July 26, 2012

Mr. Mark Detterman
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

Re: Kerry & Associates – Palace Garage
14336 Washington Avenue
San Leandro, California
ACEH Case No. RO0000208

Dear Mr. Detterman,

I declare, under penalty of perjury, that the information and/or recommendations contained in the **Feasibility Study / Corrective Action Plan** are true and correct to the best of my knowledge.

Sincerely,

Mr. Jeffrey Kerry

July 24, 2012

Mr. Mark Detterman
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

Re: Feasibility Study/ Corrective Action Plan
Kerry & Associates – Palace Garage
14336 Washington Avenue
San Leandro, California
ACEH Case No. RO0000208
SFRWQCB LUFT Case No. 01-1133

Dear Mr. Detterman:

On behalf of Kerry & Associates, Closure Solutions, Inc. (Closure Solutions) has prepared this *Feasibility Study/Corrective Action Plan* (FS/CAP) for the Palace Garage Site located at 14336 Washington Avenue, San Leandro, California (the Site, Figure 1). This FS/CAP was requested by the Alameda County Environmental Health (ACEH) in a letter dated June 21, 2012 (Attachment A).

1.0 SITE BACKGROUND

1.1 Site Description

The Site is an automotive body repair shop located on Washington Avenue in San Leandro, California. Land use in the vicinity of the property is mixed commercial and residential. ACEH records show that one underground storage tank (UST) existed at the Site at the time of removal in 1991.

1.2 Regional Geology and Hydrogeology

According to the United States Geological Survey (USGS) San Leandro 7.5 Minute Topographic Quadrangle Map (dated 1969, photo revised 1980), Site elevation is approximately 40 feet above mean sea level (msl) (Figure 1). The topography of the Site and surrounding properties are nearly flat with a slight overall slope to the west. Near surface geology is classified as Holocene age alluvial fan and fluvial deposits with a general fining upwards of soil types.

The Site is located within the Santa Clara Valley East Bay Plain Groundwater Basin. An aquifer identified as the Newark Aquifer equivalent is located between approximately 30 and 130 feet below ground surface (bgs). Aquifers of limited extent occur within the equivalent at depths of

less than 50 feet bgs. These aquifers are described as having relatively high vertical resistance to flow. This aquifer equivalent is separated from underlying aquifers by the Yerba Buena Mud, an aquitard comprised of relatively homogenous estuarine mud typically 50 feet in thickness which pinches out eastward towards the Hayward Fault. Groundwater flow in the shallow units generally flows from east to west towards the San Francisco Bay with an average horizontal gradient of 0.002 feet per foot. No surface water bodies have been identified within a 2,000 foot radius of the Site (Closure Solutions, 2008). The San Francisco Bay is located approximately 2.5 miles west of the Site.

1.3 Local Geology

Soils beneath the Site consist of clays, silty clays and clayey silts between near ground surface and approximately 16 feet bgs, poorly graded sands and gravels between approximately 16 and 21 feet bgs, and clays between approximately 21 and 25 feet bgs, the total depth explored. The saturated water bearing zone encountered beneath the Site is considered to be unconfined, with depth to groundwater measured in the existing well network ranging seasonally between 12 to 16 feet bgs. Groundwater flow direction has ranged from west to south-southwest with an average gradient of 0.003 feet per foot (ft/ft).

2.0 SUMMARY OF PREVIOUS ASSESSMENTS

A 550-gallon gasoline underground storage tank (UST) was removed from the Site in 1991. Subsequent investigations included the installation of three monitoring wells (MW-1 through MW-3) and the drilling of 15 borings (B-1 through B-15). Based on data obtained from the wells and borings, impacted unsaturated-zone soil is confined to the area of the former dispenser pad and UST. The primary groundwater flow direction is toward the southwest.

In December 2002, Professional Service Industries, Inc. (PSI) conducted a soil and groundwater investigation to evaluate the lateral extent of petroleum hydrocarbons in the soil and groundwater at the Site. Borings B-16 and B-17 were advanced to between 20 and 24 feet below ground surface (bgs). Boring B-16 was converted into monitoring well MW-4. Concentrations of total petroleum hydrocarbons as gasoline (TPHg) and gasoline related contaminants were detected only in soil from boring B-17 and groundwater from wells MW-1 and MW-2. The locations of the monitoring wells and soil borings are presented on Figure 2.

Closure Solutions conducted a Sensitive Receptor Survey to identify all water supply wells and sensitive receptors within a 2,000-foot radius of the Site. The closest water supply wells are two industrial wells approximately 450 feet northwest (cross-gradient) of the Site. The closest domestic well is approximately 1,500 feet southeast (cross-gradient) of the Site. The closest down-gradient well is an irrigation well approximately 1,400 feet southwest of the Site. No

surface water bodies were identified within a 2,000 foot radius of the Site. Results of the Sensitive Receptor Survey are presented in the *Sensitive Receptor Survey* report dated August 27, 2008.

Closure Solutions prepared and submitted a *Site Conceptual Model* (SCM) dated September 30, 2008 for the Site. The preparation of the SCM was requested by Alameda County Environmental Health (ACEH) in their letter dated September 2, 2008.

In an email dated June 12, 2009, Mr. Steve Plunkett with the ACEH approved the reduction of groundwater monitoring to a Semi-annual basis conducted in second and fourth quarters. Mr. Plunkett also approved the recommendation to eliminate the fuel oxygenates from the suite of laboratory analytes.

On October 15, 2009, Closure Solutions discussed the Site status with ACEH. Data gaps presented in the SCM and other information that ACEH would require for site closure were identified. Closure Solutions submitted the *Soil Vapor Probe and Additional Assessment Work Plan* on November 13, 2009 to address the work necessary to move the Site toward closure.

On May 14, 2010, Closure Solutions submitted a letter to the ACEH stating that Closure Solutions intended to proceed with the proposed scope of work pursuant to CCR Title 23, Division 3, Chapter 16, Section 2722 (e) which states "Implementation of the proposed workplan may begin sixty (60) calendar days after submittal, unless the responsible party is otherwise directed in writing by the regulatory agency". On May 21, 2010, the ACEH responded to Closure Solutions' letter of intent via email explaining that the ACEH has been largely precluded from generating letters on cases due to the work load imposed by SWRCB Resolution 2009-0042 and they will attempt to raise the review interval for the Site.

