (Cal. Code Regs., title. 8, section 5192; 29 CFR 1910.120). Onsite personnel are responsible for operating in accordance with all applicable regulations of the Occupational Safety and Health Administration (OSHA) outlined in the State General Industry and Construction Safety Orders (Cal. Code Regs., title. 8) and Federal Construction Industry Standards (29 CFR 1910 and 29 CFR 1926), as well as other applicable federal, state and local laws and regulations. All personnel shall operate in compliance with all California OSHA requirements.

In addition, California OSHA's Construction Safety Orders (especially Cal. Code Regs., title 8, sections 1539 and 1541) will be followed as appropriate. A site-specific HASP has been prepared for the Site in accordance with current health and safety standards as specified by the federal and California OSHA and submitted to the Regional Water Board prior to initiation of fieldwork. The HASP is presented in Appendix F.

The provisions of the HASP are mandatory for all personnel who are at the Site. The contractor and its subcontractors performing fieldwork in association with this RAP will either adopt and

abide by the HASP or shall develop their own safety plans, which at a minimum, meet the requirements of the HASP. All onsite personnel shall read the HASP and sign the Plan "Acknowledgement" (Attachment E of the HASP) before starting Site activities.

7.0 REPORTING

On completion of all remedial and sampling activities, a Remedial Action Implementation Completion Report will be prepared and submitted to the ACDEH for review, documenting the implementation activities described in this document and the RAP.

SELECTED REFERENCES

CAL-EPA Department of Toxic Substances Control (DTSC) Information Advisory – Clean Imported Fill Material, October 2001.

Dibblee, T.W., Jr., 2005, Geologic Map of the Hayward Quadrangle, Alameda and Contra Costa Counties, California, DF 163, 2005.

ENGEO, Remedial Action Plan, 20957 Baker Road, Castro Valley, California, Project Number 13255.000.000, June 29, 2017 (DRAFT).

State Water Resources Control Board, Water Quality Control Policy for Low-Threat Underground Storage Tank Closure.

TABLES

Table A - Summary of Soil Analytical Results

Sample ID	Date Collected	Sample Depth (feet)	TPH			VOCs							Arsenic	Lead	Soluble lead (STLC)	Organochlorine pesticides (OCPs)												
			TPH-g	TPH-d	TPH-mo	Naphthalene	n-Butylbenzene	Benzene	Ethylbenzene	Toluene	Xylenes	Other VOCs				beta-BHC	delta-BHC	gamma-Chlordane	alpha-Chlordane	4,4-DDE	Dieldrin	4,4-DDD	4,4-DDT	Endosulfan II	Endrin Aldehyde	Endosulfan Sulfate	Chlordane	Heptachlor Epoxide	Other OCPs
			µg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg	mg/kg	mg/L	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	
RWQCB Direct Exposure ESLs[1]			**7.40E+05**	**230**	**1.10E+04**	**3.30E+03**	**--**	**2.30E+02**	**5.10E+03**	**9.70E+05**	**5.60E+05**	**N/A**	**0.067[2]**	**80**	**5[3]**	**-**	**-**	**-**	**-**	**1,900**	**38**	**2,700**	**1,900**	**-**	**-**	**-**	**480**	**67**	**N/A**
RWQCB Groundwater Leaching ESLs[2]			**7.70E+05**	**570**	**--**	**33**	**--**	**4.40E+01**	**1.40E+03**	**2.90E+03**	**2.30E+03**	**N/A**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1.1E+06**	**0.17**	**7.5E+05**	**4,300**	**-**	**-**	**-**	**15,000**	**0.42**	**N/A**
PREVIOUS CHARACTERIZATION																												
S-1@3-9"	8/19/2016	0.25 - 0.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**13.7**	**7.41**	NA	<3.2	<1.6	<1.6	<1.7	<1.9	<1.5	<5.7	<1.3	<5.8	<1.5	<1.2	<21	<0.78	ND
S-1@12-18"	8/19/2016	1 - 1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.9**	**13.9**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S-2@3-9"	8/19/2016	0.25 - 0.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**27.3**	**6.49**	NA	<1.3	<0.62	<0.65	<0.69	<0.78	<0.59	<2.3	<0.52	<2.3	<0.60	<0.47	<8.4	<0.31	ND
S-2@12-18"	8/19/2016	1 - 1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.92**	**19.1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S-3@3-9"	8/19/2016	0.25 - 0.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**17.9**	**14.1**	NA	<1.3	<0.62	<0.65	<0.69	<0.78	<0.59	<2.3	<0.52	<2.3	<0.60	<0.47	<8.4	<0.31	ND
S-3@12-18"	8/19/2016	1 - 1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**5.51**	**8.29**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S-4@3-9"	8/19/2016	0.25 - 0.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**26.5**	**33.2**	NA	<1.3	<0.62	<0.65	<0.69	<0.78	<0.59	<2.3	<0.52	<2.3	<0.60	<0.47	<8.4	<0.31	ND
S-4@12-18"	8/19/2016	1 - 1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**6.64**	**12.9**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S-5@3-9"	8/24/2016	0.25 - 0.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**13.1**	**48.4**	NA	<6.3	<3.1	<3.3	<3.5	<3.9	<3.0	<11	<2.6	<12	<3.0	<2.3	<42	<1.6	ND
S-6@3-9"	8/24/2016	1 - 1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**7.51**	**9.71**	NA	<0.32	<0.16	<0.16	<0.17	<0.19	<0.15	<0.57	<0.13	<0.58	<0.15	<0.12	<2.1	<0.078	ND
S-7@3-9"	8/24/2016	0.25 - 0.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**3.88**	**49.6**	NA	<3.2	<1.6	**9.71**	**8.55**	**26.6**	**36.8**	<5.7	**87.9**	<5.8	<1.5	<1.2	**73.1**	<0.78	ND
S-8@3-9"	8/24/2016	1 - 1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**13.5**	**43.1**	NA	<3.2	<1.6	<0.16	<0.17	**1.9**	<1.5	<5.7	**8.03**	<5.8	<1.5	<1.2	**73.1**	**0.78**	ND
ADDITIONAL CHARACTERIZATION - MARCH 2017																												
SS-1@0-12"	3/3/2017	0 - 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**9.67**	**22.4**	NA	<3.2	<1.6	<1.6	<1.7	**6.44**	**1.7**	<5.7	7.84	<5.8	<1.5	<1.2	<21	<0.78	ND
SS-1@12-24"	3/3/2017	1 - 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**5.14**	**9.02**	NA	<1.3	<0.62	<0.65	<0.69	**4.29**	**0.9**	<2.3	<0.52	<2.3	<0.60	<0.47	<8.4	<0.31	ND
SS-2@0-12"	3/3/2017	0 - 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**10.2**	**12.9**	NA	<3.2	<1.6	**2.1**	**2.34**	**4.98**	**2.51**	<5.7	**12.3**	<5.8	<1.5	<1.2	<21	<0.78	ND
SS-2@12-24"	3/3/2017	1 - 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**8.33**	**6.01**	NA	<3.2	<1.6	<1.6	<1.7	**4.62**	<1.5	<5.7	<1.3	<5.8	<1.5	<1.2	<21	<0.78	ND
SS-3@0-12"	3/3/2017	0 - 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**13.6**	**8.21**	NA	<0.95	<0.47	<0.49	<0.52	<0.58	<0.44	<1.7	<0.39	<1.7	<0.45	<0.35	<6.3	<0.23	ND
SS-3@12-24"	3/3/2017	1 - 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**11**	**7.96**	NA	<6.3	<3.1	<3.3	<3.5	5.08	<3.0	<11	<2.6	<12	<3.0	<2.3	<42	<1.6	ND
SS-4@0-12"	3/3/2017	0 - 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**10.7**	**10.5**	NA	**45.6**	**61.3**	<1.6	<1.7	<1.9	**5.31**	**7.88**	**10.8**	**37.8**	**72.5**	**60**	<21	<0.78	ND
SS-4@12-24"	3/3/2017	1 - 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**4.72**	**6.68**	NA	<3.2	<1.6	<1.6	<1.7	**2.61**	<1.5	<5.7	<1.3	<5.8	<1.5	<1.2	<21	<0.78	ND
SS-5@0-12"	3/3/2017	0 - 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**16.4**	**5.11**	NA	<3.2	**5.34**	<1.6	<1.7	<1.9	<1.5	<5.7	<1.3	8.93	17.6	<1.2	<21	<0.78	ND
SS-5@12-24"	3/3/2017	1 - 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**6.1**	**7.99**	NA	<3.2	<1.6	<1.6	<1.7	**2.37**	**1.81**	<5.7	<1.3	<5.8	<1.5	<1.2	<21	<0.78	ND
SS-6@0-12"	3/3/2017	0 - 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**8.79**	**15.1**	NA	<3.2	**6.4**	<1.6	<1.7	<1.9	<1.5	<5.7	**8.72**	**13.4**	**18.7**	<1.2	<21	<0.78	ND
SS-6@12-24"	3/3/2017	1 - 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.47**	**3.46**	NA	<3.2	<1.6	<1.6	<1.7	<1.9	<1.5	<5.7	<1.3	<5.8	<1.5	<1.2	<21	<0.78	ND
SS-7@0-12"	3/3/2017	0 - 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**10.3**	**83.1**	3.23	<3.2	<1.6	<1.6	<1.7	<1.9	15.3	<5.7	<1.3	<5.8	<1.5	<1.2	<21	<0.78	ND
SS-7@12-24"	3/3/2017	1 - 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**17.7**	**10.8**	NA	<3.2	<1.6	<1.6	<1.7	<1.9	<1.5	<5.7	<1.3	<5.8	<1.5	<1.2	<21	<0.78	ND
SS-8@0-12"	3/3/2017	0 - 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**13.2**	**5.46**	NA	<0.95	<0.47	<0.49	<0.52	<0.58	2.44	<1.7	<0.39	<1.7	<0.45	<0.35	<6.3	<0.23	ND
SS-8@12-24"	3/3/2017	1 - 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**10.7**	**10.1**	NA	<3.2	<1.6	<1.6	<1.7	**2.81**	<1.5	<5.7	<1.3	<5.8	<1.5	<1.2	<21	<0.78	ND
SS-9@0-12"	3/3/2017	0 - 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**11.1**	**24.8**	NA	<3.2	<1.6	<1.6	<1.7	<1.9	**12**	<5.7	<1.3	<5.8	<1.5	<1.2	<21	<0.78	ND
SS-9@12-24"	3/3/2017	1 - 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**8.34**	**10**	NA	<3.2	<1.6	<1.6	<1.7	**2.02**	<1.5	<5.7	<1.3	<5.8	<1.5	<1.2	<21	<0.78	ND
SS-10@0-12"	3/3/2017	0 - 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**12.9**	**36.2**	NA	<3.2	<1.6	<1.6	<1.7	<1.9	**13.5**	<5.7	<1.3	<5.8	<1.5	<1.2	<21	<0.78	ND
SS-10@12-24"	3/3/2017	1 - 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**8.79**	**10.4**	NA	<3.2	<1.6	<1.6	<1.7	**2.11**	**1.78**	<5.7	<1.3	<5.8	<1.5	<1.2	<21	<0.78	ND
SS-11@0-12"	3/3/2017	0 - 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**19.8**	**110**	**4.57**	<0.95	<0.47	<0.49	<0.52	<0.58	**4.22**	<1.7	<0.39	<1.7	<0.45	<0.35	<6.3	<0.23	ND
SS-11@12-24"	3/3/2017	1 - 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**11.1**	**11.5**	NA	<1.3	<0.62	<0.65	<0.69	<0.78	<0.59	<2.3	<0.52	<2.3	<0.60	<0.47	<8.4	<0.31	ND
SS-12@0-12"	3/16/2017	0 - 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**3.67**	**8.54**	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ND
SS-12@12-24"	3/16/2017	1 - 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**6.17**	**5.2**	NA	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ND
SS-13@0-12"	3/3/2017	0 - 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**8.58**	**64.1**	1.55	<0.95	<0.47	**58.3**	**60.6**	**9.08**	**32.4**	<1.7	**26.7**	<1.7	<0.45	<0.35	**401**	**11.3**	ND
SS-13@12-24"	3/3/2017	1 - 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**8.18**	**89.6**	2.21	<3.2	<1.6	**32.1**	**37.2**	**55.5**	**36.1**	<5.7	**47.3**	<5.8	<1.5	<1.2	**170**	**7.92**	ND
Dup-1@0-12"	3/3/2017	0 - 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**10.1**	**7.16**	NA	<0.95	<0.47	<0.49	<0.52	<0.58	**2.59**	<1.7	<0.39	<1.7	<0.45	<0.35	<6.3	<0.23	ND
Dup-2@12-24"	3/3/2017	1 - 2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**8.74**	**13.9**	NA	<1.3	<0.62	<0.65	<0.69	<0.78	<0.59	<2.3	<0.52	<2.3	<0.60	<0.47	<8.4	<0.31	ND

Table A - Summary of Soil Analytical Results

Sample ID	Date Collected	Sample Depth (feet)	TPH			VOCs							Arsenic	Lead	Soluble lead (STLC)	Organochlorine pesticides (OCPs)													
			TPH-g	TPH-d	TPH-mo	Naphthalene	n-Butylbenzene	Benzene	Ethylbenzene	Toluene	Xylenes	Other VOCs				beta-BHC	delta-BHC	gamma-Chlordane	alpha-Chlordane	4,4-DDE	Dieldrin	4,4-DDD	4,4-DDT	Endosulfan II	Endrin Aldehyde	Endosulfan Sulfate	Chlordane	Heptachlor Epoxide	Other OCPs
			µg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg	mg/kg	mg/L	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
RWQCB Direct Exposure ESLs[1]			7.40E+05	230	1.10E+04	3.30E+03	--	2.30E+02	5.10E+03	9.70E+05	5.60E+05	N/A	0.067[2]	80	5[3]	-	-	-	-	1,900	38	2,700	1,900	-	-	-	480	67	N/A
RWQCB Groundwater Leaching ESLs[2]			7.70E+05	570	--	33	--	4.40E+01	1.40E+03	2.90E+03	2.30E+03	N/A	-	-	-	-	-	-	-	1.1E+06	0.17	7.5E+05	4,300	-	-	-	15,000	0.42	N/A
JUNE 2017 CHARACTERIZATION																													
B-1 @ 4.5-5'	6/22/2017	4.5-5	<100	<2.0	<10	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-2 @ 4.5-5'	6/22/2017	4.5-5	<100	3.26	<10	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-3 @ 4.5-5'	6/22/2017	4.5-5	<100	2.47	<10	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-4 @ 4.5-5'	6/22/2017	4.5-5	<100	<2.0	<10	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-5 @ 4.5-5'	6/22/2017	4.5-5	<100	<2.0	<10	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-6 @ 4.5-5'	6/22/2017	4.5-5	<100	<2.0	<10	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-7 @ 4.5-5'	6/22/2017	4.5-5	<100	8.14	17.9	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-7 @ 7.5-8'	6/22/2017	7.5-8	29,500	2,390	<320	221	<150	<1000	<1000	<1000	<2000	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-7 @ 9.5-10'	6/22/2017	9.5-10	95,700	4,990	<320	<170	275	<1000	<1000	<1000	<2000	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-7 @ 11.5-12'	6/22/2017	11.5-12	<100	23.7	<10	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-8 @ 4.5-5'	6/22/2017	4.5-5	<100	3.64	<10	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-9 @ 4.5-5'	6/21/2017	4.5-5	<100	4.68	<10	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-10 @ 4.5-5'	6/22/2017	4.5-5	<100	5.67	19.6	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-10 @ 7.5-8'	6/22/2017	7.5-8	<100	7.31	17.8	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-11 @ 4.5-5'	6/22/2017	4.5-5	<100	2.15	<10	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-11 @ 7.5-8'	6/22/2017	7.5-8	<100	<2.0	<10	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-11 @ 11.5-12'	6/22/2017	11.5-12	13,500	<2.0	<10	<170	<150	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-11 @ 13-13.5'	6/22/2017	13-13.5	<100	<2.0	<10	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-12 @ 4.5-5'	6/22/2017	4.5-5	<100	7.48	12.5	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-12 @ 7.5-8'	6/22/2017	7.5-8	<100	2.05	<10	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-13 @ 4.5-5'	6/22/2017	4.5-5	<100	6.96	12.7	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-14 @ 4.5-5'	6/21/2017	4.5-5	<100	3.17	<10	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-15 @ 4.5-5'	6/22/2017	4.5-5	<100	<2.0	<10	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-16 @ 4.5-5'	6/22/2017	4.5-5	<100	<2.0	<10	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-16 @ 7.5-8'	6/22/2017	7.5-8	<100	<2.0	<10	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-17 @ 4.5-5'	6/22/2017	4.5-5	<100	<2.0	<10	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-18 @ 4.5-5'	6/21/2017	4.5-5	<100	2.31	<10	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-19 @ 4.5-5'	6/22/2017	4.5-5	<100	<2.0	<10	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-20 @ 4.5-5'	6/22/2017	4.5-5	<100	<2.0	<10	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-21 @ 4.5-5'	6/22/2017	4.5-5	<100	<2.0	<10	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-22 @ 4.5-5'	6/22/2017	4.5-5	<100	<2.0	<10	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dup-1	6/22/2017	4.5-5	<100	<2.0	<10	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dup-2	6/22/2017	4.5-5	<100	<2.0	<10	<10	<10	<10	<10	<10	<20	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
N/A = Not Applicable
ND = Not Detected
NA = Not Analyzed
<3.2 mg/kg indicates that the result is less than the laboratory reporting limit of 3.2 mg/kg.
Reporting limits for xylenes are the summation of the individual reporting limits from the m,p- & o-xylenes.
Yellow highlighted cell indicate concentrations exceed corresponding residential screening levels.
None of the laboratory reporting limits exceed the direct exposure residential ESLs.
* The benzene results are displayed with the reporting limit (PQL) and the method detection limit (MDL). The MDL results were less than the applicable ESLs.

[1] Regional Water Quality Control Board (RWQCB), Direct Exposure Human Health Risk Screening Levels for Soil (Residential Land Use), Table S-1, February 2016 (Revision 3).

[2] Regional Water Quality Control Board (RWQCB), Soil Leaching to Groundwater Screening Levels for Soil (Drinking Water Resource), Table S-2, February 2016 (Revision 3).

[2] Although arsenic concentrations exceed the corresponding residential screening levels, concentrations are within expected background concentrations observed in the San Francisco Bay Area, with the exception of the yellow highlighted results (which exceed the estimated background concentration of 11 mg/kg).

[3] Used for California regulated hazardous waste. Source is California Code of Regulations, Title 22, Chapter 11, Article 3. If a substance is ten times the STLC value found in the TTLC, the Waste Extraction Test (WET) is indicated. If any substance in the waste extract is equal to or greater than the STLC value, it is considered a hazardous toxic waste.

