

**PHASE III  
CORRECTIVE ACTION  
INVESTIGATION REPORT**

**1171 OCEAN AVENUE  
OAKLAND, CALIFORNIA**

*Prepared for*

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

**September 2006**

**STELLAR ENVIRONMENTAL SOLUTIONS, INC.**  
 2198 SIXTH STREET, SUITE 201, BERKELEY, CA 94710  
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 2006 SEP 18 PM 4:05

TRANSMITTAL MEMORANDUM	
<b>TO:</b> ALAMEDA COUNTY HEALTH CARE SERVICES DEPARTMENT OF ENVIRONMENTAL HEALTH 1131 HARBOR BAY PARKWAY, SUITE 250 ALAMEDA, CALIFORNIA 94502	<b>DATE:</b> SEPTEMBER 14, 2006
<b>ATTENTION:</b> DONNA DROGOS	<b>FILE:</b> SES 2006-21
<b>SUBJECT:</b> PHASE III CORRECTIVE ACTION INVESTIGATION REPORT 1171 OCEAN AVENUE, OAKLAND, CA	
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<p><i>Alameda County</i>          SEP 19 2006          Environmental Health</p>	

**PHASE III  
CORRECTIVE ACTION  
INVESTIGATION REPORT**

**1171 OCEAN AVENUE  
OAKLAND, CALIFORNIA**

*Prepared for:*

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

**Alameda County  
SEP 19 2006  
Environmental Health**

*Prepared by:*

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

**September 12, 2006**

**Project No. 2006-21**

September 12, 2006

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

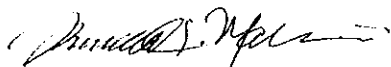
Subject: Phase III Corrective Action Investigation Report  
1171 Ocean Avenue, Oakland, California

Dear Ms Woytak:

Attached is the Stellar Environmental Solutions (SES) report of findings for the Phase III corrective action 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 II subsurface investigation was initiated in May 2006 based on historical hazardous materials use at and in the vicinity of the subject property. Findings of that investigation revealed groundwater contamination by volatile organic compounds and petroleum hydrocarbons. This report summarizes the additional characterization investigation conducted in July 2006.

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

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## **EXECUTIVE SUMMARY**

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This Phase III Corrective Action Investigation report for the property located at 1171 Ocean Avenue, Oakland, California has been completed by Stellar Environmental Solutions, Inc. (SES) on behalf of Ms. Felicia Woytak of 1171 Ocean Avenue, LLC. Because of the historical hazardous materials usage at and in the vicinity of the subject property, prior to acquisition of the property, a Phase II subsurface investigation was initiated as part of 1171 Ocean Avenue, LLC's due diligence. That investigation was conducted in May 2006.

Findings of the Phase II investigation revealed groundwater contamination by volatile organic compounds (VOCs) and petroleum hydrocarbons. This report summarizes the additional characterization (Phase III corrective action) investigation, conducted in July 2006, and documents the findings of that investigation. The Phase II investigation results were reported in a previous Phase I & II Environmental Site Assessment report (SES, 2006).

The principal objective of the Phase III investigation was to determine if the trichloroethylene (TCE) discovered in the 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 in May), although there was no historical documentation of either onsite or nearby offsite (upgradient) activities involving the use of TCE.

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. One grab sample in particular (groundwater was not encountered until 36 feet below ground surface [bgs]) contained a concentration of 5,200 micrograms per liter ( $\mu\text{g/L}$ ). Relatively minor concentrations of cis-1,2-dichloroethylene (DCE) and trans-1,2-DCE were also reported in the lab results, consistent as TCE degradation products. The TCE concentrations at the other three initial bores ranged from 310 to 910  $\mu\text{g/L}$ . The TCE regulatory screening criteria for commercial/industrial property used is 360  $\mu\text{g/L}$ .

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 spill 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.

To determine if the source of the TCE at bore HP-02 is site sourced or originates from off site, the SES recommends the placement of an additional four bores, two of which will be placed on the upgradient portion of the property, and all of which will be drilled to the same depth of BH-02 to test for TCE concentrations. This is an action item agreed to by the property owner. If the results show that the TCE is migrating from off site, the regulatory agency with lead oversight should be petitioned to consider the property as impacted from offsite source(s) rather than as a listed SLIC site, and not responsible for any future investigations.

## **1.0 INTRODUCTION AND BACKGROUND**

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### **PROJECT BACKGROUND**

Historical land use at the subject property is documented in the May 2006 Phase I & II Environmental Site Assessment Report and 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.

### **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 III corrective action) into the distribution and origin of the contaminants identified in the Phase II work are:

- Evaluate the extent to which site-sourced contaminants are responsible for the VOCs observed in the groundwater by collecting vadose zone soil sample profiles and shallow groundwater samples in the area above the highest VOC detection at greater depth.
- Identify any vertical zones of separation or difference within any upper and lower water-bearing zones to better determine if the TCE is originating from a site-source area or offsite source(s).

A primary regulatory agency criterion for determining if a site is responsible for contamination that exists beneath it and for meeting site closure (if the site is a listed site) involves the identification and subsequent removal of the source area (in this case, localized TCE-contaminated soils that would impact groundwater hydrochemistry).

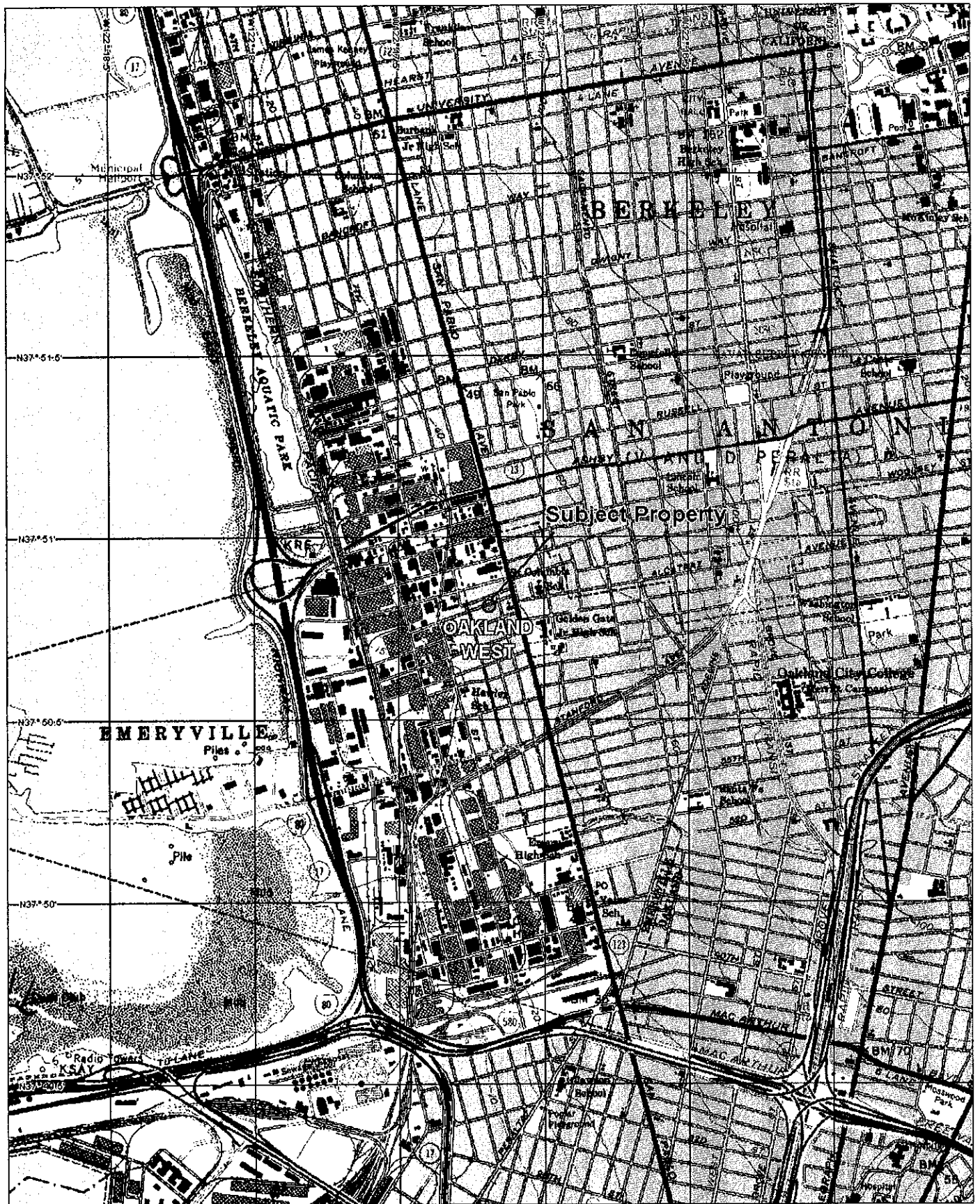
The SES scope of work included the following elements:

- Reviewing previous Phase I & II ESA report data (SES, 2006) to optimize new bore placement;
- Advancing and sampling 10 exploratory boreholes and collecting soil and groundwater samples for laboratory analysis;
- Collecting 21 soil samples for VOC analyses in vertical intervals designed to identify local sources of TCE, the contaminant of concern;
- Collecting 10 grab-groundwater samples from first-encountered groundwater depths;
- Evaluating the analytical results in the context of the extent and magnitude of contamination and the need for corrective action; and
- Recommending appropriate additional investigations and/or corrective action strategy, if needed.

## **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.



3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04996 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

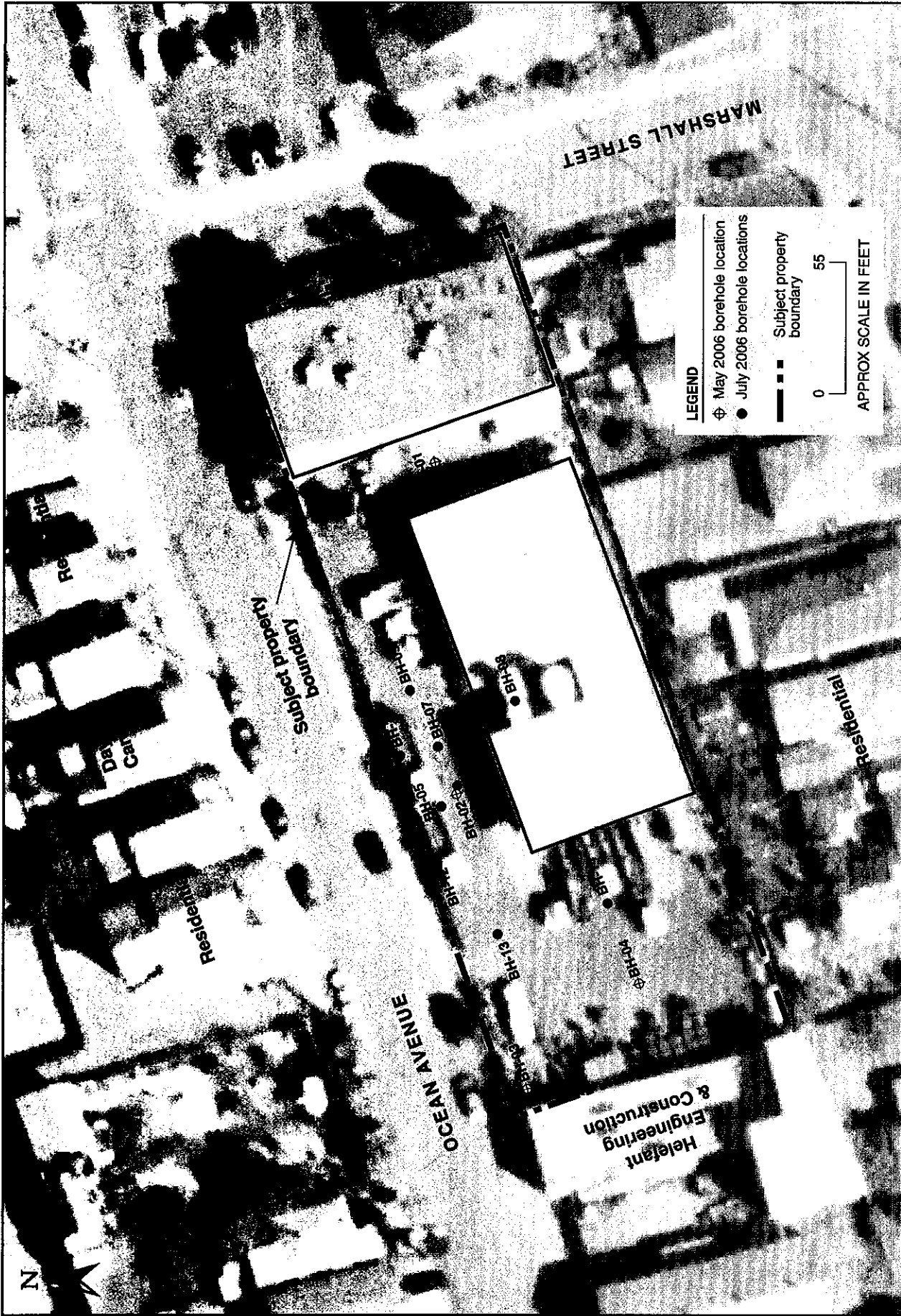
By: MJC

MARCH 2006

Figure 1



2006-21-01



**MAY AND JULY 2006 BOREHOLE LOCATIONS**  
 1171 Ocean Avenue, Oakland, CA

**Figure 2**

by: MJC

AUGUST 2006

The subject property is bordered to the east by Marshall Street and a church; to the west by Bay Area Structural Inc. and Helephant & 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 California Regional Water Quality Control Board (Water Board) site status. The current owner has submitted a notification to Alameda County. Based on the contaminants identified in the Phase II investigation, the site could 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) had its 5,000-gallon diesel UFST removed from the northwest corner of the subject property (adjacent to Ocean Avenue). 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). 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 between 0.17 milligrams per liter (mg/L) and 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 2006 GROUNDWATER INVESTIGATION FINDINGS**

During the May 2006 Phase II investigation, both petroleum hydrocarbons and VOCs were detected in the four collected groundwater samples. Detected gasoline-range hydrocarbon concentrations ranged from a maximum concentration of 1,400 micrograms per liter ( $\mu\text{g/L}$ ) to a minimum concentration of 130  $\mu\text{g/L}$ . Only one of the collected samples gasoline concentration exceeded the 500- $\mu\text{g/L}$  Water Board established Environmental Screening Level (ESL). Diesel range hydrocarbon concentrations ranged from a maximum of 610  $\mu\text{g/L}$  to a minimum of 93  $\mu\text{g/L}$ ; none of the diesel

concentrations exceeded the 640 µg/L ESL. Neither BTEX nor MTBE were detected in any of the groundwater samples.

Three VOCs were detected in the groundwater samples, including: TCE; cis-1,2-dichloroethylene (DCE); and trans-1,2-DCE. Of these detected compounds, only TCE concentrations exceed the 360 µg/L ESL, with a maximum concentration of 5,200 µg/L and a minimum concentration of 310 µg/L; TCE concentrations in three of the four collected groundwater samples exceed the respective ESL. The concentrations of cis-1,2-DCE and trans-1,2-DCE are consistent with their inferred presence as TCE degradation products.

Because maximum groundwater concentrations of petroleum hydrocarbons and VOCs were found to be centrally located at the site, the data suggested site-sourced contamination, possibly from previous site use as a bus charter and repair facility in the late 1960s and early 1970s. This conclusion is based on: 1) TCE was most commonly used as a cleaning solvent during the 1950s through early 1980s; and 2) the bus charter/repair facility was the business entity in existence within that time period most likely to have used TCE in its operations.

The two identified contaminants of concern at the subject site were gasoline and TCE, with concentrations of each exceeding their respective ESLs. TCE is the more significant of the two contaminants, both in terms of its detection above the regulatory ESLs (three of the four bores), its maximum concentration above the ESLs (5,200 µg/L TCE), and its persistence. The lateral distribution of TCE in the bores, with the BH-02 being in the central portion of the site, suggested that it could originate from onsite sources.

Although all four groundwater samples showed detectable diesel and gasoline concentrations, only one sample exhibited a concentration of gasoline that exceeded the 500-µg/L gasoline ESL. Reported concentrations for the diesel in all site groundwater samples were less than the 640 µg/L diesel ESL; none of the observed concentrations exceeded the ESL. The Phase II investigation concluded that the gasoline and diesel contamination could originate from onsite sources, but could also be the result of a ubiquitous regional contamination. There was no correlation between the highest concentration of petroleum hydrocarbons and the location of the former UFST, which would be expected if the source was site based.

Analytical results from the May 2006 subsurface investigation are summarized in Appendix A.

## **2.0 JULY 2006 FIELDWORK AND ANALYTICAL RESULTS**

This section discusses the field and laboratory investigation protocols, and presents the laboratory analytical results of the July 2006 Phase III corrective action investigation conducted by SES. Included are 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**

A total of 11 exploratory boreholes were drilled during the current investigation. Figure 2 (in Section 1.0) is a site plan that shows the borehole locations. Based on the results of the May 2006 investigation, an additional seven boreholes were advanced in the area where elevated contaminant levels were detected to further refine our evaluation of the extent and magnitude of the contamination. One upgradient borehole and three additional downgradient boreholes were advanced to assess the contaminant plume geometry. A specific objective of the overall program was to identify onsite residual soil contamination and to estimate the concentrations and volume of residual contaminated soil, if located, that might require corrective action. Downgradient boreholes were located to evaluate the lateral extent and magnitude of groundwater contamination.

Borehole soil samples for laboratory analysis were collected from 11 boreholes at depths designed to evaluate the extent and magnitude of contaminated soil. Therefore, samples were collected from depths as shallow as 2.5 feet below ground surface (bgs) to 15 feet bgs. Sampling depths were selected based on the potential contamination resulting from surficial discharge of solvents (as no UFSTs, sumps, or other below-grade structures for the storage of chlorinated solvents are documented at the subject site).

