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January 19, 2018

***DRAFT***

Mr. Andrew York, PG  
Alameda County Department of Environmental Health  
Local Oversight Program  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502

**RE: Work Plan for Subsurface Investigation  
2510 Central Avenue, Alameda, California  
ACDEH Case #RO000 [REDACTED]**

Dear Mr. York:

On behalf of the Anthony DiGenova Trust Agreement, Green Environment inc. (GEI) has prepared this work plan for conducting a follow-up subsurface environmental investigation at the location of an abandoned heating oil fuel tank recently discovered and removed from 2510 Central Avenue, Alameda, California (*Site*). The site location is shown in **Figure 1**. The site is located in a predominantly residential area of Alameda and is developed with a multi-unit residential apartment building. The pertinent site layout of the building, the small front yard area where the fuel oil underground storage tank (UST) was located, and the immediately adjacent sidewalk and street are shown in **Figure 2**. As discussed in our meeting on January 9, 2018, there is a pending sale of the *Site*, and both the seller and buyer wish to expedite the resolution of the UST matter as promptly as possible.

The subject heating fuel oil UST had an estimated size of 750 gallons and was removed under County and City permits in June 2017 as described in Golden Gate Tank Removal's *Underground Storage Tank Closure Report, 2510 Central Avenue, Alameda, California 94501* (GGTR, June 26, 2017). Although the UST was observed "...to be in poor condition with at least one visible hole", there was still residual product/sludge in the tank and the excavation did not encounter any stained or fuel-odor soils. Laboratory analysis of the one (1) soil sample collected from a depth of approximately eight (8) feet (9627-NW-8') was found to contain only 29 milligrams per kilogram (mg/kg) of total petroleum hydrocarbons in the diesel range (TPH-d), with none of the commonly associated volatile constituents of TPH-d (benzene, toluene, ethyl benzene, xylenes, naphthalene) detected. Analysis of the excavated soils (sample 9629-SP) did not detect any petroleum hydrocarbon impacts.

The UST excavation encountered shallow groundwater (approximately 8 feet below grade), an expected condition for this area close to the San Francisco Bay. After removing

approximately 1,300 gallons of the ponded water at the excavation floor, a grab sample was collected from groundwater recharge into the UST excavation. Laboratory analysis of the groundwater sample (9627-W) found 480 milligrams per liter (mg/L) of TPH-d and a trace (0.0029 mg/L) of xylenes. On June 21, 2017 a UST Unauthorized Release (Leak)/ Contamination Site Report was submitted to the Alameda County Environmental Health Department (ACDEH) by Golden Gate Tank Removal. ACDEH recently opened fuel leak case #RO000 [REDACTED] for the *Site*.

GEI recommends that an additional subsurface investigation be performed at the *Site*, and that the investigation results be evaluated for potential no further action designation under California's Low-Threat Underground Storage Tank Closure Policy (LTCP) guidelines [California State Water Resources Control Board (SWRCB), Resolution No. 2012-0016].

## **PROPOSED SCOPE OF WORK**

### **TASK 1. PRE-FIELD SITE WORK**

Prior to field sampling activities, GEI will contract with a private utility locating company to identify subsurface utilities at the location of the former UST and between the UST and the residential structure, including any remaining fuel oil piping. During this visit GEI will also inspect the *Site* building's underground garage space for any sumps. GEI will obtain an appropriate drilling permit from the Alameda County Public Works Agency (ACPWA), and obtain an encroachment permit from the City of Alameda for work in the public sidewalk/street area. GEI will mark the proposed soil boring locations with white paint (as required), contact Underground Service Alert at least forty-eight (48) hours prior to the initiation of the drilling work, and schedule the field sampling work with the *Site* Owner, ACPWA and ACDEH.

### **TASK 2. SUBSURFACE INVESTIGATION**

Prior to the start of the field sampling activities, GEI will conduct an onsite safety meeting with GEI staff and subcontractors to review the site-specific health and safety plan provided in **Appendix I**, to protect the health and safety of GEI staff, subcontractors and the public. Pedestrian and vehicle safety barricades and signage will be appropriately placed as required by the City encroachment permit.

