SES
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October 12, 2011

Mr. Jerry Wickham
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

SITE: ALAMEDA ISLANDER MOTEL
2428 CENTRAL AVENUE
ALAMEDA, CALIFORNIA

RE: RISK MANAGEMENT PLAN

Dear Mr. Wickham:

On behalf of the City of Alameda Housing Development, Strategic Engineering and Science, Inc. (SES) is submitting this Risk Management Plan for the Alameda Islander Motel located at 2428 Central Avenue in Alameda, California (Site). The purpose of this document is to provide a summary of Site conditions and potential human health risks and to outline protocols to be used to provide protection for workers in the event of future construction or excavation activities. Additionally, this document will provide a sampling and analysis plan for the elevator area located on the Site.

In addition, I, Lisa Motoyama, the Site representative, declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

If you have any questions regarding this document, please contact Mark Trevor at (510) 451-1761 or Brian Saliman at (415) 297-2258.

Sincerely,

Mark Trevor, P.G.
Senior Project Geologist
Strategic Engineering & Science, Inc.

Lisa Motoyama
Director
Housing Development.

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RISK MANAGEMENT PLAN

ALAMEDA ISLANDER MOTEL

2428 CENTRAL AVENUE

ALAMEDA, CA

October 19, 2011

Prepared for:

CITY OF ALAMEDA HOUSING DEVELOPMENT

Prepared by:

STRATEGIC ENGINEERING & SCIENCE, INC.

110 11th Street - 2nd Floor

Oakland, CA 94607

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1.0 INTRODUCTION

On behalf of the City of Alameda Housing Development, Strategic Engineering and Science, Inc. (SES) is pleased to submit this Risk Management Plan for the Alameda Islander Motel located at 2428 Central Avenue in Alameda, California (Site) (Figure 1). The purpose of this document is to provide a summary of Site conditions and potential human health risks and to outline protocols to be used to provide protection for workers in the event of future construction or excavation activities. Additionally, this document will provide a sampling and analysis plan for the elevator area located on the Site.

2.0 BACKGROUND

The Site is located on the southern corner of the intersection of Central and Park Avenues in the City of Alameda, California. A multistory motel and office building currently occupy the Site (Figure 2). Properties to the north and east are developed for commercial uses. A residential neighborhood is situated to the west and south.

According to previous reports, a Chevron service station operated at the Site from 1947 until 1970. The station facilities were abandoned on January 27, 1970. One 7,500 gallon and three 3,000 gallon underground storage tanks (USTs) were removed from the Site along with the associated product piping. Confirmation soil samples were not collected at the time of the removal of the Site USTs and station abandonment. The Site was then leased to the post office from early 1970 until Chevron sold the Site to Stahl Wooldridge Construction Company in February 1971.

In 1973, a multi-story motel was constructed at the Site. The main motel structure consists of a three-story building constructed above an at-grade parking garage. The rear auxiliary building is a single-story structure constructed at grade. A concrete-paved parking lot is present between the two structures. An aged hydroelectric elevator is present at the northwestern corner of the main motel building.

In June 1993, two soil borings (EB-1 and EB-2) were advanced near the former dispenser island and former UST pit, respectively (Figure 2). Groundwater was encountered at approximately 10 feet below grade (fbg). Soil samples collected from borings EB-1 and EB-2 at 5 fbg did not contain detectable concentrations of Total Petroleum Hydrocarbons as gasoline (TPH-G), Total Petroleum Hydrocarbons as diesel (TPH-D), or benzene, toluene, ethylbenzene, and xylenes (BTEX) at the following detection limits:

- TPH-G/TPH-D: 0.05 mg/kg
- BTEX: 0.0005 mg/kg

The soil sample collected from boring EB-1 at 10 fbg contained 211 milligrams per kilogram (mg/kg) of TPH-D and 7.94 mg/kg of benzene. The grab groundwater sample

collected from boring EB-1 contained 27,870 micrograms per liter (µg/l) of TPH-D and 1,782 µg/l of benzene. The grab groundwater sample collected from EB-2 did not contain detectable concentrations of TPH-G, TPH-D, or BTEX at the following detection limits:

- TPH-G/TPH-D: 50 µg/L
- BTEX: 0.5 µg/L

Groundwater monitoring wells MW-1 through MW-3 were installed in April 1994. Monitoring well locations are presented on Figure 2. Groundwater was encountered at approximately 7 fbg. Soil samples collected from borings MW-1 through MW-3 at 5 fbg and MW-3 at 10 fbg did not contain detectable concentrations of TPH-G, TPH-D, or BTEX. The soil sample collected from MW-1 at 10 fbg contained TPH-G (1,300 mg/kg) and TPH-D (3,000 mg/kg). The soil sample collected from boring MW-2 at 10 fbg contained detectable concentrations of TPH-G (3,000 mg/kg), TPH-D (340 mg/kg) and benzene (8 mg/kg). However, these soil samples were collected from below the static groundwater elevation at the time of installation. The groundwater sample collected from well MW-1 contained detectable concentrations of TPH-G (7,400 µg/l), TPH-D (840 µg/l), and benzene (120 µg/l). The groundwater sample collected from well MW-2 contained detectable concentrations of TPH-G (6,400 µg/l) and TPH-D (920 µg/l). The laboratory concluded that the TPH-D chromatogram pattern was indicative of weathered gasoline, not diesel. According to Gettler Ryan, as stated in their April 18, 1997 *Risk Based Corrective Action Report*, based on available records Chevron never distributed diesel at this Site. TPH-G, TPH-D, or BTEX were not detected in groundwater sample collected from MW-3.

Three offsite groundwater wells (MW-4, MW-5, and MW-6) were installed in August 1996. Monitoring well locations are presented on Figure 2. Groundwater was encountered at 7.5 fbg. Soil samples collected from borings MW-4 through MW-6 did not contain detectable concentrations of TPH-G, TPH-D, BTEX, or methyl tert butyl ether (MTBE). Groundwater samples collected from the newly installed wells did not contain TPH-G, TPH-D, BTEX, or MTBE compounds.

Quarterly groundwater monitoring and sampling was initiated at the Site in March 1994 and continued through September 1998. ORC was introduced into monitoring wells MW-1 and MW-2 on May 21, 1998. The introduction of ORC was to enhance natural attenuation processes in and around these wells. The effects of the remediation were not evaluated beyond the final monitoring and sampling event in September of that year. No further information was available.

During the last monitoring and sampling event (September 26, 1998), the groundwater sample collected from MW-1 contained TPH-G (1,400 µg/l), benzene (75 µg/l), ethylbenzene (1.1 µg/l), and total xylenes (2.2 µg/l). Groundwater samples collected from MW-2 contained detectable concentrations of TPH-G (610 µg/l), benzene (18 µg/l), toluene (0.58 µg/l), total xylenes (1.1 µg/l), and MTBE (10 µg/l). Hydrocarbons

were not detected in monitoring wells MW-3 through MW-6 during the monitoring and sampling program.

In 1999, Gettler Ryan Inc. prepared a Risk Management Plan which included several risk management measures for the Site.

In 2001, the six monitoring wells associated with the Site were abandoned by pressure grouting. A "Fuel Leak Site Case Closure" letter for the Site was issued by the Alameda County Health Care Services Agency on December 27, 2001, which accepted the risk management measures proposed by Gettler Ryan, Inc.

3.0 CURRENT SITE CONDITIONS

In July 2011, SES conducted additional site characterization activities. The work was performed in accordance with the SES workplan dated June 17, 2011 and the Alameda County Environmental Health Services approval latter dated June 20, 2011. The scope of work for the additional site characterization activities included the following:

- Completion of eight (8) direct-push soil borings to depths ranging from 15 to 20 feet below grade (fbg). Grab groundwater samples were collected from all eight soil borings. Two soil samples were collected from five borings. Groundwater and soil samples were submitted to a state-certified laboratory for analysis;

- Collection of soil gas samples at six (6) locations in proposed new development area and near former USTs and dispenser island; and

The subsequent *Additional Site Characterization Report*, dated August 9, 2011, presented the following findings and conclusions:

1. Groundwater beneath the northern portion of the Site contains naphthalene, TPH and diesel concentrations in excess of ESL's. However, impacted groundwater does not pose a risk to Site residents or workers because receptors or complete exposure pathways are not present. Figure 4 shows groundwater sampling locations and select analytical results. Tables 2A and 2B present groundwater analytical results.

2. The groundwater contamination plume is contained and not migrating downgradient. Although the plume does extend beyond the Site boundaries, the distance is less than 100 foot and the plume has remained stable.

3. Soil beneath the Site is, in some locations, impacted with TPH and diesel, but the contamination is limited to 10 feet below the surface. Site residents and workers under normal operations should not be exposed to the impacted soil. Figure 3 shows soil sampling locations and select analytical results. Table 1 presents soil analytical results.

4. Based on risk analysis and site testing, soil vapor does not pose a health risk for current or future Site residents. Although some soil vapor results underneath the existing hotel were not acceptable, valid results were obtained in both locations where future slab-on-grade buildings have been proposed. In those locations, soil vapor concentrations did not exceed CHHSL's. In locations where the samples were unacceptable (i.e. the garage), there is no complete exposure pathway for soil vapor intrusion even if contaminated shallow soil vapor was present. The shallow soil is covered by concrete, which in turn is overlain by an open-air garage. Additionally, the groundwater in those areas does not indicate a significant presence of benzene, the primary contributor for soil vapor contamination. Figure 5 shows soil gas sampling locations and select analytical results. Table 3 presents soil gas analytical results.

Alameda County Environmental Health accepted the above findings in a letter dated August 31, 2011.