The sampling strategy was also to collect groundwater at the first encountered depths to identify any vertical stratification of TCE concentrations in groundwater.

All soil and groundwater samples were analyzed by EPA Method 8260B for the EPA 8010 list of chlorinated solvents, which includes the primary site contaminant TCE and common TCE degradation products DCE and vinyl chloride. Select groundwater samples were analyzed for total



volatile hydrocarbons in the gasoline range, BTEX fuel constituents, and MTBE—by EPA Method 8015M.

## **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 D contains photodocumentation of the field activities, and Section 4.0 discusses site lithology and hydrogeology.

Exploratory borehole drilling and sampling was conducted on July 20 and 21, 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. Continuous core soil samples were collected and visually examined for lithologic characteristics. Soil samples were field screened every 2.5 feet using a photoionization detector (PID); no intervals were observed where contamination was evident. A total of 32 soil samples were selected for laboratory analysis, and were either placed into 4-ounce glass jars with Teflon lining lid, or were sealed within an approximately 6-inch length of the acetate sampling sleeve, capped with non-reactive plastic caps, labeled, chilled, and shipped to the analytical laboratory under chain-of-custody documentation.

Ten groundwater samples were collected to evaluate the contaminant distribution. Groundwater samples were collected by inserting temporary PVC well casings across the first interval of saturation, usually at about 20 feet bgs, and withdrawing samples with a disposable bailer. 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 a 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 July 2006 investigation. Tables 1 and 2 present soil and groundwater sample results for TCE and cis-1,2 DCE concentrations.

**Table 1**  
**Soil Sample Analytical Results – July 20 and 21, 2006**  
**1171 Ocean Avenue, Berkeley, California**

Sample ID	TCE	cis-1,2 DCE	Sample ID	TCE	cis-1,2 DCE
BH-05-2.5'	ND	ND	BH-09-5'	ND	ND
BH-05-5'	ND	ND	BH-09-15'	ND	ND
BH-05-10'	ND	ND	BH-10-5'	ND	ND
BH-05-15'	ND	ND	BH-10-15'	ND	ND
BH-06-2.5'	ND	ND	BH-11-5'	ND	ND
BH-06-5'	ND	ND	BH-11-15'	ND	ND
BH-06-10'	ND	ND	BH-12-5'	ND	ND
BH-06-15'	ND	ND	BH-12-15'	ND	ND
BH-07-2.5'	ND	ND	BH-13-5'	ND	ND
BH-07-5'	ND	ND	BH-13-15'	ND	ND
BH-07-10'	ND	ND	BH-14-5'	ND	ND
BH-07-15'	ND	ND	BH-14-15'	ND	ND
BH-08-2.5'	ND	ND	BH-15-2.5'	ND	ND
BH-08-5'	ND	ND	BH-15-5'	ND	ND
BH-08-10'	ND	ND	BH-15-10'	ND	ND
BH-08-15'	ND	ND	BH-15-15'	ND	ND
Notes:			<b>Soil ESLs</b>	<b>730</b>	<b>3,600</b>

ESLs = Regional Water Quality Control Board San Francisco Bay Region Environmental Screening Level (2004) – for industrial/commercial sites where groundwaters *not* a potential drinking water source.

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 kilogram (µg/kg).

Appendix E contains the certified analytical laboratory reports and chain-of-custody records. Section 4.0 contains a detailed discussion of contaminant distribution.

### Soil Results

No soil contamination was found in any of the 32 soil samples collected from the 11 bores at the site. The results of the soil sampling for VOCs (Table 1) shows no TCE or cis-1,2 DCE (compared with the groundwater sampling conducted in May 2006). This suggests that the contamination source is originating from the project site.

**Table 2**  
**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
<b>MAY 2006 GRAB-GROUNDWATER SAMPLES</b>												
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
<b>JULY 2006 GRAB-GROUNDWATER SAMPLES</b>												
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
<b>Groundwater ESLs</b>			<b>500</b>	<b>46</b>	<b>130</b>	<b>290</b>	<b>13</b>	<b>1,800</b>		<b>360</b>		<b>590</b>

Notes:

ESLs = RWQCB Environmental Screening Levels (2004) for industrial/commercial sites where groundwaters *not* a potential drinking water source.

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

NA = Not analyzed.

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

## **Groundwater Results**

Table 2 shows the groundwater sample data from both the May and June 2006 investigations. TCE was detected in 34 of 36 samples, and cis-1,2 DCE was reported in 8 of the 36 samples. However, the July 2006 samples, collected at shallow depths in the groundwater, were at much lower concentrations than found in the deeper samples collected in May 2006. The primary site groundwater contaminant is TCE, which appears to be at a significantly greater concentration at greater depth within the groundwater column, suggesting a possible offsite origin. The highest concentration of 150 µg/L reported in the sample at 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 TCE 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 as appropriate by the owner in the future, based on the soil analytical results.

## **Quality Control Sample Analytical Results**

Laboratory QC samples (e.g., method blanks, matrix spikes, surrogate spikes, etc.) 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**

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The Applicable Relevant and Appropriate Regulations (ARARs) are discussed below to provide a regulatory context before presenting the interpretation of findings and 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 regional entity, the Department of Toxic Substances Control (DTSC), and the Alameda County Health Care Services Agency – Department of Environmental 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. The contamination finding at the site may result in it being designated a Spills, Leaks, Investigations, and Cleanups (SLIC) site.

#### **SOIL CONTAMINATION AND CLEANUP CONSIDERATIONS**

The Water Board publishes ESLs for a variety of contaminants in soil, including those detected at the site (RWQCB, 2004). The ESLs are conservative criteria used to evaluate if additional investigation is needed to determine potential impacts to human health or the environment. In the most preliminary stage (Tier 1, as utilized in this assessment), direct “look-up” tables provide numerical criteria, below which contamination is generally determined to have little or no risk. Various sets of Tier 1 ESL values are used depending on various determinations (land use type, soil depth, lithology, and groundwater usage), and various risk pathways (direct exposure, groundwater protection, indoor air impacts, etc.). In cases where the ESL(s) is exceeded, a Tier 2 assessment can be utilized, wherein Tier 1 ESLs can be modified using site-specific data. Tier 3 assessments involve a risk assessment methodology that deviates significantly from the approach used to develop the Tier 1 ESLs.

It is important to note that the ESLs are not numerical cleanup goals. Cleanup goals are most appropriately determined by evaluating risk via a Tier 3-type risk assessment process, which considers site-specific considerations (e.g., depth to groundwater, land use type, surface cover, lithology, preferential contaminant migration; contaminant exposure pathways, nearby sensitive receptors, etc.). In some cases, a risk assessment may determine that soil contamination above the ESL poses no unacceptable risk. Alternatively, an extremely sensitive site may require remediation and/or additional investigation at concentrations less than the Tier 1 ESL.

Once concentrations of concern are determined (i.e., contamination is present above the appropriate ESL or other criteria established via a risk assessment), usage of ESLs is not appropriate, and potential impacts to health and the environment should be evaluated by a risk assessment approach, which requires adequate definition of the extent and magnitude of the contamination, the potential for groundwater impacts, potential exposure pathways, etc.

As discussed below, 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 RWQCB 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 most strict 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 (SWRCB) 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 shows areas where groundwater is and is not a potential drinking water resource.

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 µg/L.

## **4.0 CONTAMINANT ORIGINS, DISTRIBUTION FATE AND TRANSPORT**

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### **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 is 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.

### **SHALLOW LITHOLOGY AND HYDROGEOLOGY**

All exploratory boreholes were geologically logged by visual inspection of soil cores using the Unified Soils Classification System (USCS).

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 is included in Appendix C. The observed lithology at the subject site was fairly uniform in all boreholes, with a 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. Therefore, temporary PVC screens and casing risers were installed in all boreholes. Groundwater infiltrated boreholes BH-08, BH-09, and BH-10 within 8 hours during the first day of drilling on July 20, 2006. Boreholes BH-07 and BH-11 were left with temporary screens overnight to allow for groundwater to infiltrate and subsequently be sampled the following day. Groundwater infiltrated boreholes BH-12 and BH-14 within 6 hours during the second day of drilling on July 21, 2006. Boreholes BH-05, BH-06, and BH-13 were left with temporary screens over the weekend to allow for groundwater to infiltrate and subsequently be sampled on July 25, 2006. Equilibrated groundwater levels in temporary casings ranged from 7.47 to 18.55 feet bgs. Depth to groundwater was strongly influenced by the amount of time provided for infiltration.



## **SOIL CONTAMINATION DISTRIBUTION AND ORIGINS**

No site soil contamination was discovered. A total of 32 soil samples were analyzed for VOCs in this investigation, over an approximately 6,000-square foot area, with higher borehole density in the source area identified early around the bore (BH-02) that showed the elevated TCE in groundwater at a depth of 36 feet bgs, relative to outlying areas.

The location of BH-02 north of the loading dock suggested that a site source might be associated with historical use (possibly a solvent spill to the ground that subsequently migrated down to groundwater). Although there was no historical evidence of TCE or other solvent use either by Praxair, the current tenants, or any previous tenants, in the 1970s/1980s, solvents were commonly used in (unreported) small quantities. Thus, a conceptual model was developed of a site source of TCE in the soil overlying the area in which was reported at high concentration in groundwater.

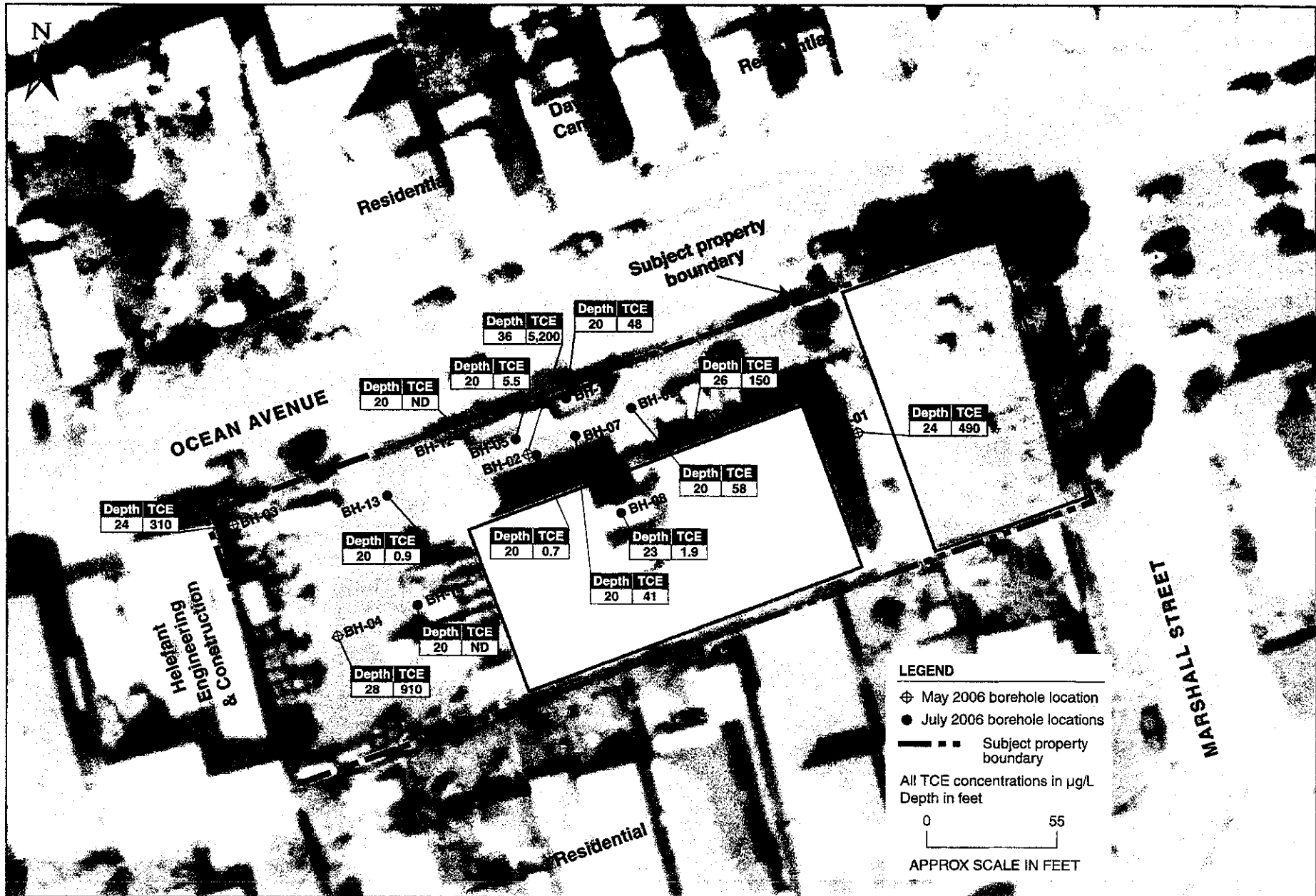
The data collected in July 2006 from the 32 soil samples demonstrated that the above-described conceptual model was erroneous. None of the 32 soil samples showed TCE—or other VOCs—above laboratory detection limits. Thus, there appears to be no VOC soil contamination at the site, either from a surface-originating source or from volatilization from the underlying groundwater.

## **GROUNDWATER CONTAMINATION DISTRIBUTION AND ORIGINS**

A total of 10 grab-groundwater samples were analyzed for VOCs in this investigation, over an approximately 6,000-square foot area. Figure 3 is a plan view showing TCE groundwater concentrations along with the depth of the grab-groundwater samples. Figure 4 is a cross-sectional view, that also shows the location of the non-detectable soil samples above the grab-groundwater samples.

The origin of the detected TCE contaminant plume in groundwater is not known at this time. The working conceptual model of a local site source origin was proved false, both by the lack of detectable soil contamination and the groundwater TCE concentration pattern showing a significantly higher concentration in deeper groundwater.

While TCE is denser than water, and thus a “sinker” that can to migrate to deeper groundwater, concentrations in shallow groundwater are almost always present at significant concentrations where sources are local. This occurs because a site source of TCE in the soil would be desorbing, constantly migrating downward into groundwater, defusing, and show a significant effect on the first encountered groundwater.

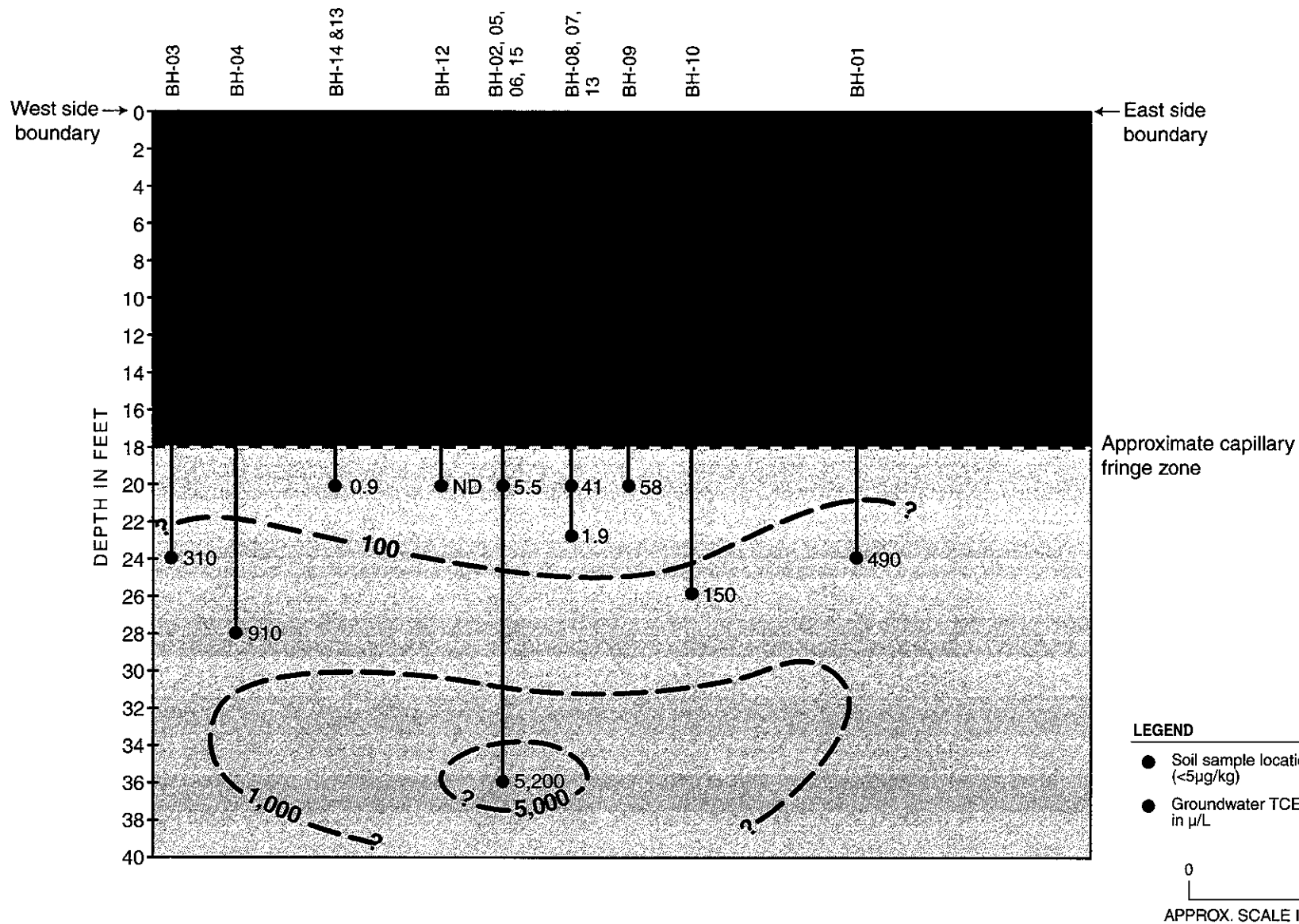


**MAY AND JULY 2006 BOREHOLE LOCATIONS  
WITH DEPTH AND TCE CONCENTRATIONS IN GROUNDWATER  
1171 Ocean Avenue, Oakland, CA**

**Figure 3**

by: MJC

AUGUST 2006



**GENERALIZED CROSS SECTION SHOWING SOIL AND  
GROUNDWATER TCE CONCENTRATIONS  
1171 Ocean Avenue, Oakland, CA**

**Figure 4**

by: MJC

AUGUST 2006

In the case of the subject property, as illustrated in Figure 3 and 4, the first encountered groundwater at a depth of about 20 feet bgs showed only trace to minor TCE concentration (58 µg/L or less), while the deepest sample at 36 feet bgs showed 5,200 µg/L; the sample depth between the two extremes confirms the downward increase in concentration trend. The more common pattern of distribution in cases of local contamination sources in soil involves attenuation of the contaminant concentration with depth.

