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Environmental Health

WELL INSTALLATION REPORT AND PREFERENTIAL PATHWAY STUDY

**R & H AUTO REPAIR
5315 SAN PABLO AVENUE
OAKLAND, CALIFORNIA**

Prepared for:

**ALAMEDA COUNTY HEALTH CARE SERVICES
1131 HARBOR BAY PARKWAY, SUITE 250
ALAMEDA, CA 94502**

June 2010

June 15, 2010

Ms. Barbara Jakub
Alameda County Health Care Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: Subsurface Investigation Report of Findings—
5315 San Pablo Avenue, Oakland, California (Case Order RO0002965)

Dear Ms. Jakub:

Stellar Environmental Solutions, Inc. (Stellar Environmental) is submitting this report of findings on behalf of Mr. and Mr. Jasbinder and Gulbinder Grewel (the responsible parties [RPs]), to the Alameda County Department of Environmental Health (ACEH) for case order RO0002965. The property is currently owned by Kenneth J. Schmier. The scope of this investigation was based on the conclusions of the Stellar Environmental March 2010 report of findings and subsequent verbal discussions with ACEH.

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

Sincerely,



Steve Bittman, R.E.A.
Senior Environmental Scientist



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

cc: Mr. and Mr. Grewel; Mr. Kenneth J. Schmier



TABLE OF CONTENTS

Section	Page
1.0 INTRODUCTION.....	1
Project Background.....	1
Site and Vicinity Description.....	1
Previous Investigations and Regulatory Action.....	4
Objectives and Scope of Work.....	6
Regulatory Oversight.....	6
California Tank Fund.....	6
2.0 PHYSICAL SETTING.....	7
Topography and Drainage.....	7
Shallow Lithology.....	7
Groundwater Hydrology.....	9
3.0 PREFERENTIAL PATHWAY SURVEY AND OFFSITE WELL SURVEYS.....	11
Preferential Pathway Survey.....	11
Underground Utility Survey.....	11
Offsite Well Survey.....	15
4.0 GROUNDWATER MONITORING WELL INSTALLATION AND OFFSITE SOIL BORINGS.....	16
Rationale for Borehole/Monitoring Well Locations.....	16
Offsite Soil Borings.....	16
Well Installation Activities.....	17
Well Development.....	17
Well Surveying.....	18
Waste Disposal.....	18
5.0 BASELINE GROUNDWATER MONITORING EVENT, SAMPLING ACTIVITIES, AND LABORATORY ANALYTICAL RESULTS.....	19
Sampling Methods and Activities.....	19
Baseline Groundwater Monitoring Event.....	19
Laboratory Analytical Results.....	20
Offsite Sample Analytical Results.....	20
Groundwater Monitoring Well Analytical Results.....	20

TABLE OF CONTENTS (continued)

Section	Page
6.0 REGULATORY CONSIDERATIONS & SITE CLOSURE CRITERIA ASSESSMENT.....	24
7.0 DISCUSSION OF FINDINGS	26
Discussion of Findings.....	26
Site Conceptual Model.....	27
Hydrocarbon Attenuation Model	28
Projected Future Trends and Remedial Options	28
Groundwater Impacts and Beneficial Uses.....	28
8.0 CONCLUSIONS AND RECOMMENDATIONS.....	30
Conclusions.....	30
Recommendations	30
9.0 REFERENCES AND BIBLIOGRAPHY	32
10.0 LIMITATIONS	33

Appendices

Appendix A	Permits, Boring Logs, Survey Data, DWR Reports
Appendix B	Conduit Survey Documentation
Appendix C	Monitoring, Sampling, and Well Development Field Records
Appendix D	Analytical Laboratory Report & Chain-of-Custody Record
Appendix E	Photodocumentation

TABLES AND FIGURES

Tables	Page
Table 1 Preferential Pathway Survey Findings 5315 San Pablo Avenue, Oakland, California	14
Table 2 Groundwater Monitoring Well Construction and Groundwater Elevation Data 5315 San Pablo Avenue, Oakland, California	18
Table 3 Total and Volatile Petroleum Hydrocarbons 5315 San Pablo Avenue, Oakland, CA	21

Figures	Page
Figure 1 Subject Property Location	2
Figure 2 Site Plan and Boring/Monitoring Well Locations	3
Figure 3 Geologic Cross Section A-A'	8
Figure 4 Groundwater Elevation Map – May 13, 2010	10
Figure 5 Utility Locations	13
Figure 6 Contaminants of Concern in Monitoring Wells and Offsite Borings	22
Figure 7 Geologic Cross Section A-A' With Soil and Groundwater Analytical Results	23

1.0 INTRODUCTION

PROJECT BACKGROUND

On behalf of Jasbinder and Gulbinder Grewel, the responsible parties (RPs) for the subject site located at 5315 San Pablo Avenue in Oakland, California, Stellar Environmental Solutions, Inc. (Stellar Environmental) has prepared this subsurface investigation report of findings. Stellar Environmental conducted the subsurface investigation in May 2010, in response to initial soil and groundwater sampling work we performed in March 2010.

The site has undergone underground storage tank (UST)-related investigations and remediation since 2007. All known environmental documents for the subject property are listed in Section 9.0, References and Bibliography.

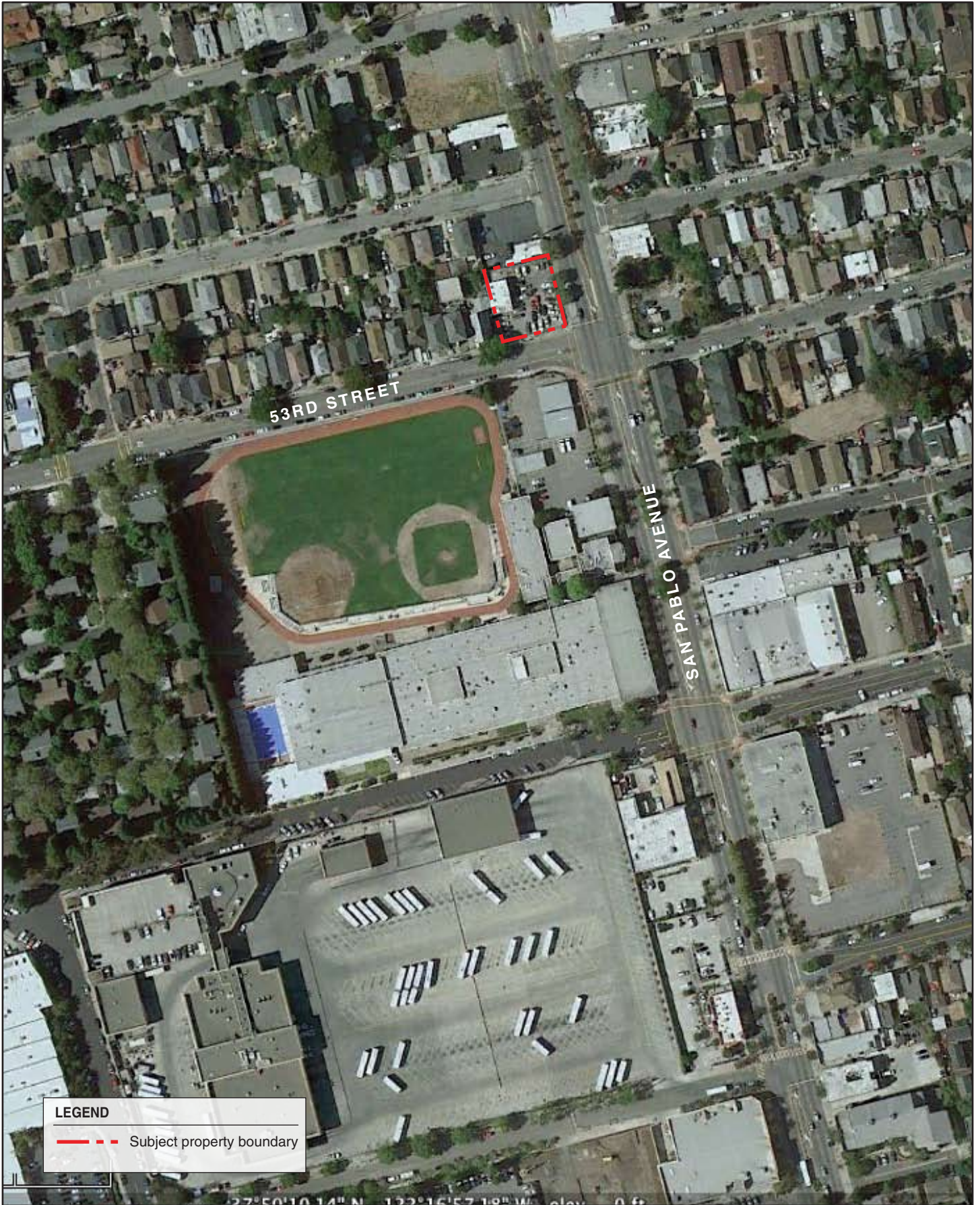
The property is currently owned by Kenneth J. Schmier of Emeryville, California.

SITE AND VICINITY DESCRIPTION

The subject site is located at the northwest corner of San Pablo Avenue and 53rd Street on the Oakland-Emeryville border (see Figure 1) and was an operating Shell service station from 1958 until the mid 1970s. Since the service station ceased operation, the site has been used only for auto repair; however, the fuel and waste oil USTs remained until 2007.

There is currently one structure in the northwest portion of the property: a 1,425-square-foot steel-framed building configured for vehicle service. The remainder of the 10,650-square-foot parcel is essentially flat, partially paved, and enclosed by a locking chain-link fence. The site is currently occupied by R&H Auto Repair, which has been operated by Mr. and Mrs. Grewel since 1986. Figure 2 is a site plan.

Adjacent land use includes: 53rd Street, with the Emeryville Child Development Center and Emery High School beyond (*to the south*); private residences (*to the west*); San Pablo Avenue and commercial and residential sites (*to the east*); and a restaurant, with 54th Street beyond (*to the north*).



LEGEND

--- Subject property boundary



SUBJECT PROPERTY LOCATION

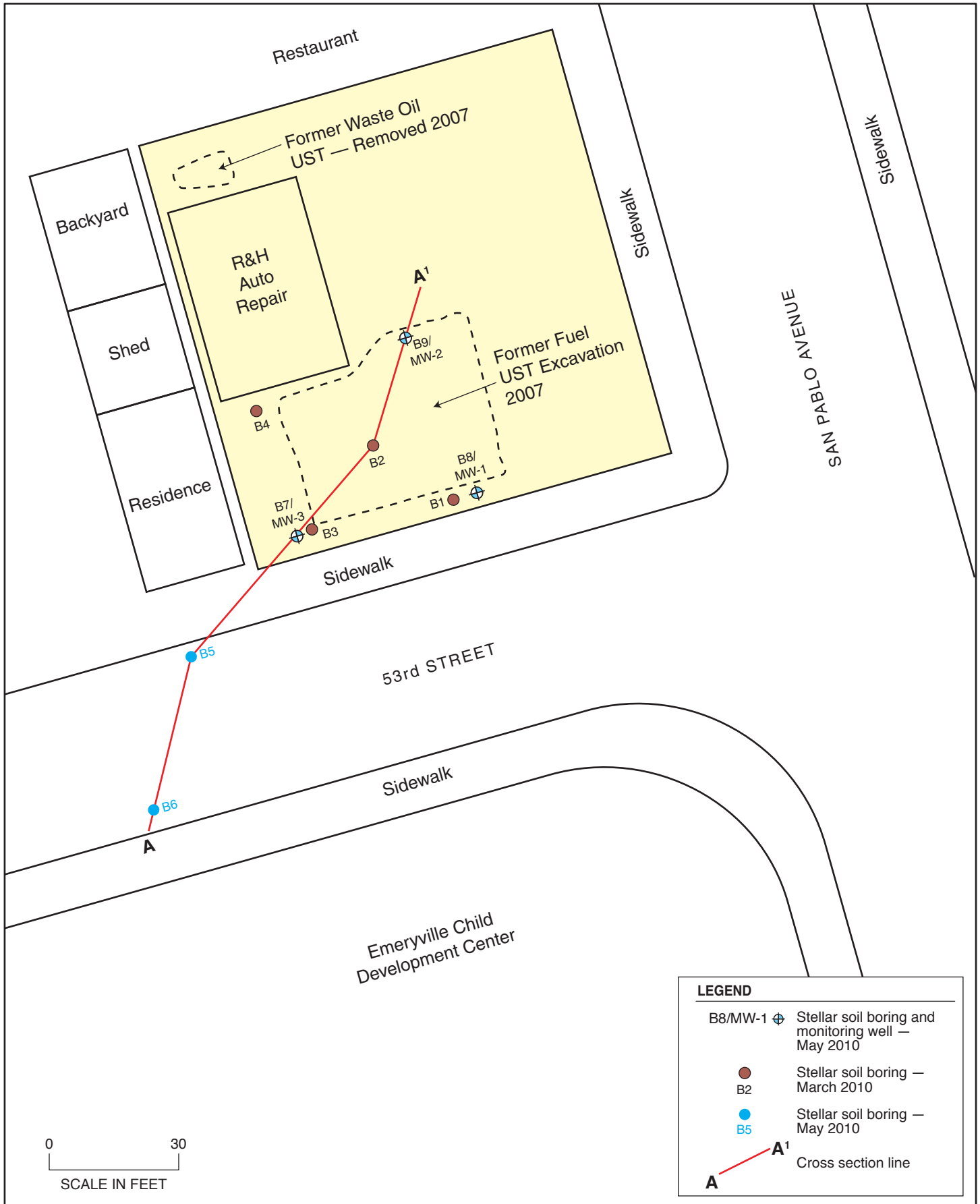
5315 San Pablo Ave.
Oakland, CA

By: MJC

JUNE 2010

Figure 1





LEGEND	
B8/MW-1	Stellar soil boring and monitoring well – May 2010
B2	Stellar soil boring – March 2010
B5	Stellar soil boring – May 2010
A-A'	Cross section line



SITE PLAN AND BORING/MONITORING WELL LOCATIONS

5315 San Pablo Avenue
Oakland, CA

By: MJC

JUNE 2010

Figure 2



2010-06-09

PREVIOUS INVESTIGATIONS AND REGULATORY ACTION

Previous site investigation activities are listed below.

2007

Two 7,500-gallon gasoline USTs and one 10,000-gallon diesel UST were removed from the southwest portion of the property in September 2007. A 550-gallon waste oil UST was removed from the northwest corner of the property at the same time.

