LRM
CONSULTING, INC.

August 29, 2006

Ms. Donna Dragos
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, California 94502-6577

Subject: **Supplemental Investigation Work Plan**
Allen Property
325 Martin Luther King, Jr. Way
Oakland, California

Dear Ms. Dragos:

LRM Consulting, Inc. (LRM) has prepared this *Supplemental Investigation Work Plan* for the referenced site in response to the report of petroleum hydrocarbons in the subsurface during recent real estate due diligence activities. The following summarizes the site background and planned scope of work. As summarized below, there is a limited data set for this new environmental case. Accordingly, the scope of work includes conducting supplemental Phase I assessment activities and the installation of three groundwater monitoring wells.

SITE BACKGROUND

Site Description

The site is located at the western corner of the intersection of Martin Luther King Jr. Way and 4th Street in a commercial/industrial section of Oakland, California (see Figure 1). The Port of Oakland and San Francisco Bay are located approximately 1/4- mile south-southwest of the site.

The site consists of a vacant 10,000-square-foot warehouse. This property, along with the two contiguous vacant warehouses, one at 301 Martin Luther King Jr. Way (15,000 square feet) and the other at 671 4th Street (5,000 square feet), were previously operated as food processing facilities by Pucci Seafoods. Preliminary site data indicate that the 301 and 325 Martin Luther King Jr. Way buildings housed the facilities and the 671 4th Street parcel was used as a loading and parking area prior to facility expansion and construction of the current building in the 1980s. These three properties are currently owned by Kimball and Jane Allen.

Previous Work

The available data indicate that an underground storage tank was located inside the warehouse at the northern corner of the building (see Figure 2). Due to proximity to the building footings, this tank was abandoned in-place by backfilling with concrete in 1986.

Ten borings have been sampled inside the buildings near the underground storage tank as part of the due diligence activities for the sale of the three parcels (see Figure 2). No boring logs were available for review. During sampling in June 2006, static groundwater was observed at 8-10 feet below ground surface (bgs) (Ceres Associates, 2006).

Total petroleum hydrocarbons as gasoline (TPH-g), total petroleum hydrocarbons as diesel (TPH-d) and benzene, toluene, ethylbenzene, and xylenes (BTEX) were reported in most of the analyzed groundwater samples collected at the site (see Figure 2 and Table 1). No methyl tert butyl ether was reported in the analyzed groundwater samples. The general distribution of hydrocarbons is consistent with a release from the eastern portion of the underground storage tank (see Figure 2). However, hydrocarbon sheen was observed and 100,000 micrograms per liter (µg/l) TPH-g and 110,000 µg/l TPH-d (without silica gel cleanup) were reported in boring SB-7, which is located approximately 25 feet east of the former underground storage tank. This finding suggests the potential for an additional source, such as former fuel dispensers and/or piping or an offsite source.

PLANNED SCOPE OF WORK

Supplemental Phase I Assessment Activities

To further evaluate the additional sources near boring SB-7, supplemental Phase I assessment activities will be conducted. Aerial photograph review and interviews of available and knowledgeable employees for the prior site operators are planned. The findings of these activities may be used to modify the planned monitoring well locations described below.

Supplemental Field Investigation Activities

Prefield Activities: Prior to conducting the planned field activities, a comprehensive site health and safety plan will be prepared. The plan will be kept onsite during field activities and signed by each site worker. In addition, drilling permits will be acquired from the Alameda County Department of Public Works.

The anticipated boring locations are shown on Figure 2 and may be modified due to the presence of subsurface or overhead obstructions and based on the findings of the supplemental Phase I assessment activities. These locations will be marked and Underground Service Alert will be contacted. A private utility locator will also be contracted to ensure that the proposed boring locations are clear of subsurface obstructions. In addition, ground penetrating radar may be used to evaluate the former underground storage tank and piping locations.

Soil Boring: Three 2-inch diameter monitoring wells will be installed using a drill rig equipped with 8-inch diameter hollow-stem augers (see Figure 2). During drilling, soil samples will be collected at a minimum of 5-foot intervals using a modified California split-spoon sampler. The soil samples will be field screened for hydrocarbons using visual and olfactory observations and/or using a photoionization detector.