4.0 SUMMARY OF POTENTIAL HUMAN HEALTH RISKS

Possible scenarios associated with public health and safety concerns which may arise at the Site include:

- Construction workers engaged in subsurface piping or soil excavation work could be exposed to hydrocarbon impacted soil if excavations exceed 2 feet below grade surface;
- Construction workers engaged in subsurface piping or soil excavation work could be exposed to hydrocarbon impacted groundwater if excavations intersect the water table;
- Construction dewatering could take place at or near the Site. Untreated groundwater could be inadvertently discharged to the public water ways;
- If construction excavations are deep enough to intersect the water table, atmospheric conditions could create a situation where workers are exposed to vapor phase hydrocarbons, or the mixture of air and vapor phase hydrocarbons could reach the lower explosive limit;
- Saturated soil excavated from the Site as a result of construction activities could be used as fill for landscaping. Workers and residents could be exposed to the soil and/or vapor from the impacted soil;
- A groundwater extraction well could be installed at the Site. Residents at the Site could be exposed to untreated groundwater or the well could act as a conduit to a deeper groundwater supply.

5.0 RISK MANAGEMENT PROCEDURES

Due to the potential that impacted soil and groundwater 10 or more feet below the surface could pose a risk to future Site workers during excavation activities, the Alameda County Environmental Health Services (ACEHS) has required the preparation

of the following Risk Management Plan for future construction and/or excavation activities at the Site.

5.1 General Site Requirements

5.1.1 Covenant and Environmental Restriction on Property

A Covenant and Environmental Restriction on the Property will be necessary to prevent potential future exposure to residual contamination remaining in portions of the Site. The Covenant shall be prepared and completed upon ACEHS approval of this Risk Management Plan.

5.1.2 General Site Restrictions

The following general Site restrictions shall remain in place at the Site:

- Soils shall not be disturbed without prior notification to the ACEHS.
- Groundwater from beneath the Site shall not be used for any purpose unless approved by the ACEHS.
- No wells shall be installed at the Site unless approved by the ACEHS.

5.2 Pre-Construction Requirements

5.2.1 Notification

The ACEHS shall be notified and apprised of all construction plans before any general construction activities take place at the Site where soil and/or groundwater might be handled. Approval of all construction plans shall be obtained from the ACEHS.

5.2.2 Site Specific Health and Safety Plan

The General Contractor has overall responsibility for health and safety at the site including all subcontractors performing the on-Site construction work. A health and safety plan is provided in Appendix A. The General Contractor therefore must have all subcontractors performing soil disturbing activities adhere to the general safety guidelines outlines in the health and safety plan provided in Appendix A and incorporate said health and safety plan into their existing health and safety program.

The Site-specific HSP provided in Appendix A includes the following elements:

- Hazard assessment and control measures (chemical and physical hazards)
- Air Monitoring
- Personal protective equipment
- Site access
- Work areas
- Equipment and personnel decontamination

- General safe work practices
- Emergency response plan
- Training

5.3 Contingency Plan

It is possible that subsurface features of environmental concern may remain at the Site. These features may include impacted soils and/or structures such as underground storage tanks and associated piping. Evidence of impacted soils can include discoloration, staining, and/or chemical odors.

In the event that unknown features of environmental concern are discovered during construction activities, the following actions shall be taken:

- Work will stop in that area immediately, the area will be secured, and the situation evaluated.
- Any contractor who encounters an unknown feature of environmental concern shall notify the Site owners or their designated environmental representative.
- The Site owners or their designated environmental representative will then be responsible for notifying the ACEHS.
- The Site owner or their designated environmental consultant shall then consult with the ACEHS regarding any removal action, additional investigation, etc. required to address the unknown feature of environmental concern.

5.4 Protocol for Excavation/Grading and Management of Excavated Materials

5.4.1 Access Control

Access control measures reduce the possibility that unauthorized personnel gain access to construction areas and come in contact with soil or groundwater that may be contaminated. The construction area should be fenced to prevent pedestrian /vehicular entry except at controlled points. Fences shall be closed and locked during non-construction hours.

5.4.2 Soil Handling Guidelines

Soil that is excavated, graded, or uncovered shall be observed for evidence of potential contamination, as described in Section 5.3. Additionally, excavated soils shall be screened for organic vapors using a photoionization detector (PID).

If excavated soils with evidence of potential chemical contamination are observed, the Site owners and the ACEHS shall be notified and the following protocols shall be followed (in addition to those protocols outlined in Section 5.3):

- The soil shall be placed on and covered with plastic sheeting in a designated stockpile area.
- The soil shall be segregated and stockpiled separately from soil that does not appear to be

contaminated.

- Contaminated soils may also be placed directly in 55-gallon drums or secured roll-off bins.
- Access to the stockpile area should be controlled to prevent unauthorized persons from coming in contact with the soil.

5.4.3 Soil Stockpile Management

Temporary stockpiling of excavated soil may be necessary during construction. Soil stockpiled at the Site will be lightly sprayed with water as needed to minimize dust. To the extent practical, soil stockpiles shall be covered with plastic sheeting.

5.4.4 Dust Control

Dust may be generated by Site construction activities. When earthwork activities occur, dust control measures shall be implemented to minimize dust generation. The following dust control measures shall be followed:

- Spray water on exposed soils at least twice daily.
- Cover all trucks hauling soil or other loose materials.
- Inspect all paved areas daily and sweep as necessary.
- Sweep streets if visible soil is carried onto adjacent public streets.
- Cover exposed soil or stockpiles and secure with fencing.

5.4.5 Air Monitoring

The atmosphere in trenches and/or excavations at the Site deeper than 2 feet below grade surface shall be monitored for VOCs using a PID and for an explosive atmosphere. Monitoring shall occur in the morning prior to work beginning and periodically throughout the work day, during excavation activities. Records of all air monitoring shall be kept onsite. Conditions under which work shall stop and mitigation measures take place shall be considered in the Site Health and Safety Plan.

5.4.6 Construction Dewatering Management Procedures

If it is determined that construction activities require dewatering, the ACEHS shall be notified and apprised of the proposed dewatering plan. At a minimum, the following risk management measures shall be implemented:

- Conduct preliminary estimates of the amount of water that will need to be removed for the specific activity.
- Water generated during dewatering activities shall be pumped into holding tanks pending sampling and analysis.
- If concentrations of contaminants of concern are detected above regulatory thresholds, the water shall be disposed of appropriately offsite.

5.4.7 Equipment Decontamination

If soils are encountered during construction activities that are deemed to contain contaminants of concern, construction equipment shall be cleaned prior to working at other areas of the Site or leaving the Site. All such equipment shall be cleaned using water. For large equipment, a temporary cleaning area will be set up for collecting and containerizing wash water. Cleaning water shall be sampled prior to proper disposal.

If vehicles are exposed to contaminated soils, cleaning procedures will include removing loose soil from the vehicle exterior with brooms or brushes. Soils not removed by brushing should be removed with the use of water.

6.0 SAMPLING AND ANALYSIS PLAN – ELEVATOR AREA

During Site redevelopment activities, it is anticipated that the elevator area and underlying soils will be exposed for visual inspection and sampling. The following section describes the sampling and analysis plan for the area.

6.1 Pre-Field Activities

A health and safety plan that promotes personnel safety and preparedness during the planned activities will be developed prior to the commencement of field activities. The health and safety plan will follow the example contained in Appendix A.

On the morning of the day that the field activities are to commence, a "tailgate" safety meeting will be conducted with applicable field workers to discuss the health and safety issues and concerns related to the specific work.

6.2 Elevator Area Sampling Activities

During Site redevelopment activities, up to 10 soil samples will be collected from depths of 0.5 fbg and 4 fbg, at five locations from the exposed underlying soils of the elevator area. Soil sampling locations will be based on field observations of the exposed soils. Soil samples will be collected using a stainless steel hand auger and slide hammer. The hand auger will be used to advance the "boring" hole to the approximate desired sample depth. A 1.5-inch diameter stainless steel or brass sample tube will then be placed into the slide hammer, and advanced into the soil for sample collection. Upon retrieval of the samples, the tube will be sealed with Teflon sheeting and polyurethane caps, and properly documented and stored pending analysis, as described in Section 6.3.

All samples will be submitted to a state-certified laboratory, however, only the shallowest sample from each location will be analyzed. The deeper samples will be kept on hold pending the results of the shallow samples. If contaminants of interest are detected in the shallower samples above CHHSLs for residential land use, the deeper samples will then be analyzed.

6.3 Soil Analysis

Select soil samples from the soil borings will be submitted to a State-certified laboratory for analysis. The selected samples will be properly preserved and transported to the laboratory under appropriate chain-of-custody protocol.

The laboratory will analyze the selected soil samples for the following constituents:

- Volatile Organic Compounds (VOCs) using EPA Method 8260B full-scan;
- TPH as gasoline (EPA 8015)
- TPH as diesel (EPA 8015)
- Polychlorinated biphenyls (PCBs) (EPA Method 8082)

Data collected during soil sampling activities will be evaluated by comparing soil constituent concentrations to California Human Health Screening Levels (CHHSLs) for Residential Soil. Screening criteria will be included with data summarized in tables contained within the summary report.