The managing consultant overseeing the tank removals was AEI Consultants of Walnut Creek, California (AEI). No holes were noted in any of the tanks; however, strong petroleum hydrocarbon odor and soil staining was present in the fuel tank excavations. Maximum petroleum hydrocarbon concentrations detected in the initial soil samples, collected from about 11 feet below ground surface (bgs), were as follows: 230 milligrams per kilogram (mg/kg) of total volatile hydrocarbons as gasoline (TVHg); and 73 mg/kg of total extractable hydrocarbons as diesel (TEHd). Up to 1,500 mg/kg of TVHg was detected in a soil sample collected at 2 feet bgs beneath the former dispenser area near the south central portion of the site. No detectable petroleum hydrocarbons or volatile organic compounds (VOCs) were detected in the confirmation soil sample collected from beneath the waste oil tank at 8 feet bgs. No groundwater was encountered in any of the excavations.

2008

In January 2008, in an effort to remove hydrocarbon-impacted soil, the gasoline and diesel tank pit were enlarged and the dispenser area deepened. Impacted soil was removed to less than 100 mg/kg in all areas, except for an area containing 160 mg/kg of TVHg on the south side of the property near the 53rd Street sidewalk. Due to the close proximity of the sidewalk and other space constraints, the excavation could not be enlarged further. According to AEI reports reviewed by Stellar Environmental, the depth of the final excavation was approximately 12 feet bgs. No groundwater was encountered during AEI's work at the site. In January 2008, the fuel tank and waste oil UST excavations were backfilled with clean imported material consisting of compacted class II fill with a drain rock cover. Approximately 320 tons of contaminated material was removed to the site as non-hazardous waste and hauled to the Keller Canyon landfill.

The Oakland Fire Department officially transferred oversight responsibility to Alameda County Environmental Health (ACEH) on March 5, 2008.

An Underground Storage Tank Unauthorized Release (Leak) Report was received by ACEH on May 6, 2008 (AEI Consultants, 2008a).

On June 26, 2008, ACEH requested an investigation to determine if groundwater beneath the site had been affected by residual hydrocarbons in soil. The work plan developed in response (AEI Consultants, 2008b) called for advancing four soil borings to groundwater in areas best judged to assess the extent of known subsurface residual hydrocarbon contamination.

In a letter dated July 3, 2008, ACEH informed the Grewels that the site was required to be “claimed” to the State Water Resources Control Board GeoTracker database, and that all reports since 2005 are to be uploaded to the database, along with survey data for all permanent monitoring points.

2009

The 2008 work plan (AEI Consultants, 2008b) was approved by ACEH in February 2009, with minor modifications.

In a letter dated July 24, 2009, ACEH informed the Grewels that the site had still not been claimed to the State GeoTracker database and warned of penalties if not in compliance by August 10, 2009.

2010

The 2008 work plan (AEI Consultants, 2008b) was implemented by Stellar Environmental in March 2010. The findings of that investigation are as follows:

- The lack of significant residual hydrocarbon contamination in soil beneath the site in the 12- to 16-foot-bgs zone, in and around the former UST area, suggests no significant remaining hydrocarbon contaminant in the soil to act as a source for continued impact to groundwater.
- The appropriate Regional Water Quality Control Board (Water Board) Environmental Screening Level (ESL) criterion for groundwater at the site is commercial/industrial where groundwater is not a likely drinking water resource.
- Groundwater beneath the site has been impacted with gasoline- and diesel-range hydrocarbons exceeding ESL criteria.
- The highest concentrations of TVHg (2,300 micrograms per liter [$\mu\text{g/L}$]) and TEHd (760 $\mu\text{g/L}$) in groundwater were found in the sample collected from boring B3, located near the southwest corner of the site and downgradient of the former USTs. This suggests offsite migration of the residual dissolved hydrocarbons to the southwest.
- With the exception of ethylbenzene—which was detected at 53 $\mu\text{g/L}$ (above the ESL) in one of the groundwater samples—the lack of significant benzene, toluene, ethylbenzene, and total xylene (BTEX) compounds in groundwater beneath the site is characteristic of an older release where these compounds have volatilized.

OBJECTIVES AND SCOPE OF WORK

This report discusses the following activities conducted/coordinated by Stellar Environmental in May 2010:

- Installation of three groundwater monitoring wells on the property around the former UST excavation area where contaminated groundwater was suspected
- Advancement of two borings offsite on 53rd Street in the inferred downgradient direction
- Collection of grab soil and groundwater samples from the two offsite borings and groundwater samples from the three new onsite wells
- Analysis of soil and groundwater samples by a State of California Environmental Laboratory Approval Program (ELAP)-accredited laboratory
- A GeoTracker-compliant location survey of the site wells, including top of casing elevations
- Water level measurements in site wells to determine shallow groundwater flow direction
- A subsurface conduit survey to determine the presence of preferential pathways and sensitive receptors

REGULATORY OVERSIGHT

The Alameda County Department of Environmental Health (ACEH) is the lead implementing agency providing oversight for the property, with the Water Board having overall oversight. The ACEH Fuel Leak case number is RO0002965. The Water Board GeoTracker global identification number is T0619704141.

The limited Phase II site investigation conducted in March 2010 (Stellar Environmental, 2010) found sufficient evidence of groundwater contamination beneath the site to require permanent onsite groundwater monitoring points, downgradient sampling, and a preferential pathway study. Time constraints associated with site ownership prompted Stellar Environmental to move forward with this work, with verbal consent from the ACEH. Electronic data format files, beginning with AEI's *Underground Storage Tank Removal Final Report* (AEI Consultants, 2008a), have been successfully uploaded to the Water Board's GeoTracker database.

CALIFORNIA TANK FUND

The preliminary application to the California Underground Storage Tank Cleanup Fund (UST Fund) was made by the RPs on February 22, 2008. On May 29, 2008, the Water Board requested additional information from the RPs in order to qualify for financial reimbursement. The RPs are in the process of gathering the required information. It is our understanding that all work since September 2007 has been conducted in compliance with UST Fund requirements.

2.0 PHYSICAL SETTING

The following evaluation of the site's physical setting—including topography, drainage, and geologic and hydrogeologic conditions—is based on a previous site investigation (AEI Consultants, 2008) and subsurface data collected by Stellar Environmental since March 2010.

TOPOGRAPHY AND DRAINAGE

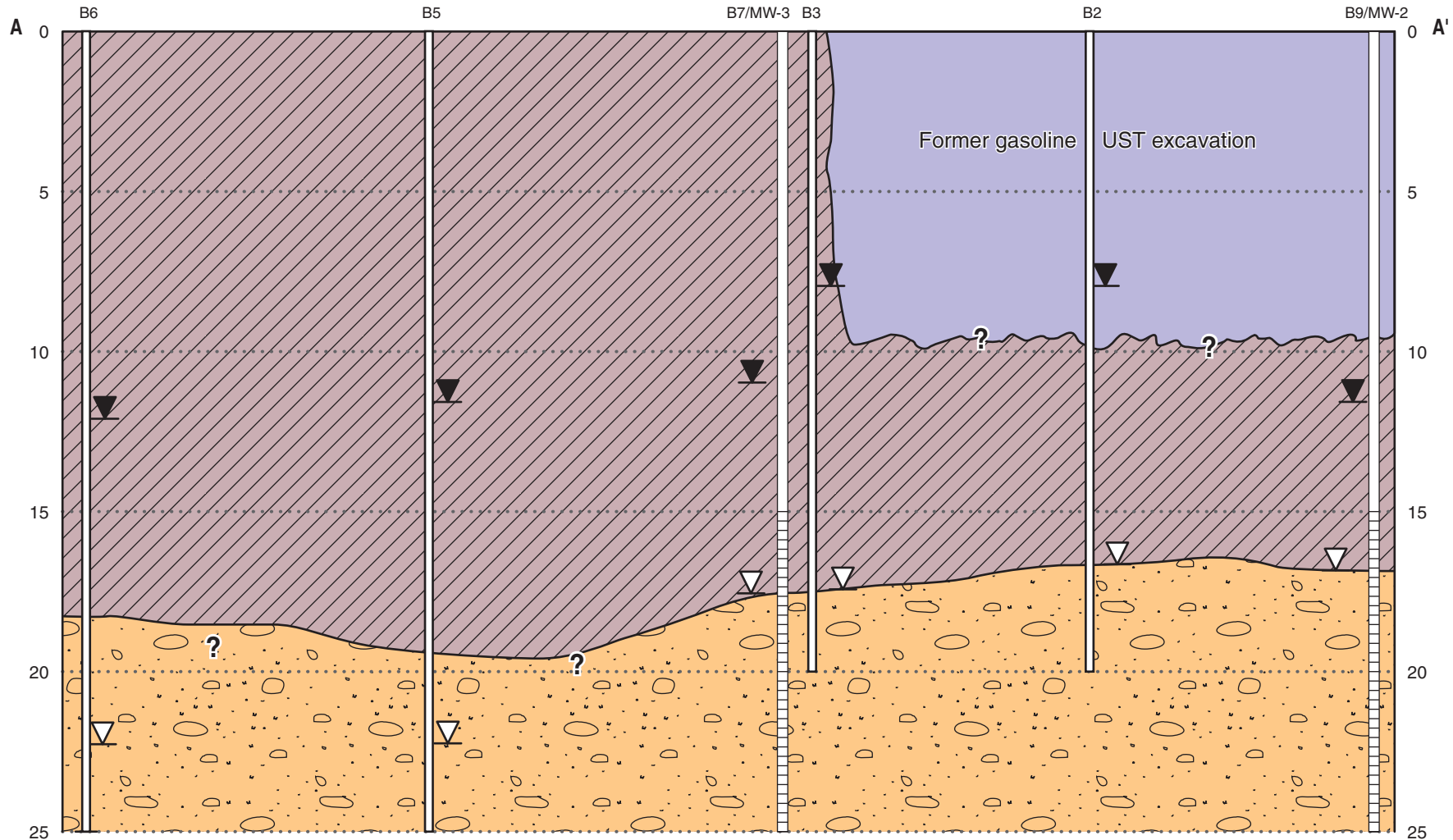
The site is on a gently sloping alluvial fan approximately 0.7 mile east of San Francisco Bay and approximately 2 miles west of the Oakland Hills. The mean elevation of the subject property is approximately 40 feet above mean seal level (amsl), with a slight general topographic gradient in the surrounding area to the west. However, locally, the target property is essentially flat, with a surface that consists of intermittent asphalt, concrete, and bare ground. The former UST excavation area is covered by ¾-inch drain rock.

The nearest surface water body is Temescal Creek, which originates in the Oakland Hills and empties into San Francisco Bay on the west side of Interstate 80 in Emeryville. The creek is nearly entirely culverted underground in the area of the property, but is visible approximately 1,400 feet southeast of the property at Temescal Park near 47th and Adeline Streets. From that point, the creek runs through a pair of buried 60-inch pipes, and passes within 150 feet of the property about 12 feet beneath the Emeryville Child Development Center and Emery High School across 53rd Street. Temescal Creek surfaces again in open culverts near Ohlone Way and Shellmound Street in Emeryville as it nears its mouth at the Bay.

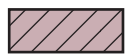

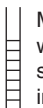



SHALLOW LITHOLOGY

Shallow lithology at the site has been determined during site subsurface investigations conducted since 2007 (see Section 9.0, References and Bibliography).

All exploratory boreholes were geologically logged by visual inspection of soil cores using the Unified Soils Classification System. Site-specific lithology was characterized to a depth of 20 feet bgs in onsite borings B1, B2, and B3; to a depth of 22 feet bgs in boring B4; and to 25 feet bgs in onsite and offsite borings B5 through B9. Subsurface lithology can be described as silty clay to gravelly clay fill with fragments of brick to approximately 2.5 feet bgs. The upper fill is underlain by native, low permeability, stiff, expansive, silty clay to about 17 feet bgs. Between 17 feet and 25 feet bgs, interbedded layers of moist to saturated sandy silt, silty sand, and clayey gravel are present. Geologic cross-section A-A' depicting the shallow site lithology is shown on Figure 3.



LEGEND

- | | | | | | |
|---|--|---|-------------------------------|--|---|
|  | Inferred lower permeability soils
(clay, gravelly clay, sandy clay) |  | Class II Fill |  | Monitoring well showing screened interval |
|  | Inferred higher permeability soils
(clayey sand to gravelly sand) |  | First encountered groundwater |  | Equilibrated groundwater level |

Horizontal scale = 1"=15' Vertical scale = 1" = 5'

GEOLOGIC CROSS SECTION AREA A-A'
5315 San Pablo Ave. Oakland, CA

Figure 3

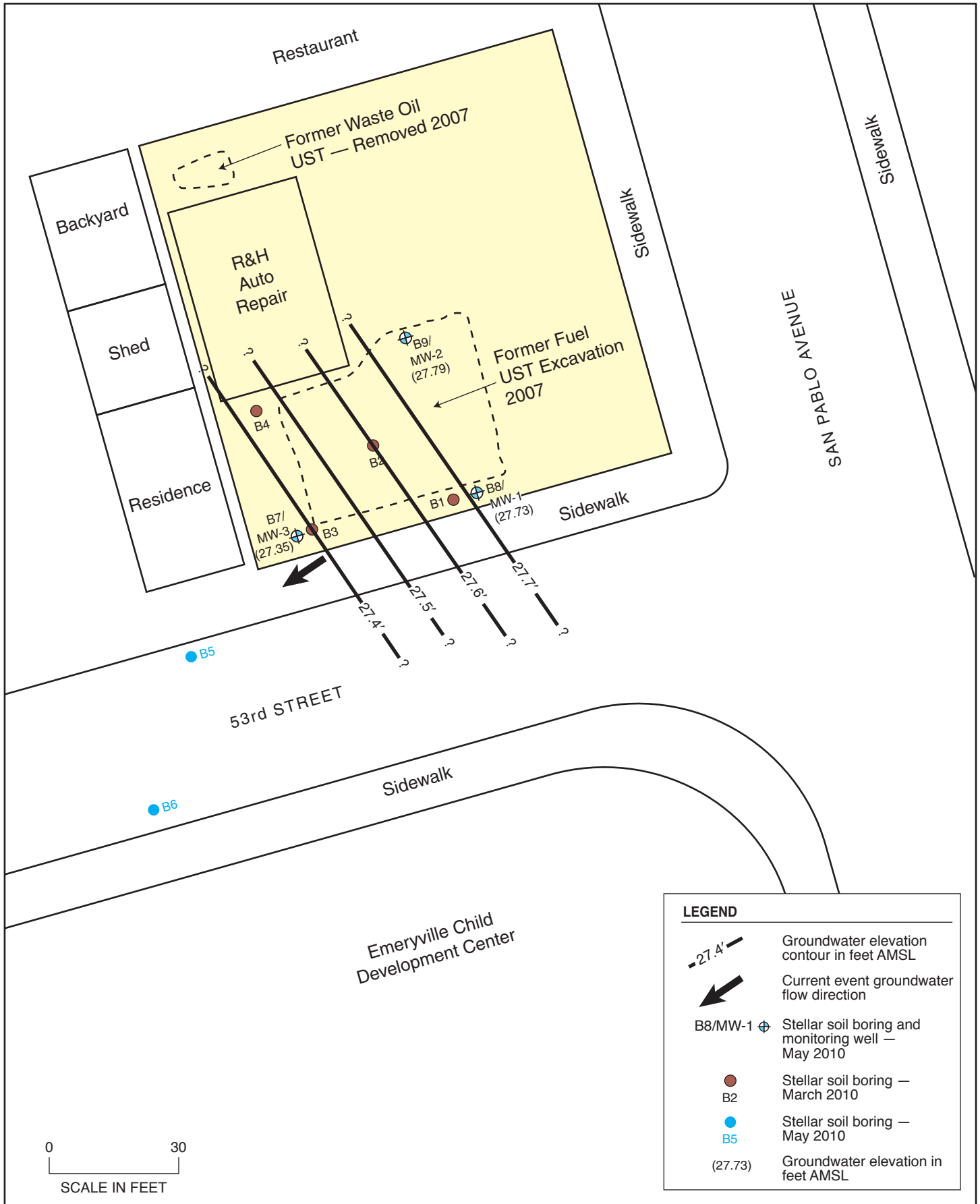
by: MJC

JUNE 2010

GROUNDWATER HYDROLOGY

According to AEI Consultants (2008a), groundwater was not observed in excavations as deep as 12 feet bgs during either the September 2007 initial UST removals or the January 2008 over-excavation work. Initial saturated soil samples were observed at the base of the upper clay layer at about 17 feet bgs during the Stellar Environmental March 2010 soil borings (B1 through B4) and the May 2010 monitoring well installation and offsite boring tests (B5 through B9). The lithology from 17 feet bgs to the total explored depth of 25 feet bgs is typical of a low-yielding, fine-grained water-bearing zone. Equilibrated water levels in the soil borings and wells ranged between approximately 6 and 11 feet bgs.

