

RECEIVED

8:55 am, Mar 28, 2007

Alameda County
Environmental Health

PHASE IV SITE INVESTIGATION REPORT

**1171 OCEAN AVENUE
OAKLAND, CALIFORNIA**

Prepared for

**1171 OCEAN AVENUE, LLC
OAKLAND, CALIFORNIA**

November 2006

**PHASE IV SITE
INVESTIGATION REPORT**

**1171 OCEAN AVENUE
OAKLAND, CALIFORNIA**

Prepared for:

**1171 OCEAN AVENUE, LLC
6114 LA SALLE AVENUE, PMB 260
OAKLAND, CA 94611**

Prepared by:

**STELLAR ENVIRONMENTAL SOLUTIONS, INC.
2198 SIXTH STREET
BERKELEY, CALIFORNIA 94710**

November 22, 2006

Project No. 2006-21

1171 Ocean Avenue, LLC
PMB 260
6114 La Salle Avenue
Oakland, CA 94611

December 26, 2006

Ms. Donna Drogos – Supervisor
Alameda County Health Care Services Agency
Department of Environmental Health
Local Oversight Program
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Subject: Notification of Findings
1171 Ocean Avenue, Oakland, California

Dear Ms. Drogos:

Since 1171 Ocean Avenue, LLC purchased the referenced property, we have commissioned four stages of investigation at the property with the objective to discover whether the volatile organic compounds (VOC) found in groundwater 36 feet below ground surface, almost exclusively TCE, were associated with an onsite or offsite source. Initial indicators did not rule out an onsite origin and extensive investigations were completed. Subsequent data collected showed that the contamination appears to be from an offsite source, as the attached report conveys. The October 2006 Phase IV investigation found that the TCE was present only in the deeper groundwater beneath the site and that there was no TCE or other VOCs in soils sampled at the property.

Based on the relatively deep (36 feet) water-bearing zone in which the higher dissolved TCE contamination is located, and the indication of no appreciable volatilization up the soil column (as evidenced by the non-detection of VOCs in soil samples), we understand that site use and future development constraints are not expected to be of much concern. Based on the findings, we request that Alameda County, as the agency that the due-diligence studies at this property have been reported to since July 2006, provide a letter of opinion or

concurrency with the technical report conclusions, as your opinion in this matter is critical to future development considerations. We are also concerned that the subject property not be placed on the SLIC site list or otherwise be the subject of agency action since it is apparently not the source of the TCE.

Thank you in advance for your attention to this matter.

Sincerely,

A handwritten signature in black ink, appearing to be 'Felicia Woytak', with a long horizontal flourish extending to the right.

Felicia Woytak
Manager

Attachment: SES November 2006 Site Investigation Report
cc: Richard Makdisi – Stellar Environmental Solutions, Inc.

November 22, 2006

Ms. Felicia Woytak
1171 Ocean Avenue, LLC
6114 La Salle Avenue, PMB 260
Oakland, CA 94611

Subject: Phase IV Site Investigation Report
1171 Ocean Avenue, Oakland, California

Dear Ms Woytak:

Attached is the Stellar Environmental Solutions (SES) report of findings for the Phase IV site investigation conducted at 1171 Ocean Avenue, Oakland, California. This report has been completed on behalf of Ms. Felicia Woytak of 1171 Ocean Avenue, LLC. As part of 1171 Ocean Avenue, LLC's due diligence prior to acquisition, a Phase I ESA and Phase II subsurface investigation was completed in May 2006; those investigations revealed TCE concentrations in the groundwater on site. A subsequent Phase III investigation completed in September 2006 collected data suggesting that the cause of the contamination was from offsite, rather than onsite, sources.

A Phase IV investigation conducted in October 2006 corroborated that the TCE found in the groundwater beneath the site is originating from off site. This report summarizes that additional Phase IV characterization investigation.

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. Please call the undersigned at (510) 644-3123 if you have any questions.

Sincerely,



Richard S. Makdisi, R.G., R.E.A.
Principal

cc: Felicia Woytak, 1171 Ocean Avenue, LLC

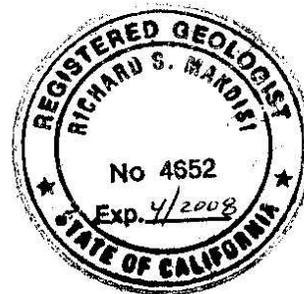


TABLE OF CONTENTS

Section	Page
EXECUTIVE SUMMARY	IV
1.0 INTRODUCTION AND BACKGROUND.....	1
Project Background.....	1
Phase IV Investigation Key Objectives and Scope of Work Summary	1
Site Description and Current Land Use	2
Regulatory Status	2
Previous UFST-Related Work	2
May and July 2006 Groundwater Investigation Findings.....	5
2.0 OCTOBER 2006 FIELDWORK AND ANALYTICAL RESULTS.....	6
Borehole Locations, Sampling and Analytical Method Selection.....	6
Drilling and Sampling Procedures	6
Soil and Groundwater Analytical Results.....	7
3.0 REGULATORY AND OTHER CONSIDERATIONS	11
Involved Regulatory Agencies.....	11
Soil Contamination and Cleanup Considerations	11
Groundwater Contamination and Cleanup Considerations.....	11
4.0 CONTAMINANT ORIGINS, DISTRIBUTION FATE AND TRANSPORT	13
Physical Setting.....	13
Lithology and Hydrogeology	13
Groundwater Contamination Distribution and Origins.....	14
5.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS.....	18
Summary and Conclusions.....	18
Recommendations	19

6.0 REFERENCES..... 20

7.0 LIMITATIONS 21

Appendices

- Appendix A May 2006 Investigation Analytical Data Summary Tables
- Appendix B Alameda County Public Works Agency Drilling Permit
- Appendix C Site Investigation Photodocumentation
- Appendix D October 2006 Analytical Laboratory Results and Chain-of-Custody Records

TABLES AND FIGURES

Table		Page
Table 1	Groundwater Sample Analytical Results – May and July 2006 1171 Ocean Avenue, Berkeley, California	8

Figure		Page
Figure 1	Site Location on USGS Topographic Map	3
Figure 2	Site Plan	4
Figure 3	Plan View of May and July TCE Concentrations in Groundwater.....	16
Figure 4	Cross-Sectional View of Soil and Groundwater Contamination	17

EXECUTIVE SUMMARY

This Phase VI Site Investigation report for the property located at 1171 Ocean Avenue, Oakland, California was conducted by Stellar Environmental Solutions, Inc. (SES) on behalf of Ms. Felicia Woytak of 1171 Ocean Avenue, LLC. The objectives of this investigation were to further evaluate whether the trichloroethylene (TCE) in groundwater on site was more concentrated at depth, and to determine if it was originating from an offsite location(s).

The findings of the Phase II investigation (directly following the Phase I ESA), conducted in May 2006, revealed groundwater contamination by volatile organic compounds (VOCs) and petroleum hydrocarbons. A Phase III investigation was then performed in October 2006 to determine if the TCE discovered in grab-groundwater samples had resulted from either historical onsite activities or had migrated from off site. A conceptual model was developed based on the hypothesis of a local source for the TCE contamination (based on the data collected during the Phase I ESA/Phase II subsurface investigation), although there was no historical documentation of either onsite or nearby offsite (upgradient) activities involving the use of TCE.

The Phase IV Site Investigation that is the subject of this report was designed to fill data gaps, testing the hypothesis that the contamination was from an offsite source, by collecting grab-groundwater samples at the upgradient property line from the same depth as the bore with the highest onsite TCE concentration.

According to the most recent historical information, Praxair Distribution, Inc. (subject property owner/occupant until July 2006, when the property was sold to 1171 Ocean Avenue LLC), utilized the site from 1984 to 2006. During that time, Praxair Distribution used the site for administrative offices and a bottled gas distribution plant; there was no record of TCE use. Other historical uses are as follows: Prior to 1946, the subject property consisted of undeveloped land in a predominantly residential area of West Oakland. In 1946, the eastern portion of the subject property was developed with a storage/drayage yard with an associated "oil" warehouse that later became a shampoo factory. After 1950, the property was redeveloped as the present-day two-story building. City directory listings indicate that the subject property was operated as a chartered bus company in the late 1960s and early 1970s, and then as a fountain company in the late 1970s and early 1980s. Thus, if the TCE is indeed site-sourced, the property's use as a chartered bus company in the 1960s and 1970s is the most likely source, as TCE was commonly used as a cleaning solvent in the 1950s through early 1980s.

The May 2006 borehole soil sampling program documented low to trace levels of petroleum hydrocarbons; however, this was not considered relevant, as regulatory closure for the historical underground fuel storage tank had already been achieved, and the new data did not suggest any additional hydrocarbon contamination of regulatory concern. As stated above, the unexpected finding was the significant concentration of TCE (a common VOC solvent) in the grab-groundwater sample BH-02. The grab-groundwater sample BH-02 encountered at 36 feet below ground surface (bgs) contained a TCE concentration of 5,200 micrograms per liter ($\mu\text{g/L}$). Grab-groundwater samples from higher up in the soil column showed significantly lower concentrations.