6.4 Summary Report

A report summarizing sampling activities will be prepared and will include the following elements:

- Site map showing sampling locations
- Description of field work performed
- Tabulated results of soil sample analyses and copies of laboratory reports
- Evaluation of findings
- Recommendations for future action

TABLES

Table 1

Summary of Soil Sample Analytical Results

2428 Central Avenue

Alameda, California

Sample Designation	Date	Sample Depth (fbg)	TPH-G (mg/kg)	TPH-D (mg/kg)	VOCs (mg/kg)	Isopropyl Benzene (mg/kg)	n-propylbenzene (mg/kg)
SB-2	07/07/11	5.0	ND<0.017	ND<0.76	ND	ND<0.0012	ND<0.0014
SB-2	07/07/11	10.0	ND<0.017	ND<0.76	ND	ND<0.0012	ND<0.0014
SB-3	07/06/11	5.0	ND<0.017	ND<0.76	ND	ND<0.0012	ND<0.0014
SB-3	07/06/11	11.0	ND<0.017	ND<0.76	ND	ND<0.0012	ND<0.0014
SB-4	07/08/11	5.0	ND<0.017	ND<0.76	ND	ND<0.0012	ND<0.0014
SB-4	07/08/11	10.0	ND<0.017	ND<0.76	ND	ND<0.0012	ND<0.0014
SB-5	07/06/11	5.0	ND<0.017	ND<0.76	ND	ND<0.0012	ND<0.0014
SB-5	07/06/11	10.5	1,700	28	ND	6.6	8.3
SB-8	07/07/11	5.0	ND<0.017	ND<0.76	ND	ND<0.0012	ND<0.0014
SB-8	07/07/11	10.0	180	180	ND	ND<0.12	ND<0.14
Residential CHHSLs			**NE**	**NE**	**NA**	**NE**	**NE**

Notes:

— = not analyzed
fbg = feet below grade
mg/kg = milligrams per kilogram
ND = not detected at or above laboratory detection limits
ug/kg = micrograms per kilogram
CHHSLs = California Human Health Screening Levels in Evaluation of Contaminated Properties, January 2005/September 2009
NE = not established
NA = not applicable
TPH-G = Total petroleum hydrocarbons as gasoline
TPH-D = Total petroleum hydrocarbons as diesel
VOCs = Volatile organic compounds

Table 2A
Summary of Groundwater Analytical Results - VOCs
2428 Central Avenue
Alameda, California

Sample Designation	Date	Methylene Chloride (ug/L)	Benzene (ug/L)	Ethyl Benzene (ug/L)	1,1,1,2-Tetrachloroethane (ug/L)	m,p-Xylene (ug/L)	o-Xylene (ug/L)	Isopropyl Benzene (ug/L)	1,1,2,2-Tetrachloroethane (ug/L)	n-Propylbenzene (ug/L)	1,3,5-Trimethylbenzene (ug/L)	4-Chlorotoluene (ug/L)	tert-Butylbenzene (ug/L)	1,2,4-Trimethylbenzene (ug/L)	p-Isopropyltoluene (ug/L)	n-Butylbenzene (ug/L)	Naphthalene (ug/L)	VOCs (ug/L)
SB-1	07/08/11	ND<0.21	ND<0.4	ND<0.18	ND<0.12	ND<0.24	ND<0.15	ND<0.34	ND<0.30	ND<0.35	ND<0.24	ND<0.39	ND<0.34	ND<0.39	ND<0.29	ND<0.38	ND<0.68	ND
SB-2	07/07/11	ND<0.21	ND<0.41	ND<0.19	ND<0.12	ND<0.24	ND<0.16	ND<0.34	ND<0.31	ND<0.36	ND<0.24	ND<0.4	ND<0.35	ND<0.4	ND<0.3	ND<0.39	ND<0.7	ND
SB-3	07/06/11	ND<0.39	ND<0.74	7.9	ND<0.22	0.56J	0.29J	40	0.59J	110	7.3	2.7	5.0	42	1.6	13	**130**	ND
SB-4	07/08/11	ND<0.19	ND<0.37	ND<0.17	ND<0.11	ND<0.22	ND<0.14	ND<0.31	ND<0.28	ND<0.33	ND<0.22	ND<0.36	ND<0.32	ND<0.36	ND<0.27	ND<0.35	ND<0.63	ND
SB-5	07/07/11	ND<0.29	2.1	ND<0.25	ND<0.16	ND<0.33	ND<0.21	56	ND<0.42	55	ND<0.33	ND<0.53	ND<0.47	ND<0.54	ND<0.40	2.5	14	ND
SB-6	07/08/11	ND<0.19	ND<0.37	0.62	ND<0.11	ND<0.22	ND<0.14	47	ND<0.28	32	ND<0.22	ND<0.36	0.67	ND<0.36	ND<0.27	1.5	23	ND
SB-7	07/08/11	0.25J	ND<0.41	ND<0.19	ND<0.12	ND<0.24	ND<0.16	1.8	1.0	1.4	ND<0.24	ND<0.4	ND<0.35	ND<0.4	ND<0.3	ND<0.39	ND<0.7	ND
SB-8	07/07/11	ND<0.23	ND<0.44	ND<0.20	ND<0.13	ND<0.27	ND<0.17	23	ND<0.34	26	ND<0.27	ND<0.43	ND<0.38	ND<0.44	2.8	4.2	**24**	ND
ESLs		**2,200**	**46**	**43**	**930**	**100**	**100**	**NE**	**190**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**24**	**NA**

Notes:

— = not analyzed
ug/L = micrograms per Liter
ND = not detected at or above laboratory detection limits
VOCs = Volatile Organic Compounds
ESLs = Environmental Screening Levels -
Groundwater is not a current or potential drinking water resource
NE = not established
NA = not applicable
J = J flag indicates an estimated value between the Reporting Limit and Method Detection Limiit

Table 2B

Summary of Groundwater Analytical Results - TPH

2428 Central Avenue

Alameda, California

Sample Designation	Date	TPH-G (ug/L)	TPH-D (ug/L)
SB-1	07/08/11	ND<26	ND<63.2
SB-2	07/07/11	ND<26	ND<49.2
SB-3	07/06/11	**1,800**	**640**
SB-4	07/08/11	ND<24	ND<52.4
SB-5	07/07/11	**1,500**	**530**
SB-6	07/08/11	**440**	ND<53.2
SB-7	07/08/11	74	ND<60.4
SB-8	07/07/11	**1,000**	ND<57.6
	ESLs	**210**	**210**

Notes:

— = not analyzed
ug/L = micrograms per liter
ND = not detected at or above laboratory detection limits
TPH-G = Total Petroleum Hydrocarbons as gasoline
TPH-D = Total Petroleum Hydrocarbons as diesel
ESLs = Environmental Screening Levels - Groundwater is not a current or potential drinking water resource
NE = not established
NA = not applicable

Table 3
Summary of Soil Gas Analytical Results
2428 Central Avenue
Alameda, California

Sample Designation	Date	Dichloro difluoro methane (ug/m3)	Chloro methane (ug/m3)	Chloro ethane (ug/m3)	Trichloro monofluoro methane (ug/m3)	Methylene Chloride (ug/m3)	Freon 113 (ug/m3)	Chloroform (ug/m3)	1,2-Dichloro ethane (EDC) (ug/m3)	1,1,1-Trichloro ethane (ug/m3)	Trichloro ethylene (ug/m3)	Tetrachloro ethylene (ug/m3)	1,1,2,2-Tetrachloroe thane (ug/m3)	1,4-Dichloro benzene (ug/m3)	Toluene (ug/m3)	m,p-Xylene (ug/m3)	o-Xylene (ug/m3)	Benzene (ug/m3)	Ethyl benzene (ug/m3)	Isopropyl Alcohol (ug/m3)	TPH-G (ug/m3)
SG-1	07/08/11	0.42	ND<0.0088	ND<0.0021	0.174	ND<0.015	0.25	0.172	ND<0.0050	ND<0.0083	0.070	0.79	ND<0.0090	ND<0.0056	2.2	12	4.5	0.14	2.2	ND<0.016	330
SG-2	07/07/11	0.41	0.19	0.016	0.0560	ND<0.015	0.25	ND<0.0081	ND<0.0050	ND<0.0083	ND<0.011	1.3	0.00690	ND<0.0056	22	89	30	0.60	23	ND<1.6	690
SG-3	07/07/11	0.38	0.13	0.018	ND<0.012	0.091	0.20	ND<0.0081	ND<0.0050	0.0275	ND<0.011	7.1	ND<0.0023	ND<0.0056	1.0	1.6	0.58	0.27	0.39	4.5	ND<240
SG-4	07/08/11	0.36	ND<0.0088	ND<0.0021	ND<0.012	0.11	0.21	ND<0.0081	0.0205	0.330	0.22	52	ND<0.0023	0.078	0.55	1.3	0.42	ND<0.034	0.26	ND<0.016	ND<230
SG-5	07/07/11	0.31	0.038	ND<0.0021	ND<0.012	0.084	0.15	ND<0.0081	ND<0.0050	ND<0.0083	0.032	1.7	ND<0.0023	ND<0.0056	0.24	0.19	0.065	0.083	0.039	22,000	11,000
SG-6	07/07/11	0.35	0.15	0.013	0.0840	0.070	0.21	ND<0.0081	ND<0.0050	ND<0.0083	ND<0.011	1.6	ND<0.0023	ND<0.0056	0.77	0.98	0.35	0.15	0.24	280	540
Residential CHHSLs		**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**49.6**	**991,000**	**528**	**180**	**NE**	**NE**	**135,000**	**319,000**	**315,000**	**36.2**	**NE**	**NE**	**NE**

Notes:

— = not analyzed
ug/m3 = micrograms per cubic meter
ND = not detected at or above laboratory detection limits
CHHSLs = California Human Health Screening Levels in Evaluation of Contaminated Properties, January 2005/September 2009
NE = not established
NA = not applicable