The site bores show a mix of silts, clays, sands, and gravel that would both allow for migration of any site source of TCE that originated in the soil and for sorption onto clays; therefore, TCE contamination would continue to impact the shallow groundwater. The 20-foot zone of first encountered groundwater similarly has enough fines to retain significant TCE and keep elevated concentrations in solution if the origins were nearby site sourced.

The site-specific lithology, hydrology, and hydrochemical data collected in May and July 2006 suggest a new conceptual model of an offsite origin that has migrated beneath the subject site, thereby affecting the deeper groundwater disproportionately. An alternative model involves site-sourced contamination from an upgradient portion of the site that likely did not involve solvent use at that location. However, as BH-01 showed significantly less contamination at 24 feet bgs as compared with the 36-foot BH-02 samples, the contamination must have migrated directly down a "stratigraphic window" of highly permeable sediments to the deeper contaminated zone. Given the lithology found in the 11 site bores, this seems unlikely. 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 two blocks upgradient of the site.

## **6.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS**

### **SUMMARY AND CONCLUSIONS**

- This remedial investigation (Phase III) 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 principal objective of the Phase III investigation was to determine if the TCE discovered in the 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 in May), although there was no historical documentation of either onsite or nearby offsite (upgradient) activities involving the use of TCE.
- The working hypothesis of a site source for TCE was tested by collected soil and shallow groundwater data in and around the area where the highest TCE was reported in the groundwater at greater depth.
- Eleven site bores were completed in the July 2006 investigation to augment the four grab-groundwater samples completed in the May 2006 investigation. A total of 32 soil samples were collected from the 11 bores, and 10 groundwater grab samples collected from depths of 20 to 26 feet bgs.
- 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 unexpected finding was the significant concentration of TCE in the grab-groundwater sample. One grab sample in particular (groundwater was not encountered until 36 feet bgs) contained a concentration of 5,200 micrograms per liter ( $\mu\text{g/L}$ ). Relatively minor concentrations of cis-1,2-DCE and trans-1,2-DCE were also reported in the lab results, consistent as TCE degradation products. The TCE concentrations at the other three initial

bores ranged from 310 to 910 µg/L. The TCE regulatory screening criteria for commercial/ industrial property used is 360 µg/L.

- 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 µg/L at 36 feet bgs) was connected to local spill 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.

## RECOMMENDATIONS

The following recommendations are made to remedy the contaminated soil on site to allow for site development and move the site toward regulatory resolution and closure:

- Submit this report Alameda County as a followup to the previous report submission, and request that the site not be placed on the SLIC list until it can be determined if the site appears responsible for the subsurface contamination or if it is from offsite source(s).
- To determine if the source of the TCE at bore HP-02 is site sourced or originates from off site, SES recommends, and the site owner had agreed to the action item to place four more bores, two of which would be upgradient, to be drilled to the same depth of BH-02, to test for TCE concentrations. If the results show that the TCE is from an offsite source(s), the regulatory agency with lead oversight should be petitioned to consider the property impacted from offsite source(s) rather than as a listed SLIC site, and not responsible for any future investigations.

## 8.0 REFERENCES

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- 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.



## 9.0 LIMITATIONS

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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.

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

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

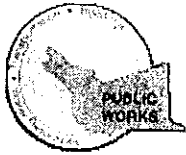
Note:

<sup>(a)</sup> All concentrations reported in micrograms per liter ( $\mu\text{g/L}$ ).

<sup>(b)</sup> 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 G for full list of VOCs for which samples were analyzed. Samples in **bold-face type** exceed the ESL.

# 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 07/20/2006 to 07/21/2006**

**Application Id:** 1152635443829  
**Site Location:** 1171 Ocean Ave, Oakland, CA 94611  
**Project Start Date:** 07/20/2006

**City of Project Site:** Oakland

**Completion Date:** 07/21/2006

**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:** --

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

**Works Requesting Permits:**

Borehole(s) for Investigation-Contamination Study - 10 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	10	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.

# PROGRAMS AND SERVICES

## Well Standards Program

The Alameda County Public Works Agency, Water Resources is located at:

399 Elmhurst Street

Hayward, CA 94544

For Driving Directions or General Info, Please Contact 510-670-5480 or [wells@acpwa.org](mailto:wells@acpwa.org)

For Drilling Permit information and process contact James Yoo at

Phone: 510-670-6633

FAX: 510-782-1939

Email: [Jamesy@acpwa.org](mailto:Jamesy@acpwa.org)

Alameda County Public Works is the administering agency of General Ordinance Code, Chapter 6.88 . The purpose of this chapter is to provide for the regulation of groundwater wells and exploratory holes as required by California Water Code. The provisions of these laws are administered and enforced by Alameda County Public Works Agency through its Well Standards Program.

**Drilling Permit Jurisdictions in Alameda County:** There are four jurisdictions in Alameda County.

### Location: Agency with Jurisdiction Contact Number

Berkeley City of Berkeley Ph: 510-981-7460

Fax: 510-540-5672

Fremont, Newark, Union City Alameda County Water District Ph: 510-668-4460

Fax: 510-651-1760

Pleasanton, Dublin, Livermore, Sunol Zone 7 Water Agency Ph: 925-454-5000

Fax: 510-454-5728

The Alameda County Public Works Agency, Water Resources has the responsibility and authority to issue drilling permits and to enforce the County Water Well Ordinance 73-68. This jurisdiction covers the western Alameda County area of **Oakland, Alameda, Piedmont, Emeryville, Albany, San Leandro, San Lorenzo, Castro Valley, and Hayward** . The purpose of the drilling permits are to ensure that any new well or the destruction of wells, including geotechnical investigations and environmental sampling within the above jurisdiction and within Alameda County will not cause pollution or contamination of ground water or otherwise jeopardize the health, safety or welfare of the people of Alameda County.

**Permits** are required for all work pertaining to wells and exploratory holes at any depth within the jurisdiction of the Well Standards Program. A completed permit application (30 Kb)\* , along with a site map, should be submitted at least **ten (10) working days prior to the planned start of work**. Submittals should be sent to the address or fax number provided on the application form. When submitting an application via fax, please use a high resolution scan to retain legibility.

### Fees

**Beginning April 11, 2005** , the following fees shall apply:

A permit to construct, rehabilitate, or destroy wells, including cathodic protection wells, but excluding dewatering wells (\*Horizontal hillside dewatering and dewatering for construction period only), shall cost \$300.00 per well.

A permit to bore exploratory holes, including temporary test wells, shall cost \$200 per site. A site includes the project parcel as well as any adjoining parcels.

Please make checks payable to: **Treasurer, County of Alameda**

### Permit Fees are exempt to State & Federal Projects

Applicants shall submit a letter from the agency requesting the fee exemption.

**Scheduling Work/Inspections:**

Alameda County Public Works Agency (ACPWA), Water Resources Section requires scheduling and inspection of permitted work. All drilling activities must be scheduled in advance. Availability of inspections will vary from week to week and will come on a first come, first served bases. To ensure inspection availability on your desired or driller scheduled date, the following procedures are required:

Please contact **James Yoo at 510-670-6633** to schedule the inspection date and time (You must have drilling permit approved prior to scheduling).

Schedule the work as far in advance as possible (at least 5 days in advance); and confirm the scheduled drilling date(s) at least 24 hours prior to drilling.

Once the work has been scheduled, an ACPWA Inspector will coordinate the inspection requirements as well as how the Inspector can be reached if they are not at the site when inspection is required. Expect for special circumstances given, all work will require the inspection to be conducted during the working hours of 8:30am to 2:30pm., Monday to Friday, excluding holidays.

**Request for Permit Extension:**

Permits are only valid from the start date to the completion date as stated on the drilling permit application and Conditions of Approval. To request an extension of a drilling permit application, applicants must request in writing prior to the completion date as set forth in the Conditions of Approval of the drilling permit application. Please send fax or email to Water Resources Section, Fax 510-782-1939 or email at wells@acpwa.org. There are no additional fees for permit extensions or for re-scheduling inspection dates. You may not extend your drilling permit dates beyond 90 days from the approval date of the permit application. **NO refunds** shall be given back after 90 days and the permit shall be deemed voided.

**Cancel a Drilling Permit:**

Applicants may cancel a drilling permit only in writing by mail, fax or email to Water Resources Section, Fax 510-782-1939 or email at wells@acpwa.org. If you do not cancel your drilling permit application before the drilling completion date or notify in writing within 90 days, Alameda County Public Works Agency, Water Resources Section may void the permit and No refunds may be given back.

**Refunds/Service Charge:**

A service charge of \$25.00 dollars for the first check returned and \$35.00 dollars for each subsequent check returned.

Applicants who cancel a drilling permit application **before** we issue the approved permit(s), will receive a **FULL** refund (at any amount) and will be mailed back within two weeks.

Applicants who cancel a drilling permit application **after** a permit has been issued will then be charged a service fee of \$50.00 (fifty Dollars).

To collect the remaining funds will be determined by the amount of the refund to be refunded (see process below).

Board of Supervisors Minute Order, File No. 9763, dated January 9, 1996, gives blanket authority to the Auditor-Controller to process claims, from all County departments for the refund of fees which do not exceed \$500 (Five Hundred Dollars)(with the exception of the County Clerk whose limit is \$1,500).

Refunds over the amounts must be authorized by the Board of Supervisors Minute Order, File No. 9763 require specific approval by the Board of Supervisors. The forms to request for refunds under \$500.00 (Five Hundred Dollars) are available at this office or any County Offices. If the amount is exceeded, a Board letter and Minute Order must accompany the claim. Applicant shall fill out the request form and the County Fiscal department will process the request.

**Enforcement**

Penalty. Any person who does any work for which a permit is required by this chapter and who fails to obtain a permit shall be guilty of a misdemeanor punishable by fine not exceeding Five Hundred Dollars (\$500.00) or by imprisonment not exceeding six months, or by both such fine and imprisonment, and such person shall be deemed guilty of a separate offense for each and every day or portion thereof during which any such

violation is committed, continued, or permitted, and shall be subject to the same punishment as for the original offense. (Prior gen. code §3-160.6)

**Enforcement actions will be determined by this office on a case-by-case basis**

Drilling without a permit shall be the cost of the permit(s) and a fine of \$500.00 (Five Hundred Dollars).

**Well Completion Reports** (State DWR-188 forms) must be filed with the Well Standards Program within 60 days of completing work. Staff will review the report, assign a state well number, and then forward it to the California Department of Water Resources (DWR). Drillers should not send completed reports to DWR directly. Failure to file a Well Completion Report or deliberate falsification of the information is a misdemeanor; it is also grounds for disciplinary action by the Contractors' State License Board. Also note that filed Well Completion Reports are considered private record protected by state law and can only be released to the well owner or those specifically authorized by government agencies.

See our website ([www.acgov.org/pwa/wells/index.shtml](http://www.acgov.org/pwa/wells/index.shtml)) for links to additional forms.

BORING NUMBER BH-01 Page 1 of 2

PROJECT Sixty-fifth St., Oakland — Ph. I & II OWNER Sixty-fifth Street Development

LOCATION 1171 Ocean Ave., Oakland PROJECT NUMBER 2006-21

TOTAL DEPTH 24 feet bgs BOREHOLE DIA. 2 inch

SURFACE ELEV. Unknown WATER FIRST ENCOUNTERED ~19'

DRILLING COMPANY EnProb Environmental DRILLING METHOD GeoProbe Direct Push

DRILLER Steve — EnProb GEOLOGIST J. Dinan DATE DRILLED 5/3/2006

DEPTH (feet)	GRAPHIC LOG	SAMPLE INTERVAL/RECOVERY	BLOW COUNTS	INSTRUMENT READING	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
0					Asphalt 0'-2' No recovery	
2					Brown clayey gravel (GC), moist, friable, angular gravel	
4					Black gravelly clay (GC), stiff, cohesive 3' Beige sandy clay (CL), minor gravels, stiff, cohesive, dry 5' Increased gravel ~25%, angular	
6					Orange clayey sand (SC), dry, friable, minor gravel	
8					Orange sandy clay (CL), cohesive, minor gravel	
10					Orange clayey sand (SC), dry, friable, minor gravel	
12					Orange sandy clay (CL), cohesive, minor gravel	
14					Beige clayey gravel (GC), friable, dry	
16					Beige sandy clay (CL), cohesive, dry, minor gravels 14' Gravel absent, color change to orange, soft	
18					18' Minor gravel 18.5' Moist	
20					19' Gravel absent	Hole swelling shut at 19'

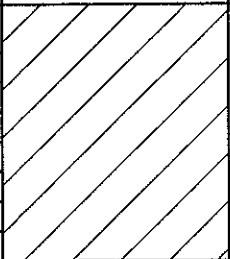
2006-21-03

▽ First encountered groundwater

▼ Equilibrated groundwater level

BORING NUMBER BH-01 Page 2 of 2

PROJECT Sixty-fifth St., Oakland — Ph. I & II OWNER Sixty-fifth Street Development  
 LOCATION 1171 Ocean Ave., Oakland PROJECT NUMBER 2006-21  
 TOTAL DEPTH 24 feet bgs BOREHOLE DIA. 2 inch  
 SURFACE ELEV. Unknown WATER FIRST ENCOUNTERED ~19'  
 DRILLING COMPANY EnProb Environmental DRILLING METHOD GeoProbe Direct Push  
 DRILLER Steve — EnProb GEOLOGIST J. Dinan DATE DRILLED 5/3/2006

DEPTH (feet)	GRAPHIC LOG	SAMPLE INTERVAL/RECOVERY	BLOW COUNTS	INSTRUMENT READING	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
-20					20' Orange sandy clay (CL), soft, cohesive, moist	▼ Inserted temporary PVC casing. Screened from 19' to 24'. DTW = 22.7' bgs after 1.5 hours
-22					21' Minor gravel	
-24					23' Brown gravelly clay (CL), stiff, cohesive, angular gravel, dry	
-24					Bottom of borehole = 24'	
-26						
-28						
-30						
-32						
-34						
-36						
-38						
-30						

2006-21-04



BORING NUMBER BH-06 Page 1 of 1

PROJECT 1171 Ocean Ave OWNER 1171 Ocean Avenue, LLC

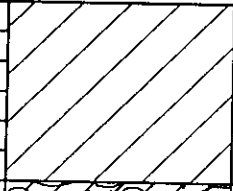

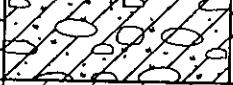


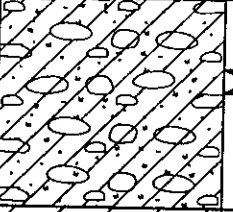

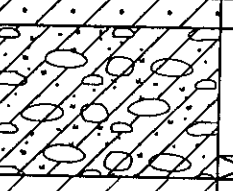

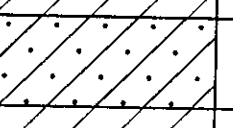
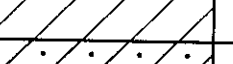
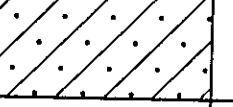
LOCATION 1171 Ocean Ave., Oakland PROJECT NUMBER 2006-21

TOTAL DEPTH 20 feet bgs BOREHOLE DIA. 2 inch

SURFACE ELEV. Unknown WATER FIRST ENCOUNTERED none encountered

DRILLING COMPANY EnProb Environmental DRILLING METHOD GeoProb Direct Push

DRILLER Jeff — EnProb GEOLOGIST R. Makdisi DATE DRILLED 7/21/2006



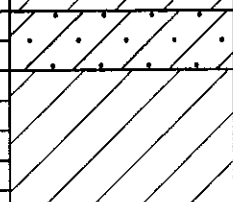


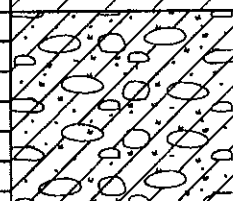
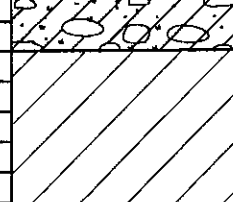

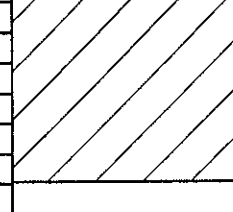
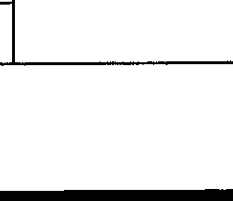
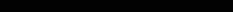