In July 2006, another 11 exploratory bores were drilled at the site. This event was designed to determine any evidence of shallow contamination in the soil indicative of a site source, as well as to determine the existence of an upper water-bearing zone (perched or otherwise) that could be sampled for TCE to compare concentrations with the previous hydropunch sample results. The results of the July sampling show non-detectable concentrations of TCE in soil, indicating no discernable “site source area” of TCE in the soil near the highest concentration in the groundwater. Four soil samples per bore were collected in the potential site source area to ensure good vertical definition of potential soil contamination. In addition, the July bores were installed to depths of 26 feet or less, and a temporary screen was installed to allow for any perched water or slowly infiltrating water to work its way into the upper water-bearing zone (to differentiate between local site sources and other potential sources). The objective was to determine if the deeper grab-groundwater sample (BH-02) that showed the highest TCE concentration (5,200 $\mu\text{g/L}$ at 36 feet bgs) was connected to local spills or leaks that would most reasonably affect the first encountered groundwater.

The shallow July soil and groundwater data from the new bores showed a disconnect between shallow and deeper groundwater, refuting the working model of a site-source origin of the TCE, and raising the prospect of offsite TCE source(s). While no obvious offsite sources were identified in the Phase I ESA conducted in May 2006, the initial indication of a likely site source is called into question by the July 2006 data.

The Phase IV Site Investigation documented in this report focused on the installation of four additional exploratory bores installed near the four corners of the site, at the same depth (36 feet bgs) as the bore with the highest TCE concentration. This placement and collection depth of the grab-groundwater samples established a higher concentration of the TCE at the southeast border of the property, indicating an offsite (from the southeast) origin of the TCE in groundwater.

Based on the relatively deep (36 feet bgs) water-bearing zone in which the higher contamination is located, and the indication of no appreciable volatilization up the soil column (as evidenced by the non-detection of VOC in soil samples), site use and future development constraints are not expected to be of much concern. Based on the findings, the regulatory agency with lead oversight should be petitioned to consider the property as impacted from offsite source(s) rather than listed as a SLIC site, and as such not responsible for any future investigations.

1.0 INTRODUCTION AND BACKGROUND

PROJECT BACKGROUND

Historical land use at the subject property, as documented in the May 2006 Phase I and II Environmental Site Assessment Report, includes: a drayage yard; an “oil” warehouse that later became a shampoo factory; a chartered bus company; and a fountain company. Various bottled gas distributors occupied the subject property between 1984 and May 2006 when Praxair Distribution, Inc. vacated the site. Land use in the vicinity of the subject property is, and historically has been, mixed residential and commercial (SES, 2006). There is no regulatory agency documentation of onsite use of hazardous materials containing volatile organic compounds (VOCs); however, given the site history and time period in which trichloroethylene (TCE) was most commonly used as a cleaning solvent (1950s through early 1980s), the previous use of the site as a chartered bus company is the most likely source of the current TCE contamination.

1171 Ocean Avenue, LLC, the current property owner, recently purchased the subject property and assumes liability for the characterization and remediation the site. The only known environmental activities prior to the aforementioned investigation is the removal of an onsite gasoline underground fuel storage tank (UFST) in 1989, which included subsequent investigations and monitoring associated with the release of hydrocarbons from the tank.

PHASE IV INVESTIGATION KEY OBJECTIVES AND SCOPE OF WORK SUMMARY

Stellar Environmental Solutions, Inc. (SES) was retained by 1171 Ocean Avenue, LLC to conduct a Phase I ESA/Phase II subsurface investigation to determine if historical onsite usage of hazardous materials, including a former UFST, had impacted the subject property. Key objectives of this additional phase of investigation (Phase IV) into the distribution and origin of the contaminants identified in the Phase II work are:

- Collect four grab-groundwater samples at a depth of 36 feet—in the upgradient, crossgradient, and downgradient directions near the property boundaries—to compare current TCE concentrations with historical concentrations collected to date.
- Identify if the TCE concentrations in the lower water-bearing zones appear to be from an offsite source(s).

The SES scope of work included:

- Reviewing previous site data to optimize new bore placement;
- Advancing and sampling four exploratory boreholes to a depth of 36 feet below ground surface (bgs), and collecting grab-groundwater samples for laboratory analysis;
- Submitting samples for VOC analyses;
- Evaluating and integrating the new analytical results with the previous data.

SITE DESCRIPTION AND CURRENT LAND USE

The site is located on the south side of Ocean Avenue in northwestern Oakland, Alameda County, California. Figure 1 shows the general location of the subject property on a U.S. Geological Survey (USGS) topographic base map. Figure 2 is a site plan showing the subject property boundaries and former building locations.

The subject property consists of one parcel of approximately 0.74 acres (31,806 square feet). The property is developed with an 8,100-square foot two-story commercial office building and associated exterior above-grade bottled gas distribution plant consisting of a concrete block foundation and steel canopy. The subject property buildings cover approximately 70 percent of the subject property. The subject property building is currently vacant (formerly occupied by Praxair Distribution, Inc.). The bottled gas distribution plant has not been used since February 2006 when distribution operations were transferred to Praxair's Pittsburg, California site.

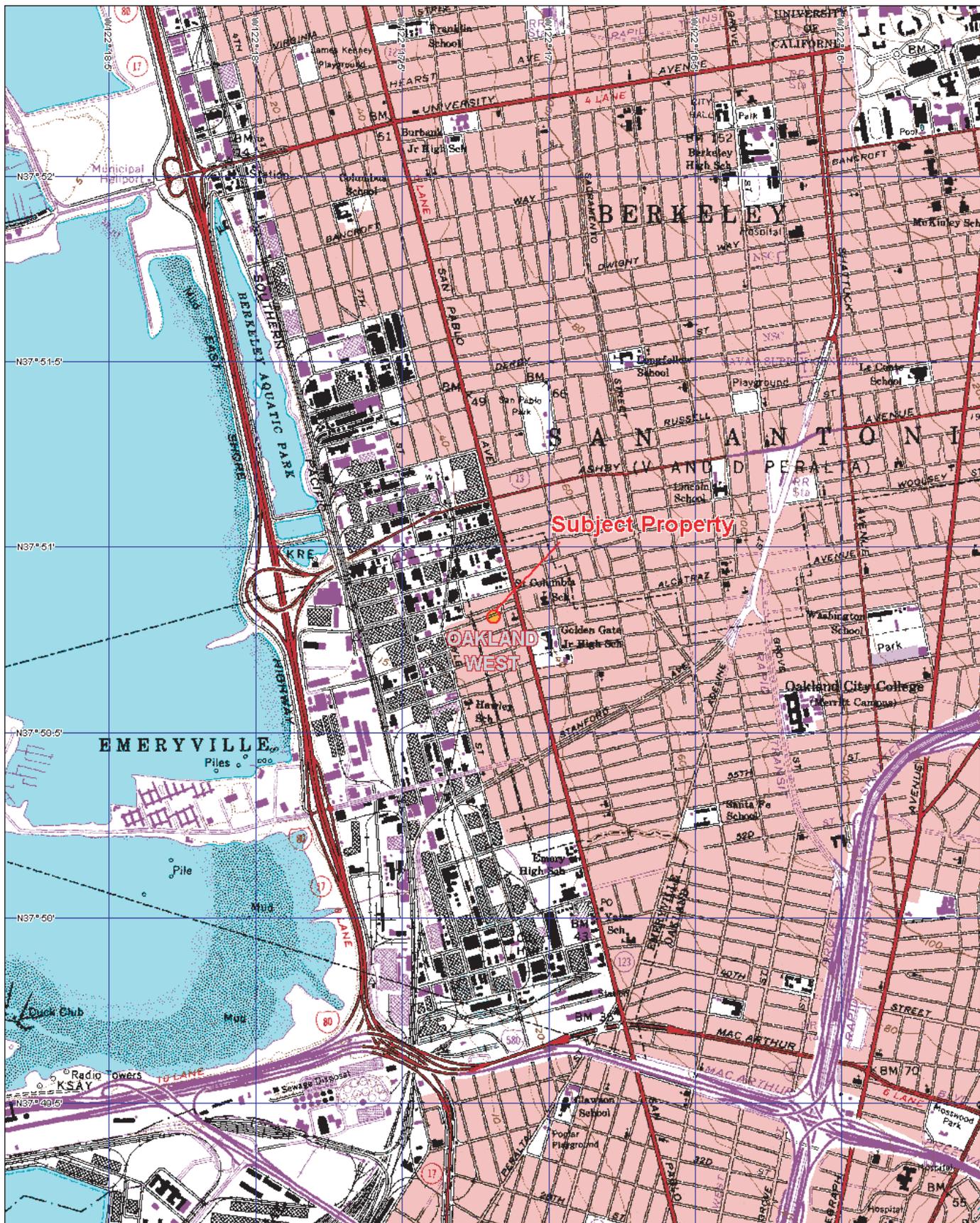
The subject property is bordered to the east by Marshall Street and a church; to the west by Bay Area Structural Inc. and Helefant & Associates Engineering and Inspections; to the south by residential homes; and to the north by residential houses and a daycare facility.

