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## **Property Mitigation Plan**

**Assessor's Parcel Number  
004-69-004  
1384-1396 5<sup>th</sup> Street  
Oakland, California**

Presented to:

**Alameda County Health Care Services**  
Environmental Health Services  
Environmental Protection  
Mr. Jerry Wickham  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

On Behalf of:

**Oakland Housing Investors, L.P.**  
c/o National Affordable Communities  
Mr. Darren Berberian  
4299 MacArthur Boulevard, Suite 215  
Newport Beach, California 92660

Presented by:

**SCS ENGINEERS**  
8799 Balboa Avenue, Suite 290  
San Diego, California 92123  
(858) 571-5500

Date: October 1, 2008  
Project Number: 01208426.01

## SCS ENGINEERS

October 1, 2008

**Project Number: 01208426.01**

Mr. Jerry Wickham  
Alameda County Health Care Services  
Environmental Health Services  
Environmental Protection  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

**Subject: Property Mitigation Plan (PMP)**

**Site: Assessor's Parcel Number (APN) 004-69-004  
Formerly Red Star Yeast/1396 5<sup>th</sup> Street LLC  
1384-1396 Fifth Street, Oakland, California**

**Spills, Leaks, Investigations, and Cleanups Program  
SLIC Case Number: RO0002896  
Global Identification Number T06019794669**

Dear Mr. Wickham:

SCS Engineers (SCS) is pleased to present this Property Mitigation Plan (PMP) for the Red Star Senior Living Apartments (Project) on behalf of Oakland Housing Investors, LP (Client). This PMP proposes the assessment and mitigation strategies and cleanup criteria to facilitate the redevelopment of the approximately 38,381-square-foot Site which is bounded by Fifth Avenue to the south, Mandela Parkway to the west, Kirkham Street to the east, and the Bay Area Rapid Transit (BART) right-of-way and elevated track. The Project is a 5-story apartment complex for senior housing.

We understand that 1396 5<sup>th</sup> Street LLC had recently been conducting assessment activities at the Site under the oversight of the Alameda County Environmental Health (ACEH). We understand that a Spills, Leaks, Investigations, and Cleanups (SLIC) Program Case, number RO0002896 had been assigned to the project along with Global Identification Number T06019794669, and that this project would proceed with the same case number, but a different responsible party.

SCS declares, under penalty of perjury, that the information and/or recommendations contained in this document are true and correct to the best of our knowledge.

We greatly appreciate your timely review of this PMP. If we can be of further assistance, or if you have any questions regarding the above scope of work, please contact one of the undersigned at (858) 571-5500.

Sincerely,



Christopher S. Spengler  
Vice President  
**SCS ENGINEERS**





Robert Q. Gutzler, PhD, PG 5571  
Senior Project Geologist  
**SCS ENGINEERS**



**Professional Certification**

I certify<sup>1</sup> that this document has been prepared under my direction and/or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my oversight of this system and those persons directly responsible for gathering the information, on the information obtained by SCS through readily available public records, and the information provided to SCS by the Client, to the best of my knowledge and belief, the information submitted is accurate and complete.

  
Robert Q. Gutzler, PhD, PG 5571  
Senior Project Geologist



<sup>1</sup> The term “certification” or “certify” shall be defined to be consistent with the definition in the California Business and Professions Code (BPC) section 6735.5. As stated in the BPC, the definition of certification constitutes an expression of professional opinion regarding those facts or findings which are the subject of the certification, and does not constitute a warranty or guarantee, either expressed or implied.

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- September 18, 2008 Alameda County Environmental Health Letter to Mr. Curtis Eisenberger
- Proposed Future Land Use Plans
- Excerpts of Data, Site Plans, and Boring Logs from Prior Reports
- 1902 Sanborn Fire Insurance Map

## EXECUTIVE SUMMARY

Oakland Housing Investors, LP (OHI) is proposing to redevelop approximately 0.88 acre of vacant land located at 1396 5<sup>th</sup> Street, Oakland, California into a five-story affordable housing project for seniors. The Site was the former home of a yeast manufacturing company that went by several different names for the course of its history, but is most commonly referred to as the Red Star Yeast Company. Yeast manufacturing had been conducted at the Site since before 1902. The former facility was demolished in 2006 and has been vacant since. The current owner, 1396 5<sup>th</sup> Street, LLC, had proposed a similar project and had been working with the Alameda County Environmental Health (ACEH) on restoring the Site for unrestricted future land use. OHI is proposing to mitigate the Site as necessary for the proposed land use and will place a deed restriction on the Site and participate in the City of Oakland's Permit Tracking System, as necessary.

Based on assessments done to date, the constituents of concern (CoCs) include elevated lead concentrations in the approximately 2.5 to 4.5 feet of fill soil across the Site, possible elevated concentrations of mercury in the same fill soil, low level concentrations of petroleum hydrocarbons (diesel- and oil-range organics) in the shallow soil, and dissolved phase petroleum hydrocarbons (diesel- and oil-range organics) in the shallow groundwater. Gasoline or other volatile organic compounds have not been detected at the Site to date and, therefore, there does not appear to be a potential for a human health risk due to vapor intrusion.

The proposed redevelopment includes a five-story building built on a podium structure (i.e., a structural slab-on-grade supported by 45-foot deep pilings). It is estimated that approximately 3,000 cubic yards of soil from the grading, excavation, and drilling activities will be generated and disposed of off-Site as a regulated waste in an appropriate landfill, and that an additional approximately 400 cubic yards will be soil that is free of CoCs which will likely be managed as reusable soil (e.g., used as alternate daily cover at a landfill).

The five-story building will include four levels of apartments above the on-grade first level which includes 23,783 square feet of parking, approximately 3,300 square feet of retail space, and approximately 2,500 square feet of office, community space, and lobby areas. Along the northern side of the Site, a fire safety access road/alley will be constructed which will be approximately 20 feet wide. The entirety of the Site will be covered with either concrete (slabs) or asphalt paving (access road).

Based on our review of the relevant regulations and policies including the Environmental Screening Levels (ESLs) of San Francisco Regional Water Quality Control Board and the site-specific target levels (SSTLs) of the City of Oakland's Urban Land Redevelopment Program, it is SCS's opinion that the proper management of soils excavated during construction activities will constitute the entire extent of the mitigation required to be protective of human health and the environment for the proposed future land use.

## 1.0 INTRODUCTION

The Site consists of approximately 0.88 acre of vacant land located in Oakland, California. The Site was the former home of a yeast manufacturing company that went by several different names for the course of its history, but is most commonly referred to as the Red Star Yeast Company. Yeast manufacturing had been conducted at the Site since before 1902. Vinegar production was also conducted in the early part of the 20<sup>th</sup> century and various breweries occupied the eastern half of the Site up until the early 1960s. SCS understands that the former facility was demolished in 2006.

Environmental concerns at the Site have included above-ground and underground storage tanks (ASTs/USTs) for fuels, the use of various chemicals and petroleum products with documented spills and releases including a release of mercury to the sewer system and subsurface soil, potential impacts from off-Site releases of petroleum products, and the presence of approximately 3 to 8 feet of fill soil across the Site that contains elevated concentrations of lead and other metals, and detectable concentrations of petroleum hydrocarbons (diesel- and oil-range organics). Diesel- and oil-range petroleum hydrocarbons were also found in groundwater samples collected from the western half of the Site which might be related to a historical (1902) UST associated with a boiler.

Oakland Housing Investors, LP (Client) are proposing to construct an affordable housing project for seniors. The five-story building will include four levels of apartments above the on-grade first level which includes 23,783 square feet of parking, approximately 3,300 square feet of retail space, and approximately 2,500 square feet of office, community space, and lobby areas. Along the northern side of the Site, a fire safety access road/alley will be constructed which will be approximately 20 feet wide. The entirety of the Site will be covered with either poured concrete slabs or concrete pavement (access road).

SCS understands that 1396 5<sup>th</sup> Street LLC (the current Site owner) had recently been conducting assessment activities at the Site under the oversight of the Alameda County Environmental Health (ACEH). We understand that a Spills, Leaks, Investigations, and Cleanups (SLIC) Program Case, number RO0002896 had been assigned to the project along with Global Identification Number T06019794669, and that this project would proceed with the same case number, but a different responsible party.

## 2.0 OBJECTIVES

The objectives of a PMP are to provide a dynamic strategy to properly manage soil containing constituents of concern (CoCs) and to assess, and mitigate, as necessary, releases of petroleum hydrocarbons and hazardous wastes in a manner that is protective of human health for the proposed future land use and the beneficial water resources of the Site vicinity.

### 3.0 PROJECT INFORMATION

<b>APN</b>	004-69-004
<b>Address</b>	1384-1396 Fifth Street, Oakland, California
<b>Area</b>	0.88 acres, 38,381 square feet
<b>Site Land Use</b>	Vacant
<b>Occupant</b>	None
<b>Project Proponent</b>	Oakland Housing Investors, LP c/o National Affordable Communities, Inc. 4299 MacArthur Boulevard, Suite 215 Newport Beach, California 92660 Contact: Mr. Darren Berberian 949-222-9119 <a href="mailto:Darrenberberian@yahoo.com">Darrenberberian@yahoo.com</a>
<b>Developer</b>	Oakland Housing Investors, LP c/o National Affordable Communities, Inc. 4299 MacArthur Boulevard, Suite 215 Newport Beach, California 92660 Contact: Mr. Darren Berberian 949-222-9119 <a href="mailto:Darrenberberian@yahoo.com">Darrenberberian@yahoo.com</a>
<b>Environmental Consultant</b>	SCS Engineers 8799 Balboa Avenue, Suite 290 San Diego, California 92123 Contact: Mr. Christopher S. Spengler 858-571-5500 <a href="mailto:cspengler@scsengineers.com">cspengler@scsengineers.com</a>

### 4.0 CURRENT SITE CONDITIONS

On July 28, 2008, Mr. Andy Zahurak of SCS, conducted a Site reconnaissance to observe and document existing Site conditions. The general Site location is shown in Figure 1 and photographs of the current Site conditions are shown in Figure 2. The Site boundary is shown in Figure 3.

All Site buildings and structures were reported to have been demolished in 2006. No remaining structures were observed at the Site. Unidentified utility covers were observed to be located in the sidewalks at the southeast and northwest areas of the Site. None of these utility covers appeared to be obviously associated with USTs, however, SCS could not gain access to all of the handholes. It is anticipated that the purpose of these manholes will be ascertained through the ALTA survey.

Approximately 20 to 24 piles of soil with debris were observed to be located at the northeast area of the Site. The soil piles were observed to contain soil, concrete, brick, and, in some cases,



organic matter. The source of this soil is unknown, as are the persons responsible for dumping it on the Site, therefore, SCS recommends testing to assess the potential for CoCs to be present in the fill (e.g., petroleum products, volatile organic compounds, pesticides, metals, etc.).

The remainder of the Site was observed to be surrounded by concrete paved sidewalks (at the north, west, and south perimeters of the Site), and limited landscaping. The BART elevated light rail tracks were observed to be adjacent to the north. Unsecured chain-link fencing was observed around the Site perimeter.

## 4.1 TOPOGRAPHY, SOIL, GEOLOGY, HYDROGEOLOGY AND WATER QUALITY SURVEY

### 4.1.1 Topography

A topographic map for the Site vicinity was reviewed and is summarized in the following table:

<b>Reported Elevation</b>	13 feet above mean sea level
<b>Reported Slope Direction</b>	General Site vicinity topography slopes downward to the south
<b>Source</b>	United States Geological Survey 7.5 Minute Topographic Map, Oakland West Quadrangle, California, 1959, photo-revised 1980 and per Geocheck® from EDR <sup>2</sup>

### 4.1.2 Geology

A geological map for the Site vicinity was reviewed and is summarized in the following table:

<b>Reported Formation</b>	Not Reported
<b>Reported Description</b>	The artificial fill is underlain by a stratified sequence of Quaternary sedimentary deposits formed during the Cenozoic Era.
<b>Source</b>	Based on the Geology of the Conterminous U. S. at 1:2,500,000 Scale - a digital representation of the 1974 P. B. King and H. M. Beikman Map by P. G. Schruben, R. E. Arndt, and W. J. Bawiec published in 1994 as part of the U. S. Geological Survey Digital Data Series (dataset DDS-11). As provided by Geocheck® from EDR

Based on the reports by Treadwell & Rollo (T&R) (in numerous assessment reports for the Site, references included in the Historical Site Research section), and a review of the available soil boring logs from T&R, Remediation Services, Inc. (RSI), and Geoboden, Inc.,<sup>3</sup> (Geoboden) the Site is covered with heterogeneous fill soil extending to depths of approximately 2.5 to 4.5 feet. The fill consists of medium dense sand with varying amounts of clay, brick, concrete, and gravel.

<sup>2</sup> Environmental Data Resources, Inc., 2008, The EDR Radius Map™ Report with GeoCheck®: Unpublished report prepared for address 1384 Fifth Street, Oakland, California 94607, dated July 2, 2008. This report was included with the August 15, 2008 *Phase I Environmental Site Assessment, Assessor's Parcel Number 004-69-004, 1384-1396 Fifth Street, Oakland, California* prepared by SCS Engineers and submitted to the ACEH.

<sup>3</sup> *Geotechnical Investigation Report, Proposed Red Star Senior Living Apartments, 1396 5th Street, Oakland, California*, prepared by Geoboden, Inc. for Oakland Housing Investors, LP, dated July 8, 2008.

The fill in the western portion of the Site is underlain by loose, “clean” sand to a depth of approximately 13 feet below grade. This sand is underlain by fine-grained deposits with organic materials and possible peat layers, possibly representing marsh deposits, between depths of approximately 13 and 24 feet below grade. The fill in the central portion of the Site is underlain by the fine-grained deposits from a depth of approximately 4.5 feet to approximately 14 feet below grade. The fine-grained deposits in the central portion were underlain by medium dense sand which grades to dense and very dense sand at approximately 25 feet below grade. The fill in the eastern portion of the Site is underlain by medium dense sand grading to dense sand from approximately 8 to 17 feet below grade.

The July 8, 2008 *Geotechnical Investigation Report* (Geotechnical Report) prepared for the Site by Geoboden described the advancement of five soil borings across the Site. According to Geoboden, the fill at Site is generally 7 to 8 feet thick except in one boring where it was identified down to a depth of 18 feet below grade. This discrepancy is likely due to different perspectives as to what constitutes fill soil. The material described by T&R, with the brick, glass, and debris is likely imported fill material while the deeper fill may be nearshore deposits that are native soils not classified by geotechnical engineers as formational materials.

The *Oakland Urban Land Redevelopment Program: Guidance Document*, (Oakland ULR) prepared by the City of Oakland Public Works Department, dated January 1, 2000 describes three major types of soil formations within the City of Oakland. The description is as follows:

“The Oakland RBCA approach identifies three Oakland-specific soil types for determining the appropriate Tier 2 SSTLs [site-specific target levels]:

- Merritt sands
- Sandy silts
- Clayey silts

Merritt sands are primarily located in the flatlands area to the west of Lake Merritt. They are a fine-grained, silty sand with lenses of sandy clay and clay. Merritt sands have a low moisture content and high permeability.

Sandy silts are found throughout Oakland. They are made up of unconsolidated, moderately sorted sand, silt, and clay sediments, with both fine-grain and coarse-grain materials. Sandy silts have a medium moisture content and moderate permeability.

Clayey silts are primarily found along the Bay and estuary, and in land fills from those areas. They may contain organic materials, peaty layers and small lenses of sand. Clayey silts have a high moisture content and low permeability.

The Oakland RBCA Tier 2 SSTLs take into account potential for contaminant sorption and migration in the different soil types, because these characteristics affect levels of human exposure. For most exposure pathways, the Tier 2 SSTLs

for Merritt sands are the most stringent, while the SSTLs for clayey silts are the least stringent.”

Based on this description, the review of the available soil boring logs, and United States Geological Survey (USGS) *Geologic Map and Map Database of Oakland Metropolitan Area, Alameda, Contra Costa, and San Francisco Counties, California*, by R.W. Graymer, 2000 (Miscellaneous Field Studies MF 2342, Online Version 1.0), it is SCS’s interpretation that the Site is underlain by the “Clayey Silts” (i.e., the upper 4 feet of fill soil) which is referred to on the map as Af – Artificial Fill (Historic). This artificial fill of clayey silts is interpreted to be underlain by the Merritt Sands (Qms) (Holocene and Pleistocene).

The Artificial Fill is described as “Man-made deposit of various materials and ages. Some are compacted and quite firm, but fills made before 1965 are nearly everywhere not compacted and consist simply of dumped materials.” Obviously, since the Site has been continuously developed since prior to 1900, the materials do have a certain amount of compaction.

The Merritt Sands are described as “fine-grained, very well sorted, well-drained eolian deposits of western Alameda County. The Merritt sand outcrops in three large areas in Oakland and Alameda. Previously thought to be only of Pleistocene age, the Merritt sand is probably time-correlative with unit Qds, based on similar interfingering with Holocene bay mud (Qhbm) and presumably similar depositional environments associated with long-term sea-level fluctuations. The Merritt sand displays different morphology from unit Qds, however, forming large sheets up to 15 meters high with yardang morphology.”

Based on the review of the readily available geologic information and the environmental data it is SCS’s opinion that the vast majority, if not all, of the CoCs at the Site are contained within the clayey silts of the artificial fill and therefore this is the most appropriate soil type for determining the appropriate Tier 2 SSTLs. The Oakland ULR defaults for clayey silts were used for the SSTLs presented in Section 7.2.

#### 4.1.3 Hydrogeology

Data regarding groundwater depth and flow direction for the Site were obtained through reviews of previous Site and off-Site investigations. In addition, the information provided by EDR via their GeoCheck® Physical Setting Source Addendum was used for general groundwater flow direction in the Site vicinity. The following table summarizes the results of this review:

<b>Reported Depth</b>	3.5 to 8 feet below grade
<b>Reported Flow Direction</b>	Generally southwest (based on the GeoCheck® information provided by EDR)
<b>Source</b>	Various T&R reports in the ACEH file

Please note that many variables influence groundwater depth and flow direction, and the actual depth and flow direction at the Site may be different from what is presented in this section.

#### 4.1.4 Water Quality Survey

The following table summarizes the reported water quality in the Site vicinity:

<b>Reported Basin</b>	Santa Clara Valley
<b>Reported Sub Basin</b>	East Bay Plain
<b>Reported Basin Number</b>	2-9.04
<b>Reported Beneficial Use</b>	Existing beneficial uses for municipal and domestic uses, industrial process supply, industrial service supply, and agricultural water supply; however, based on the numerous files reviewed as part of the Phase I, there is a high likelihood that the groundwater at the Site is not suitable as a drinking water resource due to the high amount of total dissolved solids (TDS) that were reported for the Site and numerous facilities in the Site vicinity. RSI reported the TDS of the two groundwater samples they collected from boring SB-1 and SB-2 as 2,400 and 1,800 milligrams per liter (mg/L), respectively. The TDS Maximum Contaminant Level (MCL) for Municipal Supply pursuant to the Basin Plan is 500 mg/L. SCS understands that the reported TDS levels for groundwater samples collected from the Site are consistent with other TDS concentrations in the Site vicinity and that there is a high likelihood that the TDS are naturally occurring due to the proximity of the Site to the bay.
<b>Source</b>	RWQCB's "San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan), incorporating all amendments, and dated January 18, 2007.

## 4.2 POTENTIAL OFF-SITE SOURCES

SCS recently (August 15, 2008) completed a Phase I Environmental Site Assessment (Phase I) of the Site which included a thorough evaluation of all of the known and reported off-Site releases of petroleum products and hazardous wastes. One conclusion of the Phase I was that there was a low likelihood that the Site had been impacted by any of the known and reported off-Site releases. The two off-Site facilities that had the greatest potential to have impacted the Site were the Trucker's Friend facility located north of the Site at 1395 7<sup>th</sup> Street (on the north side of the BART right-of-way), and J&A Truck Repair/Smilo Chemical Company located at 500 Kirkham Street to the east of the Site. The following paragraphs describe the releases and the basis for the conclusions that they have not impacted the Site.

### 4.2.1 Trucker's Friend

This facility appears to be adjacent to the north side of the Bay Area Rapid Transit (BART) right-of-way that is adjacent to the north side of the Site. One 520-gallon waste oil UST was removed from the facility in 1996 and in 1997, one 4,000-gallon unleaded gasoline UST, one 8,000-gallon diesel UST, and one 9,000-gallon diesel UST were removed along with the associated pipelines and fuel dispensers. These USTs were removed and replaced with a new 20,000-gallon double-walled UST.

The majority of the release from the gasoline/diesel system appears to have come from the pipelines and fuel dispensers (highest concentration of 20,000 parts per million (ppm) total petroleum hydrocarbons as diesel-range organics [TPH-diesel]). A subsequent sample reportedly

collected at 3 feet below grade in the vicinity of this highest sample was reported to have a TPH-gasoline concentration of 9.8 ppm and a TPH-diesel concentration of 44 ppm. The highest TPH concentration from the former UST pit was reported to be 1.3 ppm of TPH-gasoline. The highest TPH-gasoline/diesel concentration from the former waste oil UST pit was reported to be 180/2,400 ppm, respectively.

A document titled "Revised Workplan for Investigation of Former Waste Oil Tank, Trucker's Friend, 1395 7<sup>th</sup> Street, Oakland, CA," dated November 5, 2001 was submitted to the ACEH. The plan proposed the advancement of four direct push soil borings in order to collect *in situ* groundwater samples, one on each side of the former waste oil UST excavation. The workplan also proposed to sample the existing groundwater monitoring well, MW3, at the facility. Well MW3 is located in the southern portion of the facility, approximately 10 feet west of the southwestern corner of the former gasoline/diesel UST excavation and approximately 50 southeast of the former waste oil UST.

It appears that a report of these assessment activities was never submitted to the ACEH; however, an analytical report of the sample analyses was submitted. Based on a review of this analytical report by McCampbell Analytical, Inc., dated February 4, 2002, the four *in situ* groundwater samples were reported to have no detectable concentrations of TPH-gasoline or benzene, toluene, ethylbenzene, or xylenes. The four samples were reported to have TPH-diesel concentrations of 130, 140, 500, and 670 micrograms per liter ( $\mu\text{g/L}$ ). One of the four samples was reported to have oil and grease (as analyzed by EPA method 418.1 with silica gel cleanup) of 15 milligrams per liter ( $\text{mg/L}$ ), and the other three were reported to not have concentrations greater than 5  $\text{mg/L}$  (the method detection limit).

The groundwater sample from MW3 was reported to have no detectable concentrations of TPH-gasoline/diesel, oil and grease, benzene, or ethylbenzene. The sample was reported to have 0.55  $\mu\text{g/L}$  of toluene and 0.81  $\mu\text{g/L}$  of xylenes. While MW3 is not ideally located downgradient from the former waste oil UST location or the former dispenser islands, the general groundwater flow direction in the Site vicinity was reported to be to the southwest, which makes these releases partially crossgradient from the Site with respect to groundwater flow direction, given the locations of these former USTs/dispensers in the northwestern corner of the block. The gasoline UST pit is located approximately 124 feet north of the northern boundary of the Site. According to Mr. Barney Chan,<sup>4</sup> the former case manager for this release case, no further assessment was conducted at this facility and the documentation of the assessment was not conducted to the satisfaction of the agency.

T&R referenced the soil sample analytical results from soil boring SB-2 (advanced and sampled by RSI) as evidence that the releases at this facility have not impacted the Site. The sample collected analyzed by RSI from SB-2 was reported to have been collected from a depth of 1.5 feet below grade; however, an *in situ* groundwater sample was collected and reported to have no detectable concentrations of TPH as gasoline-range organics (TPHg), TPHd or volatile organic compounds (VOCs) by Environmental Protection Agency (EPA) Method 8260B. Groundwater

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<sup>4</sup> Telephone conversation between Mr. Christopher S. Spengler (SCS Engineers) and Mr. Barney Chan (ACEH), August 8, 2008.

analysis for oil-range organics would have been preferable, but based on the absence of detectable concentrations of VOCs or TPHg in this groundwater sample or the seven others collected at the Site, the likelihood of impact to the Site is considered to be low.

The files for this facility were included in the Appendix of SCS's Phase I which has been submitted to the ACEH.

#### **4.2.2 J&A Truck Repair/Smilo Chemical Company**

This facility was assessed and mitigated as part of the Cypress Freeway (1-880) Reconstruction Project. The site was formerly known as Smilo Chemical Company, which operated as a chemical repackaging company. It was later used as a truck repair facility in which the facility occupied approximately one third of the property. It was reported that the "Completed PEA [Preliminary Endangerment Assessment] found the Site had elevated levels of petroleum hydrocarbons, PCBs, metals, semi-and volatile organic compounds" and that "Approximately 4,700 cubic yards of soil was excavated to six feet below ground surface. The site was paved for use as a training area for postal vehicles. Caltrans has installed groundwater monitoring wells and is conducting quarterly monitoring. Since the remediation goals contained in the approved RAP were for an industrial/commercial use, a deed restriction will be placed on the property restricting use."

The following summary of the environmental assessment of the facility was included in the file:

"The site is located at 500 Kirkham Street and was formerly known as Smilo Chemical Company, which operated as a chemical repackaging company. It was later used as a truck repair facility in which the facility occupied approximately one third of the site. An unpermitted 2000 gallon UST and sump were used by the Smilo Chemical Company and possibly previous businesses. Caltrans demolished the building in May, 1995 and will soon remove the UST and sump. A new interchange will be constructed by Caltrans at the south east corner of the site for the re-alignment of 5th Street.