DEPTH (feet)	GRAPHIC LOG	SAMPLE INTERVAL/RECOVERY	BLOW COUNTS	INSTRUMENT READING	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
0				PID <0-10	Asphalt and gravel fill	Tight drilling through expansive soil
2					Brown, silty, gravelly clay (CL)	
4						No PID >0.10 readings
6					Stiff, cohesive, tan, sandy clay rich gravel (GC)	
8					Black-brown, sandy clay (CL) with some gravel	
10					Brown clayey gravel (GC) with 1/2 inch angular gravel. Dry, friable	No groundwater encountered but moist at 16 feet
12					Clayey sand (SC)	
14					Brown, stiff, clayey gravel (GC), angular, dry	
16					Silty clay (CL) Brown, clayey sand (SC)	
18					Orange-brown sandy clay (CL)	Hole swelling shut at 19'
20					Brown, clayey sand (SC) with minor gravel	
					Bottom of bore = 20 feet	

2006-21-08

 First encountered groundwater    
  Equilibrated groundwater level

BORING NUMBER BH-07 Page 1 of 1

PROJECT 1171 Ocean Ave OWNER 1171 Ocean Avenue, LLC  
 LOCATION 1171 Ocean Ave., Oakland PROJECT NUMBER 2006-21  
 TOTAL DEPTH 20 feet bgs BOREHOLE DIA. 2 inch  
 SURFACE ELEV. Unknown WATER FIRST ENCOUNTERED none encountered  
 DRILLING COMPANY EnProb Environmental DRILLING METHOD GeoProb Direct Push  
 DRILLER Jeff — EnProb GEOLOGIST R. Makdisi DATE DRILLED 7/21/2006

DEPTH (feet)	GRAPHIC LOG	SAMPLE INTERVAL/RECOVERY	BLOW COUNTS	INSTRUMENT READING	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
0				PID <0-10	Asphalt and gravel fill	Tight drilling through expansive soil
2					Brown, silty, gravelly clay (CL) with minor angular gravel	
4						
6					Brown fine-grained clay rich sand (SC)	
8					Brown, silty, gravelly clay (CL) with minor angular gravel	
10						
12					Brown clayey gravel (GC) with up to 1-inch angular poorly sorted gravel	No groundwater encountered but moist at 18 feet
14						
16					Brown, silty, gravelly clay (CL) with minor angular gravel	
18						
20					Bottom of bore = 20 feet	

2006-21-11

BORING NUMBER BH-08 Page 1 of 1

PROJECT 1171 Ocean Ave

OWNER 1171 Ocean Avenue, LLC

LOCATION 1171 Ocean Ave., Oakland

PROJECT NUMBER 2006-21

TOTAL DEPTH 23 feet bgs

BOREHOLE DIA. 2 inch

SURFACE ELEV. Unknown

WATER FIRST ENCOUNTERED none encountered

DRILLING COMPANY EnProb Environmental

DRILLING METHOD GeoProb Direct Push

DRILLER Jeff — EnProb

GEOLOGIST R. Makdisi

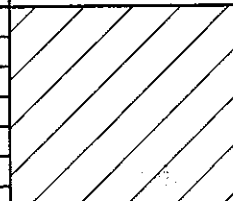

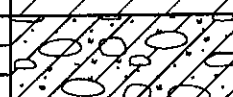

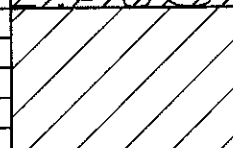
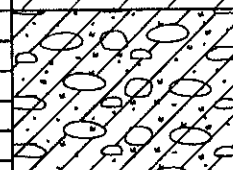

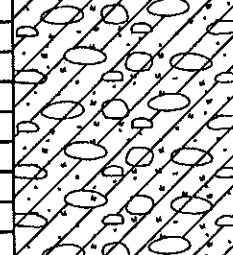

DATE DRILLED 7/21/2006

DEPTH (feet)	GRAPHIC LOG	SAMPLE INTERVAL/RECOVERY	BLOW COUNTS	INSTRUMENT READING	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
0				PID <0-10	Asphalt and gravel fill	Tight drilling through expansive soil. Changed to 3' versus 4' runs. Moist clay.
2		X			Black-brown, sandy clay (CL) with some gravel	
4						
6		X				
8					Orange brown clayey gravel (GC) with 1/2 inch angular gravel	
10		X			Black-brown, sandy clay (CL) with some gravel	
12					Silty clayey brown dry sand (SC)	
14					Orange-brown sandy clay (CL)	
16		X			Brown, clayey sand (SC) with minor gravel	
18						
20					Tan stiff silty clayey angular gravel (GC)	
22						
					Bottom of bore = 23 feet	No groundwater encountered but moist at 17 feet

2006-21-12

BORING NUMBER BH-09 Page 1 of 1

PROJECT 1171 Ocean Ave OWNER 1171 Ocean Avenue, LLC  
 LOCATION 1171 Ocean Ave., Oakland PROJECT NUMBER 2006-21  
 TOTAL DEPTH 20 feet bgs BOREHOLE DIA. 2 inch  
 SURFACE ELEV. Unknown WATER FIRST ENCOUNTERED none encountered  
 DRILLING COMPANY EnProb Environmental DRILLING METHOD GeoProb Direct Push  
 DRILLER Jeff — EnProb GEOLOGIST R. Makdisi DATE DRILLED 7/21/2006

DEPTH (feet)	GRAPHIC LOG	SAMPLE INTERVAL/RECOVERY	BLOW COUNTS	INSTRUMENT READING	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
0				PID <0-10	Asphalt and gravel fill	Tight drilling through expansive soil
2					Brown, silty, gravelly clay (CL) with minor angular gravel	
4						
6					Brown clayey sandy gravel (GC)	
8					Black-brown, sandy clay (CL) with some gravel	
10					Orange-black-brown clayey gravel (GC) with up to 1-inch angular gravel	
12						No groundwater encountered but moist at 15.5-18 feet
14					Brown soft clayey sand (SC)	
16						
18						Dry at 19'
20					Bottom of bore = 20 feet	

2006-21-13

BORING NUMBER BH-10 Page 1 of 1

PROJECT 1171 Ocean Ave OWNER 1171 Ocean Avenue, LLC  
 LOCATION 1171 Ocean Ave., Oakland PROJECT NUMBER 2006-21  
 TOTAL DEPTH 26 feet bgs BOREHOLE DIA. 2 inch  
 SURFACE ELEV. Unknown WATER FIRST ENCOUNTERED none encountered  
 DRILLING COMPANY EnProb Environmental DRILLING METHOD GeoProb Direct Push  
 DRILLER Jeff — EnProb GEOLOGIST R. Makdisi DATE DRILLED 7/21/2006

DEPTH (feet)	GRAPHIC LOG	SAMPLE INTERVAL/RECOVERY	BLOW COUNTS	INSTRUMENT READING	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
0				PID <0-10	Asphalt and gravel fill	Tight drilling through expansive soil
2					Brown, silty, gravelly clay (CL)	
4						No PID >0.10 readings
6						
8					Brown clayey sand with some subangular gravel (GC), stiff and friable, poorly sorted	
10						No groundwater encountered but moist at 12 feet
12					Silty clay (CL) with occasional gravel	
14						dry
16					Brown, stiff, clayey gravel (GC) angular	
18					Orange-brown sandy clay (CL)	Moist again at 16 feet
20					Brown, stiff, clayey gravel (GC) angular	
22						Dry at 18 feet
24					Brown, sandy clay (CL)	
26					Brown, silty, gravelly clay (CL) with minor angular gravel	Set screen at 26' for water which rose to 22.5' after 2 hrs.

2006-21-14

▽ First encountered groundwater    ▼ Equilibrated groundwater level

BORING NUMBER BH-11 Page 1 of 1

PROJECT 1171 Ocean Ave OWNER 1171 Ocean Avenue, LLC  
 LOCATION 1171 Ocean Ave., Oakland PROJECT NUMBER 2006-21  
 TOTAL DEPTH 20 feet bgs BOREHOLE DIA. 2 inch  
 SURFACE ELEV. Unknown WATER FIRST ENCOUNTERED none encountered  
 DRILLING COMPANY EnProb Environmental DRILLING METHOD GeoProb Direct Push  
 DRILLER Jeff — EnProb GEOLOGIST R. Makdisi DATE DRILLED 7/21/2006

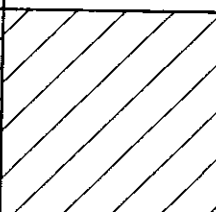



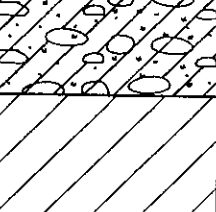
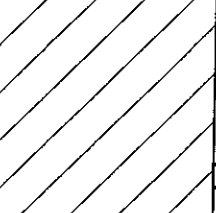
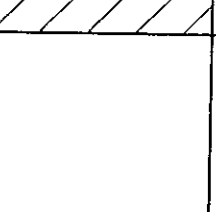

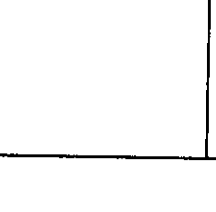
DEPTH (feet)	GRAPHIC LOG	SAMPLE INTERVAL/RECOVERY	BLOW COUNTS	INSTRUMENT READING	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
0				PID <0.10	Asphalt and gravel fill	Tight drilling through expansive soil
2					Brown, silty, gravelly clay (CL) stiff, cohesive	No PID >0.10 readings
4						
6						
8						
10					Tight brown clayey gravel (GC) with 1/2-inch angular to subrounded gravel. Dry, friable	Saturated to moist at 12 feet
12						
14						
16						
18					Orange-brown silty plastic clay (CL)	Dry
20						
					Bottom of bore = 20 feet	

2006-21-15

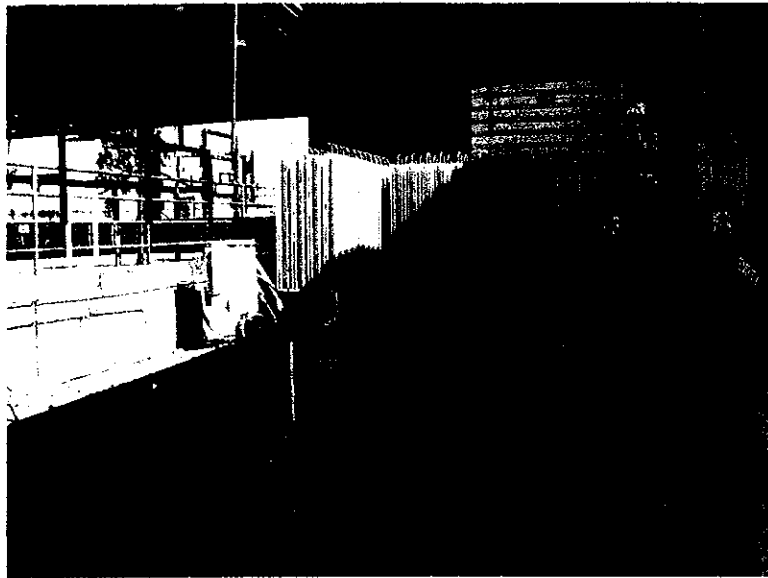
▽ First encountered groundwater    ▼ Equilibrated groundwater level

BORING NUMBER BH-15 Page 1 of 1

PROJECT 1171 Ocean Ave OWNER 1171 Ocean Avenue, LLC  
 LOCATION 1171 Ocean Ave., Oakland PROJECT NUMBER 2006-21  
 TOTAL DEPTH 16 feet bgs BOREHOLE DIA. 2 inch  
 SURFACE ELEV. Unknown WATER FIRST ENCOUNTERED none encountered  
 DRILLING COMPANY EnProb Environmental DRILLING METHOD GeoProb Direct Push  
 DRILLER Jeff — EnProb GEOLOGIST R. Makdisi DATE DRILLED 7/21/2006

DEPTH (feet)	GRAPHIC LOG	SAMPLE INTERVAL/RECOVERY	BLOW COUNTS	INSTRUMENT READING	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
0				PID <0-10	Asphalt and gravel fill	Tight drilling through expansive soil
2					Black-purple to brown, silty clay (CL), cohesive, with minor gravel	
4						No PID >0.10 readings
6						
8					Brown, clayey, sandy gravel (GC) with up to 1/2 inch angular gravel. Dry, friable	Dry
10					Orange-brown sandy clay (CL), expansive and dry	
12						
14						
16					Bottom of bore = 16 feet	
18						
20						

2006-21-17



Subject: View of BH-08 set with temporary screen to allow groundwater to infiltrate the borehole for subsequent sampling.

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

Date Taken: July 20, 2006

Project No.: SES 2006-21

Photographer: Joe Dinan

Photo No.: 01



Subject: View of drilling rig at borehole BH-09.

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

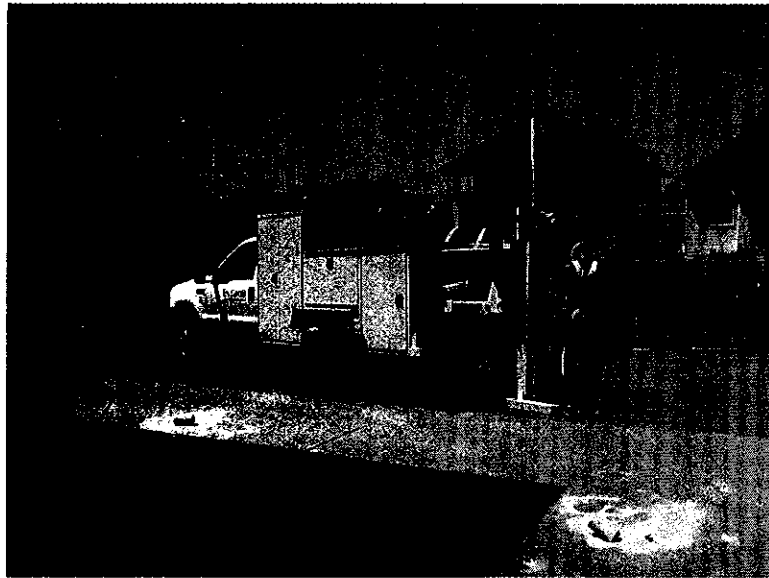
Date Taken: July 20, 2006

Project No.: SES 2006-21

Photographer: Joe Dinan

Photo No.: 02





Subject: View of drilling rig at borehole BH-07.

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

Date Taken: July 20, 2006

Project No.: SES 2006-21

Photographer: Joe Dinan

Photo No.: 03



Subject: View of drilling rig at borehole BH-11.

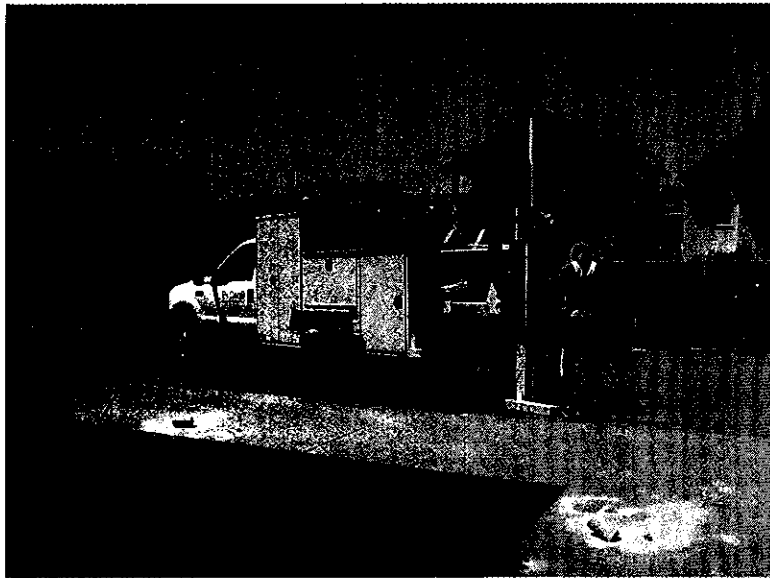
Site: 1171 Ocean Avenue, Oakland, Alameda County, California

Date Taken: July 21, 2006

Project No.: SES 2006-21

Photographer: Joe Dinan

Photo No.: 04



Subject: View of drilling rig at borehole BH-07.

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

Date Taken: July 20, 2006

Project No.: SES 2006-21

Photographer: Joe Dinan

Photo No.: 03



Subject: View of drilling rig at borehole BH-11.

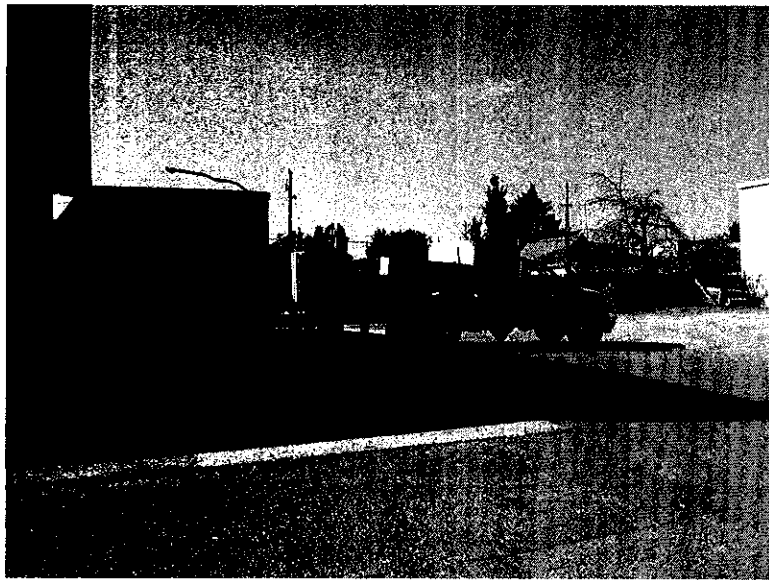
Site: 1171 Ocean Avenue, Oakland, Alameda County, California

Date Taken: July 21, 2006

Project No.: SES 2006-21

Photographer: Joe Dinan

Photo No.: 04



Subject: View of drilling rig at borehole BH-14.