On July 26, 2010, a representative from Closure Solutions was on site to oversee the installation and sampling of three temporary soil vapor probes (SV-1 through SV-3) and advancement of one down-gradient soil boring (SB-18). A *Soil Vapor Testing and Additional Assessment Report* describing field activities and discussing analytical soil and soil vapor results was submitted to the ACEH on August 30, 2010.

On January 24, 2012, Closure Solutions supervised the advancement of two soil borings, collection of additional soil and groundwater data, and installation of wells MW-5 and MW-6. The work was completed in order undertake further corrective actions at the site. Collected soil and groundwater samples were analyzed for gasoline range organics (GRO), benzene, toluene, ethylbenzene, and xylenes (BTEX constituents). Additionally, bio-attenuation parameters were analyzed for groundwater collected from well MW-5. A discussion of analytical results is

presented in the *Groundwater Monitoring Well Installation Report* submitted on March 30, 2012.

After completing the monitoring well installation a dual-phase extraction (DPE) pilot test was performed from February 21 through 25, 2012. The pilot test was conducted to evaluate whether DPE would be a viable technology to remediate soil and groundwater beneath the Site. High groundwater extraction rates were encountered during pilot testing conducted from MW-1. As a result subsurface soils could not be effectively dewatered to allow remediation via vapor extraction. Pilot testing from well MW-6, produced average groundwater extraction rates that were roughly two-thirds less than those observed during testing from MW-1. Subsequently, the technology was successful in lowering the groundwater table in the vicinity of well MW-6 and exposing the capillary fringe or "smear" zone. Based on the results of testing performed from MW-6, DPE appears to be a viable option for Site remediation.

Closure Solutions continues to conduct groundwater monitoring and sampling on a semi-annual basis during second and fourth quarters.

3.0 CURRENT SITE CONDITIONS

Clayey soils with low hydraulic conductivity and effective porosity have been identified from near ground surface to approximately 12 feet bgs with the first water bearing zone located from approximately 12 to 20 feet bgs. Groundwater elevations appear to fluctuate seasonally between approximately 13 and 16 feet bgs. A review of the last six years of groundwater monitoring data suggests the fine-grained soils present beneath the Site may be restricting the vertical movement of petroleum hydrocarbon constituents. The approximate lateral extent of TPHg/GRO impacted soil is illustrated on Figure 2.

As noted in a letter from the ACEH dated May 18, 2011, during periods of high groundwater elevation, reported concentrations of dissolved petroleum constituents in the vicinity of the source area (monitoring well MW-1) are greater than during periods of low groundwater elevation, suggesting loading of dissolved petroleum hydrocarbons to groundwater. Approximately six months following a period of high groundwater elevation, concentrations in down-gradient well MW-2 undergo an increase; however the reported concentrations are an order of magnitude lower. Concentrations in recently installed well MW-5, located down-gradient from well MW-2, have been below laboratory reporting limits for all constituents analyzed. The available analytical data suggest that the groundwater plume is defined in the down-gradient direction by MW-5 and the source area remains in the vicinity of MW-1 and MW-6.

The closest water supply wells identified are two industrial supply wells approximately 450 feet northwest (up-gradient) of the Site. The closest drinking water well is approximately 1,500 feet southeast (cross-gradient) of the Site, and the closest down-gradient well is an irrigation well approximately 1,400 feet southwest of the Site. No surface water bodies have been identified within a 2,000-foot radius of the Site. Closure Solutions, based on available data, believes that it is unlikely that the petroleum hydrocarbon contamination detected at the Site presents a significant threat to nearby sensitive receptors.

3.1 Site Specific Remediation Goals

On December 8, 1995, Mr. Walter Pettit (Executive Officer, State Water Resources Control Board [SWRCB]) issued an advisory to all Regional Water Quality Control Boards indicating that oversight agencies should proceed aggressively to close low risk cases. Based on the recently adopted 2011 *Low-Threat UST Closure Policy*, conditions at the Site do not qualify for closure due to elevated concentrations of petroleum hydrocarbons identified during previous assessment activities. The following corrective action objectives are proposed to maintain beneficial uses of groundwater resources and to protect human health.

3.1.1 Soil Remedial Objectives

A summary of soil results compared to environmental screening levels (ESLs) from the *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater - Interim Final- November 2007 (revised May 2008)* prepared by the SFRWQCB are presented in the following table.

Chemicals of Potential Concern in Shallow Soil and Environmental Screening Levels

Detected Analyte	Highest Reported Concentration	Shallow Soil Residential ESL	Shallow Soil Commercial ESL
TPHg/GRO	4,700 mg/kg	100 mg/kg	180 mg/kg
Benzene	22 mg/kg	0.12 mg/kg	0.27 mg/kg
Toluene	160 mg/kg	9.3 mg/kg	9.3 mg/kg
Ethylbenzene	89 mg/kg	2.3 mg/kg	4.7 mg/kg
Xylenes	480 mg/kg	11 mg/kg	11 mg/kg
MTBE	<10 mg/kg	8.4 mg/kg	8.4 mg/kg

Table B (SFRWQCB 2008), ESL, shallow soils groundwater not current or potential drinking water source.

As identified in the above table, concentrations of GRO and BTEX compounds are present at the Site a concentrations above the environmental screening levels for shallow soil for a residential and commercial land use. While MTBE is below the laboratory reporting limit, the reporting limit is greater than the ESL. To be conservative, Closure Solutions considers MTBE concentrations in soil to be equal to the reporting limit. The remedial objective for soil is to reduce residual hydrocarbon concentrations that may serve as a significant secondary source and prevent public exposure to the impacted soils within technical and economic constraints. Therefore remedial alternatives will be reviewed to address the impacted soil remaining on the Site.

3.1.2 Groundwater Remedial Objectives

During the groundwater monitoring and sampling event on May 9, 2012 (First Semi-Annual Event 2012), groundwater was found to be impacted with GRO and BTEX constituents. The following table presents the contaminant concentrations found during the First Semi Annual Event 2012, as well as the water quality objectives for each constituent.

For the purposes of this FS/CAP, Closure Solutions considers the Water Quality Objective for constituents of concern to be the Primary MCL or secondary MCL, if established. If a primary MCL has not been established, the San Francisco RWQCB's environmental screening level (ESL) is used. Constituents that do not exhibit concentrations above the Water Quality Objectives are not considered to be constituents of concern.