Table B - Summary of Soil Gas Analytical Results: VOCs

Sample ID	Date Collected	TPH-g	1,1-Dichloroethene	1,1-Difluoroethane	1,3-Butadiene	2-Butanone (MEK)	4-Methyl-2-Pentanone (MIBK)	Acetone	Benzene	Carbon Disulfide	cis-1,2-dichloroethene	n-hexane	n-heptane	Cyclohexane	Isopropanol	tert-Butanol	Toluene	TCE	PCE	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	2-Hexanone	4-Ethyl Toluene	Ethyl benzene	m,p-Xylene	o-xylene	Naphthalene	1,2,4-Trichlorobenzene	Other VOCs
		µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³		µg/m³	µg/m³	µg/m³	µg/m³	µg/m³			µg/m³
RWQCB ESL[2]		**3.00E+05**	**3.70E+04**	**880**	**--**	**2.60E+06**	**1.60E+06**	**1.50E+07**	**48**	**--**	**4,200**	**--**	**--**	**--**	**--**	**--**	**1.60E+05**	**240**	**240**	**--**	**--**	**--**	**--**	**560**	**5.20E+04**	**5.20E+04**	**41**	**1000**	**N/A**
PREVIOUS CHARACTERIZATION																													
SG-1	8/19/2016	**88,100**	<69	<470	<39	<52	<72	8,500	<56	<54	<69	<62	NA	NA	NA	<53	<66	<94	<120	**88**	**<86**	**95**	<86	**3,500**	**17,000**	**5,200**	<92	<130	ND
SG-2	8/19/2016	**15,300**	<20	<140	<11	<15	<21	4,900	<16	<16	<20	<18	NA	NA	NA	<15	<19	<27	<34	<25	<25	<21	<25	**210**	**1,100**	**370**	<26	**160**	ND
SG-3	8/19/2016	**245,000**	<99	<680	<55	<74	<100	2,500	<80	<78	<99	<88	NA	NA	NA	<76	<94	<130	<170	**5,700**	**2,300**	**170**	<120	**3,700**	**20,000**	**7,800**	**130**	<190	ND
ADDITIONAL CHARACTERIZATION																													
SG-A	3/15/2017	**280**	<4.2	<4.3	**37**	<11	<4.4	**28**	**19**	**63**	<4.2	**30**	**7.4**	**21**	<11	N/A	**15**	<5.7	<7.3	<5.3	<5.3	<4.4	<5.3	<4.6	4.8	<4.6	<4.3	<7.9	ND
SG-B	3/14/2017	**3,200**	<9.6	<9.8	<5.3	<7.1	<9.9	**43**	**8.2**	**35**	<9.6	**820**	<9.9	**14**	<24	N/A	**740**	<13	<16	<12	<12	<9.9	<12	**18**	**71**	**20**	<9.6	<18	ND
SG-C	3/14/2017	**3,400**	<8.5	<8.7	<4.7	**9.5**	<8.8	**35**	**11**	**35**	<8.5	**740**	**9.9**	**17**	<21	N/A	**280**	<11	**20**	<11	<11	<8.8	<11	<9.3	**21**	<9.3	<8.6	<16	ND
SG-D	3/14/2017	**210**	<3.9	<4.0	<2.2	<2.9	<4.0	<9.4	<3.1	<3.1	<3.9	<3.5	<4.0	<3.4	<9.7	N/A	**9.5**	<5.3	<6.7	<4.8	<4.8	<4.0	<4.8	<4.3	<4.3	<4.3	<3.9	<7.3	ND
SG-E	3/15/2017	**13,000**	<21	<21	**21**	<51	<21	**58**	**26**	**170**	<21	**3,600**	<21	**50**	<51	N/A	**2,400**	<28	<36	<26	<26	<21	<26	**50**	**220**	**46**	<110	<39	ND
SG-F	3/15/2017	**6,000**	<8.0	<8.2	**7.9**	**24**	<8.3	**35**	**18**	**200**	<8.0	**1,900**	**13**	**27**	<20	N/A	**870**	<11	<14	**11**	<9.9	<8.3	<9.9	**22**	**100**	**23**	<42	<15	ND
SG-G	3/14/2017	**4,700**	<7.4	<7.5	**5.2**	**7.5**	**7.6**	**210**	**8.5**	**42**	<7.4	**1,000**	**15**	**22**	<18	N/A	**1,800**	<10	<13	<9.1	<9.1	<6.6	<9.1	**31**	**130**	**33**	<39	<14	ND
SG-H	3/14/2017	**4,800**	<12	<12	**6.6**	<8.7	<12	**69**	<9.4	**180**	<12	**1,600**	**22**	**30**	<29	N/A	**870**	<16	<20	<15	<15	<12	<15	**22**	**98**	**25**	<12	<11	ND
SG-I	3/14/2017	**280**	<4.5	<4.6	<2.5	**3.6**	<4.6	**21**	<3.6	**5.6**	<4.5	**15**	<4.6	<3.9	<11	N/A	**80**	<6.0	<7.6	<5.5	<5.5	<4.6	<5.5	<4.9	**11**	<4.9	<4.5	<8.3	ND
SG-J	3/14/2017	**<64**	<4.2	<4.2	<2.3	<3.1	<4.3	<10	<3.4	**31**	<4.2	**15**	<4.3	<3.6	<10	N/A	**24**	<5.6	<7.1	<5.2	<5.2	<4.3	<5.2	<4.6	<4.6	<4.6	<4.2	<7.8	ND
SG-K	3/15/2017	**1,400**	<4.6	<4.7	**20**	**12**	<4.7	**52**	**11**	**190**	<4.6	**31**	**5**	**11**	<11	N/A	**78**	<6.2	<7.8	<5.7	<5.7	<4.7	<5.7	<5.0	<5.0	<5.0	<4.6	<8.6	ND
SG-L	3/14/2017	**6,600**	<8.7	<8.9	<4.8	**11**	<9.0	**61**	**11**	**180**	<8.7	**2100**	**28**	**30**	<22	N/A	**1,500**	<12	<15	<11	<11	<9.0	<11	**33**	**130**	**33**	<46	<16	ND
SG-M	3/14/2017	**790**	<4.6	<4.7	<2.5	**6.6**	<4.7	**31**	**4.8**	**40**	<4.6	**140**	**6.2**	<4	**13**	N/A	**260**	<6.2	<7.8	<5.7	<5.7	<4.7	<5.7	**9.4**	**40**	**11**	<4.6	<8.5	ND
SG-N	3/14/2017	**1,400**	<4.7	<4.8	<2.6	**8.7**	<4.8	**72**	<3.8	**7.6**	<4.7	**180**	<4.8	<4.0	<12	N/A	**400**	<6.3	<8.0	**6.9**	<5.8	<4.8	<5.8	**18**	**87**	**29**	<4.7	<8.7	ND
SG-DUP	3/14/2017	**1,300**	<4.6	<4.7	<2.6	**9**	<4.8	**72**	<3.7	**7.7**	<4.6	**190**	<4.8	<4.0	<12	N/A	**410**	<6.3	<7.9	**6.8**	<5.8	<4.8	<5.8	**18**	**89**	**28**	<4.7	<8.7	ND

Notes:
N/A- Not Applicable
-- means no screening level exists
<4.2 indicates that the result is less than the laboratory reporting limit of 4.2 µg/m³.
Yellow highlighted cell indicate concentrations exceeed corresponding residential screening levels.
Green highlighted cells indicate laboratory reporting limits exceed corresponding residential screening levels.

[2] Regional Water Quality Control Board (RWQCB), Subslab/Soil Gas Vapor Intrusion Human Health Risk Screening Levels (Residential Land Use), Table SG-1, February 2016 (Revision 3).

Table C - Summary of Soil Gas Analytical Results: Fixed Gases

Sample ID	Date Collected	Helium	Carbon Monoxide	Carbon Dioxide	Oxygen	Methane
		%	%	%	%	%
SG-A	3/15/2017	<0.21	<0.21	**3.1**	**12**	<0.21
SG-B	3/14/2017	<0.24	<0.24	**5.8**	**3.6**	<0.24
SG-C	3/14/2017	<0.21	<0.21	**6**	**3.7**	<0.21
SG-D	3/14/2017	<0.20	<0.20	**2.2**	**16**	<0.20
SG-E	3/15/2017	<0.35	<0.35	**1.3**	**13**	<0.35
SG-F	3/15/2017	<0.40	<0.40	**0.8**	**12**	<0.40
SG-G	3/14/2017	<0.19	<0.19	**6.6**	**5.7**	<0.19
SG-H	3/14/2017	<0.20	<0.20	<0.20	**15**	<0.20
SG-I	3/14/2017	<0.23	<0.23	**2.4**	**15**	<0.23
SG-J	3/14/2017	<0.21	<0.21	**8.4**	**8.2**	<0.21
SG-K	3/15/2017	<0.23	<0.23	**1.6**	**12**	<0.23
SG-L	3/14/2017	<0.22	<0.22	**1.1**	**9.6**	<0.22
SG-M	3/14/2017	<0.23	<0.23	**8.9**	**2.2**	<0.23
SG-N	3/14/2017	<0.24	<0.24	**9.3**	**1.8**	<0.24
SG-DUP	3/14/2017	<0.23	<0.23	**9.5**	**1.5**	<0.23

Notes:

ND- Not Detected

Table D – Summary of Groundwater Analytical Results

Sample ID	Date	TPHs			VOCs				Other VOCs	Dissolved Metals				
		TPH-d	TPH-mo	TPH-g	Benzene	Ethylbenzene	Toluene	Xylenes		Barium	Cobalt	Nickel	Zinc	Other Metals
		mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L
RWQCB ESLs [1]		**0.15**	**--**	**220**	**1**	**30**	**40**	**20**	**N/A**	**1**	**0.006**	**0.1**	**5**	**N/A**
GW-1	6/22/2017	<0.10	<0.40	<50	<0.50	<0.50	<0.50	<1.50	ND	0.06	<0.0050	<0.0050	0.013	ND
GW-2	6/22/2017	<0.10	<0.40	<50	<0.50	<0.50	<0.50	<1.50	ND	0.036	<0.0050	<0.0050	0.011	ND
GW-3	6/22/2017	<0.10	<0.40	<50	<0.50	<0.50	<0.50	<1.50	ND	0.11	**0.029**	0.020	0.0098	ND
Dup-1	6/22/2017	<0.10	<0.40	<50	<0.50	<0.50	<0.50	<1.50	ND	0.034	<0.0050	<0.0050	0.012	ND

Notes:

N/A = not applicable

ND = not detected

'--' means no screening level exists

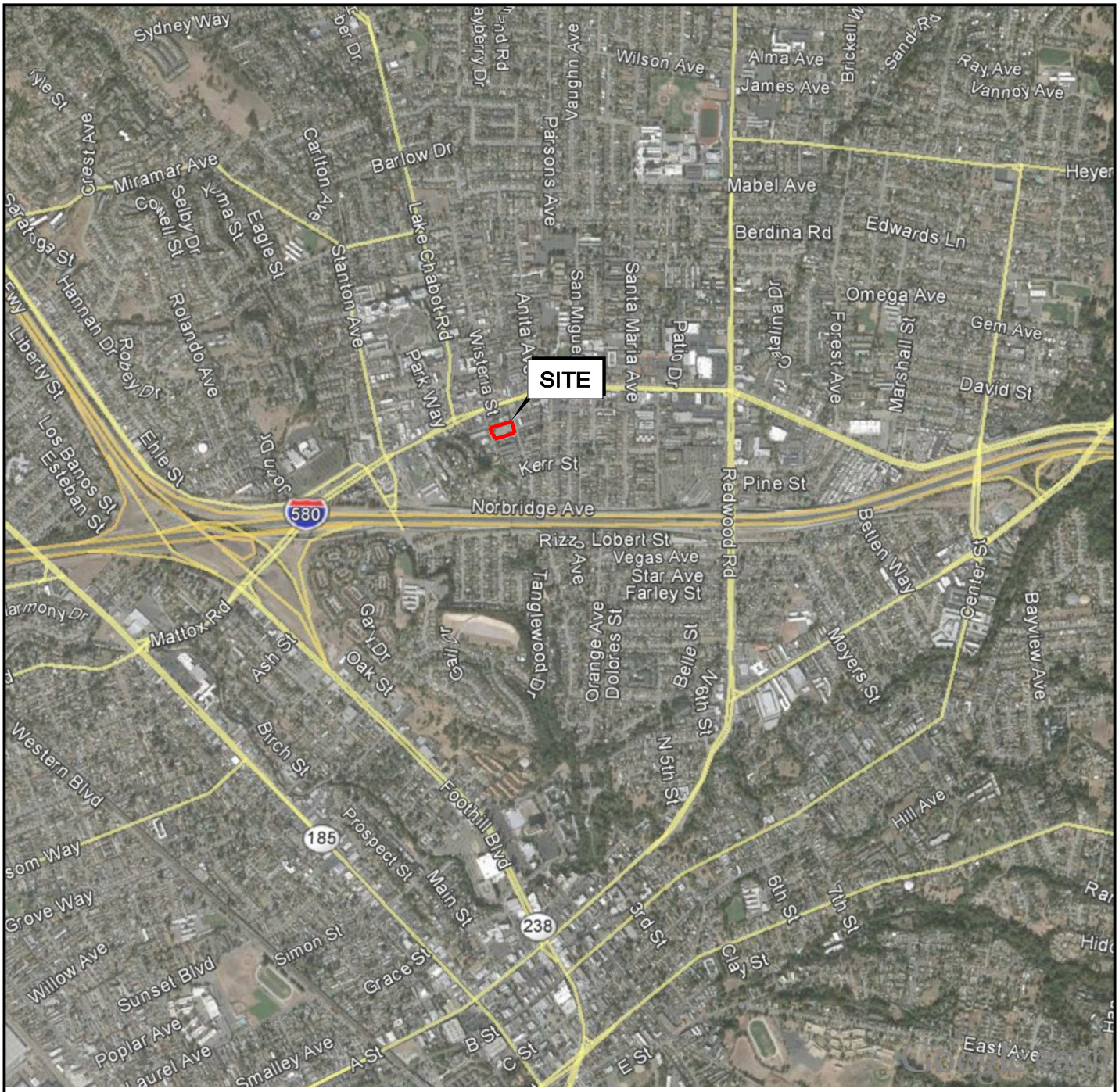
<0.1 mg/L indicates that the result is less than the laboratory reporting limit of 0.1 mg/L.

Reporting limits for xylenes are the summation of the individual reporting limits from the m,p- & o-xylenes.

Yellow highlighted cell indicate concentrations exceeed corresponding residential screening levels.

[1] Regional Water Quality Control Board (RWQCB), Direct Exposure Human Health Risk Screening Levels for Groundwater (MCL Priority), Table GW-1, February 2016 (Revision 3).

FIGURES



BASE MAP SOURCE: GOOGLE EARTH MAPPING SERVICE

ENGEO Expect Excellence

VICINITY MAP

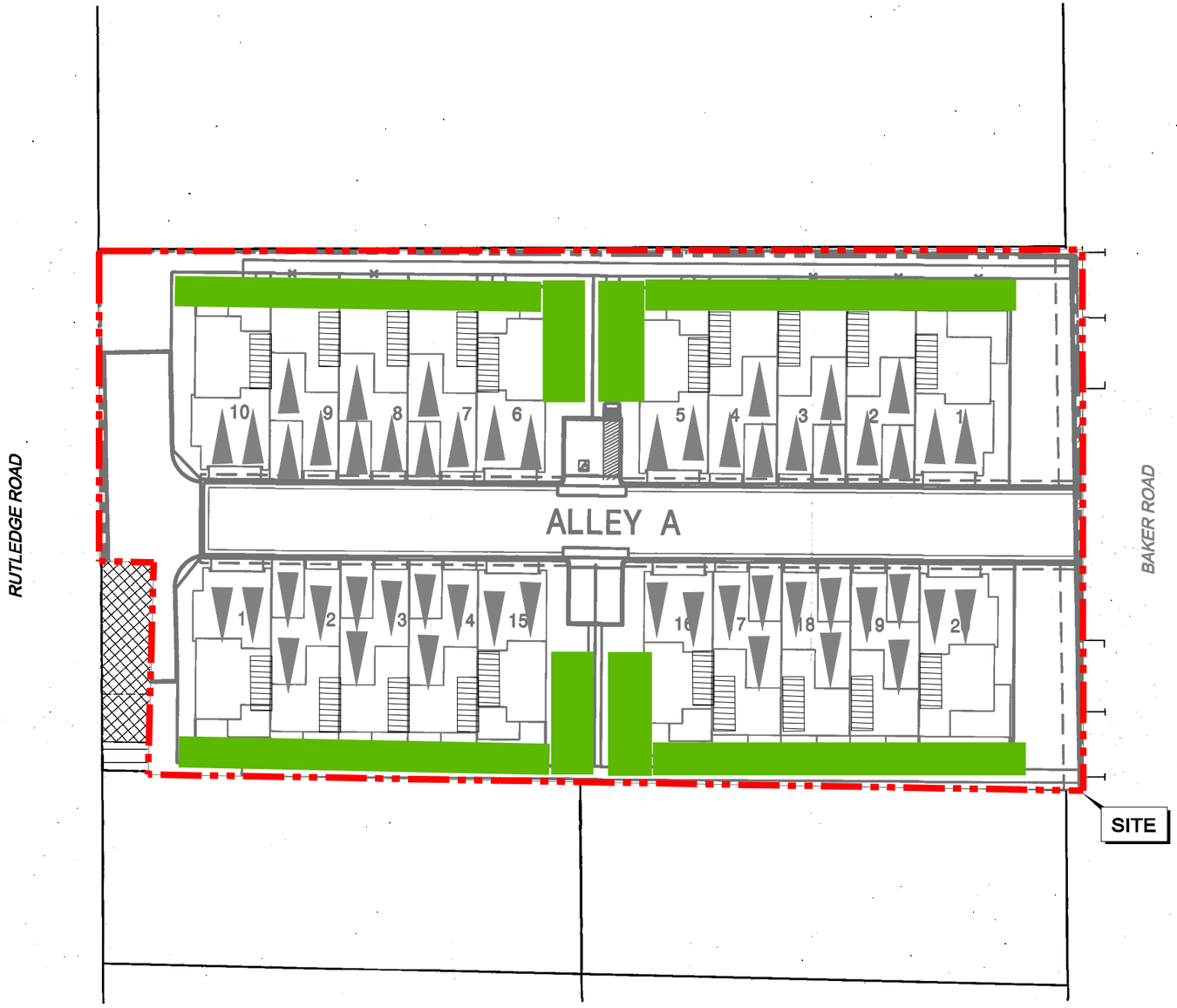
20785 AND 20957 BAKER ROAD

CASTRO VALLEY, CALIFORNIA

PROJECT NO.: 13255.000.000	FIGURE NO. 1
SCALE: AS SHOWN	
DRAWN BY: GLJ	CHECKED BY: DB

G:\Drafting\DRAFTING2_Dwg_13000 Plus\13255\20785 and 20957 Baker Road Workplan\0617\13255000000-WorkPlan-1-VicMap-0617.dwg Plot Date: 6-27-17 gjaffe

ORIGINAL FIGURE PRINTED IN COLOR



SITE SUMMARY

SITE ACRE		1.09 ac
TOTAL UNITS		20 du
Plan 2	*8 du*	*40%*
Plan 3	*10 du*	*50%*
Plan 3X	*2 du*	*10%*
DENSITY:		18.4 du/ac

PARKING SPACES:

REQUIRED	
Unit Parking (2 stalls / du)	40 stalls
Guest Parking (1 stall / du)	20 stalls
Total	60 stalls

PROVIDED	
2 Car Garage	40 stalls
Driveway	12 stalls
Head In	5 stalls
Baker On-Street	4 stalls
Total	61 stalls

OPEN SPACE:

REQUIRED

Common	min. 200 sf / unit I 25 ft min. dimension
Private	min. 300 sf/unit I 10 ft min. ground floor dimension I 7 ft min. balcony dimension
Total Usable	
Per Unit	min. 600 sf / unit
Total	min. 12,000 sf

PROVIDED

Common

Area A:	1,531 sf	Area C:	1,837 sf
Area B:	1,581 sf	Area D:	1,909 sf
Sub-Total:	3,112 sf	Sub-Total:	3,746 sf

Total Usable	
Per Unit	343 sf / unit
Total	6,858 sf

Private

Ground Floor:	220 sf / unit
Balcony:	TBD
Total Usable:	
Per Unit	220 sf / unit
Total	4,400 sf

Total Open Space	
Per Unit	563 sf (+ TBD Private Balcony Space)
Total	11,260 sf

N

0 FEET 40
0 METERS 20

EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

PARKING SPACE

OPEN SPACE

STAIRCASE

BASE MAP SOURCE: WILLIAM HEZMALHALCH ARCHITECTS INC., 2016

ENGEO Expect Excellence

PROPOSED DEVELOPMENT PLAN
20785 AND 20957 BAKER ROAD
CASTRO VALLEY, CALIFORNIA

PROJECT NO.: 13255.000.000
SCALE: AS SHOWN
DRAWN BY: GLJ CHECKED BY: DB

FIGURE NO. 2

G:\Drafting\DRAFTING2_Dwg_13000 Plus\13255\20785 and 20957 Baker Road Workplan\0617\13255000000-WorkPlan-2-DevPlan-0617.dwg Plot Date:6-27-17 gjaffe

ORIGINAL FIGURE PRINTED IN COLOR

EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

- S-8 — SOIL SAMPLE (ENGEO, 2016)
- SG-3 — PREVIOUS SOIL GAS SAMPLE (ENGEO, 2016)
- MW-5 — PREVIOUS MONITORING WELL (AEI, 2007)
- SB-8 — PREVIOUS SOIL BORING (AEI, 2005)
- GT-9 — PREVIOUS SOIL BORING (AEI, 1986)