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

Date Taken: July 21, 2006

Project No.: SES 2006-21

Photographer: Joe Dinan

Photo No.: 05



Subject: View of drilling rig at borehole BH-05.

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

Date Taken: July 21, 2006

Project No.: SES 2006-21

Photographer: Joe Dinan

Photo No.: 06



A N A L Y T I C A L   R E P O R T

Prepared for:

Stellar Environmental Solutions  
2198 6th Street  
Suite 201  
Berkeley, CA 94710

Date: 31-JUL-06


Lab Job Number: 188259

Project ID: 2006-21

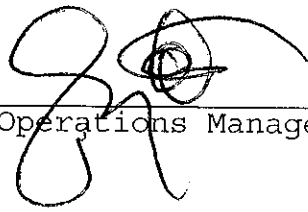
Location: Woytak Oakland Phase III Investigatio

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Reviewed by:

  
Project Manager

Reviewed by:

  
Operations Manager

This package may be reproduced only in its entirety.

## CASE NARRATIVE

Laboratory number: 188259  
Client: Stellar Environmental Solutions  
Project: 2006-21  
Location: Woytak Oakland Phase III Investigatio  
Request Date: 07/21/06  
Samples Received: 07/21/06

This hardcopy data package contains sample and QC results for fourteen soil samples and four water samples, requested for the above referenced project on 07/21/06. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B and EPA 8021B):  
No analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B) Water:  
No analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B) Soil:  
No analytical problems were encountered.

# Chain of Custody Record

Lab job no. \_\_\_\_\_

 Laboratory Curtis and Tompkins, Ltd.  
 Address 2323 Fifth Street  
Berkeley, California 94710  
510-486-0900

 Method of Shipment Hand Delivery  
 Shipment No. \_\_\_\_\_  
 Airbill No. \_\_\_\_\_

Date \_\_\_\_\_

 Page 1 of 2

 Project Owner 65th Street Development Co  
 Site Address 1171 Ocean Avenue  
Oakland, California

 Cooler No. \_\_\_\_\_  
 Project Manager Richard Makdisi  
 Telephone No. (510) 644-3123

 Project Name Woytak Oakland Phase III Investigation  
 Project Number 2006-21

 Fax No. (510) 644-3859  
 Samplers: (Signature) [Signature]

Filtered		No. of Containers		Analysis Required										Remarks									
SOLO VOC'S BY DZLO		GAS, BTEX, METALS																					

-1  
-2  
-3  
-4  
-5  
-6  
-7  
-8  
-9  
-10  
-11  
-12

Field Sample Number	Location/Depth	Date	Time	Sample Type	Type/Size of Container	Preservation		Cooler	Chemical	NO	3	X											
						Cooler	Chemical																
BH-07-GW	—	7/21	820	H <sub>2</sub> O	3 40mL VOA	Yes	HCl					X											
BH-11-GW	—		810		3 40mL VOA							X											
BH-12-GW	—		1110		6 40mL VOA							X	X										
BH-14-GW	—		1330		3 40mL VOA							X											
BH-05-2.5'	2.5'		1130	SOIL	ACETATE SLEEVE		NONE					X											
BH-05-5'	5'		1135									X											
BH-05-10'	10'		1140									X											
BH-05-15'	15'		1145		7oz Glass Jar							X											
BH-06-2.5'	2.5'		1005									X											
BH-06-5'	5'		1010		ACETATE SLEEVE							X											
BH-06-10'	10'		1015									X											
BH-06-15'	15'		1025									X											

 Relinquished by:  
 Signature [Signature]  
 Printed Joe Dinan  
 Company Stellar Environmental

 Received by:  
 Signature [Signature]  
 Printed Richard Makdisi  
 Company SES
~~Relinquished by:  
 Signature \_\_\_\_\_  
 Printed \_\_\_\_\_  
 Company \_\_\_\_\_~~ 

 Received by:  
 Signature [Signature]  
 Printed Lavanna Curtis  
 Company Curtis & Tompkins

 Turnaround Time: 5 Day TAT  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

~~Relinquished by:  
 Signature \_\_\_\_\_  
 Printed \_\_\_\_\_  
 Company \_\_\_\_\_~~ 

2000-00-01

148259

# Chain of Custody Record

Lab job no. \_\_\_\_\_

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 65th Street Development Co Project Manager Richard Makdisi  
 Site Address 1171 Ocean Avenue Telephone No. (510) 644-3123  
Oakland, California Fax No. (510) 644-3859  
 Project Name Woytak Oakland Phase III Investigation Samplers: (Signature) [Signature]  
 Project Number 2006-21

Date \_\_\_\_\_

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Field Sample Number	Location/Depth	Date	Time	Sample Type	Type/Size of Container	Preservation		Filtered	No. of Containers	Analysis Required	Remarks
						Cooler	Chemical				
-13	BH-12-5'	7/25	9:15	Soil	Acetate SLEEVE	Yes	NONE	NO	1	X	
-14	BH-12-15'		9:35						1	X	
-15	BH-13-5'		12:00						1	X	
-16	BH-13-15'		12:45						1	X	
-17	BH-14-5'		9:40						1	X	
-18	BH-14-15'		9:45						1	X	
-19	Trip Blank										

Relinquished By: Signature <u>[Signature]</u> Printed <u>Joe Dinan</u> Company <u>Stellar Environmental</u>	Date <u>7/21/07</u> Time <u>3:25</u>	Received by: Signature <u>[Signature]</u> Printed <u>Richard Makdisi</u> Company <u>SES</u>	Date <u>7/21/07</u> Time <u>3:25</u>	Relinquished by: Signature _____ Printed _____ Company _____	Date _____ Time _____	Received by: Signature <u>[Signature]</u> Printed <u>Lawanna Curtis</u> Company <u>Curtis &amp; Tompkins</u>	Date <u>7/21/07</u> Time <u>3:25</u>
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Turnaround Time: <u>5 Day TAT</u>	Relinquished by: Signature _____ Printed _____ Company _____	Date _____ Time _____	Received by: Signature _____ Printed _____ Company _____	Date _____ Time _____
Comments: _____				

2000-00-01

### Curtis & Tompkins Laboratories Analytical Report

Lab #: 188259	Location: Woytak Oakland Phase III Investigatio
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2006-21	
Field ID: BH-12-GW	Batch#: 115595
Matrix: Water	Sampled: 07/21/06
Units: ug/L	Received: 07/21/06
Diln Fac: 1.000	

Type: SAMPLE Analyzed: 07/22/06  
 Lab ID: 188259-003

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
MTBE	5.4	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	95	69-137	EPA 8015B
Bromofluorobenzene (FID)	101	80-133	EPA 8015B
Trifluorotoluene (PID)	105	64-132	EPA 8021B
Bromofluorobenzene (PID)	114	80-120	EPA 8021B

Type: BLANK Analyzed: 07/21/06  
 Lab ID: QC348673

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	92	69-137	EPA 8015B
Bromofluorobenzene (FID)	96	80-133	EPA 8015B
Trifluorotoluene (PID)	102	64-132	EPA 8021B
Bromofluorobenzene (PID)	108	80-120	EPA 8021B

ND= Not Detected  
 L= Reporting Limit





## Batch QC Report

## Curtis &amp; Tompkins Laboratories Analytical Report

Lab #:	188259	Location:	Woytak Oakland Phase III Investigatio
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8021B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC348674	Batch#:	115595
Matrix:	Water	Analyzed:	07/21/06
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	18.49	92	72-124
Benzene	20.00	18.46	92	80-120
Toluene	20.00	20.23	101	80-120
Ethylbenzene	20.00	21.00	105	80-120
m,p-Xylenes	20.00	22.40	112	80-120
o-Xylene	20.00	21.86	109	80-120

Surrogate	%REC	Limits
Trifluorotoluene (PID)	102	64-132
Bromofluorobenzene (PID)	113	80-120



## Batch QC Report

## Curtis &amp; Tompkins Laboratories Analytical Report

Lab #:	188259	Location:	Woytak Oakland Phase III Investigatio
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC348675	Batch#:	115595
Matrix:	Water	Analyzed:	07/21/06
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,941	97	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	133	69-137
Bromofluorobenzene (FID)	106	80-133

**Purgeable Halocarbons by GC/MS**

Lab #:	188259	Location:	Woytak Oakland Phase III Investigatio
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Field ID:	BH-07-GW	Batch#:	115685
Lab ID:	188259-001	Sampled:	07/21/06
Matrix:	Water	Received:	07/21/06
Units:	ug/L	Analyzed:	07/25/06
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	3.7	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	41	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	116	80-130
Toluene-d8	100	80-120
Bromofluorobenzene	106	80-122

ND= Not Detected  
 RL= Reporting Limit

### Purgeable Halocarbons by GC/MS

Lab #: 188259	Location: Woytak Oakland Phase III Investigatio
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2006-21	Analysis: EPA 8260B
Field ID: BH-11-GW	Batch#: 115685
Lab ID: 188259-002	Sampled: 07/21/06
Matrix: Water	Received: 07/21/06
Units: ug/L	Analyzed: 07/25/06
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	5.3	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	48	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	118	80-130
Toluene-d8	102	80-120
Bromofluorobenzene	108	80-122

ND= Not Detected  
 RL= Reporting Limit

**Purgeable Halocarbons by GC/MS**

Lab #: 188259	Location: Woytak Oakland Phase III Investigatio
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2006-21	Analysis: EPA 8260B
Field ID: BH-12-GW	Batch#: 115685
Lab ID: 188259-003	Sampled: 07/21/06
Matrix: Water	Received: 07/21/06
Units: ug/L	Analyzed: 07/26/06
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	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	118	80-130
Toluene-d8	100	80-120
Bromofluorobenzene	109	80-122

ND= Not Detected

RL= Reporting Limit



## Purgeable Halocarbons by GC/MS

Lab #: 188259	Location: Woytak Oakland Phase III Investigatio
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2006-21	Analysis: EPA 8260B
Field ID: BH-14-GW	Batch#: 115685
Lab ID: 188259-004	Sampled: 07/21/06
Matrix: Water	Received: 07/21/06
Units: ug/L	Analyzed: 07/26/06
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	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	120	80-130
Toluene-d8	103	80-120
Bromofluorobenzene	108	80-122

ND= Not Detected

RL= Reporting Limit

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## Batch QC Report

## Purgeable Halocarbons by GC/MS

Lab #:	188259	Location:	Woytak Oakland Phase III Investigatio
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC349001	Batch#:	115685
Matrix:	Water	Analyzed:	07/25/06
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	113	80-130
Toluene-d8	99	80-120
Bromofluorobenzene	108	80-122

ND= Not Detected  
 RL= Reporting Limit

## Batch QC Report

## Purgeable Halocarbons by GC/MS

Lab #: 188259	Location: Woytak Oakland Phase III Investigatio
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2006-21	Analysis: EPA 8260B
Type: BLANK	Diln Fac: 1.000
Lab ID: QC349002	Batch#: 115685
Matrix: Water	Analyzed: 07/25/06
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	111	80-130
Toluene-d8	100	80-120
Bromofluorobenzene	107	80-122

ND= Not Detected

L= Reporting Limit





## Batch QC Report

## Purgeable Halocarbons by GC/MS

Lab #:	188259	Location:	Woytak Oakland Phase III Investigatio
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC349000	Batch#:	115685
Matrix:	Water	Analyzed:	07/25/06
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	24.09	96	59-172
Trichloroethene	25.00	24.28	97	62-137
Chlorobenzene	25.00	24.11	96	60-133

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	111	80-130
Toluene-d8	102	80-120
Bromofluorobenzene	100	80-122

Batch QC Report

Purgeable Halocarbons by GC/MS

Lab #: 188259	Location: Woytak Oakland Phase III Investigatio
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2006-21	Analysis: EPA 8260B
Field ID: ZZZZZZZZZZ	Batch#: 115685
MSS Lab ID: 188271-001	Sampled: 07/20/06
Matrix: Water	Received: 07/21/06
Units: ug/L	Analyzed: 07/25/06
Diln Fac: 1.000	

Type: MS Lab ID: QC349018

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.08940	25.00	25.43	102	59-172
Trichloroethene	<0.08663	25.00	24.61	98	62-137
Chlorobenzene	<0.04954	25.00	24.01	96	60-133

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	114	80-130
Toluene-d8	102	80-120
Bromofluorobenzene	100	80-122

Type: MSD Lab ID: QC349019

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	26.38	106	59-172	4	22
Trichloroethene	25.00	26.66	107	62-137	8	24
Chlorobenzene	25.00	25.18	101	60-133	5	21

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	112	80-130
Toluene-d8	100	80-120
Bromofluorobenzene	103	80-122

RPD= Relative Percent Difference



## Purgeable Halocarbons by GC/MS

Lab #:	188259	Location:	Woytak Oakland Phase III Investigatio
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Field ID:	BH-05-2.5'	Diln Fac:	0.9259
Lab ID:	188259-005	Batch#:	115629
Matrix:	Soil	Sampled:	07/21/06
Units:	ug/Kg	Received:	07/21/06
Basis:	as received	Analyzed:	07/24/06

Analyte	Result	RL
Chloromethane	ND	9.3
Vinyl Chloride	ND	9.3
Bromomethane	ND	9.3
Chloroethane	ND	9.3
Trichlorofluoromethane	ND	4.6
Freon 113	ND	4.6
1,1-Dichloroethene	ND	4.6
Methylene Chloride	ND	46
trans-1,2-Dichloroethene	ND	4.6
1,1-Dichloroethane	ND	4.6
cis-1,2-Dichloroethene	ND	4.6
Chloroform	ND	4.6
1,1,1-Trichloroethane	ND	4.6
Carbon Tetrachloride	ND	4.6
1,2-Dichloroethane	ND	4.6
Trichloroethene	ND	4.6
1,2-Dichloropropane	ND	4.6
Bromodichloromethane	ND	4.6
cis-1,3-Dichloropropene	ND	4.6
trans-1,3-Dichloropropene	ND	4.6
1,1,2-Trichloroethane	ND	4.6
Tetrachloroethene	ND	4.6
Dibromochloromethane	ND	4.6
Chlorobenzene	ND	4.6
Bromoform	ND	9.3
1,1,2,2-Tetrachloroethane	ND	4.6
1,3-Dichlorobenzene	ND	4.6
1,4-Dichlorobenzene	ND	4.6
1,2-Dichlorobenzene	ND	4.6

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	95	76-130
Toluene-d8	101	80-120
Bromofluorobenzene	101	80-126

ND= Not Detected

RL= Reporting Limit



## Purgeable Halocarbons by GC/MS

Lab #:	188259	Location:	Woytak Oakland Phase III Investigatio
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Field ID:	BH-05-5'	Diln Fac:	0.9804
Lab ID:	188259-006	Batch#:	115629
Matrix:	Soil	Sampled:	07/21/06
Units:	ug/Kg	Received:	07/21/06
Basis:	as received	Analyzed:	07/24/06

Analyte	Result	RL
Chloromethane	ND	9.8
Vinyl Chloride	ND	9.8
Bromomethane	ND	9.8
Chloroethane	ND	9.8
Trichlorofluoromethane	ND	4.9
Freon 113	ND	4.9
1,1-Dichloroethene	ND	4.9
Methylene Chloride	ND	4.9
trans-1,2-Dichloroethene	ND	4.9
1,1-Dichloroethane	ND	4.9
cis-1,2-Dichloroethene	ND	4.9
Chloroform	ND	4.9
1,1,1-Trichloroethane	ND	4.9
Carbon Tetrachloride	ND	4.9
1,2-Dichloroethane	ND	4.9
Trichloroethene	ND	4.9
1,2-Dichloropropane	ND	4.9
Bromodichloromethane	ND	4.9
cis-1,3-Dichloropropene	ND	4.9
trans-1,3-Dichloropropene	ND	4.9
1,1,2-Trichloroethane	ND	4.9
Tetrachloroethene	ND	4.9
Dibromochloromethane	ND	4.9
Chlorobenzene	ND	4.9
Bromoform	ND	9.8
1,1,2,2-Tetrachloroethane	ND	4.9
1,3-Dichlorobenzene	ND	4.9
1,4-Dichlorobenzene	ND	4.9
1,2-Dichlorobenzene	ND	4.9

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	95	76-130
Toluene-d8	100	80-120
Bromofluorobenzene	102	80-126

ND= Not Detected

RL= Reporting Limit

**Purgeable Halocarbons by GC/MS**

Lab #:	188259	Location:	Woytak Oakland Phase III Investigatio
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Field ID:	BH-05-10'	Diln Fac:	0.9259
Lab ID:	188259-007	Batch#:	115631
Matrix:	Soil	Sampled:	07/21/06
Units:	ug/Kg	Received:	07/21/06
Basis:	as received	Analyzed:	07/24/06

Analyte	Result	RL
Chloromethane	ND	9.3
Vinyl Chloride	ND	9.3
Bromomethane	ND	9.3
Chloroethane	ND	9.3
Trichlorofluoromethane	ND	4.6
Freon 113	ND	4.6
1,1-Dichloroethene	ND	4.6
Methylene Chloride	ND	46
trans-1,2-Dichloroethene	ND	4.6
1,1-Dichloroethane	ND	4.6
cis-1,2-Dichloroethene	ND	4.6
Chloroform	ND	4.6
1,1,1-Trichloroethane	ND	4.6
Carbon Tetrachloride	ND	4.6
1,2-Dichloroethane	ND	4.6
Trichloroethene	ND	4.6
1,2-Dichloropropane	ND	4.6
Bromodichloromethane	ND	4.6
cis-1,3-Dichloropropene	ND	4.6
trans-1,3-Dichloropropene	ND	4.6
1,1,2-Trichloroethane	ND	4.6
Tetrachloroethene	ND	4.6
Dibromochloromethane	ND	4.6
Chlorobenzene	ND	4.6
Bromoform	ND	9.3
1,1,2,2-Tetrachloroethane	ND	4.6
1,3-Dichlorobenzene	ND	4.6
1,4-Dichlorobenzene	ND	4.6
1,2-Dichlorobenzene	ND	4.6