Contaminant	Current Concentration	Water Quality Objective	Water Quality Objective Basis
TPHg/GRO	34,000 ug/L	100 ug/L	SFRWQCB Environmental Screening Level
Benzene	190 ug/L	1.0 ug/L	California Primary MCL
Toluene	310 ug/L	150 ug/L	California Primary MCL
Ethylbenzene	1,700 ug/L	300 ug/L	California Primary MCL
Total Xylenes	3,920 ug/L	1,750 ug/L	California Primary MCL

The constituents of concern for the Site are considered to be GRO and BTEX compounds.

The groundwater remedial objective is to eliminate hazardous and nuisance conditions associated with the presence of dissolved hydrocarbons in the subsurface environment at the site within physical and economic constraints. Specifically, groundwater-based objectives include (a) reducing the dissolved-phase mass and (b) controlling plume migration.

4.0 REMEDIATION ALTERNATIVES EVALUATION AND COMPARISON

Elevated concentrations of GRO and BTEX constituents are present in the shallow soil and groundwater at the Site. The goal is to implement a cost effective remedial technology that will meet soil and groundwater clean up objectives within a reasonable time period. Remedial options considered for the site are as follows:

- No Action / Natural Attenuation
- Ozone Sparging
- Excavation
- Dual Phase Extraction

4.1 Evaluation of Alternatives

The selection of an appropriate corrective action for the petroleum hydrocarbons at the Site is further evaluated based on the following criteria:

Regulatory Agency Acceptance. This criterion is used to assess the likelihood of acceptance of the various alternatives by regulatory agencies having jurisdiction over corrective action.

Reduction of Toxicity, Mobility, or Volume. This criterion establishes preference for alternatives that will produce permanent and significant reductions. The evaluation focuses on the amount of chemicals to be destroyed or treated, the irreversibility of the treatment, and the type and quantity of residual material that will remain after treatment.

Technical Feasibility. Technical feasibility refers to the ease of construction given the Site constraints, the reliability of the technology, and the ability to monitor the effectiveness of an alternative.

Cost. This criterion is used to assess the overall remediation lifecycle costs, including capital (non-recurring) costs, recurring annual costs, as well as system destruction and abandonment costs. Costs not associated with additional assessment, closure negotiation and project management are not included in this evaluation.

4.2 Comparison of Selected Alternatives

4.2.1 No Action / Natural Attenuation

This alternative would rely on natural attenuation, rather than active remediation, to achieve the remedial objectives. Natural attenuation processes include biodegradation, dispersion, dilution, sorption, volatilization, chemical or biological stabilization, transformation or destruction of contaminants. Under this alternative, no additional work would be conducted.

Regulatory Agency Acceptance. While the plume appears to be defined by previous assessment activities conducted across the Site, this alternative is unlikely to be accepted by the regulatory agencies at this time due to the elevated concentrations of petroleum hydrocarbons described in Section 3.0, and because contaminants are unlikely to reach water quality objectives within a reasonable time frame.

Reduction of Toxicity, Mobility, and Volume. The toxicity, mobility, and volume of TPHg/GRO and BTEX constituents in soil and groundwater would likely be reduced through natural attenuation processes.

Technical Feasibility. Site assessment data indicates that residual soil and groundwater contamination resulting from a release related to the former UST is present beneath the Site. However, the extent has been relatively defined through assessment activities and is unlikely to impact sensitive receptors or deep groundwater resources. Nevertheless, because elevated concentrations of petroleum hydrocarbons in soil and groundwater remain on-Site, the technical feasibility of no action is limited due to the amount of time necessary to achieve water quality objectives through natural attenuation.

Cost. Costs for this alternative include preparation of a No Further Action Request, miscellaneous project closeout costs and continued groundwater monitoring and reporting until closure is granted. No other significant costs are associated with this alternative, as No Action infers that no further investigation or remediation will be conducted.

4.2.2 Ozone Sparging

This alternative consists of installing an ozone sparge system and ozone sparge well network to inject ozone into the subsurface. Ozone sparging promotes oxidation of petroleum hydrocarbons to non-toxic byproducts by introducing ozone into the groundwater. An ozone sparge system delivers measured amounts of ozone from an ozone generator to sparge wells located within the impacted zone. Ozone sparge wells are installed at specific locations and depths to target areas of contamination. Ozone is delivered to the sparge wells via individual lines plumbed to each of the wellheads.

Regulatory Agency Acceptance. Ozone sparging was first implemented as a remedial technology in the late 1990's, and has since gained widespread regulatory acceptance as a remedial technology for addressing dissolved groundwater concentrations. Prior to implementing full-scale ozone sparging, a bench-scale test should be performed to confirm that no detrimental secondary chemical reactions will result from discharge of ozone into the subsurface.

Reduction of Toxicity, Mobility, and Volume. Implementation of ozone sparging would reduce contaminant mass in the groundwater and thereby reduce overall toxicity.

Technical Feasibility. Ozone Sparging relies on the placement of numerous ozone sparge wells (injection points) in the source area as well as across the dissolved plume. Ozone sparging has been shown to be highly effective at reducing contaminant mass in the subsurface, however the success of ozone sparging is highly dependent upon injection point spacing and subsurface lithology. Ozone sparging is most effective in moderately to highly permeable lithologies, such as those found in the water-bearing zone at the Site, however, ozone would likely be less effective at treating hydrocarbons retained in the fine grained, less permeable soil identified in the "smear zone" above the water–bearing zone.

Cost. The initial cost to implement this alternative is relatively high due to the cost of installing the ozone sparge well network and associated conveyance piping, as well as the purchase of the ozone sparge control system. Despite the high capital cost, the recurring costs are relatively low when compared with most active remediation systems. The electrical service requirements for this type of system are minimal, no waste stream is produced, and operation and maintenance activities are limited and straightforward. Based on our experience at similar sites, Closure Solutions estimates that designing, installing, and operating an ozone sparge system at the site for approximately 3 years would cost between $300,000 and $400,000.

4.2.3 Excavation

This alternative consists of performing limited excavation and disposal of impacted soil that lies within the TPHg/GRO 1,000-milligram per kilogram (mg/kg) soil contour shown on Figure 2. To perform excavation activities, clean surface soil to approximately 6 feet bgs would be excavated and stockpiled onsite, and reused as fill material. Soil from approximately 6 feet bgs to 13 feet bgs would be excavated and disposed of at an appropriate disposal facility. The excavation activities would be conducted in the summer months when groundwater is at its lowest point. If groundwater is encountered in the excavation, it would be pumped from the excavation and stored onsite pending characterization and disposal.