A minimum of five (5) borings will be advanced at the former UST location: one (1) at the approximate center of the former UST excavation, plus a ring of four (4) surrounding borings, as shown in the attached **Figure 2**. The planned locations of borings EB1 through EB5 are subject to potential minor adjustments to coincide with subsurface utility preferential pathways, and/or to accommodate physical access. The purpose of the borings is to define the extent of petroleum-related impacts in soil and first-encountered groundwater. All borings will be advanced to a maximum depth of fifteen (15) feet below grade. Based on GEI's

review of local release-related investigations, the soils are predominantly sands and adequate groundwater for sampling will be present within the upper fifteen (15) feet of depth. GEI will contract with a C57 licensed driller to use a truck-, or track-mounted Geoprobe™ drill rig to complete the planned borings under the direction of a Professional Geologist. The borings will be advanced by direct-push dual-tube technology and continuous soil sampling capability. The Geoprobe™ equipment includes a four (4) foot long core barrel of approximately 1.5-inch diameter that is loaded with a new, retractable inner acetate sample tube. The loaded sampler is hydraulically driven into the subsurface soils to retrieve a continuous core of soil, with the process repeated for each four (4) feet of advancement. Hand augering will be performed to clear for shallow underground utilities. All downhole equipment and sampling tools will be cleaned prior to use.

Soils retrieved from the borings will be logged by the Professional Geologist utilizing the Unified Soil Classification System, and field screened for petroleum volatiles at a minimum of 2-foot vertical intervals with a pre-calibrated photo-ionization detector (PID). At a minimum, four (4) discrete soil samples will be packaged from each boring and submitted for laboratory analyses. Assuming advancement to 15 feet and no field evidence of impact (i.e., staining or PID reading above background), the planned soil testing interval depths will be 0-5 feet, 5-8 feet, 9-11 feet, and 13-15 feet below grade. In addition, any observations of petroleum staining and/or odor (or elevated PID reading) would result in a specific selection of that zone for testing. Discrete soil samples will be collected in soil-filled acetate liners, and the ends of the liner will be sealed with Teflon sheets and plastic end caps. For volatiles, Terra Core® samples will concurrently be collected for these instances. The process will consist of driving a single-use, dedicated syringe into freshly exposed soil. Soil in the syringe will be extruded into laboratory-supplied, 40-milliliter volatile organic analysis vials (40-mL VOAs), one containing methanol and two (2) containing deionized water. The 40-mL VOAs will then be promptly sealed with Teflon-lined caps. All samples will be labeled and placed in an ice chest for preservation.

The grab groundwater sampling process will first involve retracting the outer GeoProbe™ tube to expose the full saturated zone observed in the logging process, but sealing off shallower, non-saturated zones. After sounding the water column to verify a sufficient quantity of groundwater has entered the boring, a new pre-packed micro-well screen will be inserted down-hole, and then a bailer will be used to collect the groundwater sample. The groundwater sampling and depth-to-water information will be recorded along with soil lithology on the boring log. Each grab groundwater sample will be transferred into laboratory-supplied containers (with appropriate chemical preservative) appropriate for the analytical methods. The sample containers will be labeled with identification information, and placed in an ice chest for preservation.

If subsurface fuel oil piping remains and is accessible for sampling, GEI will collect native soil samples at approximate 20-foot lineal feet spacings along the piping, at a minimum depth of two (2) feet below the piping. The piping soil samples will be collected by first

manually advancing an auger, followed by driving a new metal liner using a metal slide-hammer into the soil. A paired Terra Core® sample will also be collected. Sample handling and labeling will be as described for the Geoprobe soil samples.

If sump(s) are present in the building's underground garage space and contain water at the time of our field investigation, GEI will collect sample(s) of the sump water(s) using new bailer(s) and fill appropriate laboratory-supplied containers. The sample containers will be labeled with identification information, and placed in an ice chest for preservation.

The ice chest(s) containing the samples will be transferred with chain-of-custody documentation to a California-certified analytical laboratory for the ACDEH-required petroleum hydrocarbon analyses corresponding to a heating oil release, as specified below in **Task 4**.