N

0 FEET 30

0 METERS 15

BASE MAP SOURCE: GOOGLE EARTH MAPPING SERVICE, AEI CONSULTANTS, AND WILLIAM HEZMALHALCH ARCHITECTS INC., 2016

ENGEO Expect Excellence

PREVIOUS SAMPLE LOCATIONS

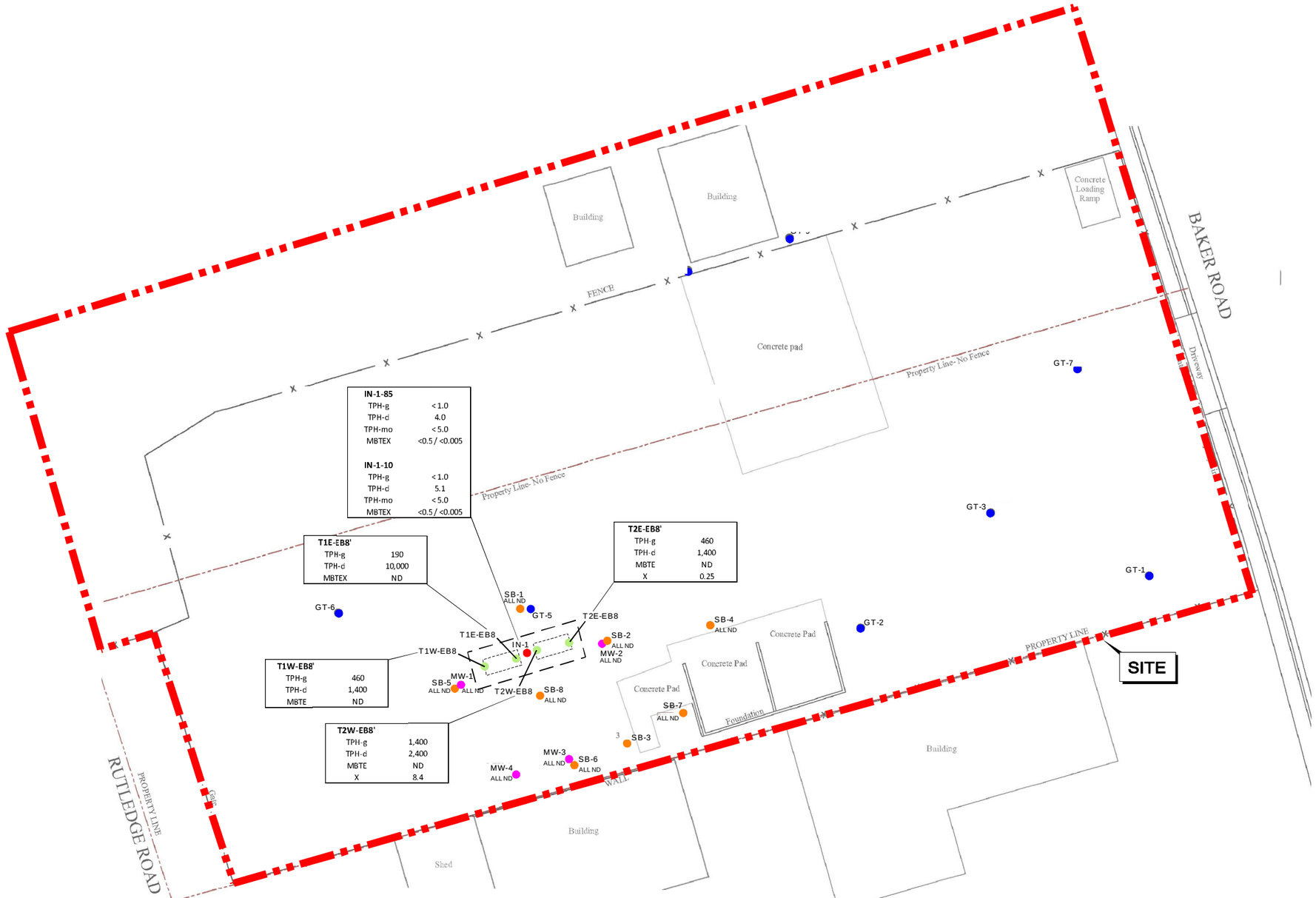
20785 AND 20957 BAKER ROAD

CASTRO VALLEY, CALIFORNIA

PROJECT NO.: 13255.000.000		FIGURE NO. 3
SCALE: AS SHOWN		
DRAWN BY: GLJ	CHECKED BY: DB	

G:\Drafting\DRAFTING2_Dwg_13000 Plus\13255\20785 and 20957 Baker Road Workplan\0617\13255000000-WorkPlan-3-PrevSample-0617.dwg Plot Date: 6-29-17 gjaffe

ORIGINAL FIGURE PRINTED IN COLOR



EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

- SB-8 — SOIL BORING (AEI, 2005)
- MW-4 — MONITORING WELL (AEI, 2007)
- GT-6 — GEOTECHNICAL SOIL BORING (AEI, 1986)
- T2E-EB8 — TANK EXCAVATION SAMPLE (AEI, 2004)
- ALL ND — PRELIMINARY SITE INVESTIGATION (AEI, 2005)
- IN-1 — WELL INSTALLATION (AEI, 2007)
- LIMIT OF TANK EXCAVATION (AEI, 2004)
- FORMER UST

BASE MAP SOURCE: AEI CONSULTANTS

ENGEO Expect Excellence

UST SOIL CONCENTRATIONS

20785 AND 20957 BAKER ROAD

CASTRO VALLEY, CALIFORNIA

PROJECT NO.: 13255.000.000		FIGURE NO. 4
SCALE: AS SHOWN		
DRAWN BY: GLJ	CHECKED BY: DB	

G:\Drafting\DRAFTING2_Dwg_13000 Plus\13255\20785 and 20957 Baker Road Workplan\0617\13255000000-WorkPlan-4-USTSoilConcentration-0617.dwg Plot Date: 6-29-17 gjaffe

ORIGINAL FIGURE PRINTED IN COLOR

EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

SS-13 @ 12''-24'' — SOIL SAMPLE (ENGEO, 2017) WITH DEPTH SHOWN IN INCHES

S-8 @ 3''-9'' — SOIL SAMPLE (ENGEO, 2016) WITH DEPTH SHOWN IN INCHES

13.5 — ARSENIC CONCENTRATION

43.1 — LEAD CONCENTRATION

<1.5 — DIELDRIN CONCENTRATION

N

0 FEET 30

0 METERS 15

NOTE:
CONCENTRATION FOR LEAD AND ARSENIC ARE SHOWN IN mg/kg

CONCENTRATION FOR DIELDRIN ARE SHOWN IN ug/kg

BASE MAP SOURCE: GOOGLE EARTH MAPPING SERVICE AND WILLIAM HEZMALHALCH ARCHITECTS INC., 2016

ENGEO Expect Excellence

LEAD, ARSENIC, AND PESTICIDE CONCENTRATIONS IN SOIL

20785 AND 20957 BAKER ROAD

CASTRO VALLEY, CALIFORNIA

PROJECT NO.: 13255.000.000

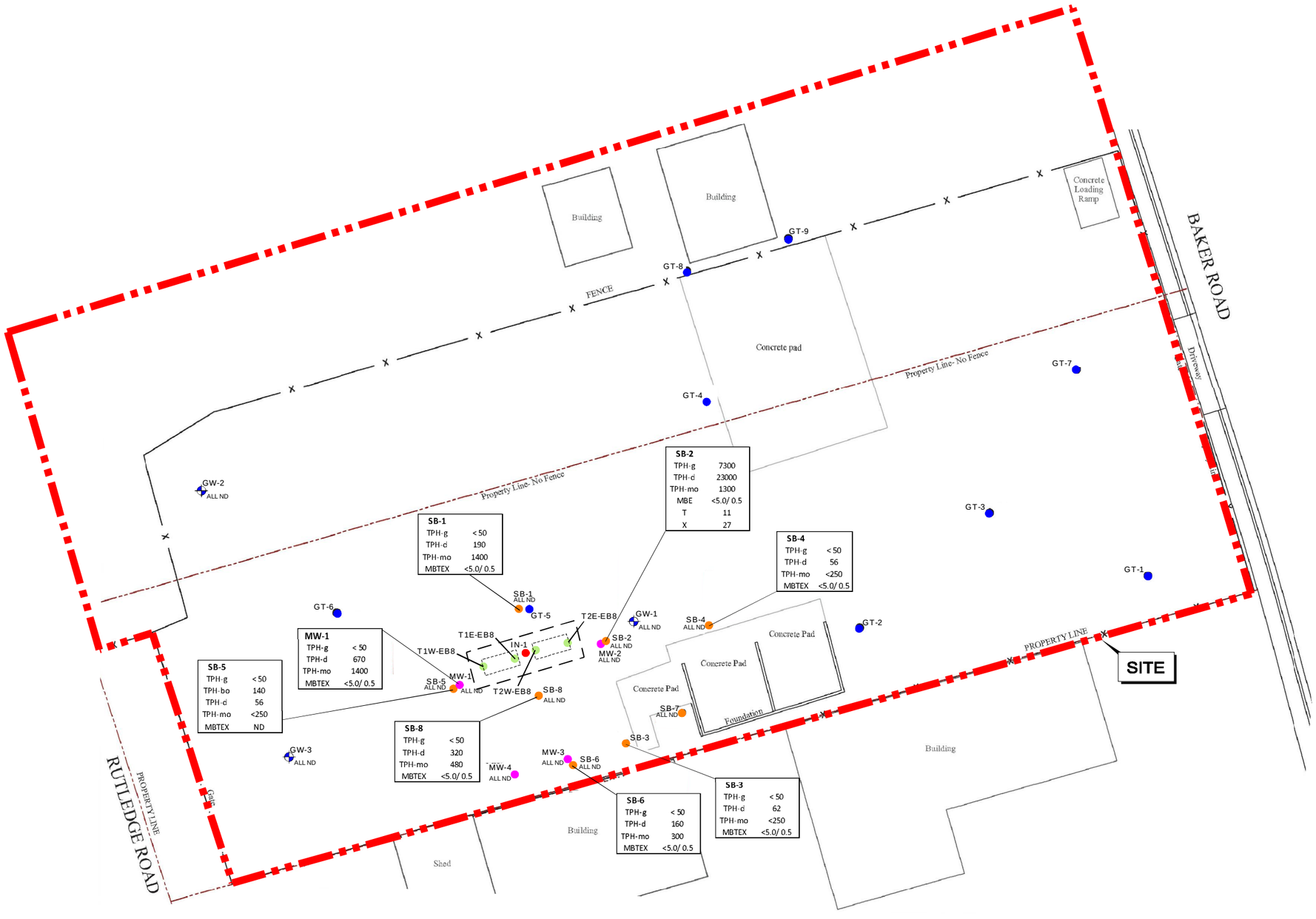
SCALE: AS SHOWN

DRAWN BY: GLJ CHECKED BY: DB

FIGURE NO. 5

G:\Drafting\DRAFTING2_Dwg_13000 Plus\13255\20785 and 20957 Baker Road Workplan\0617\13255000000-WorkPlan-5-PesticideConcentration-0617.dwg Plot Date:6-29-17 gjaffe

ORIGINAL FIGURE PRINTED IN COLOR



EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

- GW-3 — GRAB GROUNDWATER SAMPLE (ENGEO, 2017)
- SB-8 — SOIL BORING (AEI, 2005)
- MW-4 — MONITORING WELL (AEI, 2007)
- GT-6 — GEOTECHNICAL SOIL BORING (AEI, 1986)
- T2E-EB8 — TANK EXCAVATION SAMPLE (AEI, 2004)
- ALL ND — PRELIMINARY SITE INVESTIGATION (AEI, 2005)
- IN-1 — WELL INSTALLATION (AEI, 2007)
- LIMIT OF TANK EXCAVATION (AEI, 2004)
- FORMER UST

BASE MAP SOURCE: AEI CONSULTANTS

ENGEO Expect Excellence

GROUNDWATER CONCENTRATIONS

20785 AND 20957 BAKER ROAD

CASTRO VALLEY, CALIFORNIA

PROJECT NO.: 13255.000.000

SCALE: AS SHOWN

DRAWN BY: GLJ CHECKED BY: DB

FIGURE NO. 6

G:\Drafting\DRAFTING2_Dwg_13000 Plus\13255\20785 and 20957 Baker Road Workplan\0617\13255000000-WorkPlan-6-GWConcentration-0617.dwg Plot Date:6-29-17 gjaffe

ORIGINAL FIGURE PRINTED IN COLOR

EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

B-16 — SOIL BORING TO 8 FEET (ENGEO, 2017)

B-21 — SOIL BORING TO 5 FEET (ENGEO, 2017)

SG-N — SOIL GAS SAMPLE (ENGEO, 2017)

SG-3 — PREVIOUS SOIL GAS SAMPLE (ENGEO, 2016)

B — B' CROSS SECTION LOCATION

NOTE:
B-7 WAS EXTENDED TO TOTAL DEPTH OF 12 FEET
B-11 WAS EXTENDED TO T A TOTAL DEPTH OF 16 FEET

N

0 FEET 30

0 METERS 15

BASE MAP SOURCE: GOOGLE EARTH MAPPING SERVICE AND WILLIAM HEZMALHALCH ARCHITECTS INC., 2016

ENGEO Expect Excellence

2017 SOIL AND SOIL GAS SAMPLE LOCATIONS

20785 AND 20957 BAKER ROAD
CASTRO VALLEY, CALIFORNIA

PROJECT NO.: 13255.000.000		FIGURE NO. 7
SCALE: AS SHOWN		
DRAWN BY: GLJ	CHECKED BY: DB	

ORIGINAL FIGURE PRINTED IN COLOR

G:\Drafting\DRAFTING2_Dwg_13000 Plus\13255\20785 and 20957 Baker Road Workplan\0617\13255000000-WorkPlan-7-SoilGasSample-0617.dwg Plot Date: 6-29-17 gjaffe

EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

SG-N — SOIL GAS SAMPLE (ENGEO, 2017)

SG-3 — PREVIOUS SOIL GAS SAMPLE (ENGEO, 2016)

245,000 — TPH-g CONCENTRATION

3,700 — ETHYLBENZENE CONCENTRATION

130 — NAPHTHALENE CONCENTRATION

NOTE:
CONCENTRATION ARE SHOWN IN ug/m³

N

0 FEET 8

0 METERS 4

BASE MAP SOURCE: GOOGLE EARTH MAPPING SERVICE AND WILLIAM HEZMALHALCH ARCHITECTS INC., 2016

ENGEO Expect Excellence

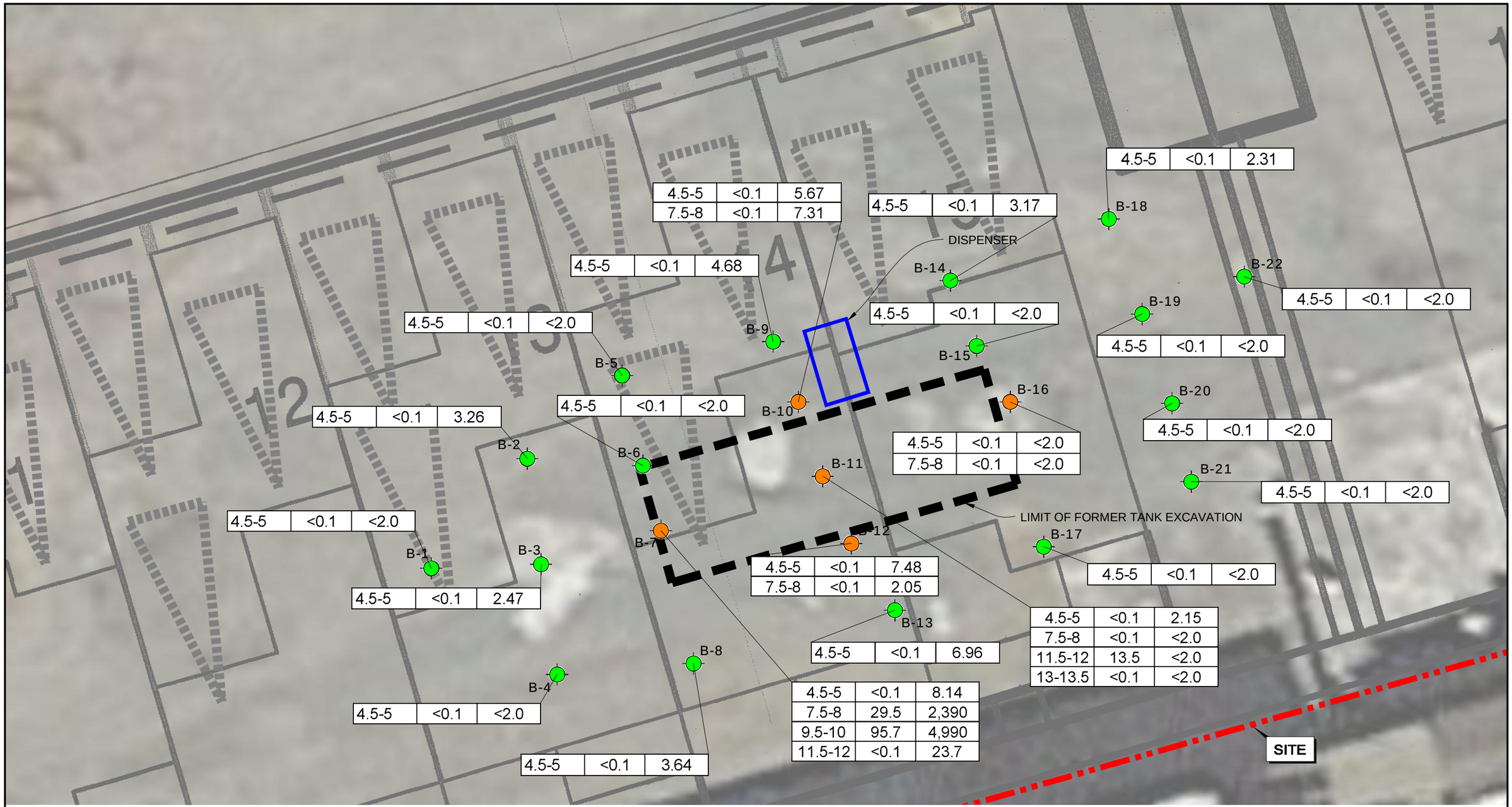
SOIL GAS CONCENTRATIONS
20785 AND 20957 BAKER ROAD
CASTRO VALLEY, CALIFORNIA

PROJECT NO.: 13255.000.000
SCALE: AS SHOWN
DRAWN BY: GLJ
CHECKED BY: DB

FIGURE NO. 8

G:\Drafting\DRAFTING2_Dwg_13000 Plus\13255\20785 and 20957 Baker Road Workplan\0617\13255000000-WorkPlan-8-SoilGasSample-0617.dwg Plot Date: 6-29-17 gjaffe

ORIGINAL FIGURE PRINTED IN COLOR



EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

B-16 — SOIL BORING TO 8 FEET (ENGEO, 2017)

B-21 — SOIL BORING TO 5 FEET (ENGEO, 2017)

4.5-5	<0.1	<2.0

TPH-d CONCENTRATION

TPH-g CONCENTRATION

DEPTH IN FEET

NOTE:
CONCENTRATIONS ARE IN mg/kg
B-7 WAS EXTENDED TO TOTAL DEPTH OF 12 FEET
B-11 WAS EXTENDED TO T A TOTAL DEPTH OF 16 FEET

N

0 FEET 8
0 METERS 4

NOTE: CONCENTRATIONS ARE IN mg/kg

BASE MAP SOURCE: GOOGLE EARTH MAPPING SERVICE AND WILLIAM HEZMALHALCH ARCHITECTS INC., 2016

ENGEO Expect Excellence

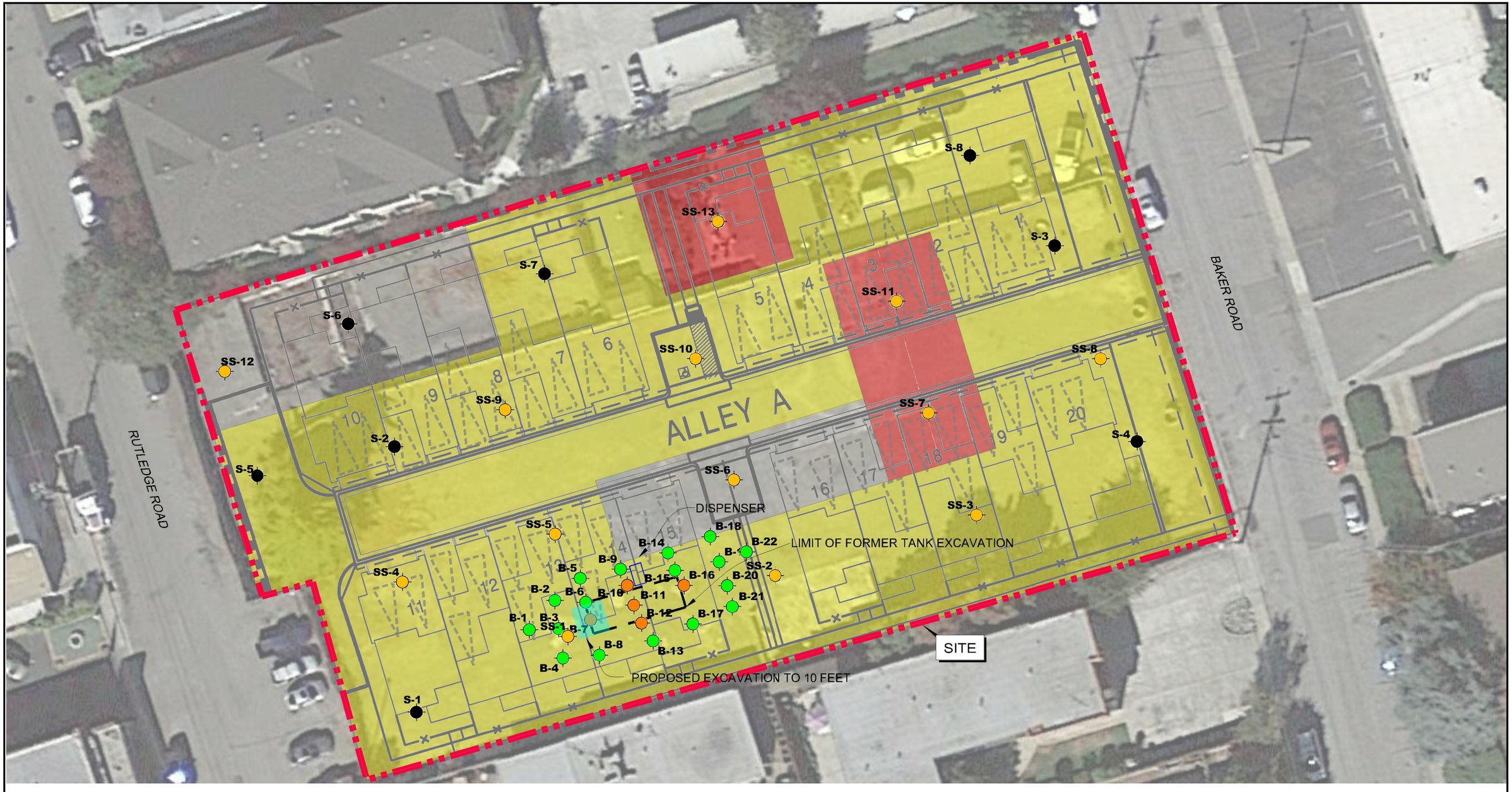
TPH-g AND TPH-d CONCENTRATIONS IN SOIL

20785 AND 20957 BAKER ROAD
CASTRO VALLEY, CALIFORNIA

PROJECT NO.: 13255.000.000	FIGURE NO. 9
SCALE: AS SHOWN	
DRAWN BY: GLJ	CHECKED BY: DB

G:\Drafting\DRAFTING2_Dwg_13000 Plus\13255\20785 and 20957 Baker Road Workplan\0617\13255000000-WorkPlan-9-SoilSample-0617.dwg Plot Date:6-29-17 gjaffe