Regulatory Agency Acceptance. While excavation would remove hydrocarbon impacted soil onsite, it would not directly remediate dissolved hydrocarbons in groundwater; therefore, it is uncertain whether or not this alternative would gain regulatory acceptance.

Reduction of Toxicity, Mobility, and Volume. The excavation and removal of impacted soil identified during previous investigations would significantly and permanently remove the volume of impacted soil and further reduce future groundwater impact.

Technical Feasibility. Limited excavation and disposal of impacted soil is a technically feasible alternative that could be performed by implementing appropriate construction practices utilized by properly licensed, experienced individuals. However, considering the size of the proposed open excavation and the proximity to nearby Site buildings, excavation would most likely require engineered shoring to protect the structural integrity of the buildings, as excavation sidewall collapse would be a significant concern. The location of the excavation (in an alley between the two adjoining buildings) provides inadequate space for the equipment necessary to complete the excavation and stockpile the soils. Additionally, the location of the excavation is used extensively by the businesses operating on the Site. Excavation activities would most likely limit access to the area, detrimentally disrupting day to day operations for the businesses operating at the Site.

Cost. The cost to implement this alternative is estimated to be between $175,000 and $275,000. The initial cost to implement this alternative is relatively high due to the cost of soil transportation (import of clean soil and disposal of contaminated soil), as well as the potential need for engineered shoring. Despite the high capital cost, there are no recurring costs.

4.2.4 Dual Phase Extraction

This alternative consists of installing and operating a Dual Phase Extraction (DPE) system at the Site. Closure Solutions conducted a pilot test at the Site from February 21 through February 25, 2012 to evaluate DPE as a potential remedial option. The test was performed for a total of approximately 44 hours. During the test, approximately 104 lbs of hydrocarbons were removed in vapor phase from the subsurface. To implement DPE at the Site, Closure Solutions recommends installing at least one additional appropriately screened well and using a temporary, trailer-mounted DPE system to avoid the expense of full-scale system installation.

Regulatory Agency Acceptance. Considering that DPE actively addresses removal of hydrocarbons in soil as well as dissolved hydrocarbons in groundwater, it is likely that this alternative would gain regulatory acceptance.

Reduction of Toxicity, Mobility, and Volume. The contaminant mass would be aggressively removed and permanently destroyed using this alternative.

Technical Feasibility. Based on the results of the DPE pilot test, it appears that this technology could successfully remediate the remaining residual hydrocarbons in soil and groundwater beneath the Site in a relatively short period of time. Vapor-phase hydrocarbon removal rates achieved during testing demonstrate that sufficient extractable mass exists in the subsurface, and that it can be successfully removed via DPE. Groundwater extraction rates observed during testing from one well (MW-6) were within acceptable limits, and appeared to decrease over time.

Cost. Implementing DPE operation at the Site using a temporary, trailer-mounted DPE system would be a more cost-effective than installing a permanent system. This approach offers flexibility in the overall remedial approach by allowing for extension of the remedial action as needed without the expense of full scale DPE system installation. The cost to implement this alternative for approximately 6 months is estimated to be between $200,000 and $300,000. The future costs include design, permitting, well installation, equipment purchase/rental, and O&M costs.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Given the success of the DPE test, Closure Solutions recommends implementing a DPE operation at the Site using a temporary DPE system. Upon agency concurrence with the Corrective Action Plan, Closure Solutions will prepare a brief work plan describing DPE installation and operation procedures, vendor selection, and permitting. Once these activities are accomplished, Closure Solutions will proceed with implementation of the selected remedial option.

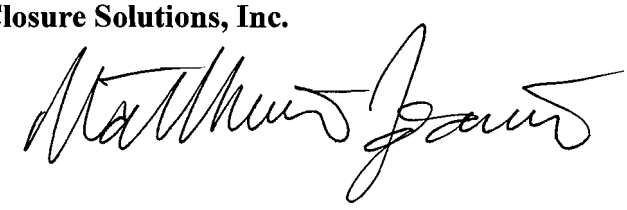
6.0 LIMITATIONS

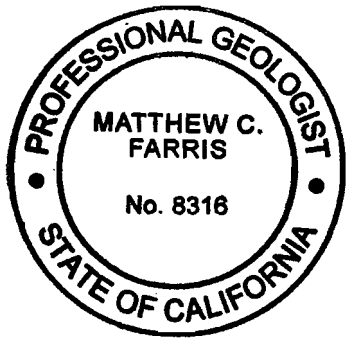
This report is based on Site conditions, data, and other information available as of the date of the report, and the conclusions and recommendations herein are applicable only to the time frame in which the report was prepared. Background information used to prepare this report including, but not limited to, previous field measurements, analytical results, Site plans and other data have been furnished to Closure Solutions by Kerry & Associates and their previous consultants. Closure Solutions has relied on this information as furnished, and is neither responsible for nor has confirmed the accuracy of this information. Analytical data used to prepare this report has been provided by an approved California Certified Laboratory. Closure Solutions has not performed an independent review of the data and is neither responsible for nor has confirmed the accuracy of this data.

If you have any questions regarding this report, please contact Mr. Matthew Farris at (916) 760-7579 or at mfarris@closuresolutions.com.

Sincerely,

Closure Solutions, Inc.