Regional groundwater flow in the area of the property is approximately to the southwest, toward San Francisco Bay. The initial groundwater monitoring event conducted by Stellar Environmental on May 13, 2010, which used wells MW-1 through MW-3 as data points, demonstrates a southwesterly groundwater flow direction with a relatively hydraulic gradient of approximately 0.01 feet/foot. Figure 4 is a map of groundwater elevations from the recent groundwater monitoring event (activities discussed in Section 5.0). Geologic logs of the May 2010 borings are included in Appendix A.



0 30
SCALE IN FEET



GROUNDWATER ELEVATION MAP — MAY 13, 2010

5315 San Pablo Avenue
Oakland, CA

By: MJC

JUNE 2010

Figure 4



2010-06-20

3.0 PREFERENTIAL PATHWAY SURVEY AND OFFSITE WELL SURVEYS

PREFERENTIAL PATHWAY SURVEY

This section presents the findings of the preferential pathway study. The task focused on identifying: 1) the location and depth of potential underground utilities, which typically have highly permeable backfill that could act as potential preferential pathways if their depths are below the water table; and 2) any groundwater wells downgradient (west to southwest) of the property that could serve as conduits.

Information for the underground utility survey was obtained from applicable State and local agencies, as well as from utility providers that provided underground maps with the locations of offsite wells and utilities. In addition, Underground Service Alert of Northern California (USA North) was contacted to document private utility locations. Information on well locations was obtained from the Alameda County Department of Public Works and the California Department of Water Resources (DWR).

UNDERGROUND UTILITY SURVEY

Stellar Environmental identified the following underground utilities located beneath 53rd Street to the west of San Pablo Avenue, and beneath San Pablo Avenue between 54th and 53rd Streets:

- Stormwater sewer
- Sanitary sewer
- Municipal water supply lines
- Electric and natural gas lines
- Telecom and cable TV lines

Underground Utilities

As summarized in Section 2.0, groundwater was first encountered in subject property and offsite boreholes (March and May 2010) at a depth of about 17 to 18 feet bgs, corresponding to an elevation of approximately 21 to 22 feet amsl. The highest measured groundwater elevation in site wells is approximately 27.8 feet amsl (approximately 11 to 12 feet bgs). Corroboration of the groundwater (water table) depth being coincident with around 16 to 18 foot deep is seen in both the lithology (with the water-bearing sands and gravels occurring at that depth) and in the 2007 excavation data

(where no water was encountered in the 12-foot-deep excavation). Given seasonal variation, the groundwater could fluctuate by a few feet; however, it is reasonable to assume that first encountered groundwater would be below 12 feet bgs. Therefore, only utilities deeper than a depth of 12 feet would have a reasonable potential to act as preferential pathways for any site-sourced groundwater contamination.

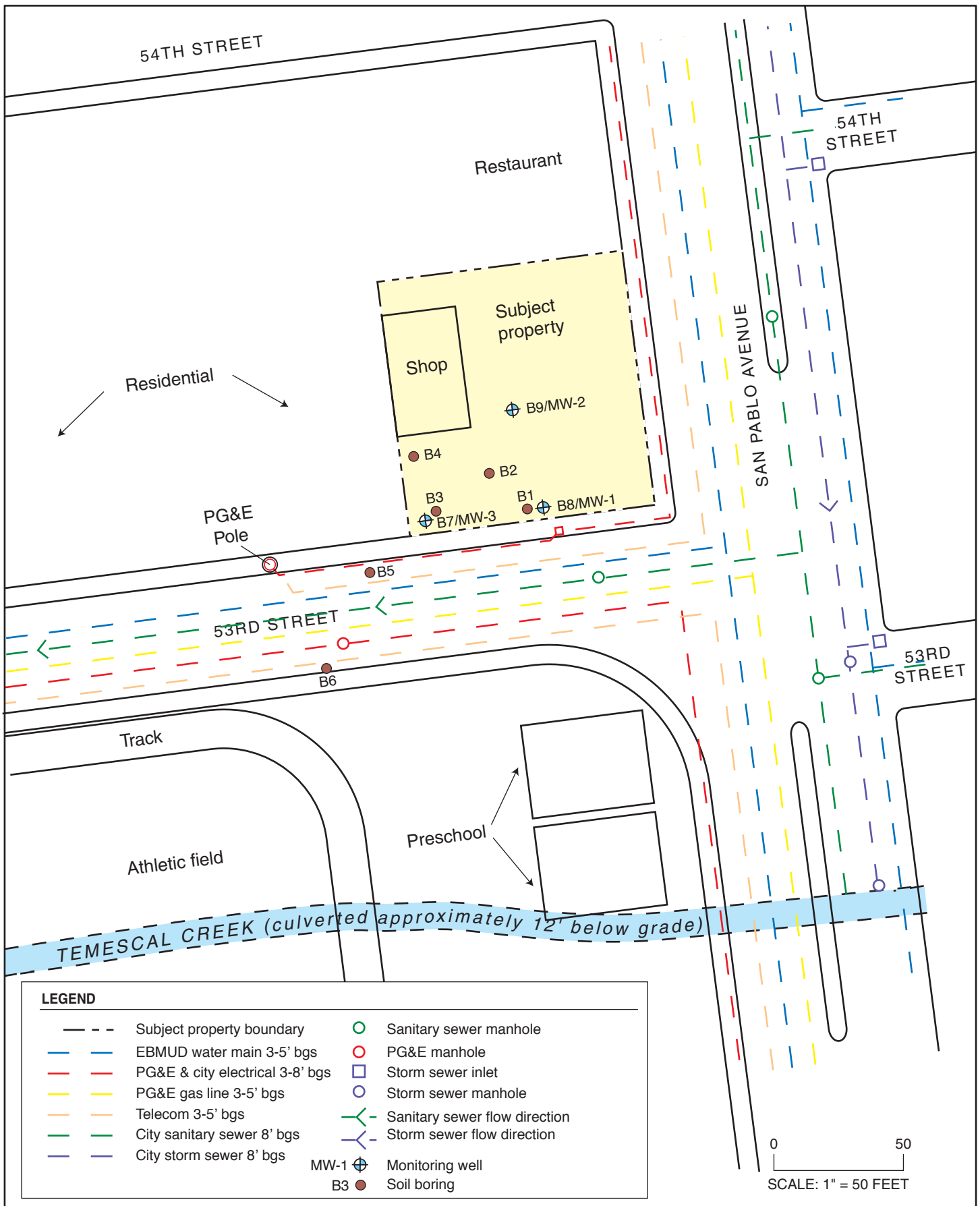
Stellar Environmental identified the following underground utilities and culverts located beneath 53rd Street, San Pablo Avenue, and adjoining areas: sanitary sewer, storm sewer, potable water line, electric, natural gas, traffic/street lights, communications, and the culverted Temescal Creek. Figure 5 shows the utilities with documented or potential depths greater than approximately 8 feet bgs, above which there is no reasonable potential for groundwater to intersect the utilities. Table 1 summarizes the locations, depths, and type of all identified utilities. As shown in Table 1, all identified utilities were at depths of 8 feet or less.

The only utility or conduit identified at or deeper than 10 feet bgs is the culvert for Temescal Creek, located beneath the Emeryville Child Development Center and Emery High School. The culvert is about 150 feet south of the subject property; based on visual observations at Temescal Park near 47th and Adeline Streets, the bottom of the culvert is approximately 12 feet below grade.

The Pacific Gas and Electric Company (PG&E) gas and electrical lines in the downgradient direction from the property are located beneath 53rd Street and the 53rd Street sidewalk at depths of approximately 3 to 8 feet bgs. One main electrical line runs down 53rd Street, and one electrical line is located adjacent to and beneath the north side 53rd Street sidewalk adjacent to the property. Only one gas line runs down 53rd Street with no service to the property. The gas line is approximately 20 feet from the subject property border. The electrical lines are located at approximately 8 and 25 feet from the subject property border, respectively as marked by PG&E in response to the USA North ticket.

An East Bay Municipal Utility District (EBMUD) water main is located beneath the north side of 53rd Street at a depth of approximately 3 to 5 feet bgs. No other underground utilities are located immediately downgradient of the site.

Appendix B contains the utility maps obtained from the municipal and county agencies and USA North notification and response information.



LEGEND

- Subject property boundary
- EBMUD water main 3-5' bgs
- PG&E & city electrical 3-8' bgs
- PG&E gas line 3-5' bgs
- Telecom 3-5' bgs
- City sanitary sewer 8' bgs
- City storm sewer 8' bgs
- Sanitary sewer manhole
- PG&E manhole
- Storm sewer inlet
- Storm sewer manhole
- Sanitary sewer flow direction
- Storm sewer flow direction
- MW-1 ⊕ Monitoring well
- B3 ● Soil boring

0 50
SCALE: 1" = 50 FEET



UTILITY LOCATIONS

5315 San Pablo Ave.
Oakland, CA

By: MJC

JUNE 2010

Figure 5



Table 1
Preferential Pathway Survey Findings
5315 San Pablo Avenue, Oakland, California

Underground Utility / Facility	Agency / Firm Contacted	Utility / Facility Description and Location	Estimated Maximum Depth (feet bgs)	Potential Preferential Pathway for Groundwater?
Sanitary Sewer	City of Oakland— Records and Maps	Offsite: Main line beneath 53 rd St within approximately 25 feet of site; also beneath San Pablo Ave. Lateral runs under 53 rd St sidewalk near southwest corner of the property.	8 (under 53 rd St)	No
		Onsite: Lateral from bathrooms/sinks to 53 rd St.	4.5	No
Stormwater Sewer	City of Oakland— Records and Maps	Offsite (only): Beneath San Pablo Ave.	8	No
Drinking Water	East Bay Municipal Utility District	Offsite: Water main beneath north side of 53 rd St and both sides of San Pablo Ave.	3 to 4	No
		Onsite: Lateral under 53 rd St sidewalk, then below site asphalt to the southwest corner of the shop.	3 to 4	No
Traffic Lights and Street Lights	City of Oakland—Department of Electrical Engineering	Offsite (only): Beneath 53 rd St and San Pablo Ave sidewalks.	1.5 to 3	No
Electric	Pacific Gas & Electric— Service Planning Department	Offsite: Trunk line beneath the south lane of 53 rd St. Branch line beneath the north side of 53 rd St, then under a portion of the 53 rd St sidewalk adjacent to the property. Main trunk line beneath San Pablo Ave and sidewalks.	3 to 8	No
		Onsite: Service from 53 rd St sidewalk, then lateral beneath asphalt to southwest corner of the shop.	1.5 to 3	No
Natural Gas	Pacific Gas & Electric— Service Planning Department	Offsite: Beneath center of 53 rd St, San Pablo Ave, and sidewalks. Onsite: No service.	3	No No
AT&T Level 3 Communications, Pacific Bell	USA North	Offsite (only): Beneath 53 rd St sidewalk near southeast corner of property, and beneath San Pablo Ave adjacent to the west sidewalk.	3 to 4	No
Temescal Creek	City of Oakland	Culverted beneath Emeryville High School 150 feet to south	~ 12	

OFFSITE WELL SURVEY

To document potential conduits downgradient of the subject property site, a survey was conducted to identify all water wells within ¼ mile and downgradient of the subject property. Water wells might include groundwater monitoring wells and water supply wells (irrigation, domestic, industrial, and municipal). We made a formal well survey request to the DWR, the agency ultimately responsible for permitting water wells and retaining water well driller's reports. Stellar Environmental also requested a well survey of the Alameda County Public Works database.

The DWR provided all of the water well completion reports within a 1-mile radius of the subject property. Of the 96 active wells and 11 abandoned/destroyed wells located within that search radius, only 1 well was located potentially downgradient of the subject property within ¼ mile (47th and San Pablo Avenue in Emeryville); the maximum practical distance where any possible impact from a residual hydrocarbon plume such as the subject property is plausible. In this case, the well at San Pablo Avenue in Emeryville is about five blocks due south on San Pablo Avenue (the subject property is at San Pablo and 53rd Street); thus, it is actually crossgradient rather than downgradient, as the flow direction is generally to the west. This well is located in the AC Transit bus yard (Global ID T0600118672). Since 1989, 19 wells have been installed at this site related to the removal of 11 fuel USTs. The groundwater flow direction has been consistently calculated to be toward the west-southwest. The well (MW-15) closest to and downgradient from the subject property does not contain detectable concentrations of fuel hydrocarbons as of July 2009, indicating no impact from the subject property.