In addition to the five (5) EB borings, GEI will install a temporary soil vapor probe in the front yard area between the former UST and the *Site* building; see VP1 on **Figure 2**. A hand-auger will be utilized to advance an approximately three (3)-inch diameter hole to a target depth of five (5) feet. A one (1)-inch stainless steel vapor screen or implant will be installed at 4.5 feet depth with Teflon® tubing of ¼-inch diameter extending up to the surface, capped with a new Swagelok® plug. The annular space around the vapor screen and bottom tubing will be backfilled with No. 2/12 filter sand in the five (5) to four (4) foot depth interval, followed by bentonite crumbles from 4.0 to 3.5 feet depth. The annular space above the bentonite crumbles will be backfilled up to the grade with a bentonite slurry. A temporary small well box will be installed at grade, with the vapor probe tubing coiled inside the well box.

Soil vapor sampling will be performed a minimum of two (2) days after the VP1 probe installation and follow a process in general accordance with the latest California advisory issued by the Regional Water Quality Control Board (RWQCB), Los Angeles Region and the Department of Toxic Substances Control (DTSC), *Advisory - Active Soil Gas Investigations*, dated April 12, 2012. Specific procedures will commence with removing the Swagelok plug from the sample tubing and connecting a laboratory-supplied soil gas sampling manifold. The manifold will include an upstream vacuum gauge to monitor pressures in the soil vapor probe, a flow regulator set to 167 milliliters-per-minute, and a downstream vacuum gauge to monitor pressure in the sampling Summa canister. The upstream vacuum gauge will be followed by a "T" fitting connected to the one (1)-liter sampling Summa canister, with the other end of the "T" outfitted with a valve to allow for purging with a graduated syringe.

Prior to drawing a vapor sample, a ten (10)-minute vacuum tightness test will be performed on the manifold and connections by applying and monitoring a vacuum (induced using the purge syringe) to the sampling manifold. The sampling Summa canister valve will remain in the closed position. After the gauge vacuum is maintained for ten (10) minutes without any change in pressure, purging can begin. The purging will consist of at least three (3) volumes

of the calculated aggregate interior volumes of the manifold, tubing, and probe. Once purging is complete, sampling will commence by opening the sample Summa canister valve. Immediately upon opening the sampling valve, a shroud will be placed over the atmosphere of the probe and entire sampling train, including all connections. Helium will be utilized as a leak detection compound by introducing the gas into the shroud via a flow regulator set to twenty (20) pounds per square inch (psi).

Vapor sampling will continue until the sample Summa vacuum gauge indicates less than 5-inches of mercury (Hg) remaining. A MGD-2002 multi-gas detector will be utilized to monitor helium inside the shroud via fitting to confirm that helium is present in the atmosphere around the sampling train. If helium is among the analytes detected when the Summa canister vapor sample is analyzed by the laboratory, this may indicate that the sampling train was compromised (short circuited). To formally quantify the shroud atmosphere helium concentration, a confirmation sample will be collected from the shroud utilizing a one liter (1-L) Summa canister and micro flow controller placed inside the shroud during sampling of the probe. Once the vapor sampling is complete, the valve to the sampling Summa will be closed, the manifold disconnected and the sampling Summa sealed with a brass Swagelok cap provided by the laboratory.

The sampling Summa and the helium atmosphere Summa will be transferred with chain-of-custody documentation to a California-certified analytical laboratory for the ACDEH-required analyses as specified below in **Task 4**.

### **TASK 3. BORING GROUTING AND VAPOR POINT DESTRUCTION**

After sampling is complete, all soil borings will be backfilled that day to grade by tremie with neat cement grout per ACDPW/ACDEH requirements. The temporary soil vapor probe will be manually augered out at the end of its need and the resulting hole similarly grouted.

### **TASK 4. LABORATORY ANALYSES**

GEI will direct a California-certified analytical laboratory to analyze the soil samples (including any product pipeline route soil samples), the grab groundwater samples, and the sample(s) of garage sump water (if present) for TPH-d and TPH in the motor oil range (TPH-mo) by EPA Method 8015 (with silica gel preparation), plus benzene, toluene, ethylbenzene, xylenes (BTEX), naphthalene and TPH in the gasoline range (TPH-g) by EPA Method 8260B. In addition, the soil samples will be analyzed for moisture content so that results can be presented on a dry weight basis. GEI understands that the analysis for gasoline additive MTBE (methyl tert-butyl ether) is not required for subject heating fuel oil cases.