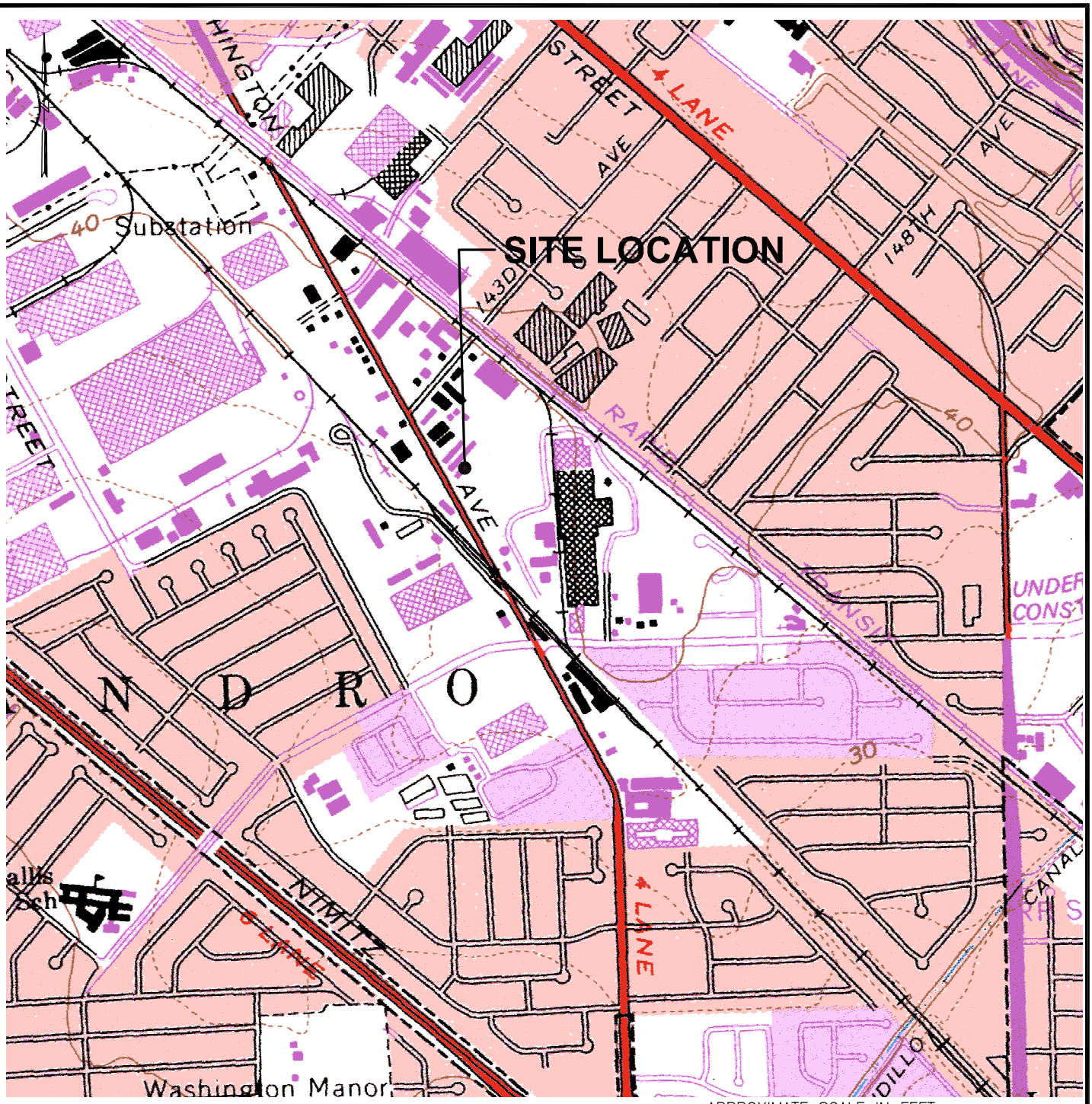


Matthew Farris, P.G.
Project Geologist

ATTACHMENTS:

Figure 1	Vicinity Map
Figure 2	TPHg/GRO in Soil from 13 to 16 feet bgs with Isoconcentration Contour
Table 1	Soil Analytical Data
Table 2	Groundwater Elevation and Analytical Data
Attachment A	ACEH correspondence

cc: Mr. Jeff Kerry, Kerry & Associates
Mr. Gerald Donnelly



REFERENCE:
USGS 7.5 MIN QUAD MAP TITLED:SAN LEANDRO, CALIFORNIA DATED: 1959 REV: 1980

FIGURE 1

SITE LOCATION MAP

PALACE GARAGE
14336 WASHINGTON AVENUE
SAN LEANDRO, CALIFORNIA

CLOSURE SOLUTIONS, INC.
4600 Northgate Boulevard • Suite 230
Sacramento • California • 95834
Phone: (800) 988-7880