A Phase I site investigation was performed by Geo/Resource Consultants, Inc. in August, 1992. No pesticides, PCBs or elevated levels of heavy metals were detected in soil samples collected. A PEA report was prepared by Environmental Solutions, Inc. and completed in March, 1995. Soil samples collected revealed elevated levels of TPH-g (max. 6,500 ppm), TRPH [total recoverable petroleum hydrocarbons] (max. 4,500 ppm) and various heavy metals, including arsenic (max. 27 ppm). Elevated levels of VOCs such as acetone (max. 250 ppm), benzene (max. 7,700 ppb [parts per billion]), and total xylenes (max. 250,000 ppb) were detected in soil samples collected near the sump and UST. SVOCs [semi-volatile organic compounds], including Bis(2-Ethylhexyl) Phthalate (max. 250,000 ppb), were also detected near the sump and UST. Ground water samples displayed minor concentration levels of heavy metals and high levels of VOCs including benzene (max. 15,000 µg/l [micrograms per liter]), toluene (max. 2,100 µg/l) and total xylenes (max. 7,200 µg/l)."

### Ranges of Soil and Groundwater Analytical Results

Constituent	Soil	Groundwater
<b>Petroleum Hydrocarbons</b>		
TRPH	12 - 4500 ppm	ND - 4 mg/L
Gasoline	2.7 - 6,500 ppm	ND - 59 mg/L
Oil and Grease	290 - 1,000 ppm	2 mg/L
<b>Metals</b>		
Antimony	ND - 2.7 ppm	ND
Arsenic	ND - 27 ppm	ND - 0.61 mg/L
Barium	23 - 330 ppm	0.047 - 1.9 mg/L
Beryllium	0.13 - 0.59 ppm	ND - 0.013 mg/L
Cadmium	0.10 - 1.6 ppm	ND - 0.062 mg/L
Chromium (total)	ND - 41 ppm	ND - 0.92 mg/L
Cobalt	1.5 - 89 ppm	ND - 0.23 mg/L
Copper	2.7 - 34 ppm	0.01 - 0.34 mg/L
Lead	1.7 - 150 ppm	ND - 0.08 mg/L
Mercury	ND - 0.66 ppm	ND - 0.002 mg/L
Molybdenum	ND - 0.32 ppm	ND - 0.026 mg/L
Nickel	3.2 - 24 ppm	ND - 0.85 mg/L
Vanadium	7.7 - 41 ppm	ND - 0.83 mg/L
Zinc	7.1 - 170 ppm	ND 0.01 mg/L
Lead - STLC	1.8 - 30 mg/L	Not Tested
pH Units	7.3 - 8.5	7.4
<b>SVOCs</b>		
Phenanthrene	ND - 0.07 ppm	ND
2-Methylnaphthalene	ND - 4.5 ppm	ND
Di-N-Butyl Phthalate	ND - 4.0 ppm	ND
Fluoranthene	ND - 0.08 ppm	ND
Pyrene	ND - 0.08 ppm	ND
Butyl Benzyl Phthalate	ND - 0.45 ppm	ND
Bis(2-Ethylhexyl)Phthalate	ND - 250 ppm	ND
Naphthalene	ND - 6.3 ppm	ND
<b>VOCs</b>		
Acetone	ND - 250 ppb	ND
Benzene	ND - 7,700 ppb	ND - 15,000 µg/L
Cis- 1,2-Dichloroethene	ND - 11 ppb	ND - 73 µg/L
Ethylbenzene	ND - 2,700 ppb	ND - 2,100 µg/L
Tetrachloroethene	ND - 15 ppb	ND - 16 µg/L
Toluene	ND - 94,000 ppb	ND - 7,700 µg/L
Trichloroethane	ND - 100 ppb	ND - 300 µg/L
Total Xylenes	ND - 250,000 ppb	ND - 7,200 µg/L
2-Butanone (MEK)	ND	ND - 44 µg/L
1,1,1 - Trichloroethane	ND	ND- 18 µg/L
1,1 - Dichloroethene	ND	ND - 13 µg/L

**Notes:**

ND – not detected above the method detection limit

mg/L – milligrams per liter

STLC – Soluble Threshold Limit Concentration

The groundwater monitoring data and well locations were not included in the readily available files from either the ENVIROSTOR database or the ACEH online records.

The groundwater samples collected at the Site that were analyzed for VOCs were reported not to have detectable concentrations of VOC or TPH-gasoline (with the one exception of a concentration of 270 µg/L in a “grab” groundwater sample collected from an open trench during the assessment of the former 3,000-gallon diesel UST in the southeastern portion of the Site); however, this concentration of TPH-gasoline was reported with the following notations: “one to a few isolated non-target peaks present” and “liquid sample that contains greater than ~1 vol. % sediment.” Therefore, it is reasonable to conclude that gasoline was not detected in the sample. Therefore, it is our opinion that there is a low likelihood that the reported releases at this facility have resulted in an impact to the Site.

The files for this facility were included in the Appendix of SCS’s Phase I which has been submitted to the ACEH.

## 5.0 HISTORICAL SITE LAND USE

The following table provides a chronology of the apparent historical Site land uses as interpreted from a review of information from the sources referenced:

Years	Interpreted Site Tenants	Interpreted Site Use
1880	Unknown	Date when the legal description of the Site was first established as Lots 12 to 19 as shown on “Map of the Westerly Part of Block 492.” This description covers approximately 50 percent of the current Site.
1902	Consumers Yeast & Vinegar Works (1372 5 <sup>th</sup> Street)	Yeast and vinegar manufacturing. Features of concern: an “oil tank underground” and a boiler
	Various dwellings (1370 and 1376 5 <sup>th</sup> Street)	Residential
	Washington Brewery (801 Kirkham Street ? [currently would 501 Kirkham Street])	Brewery. No features of concern on the current Site. A boiler fueled by coal and coke, and a water well were located north of the current Site boundaries.
1912	Consumers Yeast & Vinegar Works (1380 to 1384 5 <sup>th</sup> Street)	Yeast and vinegar manufacturing. Features of concern: the “oil tank underground” is not depicted but the text states “Fuel Oil – Power,” and two boilers.
	Various dwellings (1366, 1368, 1372, 1374, 1376, and 1396 5 <sup>th</sup> Street, 500 and 518 Cypress Street)	Residential
	Washington Brewery (501 Kirkham Street)	Brewery. No features of concern on the current Site. Two boilers fueled by fuel oil, and a water well were located north of the current Site boundaries.
1928	Lincoln Compressed Yeast Co. (1384 5 <sup>th</sup> Street)	Yeast manufacturing.
1943 - 1950	Golden West Brewing Company/Golden Glow Brewing Co. (533 Kirkham Street)	Brewery. Address is off-Site but facility likely covered a portion of the Site.



Years	Interpreted Site Tenants	Interpreted Site Use
1939 - 1952	Consumers Yeast & Vinegar Works (1374 to 1396 5 <sup>th</sup> Street, 500 Cypress Street)	The yeast and vinegar manufacturing has taken over the southwestern corner of the block. Features of concern: a boiler house is shown in the northern portion of the property and only a portion of it is interpreted to be on the current Site. The previous boilers and UST are not depicted. A "Deep Well" and a "Generator Room" is depicted on the eastern side of the property (in the central portion of the current Site).
1951 - 1955	Goebel Brewing Co. of Calif. (501 Kirkham Street/1350-1370 5 <sup>th</sup> Street, 500 Cypress Street)	Brewery. It appears that Goebel acquired the Golden West Brewery/Golden Glow Brewing Co. No apparent features of concern.
1955	Consumers Yeast Company, formerly known as Consumers Compressed Yeast Company, formerly known as Consumers Yeast and Vinegar Works	Yeast manufacturing
1955 - 1966	Red Star Yeast Co. Plant No. 4 (1374 to 1396 5 <sup>th</sup> Street, 500 Cypress Street)	Yeast manufacturing. No change in the layout or features of concern
1963	Regal Pale Brewery (1366-1370 Fifth Street)	Brewery
1965	Red Star Yeast Co. Plant No. 4 (1374 to 1396 5 <sup>th</sup> Street, 500 Cypress Street)	Every structure on the block appears to have been demolished and removed except for the yeast manufacturer.
1966	Universal Foods Corporation	Yeast manufacturing.
1967	Red Star Yeast Co. Plant No. 4 (1350 to 1396 5 <sup>th</sup> Street, 501 Kirkham Street, 500 Cypress Street)	The entire brewery has been demolished and removed. The yeast manufacturing has been reconfigured to the current Site boundaries. Fuel oil is still used. The deep well in the central portion of Site is not depicted, but a new deep well is shown in the northwestern corner of the Site. The Generator Room is still depicted.
1970	Universal Foods Corp. Red Star Yeast Div'n (1350 to 1396 5 <sup>th</sup> Street, 501 Kirkham Street, 500 Cypress Street)	Yeast manufacturing. No change in the features of concern.
1992	Red Star Yeast & Products Division of (1384 5 <sup>th</sup> Street)	Yeast manufacturing
2003	Lasaffre Yeast Corporation	Yeast manufacturing
2003	1396 5 <sup>th</sup> Street LLC & Eisenberger PTP <i>et al</i>	None
2004-2008	Red Star Housing (owner)/Vacant	Vacant lot, all structures removed.

Because many of the dates listed above are based on a limited selection of historical resources, they are considered to be approximations only; the actual beginning/ending dates for many of the Site uses listed above may have been earlier or later than indicated. Also, although a strict 5-year interval may not be apparent from the table above, due to the long term occupancy of the Site by

the same types of businesses, it is our opinion that there are no data gaps with regard to the Site history.

## 6.0 PREVIOUS ENVIRONMENTAL ASSESSMENTS

The following is a summary of the various environmental assessment activities that have been conducted at the Site by others. The readily available reports and records were included in the Appendix of SCS's Phase I.

- File: "PHASE1\_R\_2000-06.pdf" – June 2000 *Phase I Environmental Site Assessment of: Red Star Yeast and Products, A Division of Universal Foods Corporation, 1384 Fifth Street, Oakland, California 94607*, prepared by Environmental Resources Management, Inc. (ERM).
- File: "CORRES2.pdf" – January 7, 2004 County of Alameda Public Works Agency Approval of Drilling Permit Application W03-1160 for the destruction of 12-inch-diameter 400-foot-deep well and the associated application.
- File: "PHASE1\_PSA\_R\_2005-06-15.pdf" – June 15, 2005, Rev[ision] 1, *Phase I & II Environmental Site Assessment, Alameda County Assessor's Parcel Number 004-69-004*, prepared by Remediation Services, Inc. (RSI).
- File: "CORRES.pdf" – September 22, 1989 ACEH approval letter of the *Closure-in-Place of a 3,000-gallon Underground Storage Tank at 1384 5<sup>th</sup> Street, Oakland*.
- File: "CORRES2.pdf" – Various communications (letters and emails) from the ACEH, the City of Oakland Fire Services Agency (OFSA), and the County of Alameda Public Works Agency. The document dates range from January 7, 2004 to August 30, 2007.
- File: "DIR\_L.pdf" – April 3, 2006 letter from Mr. Chan to Mr. Curtis Eisenberger (1396 Fifth Street Associates) regarding the ACEH's review of the Remediation Services, Inc. (RSI) *Phase I & II Environmental Site Assessment*.
- (Not included in the File) – May 17, 2006 *Limited Environmental Site Characterization, Former Red Star Yeast Site, 1396 Fifth Street, Oakland, California*, prepared by T&R.
- File: "TNK\_R\_2006-10-20.pdf" – October 20, 2006 letter from Treadwell & Rollo (T&R) to Mr. Leroy Griffin of the City of Oakland Fire Services Agency documenting the removal of the 3,000-gallon diesel UST.
- File: "CORRES2.pdf" – November 30, 2006 No Further Action Letter from the City of Oakland Fire Department Approving the Removal of the 3,000-Gallon UST.
- File: "SWI\_R\_2006-12-15.pdf" – December 15, 2006 letter report regarding "*UST Soil and Groundwater Confirmation Sample Results*," prepared by T&R.

- File: “CORRES.pdf” – December 29, 2006 letter from Mr. Chan to Mr. Curtis Eisenberger (1396 Fifth Street Associates) regarding “Areas of Concern.”
- File: “ADD\_R\_2007-01-23.pdf” – January 23, 2007 letter from T&R to Mr. Barney Chan (ACEH) providing additional information requested by Mr. Chan prior to the development of the Site.
- File: “SWI\_R\_2007-02-28.pdf” – February 28, 2007 letter from T&R to Mr. Chan in response to Mr. Chan’s February 5, 2006 letter requesting additional information prior to development of the Site (information on the 1996 reported mercury spill, documentation of the closure of the former industrial supply well, potential soil vapor risk from the Trucker’s Friend facility, and soil boring logs).
- File: “WP\_R\_2007-04-16.pdf” – April 16, 2007 *Work Plan for Soil Confirmation Sampling*, prepared by T&R and submitted to Mr. Chan. The Work Plan was for excavation of lead-bearing soil at soil boring SB-2 and mitigation of the reported mercury spill.
- File: “MSIC\_SAMP\_r-2007-05-30.PDF” – May 30, 2007 letter from T&R to Mr. Barney Chan (ACEH) regarding “Analytical Results of Soil Confirmation Sampling” in the area of soil boring SB-2 (lead-bearing soil mitigation) and in the interpreted area of the reported mercury spill.
- File: “WP\_R\_2007-08-13.pdf” – August 13, 2007 *Work Plan for Soil Confirmation Sampling*, prepared by T&R and submitted to Mr. Chan. The Work Plan was for the additional excavation of mercury-bearing soil and the excavation of lead-bearing soil in the vicinity of soil boring E-1.
- Other miscellaneous files included an Assessor’s parcel map, a phone log regarding payment of ACEH fees, and a meeting attendance log.

The following table summarizes the various environmental issues that were identified, the extent of assessment, and the current status of the issue. The summaries below only included those documents that present unique information regarding issues of environmental concern.

Issues	Status
<b>September 22, 1989 Closure-in-Place of a 3,000-gallon Underground Storage Tank</b>	
Two soil borings, one angle, one vertical, advanced next to the UST. Soil samples collected at approximately 15 feet below grade (approximately 10 feet below the top of the saturated zone), and one groundwater grab sample. All samples reported to be “Non-Detect” for TPH-gasoline, -kerosene, and -diesel.	The ACEH concurred that the UST had been properly closed. However, since the soil samples were collected approximately 10 feet into the saturated zone they were not likely to find evidence of a release of petroleum hydrocarbons. This issue was later resolved by the removal of the UST by T&R.
<b>2000 ERM Phase I (Note: Page 8 is missing)</b>	
1947 boiler used both oil and gas burners and the source of the oil and gas was unknown.	No assessment
1967 boiler fueled by the 3,000-gallon diesel UST	Closed in place in 1989 then removed in 2006. Closure/removal approved by the ACEH.
3,000-gallon UST replaced in the early 1970s by a 1,600-gallon above-ground storage tank (AST) with secondary	No assessment of the location of the former AST; however, due to the reported secondary containment

Issues	Status
containment (incorrectly reported by ERM as 16,000 gallons) in the southeastern corner of the Site. The AST was removed prior to 1978.	system, there is a low likelihood that this former AST has caused a recognized environmental condition (REC). <sup>5</sup> The ACEH considered this issue in subsequent letters and does not considered a concern.
Mercury discovered in the soil during the repair of a sewer line on August 2, 1996.	23 55-gallon drums of soil and 12 drums of contaminated water were removed and disposed of off-Site. ERM reported that "soil samples collected from the soil surrounding the excavation showed no-detectable mercury." Analytical data or depictions of the excavation/sampling were not included in the report.
Petroleum hydrocarbon-bearing soil discovered in the vicinity of the abandoned UST during the construction of a lean-to cover.  <b>Sample results:</b> TPH-gasoline (<1 mg/kg), TPH-diesel (51 mg/kg), BTEX (< 5 µg/kg).	Less than 8 cubic yards disposed of off-Site by Safety Kleen. No records or analytical data of this action were included in the report.
Hydraulic elevator installed in 1949. Used soluble water-based hydraulic oil since 1978, but the type of oil used prior to 1978 was unknown.	The former location of the elevator is unknown.
1902 Sanborn Fire Insurance Map (Sanborn map) depicts an "Oil Tank Underground" a few feet from a boiler in the western one-third of the Site in the approximate middle of the north-south width of the Site.	It appears that none of the soil borings to date have specifically assessed this historical UST location.
A transformer was installed in 1998 to replace one installed in 1997. The fluid of the original transformer was tested for polychlorinated biphenyls (PCBs) in 1996 and no PCBs were detected. No other PCB-containing equipment was noted to be at the Site.	No assessment needed.
Oil stains were observed beneath the elevator hydraulic equipment and near pumps for some of the ASTs, and on a six-inch thick concrete pad in the new oil/paint storage area. Unspecified staining was observed in the boiler room, compressor room, and the parts storage room.	A map of stained locations was included but the quality of the copy makes it illegible. No assessment of the specific areas has been conducted except by coincidence for other sampling.
ERM concluded that: "Based on the age of the facility and process sewers and its long history as a manufacturing facility, the potential exists for subsurface environmental contamination at the Site resulting from historical usage of petroleum compounds and cleaning agents. There is no data that indicates evidence of subsurface contamination. However, wastewaters at the Site generally contain only food grade yeast materials or corrosive wastes, and elevated concentrations of hazardous substances would not be expected in the soil and groundwater beneath the site."	Without a map of a subsurface piping and drain system and also considering there have likely been multiple generations of drainage systems and subsurface piping this issue cannot be assessed specifically. Considering the release of mercury to the subsurface soil was judged to have occurred through a broken sewer line, there is a high likelihood that other releases of hazardous substances have impacted the subsurface through the drainage and piping systems of the Site throughout its history.
<b>January 7, 2004 County of Alameda Public Works Agency Approval of Drilling Permit Application</b>	
The permit approval was issued for the destruction of 12-inch-diameter 400-foot-deep well and the associated application which was perforated between 200 and 300 [feet below grade]. State Well No. 1S/4W34F4-D, Owners Well No. 34F-4, Permit No. W03-1160.	The approval letter states: "Your drilling permit applications to allow for the destruction of a unknown wells" [sic]. The application only refers to one well; however, Table 4 - Industrial and Irrigation Wells Within One Mile of Former Facility of the Remedial

<sup>5</sup> *Recognized environmental conditions*, as defined by ASTM, include the presence or likely presence of hazardous substances or petroleum products on a property that indicate an existing release, a past release, or a material threat of release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water on the property. However, the term is not intended to include *de minimis* conditions. A condition considered *de minimis* is not a recognized environmental condition.

Issues	Status
	Investigation Report, AMCO Chemical Superfund Site, Oakland, California identified two wells at 1384 Fifth Street (34F 2 and 34F 4) with depths of 350 and 400 feet, respectively. The 1951, 1952, 1957, 1958, and 1961 Sanborn maps depict a “deep well” slightly west of the approximate center of the current Site configuration. The 1967 and 1970 Sanborn maps depict a “deep well” near the northwestern corner of the current Site configuration.
<b>2005 RSI Phase I and II</b>	
RSI reported that the fill at the Site was placed between 1866 and 1890 and that the fill is commonly known to contain debris (e.g., brick, glass, wood, etc.) and elevated concentrations of metals. RSI advanced and sampled four soil borings analyzed for TPH-gasoline, -diesel, VOCs, pH, PAHs, cadmium, chromium, lead, mercury, nickel, zinc.	The fill was sampled by RSI and T&R.
<b>Soil boring SB-1</b> approximately 20 northeast of the southwestern corner of the Site. Downgradient of Site.  <b>Soil at 1.5 fbg:</b> TPH (ND); VOCs (ND), pH (7.24) <b>Groundwater:</b> TPH (ND); VOCs (ND), pH (6.61); PAHs (ND), metals (ND)	No issues based on these results; however, no issues assessed either.
<b>Soil boring SB-2</b> approximately 80 feet east of western Site boundary adjacent to the northern Site boundary. Downgradient of Trucker’s Friend.  <b>Soil at 1.5 fbg:</b> TPH (ND); VOCs (ND), pH (8.6); PAHs (0.52 mg/kg fluoranthene, 0.58 mg/kg pyrene); cadmium (3.3 mg/kg); chromium (39 mg/kg), lead (2,700 mg/kg); mercury (0.17 mg/kg); nickel (42 mg/kg); zinc (1,700 mg/kg) <b>Groundwater:</b> TPH (ND); VOCs (ND), pH (6.88); PAHs (ND), metals (ND).	Lead-bearing soil in the vicinity of SB-2 was excavated by T&R and confirmation samples indicated the mitigation was completed in terms of achieving the Environmental Screening Level (ESL) for lead of 150 mg/kg; however, the apparent assumption was that this was an isolated deposit of lead-bearing soil as opposed to a systemic and random characteristic of the fill soil across the Site which is, in our opinion, the more likely scenario. The PAHs are also likely related to the fill soil. The groundwater data would suggest that the gasoline release at Trucker’s Friend has not impacted the Site, but the analysis did not include the oil-range organics to address the waste oil release at the Trucker’s Friend facility.
<b>Soil boring SB-3</b> in the approximate center of the Site (east-west) and approximately 20 feet north of the southern Site boundary. Near the bulk chemical storage area.  <b>Soil at 1.5 – 2 fbg:</b> TPH (ND); VOCs (ND), pH (8.6); PAHs (ND); cadmium (1.4 mg/kg); chromium (28 mg/kg), lead (29 mg/kg); mercury (ND); nickel (22 mg/kg); zinc (34 mg/kg)	No issues based on these results; however, no issues were assessed either.
<b>Soil boring SB-4</b> approximately 15 feet north of the southern Site boundary and approximately 30 feet west of the eastern Site boundary. Former loading dock area.  <b>Soil at 1.5 – 2 fbg:</b> TPH (ND); VOCs (ND), pH (8.09)	No issues based on these results; however, no issues were assessed either.
<b>April 3, 2006 Letter Regarding the ACEH’s Review of the RSI Phase I &amp; II</b>	
The letter requests a map of the storage/disposal locations of hazardous materials, justification for the four soil borings, questions whether soil boring SB-2 was sufficient to assess off-Site impacts from the Trucker’s Friend facility, and a copy of the 2000 ERM Phase I.	The requested information was provided and additional assessment was undertaken by T&R regarding the releases at Trucker’s Friend in the form of soil borings E-1, E-2, and E-4.