FIGURES

NOT TO SCALE

Vicinity Map
2428 Central Avenue
Alameda, California

Figure 1	05/24/11	SES

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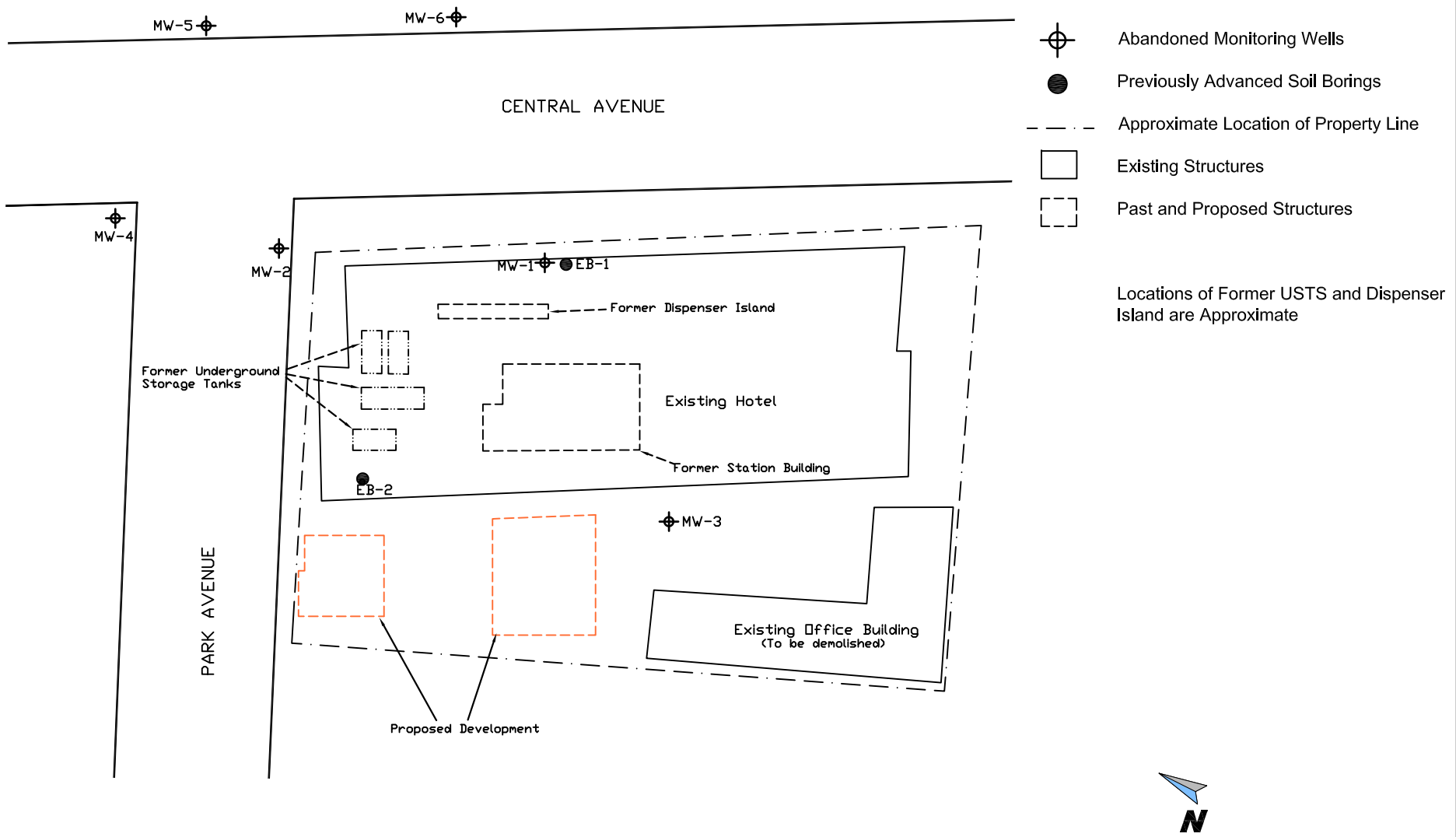

Site Plan Showing Abandoned Wells & Soil Borings

2428 Central Avenue
ALAMEDA, CALIFORNIA

Figure 2	06/16/11	SES STRATEGIC ENGINEERING & SCIENCE

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N

LEGEND

- Approximate Location of Property Line
- Ground Water/Soil Sample Locations
- Existing Structures
- Past and Proposed Structures

Locations of Former USTS and Dispenser Island are Approximate

SB-5@5.0'	
TPH-G	ND<0.017
TPH-D	ND<0.76
MTBE	ND<0.0026
BENZENE	ND<0.0015
TOLUENE	ND<0.00098
ETHYLBENZENE	ND<0.00086
O-XYLENE	ND<0.00066
M,P-XYLENE	ND<0.0019

SB-5@10.5'	
TPH-G	1,700mg/Kg
TPH-D	28mg/Kg
MTBE	ND<1.3
BENZENE	ND<0.75
TOLUENE	ND<0.49
ETHYLBENZENE	ND<0.43
O-XYLENE	ND<0.33
M,P-XYLENE	ND<0.93

SB-8@5.0'	
TPH-G	ND<0.017
TPH-D	ND<0.76
MTBE	ND<0.0026
BENZENE	ND<0.0015
TOLUENE	ND<0.00098
ETHYLBENZENE	ND<0.00086
O-XYLENE	ND<0.00066
M,P-XYLENE	ND<0.0019

SB-4@5.0'	
TPH-G	ND<0.017
TPH-D	ND<0.76
MTBE	ND<0.0026
BENZENE	ND<0.0015
TOLUENE	ND<0.00098
ETHYLBENZENE	ND<0.00086
O-XYLENE	ND<0.00066
M,P-XYLENE	ND<0.0019

SB-8@10.0'	
TPH-G	180mg/Kg
TPH-D	180mg/Kg
MTBE	ND<0.260
BENZENE	ND<0.150
TOLUENE	ND<0.098
ETHYLBENZENE	ND<0.086
O-XYLENE	ND<0.066
M,P-XYLENE	ND<0.190

SB-4@10.0'	
TPH-G	ND<0.017
TPH-D	ND<0.76
MTBE	ND<0.0026
BENZENE	ND<0.0015
TOLUENE	ND<0.00098
ETHYLBENZENE	ND<0.00086
O-XYLENE	ND<0.00066
M,P-XYLENE	ND<0.0019

SB-3@11'	
TPH-G	ND<0.017
TPH-D	ND<0.76
MTBE	ND<0.0026
BENZENE	ND<0.0015
TOLUENE	ND<0.00098
ETHYLBENZENE	ND<0.00086
O-XYLENE	ND<0.00066
M,P-XYLENE	ND<0.0019

CENTRAL AVENUE

PARK AVENUE

SB-8

SB-5

SB-4

SB-3

SB-2

Former Dispenser Island

Former Underground Storage Tanks

Existing Hotel

Former Station Building

Existing Office Building (To be demolished)

Proposed Development

SB-2@5'	
TPH-G	ND<0.017
TPH-D	ND<0.76
MTBE	ND<0.0026
BENZENE	ND<0.0015
TOLUENE	ND<0.00098
ETHYLBENZENE	ND<0.00086
O-XYLENE	ND<0.00066
M,P-XYLENE	ND<0.0019

SB-2@10'	
TPH-G	ND<0.017
TPH-D	ND<0.76
MTBE	ND<0.0026
BENZENE	ND<0.0015
TOLUENE	ND<0.00098
ETHYLBENZENE	ND<0.00086
O-XYLENE	ND<0.00066
M,P-XYLENE	ND<0.0019

SB-3@5'	
TPH-G	ND<0.017
TPH-D	ND<0.76
MTBE	ND<0.0026
BENZENE	ND<0.0015
TOLUENE	ND<0.00098
ETHYLBENZENE	ND<0.00086
O-XYLENE	ND<0.00066
M,P-XYLENE	ND<0.0019

APPROXIMATE GRAPHICAL SCALE (FEET)

0 40 80

California Human Health Screening Levels in Evaluation of Contaminated Properties, January 2005/September 2009(CHHSL's)

Total Petroleum Hydeocarbons as Gasoline (TPH-G)	NE
Total Petroleum Hydeocarbons as Diesel (TPH-D)	NE
MTBE	NE
Benzene	NE
Toluene	NE
EthylBenzene	NE
m,p-Xylene	NE
o-Xylene	NE

NE=Not Established

Site Plan Showing 2011 Investigation Soil Sampling Locations & Selected Analytical Results