20101130.14161396 D:\Client Drawings\Closure\palace garage\PALACE GARAGE VICINITY MAP.dwg

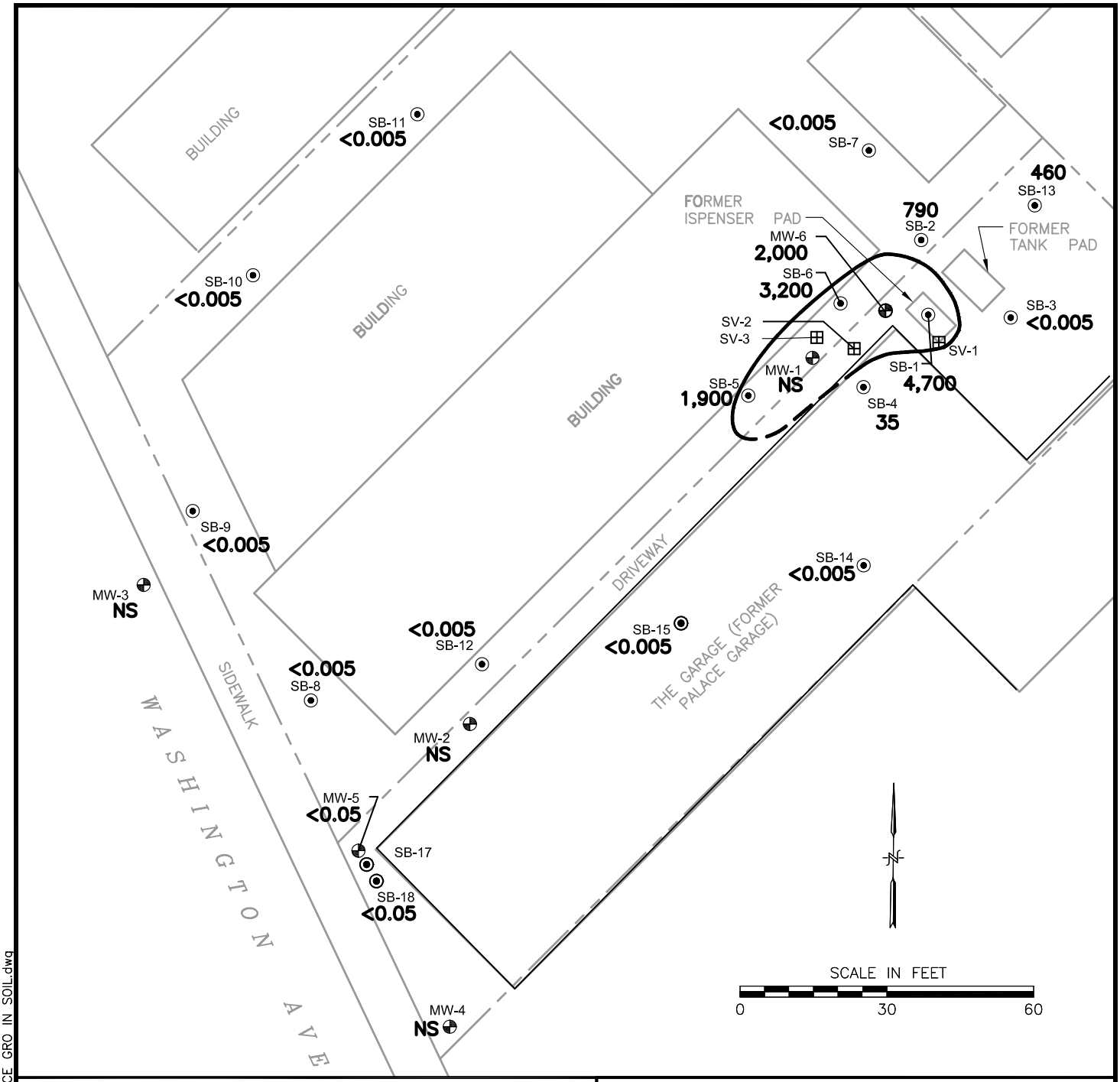


FIGURE 2

TPHg/GRO IN SOIL FROM 13 TO 16 FEET BGS WITH ISOCONCENTRATION CONTOUR

PALACE GARAGE
14336 WASHINGTON AVENUE
SAN LEANDRO, CALIFORNIA

LEGEND:

- GROUNDWATER MONITORING WELL LOCATION
- SOIL BORING LOCATION
- SOIL VAPOR PROBE
- PROPERTY LINE
- 1,000 TPHg ISOCONCENTRATION CONTOUR INTERVAL DASHED WHERE INFERRED (mg/kg)
- 35 GRO/TPHg CONCENTRATION (mg/kg)
- NS NOT SAMPLED

NOTES:

1. BASEMAP SOURCE: MORROW SURVEYING, 2/05/03

CLOSURE SOLUTIONS, INC.
4600 Northgate Boulevard • Suite 230
Sacramento • California • 95834
Phone: (800) 988-7880

20120724.10434583 D:\Client Drawings\Closure\palace garage\PALACE GRO IN SOIL.dwg

Table 1
Soil Analytical Data

Former Palace Garage
14336 Washington Avenue
San Leandro, California

Sample ID	Date Sampled	Depth (feet bgs)	TPHg/GRO (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	MTBE (mg/kg)
SB-1	2/1/1999	10-10.5	440	0.51	2.6	8.1	47	<0.5
SB-1	2/1/1999	15-15-5	4,700	12	21	88	480	<10
SB-2	2/1/1999	10-10.5	<1.0	0.016	0.012	<0.005	0.016	<0.05
SB-2	2/1/1999	15-15-5	790	0.64	4.8	5.3	18	<0.5
SB-3	2/1/1999	10-10.5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-3	2/1/1999	15-15-5	<1.0	<0.005	0.021	<0.005	0.01	<0.05
SB-4	2/1/1999	10-10.5	<1.0	<0.005	0.01	<0.005	0.007	<0.05
SB-4	2/1/1999	15-15-5	35	0.029	0.32	0.13	0.22	<0.05
SB-5	3/23/1999	10-10.5	2.8	0.092	0.023	0.064	0.11	<10
SB-5	3/23/1999	15-15-5	1,900	4.3	14	35	170	<1
SB-6	3/23/1999	10-10.5	880	3.5	16	18	89	<10
SB-6	3/23/1999	15-15-5	3,200	22	160	89	460	<0.05
SB-7	3/23/1999	10-10.5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-7	3/23/1999	15-15-5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-8	7/29/1999	14-14.5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-9	7/29/1999	15-15-5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-10	7/29/1999	14-14.5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-11	7/29/1999	15-15-5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-12	7/29/1999	15-15-5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-13	7/29/1999	7.5-8	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-13	7/29/1999	15-15.5	460	6.3	3.3	13	42	<0.5
SB-14	7/29/1999	15-15-5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-15	7/29/1999	15-15-5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-16-15	5/19/2000	15	<0.06	<0.005	<0.005	<0.005	<0.005	<0.005
SB-17-19	5/19/2000	19	0.292	<0.005	<0.005	<0.005	<0.005	<0.005
SB-18-16.5	7/26/2010	16.5	<0.5	<0.005	<0.005	<0.005	<0.010	--
MW-5	1/24/2012	13	<0.50	<0.005	<0.005	0.0076	0.0364	--
MW-6	1/24/2012	10	3,600	0.59	0.56	77	361	--
	1/24/2012	13	2,000	0.19	0.5	40	170	--

ABBREVIATIONS:

TPHg/GRP	=	Total Petroleum Hydrocarbons as gasolone/ Gasoline Range Organics (C6-C12)
B	=	Benzene
T	=	Toluene
E	=	Ethylbenzene
X	=	Total xylenes
feet bgs	=	Feet below ground surface
mg/kg	=	Milligrams per kilogram (parts per million [ppm])
<	=	Not detected at or above specified laboratory reporting limit

LIMITATIONS:

Background information, including but not limited to previous field measurements, analytical results, Site plans, and other data have been obtained from previous consultants, and/or third parties, in the preparation of this report. Closure Solutions has relied on this information as furnished. Closure Solutions is not responsible for, nor has it confirmed the accuracy of data collected or generated by

Table 2
Groundwater Elevation and Analytical Data
Palace Garage
14336 Washington Avenue
San Leandro, California