Another well included in the Alameda County Public Works well database is located at 1400 53rd Street; this well is associated with a case involving a UST removal in 1997, but is listed as destroyed. Additionally, the Alameda County Public Works database revealed 160 active wells and 13 destroyed wells within ½ mile of the property. One destroyed well in this record is in the downgradient direction within ¼ mile of the property (Hollis and 53rd in Emeryville). Seven well records outside the search criteria of ¼ mile were duplicated between the DWR and Alameda County databases.

With the exception of four deep wells included on the DWR database that were all located greater than ½ mile from the property, all the wells listed function as groundwater quality monitoring wells associated with local (not subject site) contamination. (Note: As stated below, these wells may reflect their own sources of contamination, which could be higher than the subject source.)

Appendix B contains the DWR and Alameda County Public Works well documentation.

4.0 GROUNDWATER MONITORING WELL INSTALLATION AND OFFSITE SOIL BORINGS

This section discusses the May 11, 2010 offsite soil boring work and onsite monitoring well installations. The onsite wells were constructed in accordance with California Environmental Protection Agency (Cal/EPA) guidelines for sampling dissolved petroleum products in groundwater. Ms. Vicky Hamlin of the Alameda County Department of Public Works inspected the installation of the offsite boring grouting and well seal on May 11, 2010.

The location of the two offsite soil borings B5 and B6 and onsite monitoring wells MW-1 through MW-3 are shown on Figure 2. Monitoring well construction details are discussed below, summarized in Table 2 at the end of this section, and included on the geologic logs in Appendix A. Photodocumentation of soil boring and well installation activities is included as Appendix E.

RATIONALE FOR BOREHOLE/MONITORING WELL LOCATIONS

Five boreholes (B5 through B9) were advanced, as shown on Figure 2. Borehole locations were selected to provide additional information on the extent of soil and groundwater contamination, as follows.

- Boreholes B5 and B6 were advanced beyond the property (on both sides of 53rd Street) to provide soil and groundwater information in the downgradient direction.
- Monitoring wells MW-1/B8 and MW-3/B7 were located in close proximity to the former fuel UST excavation near borings B1 and B3, respectively, where groundwater contamination was detected in the Stellar Environmental March 2010 initial site characterization. The specific objective of these boreholes was to evaluate whether groundwater concentrations warrant corrective action.
- Well MW-2/B9 was advanced north of (inferred upgradient from) the former UST excavation to evaluate if groundwater contamination extends in the upgradient direction, and to provide a third data point for groundwater flow calculation.

OFFSITE SOIL BORINGS

Prior to drilling, soil boring permits were obtained from the Alameda County Public Works Agency, an excavation permit was obtained from the City of Oakland (copies included in Appendix A), and Underground Services Alert was notified (ticket #0123179). Borings B5 and B6 were drilled to a total depth of 25 feet bgs and continuously logged for lithologic information. Soil sampling depths

both above and below the groundwater table were collected per ACEH's preference to document a vertical profile in the unsaturated and saturated zone. Two vertical soil samples were collected from boring B5 at depths of about 15 to 16 feet bgs (unsaturated) and 19 to 20 feet bgs (saturated). The samples from boring B6 were collected at approximately 16 to 17 feet bgs and 19 to 20 feet bgs. Groundwater samples were collected from both borings using a peristaltic pump equipped with new tubing that was inserted into the drill rods after they were retracted to approximately 17 feet bgs. All soil and groundwater samples were stored in appropriate containers and immediately placed on ice at 4 degrees Celsius, and transported to McCampbell Analytical, an ELAP-certified laboratory, via laboratory courier under chain-of-custody documentation.

WELL INSTALLATION ACTIVITIES

Well construction was conducted by Vapor Tech Services of Oakland, California on May 11, 2010, using a GeoProbe™ 7720 DT rig. All work was conducted under the direct supervision of a Stellar Environmental field geologist who continuously logged the bores. Pilot boreholes were first advanced using 2.5-inch-diameter steel outer drive casing lined with acetate sleeves for lithologic logging purposes. Once the desired depth was reached in each boring, they were enlarged using 3.25-inch-diameter steel drive casing. Each well was constructed using 1-inch-diameter PVC casing. Well construction details are depicted on the geologic boring logs included in Appendix A.

The well construction details are summarized below:

- 10 feet of 1-inch-diameter PVC factory-slotted well screen (0.010 inch slots) from total well depth of 25 feet bgs to 15 feet bgs
- Annular sand pack from total well depth to approximately 1 foot above the top of the well screen (approximately 14 feet bgs), overlain by approximately 1 foot of hydrated bentonite pellets, overlain by neat Portland cement grout slurry
- 1-inch-diameter PVC blank casing from top of well screen (approximately to surface with locking well caps
- Surface completion with a flush-mounted, Christy-type, traffic-rated well box

WELL DEVELOPMENT

The three monitoring wells were developed by Stellar Environmental during the initial groundwater monitoring event on May 13, 2010 using a peristaltic pump to set the annular sand pack and reduce the potential for fine-grained native materials to infiltrate the sand pack. During development, approximately 10 casing volumes were evacuated from each well. The well was sampled after development, the analytical results of which are discussed in Section 5.0. The well development record is included with the current event field sampling report in Appendix C.

Stellar Environmental completed and submitted DWR Well Completion Forms for the new monitoring wells to the Alameda County Department of Public Works (copies included in Appendix A).

WELL SURVEYING

Relative vertical elevation of the well casings and ground elevation was surveyed to GeoTracker compliance on June 2, 2010, by licensed California land surveyors Virgil Chavez Surveyors of Vallejo, CA, so that accurate groundwater elevations can be measured over time. The elevation data are presented in Table 2 and the certified survey report is contained in Appendix A.

WASTE DISPOSAL

Non-hazardous soil and wash water from drilling was stored in two steel 55-gallon drums and left onsite for future disposal.

Table 2
Groundwater Monitoring Well Construction and Groundwater Elevation Data
5315 San Pablo Avenue, Oakland, California

Well	Well Depth (feet bgs)	Screened Interval	Top of Well Casing Elevation ^(a)	Groundwater Elevation (May 13, 2010)
MW-1	25	15 to 25	38.94	27.73
MW-2	25	15 to 25	39.18	27.79
MW-3	25	15 to 25	38.46	27.38

Notes:

^(a) Relative to mean sea level.

All wells are 1-inch inside diameter PVC.

5.0 BASELINE GROUNDWATER MONITORING EVENT, SAMPLING ACTIVITIES, AND LABORATORY ANALYTICAL RESULTS

This section presents the groundwater sampling, analytical methods, and laboratory results for the May 2010 field data collection activities. Table 2 contains the monitoring well construction and groundwater monitoring data. Groundwater analytical results are summarized in Section 6.0.

SAMPLING METHODS AND ACTIVITIES

The monitoring and sampling methods used were in accordance with Water Board-approved protocols. Activities for this event include:

- Measuring static water levels in the three site wells
- Collecting post-development/purge groundwater samples for laboratory analysis of site contaminants from the three site wells

Appendix C contains the groundwater monitoring field records.

BASELINE GROUNDWATER MONITORING EVENT

Groundwater monitoring well water level measurements and development/purging and sampling of the three new wells was conducted on May 13, 2010 by Stellar Environmental. Groundwater sampling was conducted in accordance with State of California guidelines for sampling dissolved analytes in groundwater associated with leaking USTs (State Water Resources Control Board, 1989). The first task of this event involved measuring static water levels in the three site wells using an electric water level indicator. Approximately 5.5 gallons of purge water (ten casing volumes) was removed from each well prior to sampling.

Purgewater Disposal

Approximately 17 gallons of purge water from well development and sampling and equipment decontamination rinse water from the current groundwater sampling event was containerized in a labeled 55-gallon drum. Non-hazardous investigation-related wastewater (from well development, sampling, and equipment decontamination) will continue to be accumulated and stored onsite in a secure area for future disposal at a permitted non-hazardous treatment facility.

LABORATORY ANALYTICAL RESULTS

The analytical results presented below include the baseline groundwater sampling event and the other soil and groundwater samples collected during the current phase of work. Table 3 and Figure 6 summarize these analytical results. For comparative purposes, Figure 7 depicts Geologic Cross Section A-A', which includes soil and groundwater analytical results for the current phase of work and for the soil and grab groundwater results from the Stellar Environmental March 2010 investigation. Appendix D contains the McCampbell Analytical certified analytical laboratory report and a chain-of-custody record.

Soil samples from offsite borings B5 and B6 were analyzed for TVHg, BTEX, and methyl tertiary-butyl ether (MTBE) by U.S. Environmental Protection Agency (EPA) Method 5030B/8015Bm, and for TEHd by EPA Method 3550C/8015B. All groundwater samples were analyzed for TVHg, BTEX, MTBE, ethyl tertiary-butyl ether (ETBE), diisopropyl ether (DIPE), tertiary-amyl methyl ether (TAME), and tertiary-butyl alcohol (TBA) by EPA Method 8260. All groundwater samples were also analyzed for TEHd by EPA Method 8015C.

OFFSITE SAMPLE ANALYTICAL RESULTS

Soil

Offsite soil samples from borings B5 and B6 did not contain detectable concentrations of TVHg, BTEX, or MTBE compounds. TEHd was detected at 6.6 mg/kg in the 15- to 16-foot-bgs sample collected from B5, and at 1.3 mg/kg in the 16- to 17-foot-bgs sample collected from B6.

Groundwater

With the exception of 1.5 µg/L of toluene detected in the grab-groundwater sample collected from boring B6, no detectable concentrations of TVHg, BTEX, or fuel oxygenates were found in the groundwater samples collected from offsite borings B5 or B6. TEHd was detected at 72 µg/L in the groundwater collected from boring B6, while the sample collected from boring B5 did not contain a detectable concentration of TEHd.

GROUNDWATER MONITORING WELL ANALYTICAL RESULTS

Groundwater samples collected from wells MW-1, MW-2, and MW-3 did not contain detectable concentrations of TVHg or TEHd. MW-1 did not contain detectable concentrations of BTEX or fuel oxygenates. The groundwater sample from MW-2 contained 1.6 µg/L of DIPE, but did not contain detectable concentrations of BTEX. The sample collected from MW-3 contained 0.58 µg/L of ethylbenzene and 0.64 µg/L of toluene, but no fuel oxygenates.

Table 3
Total and Volatile Petroleum Hydrocarbons
5315 San Pablo Avenue, Oakland, CA

Sample ID	TVHg	TEHd	Oxygenates/ MTBE	Benzene	Toluene	Ethyl Benzene	Xylenes
SOIL SAMPLES							
B5-15-16	<1	6.6	NA	<0.5	<0.5	<0.5	<0.5
B5-19-20	<1	<1	NA	<0.5	<0.5	<0.5	<0.5
B6-16-17	<1	1.3	NA	<0.5	<0.5	<0.5	<0.5
B6-19-20	<1	<1	<NA	<0.5	<0.5	<0.5	<0.5
<i>ESLs—Residential</i> ^(a)	83 / 100	83 / 100	<i>variable</i>	0.044 / 0.27	2.9 / 9.3	3.3 / 4.7	2.3 / 11
<i>ESLs—Industrial</i> ^(a)	83 / 180	83 / 180	<i>variable</i>	0.044 / 0.12	2.9 / 9.3	2.3 / 2.3	2.3 / 11
GROUNDWATER SAMPLES							
MW-1	<50	<50	<2	<0.5	<0.5	<0.5	<0.5
MW-2	<50	<50	DIPE = 1.6	<0.5	<0.5	<0.5	<0.5
MW-3	<50	<50	<2	<0.5	<0.5	0.58	0.64
B5-W	<50	<50	<2	<0.5	<0.5	<0.5	<0.5
B6-W	<50	72	<2	<0.5	1.5	<0.5	<0.5
<i>ESLs—Residential and Industrial</i> ^(b)	100 / 210	100 / 210	<i>Variable – NE for DIPE</i>	1.0 / 46	40 / 130	30 / 43	20 / 100

Notes:

^(a) Water Board Tier 1 shallow soil Environmental Screening Levels for sites where groundwater is/is not a likely drinking water resource.

^(b) Water Board Tier 1 groundwater Environmental Screening Levels for both residential and industrial sites where groundwater is/is not a likely drinking water resource.

NA = not analyzed for constituent indicated

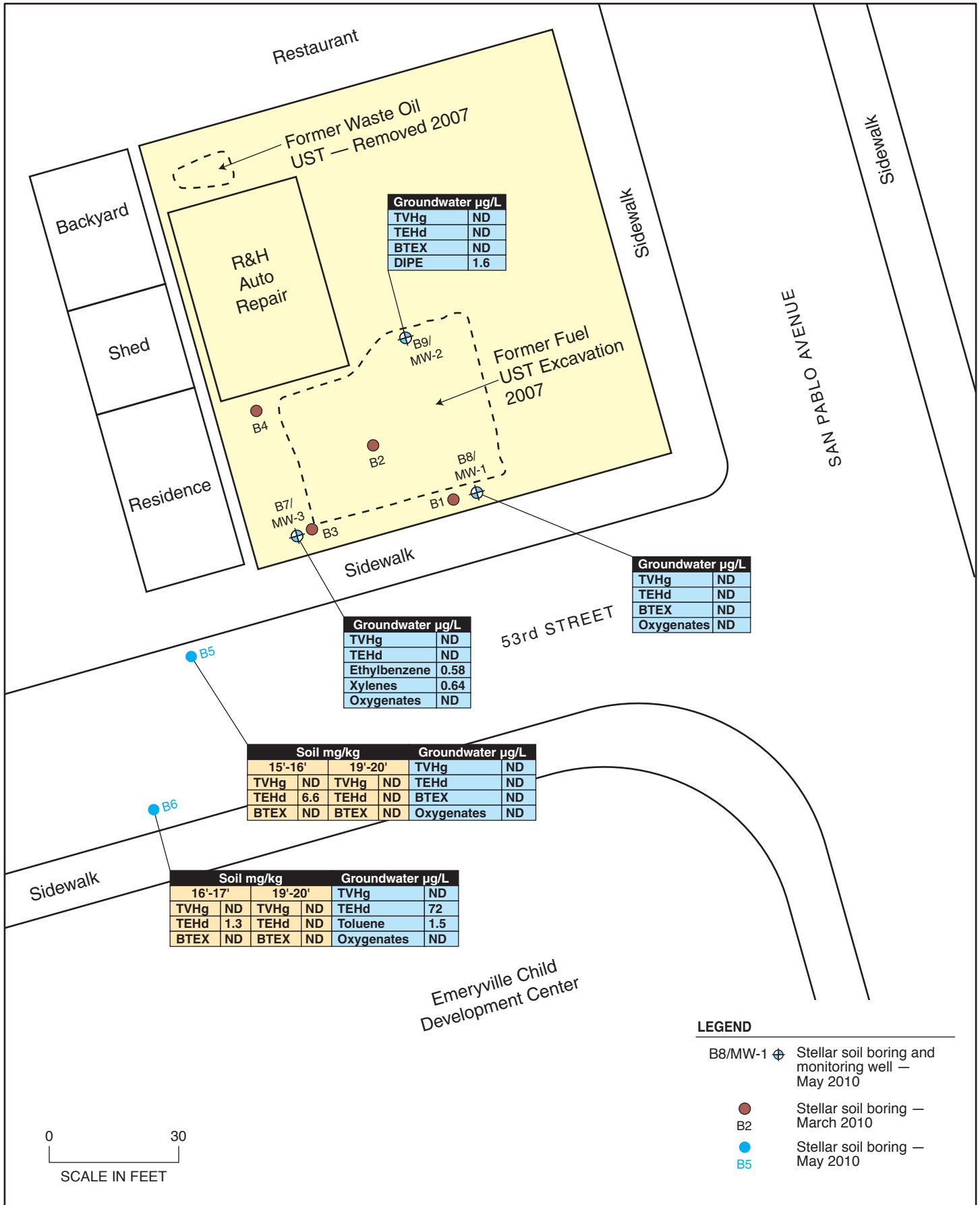
NE = Not Established

Oxygenates/MTBE = ethyl tertiary-butyl ether (ETBE), diisopropyl ether (DIPE), tertiary-amyl methyl ether (TAME), tertiary-butyl alcohol (TBA), and methyl tertiary-butyl ether (MTBE).