2428 Central Avenue

ALAMEDA, CALIFORNIA

Figure 3	06/16/11	SES STRATEGIC ENGINEERING & SCIENCE

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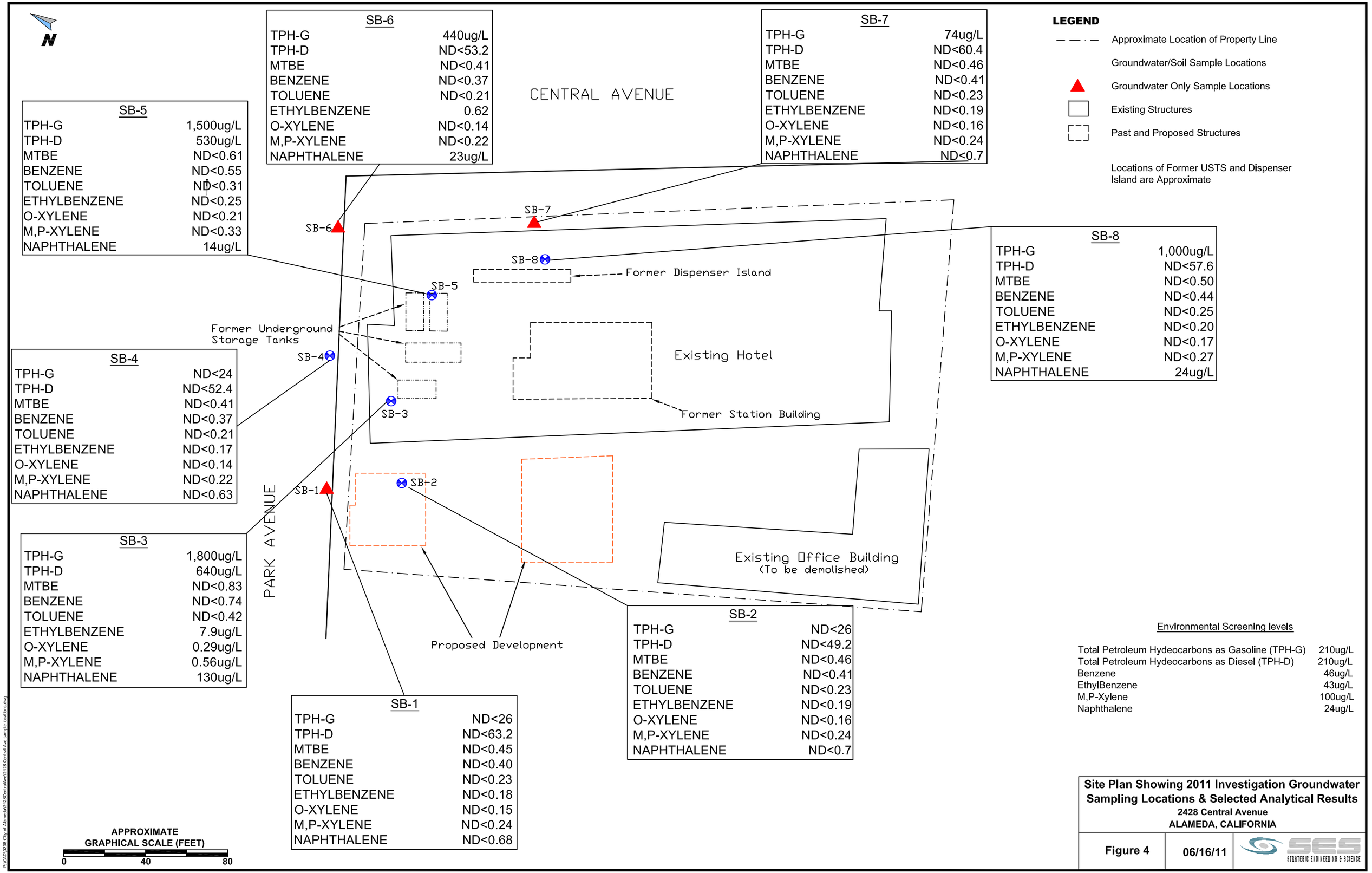

SB-6	
TPH-G	440ug/L
TPH-D	ND<53.2
MTBE	ND<0.41
BENZENE	ND<0.37
TOLUENE	ND<0.21
ETHYLBENZENE	0.62
O-XYLENE	ND<0.14
M,P-XYLENE	ND<0.22
NAPHTHALENE	23ug/L

SB-7	
TPH-G	74ug/L
TPH-D	ND<60.4
MTBE	ND<0.46
BENZENE	ND<0.41
TOLUENE	ND<0.23
ETHYLBENZENE	ND<0.19
O-XYLENE	ND<0.16
M,P-XYLENE	ND<0.24
NAPHTHALENE	ND<0.7

SB-5	
TPH-G	1,500ug/L
TPH-D	530ug/L
MTBE	ND<0.61
BENZENE	ND<0.55
TOLUENE	ND<0.31
ETHYLBENZENE	ND<0.25
O-XYLENE	ND<0.21
M,P-XYLENE	ND<0.33
NAPHTHALENE	14ug/L

SB-8	
TPH-G	1,000ug/L
TPH-D	ND<57.6
MTBE	ND<0.50
BENZENE	ND<0.44
TOLUENE	ND<0.25
ETHYLBENZENE	ND<0.20
O-XYLENE	ND<0.17
M,P-XYLENE	ND<0.27
NAPHTHALENE	24ug/L

SB-4	
TPH-G	ND<24
TPH-D	ND<52.4
MTBE	ND<0.41
BENZENE	ND<0.37
TOLUENE	ND<0.21
ETHYLBENZENE	ND<0.17
O-XYLENE	ND<0.14
M,P-XYLENE	ND<0.22
NAPHTHALENE	ND<0.63

SB-3	
TPH-G	1,800ug/L
TPH-D	640ug/L
MTBE	ND<0.83
BENZENE	ND<0.74
TOLUENE	ND<0.42
ETHYLBENZENE	7.9ug/L
O-XYLENE	0.29ug/L
M,P-XYLENE	0.56ug/L
NAPHTHALENE	130ug/L

SB-1	
TPH-G	ND<26
TPH-D	ND<63.2
MTBE	ND<0.45
BENZENE	ND<0.40
TOLUENE	ND<0.23
ETHYLBENZENE	ND<0.18
O-XYLENE	ND<0.15
M,P-XYLENE	ND<0.24
NAPHTHALENE	ND<0.68

SB-2	
TPH-G	ND<26
TPH-D	ND<49.2
MTBE	ND<0.46
BENZENE	ND<0.41
TOLUENE	ND<0.23
ETHYLBENZENE	ND<0.19
O-XYLENE	ND<0.16
M,P-XYLENE	ND<0.24
NAPHTHALENE	ND<0.7

Environmental Screening levels

Total Petroleum Hydeocarbons as Gasoline (TPH-G)	210ug/L
Total Petroleum Hydeocarbons as Diesel (TPH-D)	210ug/L
Benzene	46ug/L
EthylBenzene	43ug/L
M,P-Xylene	100ug/L
Naphthalene	24ug/L

Site Plan Showing 2011 Investigation Groundwater Sampling Locations & Selected Analytical Results
2428 Central Avenue
ALAMEDA, CALIFORNIA

Figure 4 | **06/16/11** | SES STRATEGIC ENGINEERING & SCIENCE

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N

CENTRAL AVENUE

PARK AVENUE

LEGEND

- Approximate Location of Property Line
- Soil Gas Subsurface Sample Locations
- Existing Structures
- Past and Proposed Structures

Locations of Former USTS and Dispenser Island are Approximate

Former Dispenser Island

Former Underground Storage Tanks

Existing Hotel

Former Station Building

Existing Office Building (To be demolished)

Proposed Development

SG-1

SG-2

SG-3

SG-4

SG-5

SG-6

SG-5	
TPH-G	11,000ug/m³
ISOPROPYL ALCOHOL	22,000ug/m³
MTBE	ND<0.0062
BENZENE	0.083ug/m³
TOLUENE	0.24ug/m³
ETHYLBENZENE	0.039ug/m³
O-XYLENE	0.065ug/m³
M,P-XYLENE	0.19ug/m³

SG-6	
TPH-G	540ug/m³
ISOPROPYL ALCOHOL	280ug/m³
MTBE	ND<0.0062
BENZENE	0.15ug/m³
TOLUENE	0.77ug/m³
ETHYLBENZENE	0.24ug/m³
O-XYLENE	0.35ug/m³
M,P-XYLENE	0.98ug/m³

SG-4	
TPH-G	ND<230
ISOPROPYL ALCOHOL	ND<0.016
MTBE	ND<0.0062
BENZENE	ND<0.034
TOLUENE	0.55ug/m³
ETHYLBENZENE	0.26ug/m³
O-XYLENE	0.42ug/m³
M,P-XYLENE	1.3ug/m³

SG-1	
TPH-G	330ug/m³
ISOPROPYL ALCOHOL	ND<0.016
MTBE	ND<0.0062
BENZENE	0.14ug/m³
TOLUENE	2.2ug/m³
ETHYLBENZENE	2.2ug/m³
O-XYLENE	4.5ug/m³
M,P-XYLENE	12ug/m³

SG-2	
TPH-G	690ug/m³
ISOPROPYL ALCOHOL	ND<1.6
MTBE	ND<0.0062
BENZENE	0.60ug/m³
TOLUENE	22ug/m³
ETHYLBENZENE	23ug/m³
O-XYLENE	30ug/m³
M,P-XYLENE	89ug/m³

SG-3	
TPH-G	ND<240
ISOPROPYL ALCOHOL	4.5ug/m³
MTBE	ND<0.0062
BENZENE	0.27ug/m³
TOLUENE	1.0ug/m³
ETHYLBENZENE	0.39ug/m³
O-XYLENE	0.58ug/m³
M,P-XYLENE	1.6ug/m³

California Human Health Screening Levels in Evaluation of Contaminated Properties, January 2005/September 2009(CHHSL's)

Total Petroleum Hydeocarbons as Gasoline (TPH-G)	NE
Isopropyl Alcohol	NE
MTBE	4000ug/m³
Benzene	36.2ug/m³
Toluene	135,000ug/m³
EthylBenzene	NE
m,p-Xylene	319,000ug/m³
o-Xylene	315,000ug/m³

NE=Not Established

APPROXIMATE GRAPHICAL SCALE (FEET)

0 40 80

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Site Plan Showing 2011 Investigation Soil Gas Sampling Locations & Selected Analytical Results

2428 Central Avenue

ALAMEDA, CALIFORNIA

Figure 5	06/16/11	SES STRATEGIC ENGINEERING & SCIENCE

APPENDIX A

HEALTH AND SAFETY PLAN

HEALTH AND SAFETY PLAN

Alameda Islander Motel
2428 Central Avenue
Alameda, California

Prepared for:
Housing Authority of City of Alameda

September 2011

TABLE OF CONTENTS

FIGURES

1.0 INTRODUCTION

This health and safety plan (HSP) was prepared to inform personnel of the potential hazards associated with performing construction activities at the Alameda Islander Motel (Site) located at 2428 Central Avenue in Alameda, California. The HSP addresses potential occupational safety and health hazards and specifies hazard control measures for personnel performing excavation and trenching activities that involve potential exposure to contaminated groundwater or soil. The primary objective of this HSP is to provide health and safety procedural guidance for personnel executing field assignments at the site.