ORIGINAL FIGURE PRINTED IN COLOR



N

0 FEET 30

0 METERS 15

EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

- B-16 — SOIL BORING TO 8 FEET (ENGEO, 2017)
- B-21 — SOIL BORING TO 5 FEET (ENGEO, 2017)
- SS-13 — SOIL SAMPLE (ENGEO, 2017)
- S-8 — SOIL SAMPLE (ENGEO, 2016)

- PROPOSED EXCAVATION TO 12" (VOLUME: 1,350 CUBIC YARDS)
- PROPOSED EXCAVATION TO 30" (VOLUME: 400 CUBIC YARDS)
- PROPOSED EXCAVATION OF TPH-IMPACTED SOIL TO 10 FEET

BASE MAP SOURCE: GOOGLE EARTH MAPPING SERVICE AND WILLIAM HEZMALHALCH ARCHITECTS INC., 2016

ENGEO Expect Excellence

PROPOSED EXCAVATION AREAS
20785 AND 20957 BAKER ROAD
CASTRO VALLEY, CALIFORNIA

PROJECT NO.: 13255.000.000
SCALE: AS SHOWN
DRAWN BY: GLJ CHECKED BY: DB

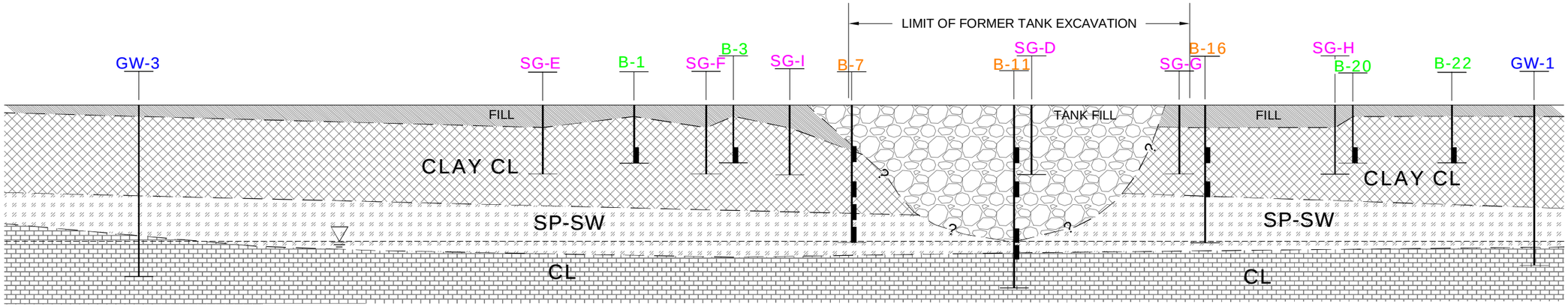
FIGURE NO. 10

G:\Drafting\DRAFTING2_Dwg_13000 Plus\13255\20785 and 20957 Baker Road Workplan\0617\13255000000-WorkPlan-10-PorpExcArea-0617.dwg Plot Date:6-29-17 gjaffe

ORIGINAL FIGURE PRINTED IN COLOR

A

A'

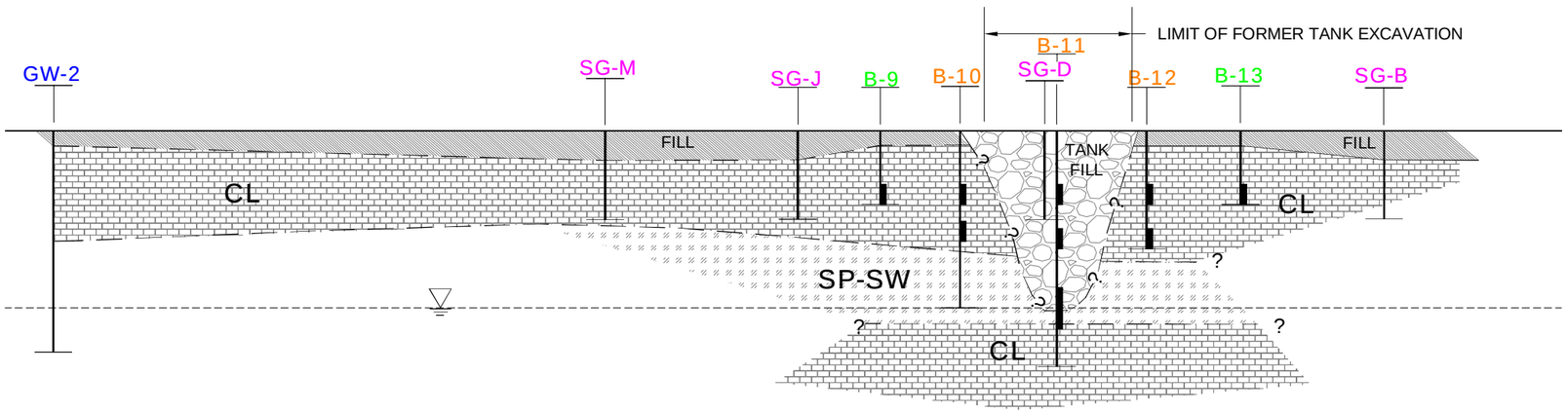


SECTION A-A'

NO SCALE

B

B'



SECTION B-B'

NO SCALE

EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

SG-M	SOIL GAS SAMPLE (ENGEO, 2017)
GW-3	GRAB GROUNDWATER SAMPLE (ENGEO, 2017)
B-16	SOIL BORING TO 8 FEET (ENGEO, 2017)
B-22	SOIL BORING TO 5 FEET (ENGEO, 2017)
CL	LEAN CLAY
SP-SW	SAND
CLAY CL	LEAN CLAY
FILL	ARTIFICIAL FILL
TANK FILL	FORMER TANK BACKFILL
	SAMPLE LOCATION

SEE FIGURE 7 FOR CROSS SECTION LOCATIONS

BASE MAP SOURCE: GOOGLE EARTH MAPPING SERVICE AND WILLIAM HEZMALHALCH ARCHITECTS INC., 2016

ENGEO Expect Excellence

CROSS SECTIONS
20785 AND 20957 BAKER ROAD
CASTRO VALLEY, CALIFORNIA

PROJECT NO.: 13255.000.000
SCALE: NO SCALE
DRAWN BY: SRP CHECKED BY: JAA

FIGURE NO. 11

G:\Drafting\DRAFTING2_Dwg_13000 Plus\13255\20785 and 20957 Baker Road Workplan\0617\13255000000-WorkPlan-11-CrossSectionsHatch-0717.dwg Plot Date: 7-11-17 gjaffe

ORIGINAL FIGURE PRINTED IN COLOR

APPENDIX A

UCL Calculation Worksheet for Lead

	A	B	C	D	E	F	G	H	I	J	K	L
1	**UCL Statistics for Uncensored Full Data Sets**								UCL Calculation Worksheet for Lead			
2												
3	User Selected Options											
4	Date/Time of Computation	3/30/2017 3:28:58 PM										
5	From File	WorkSheet_a.xls										
6	Full Precision	OFF										
7	Confidence Coefficient	95%										
8	Number of Bootstrap Operations	2000										
9												
10												
11	**Lead**											
12												
13	**General Statistics**											
14	Total Number of Observations					36	Number of Distinct Observations					36
15							Number of Missing Observations					0
16	Minimum					3.46	Mean					23.01
17	Maximum					110	Median					10.45
18	SD					26.46	Std. Error of Mean					4.41
19	Coefficient of Variation					1.15	Skewness					1.973
20												
21	**Normal GOF Test**											
22	Shapiro Wilk Test Statistic					0.693	**Shapiro Wilk GOF Test**					
23	5% Shapiro Wilk Critical Value					0.935	Data Not Normal at 5% Significance Level					
24	Lilliefors Test Statistic					0.312	**Lilliefors GOF Test**					
25	5% Lilliefors Critical Value					0.148	Data Not Normal at 5% Significance Level					
26	**Data Not Normal at 5% Significance Level**											
27												
28	**Assuming Normal Distribution**											
29	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
30	95% Student's-t UCL					30.46	95% Adjusted-CLT UCL (Chen-1995)					31.81
31							95% Modified-t UCL (Johnson-1978)					30.7
32												
33	**Gamma GOF Test**											
34	A-D Test Statistic					2.377	**Anderson-Darling Gamma GOF Test**					
35	5% A-D Critical Value					0.772	Data Not Gamma Distributed at 5% Significance Level					
36	K-S Test Statistic					0.241	**Kolmogrov-Smirnoff Gamma GOF Test**					
37	5% K-S Critical Value					0.15	Data Not Gamma Distributed at 5% Significance Level					
38	**Data Not Gamma Distributed at 5% Significance Level**											
39												
40	**Gamma Statistics**											
41	k hat (MLE)					1.208	k star (bias corrected MLE)					1.126
42	Theta hat (MLE)					19.04	Theta star (bias corrected MLE)					20.43
43	nu hat (MLE)					86.98	nu star (bias corrected)					81.07
44	MLE Mean (bias corrected)					23.01	MLE Sd (bias corrected)					21.68
45							Approximate Chi Square Value (0.05)					61.32
46	Adjusted Level of Significance					0.0428	Adjusted Chi Square Value					60.54
47												
48	**Assuming Gamma Distribution**											
49	95% Approximate Gamma UCL (use when n>=50))					30.41	95% Adjusted Gamma UCL (use when n<50)					30.81
50												
51	**Lognormal GOF Test**											
52	Shapiro Wilk Test Statistic					0.902	**Shapiro Wilk Lognormal GOF Test**					

53	5% Shapiro Wilk Critical Value					0.935	Data Not Lognormal at 5% Significance Level					
54	Lilliefors Test Statistic					0.181	**Lilliefors Lognormal GOF Test**					
55	5% Lilliefors Critical Value					0.148	Data Not Lognormal at 5% Significance Level					
56	**Data Not Lognormal at 5% Significance Level**											
57												
58	**Lognormal Statistics**											
59	Minimum of Logged Data					1.241	Mean of logged Data					2.668
60	Maximum of Logged Data					4.7	SD of logged Data					0.915
61												
62	**Assuming Lognormal Distribution**											
63	95% H-UCL					31.2	90% Chebyshev (MVUE) UCL					32.77
64	95% Chebyshev (MVUE) UCL					37.85	97.5% Chebyshev (MVUE) UCL					44.91
65	99% Chebyshev (MVUE) UCL					58.76						
66												
67	**Nonparametric Distribution Free UCL Statistics**											
68	**Data do not follow a Discernible Distribution (0.05)**											
69												
70	**Nonparametric Distribution Free UCLs**											
71	95% CLT UCL					30.26	95% Jackknife UCL					30.46
72	95% Standard Bootstrap UCL					30.14	95% Bootstrap-t UCL					32.49
73	95% Hall's Bootstrap UCL					31.6	95% Percentile Bootstrap UCL					30.96
74	95% BCA Bootstrap UCL					31.64						
75	90% Chebyshev(Mean, Sd) UCL					36.24	95% Chebyshev(Mean, Sd) UCL					42.23
76	97.5% Chebyshev(Mean, Sd) UCL					50.54	99% Chebyshev(Mean, Sd) UCL					66.88
77												
78	**Suggested UCL to Use**											
79	95% Chebyshev (Mean, Sd) UCL					42.23						
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
83	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
84	For additional insight the user may want to consult a statistician.											
85												

APPENDIX B

Dust Control Plan

DUST CONTROL PLAN

FUGITIVE DUST EMISSION CALCULATIONS (Based on PM_{10}=50 µg/m^3 differential)

Cancer risk for the outdoor air exposure pathway was calculated for a residential scenario using the equations presented in Figures 2.9 and 2.10 of the DTSC PEA guidance manual (October 2015). The calculations are based on fugitive dust emissions of PM_{10} at 0.050 mg/m^3, per the California Ambient Air Quality Standards for particulate matter. The toxicity factors used to calculate risk were obtained from the California Office of Environmental Health Hazard Assessment (OEHHA) Toxicity Criteria Database.

The exposure point concentrations for outdoor air were estimated using the following equation presented in Figure 2.10 of the PEA guidance manual:

$$C_a = C_s / PEF \times 1{,}000\ \mu g/mg$$

Where: C_a *= concentration in air, µg/*m^3
C_s *= concentration in soil, mg/kg*
PEF= 9.06×10^8 m^3/kg

- Using the maximum arsenic concentration of 27.3 mg/kg, we calculated an air concentration of $3.01E^{-5}$ µg/m^3.
- Using the maximum lead concentration of 110 mg/kg, we calculated an air concentration of $1.21E^{-4}$ µg/m^3.
- Using the maximum naphthalene concentration of 221 mg/kg, we calculated an air concentration of $2.44E^{-4}$ µg/m^3.

The cancer risk for the inhalation of outdoor air pathway was calculated using the following equation presented in Figure 2.9 of the PEA guidance manual:

$$Risk_{air} = IUR \times C_a \times 0.356$$

Where: IUR = Inhalation Unit Risk $(\mu g/m^3\text{-day})^{-1}$
[OEHHA Toxicity Criteria Database]
C_a *= maximum concentration in outdoor air,* mg/m^3

- Using the arsenic outdoor air exposure point concentration of $3.01E^{-5}$ µg/m^3, we calculated a cancer risk of $3.54E^{-8}$ for the outdoor air pathway. The cancer risk for arsenic does not exceed the acceptable risk level of $1E^{-6}$.
- Using the lead outdoor air exposure point concentration of $1.21E^{-4}$ µg/m^3, we calculated a cancer risk of $5.19E^{-10}$ for the outdoor air pathway. The cancer risk for lead does not exceed the acceptable risk level of $1E^{-6}$.
- Using the naphthalene outdoor air exposure point concentration of $2.44E^{-4}$ µg/m^3, we calculated a cancer risk of $2.95E^{-9}$ for the outdoor air pathway. The cancer risk for naphthalene does not exceed the acceptable risk level of $1E^{-6}$.

The risk values were calculated using a conservative PEL value of *9.06x10^{8} m^{3}/kg,* which utilizes a vegetative cover factor of only 25%. Calculating the risk values in this way ensures that ENGEO is being conservative with worker and public safety. Additionally, this cancer risk calculation is based on chronic exposure levels to residents for 26 years, 350 days/year, 24 hours/day. The proposed remediation of this site will be short-term in nature. This calculation reinforces the need for this work to be completed, as this short-term work will remove a potential long-term hazard. Finally, dust suppression outlined in this appendix will provide an additional level of safety during field activities.

DUST CONTROL PLAN

This section details potential dust control measures that the Contractor will implement to minimize dust emissions during the removal action. Dust emissions may result from activities during removal action and from wind erosion. These sources are most effectively controlled using wet suppression. A high wind threshold of 25 miles per hour (mph) will also be established to minimize wind erosion during extreme meteorological conditions. Stockpiles will be covered unless being loaded, water will be sprayed on areas, which have already been excavated and are subject to wind erosion. Dust control measures, including air monitoring will be performed in accordance with applicable Bay Area Air Quality Management District standards.

DUST MITIGATION

The main mechanism for the control of fugitive dust emissions from construction activities and wind erosion is by watering, which leads to the formation of a surface crust to reduce the available reservoir of dust. In addition to water, several chemical dust suppressants are available to enhance the formation of a surface crust. The effectiveness of wet suppression is dependent on the type of activities occurring, the frequency of watering, and the meteorological conditions. The watering schedule will be determined by an evaluation of the air monitoring and meteorological data, site conditions, and site activities. Watering shall also occur if there are visible dust emissions and/or an exceedance of the air monitoring action level discussed below.

STOCKPILE AND VEHICLE MANAGEMENT

As necessary, based on meteorological and Site conditions, stockpiles will be covered with 10-mil plastic sheeting. All stockpiles will be placed on paved areas or will be placed on 10-mil plastic sheeting. All vehicles onsite will be limited to a maximum speed of 5 mph. Prior to departure from the Site to the surface streets, all vehicles will be checked for material residue and cleaned if necessary. Cleaning will be completed utilizing a hand broom to remove loose soil from the vehicle prior to the vehicle leaving the site. Vehicle tires will be cleaned using a stabilized construction entrance. The public paved roadways surrounding the Site will be checked for any material possibly tracked out, despite mitigation efforts. The Contractor will take all reasonable measures to clean the roadways of this material within an hour of observation.

METEOROLOGICAL STATION

A meteorological station will be deployed at the Site to monitor wind speed and direction. Measurements will be conducted every 30 minutes to verify conditions and adjust dust monitoring

locations. If the wind speed rises to greater than 25 mph, operations will cease. Wind direction measurements from the station will be used to determine the optimum locations for dust monitors.

DUST MONITORING

A MiniRAM dust meter or equivalent will be used to measure real-time dust levels at a minimum of one upwind and two downwind locations. The meters will be mounted on surveyor's tripods approximately 5 feet above the ground surface. Dust meters will be equipped with data recorders, which will be periodically downloaded. Meters will be checked hourly to record PM10 readings. The location of the monitors will be adjusted throughout the day based on wind direction data from the on-site meteorological station. Based on the calculations presented in Fugitive Dust Emission Calculations Section, the action level for the project will be based on a 50 $\mu g/m^3$ differential between upwind and downwind measurement stations. If the action level is exceeded for a period greater than 30 minutes, work operations will cease until adequate dust mitigation measures can be implemented.

RECORD KEEPING

The removal action contractor will be responsible for maintaining a field logbook, which will serve to document meteorological conditions, dust monitor readings, and dust mitigation measures implemented. This documentation will be included in the final removal action completion report.

APPENDIX C

Sampling and Analysis Plan

TABLE OF CONTENTS

1.0 INTRODUCTION

The purpose of this Sampling and Analysis Plan (SAP) is to provide field sampling procedures and data gathering methods that will be used during site characterization activities at 20785 and 20957 Baker Road in Castro Valley, California (the Site). This SAP will be used by field personnel as a reference for sampling and analysis during the characterization activities.

2.0 SAMPLING EQUIPMENT AND PROCEDURES

This section describes sampling equipment and procedures associated with soil and groundwater sampling. This section also includes a discussion of equipment blank sampling and decontamination procedures for sampling equipment.

2.1 GENERAL PROCEDURES

All excavated soil at the Site is anticipated to be Class II material. The excavated soil from the Site will likely be disposed of at the Altamont Landfill in Livermore, California or Vasco Road Landfill in Livermore, California.

The excavation/offsite disposal remedial action will consist of removing COPC-impacted soil from the Site. The excavated soil will be stockpiled on Site, sampled, and properly disposed of by loading it into trucks for transport to a landfill. Sampling of stockpiles for landfill disposal is discussed in Section 2.4. Excavation includes using loaders, scrapers, and/or other appropriate equipment. Approximately 1,750 cubic yards of OCP and arsenic- impacted soil would need to be excavated from the Site. For the TPH-impacted soil around B-7 (Figure 10 of the RAIP), the overburden is assumed clean and can be excavated and stockpiled on Site. The soil below the overburden will be excavated to a depth of approximately 11 feet below ground surface. This would yield a volume of approximately 20 cubic yards of TPH-impacted soil to be off hauled from the Site.

The impacted portions of the Site that exhibit COPC concentrations in excess of the soil cleanup would be divided into 30-foot-square grids. An ENGEO representative will observe the excavation activities, providing oversight and coordination when necessary. The initial excavation areas have been determined based on the results of the site investigations performed in 2016 and 2017 (refer to Figure 10 of the RAIP for proposed depths). Confirmation sampling will be conducted, as discussed in Section 2.2.

2.2 SOIL CONFIRMATION SAMPLING

Following excavation of impacted soil, each of the remedial grids will be sampled by the collection of one discrete soil sample from the center-base of the grid and one sample from the mid-point of the grid's corresponding sidewalls. The confirmation samples recovered from the OCP and arsenic impacted grids will be analyzed for OCPs (EPA Method 8081) and arsenic (EPA Method 6010). Confirmation samples recovered from the former UST excavation will be analyzed for TPH-g and VOCs (EPA Method 8260) and TPH-d and TPH-mo (EPA Method 8015 with silica gel cleanup).