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	100	76-130
Toluene-d8	100	80-120
Bromofluorobenzene	103	80-126

ND= Not Detected  
 RL= Reporting Limit

### Purgeable Halocarbons by GC/MS

Lab #: 188259	Location: Woytak Oakland Phase III Investigatio
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2006-21	Analysis: EPA 8260B
Field ID: BH-05-15'	Diln Fac: 0.9259
Lab ID: 188259-008	Batch#: 115631
Matrix: Soil	Sampled: 07/21/06
Units: ug/Kg	Received: 07/21/06
Basis: as received	Analyzed: 07/24/06

Analyte	Result	RL
Chloromethane	ND	9.3
Vinyl Chloride	ND	9.3
Bromomethane	ND	9.3
Chloroethane	ND	9.3
Trichlorofluoromethane	ND	4.6
Freon 113	ND	4.6
1,1-Dichloroethene	ND	4.6
Methylene Chloride	ND	46
trans-1,2-Dichloroethene	ND	4.6
1,1-Dichloroethane	ND	4.6
cis-1,2-Dichloroethene	ND	4.6
Chloroform	ND	4.6
1,1,1-Trichloroethane	ND	4.6
Carbon Tetrachloride	ND	4.6
1,2-Dichloroethane	ND	4.6
Trichloroethene	ND	4.6
1,2-Dichloropropane	ND	4.6
Bromodichloromethane	ND	4.6
cis-1,3-Dichloropropene	ND	4.6
trans-1,3-Dichloropropene	ND	4.6
1,1,2-Trichloroethane	ND	4.6
Tetrachloroethene	ND	4.6
Dibromochloromethane	ND	4.6
Chlorobenzene	ND	4.6
Bromoform	ND	9.3
1,1,2,2-Tetrachloroethane	ND	4.6
1,3-Dichlorobenzene	ND	4.6
1,4-Dichlorobenzene	ND	4.6
1,2-Dichlorobenzene	ND	4.6

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	101	76-130
Toluene-d8	100	80-120
Bromofluorobenzene	103	80-126

ND= Not Detected  
 RL= Reporting Limit



## Purgeable Halocarbons by GC/MS

Lab #:	188259	Location:	Woytak Oakland Phase III Investigatio
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Field ID:	BH-06-2.5'	Diln Fac:	0.9615
Lab ID:	188259-009	Batch#:	115631
Matrix:	Soil	Sampled:	07/21/06
Units:	ug/Kg	Received:	07/21/06
Basis:	as received	Analyzed:	07/24/06

Analyte	Result	RL
Chloromethane	ND	9.6
Vinyl Chloride	ND	9.6
Bromomethane	ND	9.6
Chloroethane	ND	9.6
Trichlorofluoromethane	ND	4.8
Freon 113	ND	4.8
1,1-Dichloroethene	ND	4.8
Methylene Chloride	ND	48
trans-1,2-Dichloroethene	ND	4.8
1,1-Dichloroethane	ND	4.8
cis-1,2-Dichloroethene	ND	4.8
Chloroform	ND	4.8
1,1,1-Trichloroethane	ND	4.8
Carbon Tetrachloride	ND	4.8
1,2-Dichloroethane	ND	4.8
Trichloroethene	ND	4.8
1,2-Dichloropropane	ND	4.8
Bromodichloromethane	ND	4.8
cis-1,3-Dichloropropene	ND	4.8
trans-1,3-Dichloropropene	ND	4.8
1,1,2-Trichloroethane	ND	4.8
Tetrachloroethene	ND	4.8
Dibromochloromethane	ND	4.8
Chlorobenzene	ND	4.8
Bromoform	ND	9.6
1,1,2,2-Tetrachloroethane	ND	4.8
1,3-Dichlorobenzene	ND	4.8
1,4-Dichlorobenzene	ND	4.8
1,2-Dichlorobenzene	ND	4.8

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	100	76-130
Toluene-d8	100	80-120
Bromofluorobenzene	103	80-126

ND= Not Detected

RL= Reporting Limit



## Purgeable Halocarbons by GC/MS

Lab #: 188259	Location: Woytak Oakland Phase III Investigatio
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2006-21	Analysis: EPA 8260B
Field ID: BH-06-5'	Diln Fac: 0.9615
Lab ID: 188259-010	Batch#: 115631
Matrix: Soil	Sampled: 07/21/06
Units: ug/Kg	Received: 07/21/06
Basis: as received	Analyzed: 07/24/06

Analyte	Result	RL
Chloromethane	ND	9.6
Vinyl Chloride	ND	9.6
Bromomethane	ND	9.6
Chloroethane	ND	9.6
Trichlorofluoromethane	ND	4.8
Freon 113	ND	4.8
1,1-Dichloroethene	ND	4.8
Methylene Chloride	ND	48
trans-1,2-Dichloroethene	ND	4.8
1,1-Dichloroethane	ND	4.8
cis-1,2-Dichloroethene	ND	4.8
Chloroform	ND	4.8
1,1,1-Trichloroethane	ND	4.8
Carbon Tetrachloride	ND	4.8
1,2-Dichloroethane	ND	4.8
Trichloroethene	ND	4.8
1,2-Dichloropropane	ND	4.8
Bromodichloromethane	ND	4.8
cis-1,3-Dichloropropene	ND	4.8
trans-1,3-Dichloropropene	ND	4.8
1,1,2-Trichloroethane	ND	4.8
Tetrachloroethene	ND	4.8
Dibromochloromethane	ND	4.8
Chlorobenzene	ND	4.8
Bromoform	ND	9.6
1,1,2,2-Tetrachloroethane	ND	4.8
1,3-Dichlorobenzene	ND	4.8
1,4-Dichlorobenzene	ND	4.8
1,2-Dichlorobenzene	ND	4.8

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	107	76-130
Toluene-d8	101	80-120
Bromofluorobenzene	104	80-126

ND= Not Detected

RL= Reporting Limit





## Purgeable Halocarbons by GC/MS

Lab #:	188259	Location:	Woytak Oakland Phase III Investigatio
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Field ID:	BH-06-10'	Diln Fac:	0.9259
Lab ID:	188259-011	Batch#:	115631
Matrix:	Soil	Sampled:	07/21/06
Units:	ug/Kg	Received:	07/21/06
Basis:	as received	Analyzed:	07/24/06

Analyte	Result	RL
Chloromethane	ND	9.3
Vinyl Chloride	ND	9.3
Bromomethane	ND	9.3
Chloroethane	ND	9.3
Trichlorofluoromethane	ND	4.6
Freon 113	ND	4.6
1,1-Dichloroethene	ND	4.6
Methylene Chloride	ND	46
trans-1,2-Dichloroethene	ND	4.6
1,1-Dichloroethane	ND	4.6
cis-1,2-Dichloroethene	ND	4.6
Chloroform	ND	4.6
1,1,1-Trichloroethane	ND	4.6
Carbon Tetrachloride	ND	4.6
1,2-Dichloroethane	ND	4.6
Trichloroethene	ND	4.6
1,2-Dichloropropane	ND	4.6
Bromodichloromethane	ND	4.6
cis-1,3-Dichloropropene	ND	4.6
trans-1,3-Dichloropropene	ND	4.6
1,1,2-Trichloroethane	ND	4.6
Tetrachloroethene	ND	4.6
Dibromochloromethane	ND	4.6
Chlorobenzene	ND	4.6
Bromoform	ND	9.3
1,1,2,2-Tetrachloroethane	ND	4.6
1,3-Dichlorobenzene	ND	4.6
1,4-Dichlorobenzene	ND	4.6
1,2-Dichlorobenzene	ND	4.6

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	108	76-130
Toluene-d8	101	80-120
Bromofluorobenzene	103	80-126

ND= Not Detected

RL= Reporting Limit

### Purgeable Halocarbons by GC/MS

Lab #: 188259	Location: Woytak Oakland Phase III Investigatio
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2006-21	Analysis: EPA 8260B
Field ID: BH-06-15'	Diln Fac: 0.9434
Lab ID: 188259-012	Batch#: 115631
Matrix: Soil	Sampled: 07/21/06
Units: ug/Kg	Received: 07/21/06
Basis: as received	Analyzed: 07/24/06

Analyte	Result	RL
Chloromethane	ND	9.4
Vinyl Chloride	ND	9.4
Bromomethane	ND	9.4
Chloroethane	ND	9.4
Trichlorofluoromethane	ND	4.7
Freon 113	ND	4.7
1,1-Dichloroethene	ND	4.7
Methylene Chloride	ND	4.7
trans-1,2-Dichloroethene	ND	4.7
1,1-Dichloroethane	ND	4.7
cis-1,2-Dichloroethene	ND	4.7
Chloroform	ND	4.7
1,1,1-Trichloroethane	ND	4.7
Carbon Tetrachloride	ND	4.7
1,2-Dichloroethane	ND	4.7
Trichloroethene	ND	4.7
1,2-Dichloropropane	ND	4.7
Bromodichloromethane	ND	4.7
cis-1,3-Dichloropropene	ND	4.7
trans-1,3-Dichloropropene	ND	4.7
1,1,2-Trichloroethane	ND	4.7
Tetrachloroethene	ND	4.7
Dibromochloromethane	ND	4.7
Chlorobenzene	ND	4.7
Bromoform	ND	9.4
1,1,2,2-Tetrachloroethane	ND	4.7
1,3-Dichlorobenzene	ND	4.7
1,4-Dichlorobenzene	ND	4.7
1,2-Dichlorobenzene	ND	4.7

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	107	76-130
Toluene-d8	102	80-120
Bromofluorobenzene	102	80-126

ND= Not Detected

L= Reporting Limit

### Purgeable Halocarbons by GC/MS

Lab #: 188259	Location: Woytak Oakland Phase III Investigatio
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2006-21	Analysis: EPA 8260B
Field ID: BH-12-5'	Diln Fac: 0.9259
Lab ID: 188259-013	Batch#: 115631
Matrix: Soil	Sampled: 07/21/06
Units: ug/Kg	Received: 07/21/06
Basis: as received	Analyzed: 07/24/06

Analyte	Result	RL
Chloromethane	ND	9.3
Vinyl Chloride	ND	9.3
Bromomethane	ND	9.3
Chloroethane	ND	9.3
Trichlorofluoromethane	ND	4.6
Freon 113	ND	4.6
1,1-Dichloroethene	ND	4.6
Methylene Chloride	ND	46
trans-1,2-Dichloroethene	ND	4.6
1,1-Dichloroethane	ND	4.6
cis-1,2-Dichloroethene	ND	4.6
Chloroform	ND	4.6
1,1,1-Trichloroethane	ND	4.6
Carbon Tetrachloride	ND	4.6
1,2-Dichloroethane	ND	4.6
Trichloroethene	ND	4.6
1,2-Dichloropropane	ND	4.6
Bromodichloromethane	ND	4.6
cis-1,3-Dichloropropene	ND	4.6
trans-1,3-Dichloropropene	ND	4.6
1,1,2-Trichloroethane	ND	4.6
Tetrachloroethene	ND	4.6
Dibromochloromethane	ND	4.6
Chlorobenzene	ND	4.6
Bromoform	ND	9.3
1,1,2,2-Tetrachloroethane	ND	4.6
1,3-Dichlorobenzene	ND	4.6
1,4-Dichlorobenzene	ND	4.6
1,2-Dichlorobenzene	ND	4.6

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	112	76-130
Toluene-d8	100	80-120
Bromofluorobenzene	102	80-126

ND= Not Detected  
 RL= Reporting Limit

### Purgeable Halocarbons by GC/MS

Lab #: 188259	Location: Woytak Oakland Phase III Investigatio
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2006-21	Analysis: EPA 8260B
Field ID: BH-12-15'	Diln Fac: 0.9615
Lab ID: 188259-014	Batch#: 115631
Matrix: Soil	Sampled: 07/21/06
Units: ug/Kg	Received: 07/21/06
Basis: as received	Analyzed: 07/24/06

Analyte	Result	RL
Chloromethane	ND	9.6
Vinyl Chloride	ND	9.6
Bromomethane	ND	9.6
Chloroethane	ND	9.6
Trichlorofluoromethane	ND	4.8
Freon 113	ND	4.8
1,1-Dichloroethene	ND	4.8
Methylene Chloride	ND	48
trans-1,2-Dichloroethene	ND	4.8
1,1-Dichloroethane	ND	4.8
cis-1,2-Dichloroethene	ND	4.8
Chloroform	ND	4.8
1,1,1-Trichloroethane	ND	4.8
Carbon Tetrachloride	ND	4.8
1,2-Dichloroethane	ND	4.8
Trichloroethene	ND	4.8
1,2-Dichloropropane	ND	4.8
Bromodichloromethane	ND	4.8
cis-1,3-Dichloropropene	ND	4.8
trans-1,3-Dichloropropene	ND	4.8
1,1,2-Trichloroethane	ND	4.8
Tetrachloroethene	ND	4.8
Dibromochloromethane	ND	4.8
Chlorobenzene	ND	4.8
Bromoform	ND	9.6
1,1,2,2-Tetrachloroethane	ND	4.8
1,3-Dichlorobenzene	ND	4.8
1,4-Dichlorobenzene	ND	4.8
1,2-Dichlorobenzene	ND	4.8

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	112	76-130
Toluene-d8	103	80-120
Bromofluorobenzene	104	80-126

ND= Not Detected

RL= Reporting Limit

**Purgeable Halocarbons by GC/MS**

Lab #:	188259	Location:	Woytak Oakland Phase III Investigatio
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Field ID:	BH-13-5'	Diln Fac:	0.9434
Lab ID:	188259-015	Batch#:	115631
Matrix:	Soil	Sampled:	07/21/06
Units:	ug/Kg	Received:	07/21/06
Basis:	as received	Analyzed:	07/24/06

Analyte	Result	RL
Chloromethane	ND	9.4
Vinyl Chloride	ND	9.4
Bromomethane	ND	9.4
Chloroethane	ND	9.4
Trichlorofluoromethane	ND	4.7
Freon 113	ND	4.7
1,1-Dichloroethene	ND	4.7
Methylene Chloride	ND	47
trans-1,2-Dichloroethene	ND	4.7
1,1-Dichloroethane	ND	4.7
cis-1,2-Dichloroethene	ND	4.7
Chloroform	ND	4.7
1,1,1-Trichloroethane	ND	4.7
Carbon Tetrachloride	ND	4.7
1,2-Dichloroethane	ND	4.7
Trichloroethene	ND	4.7
1,2-Dichloropropane	ND	4.7
Bromodichloromethane	ND	4.7
cis-1,3-Dichloropropene	ND	4.7
trans-1,3-Dichloropropene	ND	4.7
1,1,2-Trichloroethane	ND	4.7
Tetrachloroethene	ND	4.7
Dibromochloromethane	ND	4.7
Chlorobenzene	ND	4.7
Bromoform	ND	9.4
1,1,2,2-Tetrachloroethane	ND	4.7
1,3-Dichlorobenzene	ND	4.7
1,4-Dichlorobenzene	ND	4.7
1,2-Dichlorobenzene	ND	4.7

Surrogate	IREC	Limits
1,2-Dichloroethane-d4	108	76-130
Toluene-d8	101	80-120
Bromofluorobenzene	103	80-126

ND= Not Detected

RL= Reporting Limit



## Purgeable Halocarbons by GC/MS

Lab #:	188259	Location:	Woytak Oakland Phase III Investigatio
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Field ID:	BH-13-15'	Diln Fac:	0.9259
Lab ID:	188259-016	Batch#:	115642
Matrix:	Soil	Sampled:	07/21/06
Units:	ug/Kg	Received:	07/21/06
Basis:	as received	Analyzed:	07/24/06

Analyte	Result	RL
Chloromethane	ND	9.3
Vinyl Chloride	ND	9.3
Bromomethane	ND	9.3
Chloroethane	ND	9.3
Trichlorofluoromethane	ND	4.6
Freon 113	ND	4.6
1,1-Dichloroethene	ND	4.6
Methylene Chloride	ND	46
trans-1,2-Dichloroethene	ND	4.6
1,1-Dichloroethane	ND	4.6
cis-1,2-Dichloroethene	ND	4.6
Chloroform	ND	4.6
1,1,1-Trichloroethane	ND	4.6
Carbon Tetrachloride	ND	4.6
1,2-Dichloroethane	ND	4.6
Trichloroethene	ND	4.6
1,2-Dichloropropane	ND	4.6
Bromodichloromethane	ND	4.6
cis-1,3-Dichloropropene	ND	4.6
trans-1,3-Dichloropropene	ND	4.6
1,1,2-Trichloroethane	ND	4.6
Tetrachloroethene	ND	4.6
Dibromochloromethane	ND	4.6
Chlorobenzene	ND	4.6
Bromoform	ND	9.3
1,1,2,2-Tetrachloroethane	ND	4.6
1,3-Dichlorobenzene	ND	4.6
1,4-Dichlorobenzene	ND	4.6
1,2-Dichlorobenzene	ND	4.6

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	98	76-130
Toluene-d8	103	80-120
Bromofluorobenzene	108	80-126

ND= Not Detected

RL= Reporting Limit

**Purgeable Halocarbons by GC/MS**

Lab #: 188259	Location: Woytak Oakland Phase III Investigatio
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2006-21	Analysis: EPA 8260B
Field ID: BH-14-5'	Diln Fac: 0.9434
Lab ID: 188259-017	Batch#: 115642
Matrix: Soil	Sampled: 07/21/06
Units: ug/Kg	Received: 07/21/06
Basis: as received	Analyzed: 07/24/06