Issues	Status
<b>October 20, 2006 Letter to the Fire Services Agency Regarding the Removal of the 3,000-Gallon Diesel UST.</b>	
<b>November 30, 2006 No Further Action Letter from the City of Oakland Fire Department Approving the Removal of the 3,000-Gallon UST</b>	
<p>T&amp;R removed the 3,000-gallon UST in September 2006. Approximately 20 cubic yards of soil was excavated due to apparent staining at the north end of the UST. One sample (ST-1) was collected from the east sidewall of the pit at the soil-water interface. The soil was described as dense clayey sand. A petroleum sheen was observed on the groundwater and groundwater was present at approximately 4 feet below grade. It was reported that 6,300 gallons of groundwater was removed from the pit and the groundwater was allowed to recharge prior to collecting a grab sample (GRAB). The soil sample was reported to have no detectable concentrations of TPH-gasoline, -diesel, MTBE, BTEX, and lead. The groundwater sample was reported to have 180 µg/L of TPH-diesel, and no detectable concentrations of TPH-gasoline and BTEX.</p>	<p>Additional soil sampling was conducted around the former UST location but not documented in this October 20, 2006 letter, but the results were presented in the December 15, 2006 letter report to the ACEH (see the next description).</p>
<b>December 15, 2006 Letter Report Regarding "UST Soil and Groundwater Confirmation Sample Results" From T&amp;R to the ACEH</b>	
<b>December 29, 2006 ACEH Letter of Technical Comments Regarding "Areas of Concern,"</b>	
<b>January 23, 2007 T&amp;R Letter in Response to the December 29, 2006 ACEH Letter</b>	
<b>February 5, 2007 ACEH Letter of Technical Comments Response to the January 23, 2007 T&amp;R Letter</b>	
<b>February 28, 2007 T&amp;R Letter in response to February 5, 2006 ACEH Letter</b>	
<p>This letter report from T&amp;R summarizes the previous work including a May 17, 2006 report entitled "<i>Limited Environmental Site Characterization...</i>" which described the advancement and sampling of six soil borings (E-1 through E-6). This report was not included in the file records. The December 15, 2006 letter report also included a description of additional sampling around the former UST location.</p>	<p>The December 29, 2006 ACEH letter was written on the basis of the agency's review of the December 15, 2006 T&amp;R report and requested information. T&amp;R responded with their January 5, 2007 letter which resulted in the February 5, 2007 ACEH letter. T&amp;R responded again with the February 28, 2007 letter. The following items present the culmination of these communications between the ACEH and T&amp;R.</p>
<p><b>Additional UST Sampling:</b> Four soil samples were collected on three sides of the UST excavation. Three samples were collected approximately 5 feet to the west, north, and east of the excavation at reported depths of 5 feet below grade. The fourth sample was collected approximately 10 feet north of the excavation at a reported depth of 5 feet below grade. A groundwater grab sample was collected from approximately 10 feet north of the excavation at a reported depth of 6 feet below grade. The samples were collected with the assistance of an excavator. TPH-diesel was detected in the samples collected 5 feet to the east and north of the excavation at reported concentrations of 1.3 and 2.0 mg/kg, respectively. All the samples were reported to have no detectable TPH-gasoline or BTEX concentrations. The groundwater sample (WN 10) was reported to have TPH-gasoline concentration of 270 µg/L and no detectable concentrations of TPH-diesel or BTEX.</p>	<p>The former 3,000-gallon UST appears to have been adequately assessed. The ACEH stated "<b>Therefore, no further investigation is required in regards to this UST.</b>"</p> <p>Also, the laboratory report for WN 10 indicated that the result was "one to a few isolated non-target peaks present" and "liquid sample that contains greater than ~1 vol. % sediment." Therefore, it is reasonable to conclude that gasoline was not detected at in the sample.</p>
<p><b>Soil Borings E-1 through E-6:</b> Soil samples were collected at depths of approximately 1.5 and 2.5 feet below grade from each boring.</p> <p><b>E-1</b> appears to have been located in the former petroleum oil and waste paint storage area (northwestern corner of the Site).</p>	<p>The ACEH requested that T&amp;R indicate the locations of the former new oil and waste paint and "used storage areas" and indicate if these areas were inspected or sampled.</p> <p>However, in a subsequent letter dated February 5, 2007, the ACEH stated that on the basis of the</p>

Issues	Status
<p>The 1.5-foot sample was reported to have no detectable TPH-gasoline, MTBE, or BTEX concentrations, and 3.7 mg/kg of TPH-diesel, and 19 mg/kg of TPH-oil. A total lead concentration of 180 mg/kg with a WET/STLC result of 11 mg/L, and TCLP result of &lt;0.2 mg/L were also reported.</p> <p>The 2.5-foot sample was reported to have no detectable concentrations of TPH, MTBE, BTEX, VOCs, or SVOCs. Metal concentrations of note included lead of 27 mg/kg and barium of 1,100 mg/kg.</p> <p>The groundwater sample was reported to have no detectable concentrations of TPH, MTBE, BTEX, VOCs, or SVOCs.</p>	<p>sampling results from soil boring E-1 and since the waste paint storage area could not be determined, <b>the ACEH had “no further concerns in these areas.”</b></p>
<p><b>E-2</b> was located approximately 40 northeast of the southwestern corner of the Site. The rationale for the location was not provided.</p> <p>Both samples were reported to have no detectable TPH, MTBE, or BTEX concentrations. The samples were not analyzed for metals.</p> <p>The groundwater sample was reported to have no detectable concentrations of TPH-gasoline, MTBE, or BTEX, and 320 and 1,500 µg/L of TPH-diesel/TPH-oil, respectively.</p>	<p>It appears that the ACEH did not consider that the results of soil borings SB-2, E-1, E-2, and E-4 were sufficient to address the potential impacts from the releases at the Trucker’s Friend facility. These soil borings were not specifically mentioned by the ACEH; however, the ACEH requested that T&amp;R evaluate potential soil and groundwater impacts to the Site including the potential soil vapor risk. The ACEH requested this report be submitted by February 28, 2007.</p> <p>In their February 28, 2007 letter, T&amp;R provided a discussion, rationale, and conclusion that on the basis of the groundwater analytical result for the samples collected from soil borings SB-2 and E-1, “it is unlikely that the service station is affecting the subsurface conditions at the Site.”</p> <p><b>Based on the available records, the ACEH provided no further comment on this issue and it appears that they were satisfied with T&amp;R’s assessment. SCS concurs that there is a low likelihood that the releases from the Trucker’s Friend facility have resulted in a REC at the Site.</b></p>
<p><b>E-3</b> was located approximately 20 feet north of the southern property boundary and 125 feet east of the western boundary. E-3 is interpreted by SCS to be approximately 30 feet south/southeast of the underground tank depicted on the 1902 Sanborn map and a boiler(s). The rationale for E-3 was not provided or apparent.</p> <p>The 1.5-foot sample was reported to have no detectable TPH-gasoline, MTBE, or BTEX concentrations, and 2.6 mg/kg of TPH-diesel, and 12 mg/kg of TPH-oil. A total lead concentration of &lt;0.5 mg/kg.</p> <p>The 2.5-foot sample was reported to have no detectable concentrations of TPH, MTBE, BTEX, or VOCs. A total lead concentration of 140 mg/kg with a WET/STLC result of 6.7 mg/L, and TCLP result of &lt;0.2 mg/L were also reported.</p> <p>The groundwater sample was reported to have no detectable concentrations of TPH-gasoline, MTBE, or BTEX,</p>	<p>The December 29, 2006 ACEH letter refers to “Oil-Stained Areas” as referenced in the 2000 ERM Phase I report, and requests a figure showing the locations of these areas and a description of how these areas were investigated and/or remediated. In the February 5, 2007 ACEH letter they state that they understand that T&amp;R’s contingency plan (presented in their December 15, 2006 letter report) “will cover any petroleum stained areas encountered during excavation activities.”</p> <p>The ACEH then states that they are “concerned about the detection of TPHd ranging from 320-580 ppb and TPHmo ranging from 1500-2000 ppb reported in groundwater samples from borings E-2, E-3, and E-4.” The ACEH requested that T&amp;R evaluate whether these results indicate a source of groundwater contamination that requires further delineation or risk evaluation.</p>

Issues	Status
<p>VOCs, or SVOCs., and 570 and 2,000 µg/L of TPH-diesel/TPH-oil, respectively.</p> <p><b>E-4</b> is interpreted by SCS to be approximately 10 feet east of the underground oil tank depicted on the 1902 Sanborn map and approximately 25 east of the associated boiler(s). However, the rationale for the location was not provided by T&amp;R.</p> <p>The 1.5-foot sample was reported to have no detectable TPH-gasoline, MTBE, or BTEX concentrations, and 5.6 mg/kg of TPH-diesel, and 38 mg/kg of TPH-oil.</p> <p>The 2.5-foot sample was reported to have no detectable concentrations of TPH, MTBE, or BTEX.</p> <p>The groundwater sample was reported to have no detectable concentrations of TPH-gasoline, MTBE, or BTEX, and 580 and 1,900 µg/L of TPH-diesel/TPH-oil, respectively.</p>	<p>The interpreted proximity of soil borings E-3 and E-4 to the depicted underground oil tank and associated boiler (two boilers in subsequent maps) in the 1902 Sanborn map and the downgradient direction with respect to reported groundwater flow direction of soil boring E-2 from these features suggests an on-Site source of these petroleum hydrocarbons that has not yet been fully assessed.</p> <p>In their February 28, 2007 letter, T&amp;R stated: "Although TPHd and TPHmo were detected in groundwater, the lack of VOC detections in soil and groundwater indicate that there does not appear to be a potential vapor intrusion risk from VOCs in soil and groundwater." T&amp;R went on to relate these conditions to their developments the location of planned parking facilities and how it would preclude vapor intrusion into the future residences.</p> <p><b>Based on the available records, the ACEH provided no further comment on this issue and it appears that they were satisfied with T&amp;R assessment. However, depending upon the Client's future development plans and the viewpoint of the current ACEH case manager, this issue may still be a potential REC.</b></p>
<p><b>E-5</b> was located approximately 30 feet north of the southern Site boundary and 120 feet west of the eastern boundary. The rationale for the location was not provided by T&amp;R.</p> <p>The 1.5-foot sample was reported to have no detectable TPH-gasoline, MTBE, BTEX, or VOC concentrations, and 1.4 mg/kg of TPH-diesel, and 6 mg/kg of TPH-oil.</p> <p>The 2.5-foot sample was reported to have no detectable TPH-gasoline, MTBE, or BTEX concentrations, and 3.2 mg/kg of TPH-diesel, and 20 mg/kg of TPH-oil.</p> <p>The groundwater sample was reported to have no detectable concentrations of TPH-gasoline, TPH-oil, MTBE, or BTEX, VOCs, or SVOCs., and 54 µg/L of TPH-diesel.</p>	<p>The significance of soil boring E-5 was not explained by T&amp;R or the ACEH. It is our opinion that the results (low concentrations of TPH) along with the results of all of the other soil samples demonstrate that there are random detectable concentrations of petroleum hydrocarbons and elevated concentrations of metals (primarily lead) in the fill soil at the Site. While it is likely, upon additional assessment and evaluation by statistical methods, that the concentrations of CoCs will be below residential Preliminary Remediation Goals for residential land use, these concentrations will make the soil a waste upon excavation and therefore will require disposal at a classified waste management unit (e.g., an appropriate licensed landfill).</p>
<p><b>E-6</b> was located in the AST area at the eastern end of the Site, approximately 25 feet north of the southern Site boundary and 15 feet west of the eastern boundary.</p> <p>The 1.5-foot sample was reported to have no detectable TPH-gasoline, MTBE, or BTEX concentrations, and 7.8 mg/kg of TPH-diesel, and 43 mg/kg of TPH-oil. A total lead concentration of 76 mg/kg with a WET/STLC result of 3.4 mg/L, and TCLP result of &lt;0.2 mg/L were also reported.</p> <p>The 2.5-foot sample was reported to have no detectable TPH, MTBE, BTEX, VOC concentrations.</p> <p>The groundwater sample was reported to have no detectable concentrations of TPH, MTBE, BTEX, VOCs, or SVOCs.</p>	<p>Based on the results of soil boring SB-4 (pH in a relatively neutral range) and soil boring E-6, and the clarification that the reported 16,000-gallon fuel oil AST was misreported and was really a 1,600-gallon AST, <b>the ACEH stated that they "have no further concerns in this area."</b></p>



Issues	Status
<p><b>Other Metals:</b> Reported arsenic concentrations in the five soil samples analyzed ranged from 1.7 to 6.8 mg/kg. The average concentration was 4.2 mg/kg. Two of the four groundwater samples analyzed, E-1-W and E-3-W, were reported to have arsenic concentrations of 3.4 and 4.7 µg/L, respectively. Lead was not detected in the five samples analyzed.</p>	<p>Based on the review of numerous cases for this report, it appears that the ACEH does not consider the water in the vicinity of the Site as being a source for drinking water due to high concentrations of naturally occurring total dissolved solids. <b>Therefore, it is our opinion, that there is a low likelihood that these groundwater concentrations would be considered to be a REC.</b></p>
<b>Additional ACEH Concerns</b>	
<p><b>Mercury Spill Area and Cleanup:</b> As described in the 2000 ERM Phase I a release of mercury was discovered during the repair of a sewer line. The ACEH requested a copy of a closure letter from the agency that provided oversight for the mitigation.</p>	<p>The Oakland Fire Department (OFD) was reported by T&amp;R to have been the oversight agency. According to Mr. Leroy Griffin of the OFD, they purge their records after five years unless it involves an ongoing issue which explains why T&amp;R were unable to locate any records of the mitigation. T&amp;R eventually undertook an assessment of the reported area of the spill. A Mercury Spill Incident Report is included as Appendix B to the January 23, 2007 T&amp;R letter.</p>
<p><b>Transformers/PCBs:</b> The ACEH states that they understand that T&amp;R were unable to locate any analytical results for the former transformers.</p>	<p>Since the hazardous materials management plan of the former facility stated the transformer was a non-PCB type and there is no evidence of a release from it, <b>the ACEH has no further concerns on the matter.</b></p>
<p><b>Deep Well On-Site:</b> The ACEH requested receipt of verification of the decommissioning of the industrial water supply well.</p> <p>It is our understanding that as a result of the September 11, 2001 terrorist attacks, the Department of Water Resources (DWR) will not release details regarding water supply wells without consent from an oversight agency and those records are only available to persons involved with groundwater investigations being conducted under the oversight of a regulatory agency.</p>	<p>The permit application to destroy the well and the approval of the permit are included in the file (CORRES2.pdf) but the well log and information specific to the abandonment have been redacted from the file. It was reported that Mr. James Yoo of the Alameda Public Works that stated that “this well was destroyed on February 13, 2004, however, he could not provide the DWR report.” T&amp;R was then able to obtain a copy of the final Well Completion Report prepared by Martell Water Systems, but it has been redacted from the file.</p> <p>While it does appear that there is sufficient evidence to conclude that this well has been properly decommissioned, there is no evidence regarding the decommissioning of the other well that was apparently located at the Site. While this does not fit the definition of a REC it may be of concern to a future property owner.</p>
<p><b>Elevator Hydraulic Equipment:</b> An elevator was reportedly present at the former Site facility near the northern Site boundary in the approximate center of the Site (east-west).</p>	<p>While there are no records of the removal of the hydraulic lift, the ACEH concurred with T&amp;R’s contingency plan to remove any impacted soils if encountered during excavation activities. (Note: the hydraulic elevator was reported to have used water-soluble oil which is usually considered to be a non-hazardous substance).</p>
<p><b>Lead-Impacted Areas:</b> The ACEH stated that “At least one soil sample, SB2, detected elevated lead concentration up to 2700 ppm” [sic]. The ACEH requested that this area be excavated and resampled prior to development.</p>	<p>The ACEH subsequently requested the mitigation of the lead-bearing soil in the vicinity of soil boring SB-2.</p>
<p><b>Asbestos and Lead-Based Paint:</b> In the December 29, 2006 ACEH letter, it was stated that “These materials have either been identified or are suspected to exist at the site. Appropriate health and safety plans must be observed when removing the buildings containing the materials.”</p>	<p>The buildings referenced in this statement had already been demolished and removed from the Site by the date of the ACEH letter. Asbestos-containing materials (ACMs) had been identified in the 2000 ERM Phase I which also stated that lead-based paint (LBP) was likely to be present.</p>

Issues	Status
	The Phase I recommended sampling the near-surface soil for asbestos because of the requirements of a proposed equity partner for the project (AIG/SunAmerica); however, this is usually not a concern for disposal facilities and since the entire Site will be paved or covered by the future Site building, it is SCS's opinion that this is not an issue.
<b>April 6, 2007 ACEH Technical Comments Letter</b>	
<b>Mercury Spill Area and Cleanup:</b> The ACEH stated that since T&R were not able to provide evidence of closure of this issue, they are requesting that T&R perform additional confirmation sampling in the area believed to be where the former sewer lead and mercury spill occurred.	The ACEH requested a "Work Plan for Sampling former Mercury Spill Area" be submitted by April 16, 2007.
<b>Lead-Impacted Areas:</b> Although T&R addressed the lead impacted soil in their soil management plan, the plan was intended to address future impacts and the "known lead hot spot, boring SB2 (2700 ppm @ 1.5') should be excavated and a confirmation sample taken to verify its removal."	The ACEH requested that T&R perform this work and submit the analytical results to the ACEH in a "Report of Mercury and Lead Confirmation Samples" by May 16, 2007.
<b>April 16, 2007 T&amp;R Work Plan for Soil Confirmation Sampling</b>	
<b>April 17, 2007 ACEH Letter Review of the April 16, 2007 T&amp;R Work Plan</b>	
<b>Mercury Spill Area:</b> T&R identified the interpreted location of the mercury spill and proposed to collect six surface samples and another set of six samples at approximately 6 inches below grade. T&R assumed the top of the 6-inch diameter sewer pipe was immediately beneath the former concrete slab.	The ACEH requested that the samples be collected at depths of 6 and 12 inches below grade.
<b>Lead Impacted Area:</b> T&R proposed to excavate an area approximately 5 feet by 5 feet by 2.5 feet in depth in the location of soil boring SB-2, and to collect one sample in each sidewall and one in the center of the excavation.	The mitigation of the lead impacted soil was approved as proposed.
<b>May 30, 2007 T&amp;R letter report "Analytical Results of Soil Confirmation Sampling" and July 06, 2007 Email from T&amp;R to Curtis Eisenberger and Barney Chan (ACEH)</b>	
Only the transmittal page and first page of the report were provided by the ACEH and the report was not available through their online records service. However, the above-referenced email (File: CORRES2.pdf) summarized the results of the assessment and mitigation.	<p><b>Lead Impacted Area:</b> The 5-foot by 5-foot by 2.5-foot excavation was performed and the five samples were reported to have lead concentrations of 94 to 190 mg/kg with the lowest concentration from the floor of the excavation.</p> <p><b>Mercury Spill Area:</b> T&amp;R excavated an area approximately 15 feet wide, 30 feet long, and 0.5 feet deep. Six soil samples were collected from 0.5 feet below grade, and then the excavation was extended to a depth of 1 foot below grade and an additional six samples were collected. The mercury concentrations of the samples from 0.5 feet below grade were reported to range from 0.72 to 5.8 mg/kg and the second set of samples were reported to have mercury concentrations ranging from 0.093 to 0.58 mg/kg.</p>
<b>August 1, 2007 ACEH Letter in Response to the Lead and Mercury Mitigation</b>	
<b>August 13, 2007 T&amp;R Letter Regarding the Work Plan for Soil Confirmation Sampling</b>	
<b>August 30, 2007 ACEH Letter Approving T&amp;R's August 13, 2007 Work Plan for Soil Confirmation Sampling</b>	
<b>Lead Impacted Area:</b> Since the reported lead concentrations in two samples (CS-7-WEST and CS-9-EAST)	T&R proposed to excavate an additional 3 feet (laterally) of soil near soil samples CS-7-WEST and

Issues	Status
and the sample collected from soil boring E-1 (at 1.5 feet below grade with a lead concentration of 180 mg/kg) exceeded the Environmental Screening Level (ESL) for lead of 150 ppm for residential (i.e., unrestricted) use.	CS-9-EAST and to excavate 5-foot by 5-foot by 2.5-foot volume near soil boring E-1.  <b>The presence of known lead-bearing soil with concentrations in excess of 150 mg/kg is considered to be a REC.</b>
<p><b>Mercury Spill Area:</b> The mercury concentration for sample CS-3-0 exceeded the ESL for mercury of 3.7 ppm, these areas must be excavated and re-sampled before unrestricted closure is considered or a deed restriction may be placed on the property.</p> <p>The ACEH also requested copies of the soil disposal receipts for the excavated soil along with the soil excavation report in order to expedite site closure review.</p>	T&R explained that the sample location CS-3-0 had been excavated and stockpiled on-Site and that the sample CS-3-6 was collected after 6 inches of soil had been removed and at a concentration of 0.28 mg/kg it was below the ESL.
The last piece of correspondence in the file is an August 30, 2007 email from Curtis Eisenberger to Barney Chan (ACEH) indicating he was waiting for the work plan approval. Mr. Eisenberger then goes on to wish Mr. Chan well in his new assignment (Mr. Chan was reassigned to a different department) and that he hoped Mr. Chan would be able to continue with this project until the NFA letter was issued since they've been working with him for 1-1/2 years.	
In a telephone interview between Mr. Chan (ACEH) and Mr. Chris Spengler (SCS) on August 4, 2008, Mr. Chan confirmed that there had no further progress than this. In a telephone interview Mr. Chris Spengler of SCS and Mr. Jerry Wickham (ACEH), the person to whom the case was assigned after Mr. Chan left the department, Mr. Wickham stated that he has not done any work on the case and therefore has no knowledge of the case.	
On a figure repeated through several T&R reports, three soil borings are depicted, B-1, B-2, and B-3. No references to these borings or data associated with them were found in any of the documents reviewed. It is unknown whether or not these borings were ever advanced and/or sampled. A request to Mr. Eisenberger has been sent via email for information regarding this borings but has not been received.	
It is currently unknown whether or not the excavated soil was properly disposed of at an off-Site location. If the soil containing lead and mercury above the ESLs is still present at the Site, then it would be considered to be REC. A request to Mr. Eisenberger as been sent via email for information regarding this soil but has not been received.	

**Notes:**

TPHg, TPHd, TPHo = Total Petroleum Hydrocarbons (gasoline range, diesel range, motor oil range organics as identified)

VOCs = Volatile Organic Compounds

SVOCs = Semi-Volatile Organic Compounds

PAHs = Polynuclear Aromatic Hydrocarbons

BTEX = Benzene, Toluene, Ethylbenzene, Xylenes

MTBE = Methyl-Tertiary-Butyl-Ether

PCBs = Polychlorinated Biphenyls

WET = Waste Extraction Test

STLC = Soluble Threshold Limit Test

TCLP = Toxicity Characteristic Leaching Procedure

mg/kg = milligrams per kilogram

ND = not detected above the method detection limit

µg/L = micrograms per liter

ppm = parts per million

ppb = part per billion

## 7.0 MITIGATION CRITERIA

### 7.1 HEALTH RISK EVALUATION

The primary needs of mitigation are the protection of human health and the protection of beneficial water resources. With regard to the protection of human health, standard health risk assessments evaluate three main components of risk:

- ▶ **Route of Exposure:** The route of exposure is the inhalation of, ingestion of, or dermal contact with soil, soil vapor, or groundwater containing CoCs.
- ▶ **Exposure Pathway:** The interaction between the receptor and the CoC which causes the exposure such as dermal contact to impacted soil, the inhalation of vapors migrating through the soil and into an occupied structure, or the ingestion of water containing CoCs.
- ▶ **Receptor:** In the case of a human health risk evaluation, the receptor is the human, but the concept also addresses the amount of the exposure which is tied to the concentrations of the CoCs and the length of exposure (i.e., time).

As previously described, the proposed future land use includes residential housing for seniors on floors two through five while the entire first floor is occupied by a parking garage, a retail space, and an office/recreation room/lobby area. Since the ventilations system for the first floor will be separate from the residential units, the first floor is the only occupied space that has a potential to have a complete exposure pathway to the subsurface impacts at the Site. In addition, the entire parcel will be either covered by an 11-inch-thick concrete slab or by a roadway paved with asphalt. Therefore, there will be no complete exposure pathway for direct contact with soil containing CoCs by any of the occupants of the Site. The only possible way for people to have contact with the soil would during be future subsurface utility work or repair. Obviously, the amount and duration of exposure during any such future work would be very limited and, on a per person basis, likely be single-event exposures.

Therefore, the only potential exposure pathway would be the accumulation of CoCs in indoor air as a result of vapor-phase transport from CoC-bearing groundwater or soil beneath a building. Standard practice for evaluating health risks for multi-story buildings is to only consider the lowest level of occupied space. For this Site, that level is a parking garage and commercial office space; therefore, the health risk evaluation should be based on the criteria used for commercial/industrial land uses even though the project as a whole is considered to be a residential project. This concept is supported by the Oakland Urban Land Redevelopment Program (Oakland ULR). The Oakland ULR states for land uses involving human habitation that do not include hospitals, schools for persons under 21 years of age, or day care centers for children, multi-unit housing structures where there is no exposed soil may be exempted [from residential standards for exposure] under certain conditions. It is SCS's opinion that this project is ideally suited for just such an exemption. Based on the current knowledge of the type and extent of CoCs at the Site, it

is SCS's opinion that the likelihood of a potential human health risk for the proposed future land use as a result of these CoCs in the subsurface is low.

In the Phase I prepared by SCS, SCS recommended that a soil vapor survey be conducted for screening purposes and to assist in the health risk assessment. Upon further evaluation of the data during the preparation of this PMP, it is SCS's opinion that a soil vapor survey is not warranted at this time and would only be warranted if the additional assessment activities revealed the presence of volatile compounds of concern.

## 7.2 CONSTITUENTS OF CONCERN AND COMPARISON TO ENVIRONMENTAL SCREENING LEVELS

Based on a review of the most recent, September 18, 2008, Technical Comment letter from ACEH to the Site owner, the CoCs include the following:

- ▶ Lead in the shallow soil (i.e., < 3 meters)
- ▶ Mercury in the shallow soil
- ▶ Diesel- and oil-range petroleum hydrocarbons in the shallow soil and groundwater

### Lead in Shallow Soil

The highest reported lead concentration to date was for sample SB-2 collected at 1.5 feet below grade by RSI in 2005; however, SCS understands that the associated soil within a 5-foot by 5-foot by 2.5-foot area around the sample was excavated and disposed of off-Site by T&R in 2007. Currently the highest reported lead concentration at the Site is 190 mg/kg collected from the excavation at SB-2. The 80 percent upper confidence limit of the statistical mean (80% UCL) of the reported lead concentrations for the Site was calculated using the US EPA's ProUCL software. The calculation was done with and without the 2,700 mg/kg concentration. The following table summarizes the reported lead results for the Site and the 80% UCLs.

**Reported Lead Concentrations in Soil**

Sample Number	Date Sampled	Depth (feet)	Lead (mg/kg)
SB-2	8/20/2004	1.5	2700
SB-3	8/20/2004	1.5-2	29
E-1-1.5	4/14/2006	1.5	180
E-1-2.5	4/14/2006	2.5	27
E-2-1.5	4/14/2006	1.5	--
E-2-2.5	4/14/2006	2.5	--
E-3-1.5	4/14/2006	1.5	<0.5
E-3-2.5	4/14/2006	2.5	140
E-4-1.5	4/14/2006	1.5	43
E-4-2.5	4/14/2006	2.5	15
E-5-1.5	4/14/2006	1.5	5.6

## Reported Lead Concentrations in Soil

Sample Number	Date Sampled	Depth (feet)	Lead (mg/kg)
E-5-2.5	4/14/2006	2.5	34
E-6-1.5	4/14/2006	1.5	76
E-6-2.5	4/14/2006	2.5	<5.0
ST-1	9/26/2006	NR*	<5.0
CS-7-WEST	5/17/2007	1.5	180
CS-8-NORTH	5/17/2007	1.5	130
CS-9-EAST	5/17/2007	1.5	190
CS-10-SOUTH	5/17/2007	1.5	110
CS-11-BOT	5/17/2007	2.5	94
80% UCL using sample SB-2: Lognormal Distribution			581.4
80% UCL without sample SB-2: Gamma Distribution			101.4

\* Not reported

The following table summarizes the possible regulatory mitigation criteria for lead at the Site:

Regulatory Reference	Land Use Standards	Lead Concentration
Screening For Environmental Concerns at Sites With Contaminated Soil and Groundwater (Interim Final – Revised May 2008) (ESL Surfer)	Residential	200 mg/kg*
	Commercial	750 mg/kg
San Francisco RWQCB Direct Exposure Environmental Screening Levels (ESLs)	Construction/Trench Worker Exposure	750 mg/kg

\* SCS understands that an ESL of 150 mg/kg was previously being used for the Site as the mitigation criteria and this concentration is still mentioned in the text the San Francisco RWQCB ESLs document, but the latest version of the ESL Surfer produces a result of 200 mg/kg for the residential land use scenario.