Grids with base confirmation sampling concentrations exceeding the soil cleanup levels will be re-excavated an additional 12 inches and re-sampled. Grids with sidewall confirmation sampling concentrations exceeding the soil cleanup levels would be re-excavated laterally an additional

10 feet and re-sampled. Grids with sidewall confirmation sampling concentrations exceeding the soil cleanup levels would be re-excavated laterally an additional 10 feet and resampled. An additional base sample will be collected from the additional 10-foot lateral section. If the sidewall needs further excavation, no additional base samples would be collected, unless subsequent sidewall excavations exceeded 30 feet in cumulative lateral distance from the original sidewall. Additional base samples will only be collected if lateral excavations exceed the new 30-foot by 30-foot grid.

Excavation will proceed until the soil cleanup levels are achieved. Grids with confirmation samples below the soil cleanup levels will be considered complete with no further excavation conducted.

Soil samples will be retrieved within 2-inch by 6-inch stainless steel sleeves. The sample sleeves will be sealed using Teflon® sheets secured by tight-fitting plastic end caps. Upon the collection of each sample, a label will be placed on the sample including a unique sample number, sample location, time/date collected, laboratory analysis, and the sampler's identification. The soil samples will be placed in an ice-cooled chest and submitted under documented chain-of-custody to a State-certified laboratory. Laboratory analysis will be performed on an expedited 24-hour laboratory turnaround.

2.3 SAMPLING OF STOCKPILES FOR LANDFILL DISPOSAL

As appropriate and necessary, to prevent potential impact to underlying soils or surfaces, stockpiles will be placed on 10-mil plastic sheeting. The soil stockpiles will be covered with 10-mil plastic sheeting and secured to prevent dust or runoff during storm events. Appropriate dust control and stormwater best management practices (BMPs) will be implemented during the soil mitigation activities.

The soil stockpiles will be profiled for landfill disposal. The specific laboratory profile will be determined prior to excavation activities; however, it is anticipated as a minimum, the stockpile samples will be analyzed for TPH-g and VOCs (EPA 8260), TPH-d and TPH-mo (EPA 8015 with silica gel cleanup), and CAM 17 metals (EPA 6010B). Samples will be collected at an approximate density of 1 sample per every 250 cubic yards of soil.

2.4 DECONTAMINATION PROCEDURES

Disposable sampling equipment will be bagged and properly disposed upon use. Non-disposable sampling equipment will be decontaminated to prevent cross contamination between samples. Sampling equipment will be decontaminated by washing with a non-phosphate detergent such as Alconox™ or Liquinox™. Given the small volume anticipated, decontamination water will be collected and discharged to the surface. The following steps will be followed for decontamination of non-disposable sample equipment:

- Wash with a non-phosphate detergent and water solution. This step will remove visible contamination from the equipment. Fill a 5-gallon bucket approximately 3/4 full and dilute with a non-phosphate detergent as directed by the manufacturer. Use a dedicated long-handled brush to assist with cleaning.
- Rinse with potable water. This step will decrease the gross contamination and reduce the frequency of changing of the non-phosphate detergent and water solution. Fill a 5-gallon bucket, 3/4 full with water. Use a dedicated long-handled brush to assist with cleaning of

equipment. A pressurized spray bottle will facilitate multiple rinses, without contaminating a traditional rinse bucket.

2.5 SAMPLE LABELING, DELIVERY, AND CHAIN-OF-CUSTODY

This section describes how samples will be labeled, picked up, delivered, and tracked.

2.5.1 Sample Labeling

Sample labels will be completed using indelible, black ink, and affixed to each sample container. Soil sample containers will be placed into resealable plastic bags to protect the sample from moisture during transportation to the laboratory. Each sample container will be labeled at a minimum with the following:

- Unique sample identification number
- Sample collection date (month/day/year)
- Time of collection (12 or 24-hour clock)
- Project number
- Sampler initials
- Analyses to be performed; and preservation, if any

2.5.2 Sample Delivery

This section applies to samples that will be picked up by the analytical testing laboratory or samples delivered to the offsite analytical laboratory. Samples may be picked up in the field or at the Field Geologist/Engineer's office by the analytical testing laboratory. The soil and groundwater samples will be maintained at 4° Celsius. The chain-of-custody documentation will be completed and signed by the laboratory-assigned courier. The samples may then be relinquished to the courier for transportation to the laboratory. The laboratory will record the temperature of cooler immediately upon receipt of the samples.

2.5.3 Chain-of-Custody

A chain-of-custody is a vital tool for tracking samples and is a written record of sample possession from the time the sample is collected until it is analyzed. The following will be recorded on the chain-of-custody forms:

- Project name
- Project location
- Project number
- Project contact
- Client
- Project Manager
- Sample identification
- Date and time sample was collected
- Sample type (soil, wastewater etc.)
- Number of sample containers
- Required analytical test methods
- Remarks/observations specific to the sample

- Number of samples to be relinquished to the analytical laboratory
- Transfer signatures associated with relinquishing samples (the sampler will initiate the chain-of-custody procedure)
- Courier/laboratory representative signature (for commercial carrier, record air bill number) Date/time of custody transfers
- Comments regarding the condition of the samples, (e.g., cooled with ice, etc.)
- Additional comments
- Written request for electronic file for all samples analyzed
- Information regarding sample storage/disposal
- Turn-around-time requirement; Sampler signature
- Courier signature

3.0 ANALYTICAL TESTING METHODS

This section describes analytical test methods, sample container, preservation, and holding time requirements for samples. Areas of arsenic and OCP-impacts will be analyzed for OCPs (EPA Method 8081) and arsenic (EPA Method 6010). The area with TPH-impacts will be analyzed for TPH-g and VOCs (EPA Method 8260), and TPH-d and TPH-mo (EPA Method 8015 with silica gel cleanup). Table 1 summarizes the analytical test methods for the types of samples to be collected based on regulatory requirements, as well as the hold times.

4.0 FIELD QUALITY ASSURANCE/QUALITY CONTROL

Field Quality Assurance/Quality Control (QA/QC) samples will be collected and analyzed during sampling to assess the consistency and performance of the sampling program. Field QC samples for this project will include field duplicates samples.

4.1 FIELD DUPLICATES

Field duplicates consist of a sample of the same matrix as the primary sample collected. Duplicate soil samples will be collected at the same time and location as the primary sample, using the same sampling techniques. The purpose of field duplicate samples is to evaluate the precision of the overall sample collection and analysis process. Field duplicates for the soil samples will be collected at a frequency of one per 20 samples and will be analyzed using the same method as the primary sample. A field duplicate will be collected from one groundwater sampling location and will be analyzed using the same method as the primary sample. Field duplicate sample numbers will be similar to the sample nomenclature; however, minor adjustments in the numbering system will be made to ensure that the identities of the duplicate samples are “blind” to the analytical laboratory. Locations of duplicate samples and their identifications will be recorded in the field logbook and on the sampling map.

4.2 SAMPLE CONTAINERS, PRESERVATIVES, AND HOLDING TIMES

Sample container requirements, preservatives, and holding time requirements for the analytical test methods to be used in this characterization project are summarized in Table 1.

5.0 SITE MANAGEMENT AND RECORD KEEPING

Sampling information will be recorded on chain-of-custody forms, in a field logbook, and on the appropriate excavation or stockpile map/plan. These documents will be completed in the field at the time of sample collection. Entries will be legible and recorded in indelible black ink. At a minimum, the logbook will contain the following information:

- Project name and location.
- Date and time of entries.
- Personnel in attendance, including any visitors to the site; general weather conditions.
- Work performed on a daily basis.
- Field observations.
- Sampling information (including sample identification, sample location, sample description/type, and analytical testing).
- Field measurements data (including air monitoring results, instrument calibration records, and problems, if applicable).
- Descriptions of deviations from the SAP, if applicable; Problems encountered and corrective action taken; QC-related activities and identification of field QC samples.
- Detailed record of oral and/or written requests by the regulatory agencies, client, subcontractor.
- Any other events that may affect the sampling and analyses.

TABLE 1: Analytical Test Methods, Sample Container, Preservation, and Holding Time Requirements

SOIL SAMPLING				
PARAMETER	**PRESERVATIVE**	**HOLDING TIME**	**EPA METHOD #**	**CONTAINER**
TPH-d and TPH-mo	4°C	14 days	8015 (with silica gel cleanup)	2”x6” liner
TPH-g/VOCs	4°C	14 days	8260	2”x6” liner
OCPs	4°C	40 days	8081	2”x6” liner
Arsenic	4°C	6 months	6010	2”x6” liner

APPENDIX D

Transportation Plan

TRANSPORTATION PLAN

CHARACTERISTIC AND DESTINATION OF SOIL TO BE TRANSPORTED

Elevated levels of OCPs (chlordane and dieldrin) and arsenic have been detected in Site soils. In addition, petroleum hydrocarbons are in the area of the former underground storage tanks (USTs). Based on the available data, the all excavated soil at the Site is anticipated to be Class II material

All soils determined to be Class II material are anticipated to be disposed of at either the Altamont Landfill in Livermore, CA or Republic Services Vasco Road Landfill in Livermore, CA. The addresses are provided below:

Altamont Landfill
10840 Altamont Pass Road
Livermore, CA 94551
Phone: 925-445-7300

Republic Services Vasco Road Landfill
4001 N Vasco Road
Livermore, CA 94551
Phone: 925-685-4711

TRUCK TRANSPORTATION

It is anticipated that work will require approximately 4 weeks for completion. Approximately 1,770 cubic yards (volume measured in-place) (2,655 tons) of soil will be removed from the Site. Assuming each truck carries 18 tons, approximately 148 trucks will be needed to transport the impacted soil. All permitted disposal facilities operate a certified weight station at their facility. As such, each truck will be weighed before offloading its payload. Weight tickets or bills of lading will be provided to the removal action subcontractor after all the soil has been shipped offsite. If required, a hauling plan/permit will be submitted to the Alameda County Public Works prior to work activities. Below is a summary of the truck route from the Site to the disposal facility listed above:

Altamont Landfill (26.8 miles)

1. Head south on Baker Rd toward Kerr St ..... 0.1 mi
2. Turn left onto Kerr St ..... 308 ft
3. Turn right at the 1st cross street onto Nunes Ave ..... 0.1 mi
4. Turn left onto Norbridge Ave ..... 0.5 mi
5. Turn right onto Redwood Rd ..... 0.2 mi
6. Use the left 2 lanes to turn left to merge onto I-580E ..... 0.3 mi
7. Merge onto I-580 E ..... 7.3 mi
8. Keep left to stay on I-580 E ..... 13.0 mi
9. Take exit 57 toward Altamont Pass Rd./N Greenville Rd. ..... 0.2 mi
10. Turn slightly left onto Southfront Rd ..... 0.4 mi
11. Turn left on N Greenville Rd ..... 0.3 mi
12. Turn right on Altamont Pass Rd ..... 3.9 mi

Republic Services ECDC Environmental Landfill (883 miles)

1. Head south on Baker Rd toward Kerr St ..... 0.1 mi
2. Turn left onto Kerr St ..... 308 ft
3. Turn right at the 1st cross street onto Nunes Ave ..... 0.1 mi
4. Turn left onto Norbridge Ave ..... 0.5 mi
5. Turn right onto Redwood Rd ..... 0.2 mi
6. Use the left 2 lanes to turn left to merge onto I-580E ..... 0.3 mi
7. Merge onto I-580 E ..... 7.3 mi
8. Keep left to stay on I-580 E ..... 11.8 mi
9. Take exit 55 for Vasco Rd toward Brentwood ..... 0.1 mi
10. Keep left, follow signs for Vasco Rd N and merge onto N Vasco Rd ..... 0.3 mi
11. Merge onto N Vasco Rd ..... 2.7 mi

Loading and transportation will be conducted between 7:00 am and 6:00 pm, Monday through Friday, unless directed otherwise by Alameda County. In the event traffic conditions or road repairs prevent the primary designated routes, alternate routes will developed prior to transportation activities.

Before leaving the Site, each truck driver will be instructed to notify the site manager. Each truck driver will be provided with a Uniform Hazardous Waste Manifest (not anticipated for this project), Non-Hazardous Waste Manifest, or bill-of-lading, and the cellular phone number for the site manager. It will be the responsibility of the site manager to notify Catalyst Development Partners of any unforeseen incidences. Each truck driver will be instructed to use the freeway Call Box System (if available), a cellular telephone, and/or their radio dispatch system to call for roadside assistance and report roadside emergencies.

SITE TRAFFIC CONTROL

The Site will be accessed through an access gate and trucks will exit the Site through the same access gate. A flag person will be onsite to assist the truck drivers to safely drive on and off the Site. Transportation will be coordinated in such a manner that at any given time, onsite trucks will be in communication with the Site trucking coordinator. In addition, all vehicles will be required to maintain slow speeds (i.e., less than 5 mph) for safety and for dust control purposes.

Prior to the offsite transport, the Site manager will be responsible for inspecting each truck to ensure that the payloads are adequately covered, the trucks are cleaned of excess soil and properly placarded, and that the truck's manifest or bill-of-lading has been completed and signed by the generator (or its agent) and the transporter. As the trucks leave the Site, the flag person will assist the truck drivers so that they can safely merge with traffic.

RECORD KEEPING

The removal action contractor will be responsible for maintaining a field logbook, which will serve to document observations, personnel onsite, equipment arrival and departure times, and other important project information. Logbook entries will be complete and accurate enough to permit reconstruction of field activities. Logbooks will be bound, with consecutively numbered pages and each page will indicate the date and time of the entry. All entries will be legible, written in black or blue ink, and signed by the author. Language will be factual and objective. If an error is made,

corrections will be made by crossing a line through the error and entering the correct information. Corrections will be dated and initialed.

In the unlikely event off-haul soil material is classified as hazardous waste under California or EPA regulations, the Uniform Hazardous Waste Manifest (hazardous waste manifest) form will be used to track the movement of soil from the point of generation to the point of ultimate disposal.

The hazardous waste manifests will include the following information:

- Name and address of the generator, transporter, and the destination facility.
- United States Department of Transportation description of the waste being transported and any associated hazards.
- Waste quantity.
- Name and phone number of a contact in case of an emergency.
- EPA Hazardous Waste Generator Number.
- Other information required by either the EPA and/or the DTSC.

Any soil that is profiled as non-hazardous (designated waste) and sent offsite for disposal will be documented using a Non-Hazardous Waste Manifest or Bill-of-Lading form. At a minimum, this form will include the following information:

- Generator name and address
- Transportation company
- Accepting facility name and address
- Waste shipping name and description
- Quantity shipped

Prior to transporting the excavated soil offsite, an authorized representative of Catalyst Development Partners will sign each waste manifest. The removal action Site manager will maintain one copy of all waste manifests on Site.

APPENDIX E

Soil Management Plan

TABLE OF CONTENTS

TABLE WITH SITE CONTACTS

Role	Name	Contact Person	Address	Telephone Number
Property Owner	Catalyst Development Partners	Todd Deutscher	18 Crow Canyon Court, Suite 190 San Ramon, CA 94583	925-324-1418
Consultant	ENGEO	Jeff Adams	2010 Crow Canyon Pl, Suite 250, San Ramon, CA 94583	925-395-2506
Regulatory Oversight	Alameda County Department of Environmental Health	Dilan Roe	1131 Harbor Bay Parkway Alameda, CA	510.567.6767
Contractor	Innovative Construction Solutions	Logan Linderman	6693 Sierra Lane, Suite A, Dublin CA 94568	925.574.2604

1.0 INTRODUCTION

This Soil Management Plan (SMP) has been prepared for the proposed development activities at the Site located in Castro Valley, California (Site). The Site is located at 20785 and 20957 Baker Road, northeast of Rutledge Road, and southeast of Castro Valley Boulevard in Castro Valley, California (Figure 1). The Site consists of two parcels measuring approximately 1.12 acres in area and identified with Assessor's Parcel Numbers (APN) 84A-16-5-9 and 84A-16-6-4.

The Site is bound to the west by Rutledge Road and to the east by Baker Road. An equipment storage yard was formerly located at the southern portion of the Site. Multi-family housing is present to the north and south of the Site. An automotive shop is present to the west, and multi-family housing occupies the properties to the east of Baker Road.

1.1 PROPOSED DEVELOPMENT

We understand that the proposed development will include construction of three-story townhome structures to provide 20 units with at-grade garage space, along with associated access, roadways, landscaping areas, and new underground utilities

1.2 PURPOSE OF SMP

Remediation activities will be conducted at the Site to remove the impacted soil, so soil impacts are not anticipated to be encountered during demolition and grading activities. However, this SMP will be implemented if any residual soil impacts are encountered. The purpose of the SMP is to provide the proposed procedures and protocols to address residual soil impacts that may be encountered during demolition and site grading activities. Implementation of the SMP will manage potential residual contaminants in the subsurface at the Site in a manner that is both protective of human health and the environment and compatible with current and future land uses. The extent of soil, soil gas, and groundwater impacts is discussed in Section 2 of the Remedial Action Implementation Plan (RAIP).

2.0 OBSERVATION ACTIVITIES

ENGEO will observe demolition and Site grading activities. Soils encountered during construction activities will be observed for discoloration/staining or olfactory evidence of contaminant impacts. In addition, a Photoionization Detector (PID) will be used to further screen soils for organic vapors during excavation work, with particular attention given to the area of the former USTs. In the event impacted soil is encountered during demolition and pre-grading work, this Soil Management Plan will be implemented.

The PID will provide real-time data on the presence of potentially hazardous compounds to ensure proper selection of Personnel Protection Equipment (PPE). The initial PPE will be Level D (modified) which includes safety glasses, hard hat, steel-toed boots, gloves, hearing protection and high visibility vests. In the unlikely event significant unforeseen environmental conditions are discovered, work will stop and the PPE level will be re-evaluated.

In the event impacted soil is encountered, the protocols detailed in Section 3.0 will be implemented.

Groundwater has been observed at the Site at depths ranging between 11 to 12 feet below ground surface. Since no below grade development is planned at the Site, groundwater is not likely to be encountered. However, if groundwater is encountered during construction work, then protocols for construction dewatering will implemented (Section 4.0).

3.0 SOIL MANAGEMENT

3.1 CONSTRUCTION ACTIVITIES

The proposed soil mitigation consists of the removal of impacted soil that represents a risk to future human occupants. As previously indicated, documented impacted soil within the Site footprint will be excavated as part of the proposed remediation activities. However, if any residual impacted soil is encountered during grading activities, the impacted soil will be excavated. Excavated soil will be segregated and separately stockpiled and offhauled to an offsite facility for disposal, depending on the previous analytical results and the receiving facility requirements .

Work activities will be conducted Monday through Friday between 7:00 AM and 6:00 PM and in accordance with permit requirements. Excavation will be performed using a combination of scrapers, backhoes, track-mounted excavators and/or loaders. The contractor will adhere to OSHA guidelines. If excavations require shoring, it will be provided by the contractor.

3.2 SOIL EXCAVATION AND STOCKPILE MANAGEMENT

Excavation of impacted soil will be conducted until remaining in-place excavation sidewall and/or base soils do not exhibit evidence of an environmental impact. A PID will be used to screen soil during the excavations in these locations. To prevent potential impact to underlying soils or surfaces, stockpiles of impacted material will be placed on 10-mil plastic sheeting. The soil stockpiles will be covered with 10-mil plastic sheeting and secured to prevent dust or runoff during storm events. Appropriate dust control will be implemented during the soil mitigation activities.

The soil stockpiles will be profiled in accordance with applicable regulations and the receiving facility's requirements. The specific laboratory profile will be determined prior to excavation activities; however, it is anticipated as a minimum the stockpile samples will be analyzed for OCPs (EPA Method 8081), TPH-g and VOCs (EPA Method 8260B), TPH-d and TPH-mo (EPA Method 8015 with silica gel cleanup), and CAM-17 Metals (EPA Method 6010B and 7471A).

Upon completion of the excavations, the confirmation sampling and the laboratory testing, the excavation will be backfilled with clean on-site soil or clean import fill. Import fill will be tested in general accordance with DTSC requirements prior to acceptance. Import soil will be placed in accordance with the project Geotechnical Engineer's recommendations.

3.3 CONFIRMATION SAMPLING

Where impacted soils are encountered and removed, the excavation area will be divided into 50-foot-square grids or 20-foot lineal intervals, whichever may be appropriate. Discrete soil samples from excavation bases and sidewalls will be collected for laboratory analysis to check for TPH-g and VOCs (EPA Test Method 8260).

Soil samples will be collected in six-inch stainless steel liners, and sampling equipment will be properly decontaminated between locations. The sample liners will be sealed with Teflon® sheets, plastic caps, and tape. Upon collection, a label will be placed on each sample that will include a unique sample number, sample location, time/date collected, laboratory analysis, and the sampler's identification. The soil samples will then be placed in an ice-cooled chest and submitted under documented chain-of-custody to a State-accredited analytical laboratory. Excavation bases with confirmation samples exhibiting target analyte concentrations in excess of the corresponding residential screening levels will be excavated an additional 12 inches, and sidewalls will be extended an additional 20 feet, with subsequent confirmation sampling/analysis until the impacted soil has been removed.

3.4 CONTINGENCY ACTIVITIES

This section describes the protocols to be followed in the event that underground structures or other features of potential environmental concern are identified during Site development activities. This includes any USTs, sumps, or pipes from historic activities at the Site.

If any of the above is encountered during subsurface disturbance work, the following procedures shall be followed:

- All field activities will be immediately stopped and an exclusion zone will be established. The situation will be evaluated by ENGEO's onsite representative, who will determine if the feature presents an environmental concern due to the presence of contaminants.