Per Cal/OSHA requirements, each contractor working at this Site must prepare a health and safety plan that addresses the safety and health hazards of each phase of Site operations and includes the requirements and procedures for employee protection. The plan must be kept on-Site. This HSP can be used by the contractors for guidance. Each contractor is solely responsible for the health and safety of their own employees. All contractors performing construction activities must submit their own health and safety plans to the Alameda County Environmental Health Services (ACEHS) for review and approval prior to commencement of field activities. Prior to conducting work on-Site, project management and field staff must be familiar with the contents of the HSP.

If additional contamination is encountered and/or suspected, the contractor's Site Safety Officer (SSO) and ACEHS must be notified immediately and work in the area of the additional contamination must be stopped until appropriate actions can be taken.

1.1 Site and Work Description

The Site is located on the southern corner of the intersection of Central and Park Avenues in the City of Alameda, California. A multistory motel and office building currently occupy the Site (Figure 2). Properties to the north and east are developed for commercial uses. A residential neighborhood is situated to the west and south.

The main purpose of this HSP is to inform personnel of the potential hazards associated with general construction activities and to minimize exposure to potential Site contaminants. Future Site construction activities may include the excavation of impacted soil, the potential dewatering of excavated areas, the transportation of the contaminated materials to an appropriate off-site facility for disposal, and the placement of imported replacement soil and/or concrete surfacing work.

1.2 Site Contamination

Previous investigations at the Site identified petroleum hydrocarbons impacted soil and groundwater 10 or more feet below the surface. Construction workers engaged in subsurface piping or soil excavation work could be exposed to hydrocarbon impacted groundwater and/or soil if excavations intersect the water table.

2.0 SAFETY RESPONSIBILITIES

The following are other key personnel and contact information for the City of Alameda Housing Development, the ACEHS, and SES:

City of Alameda Housing Development	ACEHS	SES
TBD	TBD	Mr. Mohammad Bazargani, Project Manager
TBD	TBD	(510) 451-1761

The contractor (TBD) performing the construction activities must appoint a Site Safety Officer (SSO) for the project who will be responsible for the health and safety of their personnel. The SSO is an individual who is responsible to the employer and has the authority, training, experience, and knowledge necessary to implement the Site HSP and verify compliance with applicable safety and health requirements. The contractor SSO has the authority to direct all other personnel regarding site safety issues. This SSO has is responsible for compliance with all applicable federal, state, and local laws and guidelines.

The contractor SSO must verify that all on-Site personnel are qualified, trained, and prepared to implement the HSP and safely perform the planned Site work. The contractors field personnel will be required to indicate in writing that they have read and understand the provisions of the HSP. Safe work practices should be emphasized during safety meetings to be conducted by the SSO and implemented throughout the removal actions.

The general contractors' SSO shall evaluate the effectiveness of their HSP should unanticipated conditions develop during construction activities. As applicable, deficiencies and associated corrective actions must be documented and a written summary evaluation prepared and maintained on Site.

3.0 HAZARD ASSESSMENT AND CONTROL MEASURES

This HSP provides standard operating procedures for personnel involved in activities that may expose them to the COCs during construction activities. Physical hazards also exist. For example, the heavy equipment that will be used to complete some construction activities presents a potential for physical hazards.

3.1 Chemical Hazards

The contaminants of concern (COCs) at the Site that have been documented to occur in soil and groundwater include naphthalene, gasoline, benzene, toluene, ethylbenzene, and xylenes. Site specific hazard identification with regards to inhalation of these contaminants are discussed below.

3.1.1 Naphthalene

Naphthalene is a natural component of fossil fuels such as petroleum and coal. Exposure to naphthalene can cause systemic reactions, including nausea, headache, diaphoresis, fever, anemia, liver damage, vomiting, convulsions, and coma. Exposure can also cause eye irritation, confusion, excitement, malaise, abdominal pain, irritation to the bladder, profuse sweating, jaundice, hematopoietic, renal shutdown, and dermatitis. Poisoning may occur by ingestion of large doses, skin and/or eye contact, inhalation, or skin absorption.

Exposure Limits
Occupational Safety and Health Administration (OSHA) permissible exposure limit (PEL): 10 parts per million (ppm) as an 8-hour Time Weighted Average (TWA).
The National Institute for Occupational Safety and Health (NIOSH) recommended exposure limits (REL): 10 ppm as an 8-hour TWA.

3.1.2 Gasoline

Gasoline is made from processed crude oil and is a pale brown or pink liquid with a strong odor. It evaporates easily, is very flammable and can form explosive mixtures in air. Many adverse health effects of gasoline are due to individual chemicals in gasoline, mainly BTEX, that are present in small amounts. Breathing small amounts of gasoline vapors can lead to nose and throat irritation, headaches, dizziness, nausea, vomiting, confusion and breathing difficulties. Symptoms from swallowing small amounts of gasoline include mouth, throat and stomach irritation, nausea, vomiting, dizziness and headaches. Some effects of skin contact with gasoline include rashes, redness and swelling. Being exposed to large amounts of gasoline can lead to coma or death.

3.1.3 Benzene

Benzene is a colorless, volatile, flammable liquid with an aromatic odor. Short-term health effects that may occur immediately after exposure to benzene include dizziness, lightheadedness, headache, vomiting, and irritation of the eyes, nose and throat. Benzene is a known carcinogen. Other health effects of long-term exposure include damage to the blood-forming organs, enough to cause death (aplastic anemia), and drying and scaling of the skin. Benzene exposure is also associated with chromosomal damage.

Exposure Limits
OSHA PEL: 1 ppm as an 8-hour TWA.
NIOSH REL: 0.1 ppm as an 8-hour TWA.

3.1.4 Toluene

Toluene is a colorless flammable liquid with a sweet, pungent, benzene-like odor. Short-term exposure to low to moderate concentrations of toluene, such as in the workplace, can produce fatigue, confusion, general weakness, drunken actions, memory loss, nausea, and loss of

appetite. Short-term exposure to high concentrations of toluene first results in lightheadedness and euphoria, followed by dizziness, drowsiness, unconsciousness, and, in some cases, death as a result of inability to breathe. Potential effects of long-term exposure to low to moderate concentrations of toluene are uncertain. Longterm exposure to high concentrations is associated with permanent brain damage, and bone marrow damage, causing low blood cell counts. Effects such as impaired speech, vision and hearing, loss of muscle control, and loss of memory and balance have been reported after such exposures.

Exposure Limits
OSHA PEL: 200 ppm as an 8-hour TWA.
NIOSH REL: 100 ppm as an 8-hour TWA.

3.1.5 Ethylbenzene

Ethylbenzene is a colorless liquid that smells like gasoline. Acute exposure to ethylbenzene in humans results in respiratory effects, such as throat irritation and chest constriction, irritation of the eyes, and neurological effects such as dizziness. Chronic exposure to ethylbenzene by inhalation in humans has shown conflicting results regarding its effects on the blood. Animal studies have reported effects on the blood, liver, and kidneys from chronic inhalation exposure to ethylbenzene. Limited information is available on the carcinogenic effects of ethylbenzene in humans.

Exposure Limits
OSHA PEL: 100 ppm as an 8-hour TWA.
NIOSH REL: 100 ppm as a TWA for up to a 10-hour workday and a 40-hour workweek.

3.1.6 Xylenes

Xylenes are flammable liquids and fire hazards. Xylenes can affect human health by being breathed in, being ingested, contacting skin or eyes, or passing through skin. High levels can cause dizziness, passing out, and death. Repeated exposure may damage bone marrow, causing low blood cell count. Xylene exposure may cause problems with memory and concentration, and may damage a developing fetus. Xylenes may also irritate the eyes, nose, and throat. They may cause stomach problems, drowsiness, staggering gait, corneal vacuolization, nausea, vomiting, abdominal pain, dermatitis, lack of coordination, and anorexia.

Exposure Limits
OSHA PEL: 100 ppm as an 8-hour TWA.
NIOSH REL: 100 ppm as a TWA for up to a 10-hour workshift and a 40-hour workweek.

3.2 Physical Hazards

Physical hazards associated with construction activities, such as occupational noise, heavy equipment, heat-related disorders, slips, trips, falls, falling objects, flying debris, electrical

shock, buried utilities, overhead power lines, and excavations, may be present on-Site and can present a greater risk of injury than the COCs in soil or groundwater at the Site. These hazards must be addressed by each contractor's Site-specific HSP. Activities within the scope of this project must comply with all applicable regulations, including Cal/OSHA standards.

3.2.1 Noise Hazards

Noise-generating equipment will be used during field activities. The equipment includes excavators, loaders, trucks, and other noise generating equipment. The noise levels near this type of equipment may exceed 85 dBA. Elevated noise levels could constitute a hearing hazard and interfere with communication. Employers must protect their field personnel from noise levels exceeding 85 dBA and provide appropriate PPE.

3.2.2 Heavy Equipment Hazards

Heavy equipment can pose significant hazards to on-Site employees. Contractors must ensure that motor vehicles and material handling equipment meet the requirements specified in the Department of Industrial Relations, General Industry Safety Orders and Construction Safety Orders (8 CCR Division 1, Chapter 4, Subchapters 4 and 7). The following safe work practices are to be followed during work around heavy equipment.

- Never walk directly behind or to the side of heavy equipment without the operator's knowledge.
- Be aware of the location and operation of heavy equipment; do not assume that the operator is aware of keeping track of your presence.
- While working on-Site, wear reflective/visible safety vests, maintain visual contact with the operator at all times, and remain alert.
- All heavy equipment must be fitted with audible reversing signals as mandated by OSHA.
- Unless a spotter is present to guide the operator, equipment with an obstructed rear view will have an audible alarm that sounds when moving in the reverse direction.
- Establish hand signals with the operator when verbal communication is not possible.
- Whenever excavation or other operations are conducted in tight quarters, the equipment contractor should make provisions for another person to help guide the operator's movements.
- Blades, buckets, and other hydraulic systems will be fully lowered and parking brakes engaged whenever equipment is not in use.
- All non-essential personnel will be kept out of work areas.
- All heavy equipment used at the Site will remain there until excavation is completed. The contractor will be responsible for completely decontaminating equipment in the designated decontamination areas, and all wash water will be collected, contained, and characterized prior to disposal.