Well ID	Date Sampled	Casing Elevation (Feet MSL)	Depth To Water (Feet)	Groundwater Elevation (Feet)	TPHg/ GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
MW-1	12/31/2002	37.59	13.62	23.97	48,000	1,030	2,380	1,690	9,220
	9/22/2006		13.33	24.26	44,000	870	2,200	720	9,700
	12/21/2006		13.94	23.65	17,000	240	980	180	5,000
	3/29/2007		13.71	23.88	2,000	30	85	23	550
	9/27/2007		15.53	22.06	540	14	3.9	44	87
	12/20/2007		15.69	21.90	280	4.3	1.3	15	37
	2/21/2008		13.72	23.87	19,000	300	150	1,100	4,900
	5/15/2008		14.60	22.99	7,200	140	50	370	2,040
	8/7/2008		15.62	21.97	820	13	3.1	44	100
	11/13/2008		16.14	21.45	670	10	2.1	31	110
	6/19/2009		15.15	22.44	1,490	85.8	13.4	164	310
	11/3/2009		15.98	21.61	75	6.0	0.70	12	40.5
	5/4/2010		13.40	24.19	18,000	300	61	880	4,070
	11/8/2010		15.83	21.76	170	4.9	ND<0.50	7.7	24
	4/22/2011		12.34	25.25	3,800	250	48	810	3,260
	12/15/2011		14.77	22.82	1,500	21	0.88	29	4.6
	5/9/2012		**13.56**	**24.03**	**20,000**	**190**	**27**	**810**	**3,150**

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MW-2	12/31/2002	37.12	13.38	23.74	1,670	1,030	11.00	23	16.4
	9/22/2006		13.25	23.87	1,800	53	1.40	14	7.5
	12/21/2006		13.89	23.23	--	--	--		--
	3/29/2007		13.57	23.55	2,100	51	1.30	--	4.5
	9/27/2007		15.37	21.75	1,600	58	0.99	12	3.7
	12/20/2007		15.40	21.72	1,500	63	1.1	16	4.9
	2/21/2008		13.60	23.52	710	23	ND<0.50	6.2	1.1
	5/15/2008		14.47	22.65	1,600	84	1.4	28	9.8
	8/7/2008		15.48	21.64	2,100	86	1.6	22	9.0
	11/13/2008		15.99	21.13	2,300	46	1.1	15	4.5
	6/19/2009		15.03	22.09	931	60.1	ND<2.0	30	3.1
	11/3/2009		15.87	21.25	220	22	0.55	9.4	5.05
	5/4/2010		12.92	24.20	950	14	0.57	9.1	13.2
	11/8/2010		15.71	21.41	1,900	45	1.6	44	9.28
	4/22/2011		12.27	24.85	1,400	30	1.2	29	5.78
	12/15/2011		14.86	22.26	4,300	160	26	480	790
	5/9/2012		**13.44**	**23.68**	**4,300**	**21**	**0.65**	**23**	**7.77**

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MW-3	12/31/2002	37.01	13.29	23.72	<50	<0.5	<0.5	<0.5	<1.0
	9/22/2006		13.14	23.87	<50	<0.5	<0.5	<0.5	<1.5
	12/21/2006		--	--	--	--	--	--	--
	3/29/2007		13.47	23.54	<50	<0.5	<0.5	<0.5	<1.5
	9/27/2007		15.29	21.72	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	12/20/2007		15.30	21.71	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	2/21/2008		---	---	---	---	---	---	---
	5/15/2008		14.35	22.66	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0
	8/7/2008		15.39	21.62	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	11/13/2008		15.90	21.11	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	6/19/2009		14.94	22.07	ND<50	ND<1.0	ND<1.0	ND<1.0	ND<2.0
	11/3/2009		15.76	21.25	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0
	5/4/2010		13.20	23.81	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5
	11/8/2010		15.62	21.39	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5
	4/22/2011		12.17	24.84	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5
	12/15/2011		14.63	22.38	150	1.5	ND<0.50	3.0	12.2
	5/9/2012		**13.36**	**23.65**	**ND<50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<1.5**

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Well ID	Date Sampled	Casing Elevation (Feet MSL)	Depth To Water (Feet)	Groundwater Elevation (Feet)	TPHg/ GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
MW-4	12/31/2002	37.09	13.45	23.64	<50	<0.5	<0.5	<0.5	<1.0
	9/22/2006		13.40	23.69	<50	<0.5	<0.5	<0.5	<1.5
	12/21/2006		13.86	23.23	<50	<0.5	<0.5	<0.5	<1.5
	3/29/2007		13.69	23.40	<50	<0.5	<0.5	<0.5	<1.5
	9/27/2007		15.48	21.61	ND<50	1.5	ND<0.50	0.71	0.74
	12/20/2007		15.28	21.81	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	2/21/2008		13.56	23.53	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0
	5/15/2008		14.58	22.51	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0
	8/7/2008		15.57	21.52	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	11/13/2008		16.09	21.00	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	6/19/2009		15.15	21.94	ND<50	ND<1.0	ND<1.0	ND<1.0	ND<2.0
	11/3/2009		16.03	21.06	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0
	5/4/2010		13.11	23.98	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5
	11/8/2010		15.89	21.20	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5
	4/22/2011		12.40	24.69	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.5
	12/15/2011		15.03	22.06	86	ND<0.50	ND<0.50	ND<0.50	1.3
	5/9/2012		**13.51**	**23.58**	**ND<50**	**ND<0.50**	**0.84**	**ND<0.50**	**ND<1.5**

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Well ID	Date Sampled	Casing Elevation (Feet MSL)	Depth To Water (Feet)	Groundwater Elevation (Feet)	TPHg/ GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
MW-5	2/2/2012	37.27	15.06	22.21	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.50
	5/9/2012		**13.68**	**23.59**	**ND<50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<1.50**
MW-6	2/2/2012	37.34	14.63	22.71	17,000	340	57	1,900	2,100
	5/9/2012		**13.26**	**24.08**	**34,000**	**170**	**310**	**1,700**	**3,920**

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Well ID	Date Sampled	Casing Elevation (Feet MSL)	Depth To Water (Feet)	Groundwater Elevation (Feet)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)

ABBREVIATIONS:

TPHg/ GRO	total petroleum hydrocarbons as gasoline. Gasoline range organics
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
µg/L	Micrograms per liter (parts per billion [ppb])
---	Not analyzed/measured/applicable
ND<	Not detected at or above specified laboratory reporting limit
Bold	Current sampling event
MSL	mean sea level

LIMITATIONS:

Background information, including but not limited to previous field measurements, analytical results, Site plans, and other data have been obtained from previous consultants, and/or third parties, in the preparation of this report. Closure Solutions has relied on this information as furnished. Closure Solutions is not responsible for, nor has it confirmed the accuracy of data collected or generated by others.