- If an emergency situation arises such that emergency services are needed, the emergency procedures established in the health and safety plan (HASP) will be followed. The HASP is provided as Appendix F of the RAIP.

- Any equipment and clothing that comes in contact with the suspected or known impacted soil will be managed/decontaminated as specified in the HASP.

3.5 DEBRIS MANAGEMENT

Any debris (building materials, foundations, asphalt, aggregate base, etc.) encountered during the excavation activities will be separately stockpiled. Loose soil will be removed prior to placement onto stockpiles. Debris will be separately stockpiled, transported, and disposed of at an appropriate facility or reused onsite. All debris reused onsite (including recycled material and base rock) will be handled in accordance with the "*CAL-EPA Department of Toxic Substances Control (DTSC) Information Advisory – Clean Imported Fill Material*" document (DTSC, 2001).

4.0 CONSTRUCTION DEWATERING

Groundwater has been observed at the Site at depths of 11 to 12 feet below the ground surface. Since no below grade development is planned at the Site, groundwater is not likely to be encountered. However, if installing deep utilities where groundwater is present and signs of groundwater impacts are evident, a pre-treatment plan shall be proposed and executed prior to discharge.

5.0 OTHER SITE MANAGEMENT PROCEDURES

This section addresses the following additional site management topics:

- Control Measures
- Health and Safety Plan
- Meetings and communication
- Dust control

5.1 CONTROL MEASURES

During redevelopment activities, the Site will be cordoned off to be protective of the general public and access to the Site will be through specific locked entrance(s).

In accordance with City/State requirements, a Construction Stormwater Pollution Prevention Plan, including an Erosion Control Plan, will be prepared prior to work activities.

Noise control measures implemented within the Site will be undertaken in accordance with applicable City requirements. Noise control measures will include but are not limited to the following:

- All equipment driven by internal combustion engines will be equipped with appropriate mufflers in good operating condition.
- When feasible, “quiet” models of stationary equipment such as air compressors, generators and other noise sources.
- Stationary noise-generating equipment will be located as far as possible from sensitive receptors.
- No unnecessary idling of internal combustion engines will occur onsite.

5.2 HEALTH AND SAFETY PLAN

All contractors will be responsible for operating in accordance with the most current requirements of State and Federal Standards for Hazardous Waste Operations and Emergency Response (Cal. Code Regs., Title 8, Section 5192; 29 CFR 1910.120). Onsite personnel are responsible for operating in accordance with all applicable regulations of the Occupational Safety and Health Administration (OSHA) outlined in the State General Industry and Construction Safety Orders (Cal. Code Regs., Title 8) and Federal Construction Industry Standards (29 CFR 1910 and 29 CFR 1926), as well as other applicable federal, state and local laws and regulations. All personnel shall operate in compliance with all California OSHA requirements.

In addition, California OSHA’s Construction Safety Orders (especially Cal. Code Regs., Title 8, Sections 1539 and 1541) will be followed as appropriate. A HASP has been prepared for the Site in accordance with current health and safety standards, as specified by the Federal and California OSHA. The HASP is presented as Appendix F of the RAIP.

5.3 MEETINGS AND COMMUNICATION

The construction superintendent will facilitate coordination among all necessary parties by pre-construction meetings, daily and/or weekly progress meetings, and special meetings as may be required. In all cases, he or she shall maintain sufficient documentation as to the planned discussion and outcomes of the meetings. As necessary, the appropriate regulatory agencies will be contacted.

5.4 DUST CONTROL

A dust control plan for the project is presented as Appendix B of the RAIP. Basic construction mitigation measures recommended by the Bay Area Air Quality Management District (BAAQMD) will be implemented to reduce fugitive dust emissions.

APPENDIX F

Health and Safety Plan

TABLE OF CONTENTS

Page

TABLE OF CONTENTS (Continued)

GLOSSARY

APR	Air Purifying Respirator
ACGIH	American Conference Governmental Industrial Hygienists
AIHA	American Industrial Hygiene Association
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
CCR	California Code of Regulations
CFR	Code of Federal Regulations
COPC	Contaminant of Potential Concern
CPR	Cardiopulmonary resuscitation
CRZ	Contaminant Reduction Zone
dBA	Decibels on the A scale
DOT	Department of Transportation
DTSC	California Department of Toxic Substance Control
EPA	U.S. Environmental Protection Agency
^{0}F	Degrees Fahrenheit
eV	Electron Volt
EZ	Exclusion Zone
FEV	Forced expiratory volume
FVC	Forced vital capacity
GISO	General Industry Safety Order
GPS	Global Positioning System
HEPA	High Efficiency Particulate Air
HSM	Health and Safety Manager
mg/m^3	Milligrams per cubic meter
MSDS	Material Safety Data Sheets
OSHA	Occupational Safety and Health Administration
PAH	Polyaromatic Hydrocarbons
PEL	Permissible Exposure Limit
PID	Photoionization Detector
PM	Project Manager
ppb	Parts per Billion
PPE	Personal Protective Equipment
ppm	Parts per million
PSHM	Program Safety and Health Manager
ROPS	Roll over protection structure
RV	Reserve volume
HASP	Health and Safety Plan
SSO	Site Safety Officer
SVOC	Semi-volatile organic compound
TLV	Threshold Limit Value
TPH	Total Petroleum Hydrocarbons
TWA	Time Weighted Average
μg/L	Micrograms per liter
VCP	Voluntary Cleanup Program
VOC	Volatile Organic Compound

DISCLAIMER

This Health and Safety Plan (HASP) was prepared for use at the Site located at, is located at 20785 and 20957 Baker Road, northeast of Rutledge Road, and southeast of Castro Valley Boulevard in Castro Valley, California (Site). The Plan was prepared based on the best available information regarding the physical and chemical hazards known or suspected to be present at the Site and for the execution of the proposed scope of work. It is not possible in advance to discover, evaluate, and protect against all possible hazards, which may be encountered during the duration of this project. Therefore, this HASP may not be appropriate if the work is not performed by or using the methods presently anticipated. In addition, as the work is performed, conditions different from that anticipated may be encountered and this HASP may have to be modified.

Adherence to the requirements of this HASP will significantly reduce, but not eliminate, the potential for occupational injury and illness at the Site. The guidelines contained in this HASP were developed specifically for the soil removal project at the Site described herein and should not be used at any other site without the review and approval of a qualified health and safety professional.

1.0 INTRODUCTION

This Health and Safety Plan (HASP) sets forth the minimum health, safety, and emergency response requirements for activities involving, or potentially involving, employee exposure to physical or chemical health hazards associated with the remedial activities proposed at the site located in Castro Valley, California (Site).

The Site is located at 20785 and 20957 Baker Road, northeast of Rutledge Road, and southeast of Castro Valley Boulevard in Castro Valley, California (Figure 1). The Site consists of two parcels measuring approximately 1.12 acres in area and identified with Assessor's Parcel Numbers (APN) 84A-16-5-9 and 84A-16-6-4.

The Site is bound to the west by Rutledge Road and to the east by Baker Road. An equipment storage yard was formerly located at the southern portion of the Site. Multi-family housing is present to the north and south of the Site. An automotive shop is present to the west, and multi-family housing occupies the properties to the east of Baker Road.

The proposed excavation area and depth of excavation is presented in Figure 10 of the RAIP. The anticipated depth of excavation in the areas of the OCP and arsenic-impacted soil is approximately 12 inches and 30 inches (in two areas). The anticipated depth of excavation in the areas of the TPH-impacted soil is approximately 11 feet.

2.0 PLANNED SOIL REMOVAL ACTION

Review of the analytical results indicates organochlorine pesticides (OCPs) and arsenic in shallow soil within portions of the Site, and petroleum hydrocarbons soil in the area of the former underground storage tanks (USTs) as Chemicals of Potential Concern (COPCs) in soil at the Site.

The removal action objective (RAO) is to reduce the human health risks associated with the COPCs in soil at the Site to a level that is acceptable for the planned future redevelopment and to allow for unrestricted future use of the Site. Based on the RAO, a cleanup level has been established that is protective of human health and the environment and reduces the potential for exposure to the COPC in soil encountered at the Site. These are presented below.

TABLE 2.0-1: Respective RAOs for Remedial Action

COPC	Basis for RAO	RAO
Arsenic	Established background concentration	11 mg/kg
Dieldrin	RWQCB Direct Exposure Human Health Risk Level	38 µg/kg
Chlordane	RWQCB Direct Exposure Human Health Risk Level	480 µg/kg
TPH-d	RWQCB Direct Exposure Human Health Risk Level	230 mg/kg
TPH-g	RWQCB Direct Exposure Human Health Risk Level	740 mg/kg

Remedial action will consist of excavation and offsite disposal. The soil mitigation measure involves the following elements:

- Excavation of an estimated 1,750 cubic yards of OCP- and arsenic-impacted soil, and 20 yards of TPH-impacted soil.
- Transport of the soil to an appropriate facility for disposal.
- Collection of confirmation soil samples across the excavation area to verify the removal of the COPC-impacted soil.
- Backfill of the excavations with clean import soil and/or onsite soil.

3.0 SITE SAFETY REGULATORY REQUIREMENTS

Work performed under this HASP will comply with applicable Federal, State of California, and local safety and occupational health laws and regulations. Applicable regulations include, but are not limited to, Occupational Safety and Health Administration (OSHA) Standards 29 CFR, Part 1910.120, "Hazardous Waste Site Operations and Emergency Response"; 29 CFR 1910.1025, General Industry Standards; 8 CCR 5216. General Industry Standard 29 CFR 1926.62, Lead in the Construction Industry; and 8 CCR 1532.1, Lead in the Construction Industry. Where the requirements of these specifications, applicable laws, criteria, ordinances, regulations and referenced documents vary, the most stringent will apply.

4.0 STAFF ORGANIZATION, QUALIFICATIONS, AND RESPONSIBILITIES

4.1 GENERAL

This section of the HASP outlines the organizational structure and Site personnel responsible for the safety and health of personnel during the proposed work. The replacement of any member of the Health and Health Staff requires the acceptance of the Project Manager. Replacement requests will include the names, qualifications, duties, and responsibilities of each proposed replacement.

4.2 PROJECT MANAGER

The Project Manager (PM) for ENGEO is Divya Bhargava. Ms. Bhargava is responsible for:

- Oversight of Site activities required to implement this HASP.
- Directing work performed under this contract.
- Verifying that work is completed in accordance with the project workplan.

4.3 HEALTH AND SAFETY MANAGER (HSM)

The Site Health and Safety Manager (HSM) is Jeffrey Adams. Mr. Adams is responsible for:

- Implementing and enforcing of the HASP.
- Providing the initial and periodic site-specific training.
- Monitoring of remediation activities.

- Coordinating activities in the event of an onsite emergency.
- Evaluating air monitoring data and changes to engineering controls, work practices, and personal protection equipment (PPE) that may be warranted.
- Receiving onsite accident reports.

4.4 SITE SAFETY OFFICER (SSO)

The Site Safety Officer is Robert Peck. Mr. Peck is responsible for:

- Conduct onsite training and the day to day onsite implementation and enforcement of the HASP.
- Be assigned to the site on a full-time basis for the duration of field activities.
- Have authority to ensure Site compliance with specified safety and health requirements, Federal and State of California OSHA regulations and all aspects of the HASP including, but not limited to, activity hazard analyses, air monitoring, use of PPE, decontamination of personnel and equipment, site control, standard operating procedures used to minimize hazards, safe use of engineering controls, the emergency response plan, confined space entry procedures, spill containment-program, and preparation of records by performing a daily safety and health inspection and documenting results on the Daily Safety Inspection Log.
- Have the authority to stop work if unacceptable health or safety conditions exist, and take necessary action to re-establish and maintain safe working conditions.
- Consult with proper authorities and coordinate any modifications to the HASP with the Project Manager.
- Serve as a member of ENGEO's quality control staff on matters relating to safety and health.
- Conduct accident investigations and prepare accident reports (Attachment A).
- Review results of daily quality control inspections and document safety and health findings into the Project Manager's Daily Log (Attachment B).
- In coordination with site management recommend corrective actions for identified deficiencies and oversee the corrective actions.

4.5 PERSONS CERTIFIED IN FIRST AID AND CPR

CPR, if needed, will be conducted by trained personnel, or offsite emergency responders (i.e. paramedics, fire fighters). Many personnel with 40-hour Hazardous Waste Operations and Emergency Response training will have completed CPR and first aid courses as part of their training. The consultant/contractor is responsible for identifying and informing workers of designated first aid trained personnel. These persons may perform other duties but will be immediately available to render first aid when needed. The identity of these persons will be posted and made known to all personnel involved in this project.

5.0 HAZARD/RISK ANALYSIS

5.1 IDENTIFIED TASKS

The tasks identified for the conduct of this soil removal project include the following:

- Mobilization/demobilization
- Excavation of soil
- Loading and stockpiling of soil
- Surface soil confirmation sampling
- Backfilling and compaction

5.2 POTENTIAL HAZARDS

5.2.1 General Safety Hazards

Potential safety hazards will include, but are not limited to, general construction hazards, such as:

- Physical contact with heavy equipment
- Physical contact with motor vehicles
- Slips/trips/falls due to unstable surfaces, or uneven terrain
- Exposure to site contaminants including dust
- Equipment noise
- Buried utility lines and energized overhead and underground power lines
- Heat stress and cold stress
- Lifting heavy objects
- Sunburn
- Biological hazards

These hazards are described below.

Noise

Noise exposures will be controlled to levels below the permissible noise exposure levels, which are equivalent to an 8-hour time weighted average (TWA) level of 85 decibels (dBA). Reduction of exposures may be by engineering controls or adequate hearing protection. Engineering controls will include isolation of the noise source by their enclosure and reduction of noise transmission by application of noise absorbing materials.

Most work site noise will originate from heavy equipment. As a result, equipment operators and observers will be required to use hearing protection when exposed at or above 85 decibels. A copy of the OSHA Occupational Noise Standard, 29 CFR 1910.95 will be available and copies will be made available to employees upon request.

Heat Stress

A worker's risk for developing heat stress is greatly increased when wearing impermeable clothing or respirators. This type of clothing interferes with the body's normal cooling mechanisms by preventing the evaporation of perspiration. For workers who wear permeable clothing, work/rest schedules recommended in the current ACGIH Threshold Limit Values (TLV) for Heat Stress will

be followed. For workers who wear semi-permeable or impermeable clothing, technical guidelines in "Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities" will be followed. Monitoring of personnel wearing impermeable clothing will commence when the ambient temperature is above 70 degrees Fahrenheit. Monitoring frequency will increase as the ambient temperature increases or as slow recovery rates are observed. A shady rest area and an adequate supply of cool drinking water will be provided for the workers.

Cold Stress

Cold stress may be an exposure hazard during the project based on the current work schedule and anticipated weather conditions. Exposure to cold weather can lead to frost bite and/or hypothermia. The signs and symptoms of excessive exposure to cold are listed in Table 5.2.1.3-1.

TABLE 5.2.1.3-1: Different Levels of Cold Exposure and Associated Symptoms

Condition	Signs and symptoms
Hypothermia - A condition when a person's body loses heat faster than it can be produced.	Vague, slow, slurred speech, impaired judgment, forgetfulness, memory lapses, drowsiness, inability to use the hands.
Frostbite - A condition where a part of the body is frozen	Loss of the sensation of touch, pressure and pain in the affected part of the body. This may occur without awareness of any numbness. Just before freezing, the skin becomes bright red and at freezing, small patches of white appear on the skin.

When weather conditions are cold, wet and windy, the following precautions will be instituted:

- Field personnel should wear layered clothing. Mittens, heavy socks, hats, jackets/vests, long underwear, glove liners or other suitable clothing should be worn when air temperatures fall below 40ºF. Chemical protective clothing will be worn over the warm garments when protective clothing is required by the field operations.
- At temperatures below 30ºF, temperature insulating suits and gloves should be considered.
- Protective outerwear should be used to prevent wetting of work shoes and feet, when appropriate.
- Additional clothing worn in layers allows gradual removal as work activities generate metabolic heat.
- At temperatures below 35ºF, raingear should be worn if an employee could become wet on the job.
- At temperatures below 35ºF, employees shall be provided with warm (65ºF or above) break areas. If appropriate, space heaters will be provided to warm hand and feet.
- Hot liquids such as soups and warm drinks should be consumed during break periods. Caffeine beverages should be limited due to attendant diuretic and circulatory effects.
- A buddy system shall be practiced at all times. An employee that is observed shivering or showing signs of frostbite shall leave the cold area immediately.

- Work should be arranged to avoid sitting or standing for long periods.
- All employees who work in cold areas should be trained in the following subjects:
  - Proper first aid treatment for cold stress
  - Proper clothing practices
  - Proper eating and drinking habits
  - Recognition of impending adverse health effects due to cold
  - Safe work practices

Sunburn

Sunburn is caused by overexposure to ultraviolet light (sunshine). The symptoms of exposure are not usually apparent until two to four hours after the exposure ceases. Depending upon the severity of the exposure, the symptoms can range from reddening of the skin, accompanied by mild discomfort, to painful deep burns and blisters. Although light-haired, fair-skinned, blue-eyed personnel are at the greatest risk of sunburn, all complexion types can develop sunburn.

The physical hazard of sunburn can be controlled by: (1) providing a shady rest area; (2) wearing appropriate clothing (long pants and tee shirts, i.e. no tank tops); (3) wearing sunscreen with an appropriate protection factor, as appropriate; and (4) working in shifts.

Heavy Equipment Operation

The contractor is responsible for all personnel associated with heavy equipment operation. Equipment operators should maintain a constant awareness of their surroundings and associated hazards. Constant visual or verbal contact between the equipment operators and laborers will facilitate such awareness. When operating heavy equipment near an embankment, a spotter shall be present at all times to observe the soil behavior on which the unit is situated. All heavy equipment shall be equipped with a roll over protection structure (ROPS) and seat belts. Operators shall use seat belts at all times when in the cab of operating equipment. All personnel will wear high visibility safety vests and hearing protection if appropriate.

Slip/Trip/Fall Hazards

Prevention of slips/trips and fall hazards can be reduced to a minimum if employees use caution when working on slick, uneven or unsteady surfaces. The risk of injury will be minimized by implementing proper site control measures such as daily safety meetings, proper footwear and by keeping the work area free of obstructions.

Lifting Hazards

Field operations often require that heavy physical labor tasks be performed. All employees will be instructed by the SSO and contractor in proper lifting techniques through safety meetings and demonstration. Additionally, employees will be instructed to not attempt to lift objects heavier than 60 pounds without mechanical assistance or the assistance of a fellow worker.

Tool and Equipment Hazards

Improper tool handling and inadequate tool maintenance will increase risk of injury during their use. Management of these hazards requires rigorous maintenance of tools and equipment. The

contractor is responsible for effective training of employees in the proper use of the tools. Hand tools that are damaged shall be tagged and removed from the work area. Equipment in need of maintenance or repair shall be tagged and removed from operation until repairs or replacement is accomplished. Only tools with immediate use will be present onsite. Unused tools shall be assembled at a collection point and removed from underfoot and immediate use.

Fire Hazard Control

Caution will be used to prevent sparks or open flames within the vicinity of vegetation. When welding or cutting, be sure hot sparks or slag does not come in contact with flammables. An approved A or B fire extinguisher, sufficient in size, will be immediately available (usually 25 feet) when welding or cutting. All heavy equipment (drill rigs, loaders, backhoes, dozers, etc.) shall have a minimum of one 5-pound AB fire extinguisher mounted on it. A minimum of one AB fire extinguisher shall be at each remediation site. Only approved containers will be used for storing flammable liquids. Oily rags and waste will be placed in appropriate containers. Fire protection equipment will be used for firefighting only. The proper use and location of fire extinguishers will be known by all employees. Gasoline or other flammable liquids will not be used for cleaning. All fire hazards will be reported to the site superintendent immediately. Fire and emergency access lanes will be kept clear at all times in order to facilitate equipment entry and exit.

5.3 BIOLOGICAL HAZARDS

Biological Hazards have not been identified but the following discussions may be relevant to activities. Potential biological hazards may consist of bees, wasps, snakes, spiders, ticks, fleas, poisonous plants such as poison oak and poison ivy, Hantavirus, and bird excrement.

5.3.1 Ants, Bees, Wasps, Hornets and Yellow Jackets

Nests and hives for ants, bees, wasps, hornets and yellow jackets often occur in ground, trees, brush and overhangs on buildings. The area will be checked for obvious nests and hives before it is cleared. If a nest or hive is detected, the PM or site SHO will be contacted before the nest is disturbed. If necessary a Pest management consultant will be brought onsite to recommend procedures for by passing or moving the nest. Workers with identified insect allergies will not be allowed to work in the area of a nest or hive. If simple first aid measures do not alleviate the symptoms of a sting, the victim will be taken to the nearest medical center for consultation with a physician. An attempt will be made to kill the offending insect and take it to the emergency room with the victim if this can be done quickly and without endangering personnel.

5.3.2 Spiders, Snakes and Fleas

These insects exist in cool dark moist areas. The potential for encounters exist when reaching into dark covered places. Suggestions for control include using a long stick to break apart webs or loosen soil from certain areas. A flashlight should also be used before reaching into a dark area. Field personnel shall be aware of their surrounding and avoid contact with all insects.