TEHd = total extractable hydrocarbons as diesel

TVHg = total volatile hydrocarbons as gasoline

All soil samples and associated ESLs are reported in milligrams per kilogram (mg/kg). All groundwater samples and associated ESLs are reported in micrograms per liter (µg/L).



CONTAMINANTS OF CONCERN IN MONITORING WELLS AND OFFSITE BORINGS

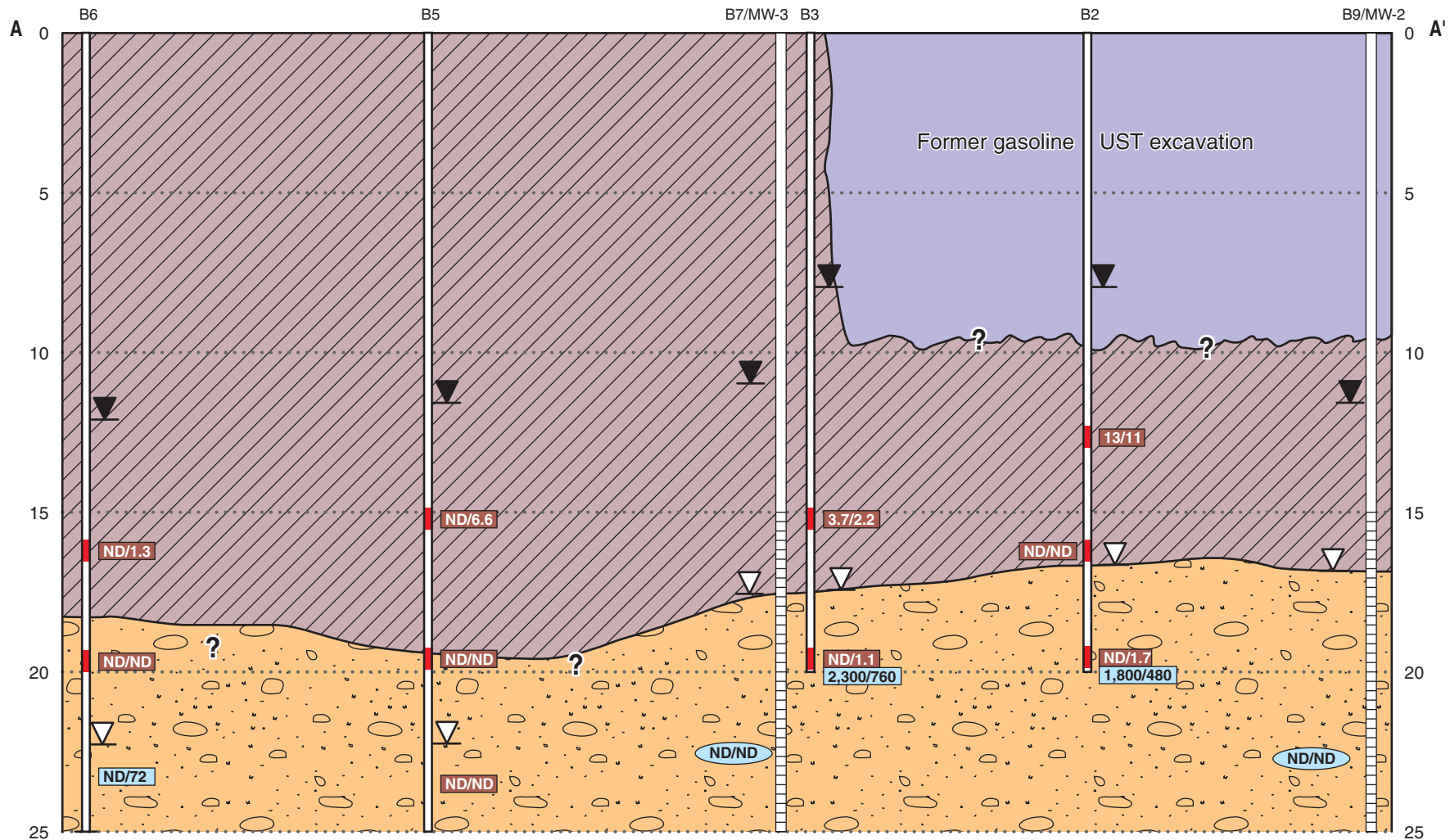
5315 San Pablo Avenue
Oakland, CA

By: MJC

JUNE 2010

Figure 6





LEGEND

- Inferred lower permeability soils (clay, gravelly clay, sandy clay)
- Class II Fill
- Inferred higher permeability soils (clayey sand to gravelly sand)
- First encountered groundwater
- Equilibrated groundwater level
- Monitoring well showing screened interval
- ND/1.1 Location soil sample retained for laboratory analyses with TVHg and TEHd concentration
- 1,800/480 Grab groundwater sample for laboratory analyses with TVHg and TEHd concentration
- ND/ND Groundwater sample collected from monitoring well for laboratory analyses with TVHg and TEHd concentration

Horizontal scale = 1"=15' Vertical scale = 1" = 5'



GEOLOGIC CROSS SECTION A-A' WITH SOIL AND GROUNDWATER ANALYTICAL RESULTS
5315 San Pablo Ave. Oakland, CA

Figure 7

by: MJC

JUNE 2010

6.0 REGULATORY CONSIDERATIONS & SITE CLOSURE CRITERIA ASSESSMENT

The concentrations reported in soil and groundwater samples must be compared to regulatory limits and guidance to evaluate the extent of any potential impact on the property and the environment.

The Water Board has established ESLs for evaluating the likelihood of environmental impact. 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 (i.e., 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 suggests that additional investigation and/or remediation is warranted.

Different ESLs are published for commercial/industrial vs. residential land use, for sites where groundwater is a likely vs. unlikely drinking water resource, and the type of receiving water body. The Water Board's "proposed groundwater management zones and designated areas map" in the *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report* (Water Board, 1999) shows the property area in a location where groundwater is unlikely to be used for drinking water.

The appropriate ESLs for the subject site are based on the following:

- Residential land use (a school is located downgradient of the property) and commercial/industrial use (for the subject property itself). Note that, for groundwater contaminants, all ESLs for the site contaminants are the same for both residential and commercial/industrial land use.
- Groundwater is not likely to be used as a potential drinking water resource based on both the property zoning status (commercial/industrial) and the designation of this area of Oakland as "Zone B – Unlikely to be used as a Drinking Water Resource (Water Board, 1999). Thus, while the Basin Plan considers all groundwater with potential for drinking water, the appropriate ESLs for the subject site are groundwater is not a likely drinking water resource.
- The receiving body for groundwater discharge is an estuary (San Francisco Bay).

The State of California has also promulgated drinking water standards (Maximum Contaminant Levels [MCLs]) for some of the site contaminants. Drinking water standards may also be utilized by regulatory agencies to evaluate the potential risk associated with groundwater contamination. For

the site contaminants, MCLs are generally the same as the ESLs (except that there is no MCL for gasoline).

Once ESLs or drinking water standards are exceeded, the need for and/or type of additional investigative and corrective actions is generally driven by the potential risk associated with the contamination. Minimum regulatory site closure criteria generally applied to fuel leak cases where groundwater is impacted include:

- The contaminant source has been removed, including reasonably accessible contaminated soils that pose a long-term impact to groundwater.

This criterion has been met, with all soil sample results below their respective ESL in areas near the former waste oil and fuel USTs most likely to show high residual contamination.

- The extent of residual contamination has been fully characterized to obtain sufficient lithologic and hydrogeologic understanding (generally referred to as a Site Conceptual Model).

This criterion has been met with respect to the onsite residual contamination.

- Groundwater wells have been installed and are monitored periodically to evaluate groundwater contaminant concentrations and hydrochemical trends.

This criterion has been partially met with the installation of the three monitoring wells and baseline monitoring onsite. Continued monitoring over at least the next three calendar quarters will likely be required to monitor hydrochemical trends and confirm groundwater flow direction.

- The stability of the contaminant plume has been evaluated to determine whether it is moving or increasing in concentration.

This criterion has not been met. Information regarding stability of the contaminant levels can only be established over time (see above).

- A determination has been made as to whether the residual contamination poses an unacceptable risk to sensitive receptors.

This criterion has been met. No fuel hydrocarbons exist offsite in concentrations that exceed ESLs, and the sensitive receptor/offsite conduit survey conducted as part of the current phase of work do not indicate the likelihood of such receptors.

7.0 DISCUSSION OF FINDINGS

DISCUSSION OF FINDINGS

Residual Soil Contamination

During the 2007-2008 AEI UST removal and the subsequent over-excavation and removal of contaminated soil, the highest reported concentration of hydrocarbons in site soils were 230 mg/kg of TVHg and 73 mg/kg of TEHd. Subsequently, concentrations of hydrocarbons in soil samples collected by Stellar Environmental in March 2010 were: 11 mg/kg of TVHg, and 73 mg/kg of TEHd. And for the May 2010 sampling event, the maximum detections were less than 1 mg/kg of TVHg (below the laboratory detection limit) and 6.6 mg/kg of TEHd.

Sample collection depths for the offsite soil samples were within the 15- to 17-foot-bgs unsaturated to capillary fringe zone and at the saturated zone between 19 and 20 feet bgs. These sampling depths are appropriate for evaluating offsite conditions downgradient from a fuel release. None of the soil samples collected from offsite soil borings B5 or B6 contained detectable concentrations of TVHg, BTEX, or MTBE, and only minor concentrations of TEHd (less than 7 mg/kg) were detected in the samples from the 15 to 17 feet bgs. The lack of TVHg, BTEX, and MTBE suggests an older spill with only minor, residual-aged fuel components still present in the capillary fringe.

Offsite Groundwater Contamination

Two downgradient bores were drilled to assess potential impacts to offsite groundwater. The grab-groundwater sample collected from boring B5 (nearest the property) did not contain detectable fuel hydrocarbons, BTEX, or fuel oxygenates, while the further downgradient boring B6 (located across 53rd Street) contained 72 µg/L of TEHd and a trace concentration of toluene (1.5 µg/L). Based on site history (indicating a cessation of fueling operations after the mid-1970s), the 2007 and 2008 AEI UST removal information (with no mention of groundwater collection in the UST excavation at a depth of 12 feet bgs), and consistent lithologic data gathered by Stellar Environmental (showing unsaturated clay conditions to about 17 feet bgs), these detections likely originated at the site and subsequently attenuated over time.

The interception of a potential plume by a preferential pathway, such as underground utilities downgradient, does not appear to be an issue at this location based on the relatively shallow depth of the utilities compared to the groundwater table depth. All of the utilities beneath 53rd Street are at or well above 12 feet, rendering these conduits unlikely to intersect groundwater and/or to act as preferential pathways.

Baseline Groundwater Well Data

The highest hydrocarbon concentrations in site groundwater—2,300 µg/L of TVHg and 760 µg/L of TEHd—are associated with a March 2010 grab-groundwater sample collected at boring B3. Based on these data, three groundwater monitoring wells were installed onsite. Laboratory analytical results for the baseline groundwater sampling event showed no fuel-range hydrocarbons in groundwater samples from wells MW-1, MW-2, or MW-3. Only trace amounts of DIPE (in well MW-2) and toluene and ethylbenzene (in well MW-3) were detected.

An apparent discrepancy exists between the concentrations of TVHg and TEHd detected in the grab-groundwater sample from the March 2010 Stellar Environmental borings (particularly B3) and the non-detect conditions found for the initial sampling event in all monitoring wells, two of which are located within 3 feet of (March 2010) borings B1 and B3. Possible explanations include the physical differences between open boreholes and properly constructed and sealed monitoring wells, the different groundwater sample collection protocols that exist between soil borings and monitoring wells, higher sample turbidity in grab samples, the potential for an isolated pocket of hydrocarbon contamination at B3, and the slightly deeper completion of the wells (to 25 feet bgs) relative to the bores (20 feet bgs). Additional quarterly site monitoring may establish a trend.

SITE CONCEPTUAL MODEL

The site conceptual model suggests that the onsite soil and groundwater contamination originated from leaks and/or spills from the USTs and/or associated piping. However, the low levels of soil and groundwater impact from such leaks and spills suggest no sustained leakage. This is corroborated by the UST removal record, which reported good integrity of the removed tanks. The highest concentration of contamination was located around the pump dispenser in the shallow soil at 2 feet bgs (1,500 mg/kg of TVHg). The maximum TEHd concentration was reported at 73 mg/kg from the excavation at 11 feet bgs.

The bulk of the petroleum product leaks and spills appear to have originated in the near surface area (as evidenced by the detection of 1,500 mg/kg of TVHg in the dispenser area soil sample) and migrated into the UST pit area, which was part of the removal action in 2007 when the tanks along with 320 tons of contaminated soil were removed (AEI, 2008a). The clay-rich soil that exists around and below the USTs minimized the hydrocarbon migration and allowed for much of the contaminant to be removed in the over-excavation stage.