REGULATORY STATUS

The subject property currently has no Alameda County or Regional Water Quality Control Board (Water Board) site status. The current owner submitted an initial notification to Alameda County regarding the TCE discovered on site. Based on the TCE contaminant distribution identified in the Phase III investigation, the property owner also updated Alameda County about the probable offsite origins to the TCE, and requested that the subject property not be assigned to the Spills, Leaks, Incidents and Cleanup (SLIC) database.

PREVIOUS UFST-RELATED WORK

In March 1989, Union Carbide Corporation (the tenant at that time) removed its 5,000-gallon diesel UFST removed from the northwest corner of the subject property (adjacent to Ocean Avenue).



3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS 750 ft Scale: 1: 25,000 Detail: 13-0 Datum: WGS84



SITE LOCATION ON U.S.G.S. TOPOGRAPHIC MAP

1171 Ocean Avenue
Oakland, CA

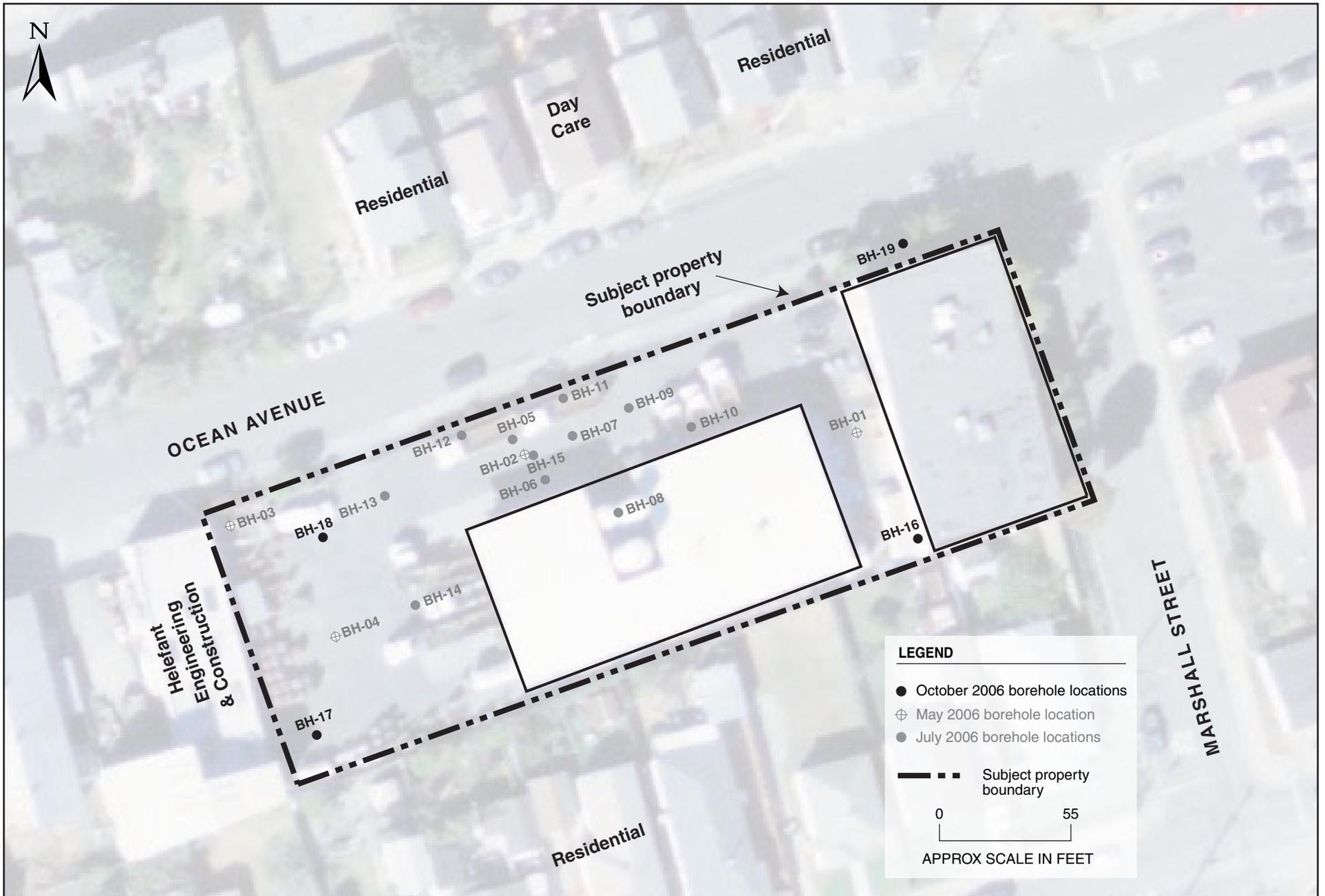
By: MJC

MARCH 2006

Figure 1



2006-21-01



2006-21-22

While no soil contamination was detected in excavation confirmation soil samples, elevated levels of petroleum hydrocarbons were detected in an excavation grab-groundwater sample. A site characterization was conducted in 1989 (seven exploratory boreholes drilled and sampled), and no soil or groundwater contamination was detected at concentrations of concern in any of the boreholes. One groundwater monitoring well was installed in the vicinity of the UFST in 1989, and was sampled in four quarterly events in 1990, followed by two more sampling events in December 1994 and January 1995. Gasoline was detected in the final three events at concentrations of 0.17 milligrams per liter (mg/L) to 0.22 mg/L. Diesel was never detected, and benzene was detected only once (in 1990). The case closure summary prepared by the Water Board indicates that the gasoline contamination may have originated from an offsite source.

The groundwater monitoring well was destroyed under regulatory permit in 1996. The case was granted full regulatory closure in May 1996 by Alameda County Environmental Health (with Water Board concurrence). A list of documented environmental reports and case closure documents is included in the References section.

MAY AND JULY 2006 GROUNDWATER INVESTIGATION FINDINGS

Data collected during the Phase II (SES, 2006a) and Phase III (SES, 2006b) investigations supported a conceptual model of relatively deep groundwater contamination by TCE (at depths greater than 30 feet bgs) and low to no TCE contamination in shallow groundwater at approximately 20 feet bgs. Additionally, the soil samples above the saturated zone showed no detectable VOCs, suggesting no local onsite source area and no appreciable volatilization of VOCs up into the soil column from the underlying groundwater contamination.

Analytical results from the May and July 2006 subsurface investigations are summarized in Appendix A, along with the data from the October 2006 borehole sampling.

2.0 OCTOBER 2006 FIELDWORK AND ANALYTICAL RESULTS

This section discusses the field and laboratory investigation protocols, and presents the laboratory analytical results of the October 2006 Phase IV site investigation. This section describes the rationale for the borehole locations, sampling depths, drilling and sampling methods, and analytical methods. Section 4.0 discusses the analytical results in the context of contaminant distribution, fate, and transport.

BOREHOLE LOCATIONS, SAMPLING AND ANALYTICAL METHOD SELECTION

The groundwater flow direction at the former Myer Drum site two blocks to the south had a historical record of showing a southeast-to-northwest groundwater flow direction; therefore, this flow direction was assumed when the four borehole locations were selected. The (assumed) upgradient borehole, BH-16, was located near the property line; boreholes BH-15, BH-17, and BH-18 were located in the presumed crossgradient and downgradient directions. No soil samples were collected during this investigation phase, as the previous investigation established that no VOCs were present in soil to the depth sampled (20 feet bgs).

The sampling strategy also involved the collection of groundwater at the 36-foot-depth horizon. All groundwater samples were analyzed by U.S. Environmental Protection Agency (EPA) Method 8260B for the EPA 8010 list of chlorinated solvents, which includes the primary site contaminant TCE, as well as the common TCE degradation products dichloroethylene (DCE) and vinyl chloride.

DRILLING AND SAMPLING PROCEDURES

Prior to drilling, we obtained the required Alameda County Public Works drilling permit. No City of Oakland encroachment permits were required, as boring locations were constrained to private property (a copy of the permit is included in Appendix B). We also reported the activities to Underground Service Alert of Northern California (USA North), which notified local utility companies to conduct a site-specific survey and mark underground utilities. Appendix C contains borehole geologic logs from the current investigation, Appendix C contains photodocumentation of the field activities, and Section 4.0 discusses site lithology and hydrogeology.

Exploratory borehole drilling and sampling was conducted on October 6, 2006. Drilling was conducted by EnProb Environmental Probing (C-57 License No. 777007), under the direct supervision of an SES field geologist. The boreholes were drilled with a truck-mounted Geoprobe™ rig. Boreholes were drilled with 2-inch-diameter steel outer drive casing lined with acetate sampling sleeves. The bores were driven to a depth of 36 feet bgs, the sacrificial tip was dropped, and grab-groundwater was collected when sufficient water entered the bore. No continuous core soil samples were collected, as the site lithology was established in previous investigations.