Well Construction: The wells will be installed to approximately 20 feet bgs with 0.010-inch slotted screen from 5 to 20 feet bgs (based on the reported 8-10 foot depth to static water). The annular space will be backfilled with No. 2/16 sand from the bottom of the screened interval to 1-2 feet above the top of screen, which will be overlain by approximately 1 foot of bentonite. The remainder of the annular space will be sealed with bentonite-cement grout. A traffic-rated vault box will be installed in concrete to protect each well. This well construction may be modified based on the conditions encountered during drilling.

Following installation, the wells will be developed by surging and purging at least 10 casing volumes of water. In addition, the wellhead locations and elevations will be surveyed by a California-licensed surveyor.

Chemical Analyses: Selected soil and groundwater samples will be analyzed for TPH-g using modified EPA Method 8015, TPH-d using modified EPA Method 8015 with silica gel cleanup, and BTEX constituents using EPA Method 8020 at a California-certified laboratory.

Soil and Water Handling: Soil and water produced during field activities will be temporarily stored onsite. Following review of analytical results, the soil and water will be transported to an appropriate facility for disposal/recycling.

Reporting

Upon completion of these activities and review of the analytical results, a *Site Investigation Report* will be prepared that, at a minimum, will contain:

- Aerial photograph review findings;
- Descriptions of the well installation methods;
- Boring logs and well construction details;
- Assessment of groundwater gradient data;
- Tabulated soil and groundwater analytical results;
- Analytical reports and chain-of-custody forms; and
- Conclusions and recommendations.

SCHEDULE

During review of this Work Plan, we plan to conduct the aerial photograph review. The Alameda County Health Care Services Agency will be advised of the rationale for modifications to the proposed well locations, if any changes are needed. Upon approval of this Work Plan, the field activities will be scheduled. Approximately 4 weeks after completion of field activities, the *Site Investigation Report* will be submitted.

CLOSING

We appreciate your assistance with this project. If you have any questions or require further information, please contact me at (510) 387-9552.

Sincerely,
LRM CONSULTING, INC.