Currently the 80% UCL results (with or without the 2,700 mg/kg result) are below the commercial and construction/trench worker Environmental Screening Levels (ESLs). Therefore, it is SCS's opinion that, unless the proposed additional assessment reveals lead concentrations significantly higher than those reported to date, there is no need to conduct additional mitigation of lead-bearing soil at the Site beyond the proper management of soils excavated and exported from the Site as part of the construction activities.

### Mercury in Shallow Soil

A release of mercury to a floor drain was reported to have been discovered in the soil during the repair of a sewer line on August 2, 1996. It was also reported that 23 55-gallon drums of soil and 12 drums of contaminated water were removed and disposed of off-Site. ERM reported that "soil samples collected from the soil surrounding the excavation showed no-detectable mercury." However, analytical data or depictions of the excavation/sampling were not included in the report or in the ACEH file. At the request of the ACEH, T&R excavated an area approximately 15 feet wide, 30 feet long, and 0.5 feet deep in the area they interpreted to be the former location of the repaired sewer line. Six soil samples were collected from 0.5 feet below grade, and then

the excavation was extended to a depth of 1 foot below grade and an additional six samples were collected. The mercury concentrations of the samples from 0.5 feet below grade were reported to range from 0.72 to 5.8 mg/kg and the second set of samples were reported to have mercury concentrations ranging from 0.093 to 0.58 mg/kg.

#### Reported Mercury Concentrations in Soil

Sample Number	Date Sampled	Depth (feet)	Mercury (mg/kg)
SB-2	8/20/2004	1.5	0.17
SB-3	8/20/2004	1.5-2	<0.1
E-1-1.5	4/14/2006	1.5	--
E-1-2.5	4/14/2006	2.5	0.12
E-2-1.5	4/14/2006	1.5	--
E-2-2.5	4/14/2006	2.5	--
E-3-1.5	4/14/2006	1.5	--
E-3-2.5	4/14/2006	2.5	--
E-4-1.5	4/14/2006	1.5	--
E-4-2.5	4/14/2006	2.5	<0.05
E-5-1.5	4/14/2006	1.5	<0.05
E-5-2.5	4/14/2006	2.5	--
E-6-1.5	4/14/2006	1.5	0.16
E-6-2.5	4/14/2006	2.5	--
CS-1-0	5/17/2007	0.5	1.1*
CS-1-6	5/17/2007	1	0.11
CS-2-0	5/17/2007	0.5	3*
CS-2-6	5/17/2007	1	0.56
CS-3-0	5/17/2007	0.5	5.8*
CS-3-6	5/17/2007	1	0.28
CS-4-0	5/17/2007	0.5	0.72*
CS-4-6	5/17/2007	1	0.14
CS-5-0	5/17/2007	0.5	1.3*
CS-5-6	5/17/2007	1	0.093
CS-6-0	5/17/2007	0.5	1.4*
CS-6-6	5/17/2007	1	0.58
80% UCL using all samples: Lognormal Distribution			1.681
80% UCL using all samples: Gamma Distribution			1.207
80% UCL excluding samples from depth of 0.5 feet: Lognormal Distribution			0.323
80% UCL excluding samples from depth of 0.5 feet: Gamma Distribution			0.256

\* Results representing soil reported to have been excavated and removed from the Site.

The reported background concentrations of mercury reported for the City of Oakland (“Survey of Background Metal Concentration Studies” from the Oakland ULR) range from 0.3 to 0.6 parts per million (ppm). Based on SCS’s review of the September 18, 2008, Technical Comment letter

from ACEH, it appears that the ACEH is not convinced that the excavation of soil represented by soil samples CS-1 through CS-6 indicate that the excavation removed the soil associated with the reported release of mercury to the sewer system. The letter states “The widespread and generally uniform distribution of mercury in the soil confirmation samples is not consistent with the distribution that would be expected from a release from a joint in [a] sewer line.” However, when the final confirmation samples are viewed in the context of typical background concentrations for the City of Oakland, none of the sample results exceed the high end of the range of background concentrations (0.6 mg/kg). Further, the 80% UCLs of the concentrations are near or below the low end of the range of background concentrations (0.3 mg/kg). Therefore, there it is likely that the reported mercury concentrations across the Site are representative of background concentrations. The proposed Site assessment activities will further evaluate the concentrations of mercury across the Site. The following table summarizes the possible regulatory mitigation criteria for mercury at the Site:

Regulatory Reference	Land Use Standards	Mercury Concentration
Screening For Environmental Concerns at Sites With Contaminated Soil and Groundwater (Interim Final - May 2008) (ESL Surfer)	Residential	1.3 mg/kg
	Commercial	10 mg/kg
Oakland ULR Tier 2 Risk Based Screening Levels (RBSLs)/Site-Specific Target Levels (SSTLs)	Residential	4.7 mg/kg
	Commercial	30 mg/kg
San Francisco RWQCB Direct Exposure Environmental Screening Levels	Construction/Trench Worker Exposure	750 mg/kg

Currently the 80% UCL results (with or without the confirmation sample results from 0.5 feet below grade) are below the commercial and construction/trench worker ESLs, and when the confirmation sample results from 0.5 feet below grade are excluded, the mercury concentrations are below the residential ESL. Therefore, it is SCS’s opinion that, unless the proposed additional assessment reveals mercury concentrations significantly higher than those reported to date, there is no need to conduct additional mitigation of mercury-bearing soil at the Site beyond the proper management of soils excavated and exported from the Site as part of the construction activities.

### Petroleum Hydrocarbons in Shallow Soil

The known and reported sources of petroleum hydrocarbons include a former 3,000-gallon diesel UST, a 1,600-gallon diesel AST, and various reported areas of stained concrete as described in the June 2000 Phase I by ERM. Based on a review of correspondence from the ACEH, the former AST is not a concern. The 3,000-gallon UST was assessed and closed in place in 1989 with concurrence from the ACEH. However, it was then later removed by T&R in September 2006 (the sampling was described in Section 6.0 of this Report).

Regarding the areas of stained concrete which were reported in the ERM Phase I, the available map of the stained areas included in the ACEH file is illegible with regard to understanding the areas ERM identified as stained. The one area that is interpreted to be one of the stained areas is judged to be in the northwestern corner of the Site which is currently covered by 20 to 25 piles of illegally dumped soil. Between the illegibility of the historical information and the current Site conditions, the likelihood assessing the Site for these specifically referenced stains and having a high degree of confidence that the results would relate to the reported observations in 2000 is



very low. Given the fact that the proposed land use includes the removal of approximately one foot of soil across the majority of the Site (which will be disposed of in an appropriate landfill), be covered with an 11-inch thick concrete slab, and that the remainder of the Site will be covered with a concrete-paved roadway, any possible releases of petroleum hydrocarbons from these former spills that may have seeped through the concrete and into the subsurface should be, in our opinion, considered a *de minimis*<sup>6</sup> condition.

**Reported Petroleum Hydrocarbon Concentrations in Soil**

Sample Number	Date Sampled	Depth (feet)	TPHg (mg/kg)	TPHd (mg/kg)	TPHo (mg/kg)	BTEX (mg/kg)
SB-1	8/20/2004	1.5	<0.1	<21	NA	<0.010
SB-2	8/20/2004	1.5	<0.1	<2.0	NA	<0.010
SB-3	8/20/2004	1.5-2	<0.1	<7.5	NA	<0.010
SB-4	8/20/2004	1.5-2	<0.1	<18	NA	<0.010
ST-1	9/26/2006	4	<1.0	<1.0	NA	<0.005
SE 05	11/14/2006	5	<1.0	1.3	NA	<0.005
SW 05	11/14/2006	5	<1.0	<1.0	NA	<0.005
SN 05	11/14/2006	5	<1.0	2.0	NA	<0.005
SN 10	11/14/2006	5	<1.0	<1.0	NA	<0.005
E-1-1.5	4/14/2006	1.5	<1.0	3.7	19	<0.005
E-1-2.5	4/14/2006	1.5-2	<1.0	<1.0	<1.0	<0.005
E-2-1.5	4/14/2006	1.5	<1.0	<1.0	<1.0	<0.005
E-2-2.5	4/14/2006	2.5	<1.0	<1.0	<1.0	<0.005
E-3-1.5	4/14/2006	1.5	<1.0	2.6	12	<0.005
E-3-2.5	4/14/2006	2.5	<1.0	<1.0	<1.0	<0.005
E-4-1.5	4/14/2006	1.5	<1.0	5.6	38	<0.005
E-4-2.5	4/14/2006	2.5	<1.0	<1.0	<1.0	<0.005
E-5-1.5	4/14/2006	1.5	<1.0	1.4	6.0	<0.005
E-5-2.5	4/14/2006	2.5	<1.0	3.2	20	<0.005
E-6-1.5	4/14/2006	1.5	<1.0	7.8	43	<0.005
E-6-2.5	4/14/2006	2.5	<1.0	<1.0	<1.0	<0.005
<b>Highest Reported Concentration</b>			<1.0	7.8	43	<0.010

The following table summarizes the possible regulatory mitigation criteria for petroleum hydrocarbons at the Site:

Regulatory Reference	Land Use Standards	TPHg (mg/kg)	TPHd (mg/kg)	TPHo (mg/kg)
Screening For Environmental Concerns at Sites With Contaminated Soil and Groundwater (Interim Final - May 2008) (ESL Surfer)	Residential	83	83	370
	Commercial	83	83	2,500
San Francisco RWQCB Direct Exposure	Construction/Trench	4,200	4,200	12,000

<sup>6</sup> *De minimis condition*. As defined by ASTM, an environmental condition that does not generally present a material risk of harm to the public health or the environment and that generally would not be subject to an enforcement action if brought to the attention of appropriate governmental agencies.

Environmental Screening Levels	Worker Exposure			
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Currently, none of the reported petroleum hydrocarbon concentrations in soil exceed any of the ESLs; however, the assessment activities proposed herein include further assessment of the presence of petroleum hydrocarbons in the shallow soil at the Site. Therefore, it is SCS's opinion that, unless the proposed additional assessment reveals petroleum hydrocarbon concentrations significantly higher than those reported to date, there is no need to conduct additional mitigation of petroleum hydrocarbon-bearing soil at the Site beyond the proper management of soils excavated and exported from the Site as part of the construction activities.

### Petroleum Hydrocarbons in Shallow Groundwater

T&R collected six groundwater samples from six soil borings advanced in various locations across the Site (Figure 3). The samples from soil borings E-2, E-3, and E-4 were reported to have TPHd/TPHo concentrations ranging from 320 to 580/1,500 to 2,000 µg/L, respectively. A review of the 1902 Sanborn Fire Insurance Map reveals that a UST and boiler were historically located just to the northwest and west, respectively, of soil boring E-4 (see Figure 3). A review of all of the groundwater data presents a possible plume of dissolved phase petroleum hydrocarbons beginning in the vicinity of the former UST and boiler and extending to the south and southwest (in the direction of the reported groundwater flow in the Site vicinity). The following table summarized the reported petroleum hydrocarbon and BTEX concentrations reported for groundwater samples collected at the Site.

**Reported Petroleum Hydrocarbon Concentrations in Groundwater**

Sample Number	Date Sampled	Depth (feet)	TPHg (µg/L)	TPHd (µg/L)	TPHo (µg/L)	BTEX (µg/L)
GR-1	8/20/2004	1.5	<0.1	<0.125	NA	<1.0
GR-2	8/20/2004	1.5	<0.1	<0.180	NA	<1.0
GRAB	10/4/2006	4	<50	180	NA	<0.5
E-1-W	4/14/2006	1.5	<1.0	<1.0	<1.0	<0.005*
E-2-W	4/14/2006	1.5	<1.0	320	1,500	<0.005*
E-3-W	4/14/2006	1.5	<1.0	570	2,000	<0.005*
E-4-W	4/14/2006	1.5	<1.0	580	1,900	<0.005*
E-5-W	4/14/2006	1.5	<1.0	54	<1.0	<0.005*
E-6-W	4/14/2006	1.5	<1.0	<1.0	<1.0	<0.005*
<b>Highest Reported Concentration</b>			<1.0	580	2,000	<1.0

\*These results are presented as they were presented in the original report; however, there is a high likelihood that these numbers should have been <0.50 µg/L and that the numbers presented are a carryover from the soil data table. The associated laboratory reports could not be found in the ACEH file.

The following table summarizes the possible regulatory mitigation criteria for petroleum hydrocarbons in the groundwater at the Site:

Regulatory Reference	Land Use Standards	TPHg (µg/L)	TPHd (µg/L)	TPHo (µg/L)
Screening For Environmental Concerns at Sites With Contaminated Soil and Groundwater (Interim Final - May 2008) (ESL Surfer)	Residential	100	100	100
	Commercial	100	100	100

The assessment activities proposed herein provide for the further assessment the petroleum hydrocarbons reported in samples E-2-W, E-3-W, and E-4-W including the assessment of the reported UST and boiler on the 1902 Sanborn Fire Insurance Map. The TPHd reported for sample E-5-W is below the ESL and, unless additional data suggests a source for a petroleum hydrocarbon release in the vicinity of E-5-W, it is our opinion that further assessment of this specific result is unwarranted.

## 8.0 ENVIRONMENTAL ASSESSMENT ACTIVITIES

### 8.1 HEALTH AND SAFETY ISSUES

#### 8.1.1 Site Health and Safety Plan

The area surrounding the Site is anticipated to be in active use, so traffic and associated Site access controls will be of primary importance. The Site will be secured by chain-link construction fences, and access to the Site will be restricted to authorized personnel only.

Based on an analysis of the Site-specific CoCs, it would appear that one of the principal health and safety issues associated with the implementation of this PMP is the proper control of dust during excavation and stockpiling. Excavations greater than 4 feet in depth also potentially represent a confined space and should not be entered by unqualified personnel. While not anticipated, if gasoline or other volatile compounds are present in soil and groundwater, a flammable or explosive hazard could exist. The presence of elevated concentrations of metals presents a potential hazard to the on-Site construction workers through inhalation of dust or ingestion through direct contact the impacted soil. SCS will prepare a Site-specific health and safety plan (HSP) to address these issues for SCS personnel and their subcontractors. Other contractors not working directly for SCS will be required to have and follow their own HSP.

A health and safety plan for work conducted at the Site and workers within the “exclusion zone” will be prepared pursuant to the regulations found in 29 Code of Federal Regulations (CFR) Part 1910.120 and California Code of Regulations (CCR), Title 8, Section 5192.A. The plan will outline the potential chemical and physical hazards that may be encountered during the excavation, loading, sampling, and handling of soils containing hazardous substances. The appropriate personal protective equipment and emergency response procedures for the anticipated site-specific chemical and physical hazards will be detailed in this plan. SCS and their contracted personnel involved with the proposed field work will be required to sign this document in order to encourage proper health and safety practices. The HSP will be available for agency review during Site mitigation activities. SCS’s HSP will cover SCS personnel and any subcontractors contracted by SCS. It is our understanding that the general contractor is responsible for a HSP that will cover their personnel and their subcontractors.

### 8.1.2 Community Health and Safety Plan

The primary community health and safety concern for this Property is the potential generation of lead-bearing dust. Dust will be controlled through the frequent use of water and the Property will be surrounded by a secure fence by the time remedial activities begin. Volatile organic compounds are not anticipated to be a concern outside of the Property. A project-specific CHSP will be prepared and submitted to the ACEH prior to implementation of this PMP.

### 8.1.3 Utility Search and Markout

It is our understanding that all subsurface utilities will be disconnected from the Site and Underground Service Alert (USA) will be notified, as required by state law.

### 8.1.4 Geophysical Survey

A geophysical survey using magnetometers and ground-penetrating radar will be conducted in an attempt to identify subsurface features of concern including magnetic anomalies, USTs or former UST pits, buried structures, significant areas of debris, and utilities. The purpose of the geophysical survey is two-fold. One purpose is to aid the assessment work by looking for potential sources of releases and secondly as a health and safety precaution by trying to identify potential hazards to the proposed drilling activities.

## 8.2 SOIL SAMPLING

### 8.2.1 Assessment of the Fill Soil

Following on the basic assumption that the elevated levels of lead, the detectable concentrations of petroleum hydrocarbons, and possibly the elevated concentrations of mercury are the result of the imported fill soil at the Site or random spills throughout the history of the Site, this PMP proposes to collect soil samples across the Site in a grid pattern. The grid will be based on one soil boring per approximately every 2,500 square feet (grids of approximately 33 feet by 75). This provides for 15 soil borings (Figure 4). The following table presents the proposed sampling depths and rationale.

Approximate Depth (Feet Below Grade)	Rationale
0.5 to 1.0	To assess and characterize the soil to be excavated for 11-inch-thick concrete slab.
2	To assess the midpoint of the fill and to characterize the soil to be exported from the construction of the pile caps and the upper four feet of the pilot holes.
4	To assess the lower portion of the fill soil and to characterize the soil to be exported from the soil cuttings generated by the pilot holes
Approximately 1 foot below the interpreted contact between the fill soil and native materials	To confirm the depth of the fill soil on the basis of concentrations of CoCs and to confirm that the native soil is suitable for reuse or ADC.

Approximate Depth (Feet Below Grade)	Rationale
Approximately 5 feet below the interpreted lithologic change between the fill soil and native materials	This sample will be collected and placed “on hold” pending the results of the shallower samples. The samples will be analyzed if it is necessary to confirm the depth of the fill soil or to further evaluate the background concentrations of the native materials.

The samples will be analyzed for Title 22 metals by EPA Methods 6010B/7471 and TPH-full carbon range by EPA Method 8015B (M). Additional analyses will be conducted based on the waste characterization requirements of the selected landfill to be used for disposal.

### 8.2.2 Assessment of the Historical UST and Boiler Locations

Two soil borings will be advanced in the interpreted former locations of the UST and boiler depicted on the 1902 Sanborn Fire Insurance map. Soil samples will be collected at depths of approximately 2, 4, 6, and 8 feet below grade and analyzed for TPH-full carbon range by EPA Method 8015B (M). The sample with the highest reported TPH concentrations will also be analyzed for VOCs and SVOCs by EPA Methods 8260B/8270C.

## 8.3 ASSESSMENT OF THE PETROLEUM HYDROCARBONS IN SHALLOW GROUNDWATER

The northwestern and western extent of the interpreted plume of dissolved phase petroleum hydrocarbons in the western half of Site are likely delineated by the samples collected from soil borings SB-1, E-1, and SB-2. Five additional soil borings and the *in situ* collection of groundwater samples will be conducted to the north and east of the interpreted historical UST location, to the southeast, to the south-southwest, and to the southwest near the southern Site boundary (refer to Figure 4). Temporary polyvinyl chloride (PVC) slotted well casings will be placed in the soil borings and the groundwater will be allowed time to come into equilibrium (within the confines of the time in the field). The groundwater depth will be measured with an interface probe capable of detecting free-phase product. The groundwater samples will be collected by a single-use bailer and decanted into laboratory-supplied volatile organic analysis (VOA) vials. The samples will be analyzed by an on-Site mobile laboratory for TPH-full carbon range by EPA Method 8015B (M). The sample with the highest reported TPH concentrations will also be analyzed for VOCs and SVOCs by EPA Methods 8260B/8270C.

Soil samples will be collected within the interpreted capillary fringe zone (estimated to be at approximately 4 feet below grade) and analyzed for TPH-full carbon range by EPA Method 8015B (M).

## 8.4 MISCELLANEOUS ITEMS

### 8.4.1 Geophysical Anomalies

If magnetic or geophysical anomalies are detected during the geophysical survey that warrant investigation, it is anticipated that a backhoe will be mobilized to the Site for the excavation of

exploratory trenches. The extent of sampling and types of sample analysis will be dependent upon the observations during the exploratory trenching. If a UST is discovered, the appropriate the ACEH and the City of Oakland Fire Department will be notified and the appropriate permits will be obtained.

#### **8.4.2 Historical Elevator**

It was reported by others that a hydraulic elevator was installed at the Site in 1949. The elevator hydraulic system was reported to have used soluble water-based hydraulic oil since 1978, but the type of oil used prior to 1978 was unknown. The elevator was reportedly present at the former Site facility near the northern Site boundary in the approximate center of the Site (east-west). It appears that there are no records of the removal of the hydraulic lift.

As the reported location of the former elevator is too vague to support the selection of a specific location for a soil boring to assess any possible releases of hydraulic oil (water-soluble or otherwise), SCS does not propose to advance a soil boring to specifically address this issue. Should the previously discussed geophysical survey reveal an anomaly in the “near the northern Site boundary in the approximate center of the Site” that is indicative of an elevator ram, then an additional soil boring will be advanced in that location to a depth of approximately 20 feet below grade and soil samples will be collected at approximate 5-foot intervals. The samples will be analyzed for TPH-full carbon range by EPA Method 8015B(M).

#### **8.4.3 Illegally Dumped Piles of Soil/Debris**

The 20 to 25 piles of illegally dumped soil/debris will be sampled and characterized pursuant to the requirements of the selected disposal facility. The final disposition of the material will be dependent upon the waste characterization results, however, it is anticipated that the material will be disposed of in an appropriately licensed landfill.

#### **8.4.4 Unexpected Discovery of Releases During Mitigation/Construction**

Due to the inherent uncertainty associated with the assessment of subsurface conditions, it is anticipated that the extent and expected concentrations of contaminants will vary from what is described in this PMP. This condition is not unusual in soil and groundwater investigation and remediation efforts, particularly in cases in which there is very little or no knowledge of the nature or extent of the historical operations that are sources of the original releases. The mitigation efforts will therefore be iterative in nature and be adjusted as excavation or other remediation efforts proceed. Additional assessment and confirmation samples will be collected and analyzed as necessary to evaluate the significance of the release and the need to mitigate the condition beyond the actions describe in this PMP. Should conditions be encountered that vary significantly from those described, or that cannot be addressed by the mitigation criteria proposed herein, the ACEH will be contacted and consulted regarding the assessment and/or mitigation.

## 8.5 INTERIM DATA SUBMITTAL

The data collected from this work will be transmitted to the ACEH in a letter report describing the work conducted and including figures showing the analytical results and soil boring locations, soil boring logs, and an interpretation of the relevance of the results to the goals of this PMP. The report will be signed by an appropriately licensed professional.

## 9.0 CONSTRUCTION ACTIVITIES

The plans for the construction of the proposed building have not been finalized at the time of the preparation of this PMP since it will be contracted as a design-build project. However, based on conversations with the developer the following components are currently anticipated to be part of the design:

- ▶ The foundation will be a podium structure supported by 370 14-inch wide steel piles driven into 12-inch diameter pilot holes to a depth of 45 feet.
- ▶ Seventy pile caps are anticipated and each is expected to be 10 feet by 10 feet by 2 feet in thickness.
- ▶ The structural concrete slab is anticipated to be 11 inches thick and cover 31,356 square feet of the Site.
- ▶ The access road is expected to be paved with 6-inch-thick concrete and 4 inches of Class II aggregated base. The access road will cover the remainder of the 38,381 square feet of the Site.
- ▶ Other subgrade features will include an elevator pit, a sump, a perimeter footing, and possibly a grease interceptor/clarifier.

The following table summarizes the anticipated volumes/tonnage of soil to be generated by these construction activities.

Construction Activity	Estimated Cubic Yards	Estimated Tonnage*
Drilling of 370 12-inch diameter pilot holes for the pilings (0 to 4 feet below grade)	86	146
Drilling of 370 12-inch diameter pilot holes for the pilings (4 to 45 feet below grade)	398	677
Excavation for 70 10' x 10' x 2' pile caps	519	881
Excavation for the 11-inch-thick structural slab	1,161	1,974
Excavation for other subgrade features	1,000	1,700
Disposal of illegally dump soil/debris piles	250	375
<b>Total Amounts to be Managed as a Waste</b>	<b>3,016</b>	<b>5,076</b>
<b>Total Amounts to be Managed as Reusable Soil</b>	<b>398</b>	<b>677</b>

\* Based on information provided in the Geotechnical Report, the weight of the soil at the Site was estimated to be 1.7 tons per bank cubic yard.

Based on the existing environmental data, the primary function of the mitigation activities will be the proper management of soils excavated during the construction process. It is anticipated that all of the soil excavated from the upper 4 feet or so (i.e., the historical fill material) will be managed as a waste and disposed of at an appropriate and properly licensed landfill. The soil excavated from depths greater than approximately 4 feet below grade is currently anticipated to be suitable for off-Site reuse. If a reuse location cannot be found prior to the initiation of exporting soil from the Site, it is anticipated that this soil will be used as alternate daily cover (ADC) at a landfill. Additional excavation and export of soil beyond the needs of the construction activities are not anticipated at this time.

## 10.0 PROPERTY CLOSURE REPORT

Based on the findings of the field investigation and laboratory results from the above scope of services, a Property Closure Report (PCR) will be prepared. The PCR will cover the various areas investigated at the Site including field observations, soil sampling, excavation, field screening, sampling activities, soil waste characterization, and soil disposal activities. Unanticipated discovery of hazardous substances during mass excavation will also be reported, if encountered, and mitigated prior to the completion of the PCR. The PCR will include laboratory reports, chain-of-custody records, soil sample locations, tabulated analytical results, and appropriate support documentation. The PCR will be peer reviewed and signed by appropriately licensed professionals. The work conducted at the Site will be overseen by a professional geologist as required by the state.



## REPORT USAGE AND FUTURE SITE CONDITIONS

This Report is intended for the sole usage of the Client and other parties designated by SCS. The methodology used during this Assessment was in general conformance with the requirements of the Client and the specifications and limitations presented in the Agreement between the Client and SCS. This Report contains information from a variety of public and other sources, and SCS makes no representation or warranty about the accuracy, reliability, suitability, or completeness of the information. Any use of this Report, whether by the Client or by a third party, shall be subject to the provisions of the Agreement between the Client and SCS. Any misuse of or reliance upon the Report shall be without risk or liability to SCS.