Four grab-groundwater samples were collected to evaluate the contaminant distribution. While all four bores were drilled to a depth of 36 feet bgs, only three showed water that could be sampled from the 36-foot depth. The last bore, BH-19, was dry when initially drilled; groundwater samples were collected by temporary PVC well casings inserted across the lower 5 feet, at 31 to 36 feet bgs. The groundwater samples were then collected when sufficient water infiltrated the temporary casing; in BH-19, this was accomplished approximately 48 hours after installation when the water column had risen to about 8 feet bgs. Groundwater samples were containerized in 40-ml glass VOA vials preserved with hydrochloric acid, labeled, chilled, and transported to the analytical laboratory under chain-of-custody documentation.

Following completion of drilling and sampling activities, the boreholes were tremie-grouted to surface with slurry of neat Portland cement and potable water. Drill cuttings from this and previous investigations were placed into a labeled metal 55-gallon drum with securely closing lid.

SOIL AND GROUNDWATER ANALYTICAL RESULTS

This section presents the soil and groundwater analytical results for the October 2006 investigation. Table 1 present the groundwater sample results for TCE and cis-1,2-DCE concentrations for all three phases of the 2006 investigations at the site. Appendix D contains the certified analytical laboratory reports and chain-of-custody records. Section 4.0 contains a detailed discussion of contaminant distribution.

Groundwater Results

Table 1 shows the groundwater sample data from the May through October 2006 investigations. TCE was detected in 38 of 40 groundwater samples, and cis-1,2-DCE was reported in 11 of the 40 samples. However, the July 2006 samples, collected at shallow depths in the groundwater, were at much lower concentrations than the deeper samples collected in May and October 2006. The primary site groundwater contaminant is TCE, which appears to be at significantly greater concentrations at about the 36-foot depth within the groundwater column, suggesting a possible offsite origin.

Table 1
Groundwater Sample Analytical Results – May and July 2006
1171 Ocean Avenue, Berkeley, California

Sample ID/Sample (depth in feet bgs)	Bore Depth	Date Sampled	Gasoline C7-C12	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	PCE	TCE	trans-1,2-DCE	cis- 1,2-DCE
MAY 2006 GRAB-GROUNDWATER SAMPLES												
BH-01 (22)	24	5/3/2006	ND	ND	ND	ND	ND	ND	ND	490	ND	8.4
BH-02 (27.5)	36	5/3/2006	1,400	ND	ND	ND	ND	ND	ND	5,200	ND	44
BH-03 (11.5)	24	5/4/2006	130	ND	ND	ND	ND	ND	ND	310	11	10
BH-04 (5.6)	28	5/4/2006	290	ND	ND	ND	ND	ND	ND	910	ND	16
JULY 2006 GRAB-GROUNDWATER SAMPLES												
BH-05-GW	20	7/25/2006	NA	NA	NA	NA	NA	NA	ND	5.5	ND	ND
BH-06-GW	20	7/25/2006	NA	NA	NA	NA	NA	NA	ND	0.7	ND	ND
BH-07-GW (20)	20	7/21/2006	NA	NA	NA	NA	NA	NA	ND	41	ND	3.7
BH-08-GW (23)	23	7/20/2006	ND	ND	ND	ND	0.54	4.0	ND	1.9	ND	ND
BH-09-GW (20)	20	7/20/2006	NA	NA	NA	NA	NA	NA	0.6	58	ND	5.3
BH-10-GW	26	7/20/2006	NA	NA	NA	NA	NA	NA	1.8	150	1.0	12
BH-11-GW	20	7/21/2006	NA	NA	NA	NA	NA	NA	ND	48	ND	5.3
BH-12-GW	20	7/21/2006	ND	ND	ND	ND	ND	5.4	ND	ND	ND	ND
BH-13-GW	20	7/24/2006	ND	ND	ND	ND	ND	ND	ND	0.9	ND	ND
BH-14-GW	20	7/21/2006	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND

Table 1 continued

Sample ID/Sample (depth in feet bgs)	Bore Depth	Date Sampled	Gasoline C7-C12	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	PCE	TCE	trans-1,2-DCE	cis- 1,2-DCE
OCTOBER 2006 GRAB-GROUNDWATER SAMPLES												
BH-16-GW	36	10/6/2006	NA	NA	NA	NA	NA	NA	ND	6,000	ND	25
BH-17-GW	36	10/6/2006	NA	NA	NA	NA	NA	NA	ND	230	ND	6.1
BH-18-GW	36	10/6/2006	NA	NA	NA	NA	NA	NA	ND	660	ND	15
BH-19-GW	36*	10/9/2006	NA	NA	NA	NA	NA	NA	ND	33	ND	ND
ESL levels recommending SVA (C/I)			NA	NA	NA	NA	NA	NA	NA	6,900	NA	55,000
ESL levels recommending SVA (R)			NA	NA	NA	NA	NA	NA	NA		NA	
Groundwater ESLs [C/I]			NA	NA	NA	NA	NA	NA	NA	360	360	590
Groundwater ESLs [R] --MCLs			NA	NA	NA	NA	NA	NA	NA	5	6	6

Notes: SVA = Soil Vapor Assessment; CI = Commercial/Industrial land use. R = Residential use. Regional Water Quality Control Board, San Francisco Bay Region, Table E-1A: Groundwater Environmental Screening Levels (ESLs) for Evaluation of Indoor-Air Impacts (volatile chemical only), Feb 2004. Low Permeability ESLs are the most applicable in this case.. NP = Not Published.

* A grab-groundwater sample was not collected from BH-19-GW immediately after drilling because the well was dry; a temporary screen was placed, and groundwater was allowed to infiltrate over 2 days. When groundwater was collected, the water had risen to a depth of 8 feet bgs.

ESLs = Water Board Environmental Screening Levels (2004) – for industrial/commercial sites where groundwater *is not* a potential drinking water source.

NA = Not analyzed. ND = Not detected above method reporting limit. See Appendix E (laboratory report) for list of method reporting limits.

All concentrations are expressed in micrograms per liter (µg/L).

The apparent upgradient (southeastern) bore, BH-16, showed the highest concentration of TCE (6,000 µg/L). The highest concentration (150 µg/L) reported in the sample from BH-10 in the July investigation was collected at the deepest point of 26 feet bgs. However, this concentration was minor compared to the 5,200-µg/L reported at a depth of 36 feet in BH-02 (which is close to BH-10) in the May 2006 investigation.

Investigation-Related Waste Management

Drill cuttings (soil) generated during the exploratory boring with the GeoProbe rig are contained in one 55-gallon steel drum that is appropriately labeled and stored onsite within the secured fenced area of the property. The soil will be disposed of as appropriate by the owner, based on the soil analytical results.

Quality Control Sample Analytical Results

Quality control (QC) samples (e.g., method blanks, matrix spikes, surrogate spikes) were analyzed by the laboratory in accordance with requirements of each analytical method. All laboratory QC sample results and sample holding times were within the acceptance limits of the analytical method.

3.0 REGULATORY AND OTHER CONSIDERATIONS

The Applicable Relevant and Appropriate Regulations (ARARs) are discussed below, to provide a regulatory context for the interpretation of the investigation findings and the consideration of corrective actions that might bring the site to regulatory closure. The following subsections present potentially applicable criteria for evaluating site contamination in soil and groundwater, and compare site contamination to the relevant criteria.

INVOLVED REGULATORY AGENCIES

The Water Board is the Local Implementing Agency providing oversight on non-fuel (i.e., VOCs and metals) related contamination investigations and remediation in the City of Oakland. The California Environmental Protection Agency Department of Toxic Substances Control (DTSC) and the Alameda County Health Care Services Agency Department of Environmental Health (Alameda County Health) may also participate in site contamination/remediation issues. The Water Board likely will be the decision-making entity on impacts to groundwater, as it is the agency responsible for groundwater quality in this region. However, the DTSC may also be involved, particularly in approving regulatory closure; however, because the source of site contamination is indicated to be offsite, this process is unlikely. The property is not currently included on any regulatory list. Based on the type of TCE contamination, it would be designated a Spills, Leaks, Investigations, and Cleanups (SLIC) site; however, because this site does not appear to be responsible for the deeper contamination, it should not be encumbered with a SLIC listing.

SOIL CONTAMINATION AND CLEANUP CONSIDERATIONS

As discussed in this report, no soil contamination has been detected, indicating that no local (site) source of contamination is apparent, and there is no measurable impact from upward VOC volatilization from the deeper groundwater contamination reported.

GROUNDWATER CONTAMINATION AND CLEANUP CONSIDERATIONS

Several potentially applicable standards exist for groundwater contamination. These include both drinking water standards and Water Board Environmental Screening Levels (ESLs). As with contaminated soils, groundwater ESLs are used to evaluate if additional investigation/corrective action is necessary.

The standard that can be applied by the lead regulatory agency is the strictest of any applicable State or federal standards, and these can be used as cleanup goals. The majority of the groundwater quality standards are human health risk-based, and apply to groundwater that is a drinking water source; however, regulatory agencies can apply drinking water standards to sites where groundwater is not a drinking water source. Cleanup criteria can be influenced by natural geochemical conditions at a site. For example, where an existing aquifer has a sustained yield of less than 200 gallons per day or the electrical conductivity is greater than 5,000 $\mu\text{mhos/cm}$, the State Water Resources Control Board considers the aquifer not usable as a potential public water supply.