Khaled B. Rahman, P.G., C.Hg.
Senior Geologist

ATTACHMENTS

Figure 1 – Site Location Map
Figure 2 – Site Plan

Table 1 – Groundwater Analytical Results

Appendix A – Standard Field Procedures for Monitoring Wells

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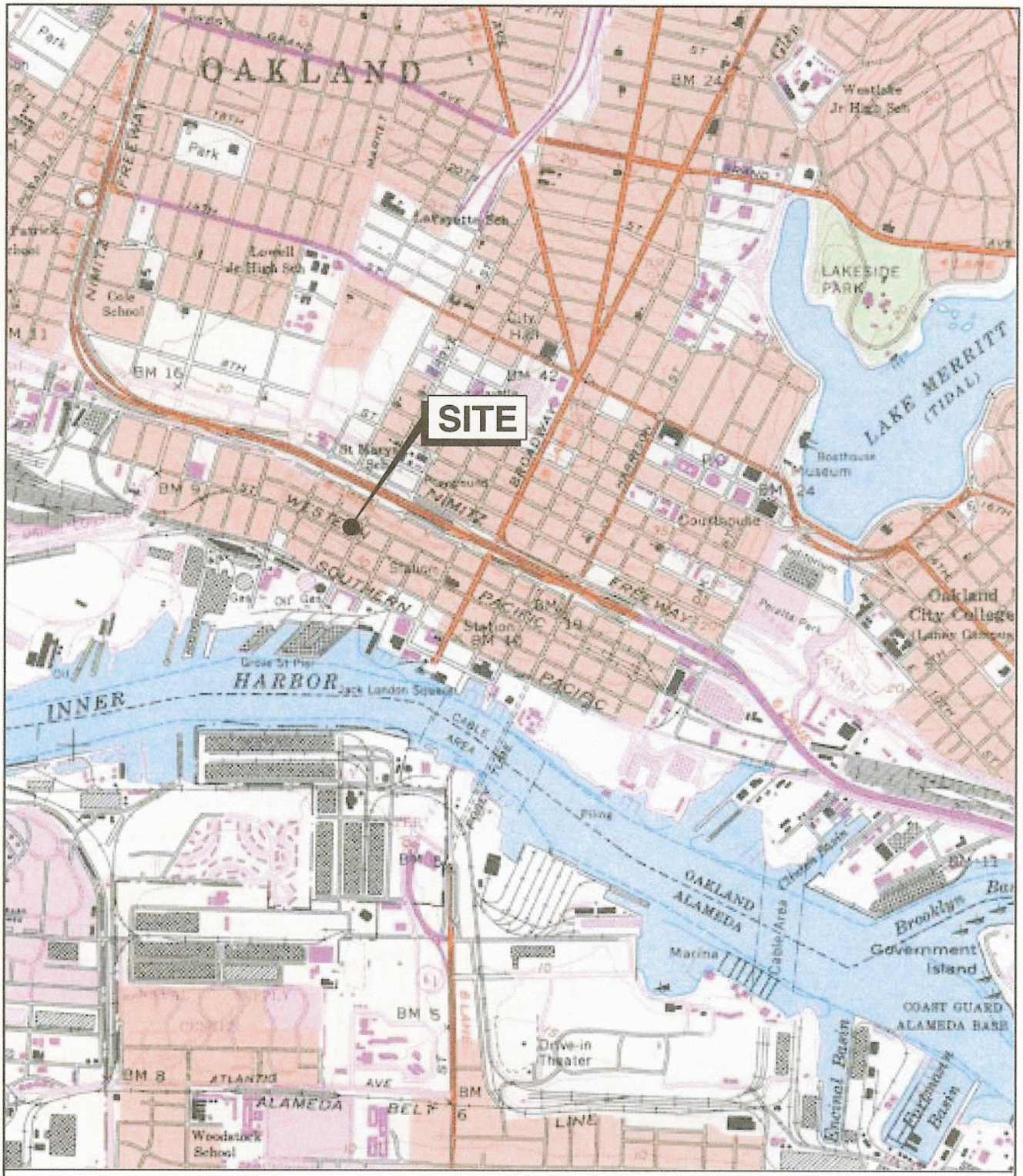
Figures



LRM CONSULTING, INC.	**SITE LOCATION MAP** ALLEN PROPERTY 325 MARTIN LUTHER KING JR. WAY OAKLAND, CALIFORNIA	FIGURE: **1**

LEGEND:

Base Map: Google Earth, 2005.

- Proposed monitoring well
- SB-2 — Approximate boring location
- (780) — Total petroleum hydrocarbons as gasoline (TPHg) in micrograms per liter (ug/L)
- Approximate area with exceeding 1,000 ug/L TPHg in groundwater
- ND — Concentration below method reporting limits

N

0 30 60

Scale (feet)

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SITE PLAN
ALLEN PROPERTY
325 MARTIN LUTHER KING JR. WAY, OAKLAND, CALIFORNIA

FIGURE: **2**

Tables

TABLE 1 - GROUNDWATER ANALYTICAL DATA
Allen Property, 325 Martin Luther King Jr. Way, Oakland, California

Boring Number	Date	Concentration (µg/L)						
		TPH-g	TPH-d	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
SB-2	05/11/05	780	420	53	9.0	35	100	--
SB-4	05/11/05	ND	ND	ND	ND	ND	0.75	--
50901-1	09/08/05	860	740	8.0	7.5	22	100	--
50901-2	09/08/05	13,000	3,600	410	1,200	390	1,700	--
50901-3	09/08/05	20,000	2,000	990	3,100	590	2,300	--
50901-4	09/08/05	550	230	20	17	19	56	--
SB-5	06/06/06	ND	170	ND	ND	ND	1.8	ND
SB-6	06/06/06	380	290	3.4	1.8	3.8	51	ND
SB-7	06/06/06	100,000	110,000	3,300	11,000	2,100	20,000	ND
SB-8	06/06/06	580	550	8.4	3.6	18	47	ND
SB-9	06/06/06	610	360	10	15	21	70	ND

MTBE Methyl tertiary butyl ether.
ND Below method reporting limit.
TPH-g Total Petroleum Hydrocarbons as gasoline.
TPH-d Total Petroleum Hydrocarbons as diesel.
µg/L Micrograms per liter.