Phase I Environmental Site Assessments are qualitative, not comprehensive, in nature and may not identify all environmental problems or eliminate all risk. For every property, but especially for properties in older downtown or urban areas, it is possible for there to be unknown, unreported recognized environmental conditions, underground storage tanks, or other features of concern that might become apparent through demolition, construction, or excavation activities, etc. In addition, the scope of services for this project was limited to those items specifically named in the scope of services for this Report. Environmental issues not specifically addressed in the scope of services for this project are not included in this Report.

Land use, condition of the properties within the Site, and other factors may change over time. The information and conclusions of this Report are judged to be relevant at the time the work described in this Report was conducted. This Report should not be relied upon to represent future Site conditions unless a qualified consultant familiar with the practice of Phase I Environmental Site Assessments in Alameda County is consulted to assess the necessity of updating this Report.

The property owners at the Site are solely responsible for notifying all governmental agencies and the public of the existence, release, or disposal of any hazardous materials/wastes or petroleum products at the Site, whether before, during, or after the performance of SCS services. SCS assumes no responsibility or liability for any claim, loss of property value, damage, or injury that results from hazardous materials/wastes or petroleum products being present or encountered within the Site.

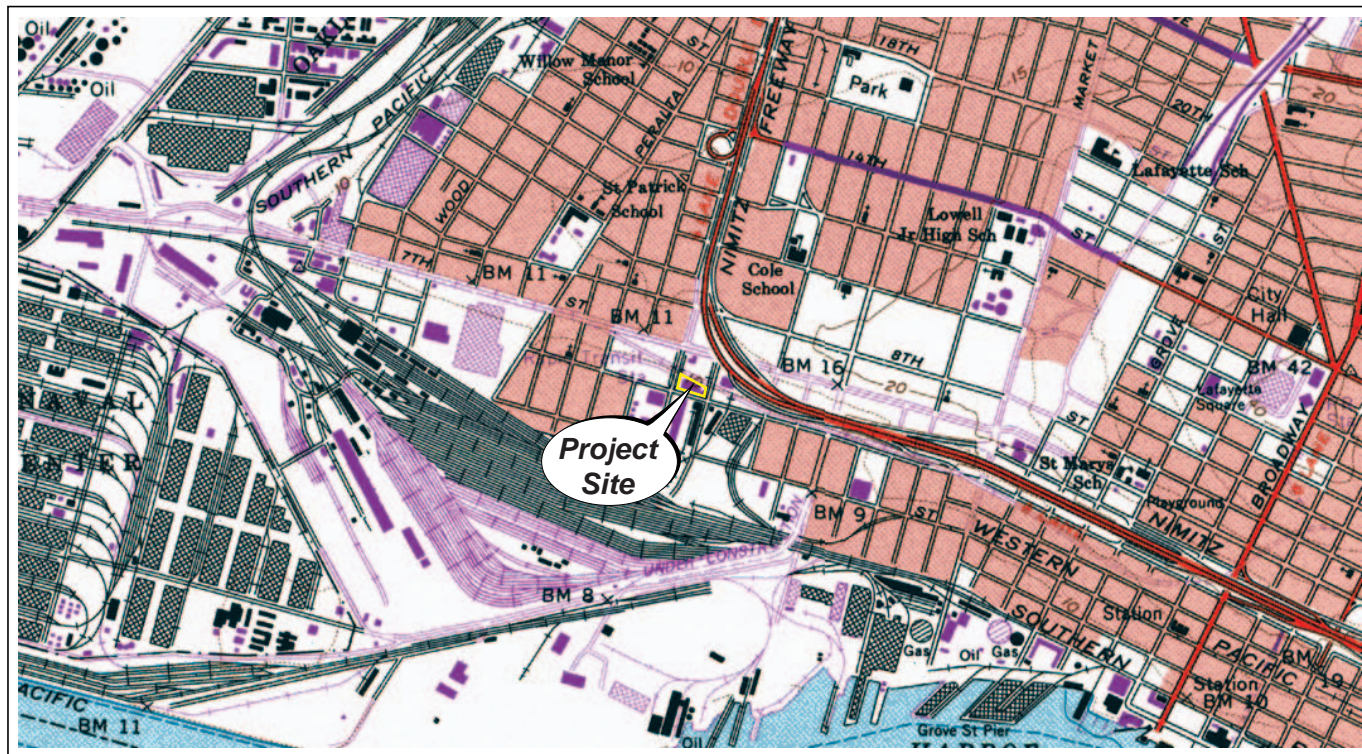
Although this Assessment has attempted to assess the likelihood that the Site has been impacted by a hazardous material/waste release, potential sources of impact may have escaped detection for reasons that include, but are not limited to: 1) our reliance on inadequate or inaccurate information rightfully provided to us by third parties, such as public agencies and other outside sources; 2) the limited scope of this Assessment; and 3) the presence of undetected, unknown, or unreported environmental releases.

## LIKELIHOOD STATEMENTS

Statements of “likelihood” have been made in this report. Likelihood statements are based on professional judgments of SCS. The term “likelihood,” as used herein, pertains to the probability of a match between the prediction for an event and its actual occurrence. The likelihood statement assigns a measure for a “degree of belief” for the match between the prediction for the event and the actual occurrence of the event.

The likelihood statements in this Report are made qualitatively (expressed in words). The qualitative terms can be approximately related to quantitative percentages. The term “low likelihood” is used by SCS to approximate a percentage range of 10 to 20 percent; the term “moderate likelihood” refers to an approximate percentage range of 40 to 60 percent; and the term “high likelihood” refers to an approximate percentage range of 80 to 90 percent.

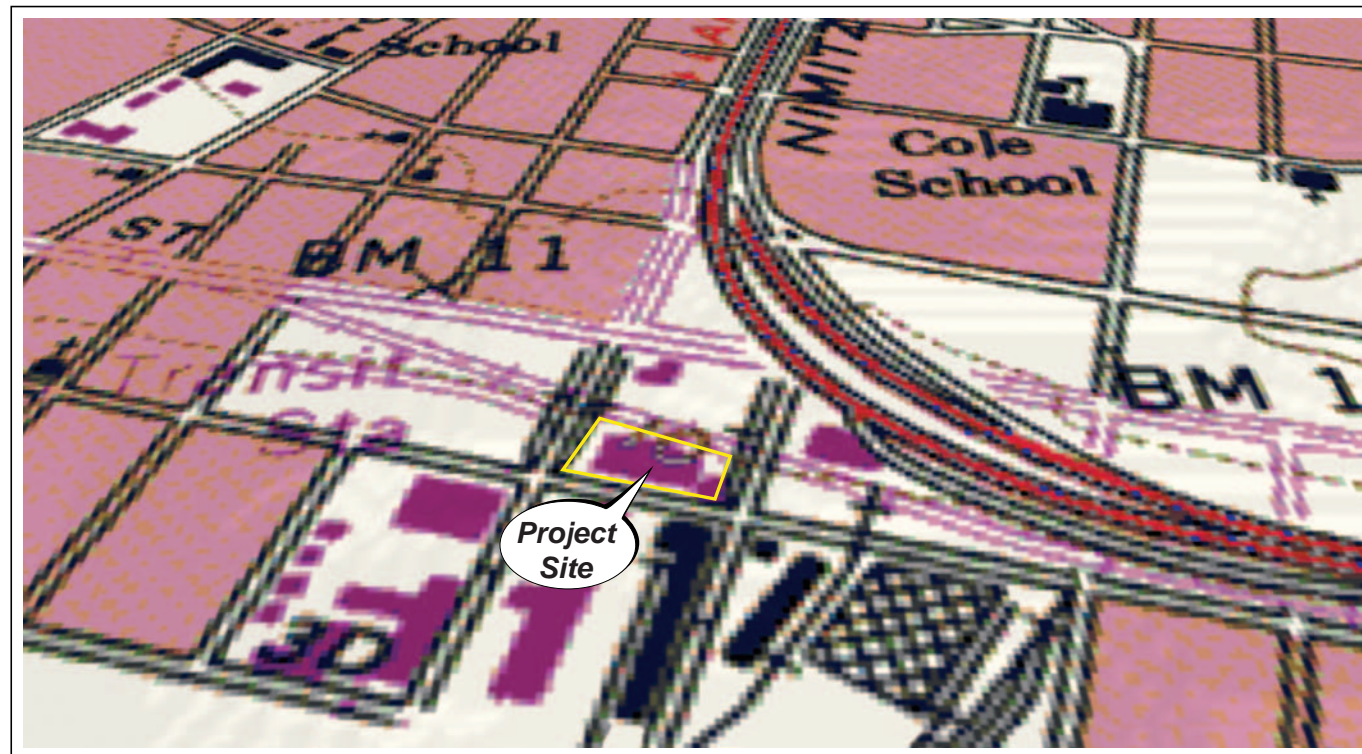
# FIGURES



Reference:  
U.S.G.S. 7.5 Minute Quadrangle map  
Oakland, California - 1977. Photo revised 1982.

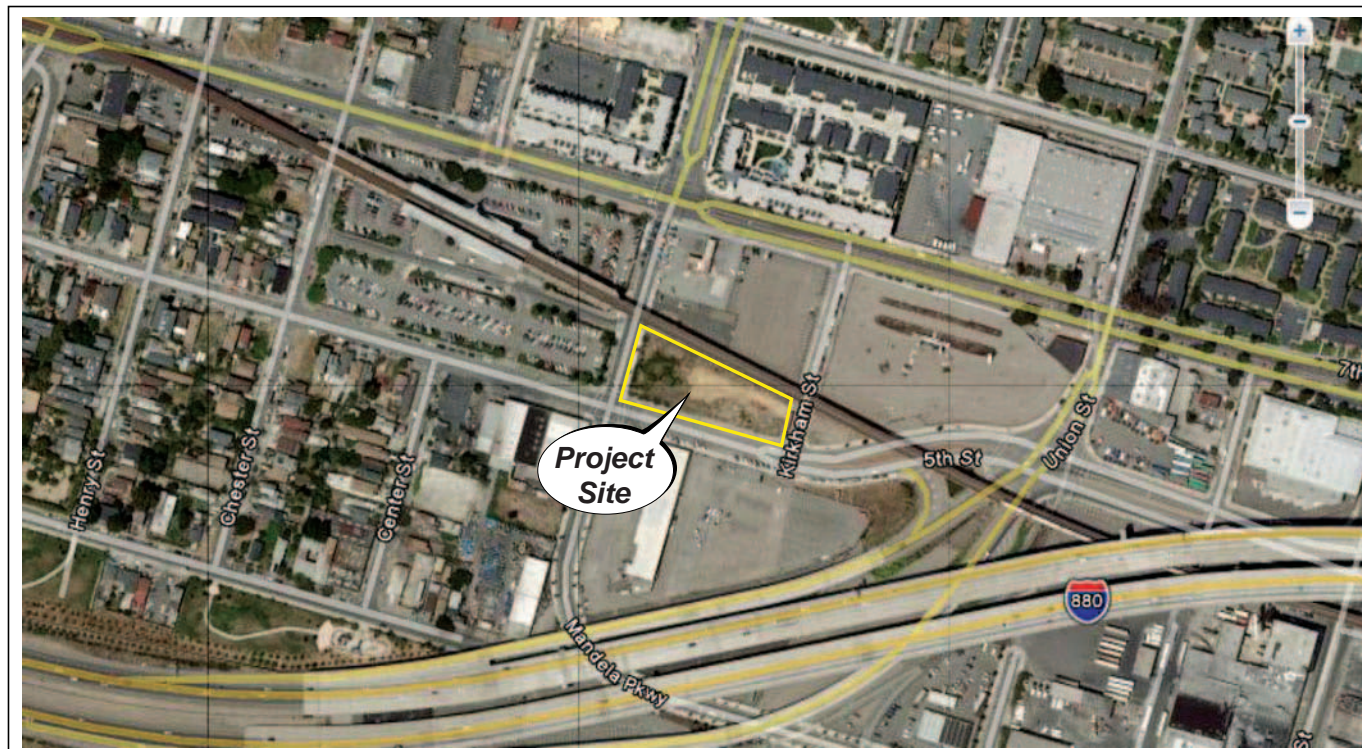
**2-DIMENSIONAL SITE LOCATION**

0 1,000 2,000 3,000  
Approximate Graphic Scale in Feet



Reference:  
U.S.G.S. 7.5 Minute Quadrangle map  
Oakland, California - 1977. Photo revised 1982.

**3-DIMENSIONAL SITE LOCATION**



Reference:  
Google Earth Aerial Photograph  
Oakland, California - June 2007

**SITE AERIAL PHOTOGRAPH**



Reference:  
Geologic Map and Map Database of Oakland Metropolitan Area,  
Alameda, Contra Costa, and San Francisco Counties, California  
by R.W. Graymer, 2000

**USGS GEOLOGICAL MAP**

**SCS ENGINEERS**

Environmental Consultants  
8799 Balboa Avenue, Suite 290  
San Diego, California 92123

**PROPERTY MITIGATION PLAN  
4-WAY SITE LOCATION MAP  
Oakland Housing Investors, L.P.**  
1384 to 1396 Fifth Street  
Oakland, California

Project No.:  
01208426.01

**Figure 1**

Date Drafted:  
9/21/08

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.



1) View of the Site from the southeast to the northwest.



1) View of soil debris piles in the northwestern portion of the Site.



2) View of the Site from the northwest to the south and east.



2) View of soil debris piles in the northwestern portion of the Site.

**SCS ENGINEERS**

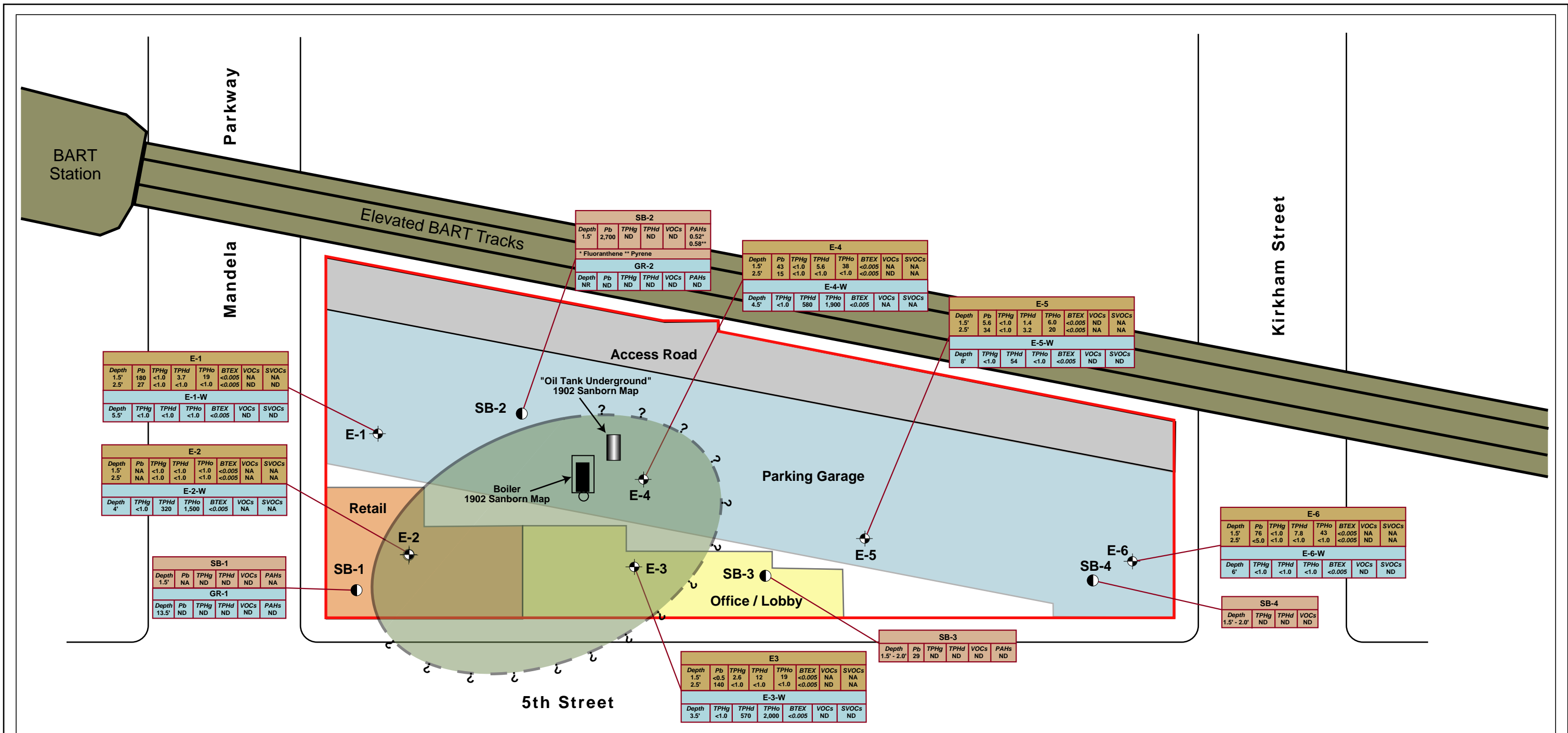
Environmental Consultants  
8799 Balboa Avenue, Suite 290  
San Diego, California 92123

**PROPERTY MITIGATION PLAN  
CURRENT SITE CONDITIONS**  
Oakland Housing Investors, L.P.  
1384 to 1396 Fifth Street  
Oakland, California

Project No.:  
01208426.01

**Figure 2**

Date Drafted:  
9/21/08



**EXPLANATION**

- Approximate Site boundary
- SB-2**  
Approximate soil boring location and designation. Soil boring advanced and sampled by Remediation Services, Inc. (RSI), 2005.
- E-3**  
Approximate soil boring location and designation. Soil boring advanced and sampled by Treadwell & Rollo (T&R), 2006.

SB-2						
Depth	Pb	TPHg	TPHd	VOCs	PAHs	
1.5'	2,700	ND	ND	ND	0.52*	0.58**
2.5'	ND	ND	ND	ND	ND	ND
* Fluoranthene ** Pyrene						
GR-2						
Depth	Pb	TPHg	TPHd	VOCs	PAHs	
NR	ND	ND	ND	ND	ND	ND

E-1						
Depth	Pb	TPHg	TPHd	BTEX	VOCs	SVOCs
1.5'	180	<1.0	3.7	19	<0.005	NA
2.5'	27	<1.0	<1.0	<0.005	NA	NA
E-1-W						
Depth	TPHg	TPHd	TPHo	BTEX	VOCs	SVOCs
5.5'	<1.0	<1.0	<1.0	<0.005	ND	ND

Approximate soil boring location and designation. Soil boring advanced and sampled by Treadwell & Rollo (T&R), 2006.

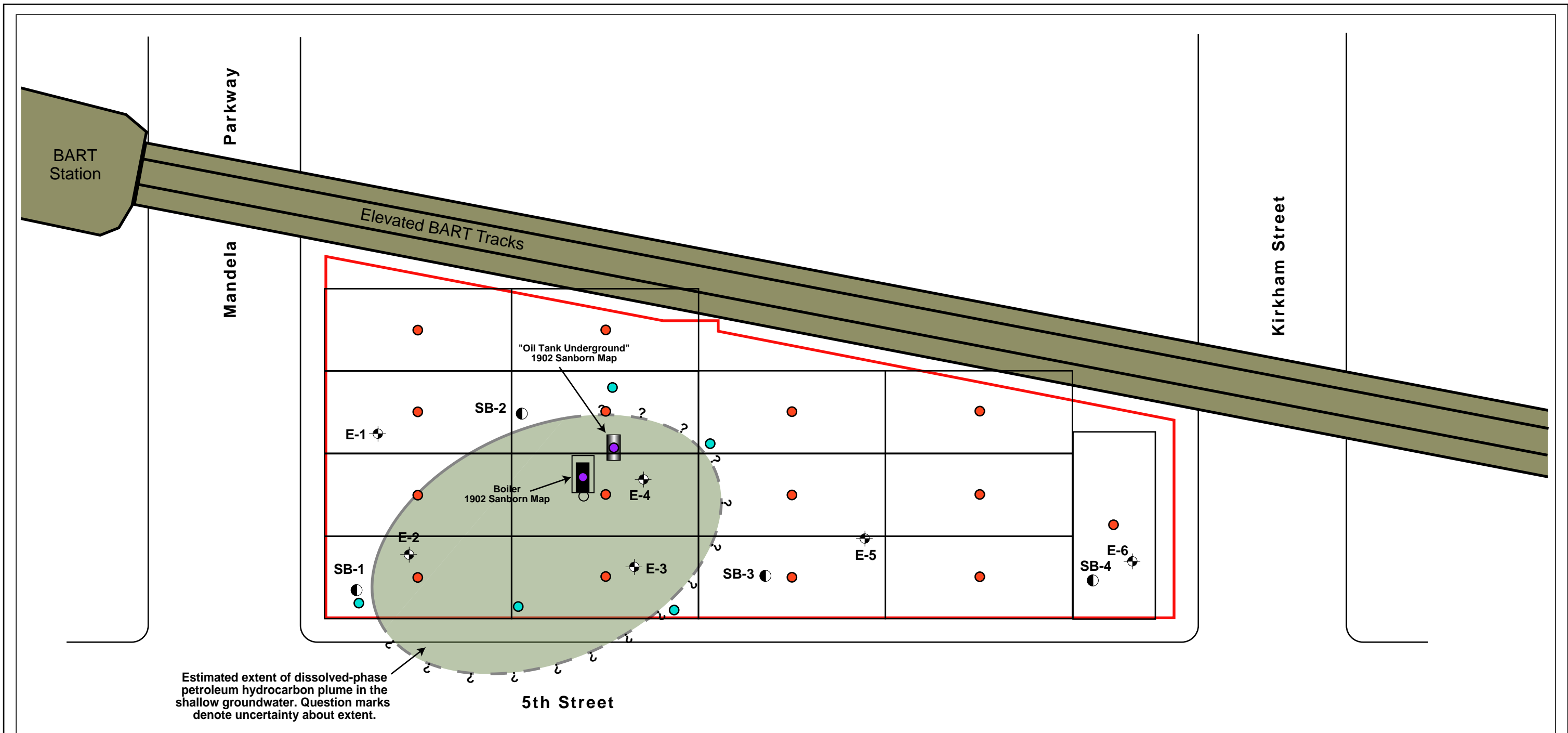
BTEX: Benzene, Toluene, Ethylbenzene, Xylenes analyzed by EPA Method 8260B  
 TPHo: Total Petroleum Hydrocarbons (oil-range organics)  
 TPH concentrations reported in mg/kg and analyzed by EPA Method 8015B  
 SVOCs: Semi-Volatile Organic Compounds analyzed by EPA Method 8270C  
 ND: Analyted not detected above the method detection limit of the analytical method.  
 NA: Not Analyzed  
 All results in mg/kg for soil, milligrams per liter (mg/L)  
 <1.0: Sample result was less than the method detection limit as indicated.

Access Road
Parking Garage
Retail
Office / Lobby

Proposed future land uses on the first floor (on-grade)




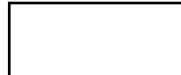
North




<p><b>SCS ENGINEERS</b></p> <p>Environmental Consultants        8799 Balboa Avenue, Suite 290        San Diego, California 92123</p>	<p><b>PROPERTY MITIGATION PLAN</b>  <b>PRIOR SOIL AND GROUNDWATER ANALYTICAL RESULTS</b>        Oakland Housing Investors, L.P.        1384 to 1396 Fifth Street        Oakland, California</p>	<p><b>Project No.:</b> 01208426.01</p> <p><b>Figure 3</b></p> <p><b>Date Drafted:</b> 10/1/08</p>
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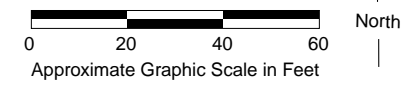


Estimated extent of dissolved-phase petroleum hydrocarbon plume in the shallow groundwater. Question marks denote uncertainty about extent.

**EXPLANATION**

-  Approximate Site boundary
-  SB-2 Approximate soil boring location and designation. Soil boring advanced and sampled by Remediation Services, Inc. (RSI), 2005.
-  E-3 Approximate soil boring location and designation. Soil boring advanced and sampled by Treadwell & Rollo (T&R), 2006.
-  Grid area, approximately 33 feet by 75 feet (approximately 2,500 square feet)

-  Approximate location of proposed soil boring intended to assess shallow soil conditions for metals and petroleum hydrocarbons. Soil samples to be collected at depths of approximately 0.5 to 1, 2, and 4 feet below grade, and 1 and 5 feet into the interpreted undisturbed native soils.
-  Approximate location of proposed soil boring intended to assess shallow soil conditions for petroleum hydrocarbons in the shallow soil and groundwater in order to assess the source(s) (i.e., the historical 1902 underground storage tank [UST] and associated boiler) of the dissolved phase petroleum hydrocarbons in the shallow groundwater. Soil samples to be collected at depths of approximately 2, 4, 6, and 8 feet below grade. Groundwater samples to be collected *in situ* through temporary well screens.
-  Approximate location of proposed soil boring intended to assess the horizontal extent of petroleum hydrocarbons within the interpreted capillary fringe and the dissolved phase petroleum hydrocarbons in the shallow groundwater. Groundwater samples to be collected *in situ* through temporary well screens.