The Water Board ESLs are conservative screening-level criteria for soil and groundwater, designed to be generally protective of both drinking water resources and aquatic environments (they incorporate both environmental and human health risk considerations). ESLs are not cleanup criteria (health-based numerical values or disposal-based values); rather, they are used as a preliminary guide in determining whether additional remediation and/or investigation may be warranted. Exceedance of ESLs may warrant additional actions, such as monitoring plume stability to demonstrate no risk to sensitive receptors in the case of sites where drinking water is not threatened.

Different ESLs are published for commercial/industrial vs. residential land use, and for sites where groundwater is a potential drinking water resource vs. is not a drinking water resource. A Water Board published map of the East Bay Plains Groundwater basin shows areas where groundwater is and is not a potential drinking water resource (Water Board, 1999).

In our professional opinion, the appropriate ESLs for the subject site are *commercial/industrial land use* and *groundwater is not a potential drinking water resource*. This is based on both the property zoning status (commercial/industrial) and the designation of groundwater in this area of Oakland as an unlikely drinking water source by the Water Board's East Bay Plain Beneficial Use Study (Water Board, 1999). As such, the Water Board ESL for TCE contamination in groundwater is 120 $\mu\text{g/L}$.

Because the property owner does not appear to be responsible for the TCE plume underlying the subject property (by all indications, the plume is migrating from an offsite source), the property owner should not be responsible for cleanup or further investigation.

4.0 CONTAMINANT ORIGINS, DISTRIBUTION FATE AND TRANSPORT

PHYSICAL SETTING

The mean elevation of the property is approximately 40 feet above mean sea level (amsl), with a general topographic gradient in the site vicinity to the west (toward San Francisco Bay). The site itself slopes to the west.

The nearest permanent surface water body is San Francisco Bay, located approximately 3,800 feet west-southwest of the subject property.

LITHOLOGY AND HYDROGEOLOGY

Site-specific lithology to a maximum depth of 23 feet was characterized in several boreholes during this investigation. Lithology encountered was a mix of silty clay, gravelly clay, clayey gravel, and sandy clay. Soils were stiff and expansive. Soils were generally dry with minor zones of moisture between depths ranging from 18.5 to 23 feet bgs. Borehole geologic log are discussed in detail in the previous SES report (SES, 2006a). The observed lithology at the subject site was fairly uniform in all boreholes, with commonly encountered stiff gravelly sandy clay with angular gravels observed in all boreholes.

Although moisture was observed in several of the boreholes, there was no evidence of a water-bearing zone in this borehole; groundwater did not infiltrate the open boreholes immediately following drilling, but did penetrate the deeper bores more readily.

All of the four grab-groundwater bores installed in October 2006 were penetrated to 36 feet bgs. In the first three boreholes (BH-16, BH-17, and BH-18), groundwater entered the bore within about 20 minutes, but only with about a 1- to 2-foot (turbid) column of water. At bore BH-19, no water penetrated the 36 foot bore after 1 hour, and a temporary 2-inch PVC screens and casing risers were installed. The temporary well was again probed for water after 4 hours, but there was still no measurable groundwater penetration. Bore BH-19 was left over the weekend; when it was revisited for sampling on Monday morning, groundwater had entered the bore and equilibrated at about 8 feet bgs. The mixing across the water column in this bore may explain the lower concentration of TCE, along with its likely transgradient location. Equilibrated groundwater levels in temporary casings

from the previous bores ranged from 7.47 to 18.55 feet bgs. Depth to groundwater was strongly influenced by the amount of time provided for infiltration.

While the ESL for potential vapor intrusion for TCE for residential is lower than the maximum concentration found in the groundwater the groundwater contamination at that levels is clearly concentrated at the 30 foot depth and below levels with a significant drop to trace levels in the groundwater TCE as it approached the capillary fringe zone around 20 feet bgs. The soil data showing no TCE also appears to eliminate the potential concern for vapor intrusion. The lack of vapor intrusion is attributed to the dominant clay lithology.

GROUNDWATER CONTAMINATION DISTRIBUTION AND ORIGINS

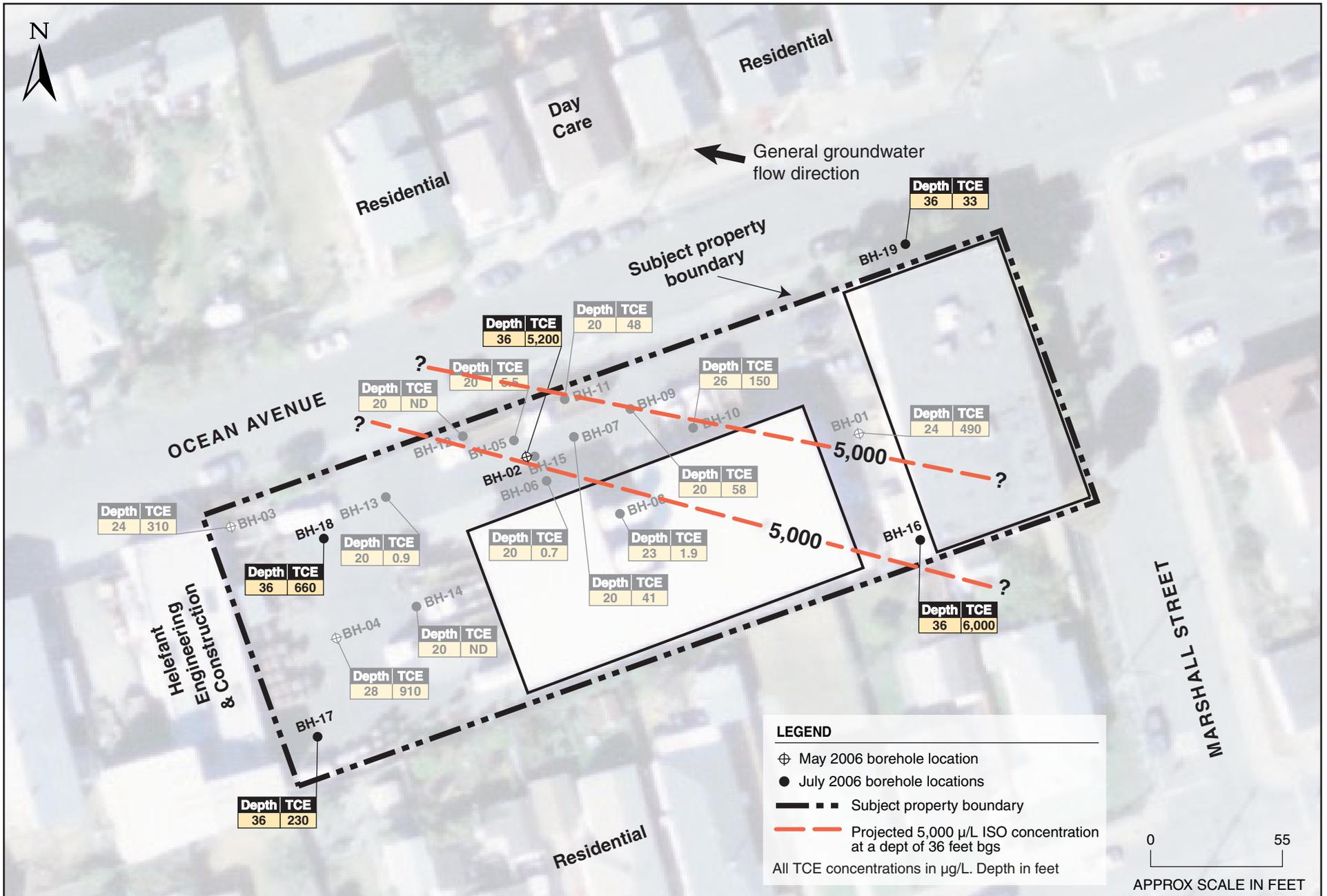
The likely offsite origin of the soil contamination is supported by the following data:

- There was no soil contamination in the numerous previous investigation bores in the vadose zone to 20 feet bgs that were located above the highest TCE concentration in groundwater at a depth of 36 feet bgs.
- While TCE is denser than water, and thus a “sinker” that can migrate to deeper groundwater, concentrations in shallow groundwater are almost always present at significant concentrations when sources are local. This occurs because a site source of TCE in the soil would be desorbing, constantly migrating downward into groundwater, defusing, and showing a significant effect on the first-encountered groundwater.
- Although no permanent wells with surveyed elevations were installed to calculate the groundwater gradient, numerous monitoring wells that were installed at a site two blocks to the north (the former Myer Drum site) showed a southeast-to-northwest flow direction. In addition, the hydrochemical data collected at this site supports a likely southeast-to-northwest flow direction.
- The highest concentration of TCE was reported in BH-16, the upgradient bore placed near the property line.
- The downgradient bore, BH-02, had less TCE (5,200 µg/L) and more of the TCE daughter product cis-1,2-DCE (44 µg/L) than BH-16 (which showed TCE at 6,000 µg/L and cis-1,2-DCE at 25 µg/L).