Appendix A

Standard Field Procedures for Monitoring Wells

STANDARD FIELD PROCEDURES FOR MONITORING WELLS

This document presents standard field methods for drilling and sampling soil borings and installing, developing, and sampling groundwater monitoring wells. These procedures are designed to comply with Federal, State, and local regulatory guidelines. Specific field procedures are summarized below.

SOIL BORINGS

Objectives

Soil samples are collected to characterize subsurface soil types, assess whether the soils exhibit obvious hydrocarbon or other compound vapor or staining, and to collect samples for analysis at a state-certified laboratory. All borings are logged using the Unified Soil Classification System by a trained geologist working under the supervision of a California Professional Geologist.

Soil Boring and Sampling

Soil borings are typically drilled using hollow-stem augers or direct-push technologies such as the Geoprobe®. Soil samples are collected at least every 5 feet to characterize the subsurface sediments and for possible chemical analysis. Additional soil samples are collected near the water table and at changes in soil type. Samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments at the bottom of the borehole.

Drilling and sampling equipment is steam-cleaned prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Analysis

Sampling tubes chosen for analysis are trimmed of excess soil and capped with Teflon tape and plastic end caps. Soil samples are labeled and stored at or below 4°C on crushed ice, depending upon local regulations. Samples are transported under chain of custody to a State-certified analytical laboratory.

Field Screening

For field screening, a small amount of soil is sealed inside a container (e.g. Ziploc bag or mason jar) and set aside to allow hydrocarbons to volatilize from the soil. After 10 to 15 minutes, a portable volatile vapor analyzer extracts vapor through an opening in the container and measures total volatile organic concentrations in the headspace. Volatile vapor analyzer measurements are used along with the field observations, odors, stratigraphy, and groundwater depth to select soil samples for analysis.

Water Sampling

Where elected, water samples are either collected from a driven Hydropunch®-type sampler, temporary well or an open borehole using bailers. The groundwater samples are decanted into the appropriate containers supplied by the analytical laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain of custody to the laboratory. Laboratory-supplied trip blanks may accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.

Grouting

If borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

MONITORING WELL INSTALLATION, DEVELOPMENT, AND SAMPLING

Well Construction and Surveying

Groundwater monitoring wells are installed to monitor groundwater quality and determine the groundwater elevation, flow direction, and gradient. Well depths and screen lengths are based on groundwater depth, occurrence of hydrocarbons or other compounds in the borehole, stratigraphy, and State and local regulatory guidelines. Well screens typically extend 10 to 15 feet below and 5 feet above the static water level at the time of drilling. However, the well screen will generally not extend into or through a clay interval that is at least 3 feet thick.

Well casing and screen are flush-threaded, Schedule 40 PVC. Screen slot size varies according to the sediments screened, but slots are generally 0.010 or 0.020 inches wide. A rinsed and graded sand occupies the annular space between the boring and the well screen to about 1 to 2 feet above the well screen. A 2-foot-thick hydrated bentonite seal separates the sand from the overlying sanitary surface seal composed of Portland type I,II cement.

Wellheads are secured by locking well caps inside traffic-rated vaults finished flush with the ground surface. A stovepipe may be installed between the wellhead and the vault cap for additional security.

The well top-of-casing elevation is surveyed with respect to mean sea level and the well is surveyed for horizontal location with respect to an onsite or nearby offsite landmark.

Well Development

Wells are generally developed using a combination of groundwater surging and extraction. Surging agitates and the groundwater and dislodges fine sediments from the sand pack. After approximately ten minutes of surging, groundwater is extracted from the well using bailing and/or pumping to remove the sediments from the well. Surging and extraction continue until at least 10 well-casing volumes of groundwater are extracted and the sediment volume in the groundwater is negligible. This process may occur prior to installing the sanitary surface seal to ensure sand pack stabilization.

If development occurs after surface seal installation, then development occurs 24 to 72 hours after seal installation to ensure the Portland cement has set up correctly. All equipment is steam cleaned prior to use.

Groundwater Sampling

Depending on local regulatory guidelines, 3 to 4 well-casing volumes of groundwater are purged prior to sampling. Purging continues until groundwater pH, conductivity, and temperature have stabilized. Groundwater samples are collected using bailers or pumps and are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain of custody to the laboratory. Laboratory-supplied trip blanks may accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.