<p><b>SCS ENGINEERS</b> Environmental Consultants 8799 Balboa Avenue, Suite 290 San Diego, California 92123</p>	<p><b>PROPERTY MITIGATION PLAN</b> <b>PROPOSED SOIL AND GROUNDWATER SAMPLING LOCATIONS</b> Oakland Housing Investors, L.P. 1384 to 1396 Fifth Street Oakland, California</p>	<p>Project No.: 01208426.01</p> <p><b>Figure 4</b></p> <p>Date Drafted: 10/1/08</p>
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# APPENDIX

**Alameda County Environmental Health  
Letter to Curtis Eisenberger, Dated  
September 18, 2008**

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ALAMEDA COUNTY  
HEALTH CARE SERVICES

AGENCY

DAVID J. KEARS, Agency Director



ENVIRONMENTAL HEALTH SERVICES

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

September 18, 2008

Mr. Curtis Eisenberger  
1396 Fifth Street LLC  
1357 5<sup>th</sup> Street, Suite B  
Oakland, CA 94607

Subject: SLIC Case RO0002896 and Geotracker Global ID T06019794669, Red Star Yeast/1396 Fifth Street LLC, 1396 5<sup>th</sup> Street, Oakland, CA 94607

Dear Mr. Eisenberger:

Alameda County Environmental Health (ACEH) staff has reviewed the Spills, Leaks, Investigations, and Cleanups (SLIC) case file for the above referenced site. Elevated concentrations of metals have been detected in shallow soil at the site. Lead and mercury were detected in shallow soils at concentrations up to 2,700 and 5.8 milligrams per kilogram (mg/kg), respectively. The source and extent of the elevated concentrations of metals in shallow soil is unknown but may be related to imported fill placed throughout the site. Petroleum hydrocarbons were detected in shallow soil and groundwater at several locations within the site. Total petroleum hydrocarbons (TPH) as diesel and TPH as motor oil were detected in groundwater at concentrations up to 580 and 2,000 micrograms per liter ( $\mu\text{g/L}$ ), respectively. The source and extent of the petroleum hydrocarbons in shallow soil and groundwater is also unknown.

The most recent technical report in the ACEH case file is a document entitled, "*Work Plan for Confirmation Sampling, Former Red Star Yeast Site, 1384 Fifth Street, Oakland, California,*" dated August 13, 2007 and prepared by Treadwell & Rollo Environmental and Geotechnical Consultants. The August 13, 2007 Work Plan suggests that limited excavation of shallow soil at three locations within the site would allow case closure with no restrictions on future land use.

Based upon our review of the case file, limited excavations in three areas of the site would not be sufficient for case closure with unrestricted future land use. Additional soil and groundwater sampling would be required in order to sufficiently characterize residual contamination and define areas for potential soil removal in order to achieve case closure for unrestricted future use. Based on the site conditions and proposed site development with first-floor parking throughout the site, implementation of a site management plan along with confirmation sampling during development and restrictions on future land use may be acceptable to prevent potential future exposure to residual soil contamination at the site. Therefore, two courses of action are possible for the site depending upon site development plans and future land use restrictions. If the site is to be restored for unrestricted future land use, please submit a Work Plan for site characterization that addresses the technical comments below. In order to develop the site with future land use restrictions, please submit an updated site management plan (see technical comment 6) and a proposed draft deed restriction to prevent potential future exposure to site contamination. The case may be reviewed for closure following site excavation and implementation of the Site Management Plan and recording of a deed restriction.

We request that you address the following technical comments, perform the proposed work, and send us the reports described below.

### **TECHNICAL COMMENTS**

- 1. Elevated Concentrations of Lead in Shallow Soil.** Lead was detected at a concentration of 2,700 mg/kg in a soil sample collected within the upper 4 feet of boring SB-2, which was advanced in the northern portion of the site by Remediation Services, Inc. on August 20, 2004. An area of approximately 5 feet by 5 feet by 2.5 feet immediately surrounding boring SB-2 was excavated on May 17, 2007. Confirmation samples collected in the sidewalls and bottom of the excavation contained lead at concentrations ranging from 94 to 180 mg/kg. The elevated concentrations of lead appear to be associated with the imported fill material placed throughout the site (Remediation Services, *Phase I & II Environmental Site Assessment*, June 15, 2005). The imported fill extends from ground surface to depths of approximately 4 feet bgs. Given that an unknown volume of the imported fill is likely to contain elevated concentrations of lead, it is not plausible that surgical excavations of areas around sampling locations will result in cleanup of lead at the site for unrestricted future land use. A significantly expanded sampling effort would be required to characterize the fill material and define areas for shallow soil removal. Therefore, we request that you submit a Work Plan for additional characterization of shallow soil if the site is to be restored to allow unrestricted future land use or proceed with an updated site management plan and a proposed deed restriction if the site is to be developed with future land use restrictions.
- 2. Mercury in Shallow Soil.** A mercury spill was reported at the location of a trap in the sanitary sewer line the site in 1996. The Phase I report (Remediation Services, *Phase I & II Environmental Site Assessment*, June 15, 2005) states that the floor drain and affected soil were removed in 1996. However, no documentation of the volume of soil excavated, observations of conditions, inspection reports, or analytical results from confirmation sampling are available. In addition, the location of the mercury spill and cleanup is only generally known in the area of the former Mash House. Therefore, the adequacy of any mercury cleanup conducted in 1996 cannot be verified. In 2006, shallow soil in the suspected area of the mercury spill was excavated to a depth of 12 inches over an area approximately 14 feet by 28 feet. Confirmation soil samples were collected at 6 locations within the excavation at depths of 6 and 12 inches below ground surface (bgs). Soil samples collected 6 inches bgs contained mercury at concentrations ranging from 0.72 to 5.8 mg/kg. The soil samples collected 12 inches bgs contained mercury at concentrations ranging from 0.07 to 0.58 mg/kg. The widespread and generally uniform distribution of mercury in the soil confirmation samples is not consistent with the distribution that would be expected from a release from a joint in a sewer line. In addition, it is not clear based on these confirmation sampling results, that elevated concentrations of mercury are limited to the area of the excavation and confirmation sampling. Mercury was also detected in shallow soil samples collected from soil borings SB-SB-2, E-1, and E-6 at concentrations ranging from 0.12 to 0.17 mg/kg. These soil borings are located outside the area potentially affected by a release from the drain line. A significantly expanded shallow soil sampling effort would be required to identify the areas of the site with elevated concentrations of mercury. Therefore, we request that you submit a Work Plan for additional characterization of shallow soil if the site is to be restored to allow unrestricted future land use or proceed with an updated site management

plan and a proposed deed restriction if the site is to be developed with future land use restrictions.

3. **Petroleum Hydrocarbons in Soil and Groundwater.** Total petroleum hydrocarbons as diesel were detected in 4 of 6 grab groundwater samples collected across the site at concentrations ranging from 54 to 580 µg/L. TPH as motor was also detected in 3 of 6 grab groundwater samples collected across the site at concentrations ranging from 1,500 to 2,000 µg/L. TPH as diesel and TPH as motor oil were detected at relative low concentrations in shallow soil samples collected from 6 soil borings advanced throughout the site. Unfortunately, soil samples were only collected at depths of 2.5 feet bgs or shallower. Due to lack of soil samples at depths below 2.5 feet bgs, the extent of petroleum hydrocarbons in soil is not known. In addition, the source of the petroleum hydrocarbons is unknown. We request that you include additional characterization for petroleum hydrocarbons in the Work Plan requested below if the site is to be restored to allow unrestricted future land use.
4. **Hydraulic System for Elevator.** No information is reportedly available regarding decommissioning of the former hydraulic equipment for the elevator. Therefore, it is possible that hydraulic equipment or oil-impacted soil remains in place beneath the former elevator. The January 23, 2007 correspondence submitted by Treadwell & Rollo on behalf of 1396 Fifth Street LLC discusses contingency plans to address hydraulic equipment or contaminated soil encountered during excavation activities at the site. We request that you include additional characterization for the former hydraulic system in the Work Plan requested below if the site is to be restored to allow unrestricted future land use.
5. **Reference to Oil Stained Areas.** During the Phase I site inspection conducted in 2000 (ERM, *Phase I Environmental Site Assessment*, June 2000), oil-stained concrete was observed in several areas of the site. Based on the discussion in Treadwell & Rollo correspondence dated January 23, 2007, no information is available regarding sampling or cleanup of the oil stained areas. Please see technical comment 6 regarding confirmation sampling in areas of observed or suspected contamination.
6. **Updated Site Management Plan.** In correspondence dated December 15, 2006, Treadwell & Rollo recommended mitigation measures due to the presence of the elevated concentrations of metals and petroleum hydrocarbons in soil beneath the site. The mitigation measures include actions to address contamination encountered during site development, soil management, surface soil removal, groundwater management, and site encapsulation. As discussed in the third paragraph of this letter, an updated site management plan is required if the site is to be developed with future land use restrictions. The updated Site Management Plan must include plans for excavation and off-site disposal of surface soil and plans for confirmation soil sampling in the areas of observed or suspected contamination (including areas discussed in technical comments 4 and 5).
7. **Water Supply Wells.** Documentation of decommissioning of the on-site water supply was provided in correspondence from Treadwell & Rollo dated February 28, 2007. However, we were not able to locate in the case file a discussion of water supply wells in the surrounding area. We request that you locate all water supply wells within a radius of 2,000 feet of the subject site. We recommend that you obtain well information from both Alameda County Public Works Agency and the State of California Department of Water Resources, at a

minimum. Submittal of maps showing the location of all wells identified in your study, and the use of tables to report the data collected as part of your survey are required. Please provide a table that includes the well designation, location, total depth, diameter, screen interval, date of well installation, current status, historic use, and owner of the wells. In addition, please provide well logs and completion records for wells downgradient from the site that are potential receptors. Please present your well survey results by November 21, 2008.

#### **TECHNICAL REPORT REQUEST**

Please submit technical reports to Alameda County Environmental Health (Attention: Jerry Wickham), according to the following schedule:

- **November 21, 2008** – Work Plan for Additional Site Characterization or Updated Site Management Plan and Proposed Draft Deed Restriction
- **November 21, 2008** – Well Survey

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.

#### **ELECTRONIC SUBMITTAL OF REPORTS**

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) Geotracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the Geotracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in Geotracker (in PDF format). Please visit the SWRCB website for more information on these requirements ([http://www.swrcb.ca.gov/ust/cleanup/electronic\\_reporting](http://www.swrcb.ca.gov/ust/cleanup/electronic_reporting)).

#### **PERJURY STATEMENT**

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I 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." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover

Mr. Curtis Eisenberger  
RO0002986  
September 18, 2008  
Page 5

letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

#### PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

#### AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to \$10,000 per day for each day of violation.

If you have any questions, please call me at (510) 567-6791 or send me an electronic mail message at [jerry.wickham@acgov.org](mailto:jerry.wickham@acgov.org).

Sincerely,



Jerry Wickham, California PG 3766, CEG 1177, and CHG 297  
Senior Hazardous Materials Specialist

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Leroy Griffin, Oakland Fire Department, 250 Frank H. Ogawa Plaza, Ste. 3341  
Oakland, CA 94612-2032

Peter Cusack, Treadwell & Rollo, 555 Montgomery Street, Suite 1300  
San Francisco, CA 94111

Donna Drogos, ACEH  
Jerry Wickham, ACEH  
File

<b>Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)</b>	<b>ISSUE DATE:</b> July 5, 2005
	<b>REVISION DATE:</b> December 16, 2005
	<b>PREVIOUS REVISIONS:</b> October 31, 2005
<b>SECTION:</b> Miscellaneous Administrative Topics & Procedures	<b>SUBJECT:</b> Electronic Report Upload (ftp) Instructions

Effective January 31, 2006, the Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

#### REQUIREMENTS

- Entire report including cover letter must be submitted to the ftp site as a **single portable document format (PDF) with no password protection**. (Please do not submit reports as attachments to electronic mail.)
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- Signature pages and perjury statements **must** be included and have either original or electronic signature.
- **Do not password protect the document**. Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted.**
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:  
RO#\_Report Name\_Year-Month-Date (e.g., RO#5555\_WorkPlan\_2005-06-14)

#### Additional Recommendations

- A separate copy of the tables in the document should be submitted by e-mail to your Caseworker in **Excel** format. These are for use by assigned Caseworker only.

#### Submission Instructions

- 1) Obtain User Name and Password:
  - a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
    - i) Send an e-mail to [dehloptoxic@acgov.org](mailto:dehloptoxic@acgov.org)  
or
    - ii) Send a fax on company letterhead to (510) 337-9335, to the attention of Alicia Lam-Finneke.
  - b) In the subject line of your request, be sure to include **"ftp PASSWORD REQUEST"** and in the body of your request, include the **Contact Information, Site Addresses, and the Case Numbers (RO# available in Geotracker)** you will be posting for.
- 2) Upload Files to the ftp Site
  - a) Using Internet Explorer (IE4+), go to <ftp://alcoftp1.acgov.org>.  
(i) Note: Netscape and Firefox browsers will not open the FTP site.
  - b) Click on File, then on Login As.
  - c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
  - d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
  - e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.
- 3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
  - a) Send email to [dehloptoxic@acgov.org](mailto:dehloptoxic@acgov.org) notify us that you have placed a report on our ftp site.
  - b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name at acgov.org. (e.g., [firstname.lastname@acgov.org](mailto:firstname.lastname@acgov.org))
  - c) The subject line of the e-mail must start with the RO# followed by Report Upload. (e.g., Subject: RO1234 Report Upload)

# **Proposed Future Land Use Plans**



NATIONAL AFFORDABLE COMMUNITIES, INC.  
 4299 MACARTHUR BLVD. #215  
 NEWPORT BEACH, CA 92660  
 Tel: (949) 851-6993  
 Fax: (949) 851-8062



KTGY NO. 20080138

COVER SHEET

**RED STAR SENIOR LIVING**  
 1396 5th Street  
 Oakland, CALIFORNIA 94607

04 APRIL '08

**A0**

**SHEET INDEX**

- A-1 SITE PLAN
- A-2 PARKING PLAN
- A-3 BUILDING PLANS
- A-3.1 BUILDING & ROOF PLANS
- A-4 BUILDING ELEVATIONS
- A-4.1 COLOR ELEVATIONS
- A-4.2 BUILDING PERSPECTIVES
- A-4.3 BUILDING PERSPECTIVES
- A-4.4 BUILDING PERSPECTIVES
- A-5 SITE SECTION
- A-6 ONE BEDROOM UNIT PLANS
- A-6.1 TWO BEDROOM UNIT PLANS
- A-7 COMMUNITY CENTER AND LAUNDRY PLANS

**PROJECT SUMMARY**

TOTAL LOT AREA:	0.88 ACRES (38,381 S.F.)
TOTAL BUILDING FOOTPRINT (PODIUM OUTLINE):	31,356 S.F.
TOTAL FLOOR AREA (4 LEVELS OF LIVING):	93,696 S.F.
TOTAL PARKING AREA:	23,783 S.F.
BUILDING HEIGHT:	± 64'
NUMBER OF DWELLING UNITS:	119
NUMBER OF PARKING SPACES:	60

**UNIT SUMMARY**

UNIT TYPE	TYPE	AREA (S.F. GROSS)	# OF UNITS
PLAN 1A	1 BR/ 1 BA	556	95
PLAN 1B	1 BR/ 1 BA	616	4
PLAN 1C	1 BR/ 1 BA	618	4
PLAN 2A	2 BR/ 1 BA	782	4
PLAN 2B	2 BR/ 1 BA	789	8
PLAN 2C	2 BR/ 1 BA	874	4
TOTAL			119

**RETAIL SUMMARY**

RETAIL SQUARE FOOTAGE:	±3,300
------------------------	--------

**PARKING SUMMARY**

TYPE	# OF UNITS	REQUIRED	PROVIDED
1 BEDROOM	103	0.5/UNIT	52
2 BEDROOM	16	0.5/UNIT	8
TOTAL	119	0.5(119)	60

TOTAL SPACES REQUIRED = 60  
 TOTAL SPACES PROVIDED = 60  
 (INCLUDES 2 A.D.A STALLS)

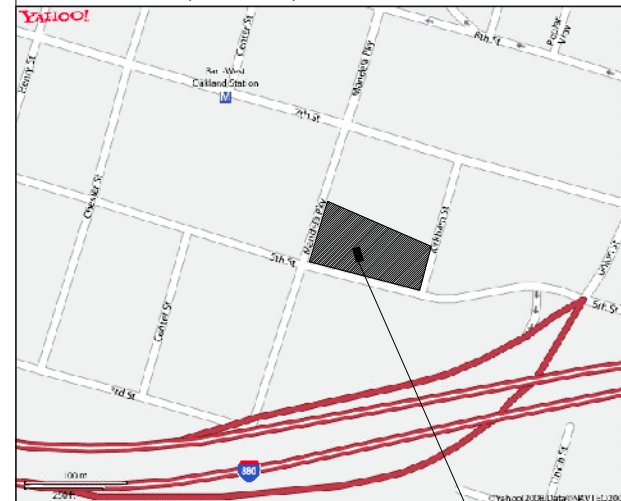
**OPEN SPACE TABULATION**

<b>REQUIRED</b>	
PRIVATE OPEN SPACE: 25 S.F./UNIT @ 119 UNITS =	2,975 S.F.
GROUP OPEN SPACE: 150 S.F./UNIT @ 119 UNITS =	17,850 S.F.
<b>PROVIDED</b>	
PRIVATE OPEN SPACE:	<b>8,640 S.F.</b>
GROUP OPEN SPACE: COURTYARD 1 = 3,340 S.F.	
COURTYARD 2 = 2,572 S.F.	
REC = 2,962 S.F.	
OTHER = 787 S.F.	
TOTAL = 9,661 S.F.	9,661 S.F.

**SUBSTITUTION OF PRIVATE OPEN SPACE FOR GROUP OPEN SPACE**  
 (8,640 - 2,975) x 2 = 11,330 S.F.

**TOTAL GROUP OPEN SPACE: 20,991 S.F.**

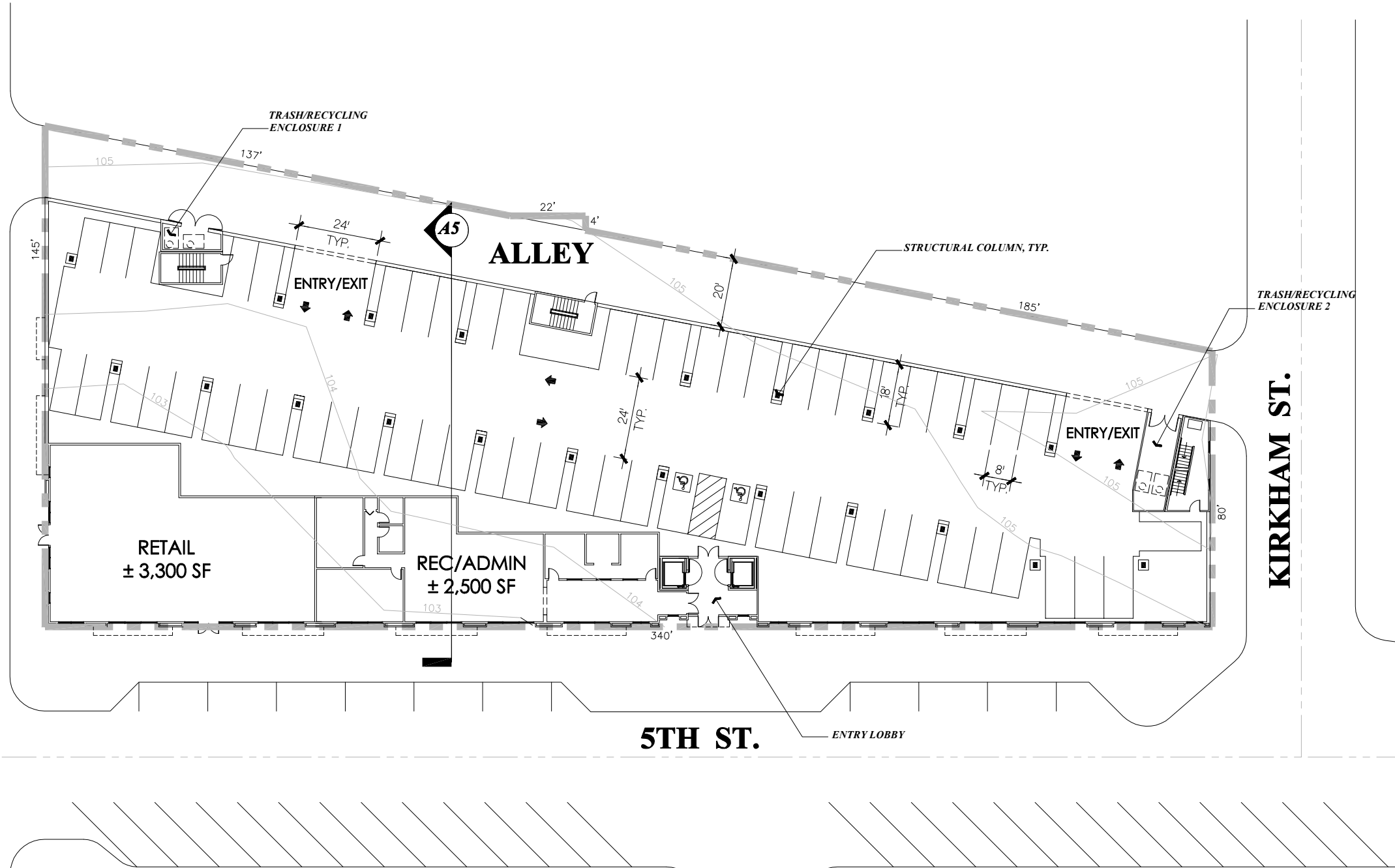
**VICINITY MAP (NOT TO SCALE)**



PROJECT SITE



MANDELA PKWY



Note: "This drawing is for conceptual purposes only. Boundary is not derived from surveyed base - verify with engineer."



NATIONAL AFFORDABLE COMMUNITIES, INC.  
 4299 MACARTHUR BLVD. #215  
 NEWPORT BEACH, CA 92660  
 Tel: (949) 851-6993  
 Fax: (949) 851-8062



KTGY NO. 20080138

PARKING PLAN  
(AT GRADE LEVEL)

RED STAR SENIOR LIVING  
 1396 5th Street  
 Oakland, CALIFORNIA 94607

04 APRIL '08

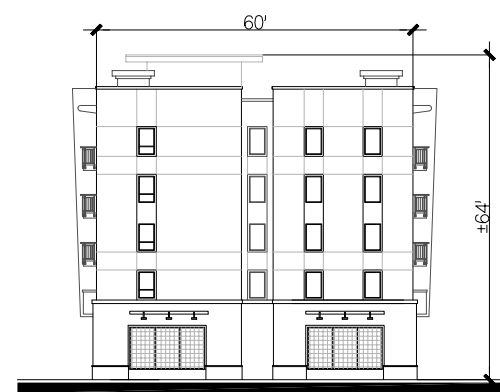
A2



SOUTH



WEST



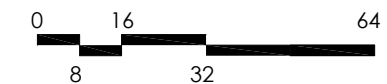
EAST

MATERIALS LEGEND

- 1. WALLS: STUCCO
- 2. RECESSED VINYL WINDOW W/COLORED WINDOW FRAME
- 3. DECORATIVE SILL TRIM
- 4. METAL AWNING
- 5. WROUGHT IRON RAILING
- 6. STOREFRONT
- 7. METAL MESH @ GARAGE OPENINGS
- 8. EXTERIOR LIGHTING FIXTURE
- 9. DECORATIVE FOAM BAND
- 10. FOAM CORNICE TRIM



NORTH



NATIONAL AFFORDABLE COMMUNITIES, INC.  
 4299 MACARTHUR BLVD. #215  
 NEWPORT BEACH, CA 92660  
 Tel: (949) 851-6993  
 Fax: (949) 851-8062



KTGY NO. 20080138

ELEVATIONS

RED STAR SENIOR LIVING

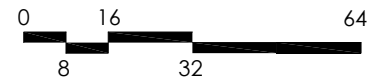
1396 5th Street  
 Oakland, CALIFORNIA 94607

04 APRIL '08

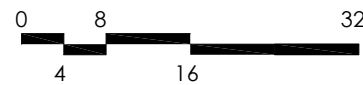
A4



5TH STREET ELEVATION



PARTIAL 5TH STREET ELEVATION



NATIONAL AFFORDABLE COMMUNITIES, INC.  
 4299 MACARTHUR BLVD, #215  
 NEWPORT BEACH, CA 92660  
 Tel: (949) 851-6993  
 Fax: (949) 851-8062



KTGY NO. 20080138

CONCEPTUAL  
 ELEVATIONS

RED STAR SENIOR LIVING  
 1396 5th Street  
 Oakland, CALIFORNIA 94607

04 APRIL '08

A4.1



5TH STREET AT CORNER LOBBY



VIEW FROM SOUTH EAST 5TH STREET

NATIONAL AFFORDABLE COMMUNITIES, INC.  
 4299 MACARTHUR BLVD. #215  
 NEWPORT BEACH, CA 92660  
 Tel: (949) 851-6993  
 Fax: (949) 851-8062