Figures 3 and 4 illustrates the site data in plan and sections view, with the sections drawn along the line of the apparent groundwater flow direction.

The site-specific lithology, hydrology, and hydrochemical data collected in May through October 2006 suggest a site conceptual model of TCE contamination originating from offsite (from the southeast), migrating beneath the subject property, and having higher contamination at depth. While

no obvious offsite origins for the TCE is evident based on the investigations completed, numerous historical commercial uses of TCE existed in the San Pablo Avenue area a few blocks upgradient of the site.

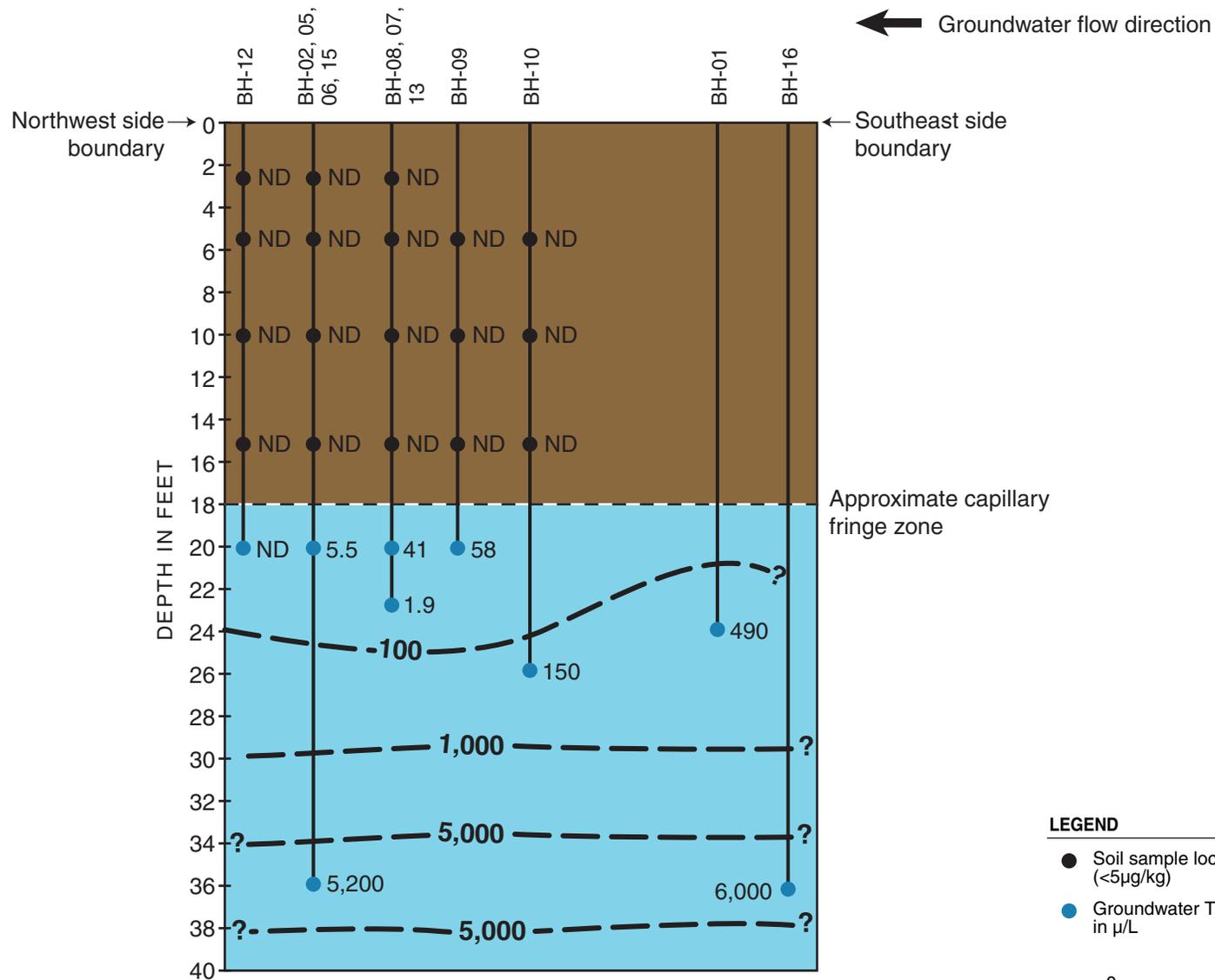


OCTOBER 2006 BOREHOLE LOCATIONS WITH TCE CONCENTRATIONS IN GROUNDWATER AT 36 FOOT DEPTH
1171 Ocean Avenue, Oakland, CA

Figure 3

by: MJC

NOVEMBER 2006



LEGEND

- Soil sample locations, all ND (<5µg/kg)
- Groundwater TCE concentrations in µ/L

0 65
APPROX. SCALE IN FEET

5.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

SUMMARY AND CONCLUSIONS

- This site investigation (Phase IV) report for the 1171 Ocean Avenue, Berkeley, California property has been completed by Stellar Environmental Solutions, Inc. (SES) on behalf of Ms. Felicia Woytak of 1171 Ocean Avenue, LLC. 1171 Ocean Avenue, LLC is interested in leasing, developing, and/or selling the subject property.
- The Phase I through Phase III investigations suggest a conceptual model of TCE originating from an offsite source; there was no evidence of TCE in either the vadose zone soils or shallow groundwater, which an onsite origin of contamination would most likely reflect.
- The principal objective of the Phase IV investigation was to determine, through the collection of grab-groundwater samples at four onsite locations, whether the deeper (36-foot) TCE contamination was distributed such that it would confirm the offsite origin of the TCE underlying the subject site.
- According to the most recent historical information, Praxair Distribution, Inc. (subject property owner/occupant until July 2006, when the property was sold to 1171 Ocean Avenue LLC), utilized the site from 1984 to 2006. During that time, Praxair Distribution used the site for administrative offices and a bottled gas distribution plant; there was no record of TCE use.
- The October 2006 data, along with the previous subsurface sampling data, strongly suggest that the TCE contamination in groundwater beneath the property has an offsite (from the southeast) origin, and its highest concentration is at a depth of approximately 35 feet bgs. Sampling data from boreholes BH-16 and BH-02 define the flow direction (from southeast to northwest) and the plume migration beneath the site.
- The site data—the highest concentration of TCE at depths of around 36 feet (6,000 µg/L), much reduced concentrations at levels of 20 feet bgs (less than 60 µg/L), and no detectable TCE in soil—suggest that there would be no impacts to future tenants and no constraints to site development, assuming slab-on-grade construction and no dewatering plans.

RECOMMENDATIONS

The following recommendation is made to allow for site development and to move the site toward regulatory resolution and closure:

- Submit this report Alameda County as a followup to the previous report submission. Reiterate that this site not be placed on the SLIC list, as the property does not appear to be responsible for the subsurface TCE contamination.

6.0 REFERENCES

- ESE, Inc., 1995. Groundwater Monitoring Results – 1171 Ocean Avenue, Oakland, California. February.
- Regional Water Quality Control Board (Water Board), 1999. East Bay Plains Beneficial Use Study, San Francisco Bay. June 15.
- Regional Water Quality Control Board (Water Board), 2004. Environmental Screening Levels (ESL) Document.
- Stellar Environmental Solutions, Inc. (SES), 2006. Phase I & II Environmental Site Assessment, 1171 Ocean Avenue, Oakland, California. May 18.
- Uriah, Inc., 1989. Limited Site Assessment at Bayox – 1171 Ocean Avenue, Oakland, California. October 4.
- Uriah, Inc., 1993. Application for Case Closure for : Bayox – 1171 Ocean Avenue, Oakland, California. August 12.

7.0 LIMITATIONS

This report has been prepared for the exclusive use of 1171 Ocean Avenue, LLC, their authorized representatives, and the Regulators. No reliance on this report shall be made by anyone other than the client, client representatives, and regulatory agencies for whom it was prepared.

The findings and conclusions presented in this report are based on the review of previous investigators' findings at the site, as well as site activities conducted by SES in May and July 2006. This report has been prepared in accordance with generally accepted methodologies and standards of practice of the area. The SES personnel who performed this investigation are qualified to perform such investigations and have accurately reported the information available, but cannot attest to the validity of that information. No warranty, expressed or implied, is made as to the findings, conclusions, and recommendations included in the report.

The findings of this report are valid as of the date of this report. Site conditions may change with the passage of time, natural processes or human intervention, which can invalidate the findings and conclusions presented in this report. As such, this report should be considered a reflection of the current site conditions as based on the investigation completed.