5.3.3 Rattlesnakes and Scorpions

These creatures are indigenous to many parts of the United States, although are not expected to be encountered at the Site. The SSO will inform field team members at the daily tailgate safety meetings to be on the lookout for rattlesnakes and scorpions. It should be noted that the

American Red Cross does not advocate the use of snakebite kits for snakebite injuries. Rather, experience has shown that the victim has a better chance of recovery without permanent damage when the site of the wound is immobilized and the victim rushed to the closest emergency medical facility (preferably within 30 minutes).

5.3.4 Poisonous Plants

Plants such as poison ivy and poison oak grow wild in shady, moist area and at the base of surrounding seedling or adult trees. Many individuals are prone to break out in dermal (skin) rashes upon contact with the plant oil. A visual site inspection and identification of the plants should be completed prior to each work shift so that all individuals are aware of the potential exposure.

5.3.5 Hantavirus

Hazards associated with Hantavirus are not expected.

5.3.6 Bird Excrement and Amplified Fungal Growth

Hazards associated with bird excrement and/or amplified fungal growth are not expected.

5.4 CHEMICAL HAZARDS

During soil removal activities, site workers, visitors, and the surrounding community may be exposed to contaminated soils and resulting dusts. The concentrations expected in nuisance dusts are expected to be below regulatory action levels; however, dust suppression measures will be used to minimize migration of nuisance dust.

TABLE 5.4-1: Chemicals of Potential Concern

Compound	PEL	IDLH	Route of Exposure	Acute Symptoms
Arsenic CAS No. 7440-38-2	TWA 0.010 mg/m^3	5 mg/m^3	Inhalation, skin absorption, skin and/or eye contact, ingestion	Ulceration of nasal septum, dermatitis, gastrointestinal disturbances, peripheral neuropathy, respiratory irritation, hyperpigmentation of skin [potential occupational carcinogen]
Lead CAS No. 7439-92-1	TWA 0.05 mg/m^3	100 mg/m^3	Inhalation, skin and/or eye contact, ingestion	Lara Asthma Symptom Scale, insomnia, facial pallor; anor, low-weight, malnut; constipation, abdominal pain, colic; anemia; gingival lead line; tremor; para wrist, ankles; encephalopathy; kidney disease; eye irritation; hypotension
Chlordane CAS No.	0.5 mg/m^3	100 mg/m^3	Inhalation, skin absorption, skin	Blurred vision; confusion; ataxia, delirium; cough;

Compound	PEL	IDLH	Route of Exposure	Acute Symptoms
57-74-9			and/or eye contact, ingestion	abdominal pain, nausea, vomiting, diarrhea; irritability, tremor, convulsions; anuria
Dieldrin CAS No. 60-57-1	0.25 mg/m^3	50 mg/m^3	Inhalation, skin absorption, skin and/or eye contact, ingestion	Headache, dizziness; nausea, vomiting, malaise, sweating; myoclonic limb jerks; clonic, tonic convulsions; coma
Diesel (Not Listed)	N/A	N/A	N/A	N/A
Gasoline CAS No. 8006-61-9	N/A	N/A	Inhalation, skin absorption, skin and/or eye contact, ingestion	Irritated eyes, skin, mucus membranes, fatigue, dizziness, blurred vision, slurred speech, confusion

PEL = Permissible Exposure Limit
IDLH – Immediately Dangerous to Life and Health
TWA – Time weighted average
N/A = Not available
Reference: NIOSH, *Pocket Guide to Chemical Hazards*, 2007

6.0 SAFETY AND HEALTH TRAINING

6.1 CERTIFICATION OF TRAINING

Certification of 40- or 24-hour OSHA initial training by the consultant/contractor(s) must be provided to ENGEO before work on the site. Certification records must indicate the type and time period of training. Certification of supervised field experience must also be provided for previous work. If not available, supervised field experience may be obtained at the Site. In addition, workers must demonstrate the completion of annual 8-hour refresher training, as necessary. Requirements for initial training in hazardous substances and supervised field experience contained in 29 CFR 1910.120 and 8 CCR 5192 vary with the degree of anticipated exposure to hazardous substances. The initial training requirements for workers involved in the investigation and remediation activities that may involve exposure to contaminated soils are summarized in the following table:

TABLE 6.1-1: OSHA Initial Training and Field Experience Requirements

Activity	Function	Initial Training (hours)	Supervised Field Experience (days)
Excavation and Drilling	Equipment operator and laborer	24	3
Site Safety Officer	Consultant—onsite during operations	24	3
Health and Safety Manager Project Manager	Consultant— onsite part time	40	3

6.2 TAILGATE SAFETY MEETINGS

At a minimum, daily tailgate health and safety meetings will be held and documented at the site for all field personnel. The SSO will be responsible for scheduling and conducting this safety meeting. All personnel will be required to attend. Hands-on refresher training on PPE, decontamination procedures, work practices, changes in work-tasks, schedule changes, results of air monitoring, and review of safety discrepancies noted will be discussed. Should an operation change affect the onsite fieldwork, a meeting prior to implementation of the change will be convened to explain the changes to all concerned.

7.0 PERSONAL PROTECTIVE EQUIPMENT

7.1 DUST HAZARDS

COPC concentrations based on calculations presented in Appendix B demonstrate that airborne COPC are well below applicable OSHA and NIOSH criteria at the 50 $\mu g/m^3$ differential PM10 level established in the Dust Control Plan (Appendix B); therefore, no worker exposure issues exist and no respiratory protection is required.

Dust control procedures are required to address potential sensitive receptor exposures. These measures are detailed in Appendix B.

7.2 LEVELS OF PPE

All personnel working on the project site will wear the appropriate level of protection as described herein. It is anticipated that EPA level D modified will be required as the initial level of protection. The SSO, in consultation with the HSM may upgrade or downgrade levels of protection. In general, all onsite work will be conducted in Modified Level D PPE. Level A, B or C work is not anticipated for the project. A description of the PPE ensembles is presented below.

7.2.1 Level D

- Hearing Protection - custom fitted or disposable ear plugs/ear muffs (85dBA or above)
- Hard hat (meets ANSI requirements)
- Safety glasses with side shields (meets ANSI requirements)
- Safety shoes or boots
- Coveralls or long pants and orange shirts or high visibility safety vests
- Leather work gloves

7.2.2 Level D Modified

- Hearing protection as described above
- Work clothing, as dictated by the weather
- Safety shoes or boots
- Hard hat
- Tyvek (or equivalent) coveralls
- Nitrile gloves (when handling or contact may occur with contaminated soils or materials)
- Safety glasses with side shields
- High Visibility Safety vest

7.2.3 Level C

This level of protection is not anticipated for the Scope of Work assigned to this project.

7.2.4 Level B

This level of protection is not anticipated for the Scope of Work assigned to this project.

7.2.5 Level A

This level of protection is not anticipated for the Scope of Work assigned to this project.

7.3 INSPECTION OF PPE

Specific procedures recommended by equipment manufacturers should be followed for inspection of PPE. A general inspection checklist for PPE before use includes:

- Determining that the clothing material is correct for the specified task at hand.
- Visually inspect for imperfect seams, non-uniform coatings, tears, closure malfunctions, hold up to light and check for pinholes.
- Hard Hats - Head harness is intact and installed properly. Check for cracks.
- Safety Glasses/Goggles - Lenses are clear and free of scratches. Side shields are present.
- Safety Shoes/Boots - Free of holes, damage, soles have ample thread, and laces are adequate.
- Air Purifying Respirators, if appropriate - Parts to respirators are intact and in place. Inspect for malfunctions, tears or disfigurement of the mask, proper cartridges, valves are not torn or warped, head and neck straps have ample elasticity.

8.0 SAFETY PROCEDURES, ENGINEERING CONTROLS, AND WORK PRACTICES

8.1 GENERAL SITE RULES/PROHIBITIONS

During soil removal work, all employees, subcontractors or persons entering the work site shall sign in with the SSO and shall sign out upon departing. Employees, subcontractors or persons who will be engaged in hazardous materials or waste operations or have the potential to be exposed to hazardous materials will be informed of the nature, and level of exposure. Each person engaged in such operations will be required to indicate they have been informed of the associated hazards and requirements by signing the Project Manager's notification form.

8.1.1 Buddy System

Contractor personnel will not conduct work activities alone at any of the sites. The "Buddy System", as specified in 29 CFR 1910.120 and 8 CCR Section 1532.1 will be implemented. The buddy teams working at the site will maintain visual and audible contact so that they may provide emergency assistance to each other. Both members of the buddy team need not be in the same site zone, but each member must be wearing adequate PPE to assist the other member.

8.1.2 Engineering Controls and Work Practices

Engineering controls are not anticipated for the proposed activity. Work practices to minimize exposure to nuisance dust will include the wetting down of dusty operations and relocating employees upwind of dusty areas, if necessary.

8.1.3 Employee Rotation

A schedule of employee rotation will not be implemented as a means of compliance with permissible exposure.

8.1.4 Work Practices and Procedures

The following health precautions will be implemented:

- Avoid skin contact and ingestion of stockpiled soil.
- Avoid excessively dusty areas
- Keep work areas clean and well ventilated
- Clean up spills promptly

8.2 MATERIALS HANDLING

8.2.1 Spill and Discharge Control

Should a spill or discharge of petroleum products or contaminated soil occur, the following measures will be taken:

- Take immediate measures to control and contain the spill to the smallest area possible.
- Keep unnecessary people away, isolate the hazardous area, deny entry to unauthorized people, do not allow unauthorized people to touch spilled material.
- Stay upwind.
- Keep out of low areas.
- Keep combustibles away from the spilled material.
- Use a water spray to reduce vapor or dust generation being cautious not to cause the migration of water outside the set boundaries.
- If necessary, take samples for analysis to determine adequate cleanup was performed.
- Remove or retrieve any discharged liquids or slugs. Absorb discharged materials with absorbents such as commercial pillows, kitty litter, sand, clean fill, or other noncombustible absorbent material. Place the absorbent/spill mixture into leak proof containers and dispose per EPA and DOT requirements.

8.2.2 Notification of Spills and Discharges

If the spill or discharge is reportable, and/or human health or the environment is threatened, notify the National Response Center, Alameda County Department of Environmental Health, Alameda Police and Fire Department non-emergency line, and the Project Manager. Spills or leaks,

regardless of their quantity will be reported to the Project Manager immediately following discovery. A follow-up written report will be submitted to the Project Manager within seven (7) days after the initial report. The written report will be in narrative form and as a minimum include the following:

- A description of the material spilled including identity and quantity. Photographs showing the location and extent of the spill.
- A statement as to whether the amount spilled is EPA/State reportable and when and to whom it was reported.
- Exact time and location of the spill, including a description of the area involved.
- Containment procedures initiated and a full description of the cleanup measures taken, or to be taken, including disposal location of the spill residue.

8.2.3 Material Storage, and Disposal

Employees will be trained in and will use proper lifting techniques. Material handling devices will be available for the material handling needs of an activity. Whenever heavy or bulky material is to be moved, the material handling needs will be evaluated in terms of weight, size, and distance and path of move. The following hierarchy will be followed in selecting a means for material handling:

- Elimination of material handling need by engineering controls
- Movement by mechanical device (e.g. lift truck, backhoe, loader, etc.)
- Movement by manual means with handling aid (e.g. dolly or cart)
- Movement by manual means with protective equipment (e.g. lifting belt or lifting monitor)

Materials will not be moved over or suspended above personnel unless positive precautions have been taken to protect the personnel from falling objects. Where the movement of materials may be hazardous to personnel, taglines or other devices will be used to control the loads being handled by hoisting equipment. These devices will be nonconductive when used near energized lines.

Non-compatible materials will be segregated in storage.

Work areas and means of access will be maintained safe and orderly. Sufficient personnel and equipment will be provided to insure compliance with all housekeeping requirements. Work areas will be inspected daily for adequate housekeeping and findings recorded on daily inspection reports. Work will not be allowed in those areas that do not comply with the requirements of this section.

Waste material and rubbish, if generated, will be placed in suitable containers. Waste material and rubbish will not be stored in areas that are away from the general work areas. Separate covered, non-flammable/non-reactive containers will be provided for the collection of garbage, oily, flammable, and dangerous wastes. The containers will be labeled with a description of their contents. The contents will be properly disposed of on a scheduled basis.

Hazardous material waste (i.e. vehicle and equipment oils and lubricants, containers and drums for solvents, adhesives, etc.) will be collected, stored, and disposed of in accordance with Federal, state, and local agencies.

8.3 TEMPORARY FACILITIES

Temporary facilities, including toilettes and hand wash facilities, will be located onsite. The facilities will be located in a central location, preferably upwind of soil removal activities.

8.4 FIRE PROTECTION AND PREVENTION PLAN

The following are the elements of the Fire Protection and Prevention Plan:

- Portable fire extinguishers will be provided at each work site. Extinguishers shall be inspected weekly and tagged with inspection dates.
- Fire extinguishers will be suitably placed at each work site, distinctly marked, readily accessible, and maintained in a fully charged and operable condition.
- A fire extinguisher, rated not less than 20-AB will be provided within 50 feet of wherever more than 5 gallons of flammable or combustible liquids or 5 pounds of flammable gas are being used on the work site. This requirement does not apply to the integral fuel tanks of motor vehicles.
- At least one portable fire extinguisher having a rating of not less than 20-AB will be located not less than 25 feet, or more than 75 feet, from any bulk flammable liquid storage area. This requirement does not apply to the integral fuel tanks of motor vehicles.
- At least one portable fire extinguisher not less than 20-ABC will be provided on all tank trucks or other vehicles used for transporting and/or dispensing flammable or combustible liquids.
- Each service or fueling area will be provided with at least one fire extinguisher having a rating of not less than 20-AB located so that an extinguisher will be within 50 feet of each pump, dispenser, underground fill pipe opening, and lubrication or service area.
- At least one portable fire extinguisher not less than 5-ABC shall be mounted and accessible in each commercial vehicle and piece of heavy equipment.
- Fire extinguishers listed or approved by the California Fire Marshal and/or a nationally recognized testing laboratory will be used.

8.5 HAZARD COMMUNICATION

All personnel must follow established work practices to safely handle hazardous materials and chemicals. A hazardous chemical is broadly defined as a chemical that is a health hazard, a physical hazard or both. A hazard communication program has been developed to limit the risks of personnel exposures, damage to equipment, and the unplanned release of hazardous materials and chemicals to the environment due to normal operations. The written program includes protocols for:

- Assessment of the hazards associated with chemicals onsite.
- Inventory and labeling of chemicals and their containers.
- Communication of hazards to the employee through Material Safety Data Sheets (MSDSs) for chemical products and tailgate meetings to discuss hazards of impacted environmental media, such as impacted soil or water.
- Training on the safe handling of chemicals.

- Acquisition, transportation and handling of chemicals.
- Emergency response to releases of chemicals.

The requirements of this program will apply to consultant/contractor in the event that they need to store hazardous materials and/or chemicals such as equipment, fuel, caustic compounds for sample preservation, or solvents for equipment decontamination on the site. The consultant/contractor will be responsible for coordinating the inventory of hazardous materials and chemicals used or stored at the site. The inventory will be utilized for reporting and emergency response purposes. Data contained in the inventory will include the name, quantity, and location of the chemical. Material Safety Data Sheets shall be readily available onsite for reference.

8.6 SANITATION

8.6.1 Potable Water

An adequate supply of drinking water will be supplied from sources approved by Federal, State, or local health authorities. Drinking water will be dispensed by means, which prevent contamination between the consumer and source. Approved potable water systems will only be used for the distribution of drinking water.

8.6.2 Non-Potable Water

Outlets for non-potable water, such as water for firefighting purposes, will be identified to indicate clearly that the water is unsafe and is not to be used for drinking, washing, or cooking purposes. Non-potable water will be conspicuously posted: "CAUTION -- WATER UNFIT FOR DRINKING." There will be no cross-connection, open or potential, between a system furnishing potable water and a system furnishing non-potable water.

8.6.3 Toilets

One toilet per 20 work site personnel will be provided at the job site and within 5 minutes walking distance in accordance with OSHA requirements. Each toilet will be equipped with a metal, plastic, or porcelain urinal trough and hand washing facilities. Toilets will be so constructed that the occupants will be protected against weather and falling objects. All cracks will be sealed and the door will be tight-fitting, self-closing and latchable. Seat boxes will be vented to the outside (minimum vent size four inches inside diameter) with vent intake located one inch below the seat. Toilets will be constructed so that the interior is lighted. Adequate ventilation will be provided and all windows and vents screened. Provisions for routinely servicing and cleaning all toilets and disposing of the sewage will be established through a contracted source.

8.6.4 Washing Facilities

Washing facilities will be provided onsite to maintain healthful and sanitary conditions. The washing facility will be maintained in a sanitary condition and provided with water, soap, individual means of drying, and covered receptacles for waste. An eye wash station will be provided at the work site.

8.7 PROTECTION OF ADJACENT WORK OR AREAS TO REMAIN

The work will be performed without damage or contamination of adjacent work or surrounding areas. Where such work or surrounding area is damaged or contaminated, it will be restored to its original condition and decontaminated at no additional expense to the client as deemed appropriate by the Project Manager. When satisfactory visual inspection and/or sampling analysis results are obtained and have been evaluated, work may proceed.

8.8 MACHINERY AND MECHANIZED EQUIPMENT

Before any machinery or mechanized equipment is placed in use, the contractor is responsible for the inspection and testing by a competent person and certified to be in safe operating condition. Inspections and tests will be in accordance with manufacturer's recommendations and will be documented in the daily logs. Records of tests and inspections will be maintained at the site, and will be made available upon request of the designated authority.

Daily/shift inspections and tests:

- All machinery and equipment will be inspected daily (when in use) to ensure safe operating conditions. The Site Superintendent will designate competent persons to conduct the inspections. These inspections will be documented and incorporated into the field logs.

- Tests will be made at the beginning of each shift during which the equipment is to be used to determine that the brakes and operating systems are in proper working condition and that all required safety devices are in place and functional.

Whenever any machinery or equipment is found to be unsafe, or whenever a deficiency, which affects the safe operation of equipment, is observed, the equipment will be tagged and immediately taken out of service until the unsafe condition(s) have been corrected. The tag will indicate the equipment will not be operated. The tag will not be removed and will be placed in a conspicuous location on the equipment. The tag will remain in its attached location until it is demonstrated to the individual dead lining the equipment that it is safe to operate. When corrections are complete, the machinery or equipment will be re-tested and re-inspected prior to being returned to service.

Machinery and mechanized equipment will be operated only by designated qualified personnel. Machinery or equipment will not be operated in a manner that will endanger persons or property nor will the safe operating speeds or loads be exceeded. Getting off or on any equipment where it is in motion is prohibited. Machinery and equipment will be operated in accordance with the manufacturer's instructions and recommendations. Inspections or determinations of road conditions and structures will be made in advance to assure that clearances and load capacities are safe for the passage or placing of any machinery or equipment.

Mobile equipment, operating within an off-highway job site not open to public traffic, will have a service brake system and a parking brake system capable of stopping and holding the equipment while fully loaded on the grade of operation. In addition, it is recommended that heavy-duty hauling equipment have an emergency brake system, which will automatically stop the equipment upon failure of the service brake system. This emergency brake system should be manually operable from the driver's position.

Preventive maintenance procedures recommended by the manufacturer will be followed. All machinery or equipment will be shut down and positive means taken to prevent its operation while repairs or maintenance is being done. Equipment designed to be serviced while running are exempt from this requirement. All repairs on machinery or equipment will be made at a location, which will protect repair personnel from traffic. Heavy machinery, equipment, or parts thereof which are suspended or held apart by slings, hoist, or jacks also will be substantially blocked or cribbed before personnel are permitted to work underneath or between them. Only, authorized factory trained personnel shall do repairs to heavy equipment. Routine daily lubrication, fueling, etc. shall be conducted by the operator.

All vehicles which will be parked or moving slower than normal traffic on haul roads will have a yellow flashing light or four-way flashers visible from all directions.

All industrial trucks will meet the requirements of design, construction, stability, inspection, testing, maintenance, and operation, defined in ANSI/ASME B56.1, Safety Standards for Low Lift and High Lift Trucks.

Self-propelled construction equipment, whether moving alone or in combination, will be equipped with a reverse signal alarm. Equipment designed and operated so that the operator is always facing the direction of motion does not require a reverse signal alarm. Reverse signal alarms will be audible and sufficiently distinct to be heard under prevailing conditions. Alarms will operate automatically upon commencement of backward motion. Alarms may be continuous or intermittent (not to exceed 3-second intervals) and will operate during the entire backward movement. Reverse signal alarms will be in addition to requirements for signal persons. A warning device or signal-person will be provided where there is danger to persons from moving equipment, swinging loads, buckets, booms, etc.