3.2.3 Heat Related Hazards

Heat stress can develop with high temperatures and employees must be monitored. The

contractor is responsible for monitoring their workers for signs and symptoms of heat stress. Water must be provided on-Site and the contractor's Site supervisor should be familiar with the early signs of heat related disorders, and appropriate treatment procedures.

The following table summarizes signs and treatment of heat stroke:

Signs and Symptoms:

- Mild heat stress - Decreased energy, slight loss of appetite, nausea, lightheadedness.
- Moderate heat stress - heavy sweating, thirst, faintness, headache, confusion.
- Severe heat stress (heat stroke) - Throbbing headache, confusion, irritability, rapid heartbeat, difficulty breathing, dry skin (no sweating), vomiting, diarrhea.

Treatment:

- Mild and Moderate heat stress - Take to cool place, drink cool (not cold) fluids, remove excess clothing, rest.
- Severe heat stress - Call 911 for an ambulance and get to a cool place, remove excess clothing and rest.
- Adjust work and rest schedules as needed. Establish a work regimen that will provide adequate rest periods for cooling down. This may require additional shifts of workers.
- Provide shelter or shaded areas (77^{o} F is best) to protect personnel during rest periods.
- Maintain worker's body fluids at normal levels to ensure that the cardiovascular system functions adequately. Daily fluid intake must equal the approximate amount of water lost in sweat. Workers are encouraged to drink more than the amount required to satisfy thirst (recommend water and sport drinks, not coffee or soda), because thirst is not an adequate indicator of adequate salt and fluid replacement.
- Remove impermeable protective garments during rest periods.
- Do not assign other tasks to personnel during rest periods.
- Provide cooling devices, when necessary, to aid natural body heat exchange during prolonged work or severe heat exposure. Devices include field showers or hose-down areas and shade tents; as well as cooling jackets, vests, or suits. of adequate salt and fluid replacement.

3.2.4 Slip, Trip, and Fall

Slipping, tripping, and falling are the most common sources of injuries at these types of sites. These injuries can be prevented by proper Site control measures, safe work practices, and by keeping the work area free from obstructions. Tailgate safety briefings should be held by the contractor prior to each day's field activities to identify specific Site locations of concern (slippery surfaces, trenches, or uneven terrain), and to specify work practices and controls necessary to avoid or eliminate the hazards in those areas.

3.2.5 Buried Utilities

The buried utilities at the Site must be identified through Underground Service Alert (USA). If buried utilities, such as natural gas piping, are damaged during grading activities, the area should be immediately evacuated and Emergency 911 should be immediately notified. The contractor's SSO should notify all on-Site employees of the rupture and the area of the release should be evacuated.

3.2.6 Material Handling

Field activities may require some lifting of heavy objects. No one should attempt to lift large, heavy (greater than 50 pounds), or cumbersome objects without assistance. All on-Site employees who are generally called upon to do frequent lifting are to be instructed in proper lifting procedures.

3.2.7 Biological Hazards

The biological hazards that may be encountered include snakes, spiders, and bees. A first aid kit to treat minor skin irritations, stings, and bites must be maintained by the contractor at the Site.

3.2.8 Use of Tools and Equipment

Portable tools and equipment will be used during construction activities. General safety procedures for tool and equipment use are listed below.

- Personnel will use appropriate hand and power tools for the tasks assigned.
- Inspect tools frequently for defects. Damaged or inappropriate tools must not be used.
- Portable electric tools must not be lifted or lowered by means of the power cord.
- Electrical equipment cords should be kept coiled when not in use.
- When electrical equipment is in use, cords should be positioned to avoid being run over by vehicles or equipment.

3.2.9 Pressure Washers

The following procedures will be required when using pressure washers.

- Pressure washing operations will occur only at the designated decontamination locations.
- Only trained and experienced personnel will operate pressure washing equipment.
- Electrical equipment that is being cleaned will be shut off before water is applied.
- Pressure washer operators will wear protective boots, clothing, hearing protection, and face shields or goggles.
- A fire extinguisher will be maintained on each pressure washer unit.

- The pressure washer discharge nozzle will also be pointed away from the operator and other personnel at the site when cleaning is being performed.

4.0 AIR MONITORING

The atmosphere in trenches and/or excavations at the Site deeper than 2 feet below grade surface shall be monitored for VOCs using a photo-ionization detector (PID) and for an explosive atmosphere. The SSO will also be responsible for visual monitoring of excavated soils and dust emissions.

4.1 Visual Monitoring

Excavations shall be observed for evidence of soil staining and/or petroleum hydrocarbon odors. If these conditions are observed, field operations shall be modified to reduce or suppress the emissions. Visual dust monitoring will also be conducted while construction activities occur. Certain dust control measures will be implemented at all times. These control measures include:

- Spray water on exposed soils at least twice daily.
- Cover all trucks hauling soil or other loose materials.
- Inspect all paved areas daily and sweep as necessary.
- Sweep streets if visible soil is carried onto adjacent public streets.
- Cover exposed soil or stockpiles and secure with fencing.

The SSO will observe site conditions to determine if dust is being generated by the construction operations. The standard for instituting additional dust control measures will be visible airborne dust beyond the immediate work zone. When visible airborne dust is observed, the contractor shall institute additional dust control measures.

4.2 Combustible Gas Monitoring

Combustible gas monitoring will be conducted whenever excavation activities occur. Monitoring will be performed in the general work areas to ensure that ambient concentrations are within acceptable ranges. Combustible gas monitoring will also be required before hot work is permitted. The action level for combustible gas readings are exceedences of 20 percent of the lower explosive limit.

If the action level is exceeded in the general work area, operations will be terminated until combustible gas levels are within acceptable ranges.

4.3 VOC Monitoring

Photo-ionization detector (PID) readings will be taken and recorded on each day prior to work beginning and at a minimum of once every hour during work activities. If PID

readings reach 10 ppm in the breathing zone for 5 minutes, half mask respirators with organic vapor cartridges will be required. If PID readings reach 50 ppm in the breathing zone for 5 minutes, work activities will be suspended until the concentration decreases to below 10 ppm.

4.4 Calibration and Recordkeeping

Portable monitoring instruments will be calibrated before use following the manufacturer's recommendations. All calibration data and monitoring results will be recorded on data collection forms or field notebooks.

5.0 PERSONAL PROTECTIVE EQUIPMENT

5.1 General PPE

PPE and clothing are used to isolate individuals from the COCs and physical hazards. Unless otherwise indicated by the results of air monitoring, the minimum level of protection for workers performing construction activities is generally Level D and should include the following:

- Reflective/visible safety vests
- Work gloves
- Steel-toed boots
- Safety glasses, as necessary
- Hard hat, as necessary
- Hearing protection, as necessary
- Work coveralls

5.2 Respiratory Protection Guidelines

Respirators will be provided by the Contractor when such equipment is deemed necessary. The Contractor shall provide respirators which are applicable and suitable for the purpose intended. The employer shall be responsible for the establishment and maintenance of a respiratory protection program.

A medical evaluation is required prior to wearing any respirator, except where emergency escape respirators are provided. A physician shall determine if any health or physical conditions exist which would prohibit a worker from being assigned to an area requiring respiratory protection.

Respirators shall not be worn when conditions prevent a face-piece to face seal. Such conditions as facial hair, scars, wrinkles, facial disease, or other disorders could prevent proper face-piece to face seal.

For the safe use of any respirator, it is essential that the user be properly instructed in its

operation and maintenance. Employees shall be instructed and trained in the proper selection and use of respirators and their limitations. The employee shall use the provided respirator in accordance with instructions and training received. All training shall be documented with records retained in the employee's training files.

6.0 SITE CONTROL

If contaminated soils are encountered, Site control procedures shall be established to control the potential spread of contamination from the Site. The Site must be fenced prior to initiation of remedial activities. Access and egress will be controlled via gates. The gates that provide site access will be locked after working hours. Signs instructing visitors to check in at the project support area should be posted at all entrances to the Site. Access to work areas that are suspected to contain impacted soil must be limited to authorized, trained personnel.

The contractor's SSO should be notified immediately upon the arrival of any visitors. Additionally, visitors will be required to read and indicate in writing their understanding of this HSP. Visitors are expected to comply with all local, state, and federal training regulations and medical surveillance requirements and to provide their own PPE. Visitors failing to adhere to the provisions of this HSP will be asked to leave the Site.

7.0 WORK AREAS

This section provides a brief description of the work areas that will be established for excavation work in contaminated soils. In addition to the areas described below, an evacuation meeting point will be established. The work zones described in this section may be modified by the SSO based on the type of operation to be conducted, potential for exposure to site constituents, and potential for contact with other health and safety hazards.

7.1 Exclusion

The area extending about 100 feet from the excavation in all directions will be considered the exclusion area when work is being conducted in contaminated soils. Specified personnel protective equipment will be required for all personnel in this area while work is being conducted.

7.2 Contamination Reduction

Contamination reduction and equipment cleaning activities will occur at the upwind edge of the exclusion area. Personnel can remove soiled personal protective clothing (gloves, disposable coveralls) at the work area. Equipment can be dry cleaned as necessary using brooms and shovels in between drilling locations. Reusable equipment will be pressure-washed at a designated location. Rinseate from pressure washing operations will be contained for subsequent characterization and disposal.