Attachment A

ACEH Correspondence

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

June 21, 2012

Mr. Jeff Kerry
Kerry & Associates
151 Callan Avenue, Suite 300
San Leandro, CA 94577

Mr. Jeffery Kerry
Jeffery & Dolores Kerry Trust & Jame Donnelley et. al.
19655 North Ripon Road
Ripon, CA 95366

Subject: Request for FS / CAP; Fuel Leak Case No. RO00000208; Palace Garage (Global ID #T0600101043), 14336 Washington Avenue, San Leandro, CA 94578

Dear Mr. Kerry:

Alameda County Environmental Health (ACEH) staff has reviewed the case file including the *Fourth Quarter 2011 Groundwater Monitoring Report,* dated, January 27, 2012, the *Groundwater Monitoring Well Installation Report,* dated March 30, 2012, and the *Dual Phase Extraction Pilot Test Report,* dated April 13, 2012. The reports were prepared and submitted on your behalf by Closure Solutions, Inc. (Closure Solutions). Thank you for submitting the reports.

These reports documented the semi-annual groundwater monitoring report, the installation of wells MW-5 and MW-6, and the results of the Dual Phase Extraction (DPE) pilot test. The DPE pilot test estimated a 35 foot radius of influence on properly constructed extraction wells at the site and recommended implementation of a longer-term DPE operation at the site using a temporary DPE system. ACEH is in general concurrence with these recommendations; however, a comparison between three viable remedial options (see below) is required. Based on ACEH staff review of the case file, we request that you address the following technical comments and send us the reports described below.

TECHNICAL COMMENTS

1. **Electronic Report and Data Upload Compliance** – A review of the case file and the State's Geotracker database indicates that the site is not in compliance with previous directive letters. Compliance is also a State requirement. Pursuant to California Code of Regulations, Title 23, Division 3, Chapter 16, Article 12, Sections 2729 and 2729.1, beginning September 1, 2001, all analytical data, including monitoring well samples, submitted in a report to a regulatory agency as part of the UST or LUST program, must be transmitted electronically to the SWRCB GeoTracker system via the internet. Also, beginning January 1, 2002, all permanent monitoring points utilized to collect groundwater samples (i.e. monitoring wells) and submitted in a report to a regulatory agency, must be surveyed (top of casing) to mean sea level and latitude and longitude to sub-meter accuracy using NAD 83. A California licensed surveyor may be required to perform this work. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs, including SLIC programs. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites was required in GeoTracker. At present missing data and documents include, but may not be limited to, older reports, older EDF submittals, recent GEO_MAPS, older GEO_WELL data, and all bore logs. **Compliance is required by the State and is tied to reimbursement funding by the UST Cleanup Fund**. Please see Attachment 1 for limited additional details, and the state GeoTracker website for full details. Please upload all submittals to GeoTracker as well as to ACEH's ftp website by the date specified below.

2. **Request for Corrective Action Plan** - At this time, a Feasibility Study/Corrective Action Plan (FS/CAP) prepared in accordance with Title 23, California Code of Regulations, Section 2725 appears warranted. The FS/CAP must include a concise background of soil and groundwater investigations performed in connection with this case and an assessment of the residual impacts of the chemicals of concern (COCs) for the site and the surrounding area where the unauthorized release has migrated or may migrate. The FS/CAP should also include, but is not limited to, a detailed description of site lithology, including soil permeability, and most importantly, contamination cleanup levels and cleanup goals, and the time to remediate them, in accordance with the San Francisco Regional Water Quality Control Board (SFRWQCB) Basin Plan and appropriate ESL guidance for all COCs and for the appropriate groundwater designation. Please note that soil cleanup levels should ultimately (within a reasonable timeframe) achieve water quality objectives (cleanup goals) for groundwater in accordance with the SFRWQCB Basin Plan. Please specify appropriate cleanup levels and cleanup goals in accordance with 23 CCR Section 2725, 2726, and 2727 in the FS/CAP.

   The FS/CAP must evaluate at least three viable alternatives for remedying or mitigating the actual or potential adverse affects of the unauthorized release(s) besides the 'no action' and 'monitored natural attenuation' remedial alternatives. Each alternative shall be evaluated not only for cost-effectiveness but also its timeframe to reach cleanup levels and cleanup goals, and ultimately the Responsible Party must propose the most cost-effective corrective action. Please submit the FS / CAP by the date identified below.

3. **Groundwater Monitoring** – The installation of wells MW-5 and MW-6 requires conducting quarterly groundwater monitoring at site wells for the period of one year. This is subject to modification depending on the consistency of results. Please submit groundwater monitoring reports by the dates identified below.

TECHNICAL REPORT REQUEST

Please submit the following deliverable to ACEH (Attention: Mark Detterman), according to the following schedule:

- **July 13, 2012** – Geotracker Compliance Uploads (with upload documentation)
- **August 31, 2012** – Feasibility Study / Corrective Action Plan
- **October 12, 2012** – Third Quarter 2012 Groundwater Monitoring Report (MW-5 and MW-6)
- **January 11, 2013** – Fourth Quarter 2013 Groundwater Monitoring Report
- **90 Days After Approval ICAP** – Interim Corrective Action Report

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

Should you have any questions, please contact me at (510) 567--6876 or send me an electronic mail message at mark.detterman@acgov.org.

Sincerely,

Digitally signed by Mark E. Detterman
DN: cn=Mark E. Detterman, o, ou, email, c=US
Date: 2012.06.21 16:32:06 -07'00'

Mark E. Detterman, PG, CEG
Senior Hazardous Materials Specialist

Enclosures: Attachment 1 – Responsible Party (ies) Legal Requirements / Obligations
Electronic Report Upload (ftp) Instructions

cc: Matthew Farris, Closure Solutions, Inc, 4600 Northgate Blvd, Suite 230, Sacramento, CA 95834
(sent via electronic mail to: mfarris@closuresolutions.com)

Donna Drogos, ACEH, (sent via electronic mail to donna.drogos@acgov.org)
Mark Detterman, ACEH, (sent via electronic mail to mark.detterman@acgov.org)
Geotracker, Electronic File