Analyte	Result	RL
Chloromethane	ND	9.4
Vinyl Chloride	ND	9.4
Bromomethane	ND	9.4
Chloroethane	ND	9.4
Trichlorofluoromethane	ND	4.7
Freon 113	ND	4.7
1,1-Dichloroethene	ND	4.7
Methylene Chloride	ND	47
trans-1,2-Dichloroethene	ND	4.7
1,1-Dichloroethane	ND	4.7
cis-1,2-Dichloroethene	ND	4.7
Chloroform	ND	4.7
1,1,1-Trichloroethane	ND	4.7
Carbon Tetrachloride	ND	4.7
1,2-Dichloroethane	ND	4.7
Trichloroethene	ND	4.7
1,2-Dichloropropane	ND	4.7
Bromodichloromethane	ND	4.7
cis-1,3-Dichloropropene	ND	4.7
trans-1,3-Dichloropropene	ND	4.7
1,1,2-Trichloroethane	ND	4.7
Tetrachloroethene	ND	4.7
Dibromochloromethane	ND	4.7
Chlorobenzene	ND	4.7
Bromoform	ND	9.4
1,1,2,2-Tetrachloroethane	ND	4.7
1,3-Dichlorobenzene	ND	4.7
1,4-Dichlorobenzene	ND	4.7
1,2-Dichlorobenzene	ND	4.7

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	103	76-130
Toluene-d8	107	80-120
Bromofluorobenzene	107	80-126

ND= Not Detected

RL= Reporting Limit

## Purgeable Halocarbons by GC/MS

Lab #: 188259	Location: Woytak Oakland Phase III Investigatio
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2006-21	Analysis: EPA 8260B
Field ID: BH-14-15'	Diln Fac: 0.9615
Lab ID: 188259-018	Batch#: 115642
Matrix: Soil	Sampled: 07/21/06
Units: ug/Kg	Received: 07/21/06
Basis: as received	Analyzed: 07/24/06

Analyte	Result	RL
Chloromethane	ND	9.6
Vinyl Chloride	ND	9.6
Bromomethane	ND	9.6
Chloroethane	ND	9.6
Trichlorofluoromethane	ND	4.8
Freon 113	ND	4.8
1,1-Dichloroethene	ND	4.8
Methylene Chloride	ND	48
trans-1,2-Dichloroethene	ND	4.8
1,1-Dichloroethane	ND	4.8
cis-1,2-Dichloroethene	ND	4.8
Chloroform	ND	4.8
1,1,1-Trichloroethane	ND	4.8
Carbon Tetrachloride	ND	4.8
1,2-Dichloroethane	ND	4.8
Trichloroethene	ND	4.8
1,2-Dichloropropane	ND	4.8
Bromodichloromethane	ND	4.8
cis-1,3-Dichloropropene	ND	4.8
trans-1,3-Dichloropropene	ND	4.8
1,1,2-Trichloroethane	ND	4.8
Tetrachloroethene	ND	4.8
Dibromochloromethane	ND	4.8
Chlorobenzene	ND	4.8
Bromoform	ND	9.6
1,1,2,2-Tetrachloroethane	ND	4.8
1,3-Dichlorobenzene	ND	4.8
1,4-Dichlorobenzene	ND	4.8
1,2-Dichlorobenzene	ND	4.8

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	98	76-130
Toluene-d8	104	80-120
Bromofluorobenzene	111	80-126

ND= Not Detected

RL= Reporting Limit



## Batch QC Report

## Purgeable Halocarbons by GC/MS

Lab #:	188259	Location:	Woytak Oakland Phase III Investigatio
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Type:	BLANK	Basis:	as received
Lab ID:	QC348806	Diln Fac:	1.000
Matrix:	Soil	Batch#:	115629
Units:	ug/Kg	Analyzed:	07/24/06

Analyte	Result	RL
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	50
trans-1,2-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0
Chlorobenzene	ND	5.0
Bromoform	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	110	76-130
Toluene-d8	104	80-120
Bromofluorobenzene	101	80-126

ND= Not Detected  
 RL= Reporting Limit

## Batch QC Report

## Purgeable Halocarbons by GC/MS

Lab #: 188259	Location: Woytak Oakland Phase III Investigatio
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2006-21	Analysis: EPA 8260B
Type: BLANK	Basis: as received
Lab ID: QC348815	Diln Fac: 1.000
Matrix: Soil	Batch#: 115631
Units: ug/Kg	Analyzed: 07/24/06

Analyte	Result	RL
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	50
trans-1,2-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0
Chlorobenzene	ND	5.0
Bromoform	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	92	76-130
Toluene-d8	100	80-120
Bromofluorobenzene	103	80-126

ND= Not Detected

RL= Reporting Limit

## Batch QC Report

## Purgeable Halocarbons by GC/MS

Lab #:	188259	Location:	Woytak Oakland Phase III Investigatio
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Type:	BLANK	Basis:	as received
Lab ID:	QC348868	Diln Fac:	1.000
Matrix:	Soil	Batch#:	115642
Units:	ug/Kg	Analyzed:	07/24/06

Analyte	Result	RL
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	50
trans-1,2-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0
Chlorobenzene	ND	5.0
Bromoform	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	94	76-130
Toluene-d8	102	80-120
Bromofluorobenzene	111	80-126

ND= Not Detected  
 RL= Reporting Limit



Batch QC Report

Purgeable Halocarbons by GC/MS

Lab #:	188259	Location:	Woytak Oakland Phase III Investigatio
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Type:	LCS	Basis:	as received
Lab ID:	QC348805	Diln Fac:	1.000
Matrix:	Soil	Batch#:	115629
Units:	ug/Kg	Analyzed:	07/24/06

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	27.37	109	79-132
Trichloroethene	25.00	27.30	109	80-121
Chlorobenzene	25.00	23.98	96	80-120

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	111	76-130
Toluene-d8	107	80-120
Bromofluorobenzene	101	80-126



Batch QC Report

Purgeable Halocarbons by GC/MS

Lab #:	188259	Location:	Woytak Oakland Phase III Investigatio
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Type:	LCS	Basis:	as received
Lab ID:	QC348812	Diln Fac:	1.000
Matrix:	Soil	Batch#:	115631
Units:	ug/Kg	Analyzed:	07/24/06

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	24.24	97	79-132
Trichloroethene	25.00	22.12	88	80-121
Chlorobenzene	25.00	24.12	96	80-120

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	96	76-130
Toluene-d8	104	80-120
Bromofluorobenzene	104	80-126

## Batch QC Report

## Purgeable Halocarbons by GC/MS

Lab #:	188259	Location:	Woytak Oakland Phase III Investigatio
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Matrix:	Soil	Diln Fac:	1.000
Units:	ug/Kg	Batch#:	115642
Basis:	as received	Analyzed:	07/24/06

Type: BS Lab ID: QC348866

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	22.76	91	79-132
Trichloroethene	25.00	26.45	106	80-121
Chlorobenzene	25.00	24.02	96	80-120

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	84	76-130
Toluene-d8	103	80-120
Bromofluorobenzene	106	80-126

Type: BSD Lab ID: QC348867

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	27.77	111	79-132	20	20
Trichloroethene	25.00	26.06	104	80-121	1	20
Chlorobenzene	25.00	25.19	101	80-120	5	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	87	76-130
Toluene-d8	105	80-120
Bromofluorobenzene	109	80-126

RPD= Relative Percent Difference



## Batch QC Report

## Purgeable Halocarbons by GC/MS

Lab #:	188259	Location:	Woytak Oakland Phase III Investigatio
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Diln Fac:	166.7
MSS Lab ID:	188210-001	Batch#:	115629
Matrix:	Soil	Sampled:	07/19/06
Units:	ug/Kg	Received:	07/19/06
Basis:	as received	Analyzed:	07/24/06

Type: MS Lab ID: QC348810

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<36.13	4,167	5,532	133	72-135
Trichloroethene	<12.70	4,167	4,916	118	65-131
Chlorobenzene	<14.94	4,167	4,366	105	59-120

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	92	76-130
Toluene-d8	101	80-120
Bromofluorobenzene	99	80-126
Trifluorotoluene (MeOH)	110	53-133

Type: MSD Lab ID: QC348811

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	4,167	5,545	133	72-135	0	22
Trichloroethene	4,167	4,688	113	65-131	5	20
Chlorobenzene	4,167	4,137	99	59-120	5	21

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	90	76-130
Toluene-d8	102	80-120
Bromofluorobenzene	99	80-126
Trifluorotoluene (MeOH)	112	53-133

RPD= Relative Percent Difference

## Batch QC Report

## Purgeable Halocarbons by GC/MS

Lab #: 188259	Location: Woytak Oakland Phase III Investigatio
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2006-21	Analysis: EPA 8260B
Field ID: ZZZZZZZZZZ	Diln Fac: 0.9804
MSS Lab ID: 188258-001	Batch#: 115631
Matrix: Soil	Sampled: 07/21/06
Units: ug/Kg	Received: 07/21/06
Basis: as received	Analyzed: 07/24/06

Type: MS Lab ID: QC348861

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.3138	49.02	46.46	95	72-135
Trichloroethene	<0.3147	49.02	40.57	83	65-131
Chlorobenzene	<0.3583	49.02	42.55	87	59-120

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	97	76-130
Toluene-d8	104	80-120
Bromofluorobenzene	104	80-126

Type: MSD Lab ID: QC348862

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	49.02	48.57	99	72-135	4	22
Trichloroethene	49.02	42.58	87	65-131	5	20
Chlorobenzene	49.02	44.64	91	59-120	5	21

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	95	76-130
Toluene-d8	104	80-120
Bromofluorobenzene	103	80-126

PD= Relative Percent Difference



## Batch QC Report

## Purgeable Halocarbons by GC/MS

Lab #:	188259	Location:	Woytak Oakland Phase III Investigatio
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Field ID:	BH-13-15'	Diln Fac:	0.9259
MSS Lab ID:	188259-016	Batch#:	115642
Matrix:	Soil	Sampled:	07/21/06
Units:	ug/Kg	Received:	07/21/06
Basis:	as received	Analyzed:	07/24/06

Type: MS Lab ID: QC348902

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.8526	23.15	24.37	105	72-135
Trichloroethene	<0.2519	23.15	21.01	91	65-131
Chlorobenzene	<0.3620	23.15	19.03	82	59-120

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	95	76-130
Toluene-d8	104	80-120
Bromofluorobenzene	104	80-126

Type: MSD Lab ID: QC348903

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	23.15	26.02	112	72-135	7	22
Trichloroethene	23.15	21.90	95	65-131	4	20
Chlorobenzene	23.15	19.97	86	59-120	5	21

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	94	76-130
Toluene-d8	103	80-120
Bromofluorobenzene	110	80-126

RPD= Relative Percent Difference

## Batch QC Report

## Curtis &amp; Tompkins Laboratories Analytical Report

Lab #: 188259	Location: Woytak Oakland Phase III Investigatio
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2006-21	Analysis: EPA 8015B
Field ID: BH-08-GW	Batch#: 115595
MSS Lab ID: 188238-019	Sampled: 07/20/06
Matrix: Water	Received: 07/20/06
Units: ug/L	Analyzed: 07/21/06
Diln Fac: 1.000	

Type: MS Lab ID: QC348705

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	18.75	2,000	1,939	96	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	135	69-137
Bromofluorobenzene (FID)	109	80-133

Type: MSD Lab ID: QC348706

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,923	95	80-120	1	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	136	69-137
Bromofluorobenzene (FID)	111	80-133

RPD= Relative Percent Difference



A N A L Y T I C A L   R E P O R T

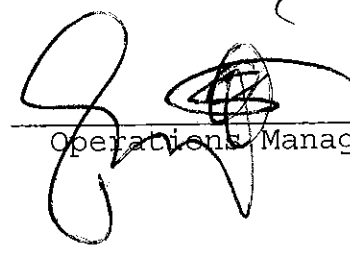
Prepared for:

Stellar Environmental Solutions  
2198 6th Street  
Suite 201  
Berkeley, CA 94710

Date: 31-JUL-06  
Lab Job Number: 188288  
Project ID: 2006-21  
Location: Woytak Oakland Phase III Investigatio

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Reviewed by:   
Project Manager

Reviewed by:   
Operations Manager

This package may be reproduced only in its entirety.

## CASE NARRATIVE

Laboratory number: 188288  
Client: Stellar Environmental Solutions  
Project: 2006-21  
Location: Woytak Oakland Phase III Investigatio  
Request Date: 07/24/06  
Samples Received: 07/24/06

This hardcopy data package contains sample and QC results for three water samples, requested for the above referenced project on 07/24/06. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B and EPA 8021B):  
No analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B):  
No analytical problems were encountered.

100200

# Chain of Custody Record

Lab job no. \_\_\_\_\_

Laboratory Curtis and Tompkins, Ltd.  
Address 2323 Fifth Street  
Berkeley, California 94710  
510-486-0900

Method of Shipment Hand Delivery  
Shipment No. \_\_\_\_\_  
Airbill No. \_\_\_\_\_

Date \_\_\_\_\_

Page 1 of 1

Project Owner 65th Street Development Co  
Site Address 1171 Ocean Avenue  
Oakland, California

Cooler No. \_\_\_\_\_  
Project Manager Richard Makdisi  
Telephone No. (510) 644-3123

Project Name Woytak Oakland Phase III Investigation  
Project Number 2006-21

Fax No. (510) 644-3859  
Samplers: (Signature) [Signature]

Filtered	No. of Containers	Analysis Required										Remarks	

*2010 VOCs by 8/24/06  
GAS, STEY, MTBE*

-1  
-2  
-3

Field Sample Number	Location/Depth	Date	Time	Sample Type	Type/Size of Container	Preservation		NO	3	X									
						Cooler	Chemical												
BH-06-GW	-	7/24	925	H <sub>2</sub> O	(3) 40 ML VOA	Yes	HCl	NO	3	X									
BH-05-GW	-	↓	935	↓	(3) 40 ML VOA	↓	↓	↓	3	X									
BH-13-GW	-	↓	945	↓	(4) 40 ML VOA	↓	↓	↓	6	X	X								

Relinquished by: [Signature]  
Signature [Signature]  
Printed Joe Dinan  
Company Stellar Environmental

Date 7/24/06  
Received by: [Signature]  
Signature [Signature]  
Printed RICHARD MAKDISI  
Company SES

~~Relinquished by: \_\_\_\_\_  
Signature \_\_\_\_\_  
Printed \_\_\_\_\_  
Company \_\_\_\_\_~~

Date 7/24/06  
Received by: [Signature]  
Signature [Signature]  
Printed LAVANNA COIT  
Company C&T

Turnaround Time: 5 Day TAT  
Comments: REC'D cold; intact IR

Relinquished by: \_\_\_\_\_  
Signature \_\_\_\_\_  
Printed \_\_\_\_\_  
Company \_\_\_\_\_

2006-00-01

## Curtis &amp; Tompkins Laboratories Analytical Report

Lab #: 188288	Location: Woytak Oakland Phase III Investigatio
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2006-21	
Field ID: BH-13-GW	Batch#: 115638
Matrix: Water	Sampled: 07/24/06
Units: ug/L	Received: 07/24/06
Diln Fac: 1.000	Analyzed: 07/24/06

Type: SAMPLE Lab ID: 188288-003

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	94	69-137	EPA 8015B
Bromofluorobenzene (FID)	100	80-133	EPA 8015B
Trifluorotoluene (PID)	113	64-132	EPA 8021B
Bromofluorobenzene (PID)	118	80-120	EPA 8021B

Type: BLANK Lab ID: QC348843

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	91	69-137	EPA 8015B
Bromofluorobenzene (FID)	96	80-133	EPA 8015B
Trifluorotoluene (PID)	106	64-132	EPA 8021B
Bromofluorobenzene (PID)	112	80-120	EPA 8021B

ND= Not Detected  
 RL= Reporting Limit

## Batch QC Report

## Curtis &amp; Tompkins Laboratories Analytical Report

Lab #:	188288	Location:	Woytak Oakland Phase III Investigatio
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8021B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC348844	Batch#:	115638
Matrix:	Water	Analyzed:	07/24/06
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	22.74	114	72-124
Benzene	20.00	21.31	107	80-120
Toluene	20.00	21.72	109	80-120
Ethylbenzene	20.00	22.23	111	80-120
m,p-Xylenes	20.00	22.87	114	80-120
o-Xylene	20.00	22.81	114	80-120

Surrogate	%REC	Limits
Trifluorotoluene (PID)	111	64-132
Bromofluorobenzene (PID)	114	80-120

## Batch QC Report

## Curtis &amp; Tompkins Laboratories Analytical Report

Lab #:	188288	Location:	Woytak Oakland Phase III Investigatio
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC348845	Batch#:	115638
Matrix:	Water	Analyzed:	07/24/06
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,960	98	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	134	69-137
Bromofluorobenzene (FID)	108	80-133





Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #: 188288	Location: Woytak Oakland Phase III Investigatio
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2006-21	Analysis: EPA 8015B
Field ID: BH-13-GW	Batch#: 115638
MSS Lab ID: 188288-003	Sampled: 07/24/06
Matrix: Water	Received: 07/24/06
Units: ug/L	Analyzed: 07/24/06
Diln Fac: 1.000	

Type: MS Lab ID: QC348925

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	15.68	2,000	1,968	98	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	110	69-137
Bromofluorobenzene (FID)	114	80-133

Type: MSD Lab ID: QC348926

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,908	95	80-120	3	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	103	69-137
Bromofluorobenzene (FID)	105	80-133