7.3 Support

If contaminated soils are encountered, a support area will be set up on-Site to provide for administrative and support functions (command post, first-aid station, rest area, drinking facility, etc.) necessary to keep the field activities running smoothly. The contractor shall provide potable water and washing facilities for field personnel in this location as well.

8.0 DECONTAMINATION

If contaminated soils are encountered, equipment will be cleaned before it is removed from the site at the designated cleaning location. Personnel will be expected to practice vigilant personnel hygiene and follow the minimum decontamination procedures described in this section.

8.1 Equipment Cleaning

Equipment that contacts contaminated soils shall be cleaned before it is removed from the Site. The equipment will be cleaned using dry removal methods (shovels, scrapers, brooms) and pressure-washed at a designated location before it is removed from the site. Equipment cleaning water will be temporarily stored and characterized for proper disposal.

8.2 Personal Hygiene

When working with contaminated soils, workers should minimize the amount of dirt or dust on their hands, face, clothing, and shoes. If any of these are visibly soiled, they should be cleaned with water or left at the Site. Footwear with visible accumulations of soil must be cleaned with a brush and/or water. These activities must be performed prior to leaving the decontamination zone

9.0 GENERAL SAFE WORK PRACTICES

Construction work will be conducted following the minimum safety practices described below.

9.1 Safe Work Practices

- Report all unsafe conditions, accidents, and near misses to your supervisor or the project safety coordinator.
- In the event of a fire or emergency condition, notify the SSO immediately.
- When you hear an emergency announcement, stop work and report to the designated meeting point.
- Perform air monitoring for combustible gases whenever working around or in excavations. Do not work in areas that contain combustible gas at concentrations greater than 20 percent of the lower explosive limit,.

- Practice vigilant personal hygiene. Wash your hands before leaving the exclusion area or any other area where hazardous constituents are present before eating, drinking, or smoking
- Use caution when walking on uneven surfaces to prevent slips, trips, and falls.
- Use appropriate hand and power tools for the tasks assigned. Do not use damaged or inappropriate tools and report equipment abnormalities or failures to your supervisor.
- Maintain visual contact with equipment and truck operators when working near this equipment. Be alert to moving vehicles and back-up alarms.
- Equipment will not be serviced until it has been de-energized and the power source locked out.

9.2 Safe Workplace Conditions

- Construction personnel shall be briefed on the contents of this HSP before field work is initiated.
- Multipurpose fire extinguishers, portable eyewash bottles, and spill response equipment will be available within the work areas for emergency use.
- Washing facilities including water, a cleansing agent, and paper towels will be provided.
- Equipment must be kept in good condition and maintained.
- First aid supplies must be available at the work site.
- Emergency numbers and a map with directions to the designated emergency medical facility must be immediately available to field crews during project operations.

10.0 SANITATION

Potable water, toilet, and washing facilities must be provided at the Site in the support area by the contractor in accordance with Title 8 CCR 5192.

11.0 EMERGENCY PROCEDURES

11.1 Relevant First Aid Procedures

Minor injuries, including minor cuts, scrapes, and abrasions should be treated on Site. If an injured person requires further attention, the individual should be immediately transported to the nearest hospital. A map illustrating the route to the nearest emergency medical facility must be present on-Site. *All accidents, without regard to severity, must be reported in writing to the contractor's SSO within 24 hours.* The SSO should also maintain documentation of all accidents.

11.2 Emergency Treatment

When transporting an injured person to a hospital, this HSP must be taken with the injured person to assist medical personnel with diagnosis and treatment.

- In all cases of chemical overexposure, standard procedures are to be followed as outlined below for poison management, first aid, and, if applicable, CPR. The following are four different routes of exposure and their respective first aid/poison management procedures.

- Ingestion: Refer to the material data safety sheets (MSDS) (if construction chemical product, i.e. gasoline) for specific recommendations and/or CALL 911 FOR INSTRUCTIONS.

- Inhalation: Move the person from the contaminated environment. Initiate CPR if necessary. Call, or have someone call, for medical assistance. Refer to the MSDS for additional specific information. If necessary, transport the victim to the nearest hospital as soon as possible.

- Skin Contact: Immediately wash off skin with a large amount of water. Remove any contaminated clothing and rewash skin using soap, if available. Transport the injured person to a medical facility if necessary.

- Eyes: Hold eyelids open and rinse the eyes immediately with copious amounts of water for 15 minutes. If possible, have the person remove his/her contact lenses (if worn). Never permit the eyes to be rubbed. Transport the injured person to a hospital as soon as possible.

11.3 Evacuation Procedures

Various emergencies may warrant a Site evacuation. Although these conditions are not anticipated, they may include fire, explosion, chemical release, or other event that could cause personal injury. If an emergency condition develops, all personnel will be notified via verbal communication. If this occurs, all personnel will exit the work zone immediately via the established exits.

11.4 Emergency Services and Contact Telephone Numbers

In the event of an emergency, the nearest emergency services to the Site are located at the Alameda Hospital at 2070 Clinton Avenue, Alameda, California 94501. A map showing the route to the hospital is presented as Figure A-2. From the Site, head northwest on Central Avenue towards Park Avenue, turn left on Park Street, turn right on Clinton Avenue. The hospital is located on left hand side of Clinton Avenue.

If an injury is serious enough to require ambulance medical transport or the fire department, immediately call 911. For any other information the hospitals contact number is (510) 522-3700.

12.0 DAILY SIGN IN SHEETS

A daily sign-in sheet shall be maintained at the Site for all workers and visitors, and is the responsibility of the contractor.

13.0 SIGNATURES

By signing below, the following individuals verify that they have read and understand this HSP.

Print Name	Signature and Date
Print Name	Signature and Date
Print Name	Signature and Date
Print Name	Signature and Date
Print Name	Signature and Date
Print Name	Signature and Date
Print Name	Signature and Date
Print Name	Signature and Date
Print Name	Signature and Date

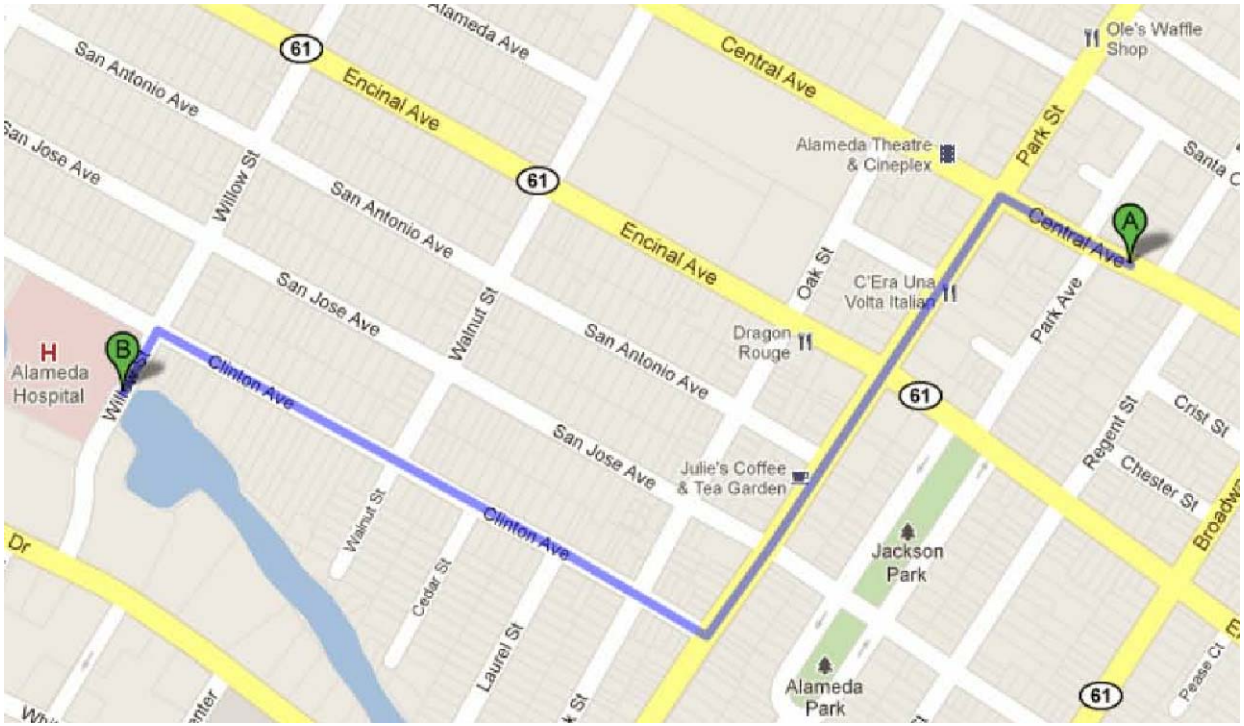
FIGURES

NOT TO SCALE

Vicinity Map
2428 Central Avenue
Alameda, California

Figure A-1	05/24/11	SES

P:\CAD\0208 City of Alameda\2428CentralAve\Fig1_Vicinity_Map.dwg



A 2428 Central Ave, Alameda, CA 94501

1.	Head **northwest** on **Central Ave** toward **Park Ave**	go 0.1 mi total 0.1 mi
2.	Take the 2nd left onto **Park St** About 2 mins	go 0.3 mi total 0.4 mi
3.	Turn right onto **Clinton Ave** About 1 min	go 0.4 mi total 0.8 mi
4.	Turn left onto **Willow St** Destination will be on the right	go 246 ft total 0.9 mi

B **Alameda Hospital: Emergency Room**
2070 Clinton Avenue, Alameda, CA 94501-4399 - (510) 522-3700

Source: Google Maps

Route to Nearest Hospital
2428 Central Avenue
Alameda, California

Figure A-2 | **05/24/11** | SES

P:\CAD\0208 City of Alameda\2428CentralAve\Fig1_Vicinity_Map.dwg