GEI will similarly direct a California-certified analytical laboratory to analyze soil vapor sample VP1 for benzene, ethylbenzene and naphthalene by EPA Method TO-15, and for helium, methane and oxygen by ASTM Method D-1946. In addition, the shroud atmosphere



sample will be analyzed for helium by ASTM Method D-1946.

All laboratory analyses will be completed within published analytical method hold times.

#### **TASK 5. INVESTIGATION-DERIVED WASTE**

Excess soil and all other wastes generated in this investigation work will be placed in a single Department of Transportation (DOT) approved drum(s). The drum(s) will be labeled appropriately and placed for temporary safe storage at the *Site*. The drum contents will be characterized and transported for proper off-site disposal shortly after receipt of the analytical data.

#### **TASK 6. REPORTING**

GEI will prepare a report including field activities conducted, data result table(s), evaluation of site-specific and vicinity (nearby water supply wells and surface water bodies) LTCP factors, a conceptual site model (CSM), conclusions, and recommendations regarding case closure under LTCP provisions. Laboratory reports, boring logs and IDW disposal documentation will be provided as appendices of the report. The report will be provided to the ACDEH electronically, and uploaded to the California Geotracker database.

#### **SCHEDULE**

GEI will implement this work plan and issue a report within forty-five (45) days of ACDEH's approval of the work plan.

Respectfully,

**DRAFT**

Eric Lautenbach  
Senior Environmental Engineer, CE #42437

cc: Marion Brown, Anderson Yazdi Hwang Minton + Horn, 350 Primrose Road,  
Burlingame, CA 94010



*Work Plan for Subsurface Investigation  
2510 Central Avenue, Alameda, California*

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## **FIGURES**



Figure 1  
Vicinity Map







<b>Legend:</b>	<b>Notes:</b>
<ul style="list-style-type: none"> <li> Soil sample location (GGTR, 2017)</li> <li> Proposed exploration and sampling boring, EB-1 to EB-5 (GEI)</li> <li> Proposed vapor probe, VP-1 (GEI)</li> </ul>	<p>Approximate location of site features and sample locations.</p>



Drawing Name:	Site Plan
Address:	2510 Central Avenue Alameda, California

Drawn by:	KA
Date:	01/17/2018
Scale:	1" = 20'-0"
Job #	M171247
Figure #	2

**DRAFT**



*Work Plan for Subsurface Investigation  
2510 Central Avenue, Alameda, California*

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## **APPENDIX I**



Site Health and Safety Plan  
for  
Subsurface Investigation  
at

2510 Central Avenue, Alameda, CA

January 17, 2018

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Attachment I – Site Map and Directions to Medical Facility

Attachment II – Chemical Hazards

Attachment III – Activity Hazards and Controls

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## I. Introduction

This Health & Safety Plan (HASP) addresses requirements set forth in 8 CCR 5192 and applies to Green Environment inc. (GEI) and subcontractor field activities, including, but not limited to: hand-augering; Geo-Probe drilling; soil sampling; grab groundwater sampling; and soil-vapor probe installation and sampling.

For detailed information regarding proposed field activities, refer to the *Work Plan*.

The HASP provides policies and procedures for performing work at the Central Avenue site in Alameda, Alameda County, California. A site location map is included as **Attachment I**.

### Site Background and Potential Chemicals of Concern

One 750-gallon underground storage tank was removed from this residential site in June 2017. The tank was used for home heating oil. One soil sample from the tank grave was reported to contain Total Petroleum Hydrocarbons as diesel (TPHd) at 29 milligrams per kilogram (mg/kg).

Groundwater infiltrating into the tank excavation was sampled; the water was reported to contain 480 milligrams per liter (mg/L) of TPHd and 2.9 micrograms per liter (ug/L) xylenes.

A review of site health and safety issues and the scope of work for this project will be conducted with all site personnel on the first day of field activities. Subsequent briefings will be provided on an as needed basis. A copy of this Site Health & Safety Plan (HASP) will be available on site.

The Site Safety Officer is:

Name: Paul Studemeister  
Title: Senior Geologist  
Mobile: **(650) 575-5460**

When this plan refers to the Site Safety Officer (SSO), it also means the SSO's designated representative.