Below the point where excavation occurred, at about 12 feet bgs, an additional 4 to 5 feet of clay exists before the lithology changes to a more permeable sand-rich water-bearing material. From the apparent shallow spillage/leakage points, the hydrocarbon contamination worked its way slowly downward, likely in inverted cone geometry, through the laterally uniform clay stratigraphy, eventually reaching the perennial groundwater table and silty/sandy materials found at depths of 16

to 18 feet bgs. No vertical preferential pathway based on lithology were noted by AEI in the UST excavation, or reflected in the Stellar Environmental exploratory or well bores. The gasoline-phase contamination shows only trace BTEX and fuel oxygenate fractions, below applicable ESLs.

HYDROCARBON ATTENUATION MODEL

Numerous field and laboratory studies have concluded that the subsurface behavior of petroleum hydrocarbons is significantly impacted by their high capacity to undergo biodegradation (Lawrence Livermore National Laboratory, Rice et al 1995). A variety of naturally occurring microorganisms utilize petroleum hydrocarbons as a carbon (food) source. Biodegradation of hydrocarbons can occur under anaerobic conditions, but is more highly favored in aerobic conditions.

Biodegradation should continue to be enhanced, as it appears to have been to date, as the relatively aerobic conditions benefit future natural attenuation. Most hydrocarbon plume conceptual models show biodegradation of petroleum hydrocarbons in groundwater as having a significant role in creating a stable plume, minimizing groundwater plume configuration and concentrations over time (Lawrence Livermore National Laboratory, 1995).

In general, natural attenuation of petroleum in groundwater is likely occurring, unless petroleum concentrations are sufficient to overwhelm the biodegradation process (i.e., in the high-concentration area of the plume). In these areas, biodegradation progresses until one of the process-limiting factors (usually oxygen) is depleted to the point at which biodegradation is not supported.

PROJECTED FUTURE TRENDS AND REMEDIAL OPTIONS

Projected Future Trends

Residual gasoline and diesel hydrocarbon impacts to groundwater will likely continue to diminish over the long term, as the main source of residual contaminated soil and backfill was removed in 2007 and 2008. This should be verified at the conclusion of the year of quarterly groundwater monitoring that is designed to evaluate any seasonal variations in hydrologic or hydrochemical conditions at the three site groundwater monitoring wells.

Potential Remedial Action

No further remedial action is considered needed given the data collected to date.

GROUNDWATER IMPACTS AND BENEFICIAL USES

There are no known immediate impacts to the groundwater that affect current beneficial use. The nearest surface water body is San Francisco Bay, located approximately 4,000 feet to the west of the site. Temescal Creek (150 feet to the south) is culverted. Groundwater is not likely to be used as a

potential drinking water resource, based on both the property zoning status (commercial/industrial) and the designation of this area of Oakland as “Zone B – Unlikely to be used as a Drinking Water Resource (Water Board, 1999). Thus, while the Water Board Basin Plan considers all groundwater with potential for drinking water, the appropriate designation and ESL criteria for the subject site is groundwater is not a likely drinking water resource.

The primary source (USTs) and secondary source (contaminated soil) have been remediated to the extent practical by the 2007 UST removals and over-excavation of contaminated soil. The property owner has no plans for any future UST or hydrocarbon use, or to utilize site groundwater for any purpose.

8.0 CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

The following conclusions are based on results of the current site assessment work for the subject property located at 5315 San Pablo Avenue in Oakland, Alameda County, California.

- Site lithology is fairly consistent in the areas tested onsite and offsite along 53rd Street, with an unsaturated clay zone located from near the surface to approximately 17 feet bgs. This low-permeability zone is underlain by a higher-permeability, fine sand and silt zone that extends to at least 25 feet bgs, which is the total explored depth. Groundwater was encountered at about 17 feet bgs during drilling and equilibrated (reflecting the overlying clay confining pressure) at about 11 to 12 feet bgs in site monitoring wells.
- The relatively high hydrocarbon concentration in boring B-3 in March 2010 (compared to the non-detection in the monitoring well located about 5 feet away) is attributed to one of more of the following: the grab-groundwater sample having colloidal particles, an isolated (vertically and laterally) pocket of higher concentration, and/or the difference in depths between the grab sample and the well sample.
- The calculated groundwater flow direction beneath the site is toward the southwest at a gradient of approximately 0.01 feet per foot.
- No significant offsite impacts to soil or groundwater currently exist from the former site UST release. The 72 µg/L of TEHd reported for the offsite grab-groundwater sample point is below the ESL, likely reflecting site sourced attenuation with time.
- Based on the depth to groundwater and the maximum 8-foot depth of the located utilities, there does not appear to be any preferential pathways that could intersect the plume. In addition, there are no nearby downgradient water wells that could be impacted, and no demonstrable risk to sensitive receptors from the residual contamination.

RECOMMENDATIONS

Based on the findings stated above and on Stellar Environmental Solutions' understanding of ACEH's site closure evaluation criteria we recommend the following:

- Provide this report to the ACEH and discuss strategies to move the site toward regulatory closure.

- Upload this report and the site monitoring well elevation and location survey data to the State GeoTracker database to satisfy ACEH and Water Board requirements.
- Upload all previous site investigation reports to the GeoTracker database to satisfy ACEH and Water Board requirements.
- Conduct three additional quarters of groundwater monitoring of the existing wells to monitor hydrologic conditions and groundwater flow direction, and to establish hydrochemical trends.
- Consider placing asphalt or pavement over the former UST excavation area. This area is currently surfaced with drain rock, which provides no protection against automotive-based hydrocarbon spills that commonly occur at auto repair shops. Such spills can be easily transported to the subsurface by rainwater infiltration through an unsealed surface.

9.0 REFERENCES AND BIBLIOGRAPHY

AEI Consultants, 2008. Underground Storage Tank Removal Final Report, 5315 San Pablo Avenue, Oakland, California. February 19.

AEI Consultants, 2008b. Work Plan – Soil and Groundwater Investigation, 5315 San Pablo Avenue, Oakland, California. October 31.

Alameda County Health Care Services Agency, 2009. Fuel Leak Case # RO0002965 and GeoTracker Global ID T0619704141, R&H Auto Repair, 5315 San Pablo Avenue, Oakland, California, 94608. February 20.

Lawrence Livermore National Laboratory, 1995, Rice et al.. Recommendations to Improve the Cleanup Process for California's Leaking Underground Fuel Tanks.

Regional Water Quality Control Board (Water Board), 1999. East Bay Plain Groundwater Basin Beneficial Use Evaluation Report – Alameda and Contra Costa Counties. June.

Regional Water Quality Control Board (Water Board), 2007. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater. November.

State Water Resources Control Board, 1989. Leaking Underground Fuel Tank Field Manual. October

Stellar Environmental Solutions, Inc., 2010. Limited Phase II Site Investigation Report, 5315 San Pablo Avenue, Oakland, California. March 28.

10.0 LIMITATIONS

This report has been prepared for the use of the R&H Auto Repair property owners, members, property manager, and tenants, and all of their authorized representatives. The information presented in this report is based on a review of site-specific documents provided by the property owner and its agents (e.g., historical environmental assessments and monitoring) and communication with the regulatory agencies. This report has been prepared in accordance with generally accepted methodologies and standards of practice of the area. The personnel performing this assessment 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 included in the report.

The findings of this report are valid as of the date of this report. Subject property 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 updated as needed with monitoring reports, inspection reports, contact information, and monitoring schedules.

APPENDIX A

Permits

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: 05/04/2010 By jamesy

Permit Numbers: W2010-0298
Permits Valid from 05/11/2010 to 05/11/2010

Application Id: 1272649551525
Site Location: 5315 San Pablo Avenue.

City of Project Site:Oakland

NW corner San Pablo Avenue & 53rd Street.

Project Start Date: 1 boring in parking strip outside property boundary and 1 across the street in parking strip
05/11/2010 Completion Date:05/11/2010

Assigned Inspector: Contact Vicky Hamlin at (510) 670-5443 or vickyh@acpwa.org

Applicant: Stellar Environmental Solutions - Steve Bittman
2198 Sixth Street, Suite 201, Berkeley, CA 94710

Phone: 510-644-3123

Property Owner: Kenneth Schmier
1475 Powell St., Emeryville, CA 94608

Phone: 510-652-6080

Client: Jim Grewel
5315 San Pablo Avenue, Oakland, CA 94608

Phone: 510-547-7511 x

Contact: Steve Bittman

Phone: 510-644-3123
Cell: 510-612-8751

Receipt Number: WR2010-0143 Total Due: \$265.00
Payer Name : Teal Glass Total Amount Paid: \$265.00
Paid By: VISA PAID IN FULL

Works Requesting Permits:

Borehole(s) for Geo Probes-Sampling 24 to 72 hours only - 2 Boreholes
Driller: Vapor Tech Services - Lic #: 916085 - Method: DP

Work Total: \$265.00

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2010-0298	05/04/2010	08/09/2010	2	2.25 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. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.
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. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no

Alameda County Public Works Agency - Water Resources Well Permit

case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

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. Prior to any drilling activities onto any public right-of-ways, it shall be the applicants responsibilities to contact and coordinate a Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits required for that City or to the County and follow all City or County Ordinances. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County a Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

7. 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.

8. Applicant shall contact Vicky Hamlin for an inspection time at 510-670-5443 or email to vickyh@acpwa.org 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.

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: 05/04/2010 By jamesy

Permit Numbers: W2010-0300 to W2010-0302
Permits Valid from 05/11/2010 to 05/11/2010

Application Id: 1272572435646
Site Location: 5315 San Pablo Avenue
Project Start Date: 05/11/2010
Assigned Inspector: Contact Vicky Hamlin at (510) 670-5443 or vickyh@acpwa.org

City of Project Site:Oakland

Completion Date:05/11/2010

Applicant: Stellar Environmental Solutions - Steve Bittman
2198 Sixth Street Suite 201, Berkeley, CA 94710
Property Owner: Kenneth Schmier
1475 Powell Street, Emeryville, CA 94608
Client: Jim Grewel
5315 San Pablo Avenue, Oakland, CA 94608
Contact: Steve Bittman

Phone: 510-644-3123

Phone: 510-652-6080

Phone: 510-547-7511

Phone: 510-644-3123
Cell: 510-612-8751

Receipt Number: WR2010-0145	Total Due:	\$1191.00
Payer Name : Teal Glass	Total Amount Paid:	\$1191.00
	Paid By: VISA	PAID IN FULL

Works Requesting Permits:

Well Construction-Monitoring-Monitoring - 3 Wells
Driller: Vapor Tech Services - Lic #: 916085 - Method: DP

Work Total: \$1191.00

Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2010-0300	05/04/2010	08/09/2010	MW-1	2.50 in.	1.00 in.	15.00 ft	25.00 ft
W2010-0301	05/04/2010	08/09/2010	MW-2	2.50 in.	1.00 in.	15.00 ft	25.00 ft
W2010-0302	05/04/2010	08/09/2010	MW-3	2.50 in.	1.00 in.	15.00 ft	25.00 ft

Specific Work Permit Conditions

1. 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.

2. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

3. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County an Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

Alameda County Public Works Agency - Water Resources Well Permit

4. Compliance with the well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate State reporting-requirements related to well construction or destruction (Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and mail original to the Alameda County Public Works Agency, Water Resources Section, within 60 days. Including permit number and site map.
 5. Applicant shall contact Vicky Hamlin for an inspection time at 510-670-5443 or email to vickyh@acpwa.org 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.
 6. Wells shall have a Christy box or similar structure with a locking cap or cover. Well(s) shall be kept locked at all times. Well(s) that become damaged by traffic or construction shall be repaired in a timely manner or destroyed immediately (through permit process). No well(s) shall be left in a manner to act as a conduit at any time.
 7. Minimum surface seal thickness is two inches of cement grout placed by tremie
 8. Minimum seal (Neat Cement seal) depth for monitoring wells is 5 feet below ground surface(BGS) or the maximum depth practicable or 20 feet.
 9. 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.
-



EXCAVATION PERMIT

TO EXCAVATE IN STREETS OR OTHER SPECIFIED WORK

CIVIL ENGINEERING

1110

ON 5300 SF

PAGE 2 of 2

Permit valid for 90 days from date of issuance.

PERMIT NUMBER X10000622*		SITE ADDRESS/LOCATION 5315 SAN PABLO AVE	
APPROX. START DATE 5/12/10	APPROX. END DATE 5/12/10	24-HOUR EMERGENCY PHONE NUMBER (Permit not valid without 24-Hour number) 415-370-0415	
CONTRACTOR'S LICENSE # AND CLASS 916085 CS7		CITY BUSINESS TAX # 28006455	

ATTENTION:

- 1- State law requires that the contractor/owner call Underground Service Alert (USA) two working days before excavating. This permit is not valid unless applicant has secured an inquiry identification number issued by USA. The USA telephone number is 1-800-642-2444. Underground Service Alert (USA) # _____
- 2- 48 hours prior to starting work, you MUST CALL (510) 238-3651 to schedule an inspection.
- 3- 48 hours prior to re-paving, a compaction certificate is required (waived for approved slurry backfill).

OWNER/BUILDER

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5 Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the revisions of the Contractor's License Law Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code, or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than \$500):

I, as an owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale).

I, as owner of the property, am exempt from the sale requirements of the above due to: (1) I am improving my principal place of residence or appurtenances thereto, (2) the work will be performed prior to sale, (3) I have resided in the residence for the 12 months prior to completion of the work, and (4) I have not claimed exemption on this subdivision on more than two structures more than once during any three-year period. (Sec. 7044 Business and Professions Code).

I, as owner of the property, am exclusively contracting with licensed contractors to construct the project, (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License Law).

I am exempt under Sec. _____, B&PC for this reason _____

WORKER'S COMPENSATION

I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Worker's Compensation Insurance, or a certified copy thereof (Sec. 3700, Labor Code).

Policy # 4/10 Company Name _____

I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Worker's Compensation Laws California (not required for work valued at one hundred dollars (\$100) or less).

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked. This permit is issued pursuant to all provisions of Title 12 Chapter 12.12 of the Oakland Municipal Code. It is issued upon the express condition that the permittee shall be responsible for all claims and liabilities arising out of work performed under the permit or arising out of permittee's failure to perform the obligations with respect to street maintenance. The permittee shall, and by acceptance of the permit agrees to defend, indemnify, save and hold harmless the City, its officers and employees, from and against any and all suits, claims, or actions brought by any person for or on account of any bodily injuries, disease or illness or damage to persons and/or property sustained or arising in the construction of the work performed under the permit or in consequence of permittee's failure to perform the obligations with respect to street maintenance. This permit is void 90 days from the date of issuance unless an extension is granted by the Director of the Office of Planning and Building.

I hereby affirm that I am licensed under provisions of Chapter 9 of Division 3 of the Business and Professions Code and my license is in full force and effect (if contractor), that I have read permit and agree to its requirements, and that the above information is true and correct under penalty of law.