APPENDIX A

May 2006 Investigation Analytical Data Summary Tables

Table A-1
May 3 & 4, 2006 Borehole Groundwater Analytical Results
1171 Ocean Avenue, Oakland, California ^(a)

Analyte	BH-01-GW	BH-02-GW	BH-03-GW	BH-04-GW	ESL ^(b)
Petroleum-related Compounds					
TEHd	260	93	130	610	640
TVHg	180	1,400	130	290	500
BTEX	<i>ND</i>	<i>ND</i>	<i>ND</i>	<i>ND</i>	varies
MTBE	<i>ND</i>	<i>ND</i>	<i>ND</i>	<i>ND</i>	1,800
Volatile Organic Compounds					
trichloroethylene	490	5,200	310	910	360
cis-1,2-dichloroethylene	8.7	44	10	16	590
trans-1,2-dichloroethylene	<i>ND</i>	<i>ND</i>	1.1	<i>ND</i>	590

Note:

^(a) All concentrations reported in micrograms per liter (µg/L).

^(b) Water Board Environmental Screening Levels for commercial/industrial sites where groundwater is not a potential drinking water resource.

ND = Not detected above method reporting limit. Table lists only detected VOCs. See Appendix D for full list of VOCs for which samples were analyzed.

Samples in **bold-face type** exceed the ESL.

APPENDIX B

Alameda County Public Works Agency Drilling Permit

Alameda County Public Works Agency - Water Resources Well Permit



399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 07/13/2006 By jamesy

Permit Numbers: W2006-0659
Permits Valid from 10/06/2006 to 10/06/2006

Application Id: 1152635443829
Site Location: 1171 Ocean Ave, Oakland, CA 94611
Project Start Date: 10/06/2006

City of Project Site:Oakland

Completion Date:10/06/2006

Applicant: Stellar Environmental - Joe Dinan
2198 6th St. #201, Berkeley, CA 94710
Property Owner: 65th St. Dev't Co.
6114 La Salle Ave., Oakland, CA 94611
Client: ** same as Property Owner **

Phone: 510-644-3123

Phone: --

Receipt Number: WR2006-0334 Total Due: \$200.00
Payer Name : Joseph Dinan Total Amount Paid: \$200.00
Paid By: MC PAID IN FULL

Works Requesting Permits:

Borehole(s) for Investigation-Contamination Study - 14 Boreholes
Driller: EnProb Environmental Probing - Lic #: 777007 - Method: DP

Work Total: \$200.00

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2006-0659	07/13/2006	10/18/2006	14	2.00 in.	20.00 ft

Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site.
2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.
3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.
4. Applicant shall contact James Yoo for an inspection time at 510-670-6633 at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.
5. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of \$500.00.
6. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.
7. Four additional borings added for drilling on 10-6-06. (Ten borings previously completed on 7-21-06.)

APPENDIX C

Site Investigation Photodocumentation



Subject: Wide angle view southwest front of the subject property across Ocean Avenue.

Site: 1171 Ocean Avenue, Oakland, Alameda County, California

Date Taken: October 9, 2006

Project No.: SES 2006-21

Photographer: Richard Makdisi

Photo No.: 01



Subject: Interior view of geoprobe rig in yard drilling grab-groundwater sample.

Site: 1171 Ocean Avenue, Oakland, Alameda County, California

Date Taken: October 9, 2006

Project No.: SES 2006-21

Photographer: Richard Makdisi

Photo No.: 02



Subject: View of geoprobe rig.

Site: 1171 Ocean Avenue, Oakland, Alameda County, California

Date Taken: October 9, 2006

Project No.: SES 2006-21

Photographer: Richard Makdisi

Photo No.: 03



Subject: View of Enprobe drilling rig.

Site: 1171 Ocean Avenue, Oakland, Alameda County, California

Date Taken: October 9, 2006

Project No.: SES 2006-21

Photographer: Richard Makdisi

Photo No.: 04

APPENDIX D

October 2006 Analytical Laboratory Results and Chain-of-Custody Records

Purgeable Halocarbons by GC/MS

Lab #: 189936	Location: 1171 Ocean Ave, LLC
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2006-21	Analysis: EPA 8260B
Field ID: BH-16(36)	Sampled: 10/06/06
Lab ID: 189936-001	Received: 10/06/06
Matrix: Water	Analyzed: 10/17/06
Units: ug/L	

Analyte	Result	RL	Diln Fac	Batch#
Freon 12	ND	7.1	7.143	118447
Chloromethane	ND	7.1	7.143	118447
Vinyl Chloride	ND	3.6	7.143	118447
Bromomethane	ND	7.1	7.143	118447
Chloroethane	ND	7.1	7.143	118447
Trichlorofluoromethane	ND	7.1	7.143	118447
Freon 113	ND	3.6	7.143	118447
1,1-Dichloroethene	ND	3.6	7.143	118447
Methylene Chloride	ND	140	7.143	118447
trans-1,2-Dichloroethene	ND	3.6	7.143	118447
1,1-Dichloroethane	ND	3.6	7.143	118447
cis-1,2-Dichloroethene	25	3.6	7.143	118447
Chloroform	ND	3.6	7.143	118447
1,1,1-Trichloroethane	ND	3.6	7.143	118447
Carbon Tetrachloride	ND	3.6	7.143	118447
1,2-Dichloroethane	ND	3.6	7.143	118447
Trichloroethene	6,000	31	62.50	118484
1,2-Dichloropropane	ND	3.6	7.143	118447
Bromodichloromethane	ND	3.6	7.143	118447
cis-1,3-Dichloropropene	ND	3.6	7.143	118447
trans-1,3-Dichloropropene	ND	3.6	7.143	118447
1,1,2-Trichloroethane	ND	3.6	7.143	118447
Tetrachloroethene	ND	3.6	7.143	118447
Dibromochloromethane	ND	3.6	7.143	118447
Chlorobenzene	ND	3.6	7.143	118447
Bromoform	ND	3.6	7.143	118447
1,1,2,2-Tetrachloroethane	ND	3.6	7.143	118447
1,3-Dichlorobenzene	ND	7.1	7.143	118447
1,4-Dichlorobenzene	ND	7.1	7.143	118447
1,2-Dichlorobenzene	ND	7.1	7.143	118447

Surrogate	%REC	Limits	Diln Fac	Batch#
1,2-Dichloroethane-d4	102	80-130	7.143	118447
Toluene-d8	99	80-120	7.143	118447
Bromofluorobenzene	103	80-122	7.143	118447

ND= Not Detected
 RL= Reporting Limit

Purgeable Halocarbons by GC/MS

Lab #: 189936	Location: 1171 Ocean Ave, LLC
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2006-21	Analysis: EPA 8260B
Field ID: BH-17(36)	Batch#: 118447
Lab ID: 189936-002	Sampled: 10/06/06
Matrix: Water	Received: 10/06/06
Units: ug/L	Analyzed: 10/17/06
Diln Fac: 3.333	

Analyte	Result	RL
Freon 12	ND	3.3
Chloromethane	ND	3.3
Vinyl Chloride	ND	1.7
Bromomethane	ND	3.3
Chloroethane	ND	3.3
Trichlorofluoromethane	ND	3.3
Freon 113	ND	1.7
1,1-Dichloroethene	ND	1.7
Methylene Chloride	ND	67
trans-1,2-Dichloroethene	ND	1.7
1,1-Dichloroethane	ND	1.7
cis-1,2-Dichloroethene	6.1	1.7
Chloroform	ND	1.7
1,1,1-Trichloroethane	ND	1.7
Carbon Tetrachloride	ND	1.7
1,2-Dichloroethane	ND	1.7
Trichloroethene	230	1.7
1,2-Dichloropropane	ND	1.7
Bromodichloromethane	ND	1.7
cis-1,3-Dichloropropene	ND	1.7
trans-1,3-Dichloropropene	ND	1.7
1,1,2-Trichloroethane	ND	1.7
Tetrachloroethene	ND	1.7
Dibromochloromethane	ND	1.7
Chlorobenzene	ND	1.7
Bromoform	ND	1.7
1,1,2,2-Tetrachloroethane	ND	1.7
1,3-Dichlorobenzene	ND	3.3
1,4-Dichlorobenzene	ND	3.3
1,2-Dichlorobenzene	ND	3.3

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	103	80-130
Toluene-d8	98	80-120
Bromofluorobenzene	101	80-122

ND= Not Detected

RL= Reporting Limit

Purgeable Halocarbons by GC/MS

Lab #: 189936	Location: 1171 Ocean Ave, LLC
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2006-21	Analysis: EPA 8260B
Field ID: BH-18(35)	Units: ug/L
Lab ID: 189936-003	Sampled: 10/06/06
Matrix: Water	Received: 10/06/06