GEI's Corporate Safety Officer is:

Name: Ellen Ackerman  
Title: Vice President, Green Environment inc.  
Mobile: **(650) 799-6651**





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## II. Hazard Assessments

Based upon a review of the site history, the hazardous substances detailed in Section I may be encountered during subsurface activities at the site:

See **Attachments II and III** for details on the hazards of these substances.

### Project-Specific Hazards

Activity hazard analysis (AHA) sheets are presented in **Attachment IV** for project-specific activities.

In order to ensure the safety of GEI personnel and subcontractors while performing work, an exclusion zone will be set up utilizing orange safety cones and caution tape as needed. Personnel working inside the exclusion zone will be required to wear bright colored clothing and/or safety vests to increase visibility.

## III. Safety Requirements

Safety is of paramount concern. Every precaution should be taken to avoid injury and to protect the environment. Project specific hazards are addressed in the AHAs presented in **Attachment IV**.

### General Safety Practices

No work by GEI or its subcontractor may proceed without the presence of the GEI SSO or his delegate.

Before activities begin, the location of underground utilities and overhead obstructions will be identified by the SSO. Underground utilities will be marked appropriately by Underground Storage Alert (USA) and by a private utility locator contracted by GEI.

During site activities, smoking, open flames or other sources of ignition are prohibited within 50 feet of the boring locations.

Whenever possible, workers should position themselves upwind of the site.

Eating, drinking, chewing gum and tobacco, and any other activities that increase the possibility of hand-to-mouth ingestion of contaminants are prohibited within 50 feet of each work area.



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Hands must be washed when leaving the work area and before eating and drinking.

Loose clothing and jewelry are at risk of being caught in machinery and should be avoided.

Contact with contaminated surfaces is to be avoided. All soil borings, soils, water and other sampling materials will be collected in approved containers and held in a secure location for future disposal.

The number of persons involved with operations is to be kept to a minimum. Observers should stand a safe distance upwind of the site.

Workers will not enter excavations five (5) feet or greater in depth unless the excavation is protected from cave-ins, or the excavation is made entirely in stable rock<sup>1</sup>. Design of protective systems will conform to the requirements of California Code of Regulations Title 8, section 1541.1.

Respiratory protection from dust particles is not required unless the 8-hour time-weighted average exposure exceeds 15 milligrams per cubic meter (mg/m<sup>3</sup>). It is not anticipated that this work will generate dust at that level. (Workers required to wear tight-fitting respirators to mitigate dust exposures must be medically cleared, fit-tested and trained. Workers may voluntarily wear filtering facepiece-type respirators [dust masks] upon review of CCR8, §5144).

If significant visible dust emissions are observed, the excavation will be watered to reduce emissions.

Excavations will be protected if left open overnight.

Access to the site will be controlled to ensure unauthorized personnel are not present in the work areas.

Non-disposable safety equipment will be decontaminated prior to leaving the site. Materials collected during site activities will be (temporarily) stored in an approved container, labeled, and stored in a secure location on site.

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<sup>1</sup> As per CCR8 §1541.1(a)(1)

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## Personal Protective Equipment

At a minimum, all field operations require Modified Level D personal protective equipment (PPE), as follows:

- Safety shoes
- Nitrile gloves when contacting impacted soil or groundwater
- Safety glasses
- Hearing protection when necessary
- Hard hats when in proximity to a drill rig or heavy equipment.

GEI will be responsible for providing appropriate PPE and safety equipment to GEI employees. Subcontractors will be responsible for providing appropriate PPE and safety equipment to their employees.

## Air Monitoring

A photo-ionization detector (PID) or similar portable field gas analyzer will be available for monitoring air space conditions during the work. If elevated PID readings are obtained, then the SSO and field staff will stop work, re-assess the safety conditions of the project, and upgrade safety provisions as needed before continuing the work. **If volatile concentrations exceed 50 parts per million consistently over a one minute period, half-mask organic vapor cartridge respirators will be required for workers in the affected area, who will need to have the OSHA required medical clearance, fit testing and training to wear a respirator.**

## IV. Emergencies

The designated medical facility is:

**Alameda Hospital**  
2070 Clinton Avenue  
Alameda, CA

**510-522-3700**

A cellular phone will be located at the work site.