St. B. Brown _____ Date **4/28/10**

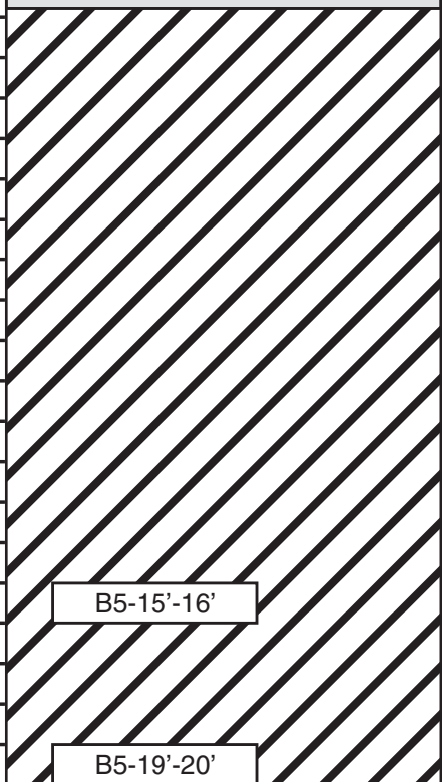
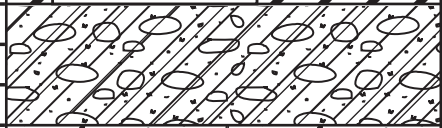
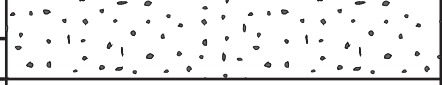
Nature of Permittee Agent for Contractor Owner

IF STREET LAST SURFACED	SPECIAL PAVING DETAIL REQUIRED? <input type="checkbox"/> YES <input type="checkbox"/> NO	HOLIDAY RESTRICTION? (NOV 1 - JAN 1) <input type="checkbox"/> YES <input type="checkbox"/> NO	LIMITED OPERATION AREA? (7AM-9AM & 4PM-6PM) <input type="checkbox"/> YES <input type="checkbox"/> NO
ISSUED BY	DATE ISSUED 4/28/10		

Boring Logs with Well Construction Details

BORING NUMBER B5 Page 1 of 1

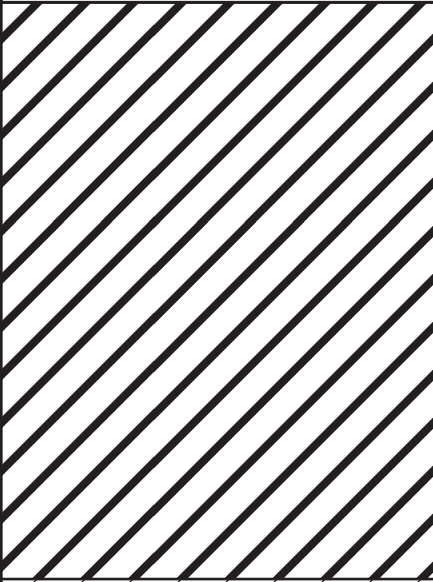

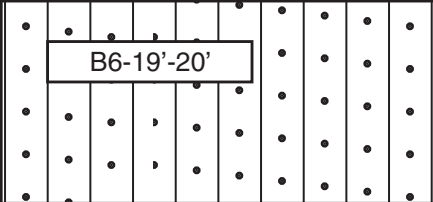
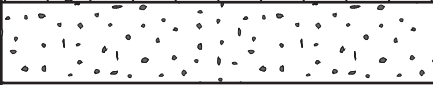
PROJECT R & H Auto Repair OWNER _____
 LOCATION 5315 San Pablo Ave., Oakland, CA PROJECT NUMBER 2010-06
 TOTAL DEPTH 25 feet BOREHOLE DIA. 2.25 in.
 SURFACE ELEV. Approx. 40 feet WATER FIRST ENCOUNTERED 23 feet
 DRILLING COMPANY V & S DRILLING METHOD Direct Push 7720 DT
 DRILLER Glenn GEOLOGIST S. Bittman DATE DRILLED 5/11/10

DEPTH (feet)	GRAPHIC LOG	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
0		Asphalt 4", Baserock 6"	
0-19'		CH, Silty clay, dark brown, damp, stiff CH, as above, grey, damp, very stiff ▼ Softer at 14', brown Becomes mottled with oxide at 15'	Notes: Continuous core sampling—100% core recovery unless specified otherwise
15'	B5-15'-16'		
19'	B5-19'-20'		
20'		CL/GC, gravelly clay to clayey gravel, grey, moist, soft ▽	Grab groundwater samples collected from inside drill rods
25'		SW, gravelly sand, clayey, reddish brown, medium dense, wet	B5-15'-16'
25'		Bottom of bore = 25 feet	Soil sample collected for analysis
30'			

2010-06-10

BORING NUMBER B6 Page 1 of 1

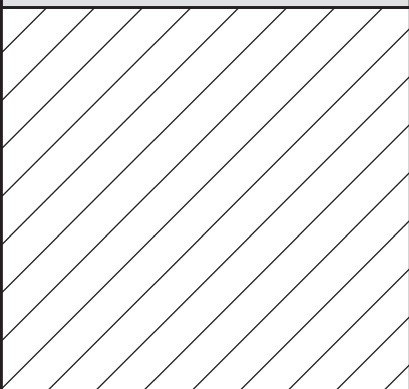
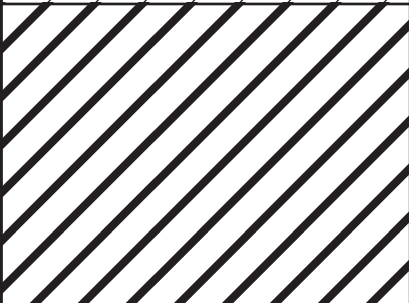
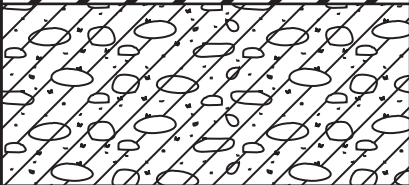
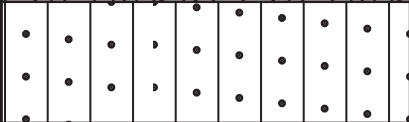
PROJECT R & H Auto Repair OWNER _____
 LOCATION 5315 San Pablo Ave., Oakland, CA PROJECT NUMBER 2010-06
 TOTAL DEPTH 25 feet BOREHOLE DIA. 2.25 in.
 SURFACE ELEV. Approx. 40 feet WATER FIRST ENCOUNTERED 23 feet
 DRILLING COMPANY V & S DRILLING METHOD Direct Push 7720 DT
 DRILLER Glenn GEOLOGIST S. Bittman DATE DRILLED 5/11/10

DEPTH (feet)	GRAPHIC LOG	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
0		Asphalt 4", Baserock 6"	
0-15		CH, Silty clay, dark grey to brown, damp, stiff, redwood rootlets to 5' CH as above, no odor ▼ softer, grey at 12'	
16-17	 B6-16'-17'	CL, mottled with oxide staining, soft	Notes: Continuous core sampling—100% core recovery unless specified otherwise Grab groundwater samples collected from inside drill rods
19-20	 B6-19'-20'	CL/SM, Sandy clay to silty sand, grey, moist, soft ▽	
23-25		SW, Gravelly sand, tan, wet, medium dense	
25		Bottom of bore = 25 feet	B6-16'-17' Soil sample collected for analysis
30			

2010-06-11

BORING NUMBER B7/MW-3 Page 1 of 1

PROJECT R & H Auto Repair OWNER _____
 LOCATION 5315 San Pablo Ave., Oakland, CA PROJECT NUMBER 2010-06
 TOTAL DEPTH 25 feet BOREHOLE DIA. 3.25 in.
 SURFACE ELEV. Approx. 40 feet WATER FIRST ENCOUNTERED 17.5 feet
 DRILLING COMPANY V & S DRILLING METHOD Direct Push 7720 DT
 DRILLER Glenn GEOLOGIST S. Bittman DATE DRILLED 5/11/10

DEPTH (feet)	GRAPHIC LOG	DESCRIPTION/SOIL CLASSIFICATION	REMARKS	WELL CONSTRUCTION	
					MW-3
0		Asphalt 3", Baserock 3"			
0-10		CL, silty clay, brown, damp, medium plasticity, very stiff			
10-14		CH, becomes grey with increasing plasticity at 10' becomes soft with oxide mottling at 14'			
14-20		GC, Gravelly clay with sandy silt and silty sand interbeds, brown with orange oxide stain, moist to wet, soft			
20-25		SM, Silty fine sand, grey, wet, 15% sub angular pebbles, dense			
25		Bottom of bore = 25 feet			
30					

2010-06-12

Well Construction Legend:

	1" PVC screen (0.010-in. slots)		Hydrated bentonite pellets		#2/12 Monterey Sand		Portland cement & water grout		Static groundwater
			Groundwater encountered						

BORING NUMBER B8/MW-1 Page 1 of 1

PROJECT R & H Auto Repair OWNER _____
 LOCATION 5315 San Pablo Ave., Oakland, CA PROJECT NUMBER 2010-06
 TOTAL DEPTH 25 feet BOREHOLE DIA. 3.25 in.
 SURFACE ELEV. Approx. 40 feet WATER FIRST ENCOUNTERED 18 feet
 DRILLING COMPANY V & S DRILLING METHOD Direct Push 7720 DT
 DRILLER Glenn GEOLOGIST S. Bittman DATE DRILLED 5/11/10

DEPTH (feet)	GRAPHIC LOG	DESCRIPTION/SOIL CLASSIFICATION	REMARKS	WELL CONSTRUCTION	
					MW-3
0		Asphalt 3", Baserock 3"			
0-4		GC, Gravelly clay, dark brown, dry, medium stiff			
4-13		CL, silty clay, dark brown, damp, very stiff			
8-13		Becomes grey at 8' with some oxide mottling			
13-18		CH, Softer at 15', stiff			
18-20					
20-23		SM/CL, sandy silt to sandy clay, brown with red oxide staining, moist to wet, soft			
23-25		SM, Silty fine sand with clay, grey, wet, soft			
25		Bottom of bore = 25 feet			
30					

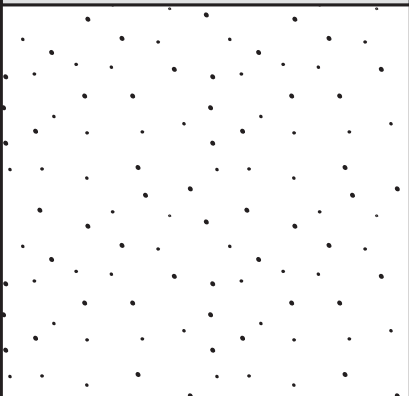
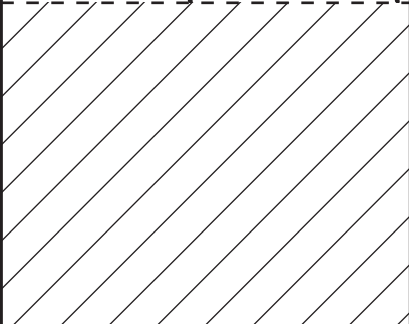
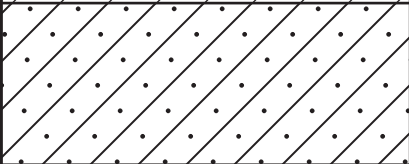
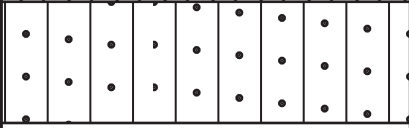
2010-06-13

Well Construction Legend:

	1" PVC screen (0.010-in. slots)		Hydrated bentonite pellets		#2/12 Monterey Sand		Portland cement & water grout		Static groundwater
									Groundwater encountered

BORING NUMBER B9/MW-2 Page 1 of 1

PROJECT R & H Auto Repair OWNER _____
 LOCATION 5315 San Pablo Ave., Oakland, CA PROJECT NUMBER 2010-06
 TOTAL DEPTH 25 feet BOREHOLE DIA. 3.25 in.
 SURFACE ELEV. Approx. 40 feet WATER FIRST ENCOUNTERED 17 feet
 DRILLING COMPANY V & S DRILLING METHOD Direct Push 7720 DT
 DRILLER Glenn GEOLOGIST S. Bittman DATE DRILLED 5/11/10

DEPTH (feet)	GRAPHIC LOG	DESCRIPTION/SOIL CLASSIFICATION	REMARKS	WELL CONSTRUCTION	
					MW-3
0		3-1/2" drain rock			
0-10		Compacted Class II fill			
10-15		CL, silty clay, dark brown to black, damp, stiff, no odor ▼			
15-20		Becomes olive brown, softer at 15' ▽			
20-25		SM, Silty sand, grey, moist to wet, medium dense			
25		Bottom of bore = 25 feet			
30					

2010-06-14

Well Construction Legend:

	1" PVC screen (0.010-in. slots)		Hydrated bentonite pellets		#2/12 Monterey Sand		Portland cement & water grout		Static groundwater
			Groundwater encountered						

Well Survey Report

Virgil Chavez Land Surveying

721 Tuolumne Street

Vallejo, California, 94590

(707) 553-2476 • Fax (707) 553-8698

June 8, 2010

Project No.: 2918-03

Steve Bittman
Stellar Environmental
2198 Sixth Street, Suite 201
Berkeley, Ca 94710

Subject: Monitoring Well Survey
5315 San Pablo Ave.
Oakland, CA

Dear Steve:

This is to confirm that we have proceeded at your request to survey the monitoring wells located at the above referenced location. The survey was completed on June 2, 2010. The benchmark for this survey was a well monument on Powell St. under the westbound lanes of I-580. The latitude, longitude and coordinates are for top of casings and are based on the California State Coordinate System, Zone III (NAD83).
Benchmark Elevation = 13.88 feet (NAVD88).

<u>Latitude</u>	<u>Longitude</u>	<u>Northing</u>	<u>Easting</u>	<u>Elev.</u>	<u>Desc.</u>
37.8372261	-122.2822106	2132215.34	6047032.22	39.19	RIM MW-1
				38.94	TOC MW-1
				39.63	RIM MW-2
37.8373335	-122.2822536	2132254.67	6047020.56	39.18	TOC MW-2
				38.46	RIM MW-3
37.8372154	-122.2823593	2132212.26	6046989.21	38.23	TOC MW-3



Sincerely,

Virgil D. Chavez
Virgil D. Chavez, PLS 6323

Department of Water Resources Reports

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

APPENDIX B

Conduit Survey Documentation

May 6, 2010

Anthony Thomas
PG&E

Email: aft5@pge.com

Subject: PG&E Utility Maps in the Vicinity of 5315 San Pablo Avenue, Oakland, CA

Dear PG&E:

We are currently remediating a leaking underground storage tank site at 5315 San Pablo Avenue in Oakland, CA. Alameda County Department of Environmental Health has asked us to conduct a preferential pathway study of potential conduits for contaminant migration away from this site (hydrocarbons). This would include PG&E's underground gas and electrical pipelines that are located in San Pablo Avenue between about 47th and 54th Streets, and in 53rd Street about 0.25 miles west of San Pablo Avenue .