KTGY NO. 20080138

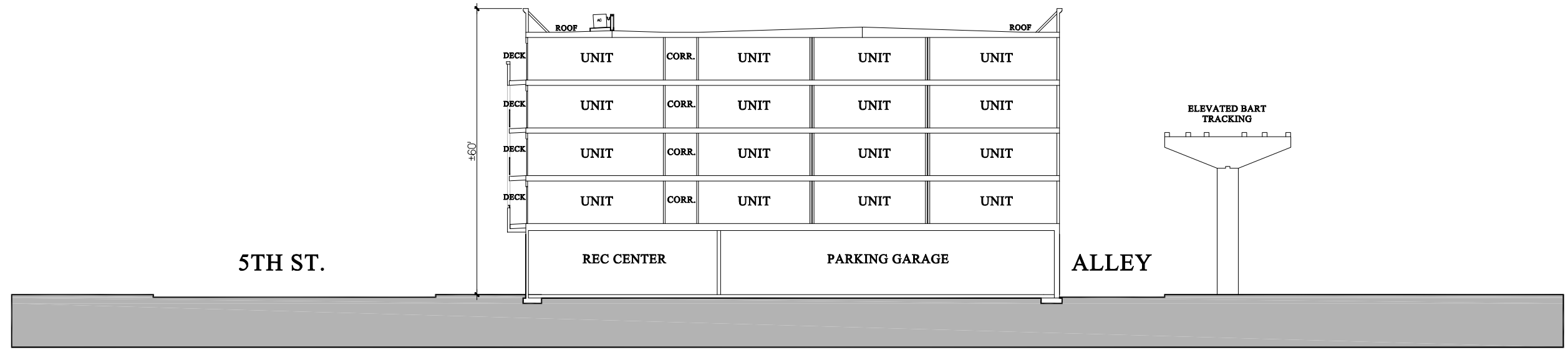
PERSPECTIVES

RED STAR SENIOR LIVING

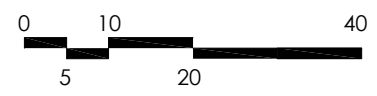
1396 5th Street  
 Oakland, CALIFORNIA 94607

04 APRIL '08

A4.2



EAST CROSS SECTION



NATIONAL AFFORDABLE COMMUNITIES, INC.  
 4299 MACARTHUR BLVD. #215  
 NEWPORT BEACH, CA 92660  
 Tel: (949) 851-6993  
 Fax: (949) 851-8062



KTGY NO. 20080138

SITE SECTION

RED STAR SENIOR LIVING  
 1396 5th Street  
 Oakland, CALIFORNIA 94607

04 APRIL '08

A5

# **Excerpts of Data, Site Plans, and Boring Logs from Prior Reports**

**Table 3**  
**Summary of Analytical Data**

Parameter	Method	Units	SB-1	GR-1	SB-2	GR-2	SB-3	SB-4
TPH (Diesel)	SW8015B	mg/Kg or mg/L	ND	ND	ND	ND	ND	ND
TPH (Gasoline)	SW8015B	mg/Kg or mg/L	ND	ND	ND	ND	ND	ND
VOCs	SW8260B	µg/Kg or µg/L	ND	ND	ND	ND	ND	ND
pH	SW9045C	pH units	7.24	6.61	8.6	6.88	8.16	8.09
PAHs	SW8270C	mg/Kg or mg/L		ND	0.52*, 0.58**	ND	ND	
Cadmium	SW6010B	mg/Kg or mg/L		ND	3.3	ND	1.4	
Chromium	SW6010B	mg/Kg or mg/L		ND	39	ND	28	
Lead	SW6010B	mg/Kg or mg/L		ND	2700	ND	29	
Mercury	SW7471A	mg/Kg or mg/L		ND	0.17	ND	ND	
Nickel	SW6010B	mg/Kg or mg/L		ND	42	ND	22	
Zinc	SW6010B	mg/Kg or mg/L		ND	1700	ND	34	
TDS	E160.1	mg/L		2400		1800		

\* Result is for Fluoranthene

\*\* Result is for Pyrene

Depth, ft.	Sampler Type	Blow/Foot 350 ft.-lbs.	Sample Recovery	MATERIAL DESCRIPTION	Unified Soil Classification	$q_u$ - s.a.f. Penetration	Dry Density p.o.f.	Moisture % of dry wt.	MISCELLANEOUS TEST RESULTS
1	S		↕	Mixed fill material					LEL 000 ppm
2				Sand, Construction gravel some bitumen staining					Sample Collected
3			↕	Dark Gray fine silt					
4			↕						
5			↕	Wet Dark Gray fine silt					LEL 000 ppm
6			↕						
7			↕	Brown fibrous organic material (H.S. odor) becoming wet silty at about 8 ft.					
8			↕						
9			↕	Wet Dark Gray clayey silt.					LEL 000 ppm
10			↕						
11			↕	5% organic (root cany) at about 11 ft.					
12			↕						
13			↕	Moist Greenish Gray silt with some clay					LEL 000 ppm
14			↕						
15			↕						
16			↕						
17			↕	Yellowish Brown silty clay					LEL 000 ppm
18			↕						
19			↕						
20			↕						
21			↕						
22			↕						
23			↕						
24			↕						
25			↕						

Stratification lines represent the approximate boundary between the engineer's description of material types. The actual transition may be gradual and may vary with location.



PROJECT NAME:

PHASE I/II 1384 5th Ave OAKLAND

PROJECT NUMBER:

2004-01-001

Logged by: SW

Date: 8/20/04

Equipment:

Direct push

Log of: SB

Depth, ft.	Sampler Type	Ribbed/Foot 380 ft.-lbs. Sample Recovery	MATERIAL DESCRIPTION	Unified Soil Classification	$C_u$ - t.s.f. Penetrometer	Dry Density p.c.f.	Moisture % of dry wt.	MISCELLANEOUS TEST RESULTS
1	↑							LEL 00 ppm. Collected Sample
2	S	6" / 4"	Dark brown silty (Fill) with 30% angular Rock Fragments					
3	↓							
4	↑							
5	S	8" / 4"	Dark Brownish gray, moist sandy silt (decaying fill)					LEL 000 ppm
6	S		Dark, gray v. fine silty sand					
7	↓							
8	↓		Brown, organic material with roots					
9								
10			Brown, organic, fibrous (peat) material with roots					
11			Becoming increasingly silty about 7.5 ft					LEL 000 ppm
12			Dark gray sandy silt with 5% root (organic) casings					
13	△		Becoming light gray at end of interval. (moist)					
14								
15								
16								
17			Blueish green clayey, sandy silt. P					
18			Becoming yellowish brown increasingly clayey at about 20 ft. moist.					Hole collapsing
19								LEL 200 ppm
20								
21			Yellowish brown clayey silt. (Moist)					
22								
23								
24								
25								

Stratification lines represent the approximate boundary between the engineer's description of material types. The actual transition may be gradual and may vary with location.

Mandella  
SB-1

Table 1  
Soil Analytical Results for Petroleum Hydrocarbons  
Red Star Yeast  
1396 Fifth Street  
Oakland, California

Sample ID	Date Sample	TPHg	TPHd	TPHmo	MTBE	mg/kg					
						Benzene	Toluene	Ethylbenzene	Xylenes	VOCs	SVOCs
E-1-1.5	4/14/2006	< 1.0	3.7	19	< 0.05	< 0.005	< 0.005	< 0.005	< 0.005	--	--
E-1-2.5	4/14/2006	< 1.0	< 1.0	< 1.0	< 0.05	< 0.005	< 0.005	< 0.005	< 0.005	ND	ND
E-2-1.5	4/14/2006	< 1.0	< 1.0	< 1.0	< 0.05	< 0.005	< 0.005	< 0.005	< 0.005	--	--
E-2-2.5	4/14/2006	< 1.0	< 1.0	< 1.0	< 0.05	< 0.005	< 0.005	< 0.005	< 0.005	--	--
E-3-1.5	4/14/2006	< 1.0	2.6	12	< 0.05	< 0.005	< 0.005	< 0.005	< 0.005	--	--
E-3-2.5	4/14/2006	< 1.0	< 1.0	< 1.0	< 0.05	< 0.005	< 0.005	< 0.005	< 0.005	ND	--
E-4-1.5	4/14/2006	< 1.0	5.6	38	< 0.05	< 0.005	< 0.005	< 0.005	< 0.005	--	--
E-4-2.5	4/14/2006	< 1.0	< 1.0	< 1.0	< 0.05	< 0.005	< 0.005	< 0.005	< 0.005	--	--
E-5-1.5	4/14/2006	< 1.0	1.4	6.0	< 0.05	< 0.005	< 0.005	< 0.005	< 0.005	ND	--
E-5-2.5	4/14/2006	< 1.0	3.2	20	< 0.05	< 0.005	< 0.005	< 0.005	< 0.005	--	--
E-6-1.5	4/14/2006	< 1.0	7.8	43	< 0.05	< 0.005	< 0.005	< 0.005	< 0.005	--	--
E-6-2.5	4/14/2006	< 1.0	< 1.0	< 1.0	< 0.05	< 0.005	< 0.005	< 0.005	< 0.005	ND	--

Notes:

TPHg - Total Petroleum Hydrocarbons as Gasoline, EPA Method 8015M

TPHd - Total Petroleum Hydrocarbons as Diesel Range (C10-C23), EPA Method 8015M

TPHmo - Total Petroleum Hydrocarbons as Motor Oil (C10-C23), EPA Method 8015M

MTBE - Methyl Tert Butyl Ether

VOCs - Volatile Organic Compounds, EPA 8260B

SVOCs - Semi volatile organic compounds, EPA Method 8270

All results are reported in milligrams per kilogram (mg/kg)

< 0.005 - Analyte was not detected above the laboratory reporting limit (0.005 mg/kg)

-- Not Analyzed

ND - Not detected at or above the laboratory reporting limit

Table 2  
 Soil Analytical Results for Metals  
 Red Star Yeast  
 1396 Fifth Street  
 Oakland, California

Sample ID	Date Sampled	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	STLC Lead (mg/L)	TCLP Lead (mg/L)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
E-1-1.5	4/14/2006	--	--	--	--	< 1.5	20	--	--	180	11	<0.2	--	--	25	--	--	--	--	280
E-1-2.5	4/14/2006	1.8	6.8	1,100	0.9	< 0.25	16	7.7	38	27	--	--	0.12	1.4	18	< 0.5	< 0.5	< 0.5	48	41
E-2-1.5	4/14/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
E-2-2.5	4/14/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
E-3-1.5	4/14/2006	< 0.5	5.1	--	--	--	< 0.5	--	--	< 0.5	--	--	--	--	7.3	--	--	--	--	< 5.0
E-3-2.5	4/14/2006	--	--	--	--	< 1.5	24	--	--	140	6.7	<0.2	--	--	22	--	--	--	--	370
E-4-1.5	4/14/2006	--	--	--	--	< 1.5	47	--	--	43	--	--	--	--	43	--	--	--	--	67
E-4-2.5	4/14/2006	< 0.5	1.7	130	< 0.5	< 0.25	23	3.5	13	15	--	--	< 0.05	< 0.5	18	< 0.5	< 0.5	< 0.5	22	34
E-5-1.5	4/14/2006	< 0.5	3.1	140	< 0.5	0.36	34	6.5	19	5.6	--	--	< 0.05	< 0.5	32	< 0.5	< 0.5	< 0.5	39	49
E-5-2.5	4/14/2006	--	--	--	--	< 1.5	29	--	--	34	--	--	--	--	22	--	--	--	--	200
E-6-1.5	4/14/2006	< 0.5	4.3	190	< 0.5	< 0.25	31	7.9	18	76	3.4	<0.2	0.16	0.5	40	< 0.5	< 0.5	< 0.5	45	92
E-6-2.5	4/14/2006	--	--	--	--	< 1.5	50	--	--	< 5.0	--	--	--	--	41	--	--	--	--	25

Notes:

mg/kg - milligrams per kilograms

< 5.0 - Analyte was not detected above the laboratory reporting limit (5.0 mg/kg).

-- Not analyzed

**Table 3**  
**Groundwater Analytical Results for Petroleum Hydrocarbons**  
**Red Star Yeast**  
**1396 Fifth Street**  
**Oakland, California**

Sample ID	Date Sample	TPHg	TPHd	TPHmo	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	VOCs	SVOCs
		µg/L									
E-1-W	4/14/2006	< 1.0	< 1.0	< 1.0	< 0.05	< 0.005	< 0.005	< 0.005	< 0.005	ND	ND
E-2-W	4/14/2006	< 1.0	320	1,500	< 0.05	< 0.005	< 0.005	< 0.005	< 0.005	--	--
E-3-W	4/14/2006	< 1.0	570	2,000	< 0.05	< 0.005	< 0.005	< 0.005	< 0.005	ND	ND
E-4-W	4/14/2006	< 1.0	580	1,900	< 0.05	< 0.005	< 0.005	< 0.005	< 0.005	--	--
E-5-W	4/14/2006	< 1.0	54	< 1.0	< 0.05	< 0.005	< 0.005	< 0.005	< 0.005	ND	ND
E-6-W	4/14/2006	< 1.0	< 1.0	< 1.0	< 0.05	< 0.005	< 0.005	< 0.005	< 0.005	ND	ND

**Notes:**

TPHg - Total Petroleum Hydrocarbons as Gasoline, EPA Method 8015M

TPHd - Total Petroleum Hydrocarbons as Diesel Range (C10-C23), EPA Method 8015M

TPHmo - Total Petroleum Hydrocarbons as Motor Oil (C10-C23), EPA Method 8015M

MTBE - Methyl Tert Butyl Ether

VOCs - Volatile Organic Compounds, EPA 8260B

SVOCs - Semi volatile organic compounds, EPA Method 8270

All results are reported in micrograms per liter (µg/L)

< 1.0 - Analyte was not detected above the laboratory reporting limit (0.005 mg/kg)

-- Not Analyzed

ND - Not detected at or above the laboratory reporting limit

Table 4  
Groundwater Analytical Results for Total Metals  
Red Star Yeast  
1396 Fifth Street  
Oakland, California

Sample ID	Date Sampled	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
E-1-W	4/14/2006	< 0.5	3.4	180	< 0.5	< 0.25	< 0.5	0.96	0.94	< 0.5	< 0.5	4.1	3.7	< 0.5	< 0.19	< 0.5	0.67	< 0.5
E-2-W	4/14/2006	--	--	--	--	< 0.25	< 0.5	--	--	--	--	--	--	--	--	--	--	--
E-3-W	4/14/2006	0.58	4.7	320	< 0.5	< 0.25	< 0.5	3.1	< 0.5	< 0.5	< 0.012	12	8.1	< 0.5	< 0.19	< 0.5	2.9	12
E-4-W	4/14/2006	--	--	--	--	< 0.25	< 0.5	--	--	< 0.5	--	--	5.8	--	--	--	--	< 5.0
E-5-W	4/14/2006	< 0.5	< 0.5	170	< 0.5	< 0.25	< 0.5	1.9	0.54	< 0.5	0.013	1.0	11	< 0.5	< 0.19	< 0.5	1.9	< 5.0
E-6-W	4/14/2006	< 0.5	< 0.5	150	< 0.5	< 0.25	< 0.5	3.0	1.5	< 0.5	< 0.012	1.3	7.7	< 0.5	< 0.19	< 0.5	1.7	< 5.0

Notes:

µg/L - microgram per liter

< 0.5 - Analyte was not detected above the laboratory reporting limit (0.5 µg/L).

-- Not analyzed

**Table 5**  
**Soil Analytical Results for Petroleum Hydrocarbons and Total Lead**  
**Red Star Yeast**  
**Oakland, California**

Sample ID	Date Sample	TPHg	TPHd	MTBE	Benzene	Toluene	Ethlybenzene	Xylenes	Lead
		mg/kg							
ST-1	26-Sep-06	<1.0	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005	<5.0
SE 05 (14Nov06)	14-Nov-06	<1.0	1.3	NM	<0.005	<0.005	<0.005	<0.005	NM
SW 05 (14Nov06)	14-Nov-06	<1.0	<1.0	NM	<0.005	<0.005	<0.005	<0.005	NM
SN 05 (14Nov06)	14-Nov-06	<1.0	2.0	NM	<0.005	<0.005	<0.005	<0.005	NM
SN 10 (14Nov06)	14-Nov-06	<1.0	<1.0	NM	<0.005	<0.005	<0.005	<0.005	NM

**Notes:**

All results are reported in milligrams per kilogram (mg/kg)

TPHg - Total Petroleum Hydrocarbons as Gasoline, EPA Method 8015M

TPHd - Total Petroleum Hydrocarbons as Diesel Range (C10-C23), EPA Method 8015M

MTBE - Methyl Tert Butyl Ether

<1.0 - Analyte was not detected above the laboratory reporting limit (1.0 mg/kg)

NM - Not Measured

**Table 6**  
**Groundwater Analytical Results for Petroleum Hydrocarbons**  
**Red Start Yeast**  
**Oakland, California**

Sample ID	Date Sampled	TPHg	TPHd	MTBE	Benzene	Toluene	Ethlybenzene	Xylenes
		µg/L						
GRAB	3-Oct-06	< 50	180	< 5.0	< 0.5	< 0.5	< 0.5	< 0.5
WN10 (14Nov06)	14-Nov-06	270	< 50	NM	< 0.5	< 0.5	< 0.5	< 0.5

**Notes:**

All results are reported in micrograms per Liter (µg/L)

TPHg - Total Petroleum Hydrocarbons as Gasoline, EPA Method 8015M

TPHd - Total Petroleum Hydrocarbons as Diesel Range (C10-C23), EPA Method 8015M

MTBE - Methyl Tert Butyl Ether

< 50 - Analyte was not detected above the laboratory reporting limit (50 µg/L)

NM - Not measured

**Table 1**  
**Soil Analytical Results for Total Lead**  
**Red Star Yeast**  
**Oakland, CA**  
**Project: 4068.01**

<b>Sample ID</b>	<b>Depth (feet)</b>	<b>Date Sampled</b>	<b>Lead</b>
			(mg/kg)
CS-7-WEST	1.5	5/17/2007	180
CS-8-NORTH	1.5	5/17/2007	130
CS-9-EAST	1.5	5/17/2007	190
CS-10-SOUTH	1.5	5/17/2007	110
CS-11-BOT	2.5	5/17/2007	94

Notes:

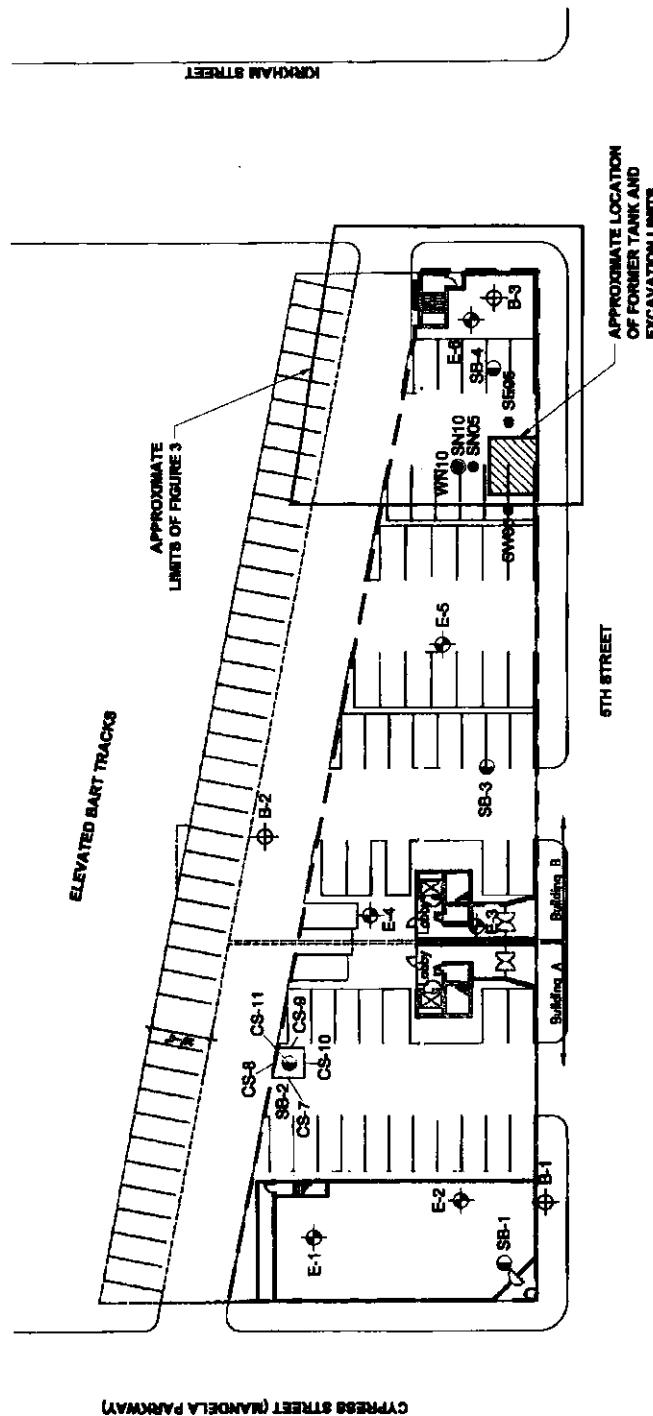
mg/kg - milligrams per kilograms



**Table 2**  
**Soil Analytical Results for Total Mercury**  
**Red Star Yeast**  
**Oakland, CA**  
**Project: 4068.01**

Sample ID	Depth (feet)	Date Sampled	Mercury (mg/kg)
CS-1-0	0.5	5/17/2007	1.1
CS-1-6	1	5/17/2007	0.11
CS-2-0	0.5	5/17/2007	3
CS-2-6	1	5/17/2007	0.56
CS-3-0	0.5	5/17/2007	5.8
CS-3-6	1	5/17/2007	0.28
CS-4-0	0.5	5/17/2007	0.72
CS-4-6	1	5/17/2007	0.14
CS-5-0	0.5	5/17/2007	1.3
CS-5-6	1	5/17/2007	0.093
CS-6-0	0.5	5/17/2007	1.4
CS-6-6	1	5/17/2007	0.58

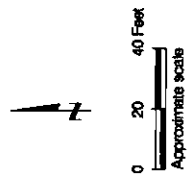
Notes:  
mg/kg - milligrams per kilograms



**EXPLANATION**

- CS-7 Approximate location of confirmatory soil sample by Treadwell & Rollo, Inc. May 2007
- Approximate excavation area for confirmation sampling for total lead.
- Sample CS-7 West, CS-8 North, CS-9 East, CS-10 South, collected from west, north, east, and south excavation sidewalks, respectively. Sample CS-11 Bot Collected from excavation bottom (2.5 feet bgs).
- E-1 Approximate location of boring by Treadwell & Rollo, Inc. April 2006
- B-1 Approximate location of boring by Treadwell & Rollo, Inc. March 2005
- SB-1 Approximate location of boring by Remediation Services, Inc. August 2004
- SN05 Grab soil sample location, by Treadwell & Rollo, Inc. November 2006. May 2007
- WN10 Grab groundwater sample location, by Treadwell & Rollo, Inc. November 2006

Note: Unless noted, soil samples collected 5 feet below ground surface, groundwater sample collected 6 feet below ground surface.



Reference: Ground Floor Plan - Option A by Philip Banta & Associates Architects, dated 11/03/04.

<b>RED STAR YEAST SITE</b> Oakland, California	
<b>SITE PLAN</b>	
Date 05/20/07	Project No. 4068.01
Figure 2	

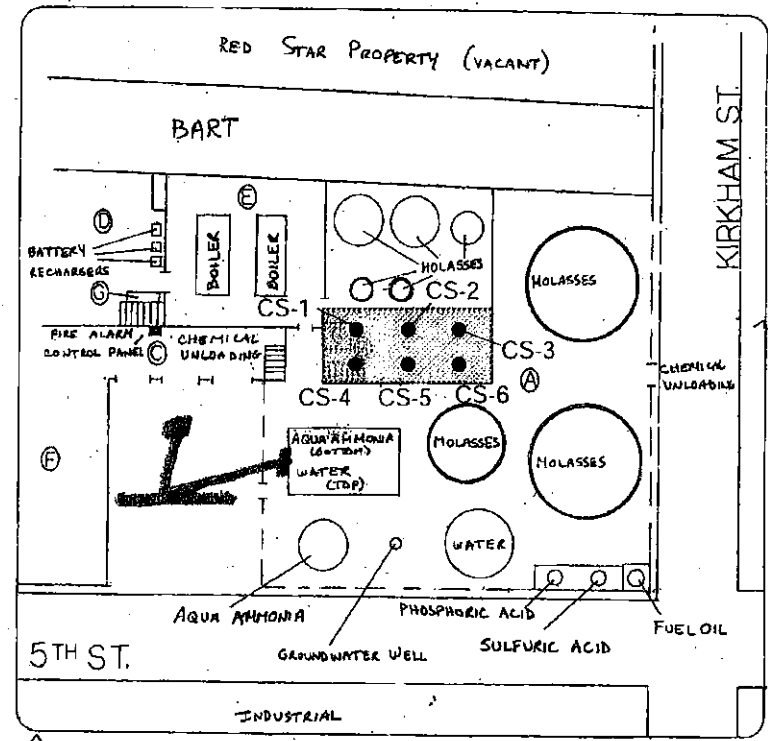
**Treadwell & Rollo**

Alameda County Department of Environmental Health

HAZARDOUS MATERIALS MANAGEMENT PLAN  
Facility Map - Storage Detail

Facility Name RED STAR YEAST Facility ID 3889

CONFIDENTIAL



Scale 2 1/2 feet/inch

Map # 1 Map Name TANK FARM

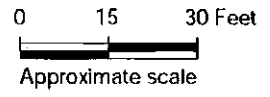
Today's Date 7/28/92

- LEG
- A- TANK FARM
  - B- MASH HOUSE
  - C- LOADING DOCK
  - D- WARE HOUSE
  - E- BOILER ROOM
  - F- COOLER
  - G- OFFICE

NOTE: -MSDS's STORED IN OFFICES.  
-ALL INTERIOR DRAINS ARE SEWER DRAINS

EXPLANATION

- Approximate area where mercury spill reportedly occurred in 1996
- Approximate location of soil sample collected for confirmatory mercury sample
- CS-1 Confirmation sample collected at depths of 0-6 inches and 6-12 inches  
Reference: Alameda County Department of Environmental Health.