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Before site operations commence, the SSO will make any necessary contact with medical personnel and public safety representatives to inform them of the nature of the work and of potential emergencies and chemicals that may be encountered during site activities. **(Not required for this project)**

The fastest transportation route to the nearest medical facility is provided on the Site Map (attached), which will be available on site.

In the event of a fire, explosion, physical injury, or illness due to site work activities, the following actions should be undertaken immediately:

1. If necessary and safe to do so, remove the injured person(s) upwind and out of the danger area.
2. Render first aid and decontaminate the person(s) if necessary and can be done safely.
3. Evacuate the area.
4. Notify the SSO. The SSO will be responsible for required agency notifications.

**Emergency Contact Numbers:**

Ambulance (Paramedics)	911
Alameda Fire Department	911
California Office of Emergency Services	(800) 852-7550
Chemtrec (HazMat Emergency)	(800) 424-9300
National Response Center	(800) 424-8802
Poison Control Center	(800) 662-9886
USA – Underground Utilities	(800) 227-2600
Alameda County Environmental Health	(510) 567-6700

## V. Training

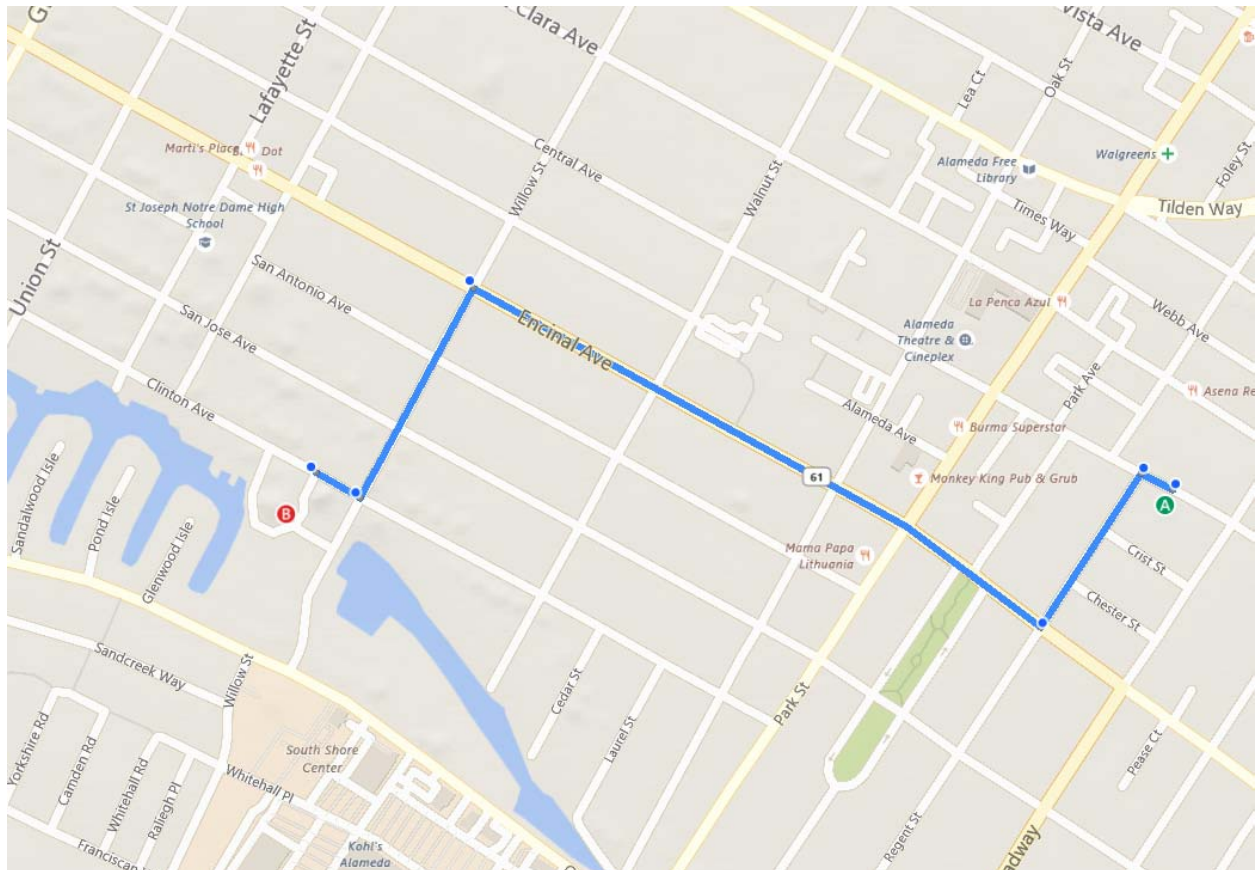
All primary contractor and subcontractor workers must have received the following training prior to commencing site activities:

1. HazComm: 8CCR 5194
2. IIPP: 8CCR 3203/8 CCR 1509

Employee training records are maintained for a minimum of three years in the office of GEI or the subcontractor(s).



**Attachment I**  
**Site Location Map**  
**&**  
**Directions to Alameda Hospital**



Summary: 1 mile (5 minutes)

- Head northwest on Central Ave.
- Turn left onto Regent St.
- Turn right onto Encinal Ave.
- Turn left onto Willow St.
- Turn right onto Clinton Ave.
- Hospital is on left



### Attachment II – Chemical Hazards

Name	CAS #	Boiling pt	OSHA PEL	IDLH	Properties	Symptoms	1st aid
Petroleum hydrocarbons-diesel	68334-30-5	3568-7168 F	not established (ACGIH TLV = 100 mg/m <sup>3</sup> )	not established	Clear yellow brown combustible liquid; floats on water	Irritation of eyes, skin, respiratory tract; dizziness, headache, nausea; chemical pneumonitis (from aspiration of liquid); dry, red skin; irritant contact dermatitis; eye redness, pain.	For skin contact, wash affected areas with soap immediately. For ingestion, rinse mouth and get medical attention. If inhaled, get to fresh air and rest. For eye contact, rinse with plenty of water for several minutes and remove contact lenses if easily possible.
Xylene	1330-20-7	281.3° F	150 ppm STEL 100 ppm TWA	not established	Colorless liquid, sweet pungent aromatic hydrocarbon	Irritation of eyes, skin-watering, redness. Breathing high concentrations can cause irregular heartbeats which may be fatal. Repeated or prolonged overexposure to solvents can cause brain or other nervous system damage. The symptoms can include the loss of memory, the loss of intellectual capacity and the loss of coordination. Repeated or prolonged overexposure to certain chemicals in this product may exacerbate the hearing loss effects associated with noise exposure.	For skin contact, wash affected areas with soap immediately. For ingestion, rinse mouth and get medical attention. If inhaled, get to fresh air and rest. For eye contact, rinse with plenty of water for several minutes and remove contact lenses if easily possible.
Naphthalene	91-20-3	424° F	10 ppm	250 ppm	Colorless to brown solid with an odor of mothballs	Irritation eyes; headache, confusion, excitement, malaise (vague feeling of discomfort); nausea, vomiting, abdominal pain; irritation bladder; profuse sweating; jaundice; hematuria (blood in the urine), renal shutdown; dermatitis, optical neuritis, corneal damage*	Eyes: First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.  Skin: Rinse skin with plenty of water or shower.  Inhalation: Fresh air, rest. Refer for medical attention

Site Health & Safety Plan  
2510 Central Avenue, Alameda, CA

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### Attachment III – Activity Hazards and Controls