All belts, gears, shafts, pulleys, sprockets, spindles, drums, flywheels, chains, or other reciprocating, rotating or moving parts of equipment will be guarded when exposed to contact by persons or when they otherwise create a hazard. All hot surfaces of equipment, including exhaust pipes or other lines, will be guarded or insulated to prevent injury and fire. All equipment having a charging skip will be provided with guards on both sides and open end of the skip area to prevent persons from walking under the skip while it is elevated. Platforms, foot walks, steps, handholds, guardrails, and toe boards will be designed, constructed, and installed on machinery and equipment to provide safe footing and access. Equipment will be provided with suitable working surfaces of platforms, guard rails, and hand grabs when attendants or other employees are required to ride for operating purposes outside the operator's cab or compartment. Platforms and steps will be of nonskid material. Substantial overhead protection will be provided for the operators of forklifts and similar material handling equipment.

Fuel tanks, if any, will be located in a manner, which will not allow spills or overflows to run onto engine, exhaust, or electrical equipment. Exhaust or discharges from equipment will be so directed that they do not endanger persons or obstruct view of operator.

All points requiring lubrication during operation will have fittings so located or guarded to be accessible without hazardous exposure.

8.9 CONFINED SPACE OPERATIONS

All work will be performed at or above current grades at the Site. No work within trenches or other confined spaces will occur during the course of the proposed project.

8.10 SITE ILLUMINATION

All work will be performed during daylight hours. No work will be performed within structures. No special illumination devices will be necessary to perform the proposed scope of work. Vehicular headlights will be required in the event that vehicular transport operations are required outside of daylight hours or during times of limited visibility (i.e. fog, rain). Additionally, site workers will be required to use vehicular headlights in accordance with State of California motor vehicle laws during onsite or offsite transport.

9.0 SITE CONTROL MEASURES

All employees and personnel entering the site during soil removal work will be required to report to the Site Safety Officer and sign in and out on the site control log. In addition, all workers will be required to complete the worker/visitor acknowledgment form informing them of the potential hazards onsite. Copies of both the site control log and the worker/visitor acknowledgment form are presented in Attachment D. The purpose of the site control measures is to prevent the spread of contamination, control the flow of personnel, vehicles, and materials into and out of work areas. Procedures for preventing the spread of contamination include maintaining a site control log, developing a communications program, and implementing site security measures are presented below.

9.1 SITE CONTROL LOG

ENGEO will maintain documentation of sign-in/out forms, employee training records, PPE use and applicable medical surveillance records. In addition, any unsafe conditions present or work practices that have been identified and action taken to correct the identified unsafe conditions and work practices will be identified by the SSO and documented on the site control log. Record keeping will be performed in accordance with the following.
ENGEO will maintain logs and reports covering the implementation of the HASP. If necessary the format will include training logs and bi-weekly reports. The training log will include the following information for both initial training and refresher training sessions:

- Date and place.
- Area (specific zone) checked.
- Employees in a particular area.
- Equipment being utilized by employees named.
- Protective clothing being worn by employees named.
- Protective devices being used by employees named and area assignment.

Should this project be extended, the bi-weekly reports will include the following information:

- Summary sheet covering the range of work being done.

- Any incidents of nonuse of protective devices in an area where required, nonuse of protective clothing, disregard of buddy system, violation of eating, smoking, and chewing in prohibited areas, instances of job-related injuries and illness, and monitoring results.
- Copies of medical certificates for employees and the waivers of visitors.

9.2 DECONTAMINATION

9.2.1 Personnel

Decontamination will consist of the removal of disposal of protective coverings (i.e. gloves, coveralls) and washing of skin surfaces that may have been exposed or soiled during operations. Additionally, all onsite personnel will be required to wash hands or any other potentially exposed or soiled skin surface prior to breaks, leaving the Site, and at the end of daily operations.

9.2.2 Equipment

Equipment, including but not limited to, excavators, backhoes and loaders will have visible soil deposits removed prior to equipment being transported offsite.

10.0 EMERGENCY EQUIPMENT

The following items, at a minimum, will be maintained onsite and available for immediate use:

- First aid equipment and supplies.
- Emergency eyewashes which comply with ANSI Z358.1 will be located near the work areas.
- Fire extinguishers with a minimum rating of 5-A, B, or C will be carried in all vehicles and heavy equipment. Fire extinguishers will also be available at any site where flammables or combustible materials present a fire risk.
- Spill response kit.

11.0 EMERGENCY RESPONSE AND CONTINGENCY PROCEDURES

11.1 PRE-EMERGENCY PLANNING

Emergency response agencies will be contacted, and notified of upcoming site activities and potential emergency situations. The capabilities and commitment of the local agencies will be ascertained and obtained. ENGEO will verify that this Emergency Response Plan is compatible and integrated with disaster, fire, and emergency response plans of the local, state, and federal agencies.

11.2 LINES OF AUTHORITY

The HSM and SSO are responsible for overall Site safety. In the case of a Site safety concern, emergency or accident, the SSO should be contacted immediately. Upon notification, the SSO will make appropriate decision regarding the incident.

11.3 EMERGENCY RECOGNITION AND PREVENTION

The recognition and prevention of hazards and potential emergencies are discussed in detail elsewhere in this plan. In general, emergency situations occur when personnel are seriously injured and require first aid or hazardous or potentially hazardous materials are spilled or released to the environment.

11.4 PROCEDURES FOR SITE EVACUATION

11.4.1 Emergency Equipment

The following items, as a minimum will be immediately available for onsite use:

- First aid equipment and supplies
- Spill control materials and equipment
- Fire extinguishers
- Telephone

11.4.2 Adverse Weather Conditions

In the event of adverse weather conditions, the SSO will assess if work can continue without sacrificing the health and safety of any field workers. Items to be considered prior to assessing if work should continue include:

- Potential for heat stress and heat-related injuries
- Limited visibility
- Potential for electrical storms
- Potential for high winds resulting in contaminant transport

11.4.3 Earthquakes

This guidance assumes that personnel will be outdoors. In the event of a major earthquake:

- Field personnel should immediately evacuate any trenches, excavations or elevated positions in machinery, heavy equipment or structures.
- Field personnel should move away from structures or overhead electrical transmission poles and wires or any other objects or structures that might topple over or collapse.
- Personnel should move to an area where there is the least chance of something falling from above.
- Personnel should assume a position of low center of gravity to avoid being thrown or falling to the ground. A position on “all fours” can minimize shaking.
- Personnel should remain alert for rolling or traveling objects to avoid injury.
- The buddy system shall be maintained in the event of earthquake.

11.4.4 Evacuation Routes and Places of Refuge

Prior to access into the work areas and during soil removal work, workers will be instructed as to designated evacuation routes and procedures. A route map detailing directions to the emergency medical facility will be posted conspicuously at the job site. Additionally, each support vehicle should be equipped with copies of this map and each driver should be familiar with the route and travel time to that facility. A copy of the hospital route map is included as Attachment F.

Workers will be instructed during the preliminary and subsequent tailgate meetings to proceed away from the hazard in a direction of 90° to the prevailing wind for at least 50 feet prior to heading up wind of the hazard should an emergency evacuation occur. A place of refuge will be identified. The purpose of the place of refuge is to provide an offsite meeting place in the event that site evacuation is required. The actual place of refuge will be determined during the weekly onsite safety meetings.

11.4.5 Site Security and Control

Areas onsite where hazardous substances are known to exist will be secured through demarcation tape and warning signs. Access to the work area will be restricted, and all personnel (regardless of status) requesting entry the work area will be required to report to the Site safety officer and sign in on the Site control log. All visitors will be briefed onsite-specific safety and health issues. The gated Site will be kept closed and locked during hours of non-operation.

11.5 NEAREST HOSPITAL

The nearest urgent care facility is located in Castro Valley, approximately 1 mile from the project site. Attachment F provides a map and directions to the nearest hospital.

The address and telephone number are as follows:

Eden Medical Center
20103 Lake Chabot Road
Castro Valley, CA 94546
(510) 537-1234

11.6 EMERGENCY ALERTING AND RESPONSE PROCEDURES

11.6.1 Emergency Alerting Procedures

If physical injury or illness due to accidental exposure to hazardous materials or waste occurs, uninjured/unaffected personnel should do the following:

- Evacuate all non-essential personnel.
- Remove injured/exposed person(s) from the work zone.
- Remove protective gear from injured/exposed person(s).
- Decontaminate exposed person(s).
- Render first aid if necessary.
- **Call 911.**

- *If medical assistance is urgent, decontamination of the victim may not be practical or required.*
- Evacuate other onsite personnel to a safe place until the SSO determines that it is safe to resume work
- The senior person present will notify the SSO and superintendent and advise them of the incident and the steps taken to prevent recurrence.
- Submit a written report on the incident to the contracting officer or representative within 24 hours. The report will be made part of the final closure file.
- Accident reporting records and investigative reports will be maintained at the site office and ENGEO's corporate office as part of the Department of Labor record keeping requirements.

Following any emergency response, an evaluation of procedures will be performed. The evaluation should include cause and proposed remedy for subsequent incident prevention. Should an emergency situation develop the site superintendent will notify work site personnel by hand held radio. Work activities shall be stopped if necessary.

11.6.2 Emergency Telephone Numbers

The universal emergency response number is 911. When 911 is dialed, a public safety answering service will ascertain the type of assistance needed and quickly summon the appropriate emergency service (Fire Department, Police Department, emergency medical or paramedics, ambulance, etc.) to the site. A complete listing of emergency telephone numbers for project personnel is provided In Table 11.6.2-1 below.

TABLE 11.6.2-1: Emergency Contact Telephone Numbers

Name	Telephone number	Alternate Number
National Emergency Response Center	1-800-424-8802	
Alameda County Department of Environmental Health	510-567-6700	
National Poison Control	1-800-876-4766	
Alameda County Sheriff's Department	510-667-7721	911
Alameda County Fire Station No. 25	510-670-5853	911
Project Manager, Divya Bhargava	925-395-2559	650-804-2402
Health and Safety Manager, Jeffrey Adams	925-395-2506	925-570-4795
Site Safety Officer , Robert Peck	925-395-2583	925-570-8110

11.7 COMMUNITY ALERT PROGRAM

The universal emergency response number is 911. When 911 is dialed, a public safety answering service will ascertain the type of assistance needed and quickly summon the appropriate local and/or municipal emergency service (Fire Department, Policy Department, emergency medical or paramedics, ambulance, etc.) to the site.

11.8 PROCEDURES FOR INCIDENT REPORTING

In the event that an incident such as an explosion or fire, or a spill or release of toxic material occurs during the course of the project, the appropriate government agencies will immediately notified. ENGEO will notify Cal/OSHA, EPA, and the contractor/subcontractor supervisor(s). A

written notification shall be forwarded to the contracting officer within 24 hours. The report should include the following items:

- Name, organization, telephone number, and location.
- Name and title of the person(s) reporting.
- Date and time of the incident.
- Location of the incident, i.e. site location, facility name.
- Brief summary of the incident giving pertinent details including type of operation ongoing at the time of the incident.
- Cause of the incident, if known.
- Casualties (fatalities, disabling injuries).
- Details of any existing chemical hazard or contamination.
- Estimated property damage, if applicable.
- Nature of damage, effect on contract schedule.

12.0 CERTIFICATE OF WORKER/VISITOR ACKNOWLEDGMENT

A copy of a certificate of worker/visitor acknowledgment (Attachment D) will be completed and submitted for each visitor allowed to enter the work site during soil removal work.

13.0 REPORTING

13.1 LOGS, REPORTS, AND RECORDKEEPING

The following logs, reports, and records will be developed, retained, and submitted to the contracting officer when requested:

- Training logs (site specific and visitor)
- Daily inspection logs
- Equipment Safety and Maintenance Logs
- Employee/visitor register (Site Control Log)
- Environmental and personal exposure monitoring/sampling results

ATTACHMENT A

ACCIDENT/INJURY/ILLNESS INVESTIGATION

Job Site: _____

Please Print - complete all items - submit immediately

PART I – SUPERVISOR

Employee Employee # Phone # ( )
Address City State Zip
Date of Birth / / Age Sex Social Security #
Shift ☐ Day ☐ Evening ☐ Night Date of Hire / / Occupation
Date of Injury / / Time of Injury : AM : PM
Location of Incident
Date Reported / / Time Reported Reported to Whom?

PART II - SUPERVISOR

(1) Was employee given First-Aid? Yes ☐ No ☐
(2) Sent to: Emergency Room Yes ☐ No ☐
Preferred Provider Yes ☐ No ☐
Personal Physician Yes ☐ No ☐
Company Nurse Yes ☐ No ☐
Other Yes ☐ No ☐
(3) Was Employee Placed on Transitional Duty? Yes ☐ No ☐
(4) Will Employee lose time/work? Yes ☐ No ☐
(5) If lost time, approx. days_____
(6) Was treatment refused? Yes ☐ No ☐
Name & Address of Clinic Phone number of clinic

Attach statement of all witnesses

PART III – SUPERVISOR

Name of Witness	Address	Phone
(1)		
(2)		

Describe in detail what employee was doing at the time of injury (what, how why)

Did employee wear protective equipment? Yes ☐ No ☐ If Yes, specify

Part of body (check) indicate right or left when applicable

1 ☐ Head	5 ☐ Mouth	9 ☐ Arm	13 ☐ Knee	17 ☐ Toe	21 ☐ Groin
2 ☐ Face	6 ☐ Heart	10 ☐ Wrist	14 ☐ Leg	18 ☐ Hip	22 ☐ None
3 ☐ Eye	7 ☐ Back	11 ☐ Hand	15 ☐ Ankle	19 ☐ Neck	23-☐ other_____
4 ☐ Ear	8 ☐ Trunk	12 ☐ Finger	16 ☐ Foot	20 ☐ Shoulder	

Type of injury (check)

1 ☐ Reaction to foreign substances/objects	6 ☐ Fracture
2 ☐ Puncture	7 ☐ Amputation
3 ☐ Laceration	8 ☐ Sprain/Strain
4 ☐ Contusion	9 ☐ Other
5 ☐ Burn	

What type of training has been conducted to prevent recurrence?

Describe what acts or conditions may have contributed to the incident. (Analyze all the facts concerned. If either the injured person, a machine or other physical condition was involved, find out How. Use the Possible Worker's Compensation Accident Causes on the back of this form to complete this section.)

Corrective Action(s) taken:

Investigated by: _____Date:_____

PART IV - MANAGEMENT REVIEW

Are you satisfied with your review of Part I-III that the accident has been thoroughly investigated? ☐ Yes ☐ No
If NO, return for a more detailed report.

As a result of your review, have you identified any additional reasons why the accident occurred: ☐ Yes ☐ No
If YES, list the reasons:

Corrective action(s) you are taking?
Who have you made responsible for corrections?
Signature of Superintendent Date:
Manager Comments

As a result of the Foreman's investigations and my comments above, I am satisfied that the accident has been thoroughly investigated. Corrective actions will be personally followed up by me until complete.

Signature of Manager_____Date:_____

POSSIBLE WORKER'S COMPENSATION ACCIDENT CAUSES

UNSAFE ACT - PERSONAL FACTORS	UNSAFE CONDITION
Making safety devices inoperable	Inadequate guards or protection
Failure to use guards provided	Defective tools or equipment
Using defective equipment	Unsafe condition of machine
Servicing equipment in motion	Congested work area
Failure to use proper tools or equipment	Poor housekeeping
Operating machinery or equipment at unsafe speed	Unsafe floors, ramps, stairways, platforms
Failure to use personal protective equipment	Improper material storage
Operating without authority	Inadequate warning system
Lack of skill or knowledge	Fire or explosion hazards
Unsafe loading or placing	Hazardous atmosphere: gases, dust, fumes, vapors
Improper lifting, lowering or carrying	Hazardous substances
Taking unsafe position	Inadequate ventilation
Unnecessary haste	Radiation exposures
Influence of alcohol or drugs	Excessive noise
Physical limitation or mental attitude	Inadequate lighting
Unaware of hazards	
Unsafe act or other	

THE PURPOSE OF THIS INVESTIGATION FORM IS NOT TO PLACE FAULT OR BLAME. ITS PURPOSE IS TO INVESTIGATE ALL POSSIBLE CAUSES OF THE ACCIDENT TO TAKE NECESSARY CORRECTIVE ACTIONS AND CONTINUALLY IMPROVE PROJECT SAFETY.

ATTACHMENT B

Project Manager Daily Log

Date: _____ Project Name: _____

Log Information:_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____.

ATTACHMENT C

Worker/ Visitor Entry and Exit Control Log

Name	Date	Time	In	Out

SSO Signature_____ Date_____

ATTACHMENT D

ACKNOWLEDGEMENT

This is to acknowledge my participation in exploration remediation project. I accept the responsibility to protect myself with the appropriate personal protective equipment. In the event I have any safety questions, I will not hesitate to ask the Head Site Safety Officer.

_____
(Signature)

_____
(Date)

ATTACHMENT E

JOB SITE EMERGENCY PROCEDURES

Job Site:_____Date:_____

EMERGENCY TELEPHONE NUMBERS:

FIRE _____
POLICE _____
AMBULANCE _____
HOSPITAL _____

IN CASE OF FIRE:

- exit the site using the evacuation route
- call the fire department
- go immediately to the assembly point

EVACUATION ROUTE:

_____
_____
_____

ASSEMBLY POINT:_____

IN CASE OF SERIOUS INJURY:

- immediately contact first aid trained personnel
- call for medical assistance

Job site first aid trained personnel:

_____
_____
_____

Trained personnel will take immediate charge of the emergency situation. (Supervision to perform accident investigation)

In case of natural disaster: (check)

☐ Tornado: Seek inside shelter, preferably underground. Stay away from windows. If outside, move away from the tornado's path at a right angle, or lie flat in a ditch or ravine

☐ Earthquake: Evacuate the building and go directly to the designated assembly point for instructions.

☐Other: _____

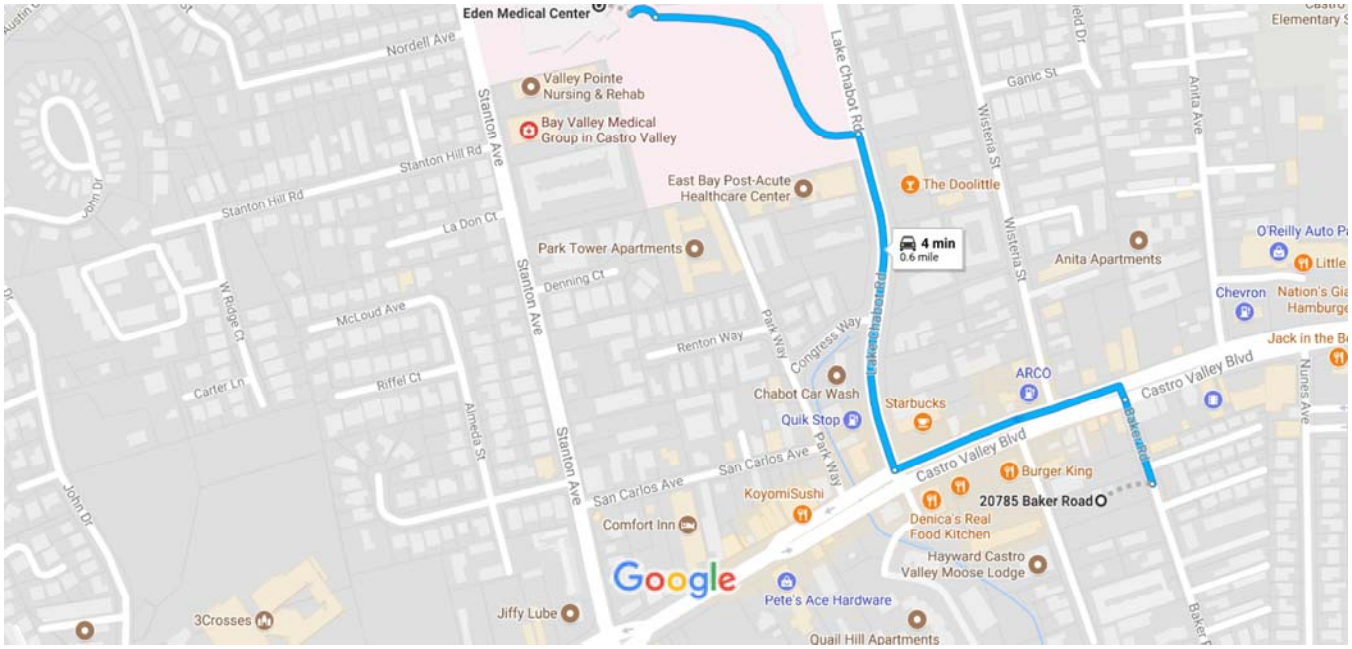
ATTACHMENT F

Hospital Map

Google Maps

20785 Baker Road, Castro Valley, CA to Sutter Health - Eden Medical Center

Drive 0.6 mile, 4 min



Map data ©2017 Google United States 200 ft

20785 Baker Rd

Castro Valley, CA 94546

1. Head north on Baker Rd toward Castro Valley Blvd

279 ft

2. Turn left onto Castro Valley Blvd

0.2 mi

3. Turn right at the 2nd cross street onto Lake Chabot Rd

0.2 mi

4. Turn left

0.2 mi

5. Turn right

Destination will be on the right

95 ft

Sutter Health - Eden Medical Center

20103 Lake Chabot Rd, Castro Valley, CA 94546

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

SAN RAMON

SAN FRANCISCO

SAN JOSE

OAKLAND

LATHROP

ROCKLIN

SANTA CLARITA

IRVINE

CHRISTCHURCH

WELLINGTON

AUCKLAND

ENGEO

Expect Excellence