RED START YEAST SITE  
Oakland, California

PROPOSED SOIL CONFIRMATION  
SAMPLE LOCATIONS



Date 05/23/07 Project No. 4068.01 Figure 3

\\TNR2\vol1\Graphics\Trgraphics\4000's\4068.01\4068.01\Proposed Soil Sample Location.dwg 5/23/07




Boring location: See Site Plan, Figure 2 Logged by: C. Gordon

Date started: 4/14/06 Date finished: 4/14/06

Drilling method: Hollow Stem Auger

Hammer weight/drop: 140 lbs./30-inches Hammer type: Automatic

Sampler: California Modified Split Spoon

DEPTH (feet)	SAMPLES				OVM (ppm)	LITHOLOGY	MATERIAL DESCRIPTION
	Sample Number	Sample	Block Count	Recovery (inches)			
1						SP	SAND (SP) brown, loose, moist, no odor, trace gravel
2	E-1-1.5						
3	E-1-2.5						
4						SM	SILTY SAND (SM) dark brown, loose, wet, non-plastic, no odor, trace clay, trace gravel
5	E-1-5.0						
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

FILL

TEST ENVIRONMENTAL 406801 ENV.GP.J T&R.GDT 5/16/06

Boring terminated at a depth of 10 feet below ground surface.  
Boring backfilled with cement grout.  
Groundwater encountered at a depth of 5.5 feet below ground surface during drilling.

**Treadwell & Rollo**

Project No.: 4068.01 Figure: A-1

Boring location: See Site Plan, Figure 2 Logged by: C. Gordon

Date started: 4/14/06 Date finished: 4/14/06

Drilling method: Hollow Stem Auger

Hammer weight/drop: 140 lbs./30-inches Hammer type: Automatic

Sampler: California Modified Split Spoon

DEPTH (feet)	SAMPLES				OVM (ppm)	LITHOLOGY	MATERIAL DESCRIPTION
	Sample Number	Sample	Blow Count	Recovery (inches)			
1						SP	SAND (SP) brown, loose, moist, non-plastic, no odor, trace concrete
2	E-2-1.5	[Sample]					
3	E-2-2.5	[Sample]				SM	SILTY SAND (SM) dark brown, loose, wet, non-plastic, no odor, trace gravel
4							
5	E-2-5.0	[Sample]					
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

TEST ENVIRONMENTAL 406801 ENV.GPJ T&R.GDT 5/16/06

Boring terminated at a depth of 6.5 feet below ground surface.  
Boring backfilled with cement grout.  
Groundwater encountered at a depth of 4.0 feet below ground surface during drilling.

**Treadwell & Rollo**

Project No.	4068.01	Figure:	A-2
-------------	---------	---------	-----

Boring location: See Site Plan, Figure 2 Logged by: C. Gordon

Date started: 4/14/06 Date finished: 4/14/06

Drilling method: Hollow Stem Auger

Hammer weight/drop: 140 lbs./30-inches Hammer type: Automatic

Sampler: California Modified Split Spoon

DEPTH (feet)	SAMPLES					LITHOLOGY	MATERIAL DESCRIPTION
	Sample Number	Sample	Blow Count	Recovery (inches)	OMV (ppm)		
1						SC	CLAYEY SAND (SC) yellow-brown, moist, no odor, trace gravel and brick
2	E-3-1.5						
3	E-3-2.5						
4						GP	GRAVEL (GP) dark brown, loose, wet, no odor
5	E-3-5.0					SC	CLAYEY SAND (SC) olive-gray, loose, wet, no odor
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

FILL

TEST ENVIRONMENTAL 406801 ENV/GPJ T&R.GDT 5/16/06

Boring terminated at a depth of 6.5 feet below ground surface.  
Boring backfilled with cement grout.  
Groundwater encountered at a depth of 3.5 feet below ground surface during drilling.

**Treadwell & Rollo**

Project No.: 4068.01 | Figure: A-3

<b>PROJECT:</b> RED STAR YEAST SITE Oakland, California		<b>Log of Boring E-4</b>					
Boring location: See Site Plan, Figure 2			Logged by: C. Gordon				
Date started: 4/14/06		Date finished: 4/14/06					
Drilling method: Hollow Stem Auger							
Hammer weight/drop: 140 lbs./30-inches		Hammer type: Automatic					
Sampler: California Modified Split Spoon							
DEPTH (feet)	SAMPLES				OVM (ppm)	LITHOLOGY	MATERIAL DESCRIPTION
	Sample Number	Sample	Blow Count	Recovery (inches)			
1						SC	
2	E-4-1.5	■					
3	E-4-2.5	■				SC	
4						SC	
5						SC	
6	E-4-5.5	■					
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Boring terminated at a depth of 6.5 feet below ground surface.  
 Boring backfilled with cement grout.  
 Groundwater encountered at a depth of 4.5 feet below ground surface during drilling.

**Treadwell & Rollo**

Project No. 4068.01    Figure: A-4

TEST ENVIRONMENTAL 406801-ENV.GPJ T&R.GDT 5/16/06

Boring location: See Site Plan, Figure 2	Logged by: C. Gordon
Date started: 4/14/06	Date finished: 4/14/06
Drilling method: Hollow Stem Auger	
Hammer weight/drop: 140 lbs./30-inches	Hammer type: Automatic
Sampler: California Modified Split Spoon	

DEPTH (feet)	SAMPLES				OVM (ppm)	LITHOLOGY	MATERIAL DESCRIPTION
	Sample Number	Sample	Blow Count	Recovery (inches)			
1						SC	CLAYEY SAND (SC) olive-brown, soft, moist, no odor, trace gravel plus brick, gravel layer at 2.0 to 2.5' bgs <div style="text-align: right; border-left: 1px solid black; padding-left: 5px;">             ↑ FILL ↓           </div>
2	E-5-1.5						
3	E-5-2.5					SC	CLAYEY SAND (SC) dark brown, medium dense, moist, no odor, trace gravel
4							
5	E-5-5.0						SILTY SAND (SM) yellow-brown, medium dense, moist to wet, no odor
6							
7							
8						SM	▼
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

TEST ENVIRONMENTAL 406801 ENV.GPJ T&amp;R.GDT 5/15/06

Boring terminated at a depth of 10 feet below ground surface.  
 Boring backfilled with cement grout.  
 Groundwater encountered at a depth of 8.0 feet below ground surface during drilling.

<b>Treadwell&amp;Rollo</b>	
Project No. 4068.01	Figure: A-5



PROJECT: **RED STAR YEAST SITE**  
Oakland, California

# Log of Boring E-6

Boring location: See Site Plan, Figure 2  
 Date started: 4/14/06 Date finished: 4/14/06  
 Drilling method: Hollow Stem Auger  
 Hammer weight/drop: 140 lbs./30-inches Hammer type: Automatic  
 Sampler: California Modified Split Spoon

DEPTH (feet)	SAMPLES					LITHOLOGY	MATERIAL DESCRIPTION
	Sample Number	Sample	Blow Count	Recovery (inches)	QVM (ppm)		
1						SP	SAND (SP) dark brown, loose, moist, no odor, trace brick debris
2	E-6-1.5	[Sample]					
3	E-6-2.5	[Sample]				SC	CLAYEY SAND (SC) yellow-brown, medium dense, moist, no odor, trace gravel
4							
5						SC	CLAYEY SAND (SC) olive-brown, medium dense, wet, no odor, trace gravel
6							
7	E-6-6.5	[Sample]				SC	change to yellow-brown at 7.0' bgs
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

FILL

TEST ENVIRONMENTAL 406801 ENV.GPJ T&R.GDT 5/15/06

Boring terminated at a depth of 10 feet below ground surface.  
 Boring backfilled with cement grout.  
 Groundwater encountered at a depth of 6 feet below ground surface during drilling.

**Treadwell & Rollo**

Project No.: 4068.01 Figure: A-6

**GEOTECHNICAL INVESTIGATION REPORT  
PROPOSED RED STAR SENIOR LIVING APARTMENTS  
1396 5<sup>th</sup> STREET  
OAKLAND, CALIFORNIA**

**OAKLAND HOUSING INVESTORS, L.P.**

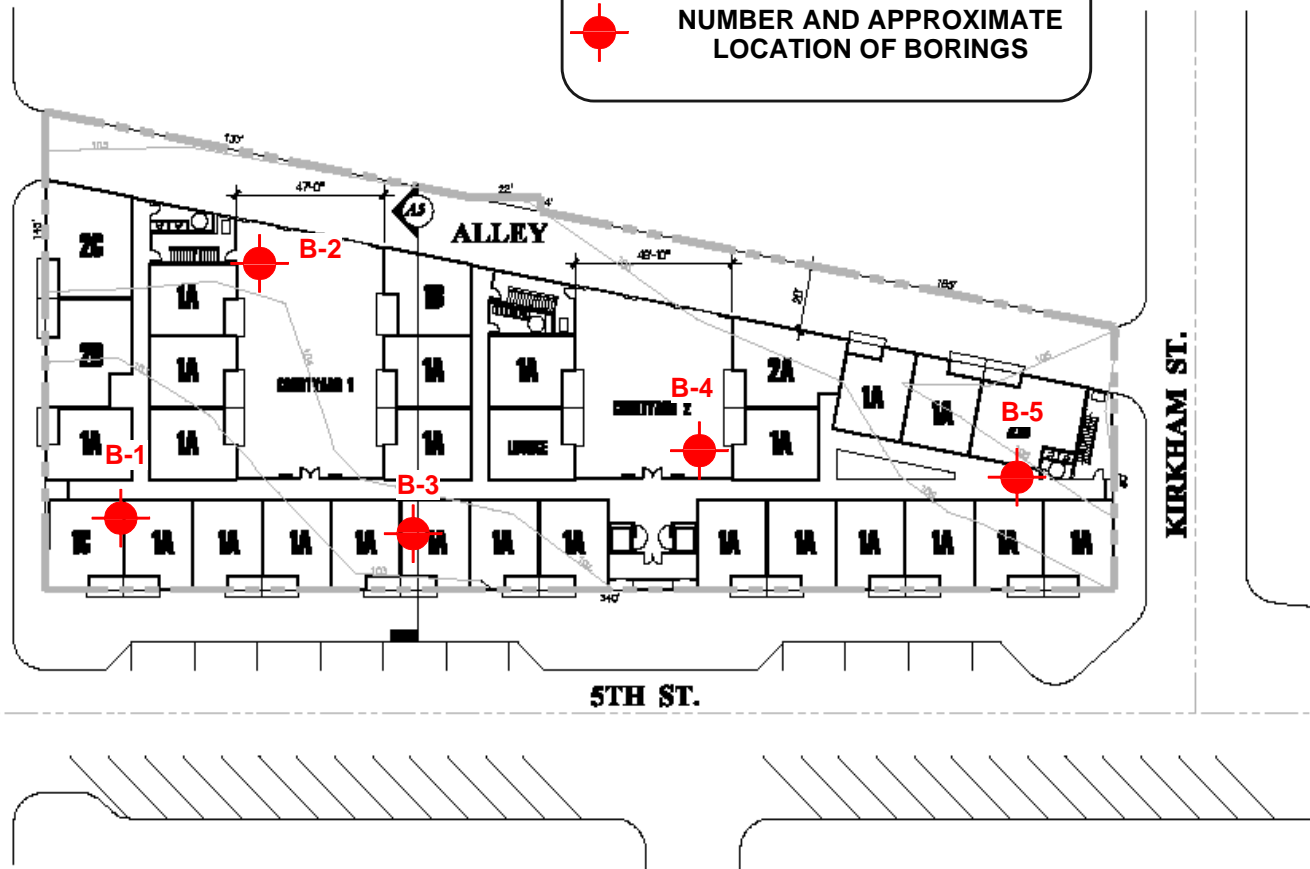
*Prepared by:*

**GEOBODEN INC.**  
5 Hodgenville, Suite A.  
Irvine, California 92620

July 8, 2008


J.N. Red Star-1-01

MANDELA PKWY



**LEGEND**

**B-1**

 **NUMBER AND APPROXIMATE LOCATION OF BORINGS**

Note: "This drawing is for conceptual purposes only. Boundary is not derived from surveyed base - verify with engineer."

**NATIONAL ATTORNEY-ENGINEER CONSULTANTS, INC.**  
 4071 MACDONALD BLVD., SUITE 2015  
 NEWPORT BEACH, CA 92660  
 TEL: (949) 851-4800  
 FAX: (949) 851-4802



**SITE PLAN**  
(AT SECOND LEVEL)

**RED STAR SENIOR LIVING**  
 1396 5th Street  
 Oakland, CALIFORNIA 94607

04 APRIL '08

A1

**GEOBODEN INC.**



Geotechnical Consultants

**BORING LOCATION PLAN**  
**PROPOSED RED STAR SENIOR LIVING APARTMENTS**  
 1396 5th STREET  
 OAKLAND, CALIFORNIA

Figure By  
C.R.  
Map No.  
XX  
Date  
07-08-08

Project No.  
Red Star-1-01  
FIGURE NO.  
2

**GEOBODEN INC.**  
**Geotechnical Consultants**

CLIENT OAKLAND HOUSING INVESTORS, L.P.  
 PROJECT NUMBER Red Star-1-01  
 DATE STARTED 1/7/08 COMPLETED 1/7/08  
 DRILLING CONTRACTOR Irvine Drilling, Inc.  
 DRILLING METHOD HSA  
 LOGGED BY C.R. CHECKED BY \_\_\_\_\_  
 NOTES \_\_\_\_\_

PROJECT NAME PROPOSED RED STAR SENIOR LIVING APARTMENTS  
 PROJECT LOCATION 1396 5th Street, Oakland, CA  
 GROUND ELEVATION \_\_\_\_\_ HOLE SIZE 8 inches  
 GROUND WATER LEVELS:  
 ∇ AT TIME OF DRILLING 6.50 ft  
 AT END OF DRILLING ---  
 AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		SILTY SAND (SM): very dark gray, moist, fine to medium-grained sand [FILL]										
5		∇	MC R-1		4		118	15				
		SILTY SAND (SM): olive gray, moist [NATIVE]										
10			SS S-2		13			19				
15		color becomes olive, moist, fine-grained sand	MC R-3		21		110	21				
20		color becomes light yellowish brown, moist, fine to medium-grained sand	SS S-4		18		18					
25		color becomes yellowish brown	MC R-5		68		109	20				
30		color becomes light olive brown, fine to medium-grained sand	SS S-6		57							
35		LEAN CLAY (CL): yellowish brown, moist										

GEO TECH BH COLUMNS - GINT STD US LAB.GDT - 7/19/08 15:14 - C:\PASSPORT\GIBI\CHARLES\OAKLAND\LOGS.GPJ

(Continued Next Page)

**GEOBODEN INC.**  
**Geotechnical Consultants**

CLIENT OAKLAND HOUSING INVESTORS, L.P.

PROJECT NAME PROPOSED RED STAR SENIOR LIVING APARTMENTS

PROJECT NUMBER Red Star-1-01

PROJECT LOCATION 1396 5th Street, Oakland, CA

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
35		LEAN CLAY (CL): yellowish brown, moist ( <i>continued</i> )	SS S-7		61							
40		SAND w. SILT to SILTY SAND (SP-SM/SM): light olive brown, moist, medium to coarse-grained sand	SS S-8		84							
45		CLAYEY SAND (SC): olive, wet, fine to medium grained sand	SS S-9		68							
50		SILTY SAND (SM): olive brown, moist, fine to medium-grained sand	SS S-10		74							

Bottom of borehole at 51.5 feet below ground surface. Groundwater was encountered at 6.5 feet at the time of drilling.

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# GEOBODEN INC. Geotechnical Consultants

## BORING NUMBER B-2

PAGE 1 OF 1

CLIENT OAKLAND HOUSING INVESTORS, L.P.  
 PROJECT NUMBER Red Star-1-01  
 DATE STARTED 1/7/08 COMPLETED 1/7/08  
 DRILLING CONTRACTOR Irvine Drilling, Inc.  
 DRILLING METHOD HSA  
 LOGGED BY C.R. CHECKED BY \_\_\_\_\_  
 NOTES \_\_\_\_\_

PROJECT NAME PROPOSED RED STAR SENIOR LIVING APARTMENTS  
 PROJECT LOCATION 1396 5th Street, Oakland, CA  
 GROUND ELEVATION \_\_\_\_\_ HOLE SIZE 8 inches  
 GROUND WATER LEVELS:  
 ▽ AT TIME OF DRILLING 7.00 ft  
 AT END OF DRILLING ---  
 AFTER DRILLING ---

GEO TECH BH COLUMNS - GINT STD US LAB.GDT - 7/19/08 15:14 - C:\PASSPORT\GIBI\CHARLES\OAKLAND\LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		SILTY SAND (SM): very dark grayish brown, moist, fine-grained sand [FILL]										
5			MC R-1		9		129	18				
	▽	SILTY SAND (SM): dark gray, moist [NATIVE]										
10			SS S-2		4			18				
15		color becomes greenish gray, moist, fine to medium-grained sand	MC R-3		13		110	21				
20		color becomes light yellowish brown, moist to wet, fine-grained sand	SS S-4		14							
25		fine to medium-grained sand	MC R-5		50		112	19				
30		color becomes yellowish brown, fine to medium-grained sand	SS S-6		57							
Bottom of borehole at 31.5 feet below ground surface. Groundwater was encountered at 7 feet at the time of drilling.												

# GEOBODEN INC. Geotechnical Consultants

**BORING NUMBER B-3**

PAGE 1 OF 1

CLIENT OAKLAND HOUSING INVESTORS, L.P.  
 PROJECT NUMBER Red Star-1-01  
 DATE STARTED 1/7/08 COMPLETED 1/7/08  
 DRILLING CONTRACTOR Irvine Drilling, Inc.  
 DRILLING METHOD HSA  
 LOGGED BY C.R. CHECKED BY \_\_\_\_\_  
 NOTES \_\_\_\_\_

PROJECT NAME PROPOSED RED STAR SENIOR LIVING APARTMENTS  
 PROJECT LOCATION 1396 5th Street, Oakland, CA  
 GROUND ELEVATION \_\_\_\_\_ HOLE SIZE 8 inches  
 GROUND WATER LEVELS:  
 ∇ AT TIME OF DRILLING 7.00 ft  
 AT END OF DRILLING ---  
 AFTER DRILLING ---

GEOTECH BH COLUMNS - GINT STD US LAB.GDT - 7/19/08 15:14 - C:\PASSPORT\GIBI\CHARLES\OAKLAND\LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		SILTY SAND (SM): very dark grayish brown, moist, fine-grained sand [FILL]										
5	∇		MC	0	13							
10		SILT (ML): very dark grayish brown, moist, rootlets [FILL]	SS S-1		2							
15		SILTY SAND (SM): dark, moist [FILL]	MC R-2		9		96	36				
20		SILTY SAND (SM): greenish gray, moist, fine-grained sand [NATIVE]	SS S-3		4							
25		color becomes light olive brown, fine to medium-grained sand	MC R-4		75		112	20				
30		fine-grained sand	SS S-5		29							
Bottom of borehole at 31.5 feet below ground surface. Groundwater was encountered at 7 feet at the time of drilling.												

# GEOBODEN INC. Geotechnical Consultants

## BORING NUMBER B-4

PAGE 1 OF 1

CLIENT OAKLAND HOUSING INVESTORS, L.P.  
 PROJECT NUMBER Red Star-1-01  
 DATE STARTED 1/7/08 COMPLETED 1/7/08  
 DRILLING CONTRACTOR Irvine Drilling, Inc.  
 DRILLING METHOD HSA  
 LOGGED BY C.R. CHECKED BY \_\_\_\_\_  
 NOTES \_\_\_\_\_

PROJECT NAME PROPOSED RED STAR SENIOR LIVING APARTMENTS  
 PROJECT LOCATION 1396 5th Street, Oakland, CA  
 GROUND ELEVATION \_\_\_\_\_ HOLE SIZE 8 inches  
 GROUND WATER LEVELS:  
 ∇ AT TIME OF DRILLING 7.00 ft  
 AT END OF DRILLING ---  
 AFTER DRILLING ---

GEOTECH BH COLUMNS - GINT STD US LAB.GDT - 7/19/08 15:15 - C:\PASSPORT\GIBI\CHARLES\OAKLAND\LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		SILTY SAND (SM): yellowish brown, moist [FILL]										
5	∇		MC R-1		12		111	19				
10		SILTY SAND (SM): brown, moist, fine-grained sand [NATIVE]	SS S-2		18			17				
15		color becomes yellowish brown, moist, fine to medium-grained sand	MC R-3		41							
20		CLAYEY SAND (SC): yellowish brown, moist, fine-grained sand	SS S-4		24							
25		SILTY SAND (SM): yellowish brown, moist	MC R-5		60							
30		color becomes light olive brown, moist, medium-grained sand	SS S-6		80							
Bottom of borehole at 31.5 feet below ground surface. Groundwater was encountered at 7 feet at the time of drilling.												



**GEOBODEN INC.**  
**Geotechnical Consultants**

CLIENT OAKLAND HOUSING INVESTORS, L.P.  
 PROJECT NUMBER Red Star-1-01  
 DATE STARTED 1/7/08 COMPLETED 1/7/08  
 DRILLING CONTRACTOR Irvine Drilling, Inc.  
 DRILLING METHOD HSA  
 LOGGED BY C.R. CHECKED BY \_\_\_\_\_  
 NOTES \_\_\_\_\_

PROJECT NAME PROPOSED RED STAR SENIOR LIVING APARTMENTS  
 PROJECT LOCATION 1396 5th Street, Oakland, CA  
 GROUND ELEVATION \_\_\_\_\_ HOLE SIZE 8 inches  
 GROUND WATER LEVELS:  
 ∇ AT TIME OF DRILLING 7.00 ft  
 AT END OF DRILLING ---  
 AFTER DRILLING ---

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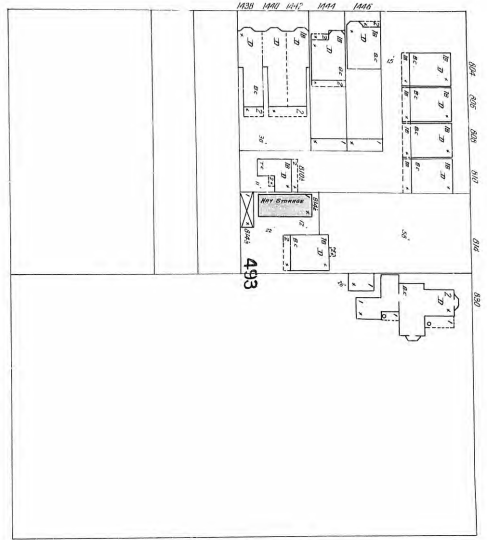
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									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		SILTY SAND (SM): yellowish brown, moist, fine to medium-grained sand [FILL]										
5			MC R-1		29		119	17				
7	∇											
10		SILTY SAND (SM): light olive brown, moist, fine-grained sand [NATIVE]	SS S-2		26			18				
15		color becomes dark yellowish brown	MC R-3		38		112	19				
20		color becomes light olive brown	SS S-4		19							
25		color becomes olive brown	MC R-5		82							
30			SS S-6		34							
Bottom of borehole at 31.5 feet below ground surface. Groundwater was encountered at 7 feet at the time of drilling.												

# 1902 Sanborn Fire Insurance Map

95

102

CENTER



CYPRESS

94 ST.

CONSUMERS TREST & WINGEN WORKS  
NO FIRE HOOK OR WATER TOWER

492

493

57 1/2

WASHINGTON BREWERY

KIRKHAM'S

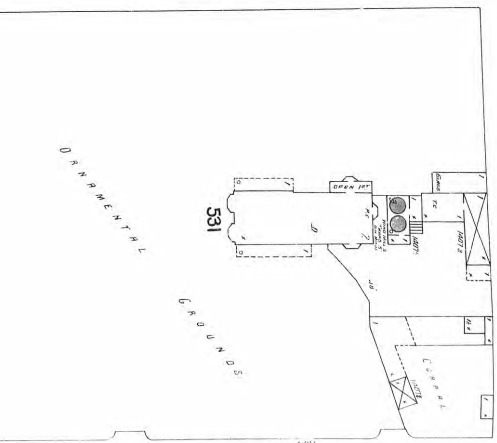
POPLAR

88

Scale of Feet



103

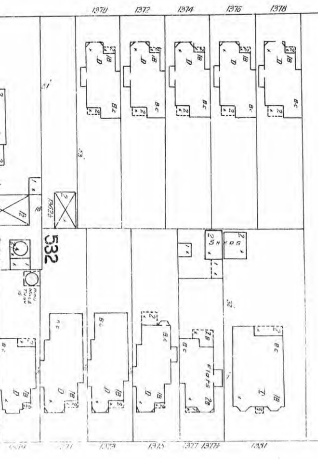


ORANGE HILL

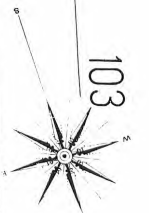
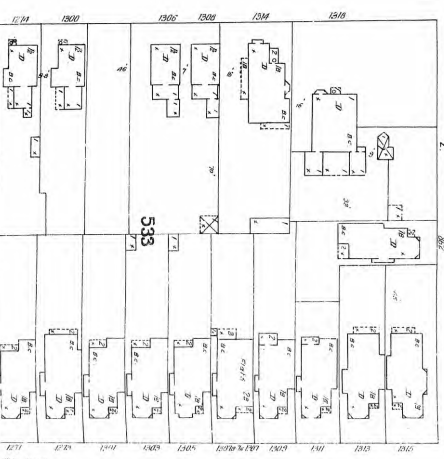
531

9TH ST.

532



533



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Certification # 98AE-4327-A041

Site Name: Red Start  
 Address: 1384 Fifth Street  
 City, ST, ZIP: Oakland CA 94607  
 Client: Selsky and Company  
 EDR Inquiry: 2268874.35  
 Order Date: 7/3/2008 11:28:04 AM  
 Certification #: 98AE-4327-A041

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