### Drilling and Sampling

Task	Hazards	Hazard Controls	PPE
Set up drill/GeoProbe rig and job site	<ul style="list-style-type: none"> <li>- Overhead hazards: trees, power lines, building structures.</li> <li>- Tripping hazards: hoses, tools, equipment, etc.</li> <li>- Underground utilities</li> </ul>	<ul style="list-style-type: none"> <li>- Equipment operator and GEI SSO to survey site prior to operating heavy equipment. Never move rig when mast is up.</li> <li>- Good housekeeping, maintain clear walkways and awareness of job site</li> <li>- USA and private utility locator to mark utilities prior to beginning of work. Hand auger to be used to a depth of 5 ft bts if there is any uncertainty or perceived risk.</li> </ul>	Modified Level D <sup>2</sup>
General activities	<ul style="list-style-type: none"> <li>- Injury to hearing from noise</li> <li>- Miscommunications due to noise</li> <li>- Traffic hazards in parking area</li> </ul>	<ul style="list-style-type: none"> <li>- Ear plugs or protective ear muffs to be worn by all personnel near heavy equipment in operation</li> <li>- Review of standard hand signals during PTSP meeting</li> <li>- Safety zone to be set up prior to any work, using orange safety cones and caution tape</li> </ul>	Modified Level D
Drilling/GeoProbe activities	<ul style="list-style-type: none"> <li>- Moving parts of machinery</li> <li>- Heavy equipment</li> <li>- High pressure hoses</li> <li>- Injury from rods if not stored properly</li> </ul>	<ul style="list-style-type: none"> <li>- Avoid moving parts of machinery. Use proper tools to aid with connecting/disconnecting rods. Wear leather or equivalent work gloves. Avoid pinch points.</li> <li>- Use proper lifting techniques (use your legs, not your back). Get help from someone if an item is too heavy to lift alone.</li> <li>- Keep out of the way of high pressure hoses. Never attempt to grab a hose until the liquid supply has been shut off.</li> <li>- Store rods on rack or well away from work area. Wear steel toed boots to protect against falling or dropped rods.</li> <li>- Access to the site will be controlled to ensure unauthorized personnel are not present in the work areas</li> </ul>	Modified Level D
Clean-up and movement of drill/GeoProbe rig equipment	<ul style="list-style-type: none"> <li>- Injury to personnel not operating rig</li> <li>- Striking objects on the ground or overhead</li> </ul>	<ul style="list-style-type: none"> <li>- Check that vehicle backup alarm and emergency shut off are in proper working order.</li> <li>- Use a spotter to maneuver the rig in parking area.</li> <li>- Never move a rig with the mast up; lower mast prior to movement.</li> </ul>	Modified Level D

<sup>2</sup> Modified Level D PPE includes: steel toed safety boots, hard hat, hearing protection, safety glasses, nitrile gloves and/or work gloves, long pants, high visibility shirt or vest.

Site Health & Safety Plan  
 2510 Central Avenue, Alameda, CA

Task	Hazards	Hazard Controls	PPE
Soil/water/soil vapor sample collection	<ul style="list-style-type: none"> <li>- Skin contact with potentially contaminated soils/water</li> <li>- Skin or eye contact with sample preservatives</li> </ul>	<ul style="list-style-type: none"> <li>- Wear proper PPE, including nitrile gloves and safety glasses.</li> <li>- Minimize contact with soils/water during transfer to sample containers</li> <li>- Use caution when picking up and opening sample containers; confirm there has not been a leak of preservative during shipping</li> <li>- Adjust flow rate to reduce risk of splashing/spattering of groundwater</li> <li>- If contact occurs, rinse the area with plenty of water and notify the SSO.</li> </ul>	Modified Level D
Sample management	<ul style="list-style-type: none"> <li>- Heavy lifting of coolers full of ice and samples</li> </ul>	<ul style="list-style-type: none"> <li>- Use proper lifting techniques (legs not back). Ask for help if an item is too heavy for one person.</li> </ul>	Modified Level D
All activities	<ul style="list-style-type: none"> <li>- Slips, trips, and falls</li> <li>- Potential inhalation of hazardous chemicals</li> </ul>	<ul style="list-style-type: none"> <li>- Maintain good housekeeping at all times</li> <li>- Watch your step, avoid rushing and work methodically</li> <li>- If rainy/icy conditions, exercise extra caution when walking and/or driving</li> <li>- Regularly monitor the breathing zone of personnel using a photo ionization detector. If action levels are exceeded, notify the SSO and have all personnel evacuate the area until it is deemed safe. Employ engineering controls and/or upgrade PPE to prevent inhalation hazard.</li> </ul>	Modified Level D
All activities	Biological hazards: cold/heat stress	<ul style="list-style-type: none"> <li>- Employ the buddy system to monitor for cold/heat stress. Take breaks to get warm/cool as necessary. Drink plenty of fluids.</li> </ul>	Modified Level D

Notes: \_\_\_\_\_

\_\_\_\_\_