Analyte	Result	RL	Diln Fac	Batch#	Analyzed
Freon 12	ND	7.1	7.143	118484	10/17/06
Chloromethane	ND	7.1	7.143	118484	10/17/06
Vinyl Chloride	ND	3.6	7.143	118484	10/17/06
Bromomethane	ND	7.1	7.143	118484	10/17/06
Chloroethane	ND	7.1	7.143	118484	10/17/06
Trichlorofluoromethane	ND	7.1	7.143	118484	10/17/06
Freon 113	ND	3.6	7.143	118484	10/17/06
1,1-Dichloroethene	ND	3.6	7.143	118484	10/17/06
Methylene Chloride	ND	140	7.143	118484	10/17/06
trans-1,2-Dichloroethene	ND	3.6	7.143	118484	10/17/06
1,1-Dichloroethane	ND	3.6	7.143	118484	10/17/06
cis-1,2-Dichloroethene	15	3.6	7.143	118484	10/17/06
Chloroform	ND	3.6	7.143	118484	10/17/06
1,1,1-Trichloroethane	ND	3.6	7.143	118484	10/17/06
Carbon Tetrachloride	ND	3.6	7.143	118484	10/17/06
1,2-Dichloroethane	ND	3.6	7.143	118484	10/17/06
Trichloroethene	660	6.3	12.50	118523	10/18/06
1,2-Dichloropropane	ND	3.6	7.143	118484	10/17/06
Bromodichloromethane	ND	3.6	7.143	118484	10/17/06
cis-1,3-Dichloropropene	ND	3.6	7.143	118484	10/17/06
trans-1,3-Dichloropropene	ND	3.6	7.143	118484	10/17/06
1,1,2-Trichloroethane	ND	3.6	7.143	118484	10/17/06
Tetrachloroethene	ND	3.6	7.143	118484	10/17/06
Dibromochloromethane	ND	3.6	7.143	118484	10/17/06
Chlorobenzene	ND	3.6	7.143	118484	10/17/06
Bromoform	ND	3.6	7.143	118484	10/17/06
1,1,2,2-Tetrachloroethane	ND	3.6	7.143	118484	10/17/06
1,3-Dichlorobenzene	ND	7.1	7.143	118484	10/17/06
1,4-Dichlorobenzene	ND	7.1	7.143	118484	10/17/06
1,2-Dichlorobenzene	ND	7.1	7.143	118484	10/17/06

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed
1,2-Dichloroethane-d4	95	80-130	7.143	118484	10/17/06
Toluene-d8	96	80-120	7.143	118484	10/17/06
Bromofluorobenzene	102	80-122	7.143	118484	10/17/06

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Purgeable Halocarbons by GC/MS			
Lab #:	189936	Location:	1171 Ocean Ave, LLC
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	118447
Units:	ug/L	Analyzed:	10/16/06
Diln Fac:	1.000		

Type: BS Lab ID: QC360372

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	26.06	104	59-172
Trichloroethene	25.00	22.86	91	62-137
Chlorobenzene	25.00	24.24	97	60-133

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	101	80-130
Toluene-d8	97	80-120
Bromofluorobenzene	95	80-122

Type: BSD Lab ID: QC360373

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	24.48	98	59-172	6	22
Trichloroethene	25.00	22.50	90	62-137	2	24
Chlorobenzene	25.00	23.67	95	60-133	2	21

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	98	80-130
Toluene-d8	98	80-120
Bromofluorobenzene	96	80-122

RPD= Relative Percent Difference

Batch QC Report

Purgeable Halocarbons by GC/MS			
Lab #:	189936	Location:	1171 Ocean Ave, LLC
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC360375	Batch#:	118447
Matrix:	Water	Analyzed:	10/16/06
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	0.5
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	102	80-130
Toluene-d8	97	80-120
Bromofluorobenzene	102	80-122

ND= Not Detected

RL= Reporting Limit

Batch QC Report

Purgeable Halocarbons by GC/MS			
Lab #:	189936	Location:	1171 Ocean Ave, LLC
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	118484
Units:	ug/L	Analyzed:	10/17/06
Diln Fac:	1.000		

Type: BS Lab ID: QC360542

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	27.63	111	59-172
Trichloroethene	25.00	26.66	107	62-137
Chlorobenzene	25.00	24.10	96	60-133

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	103	80-130
Toluene-d8	92	80-120
Bromofluorobenzene	112	80-122

Type: BSD Lab ID: QC360543

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	27.63	111	59-172	0	22
Trichloroethene	25.00	27.44	110	62-137	3	24
Chlorobenzene	25.00	24.90	100	60-133	3	21

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	97	80-130
Toluene-d8	95	80-120
Bromofluorobenzene	116	80-122

RPD= Relative Percent Difference

Batch QC Report

Purgeable Halocarbons by GC/MS			
Lab #:	189936	Location:	1171 Ocean Ave, LLC
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC360544	Batch#:	118484
Matrix:	Water	Analyzed:	10/17/06
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	0.5
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	96	80-130
Toluene-d8	97	80-120
Bromofluorobenzene	104	80-122

ND= Not Detected

RL= Reporting Limit

Batch QC Report

Purgeable Halocarbons by GC/MS			
Lab #:	189936	Location:	1171 Ocean Ave, LLC
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	118523
Units:	ug/L	Analyzed:	10/18/06
Diln Fac:	1.000		

Type: BS Lab ID: QC360713

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	22.45	90	59-172
Trichloroethene	25.00	24.91	100	62-137
Chlorobenzene	25.00	22.51	90	60-133

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	104	80-130
Toluene-d8	99	80-120
Bromofluorobenzene	117	80-122

Type: BSD Lab ID: QC360714

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	25.91	104	59-172	14	22
Trichloroethene	25.00	27.45	110	62-137	10	24
Chlorobenzene	25.00	23.91	96	60-133	6	21

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	106	80-130
Toluene-d8	96	80-120
Bromofluorobenzene	118	80-122

RPD= Relative Percent Difference

Batch QC Report

Purgeable Halocarbons by GC/MS			
Lab #:	189936	Location:	1171 Ocean Ave, LLC
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC360715	Batch#:	118523
Matrix:	Water	Analyzed:	10/18/06
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	0.5
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	102	80-130
Toluene-d8	95	80-120
Bromofluorobenzene	106	80-122

ND= Not Detected

RL= Reporting Limit

Purgeable Halocarbons by GC/MS

Lab #:	189947	Location:	1171 Ocean Ave, LLC
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Field ID:	BH-19(35)	Batch#:	118448
Lab ID:	189947-001	Sampled:	10/09/06
Matrix:	Water	Received:	10/09/06
Units:	ug/L	Analyzed:	10/16/06
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	0.5
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	33	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	95	80-130
Toluene-d8	92	80-120
Bromofluorobenzene	108	80-122

ND= Not Detected

RL= Reporting Limit

Batch QC Report

Purgeable Halocarbons by GC/MS			
Lab #:	189947	Location:	1171 Ocean Ave, LLC
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	118448
Units:	ug/L	Analyzed:	10/16/06
Diln Fac:	1.000		

Type: BS Lab ID: QC360378

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	26.52	106	59-172
Trichloroethene	25.00	25.99	104	62-137
Chlorobenzene	25.00	24.29	97	60-133

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	96	80-130
Toluene-d8	93	80-120
Bromofluorobenzene	109	80-122

Type: BSD Lab ID: QC360379

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	23.70	95	59-172	11	22
Trichloroethene	25.00	27.52	110	62-137	6	24
Chlorobenzene	25.00	25.29	101	60-133	4	21

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	98	80-130
Toluene-d8	95	80-120
Bromofluorobenzene	113	80-122

RPD= Relative Percent Difference

Batch QC Report

Purgeable Halocarbons by GC/MS			
Lab #:	189947	Location:	1171 Ocean Ave, LLC
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC360380	Batch#:	118448
Matrix:	Water	Analyzed:	10/16/06
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	0.5
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	98	80-130
Toluene-d8	95	80-120
Bromofluorobenzene	102	80-122

ND= Not Detected

RL= Reporting Limit

Chain of Custody Record

Lab job no. _____

Date _____

Page 1 of 1

Laboratory Curtis and Tompkins, Ltd. Method of Shipment Hand Delivery
 Address 2323 Fifth Street Shipment No. _____
Berkeley, California 94710 Airbill No. _____
510-486-0900 Cooler No. _____
 Project Owner 1171 Ocean Avenue, LLC Project Manager Richard Makdisi
 Site Address 1171 Ocean Ave., Oakland Telephone No. (510) 644-3123
California Fax No. (510) 644-3859
 Project Name 1171 Ocean Avenue, LLC Samplers: (Signature) _____
 Project Number 2006-21

Filtered	No. of Containers	Analysis Required										Remarks

Field Sample Number	Location/Depth	Date	Time	Sample Type	Type/Size of Container	Preservation		Filtered	No. of Containers	Analysis Required										Remarks				
						Cooler	Chemical																	
BH-19 (35)				water	(a)	yes	(a)	no	3															

Relinquished by: Signature _____	Date _____	Received by: Signature _____	Date _____	Relinquished by: Signature _____	Date _____	Received by: Signature _____	Date _____
Printed <u>Richard Makdisii</u>	Time _____	Printed _____	Time _____	Printed _____	Time _____	Printed _____	Time _____
Company <u>Stellar Environmental</u>		Company _____		Company _____		Company _____	
Turnaround Time: <u>5-Day Turnaround Time</u>				Relinquished by: Signature _____			
Comments: <u>(a) 3 -4oml VOA vials with HCL preservative</u>				Date _____			
				Time _____			
				Printed _____			
				Company _____			

2000-00-01