RPD= Relative Percent Difference

### Purgeable Halocarbons by GC/MS

Lab #: 188288	Location: Woytak Oakland Phase III Investigatio
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2006-21	Analysis: EPA 8260B
Field ID: BH-06-GW	Batch#: 115708
Lab ID: 188288-001	Sampled: 07/24/06
Matrix: Water	Received: 07/24/06
Units: ug/L	Analyzed: 07/25/06
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	0.7	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	101	80-120
Bromofluorobenzene	99	80-122

ND= Not Detected  
 RL= Reporting Limit



## Purgeable Halocarbons by GC/MS

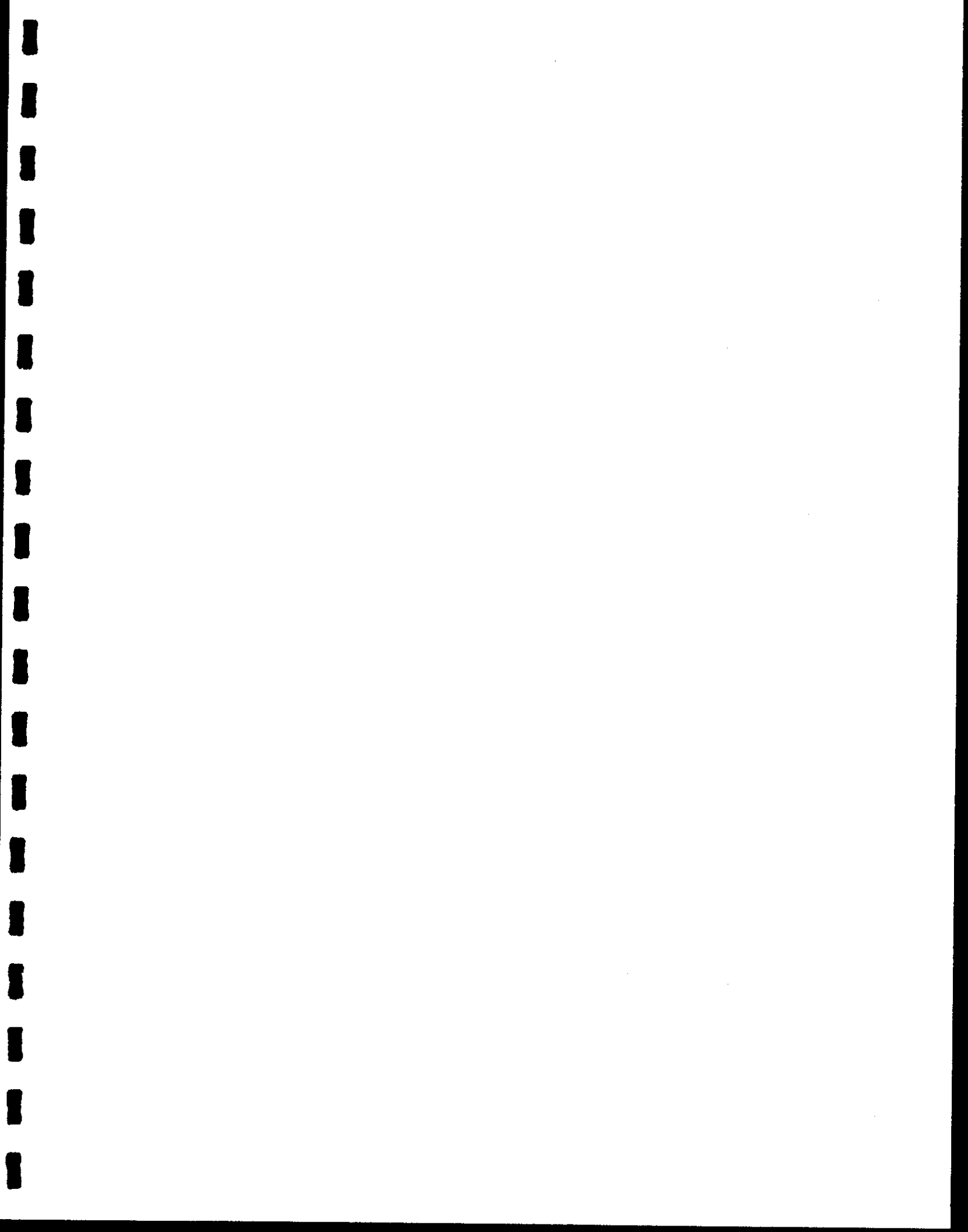
Lab #:	188288	Location:	Woytak Oakland Phase III Investigatio
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Field ID:	BH-05-GW	Batch#:	115708
Lab ID:	188288-002	Sampled:	07/24/06
Matrix:	Water	Received:	07/24/06
Units:	ug/L	Analyzed:	07/25/06
Diln Fac:	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	5.5	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	101	80-120
Bromofluorobenzene	99	80-122

ND= Not Detected

RL= Reporting Limit





## Batch QC Report

## Purgeable Halocarbons by GC/MS

Lab #:	188288	Location:	Woytak Oakland Phase III Investigatio
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-21	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC349088	Batch#:	115708
Matrix:	Water	Analyzed:	07/25/06
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	93	80-130
Toluene-d8	100	80-120
Bromofluorobenzene	95	80-122

ND= Not Detected

RL= Reporting Limit

## Batch QC Report

## Purgeable Halocarbons by GC/MS

Lab #: 188288	Location: Woytak Oakland Phase III Investigatio
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2006-21	Analysis: EPA 8260B
Matrix: Water	Batch#: 115708
Units: ug/L	Analyzed: 07/25/06
Diln Fac: 1.000	

Type: BS Lab ID: QC349086

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	23.95	96	59-172
Trichloroethene	25.00	24.28	97	62-137
Chlorobenzene	25.00	23.91	96	60-133

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	90	80-130
Toluene-d8	100	80-120
Bromofluorobenzene	94	80-122

Type: BSD Lab ID: QC349087

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	24.36	97	59-172	2	22
Trichloroethene	25.00	24.38	98	62-137	0	24
Chlorobenzene	25.00	23.69	95	60-133	1	21

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	92	80-130
Toluene-d8	102	80-120
Bromofluorobenzene	93	80-122

RPD= Relative Percent Difference

# Chain of Custody Record

Lab job no. \_\_\_\_\_

Date \_\_\_\_\_

 Page 1 of 2

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 65th Street Development Co Project Manager Richard Makdisi  
 Site Address 1171 Ocean Avenue Telephone No. (510) 644-3123  
Oakland, California Fax No. (510) 644-3859  
 Project Name Woytak Oakland Phase III Investigation Samplers: (Signature) [Signature]  
 Project Number 2006-21

Field Sample Number	Location/Depth	Date	Time	Sample Type	Type/Size of Container	Preservation		Filtered	No. of Containers	Analysis Required	Remarks			
						Cooler	Chemical							
BH-07-2.5'	2.5'	7/20	1420	Soil	4oz glass jar	Yes	None	NO	1	X				
BH-07-5'	5'	↓	1435	↓	Acetate Sealed	↓	↓	↓	↓	↓	↓	↓		
BH-07-10'	10'		1450		"								1	X
BH-07-15'	15'		1505		"								1	X
BH-08-2.5'	2.5'		850		"								1	X
BH-08-5'	5'		855		4oz glass jar								1	X
BH-08-10'	10'		905		Acetate Sealed								1	X
BH-08-15'	15'		920		"								1	X
BH-09-5'	5'		1200		"								1	X
BH-09-15'	15'		1235		"								1	X
BH-10-5'	5'		1630		"								1	X
BH-10-15'	15'	1455	"	1	X									

 Filtered  
 No. of Containers  
 8010 Vials by 8260

Relinquished by: [Signature]  
 Signature \_\_\_\_\_  
 Printed Joe Dinan  
 Company Stellar Environmental

Date 7/20/06  
 Received by: [Signature]  
 Signature \_\_\_\_\_  
 Printed Richard Makdisi  
 Company SES

Relinquished by: [Signature]  
 Signature \_\_\_\_\_  
 Printed \_\_\_\_\_  
 Company \_\_\_\_\_

Date 7/20/06  
 Received by: [Signature]  
 Signature \_\_\_\_\_  
 Printed Laranne C. [Signature]  
 Company CTT

Turnaround Time: 5 Day TAT  
 Comments: (a) 3 - 40 ml VOAs with HCl preservative

Relinquished by: \_\_\_\_\_  
 Signature \_\_\_\_\_  
 Printed \_\_\_\_\_  
 Company \_\_\_\_\_

2000-00-01

# Chain of Custody Record

Laboratory Curtis and Tompkins, Ltd. Method of Shipment Hand Delivery  
 Address 2323 Fifth Street  
Berkeley, California 94710  
510-486-0900  
 Project Owner 65th Street Development Co  
 Site Address 1171 Ocean Avenue  
Oakland, California  
 Project Manager Richard Makdisi  
 Project Name Woytak Oakland Phase III Investigation  
 Project Number 2006-21  
 Telephone No. (510) 644-3123  
 Fax No. (510) 644-3859  
 Samplers: (Signature) [Signature]

Lab job no. \_\_\_\_\_

Date \_\_\_\_\_

Page 2 of 2

Field Sample Number	Location/ Depth	Date	Time	Sample Type	Type/Size of Container	Preservation		Filtered	No. of Containers	Analysis Required	Remarks					
						Cooler	Chemical									
BH-11-5'	5'	7/20	1355	Soil	Acetate Sleeve	Yes	None	NO	1	X						
BH-11-15'	15'	}	1620	}	4oz glass jar											
BH-15-2.5'	2.5'		1330		"								1	X		
BH-15-5'	5'		1335		Acetate Sleeve								1	X		
BH-15-10'	10'		1350		"								1	X		
BH-15-15'	15'		1410		"								1	X		
BH-08-GW	—		1710		H <sub>2</sub> O							(b)	(b)	6	X	X
BH-09-GW	—		1720		}							(a)	(a)	3	X	
BH-10-GW	—		1715									(a)	(a)	3	X	

Filtered  
 No. of Containers  
5010 VOC's by 8260  
GAH + STEY + MTBE

Relinquished by: Signature <u>[Signature]</u> Printed <u>Joe Dinan</u> Company <u>Stellar Environmental</u>	Date <u>7/20/06</u> Time <u>1730</u>	Received by: Signature <u>[Signature]</u> Printed <u>Richard Makdisi</u> Company <u>SES</u>	Date <u>7/20/06</u> Time <u>1730</u>	Relinquished by: Signature _____ Printed _____ Company _____	Date _____ Time _____	Received by: Signature <u>[Signature]</u> Printed <u>Lavanne Curtis</u> Company <u>C+T</u>	Date <u>7/20/06</u> Time <u>5:30</u>	
Turnaround Time: <u>5 Day TAT</u>				Relinquished by: Signature _____ Printed _____ Company _____				Date _____ Time _____
Comments: <u>(a) 3 - 40 ml VOAs with HCl preservative</u> <u>(b) 6 - 40 ml VOAs w/ HCl</u>				Received by: Signature _____ Printed _____ Company _____				Date _____ Time _____

2000-00-01



# Chain of Custody Record

Lab job no. \_\_\_\_\_

Laboratory Curtis and Tompkins, Ltd. Method of Shipment Hand Delivery  
 Address 2323 Fifth Street  
Berkeley, California 94710  
510-486-0900  
 Project Owner 65th Street Development Co  
 Site Address 1171 Ocean Avenue  
Oakland, California  
 Project Name Woytak Oakland Phase III Investigation  
 Project Number 2006-21  
 Shipment No. \_\_\_\_\_  
 Airbill No. \_\_\_\_\_  
 Cooler No. \_\_\_\_\_  
 Project Manager Richard Makdisi  
 Telephone No. (510) 644-3123  
 Fax No. (510) 644-3859  
 Samplers: (Signature) [Signature]

Date \_\_\_\_\_

Page 1 of 2

Field Sample Number	Location/Depth	Date	Time	Sample Type	Type/Size of Container	Preservation		Analysis Required			Remarks
						Cooler	Chemical	Filtered	No. of Containers		
BH-07-GW	—	7/21	820	H <sub>2</sub> O	3 40mL VOA	Yes	HCl	NO	3	X	
BH-11-GW	—		810		3 40mL VOA				3	X	
BH-12-GW	—		1110		6 40mL VOA				6	X	X
BH-14-GW	—		1330		3 40mL VOA				3	X	
BH-05-2.5'	2.5'		1130	Soil	ACETATE SLEEVE		NONE		1	X	
BH-05-5'	5'		1135						1	X	
BH-05-10'	10'		1140						1	X	
BH-05-15'	15'		1145		7oz Glass Jar				1	X	
BH-06-2.5'	2.5'		1005						1	X	
BH-06-5'	5'		1010		ACETATE SLEEVE				1	X	
BH-06-10'	10'		1015						1	X	
BH-06-15'	15'		1025						1	X	

Filtered  
 No. of Containers  
 2010 VOA's by 8260  
 GAS, BTEX, MTBE

Relinquished by: Signature: <u>[Signature]</u> Printed: <u>Joe Dinan</u> Company: <u>Stellar Environmental</u>	Date: <u>7/21/06</u> Time: <u>325</u>	Received by: Signature: <u>[Signature]</u> Printed: <u>Richard Makdisi</u> Company: <u>[Signature]</u>	Date: <u>7/21/06</u> Time: <u>325</u>	Relinquished by: Signature: _____ Printed: _____ Company: _____	Date: _____ Time: _____	Received by: Signature: <u>[Signature]</u> Printed: <u>Lavanna Cortez</u> Company: <u>Curtis &amp; Tompkins</u>	Date: <u>7/21/06</u> Time: <u>325pm</u>		
Turnaround Time: <u>5 Day TAT</u> Comments: _____ _____ _____				Relinquished by: Signature: _____ Printed: _____ Company: _____				Received by: Signature: _____ Printed: _____ Company: _____	

2000-00-01

# Chain of Custody Record

Laboratory Curtis and Tompkins, Ltd.  
 Address 2323 Fifth Street  
Berkeley, California 94710  
510-486-0900

Method of Shipment Hand Delivery  
 Shipment No. \_\_\_\_\_  
 Airbill No. \_\_\_\_\_  
 Cooler No. \_\_\_\_\_

Project Owner 65th Street Development Co  
 Site Address 1171 Ocean Avenue  
Oakland, California

Project Manager Richard Makdisi  
 Telephone No. (510) 644-3123  
 Fax No. (510) 644-3859

Project Name Woytak Oakland Phase III Investigation  
 Project Number 2006-21

Samplers: (Signature) [Signature]

Lab job no. \_\_\_\_\_  
 Date \_\_\_\_\_  
 Page 2 of 2

Field Sample Number	Location/Depth	Date	Time	Sample Type	Type/Size of Container	Preservation		Filtered	No. of Containers	Analysis Required	Remarks
						Cooler	Chemical				
BH-12-5'	5'	7/21	9:15	Soil	Acetate SLEEVE	Yes	NONE	NO	1	X	
BH-12-15'	15'		9:35	↓	↓				1	X	
BH-13-5'	5'		12:10	↓	↓				1	X	
BH-13-15'	15'		12:45	↓	↓				1	X	
BH-14-5'	5'		9:40	↓	↓				1	X	
BH-14-15'	15'		9:45	↓	↓				1	X	

Relinquished by: Signature <u>[Signature]</u> Printed <u>Joe Dinan</u> Company <u>Stellar Environmental</u>	Date <u>7/21/06</u> Time <u>3:25</u>	Received by: Signature <u>[Signature]</u> Printed <u>Richard Warder</u> Company <u>SES</u>	Date <u>7/21/06</u> Time <u>3:25</u>	Relinquished by: Signature _____ Printed _____ Company _____	Date _____ Time _____	Received by: Signature <u>[Signature]</u> Printed <u>Lawanna Curran</u> Company <u>Curtis &amp; Tompkins</u>	Date <u>7/21/06</u> Time <u>3:25</u>		
Turnaround Time: <u>5 Day TAT</u> Comments: _____ _____ _____				Relinquished by: Signature _____ Printed _____ Company _____				Received by: Signature _____ Printed _____ Company _____	

2000-00-01

# Chain of Custody Record

Lab job no. \_\_\_\_\_

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 65th Street Development Co Project Manager Richard Makdisi  
 Site Address 1171 Ocean Avenue Telephone No. (510) 644-3123  
Oakland, California Fax No. (510) 644-3859  
 Project Name Woytak Oakland Phase III Investigation Samplers: (Signature) [Signature]  
 Project Number 2006-21

Date \_\_\_\_\_

 Page 1 of 1

Field Sample Number	Location/Depth	Date	Time	Sample Type	Type/Size of Container	Preservation		Filtered	No. of Containers	Analysis Required										Remarks				
						Cooler	Chemical																	
BH-06-GW	-	7/24	925	H <sub>2</sub> O	(3) 40 ML VOA	Yes	HCl	NO	3	X														
BH-05-GW	-	↓	935	↓	(3) 40 ML VOA	↓	↓	↓	3	X														
BH-13-GW	-	↓	945	↓	(6) 40 ML VOA	↓	↓	↓	6	X	X													

Relinquished by: Signature: <u>[Signature]</u> Printed: <u>Joe Dinan</u> Company: <u>Stellar Environmental</u>	Date: <u>7/24/06</u> Time: _____	Received by: Signature: <u>[Signature]</u> Printed: <u>RICHARD MAKDISI</u> Company: <u>SEI</u>	Date: <u>7/24/06</u> Time: _____	<del>                     Relinquished by:                      Signature _____                      Printed _____                      Company _____                 </del>	Date: _____ Time: _____	Received by: Signature: <u>[Signature]</u> Printed: <u>Lavanna Corti</u> Company: <u>C&amp;T</u>	Date: <u>7/24/06</u> Time: <u>1:30</u>
Turnaround Time: <u>5 Day TAT</u> Comments: <u>REC'D cold, intact IR</u>				Relinquished by: Signature _____ Printed _____ Company _____		Received by: Signature _____ Printed _____ Company _____	

2000-00-01