Attached is a Street map showing the contaminated site, and a square outlining the area of concern for which we need underground utility information. If you could send me any maps and/or information on your underground utilities in this area, it would be greatly appreciated.

Sincerely,



Steve Bittman, R.E.A.
Senior Environmental Scientist

Stellar Environmental Solutions for 5315 San Pablo Ave

Cre: Be Oakland



Map of Well Search area request

Steve Bittman

From: Steve Bittman [intergeo@earthlink.net]
Sent: Monday, May 24, 2010 3:36 PM
To: Steve Bittman
Subject: Fw: PG&E Response to a USA Locate Request

From: <Notify@pge.com>
Sent: Tuesday, May 11, 2010 2:01 PM
To: <INTERGEO@EARTHLINK.NET>
Subject: PG&E Response to a USA Locate Request

> =====
> To: STELLAR ENVIRONMENTAL Attn: STEVE BITTMAN
> Voice: 5106128751 Fax: 5106443859
> Re: PG&E Response to a USA Locate Request
>
> This is a message from Pacific Gas & Electric Company replying to your
> request to mark our facilities.
>
> =====
> =====
>
> Ticket: 0123179
> County: ALAMEDA Place: OAKLAND
> Address: 5315 SAN PABLO AVE
>
> PGEOAK:
> WARNING! This site was excavated before PG&E marked it's facilities.
> Call 1 800
> 973 5000 if you have questions.
>
> =====
> =====
>
> Please call USA at 8-1-1 if you have questions about white paint or
> the USA process. If you have a question for PG&E, please call
> 1-800-743-5000.
>
> =====
> =====
>
> This message was generated by an automated system. Please do not
> reply to this email.

May 3, 2010

EBMUD Mapping Services
375 11th Street
Oakland, California 94607

Subject: Map request in the Vicinity of 5315 San Pablo Avenue, Oakland, CA

Dear EBMUD Mapping Services:

We are currently remediating a leaking underground storage tank site at 5315 San Pablo Avenue in Oakland, CA. Alameda County Department of Environmental Health has asked us to conduct a preferential pathway study of potential conduits for contaminant migration away from this site (hydrocarbons). This would include EBMUD's underground utilities that are located on the Oakland Emeryville border under 53rd Street between San Pablo Avenue and Boyer Street, and under San Pablo Avenue between 54th Street and 47th Street.

Attached is a Google map showing the contaminated site, and a dashed outline of the area of concern for which we need underground utility information. If you could send me any maps and/or information on your underground utilities in this area, it would be greatly appreciated.

Sincerely,



Steve Bittman, R.E.A.
Senior Environmental Scientist



Map Depicting 5315 San Pablo Ave, and area of Interest

DEPARTMENT OF WATER RESOURCES

NORTHERN REGION
2440 Main Street
Red Bluff, CA 96080
(530) 529-7300
(530) 529-7322 (Fax)

NORTH-CENTRAL REGION
3500 Industrial Blvd.
West Sacramento, CA 95691
(916) 376-9612
(916) 376-9676 (Fax)

SOUTH-CENTRAL REGION
3374 E. Shields Ave Ste A7
Fresno, CA 93726
(559) 230-3300
(559) 230-3301 (Fax)

SOUTHERN REGION
770 Fairmont Avenue
Glendale, CA 91203
(818) 500-1645 ext. 233
(818) 543-4604 (Fax)

**WELL COMPLETION REPORT RELEASE REQUEST AND CONFIDENTIALITY AGREEMENT
REGULATORY-RELATED ENVIRONMENTAL CLEANUP STUDY**

Well Completion Reports associated with wells located within two miles of an area affected or potentially affected by a known unauthorized release of a contaminant will be made available upon request to any person performing an environmental cleanup study associated with the unauthorized release, if the study is conducted pursuant to a regulatory agency order (Water Code Section 13752).

Requests must be made on the form below, signed and submitted to the appropriate DWR District Office. Please provide the township, range, and section of the property where the study is to be conducted. Attach a map or a sketch with a north arrow, and provide as much identifying information requested below as possible; additional paper may be attached if necessary.

By signing below, the requester acknowledges and agrees that, in compliance with Section 13752, the information obtained from these reports will be kept confidential and will not be disseminated, published, or made available for inspection by the public. Copies obtained must be stamped CONFIDENTIAL and kept in a restricted file accessible only to authorized personnel. These reports must not be used for any purpose other than for the purpose of conducting the environmental cleanup study.

Project Name: RdH Auto Repair County: Alameda
Street Address: 5315 San Pablo Ave City: Oakland
Township, Range, and Section: T1S, R4W Sec 22 Radius: 0.25 miles
(Include entire study area and a map that shows the area of interest.) (maximum 2 miles)

Requester's Company: Stellar Environmental Solutions Regulatory Agency Name: Alameda County Health Care Agency
Requester's Name (please print): Steve Bittman Agency Contact Name (please print): Barbara Jakub
Address: 2198 Sixth St # 201 Address: 1131 Harbor Bay Parkway
City, State, and Zip Code: Berkeley CA 94710 City, State, and Zip Code: Alameda CA 94502
Signature: Steve Bittman Signature: Barbara Jakub
Title: Project Manager Title: Hazardous Materials Specialist
Telephone: (510) 644-3123 Telephone: (510) 639-1287
FAX: (510) 644-3859 FAX: (510) 337-9335
Date: May 4, 2010 Date: 5/5/2010
E-mail: sbittman@stellar-environmental.com E-mail: barbara.jakub@acgov.org

STELLAR ENVIRONMENTAL SOLUTIONS, INC.

2198 Sixth Street, Suite 201

Berkeley, CA 94710

Tel: (510) 644-3123

Fax: (510) 644-3859

fax

to: **County of Alameda Public Works Agency – Water Resources**

fax #: **510-782-1939**

from: **Steve Bittman**

date: **May 6, 2010**

subject: **Well Completion Report Release Agreement – Agency Study**

pages: **3 (including this cover page)**

NOTES: *In conjunction with the Alameda County Department of Environmental Health, SES is conducting a well search for a 0.25 mile Radius surrounding 5315 San Pablo Avenue, Oakland, CA. We are specifically looking for location data and well completion reports for wells located downgradient (to the west towards the Bay) of the subject property address. Attached is the signed Well Completion Report Release Agreement and a site map with the area of concern indicated by a box. Please contact me at the number above, or email me at sbittman@stellar-environmental.com if you have any questions or concerns.*

Thanks!

Steve Bittman

Stellar Environmental Solutions, Inc.

<u>Permit</u>	<u>Tr</u>	<u>Section</u>	<u>Address</u>	<u>Longcity</u>
	1S/4W	14N 1	1056 48th St.	Emeryville
	1S/4W	14N 2	1056 48th St.	Emeryville
	1S/4W	14N 3	1056 48th St.	Emeryville
	1S/4W	15J	SAN PABLO AVE & POWELL	Oakland
	1S/4W	15J 6	5714 San Pablo Ave.	Oakland
	1S/4W	15J 7	5714 San Pablo Ave.	Oakland
	1S/4W	15J 8	5714 San Pablo Ave.	Oakland
	1S/4W	15J 9	5714 San Pablo Ave.	Oakland
	1S/4W	15J		
	1S/4W	15J		
	1S/4W	15J		
	1S/4W	15J		
	1S/4W	15J		
	1S/4W	15J		
	1S/4W	15J		
	1S/4W	15J		
	1S/4W	15J		
	1S/4W	15J		
	1S/4W	15K 1	HOLLIS ST. & 59TH	Emeryville
	1S/4W	15K1		
	1S/4W	15Q 4	1355 55th St	Emeryville
	1S/4W	15Q 5	1355 55th St	Emeryville
	1S/4W	15Q 1	1400-53RD ST	Emeryville
	1S/4W	15Q 2	4525 Hollis Street	Emeryville
	1S/4W	15Q 3	5521 Doyle St.	Emeryville
97WR214	1S/4W	22A23	4575 San Pablo Av	Emeryville
97WR214	1S/4W	22A24	4575 San Pablo Av	Emeryville
97WR214	1S/4W	22A25	4575 San Pablo Av	Emeryville
	1S/4W	22A 2	4343 San Pablo Av	Emeryville
	1S/4W	22A 3	4343 San Pablo Av	Emeryville
	1S/4W	22A 4	4343 San Pablo Av	Emeryville
	1S/4W	22A 5	4343 San Pablo Av	Emeryville
	1S/4W	22A 1	45TH ST/SAN PABLO AVE	Emeryville
	1S/4W	22A 6	4331 San Pablo Av	Emeryville
95412	1S/4W	22A21	1250 Park Ave	Emeryville
	1S/4W	22A 7	4300 San Pablo Av	Emeryville
94653	1S/4W	22A17	1150 Park Av	Emeryville
94653	1S/4W	22A18	1150 Park Av	Emeryville
94653	1S/4W	22A19	1150 Park Av	Emeryville
94653	1S/4W	22A20	1150 Park Av	Emeryville
95371	1S/4W	22A22	1150 Park Av	Emeryville
	1S/4W	22A 8	1150 Park Av	Emeryville
	1S/4W	22A 9	1150 Park Av	Emeryville
	1S/4W	22A10	1150 Park Av	Emeryville
	1S/4W	22A11	1150 Park Av	Emeryville
	1S/4W	22A12	1150 Park Av	Emeryville
	1S/4W	22A13	1150 Park Av	Emeryville

	1S/4W	22A14	1150 Park Av	Emeryville
	1S/4W	22A15	1150 Park Av	Emeryville
	1S/4W	22A16	1150 Park Av	Emeryville
97WR243	1S/4W	22B32	Horton St (Bet. 45th and	Emeryville
97WR243	1S/4W	22B33	Horton St (Bet. 45th and	Emeryville
97WR243	1S/4W	22B34	Horton St (Bet. 45th and	Emeryville
97WR243	1S/4W	22B35	Horton St (Bet. 45th and	Emeryville
	1S/4W	22B 3	1401 45th St.	Emeryville
	1S/4W	22B 3	1401 45TH ST.	Emeryville
	1S/4W	22B 1	4520 HORTON	Emeryville
	1S/4W	22B 2	4520 HORTON ST	Emeryville
94117	1S/4W	22B28	4204 Hollis St	Emeryville
	1S/4W	22B25	4525-4563 Horton St	Emeryville
	1S/4W	22B26	4525-4563 Horton St	Emeryville
	1S/4W	22B27	4525-4563 Horton St	Emeryville
94145	1S/4W	22B21	4525 Hollis St	Emeryville
94145	1S/4W	22B22	4525 Hollis St	Emeryville
94145	1S/4W	22B23	4525 Hollis St	Emeryville
94145	1S/4W	22B24	4525 Hollis St	Emeryville
97WR190	1S/4W	22B42	1450 Sherwin Ave	Emeryville
97WR190	1S/4W	22B43	1450 Sherwin Ave	Emeryville
97WR190	1S/4W	22B44	1450 Sherwin Ave	Emeryville
97WR190	1S/4W	22B45	1450 Sherwin Ave	Emeryville
97WR190	1S/4W	22B46	1450 Sherwin Ave	Emeryville
97WR190	1S/4W	22B47	1450 Sherwin Ave	Emeryville
97WR190	1S/4W	22B48	1450 Sherwin Ave	Emeryville
97WR190	1S/4W	22B49	1450 Sherwin Ave	Emeryville
97WR190	1S/4W	22B50	1450 Sherwin Ave	Emeryville
97WR190	1S/4W	22B51	1450 Sherwin Ave	Emeryville
97WR190	1S/4W	22B52	1450 Sherwin Ave	Emeryville
97WR190	1S/4W	22B53	1450 Sherwin Ave	Emeryville
97WR190	1S/4W	22B54	1450 Sherwin Ave	Emeryville
97WR190	1S/4W	22B55	1450 Sherwin Ave	Emeryville
96516	1S/4W	22B56	Hollis and 53rd	Emeryville
97WR190	1S/4W	22B36	1450 Sherwin Av	Emeryville
97WR190	1S/4W	22B37	1450 Sherwin Av	Emeryville
97WR190	1S/4W	22B38	1450 Sherwin Av	Emeryville
97WR190	1S/4W	22B39	1450 Sherwin Av	Emeryville
97WR190	1S/4W	22B40	1450 Sherwin Av	Emeryville
97WR190	1S/4W	22B41	1450 Sherwin Ave	Emeryville
	1S/4W	22B 4	1450 Sherwin Av	Emeryville
	1S/4W	22B 5	1450 Sherwin Av	Emeryville
	1S/4W	22B 6	1450 Sherwin Av	Emeryville
	1S/4W	22B 7	1450 Sherwin Av	Emeryville
	1S/4W	22B 8	1450 Sherwin Av	Emeryville
	1S/4W	22B 9	1450 Sherwin Av	Emeryville
	1S/4W	22B10	1450 Sherwin Av	Emeryville

	1S/4W	22B11	1450 Sherwin Av	Emeryville
	1S/4W	22B12	1450 Sherwin Av	Emeryville
	1S/4W	22B13	1450 Sherwin Av	Emeryville
	1S/4W	22B14	1450 Sherwin Av	Emeryville
	1S/4W	22B15	1450 Sherwin Av	Emeryville
95425	1S/4W	22B29	1450 Sherwin Ave	Emeryville
95425	1S/4W	22B30	1450 Sherwin Ave	Emeryville
95425	1S/4W	22B31	1450 Sherwin Ave	Emeryville
	1S/4W	22B16	4525-4563 Horton St	Emeryville
	1S/4W	22B17	4525-4563 Horton St	Emeryville
	1S/4W	22B18	4525-4563 Horton St	Emeryville
	1S/4W	22B19	4525-4563 Horton St	Emeryville
	1S/4W	22B20	4525-4563 Horton St	Emeryville
96516	1S/4W	22B56	Hollis and 53rd	Emeryville
	1S/4W	23D 2	989 41st Street	Oakland
	1S/4W	23D 3	989 41st Street	Oakland
	1S/4W	23D 4	989 41st Street	Oakland
94237	1S/4W	23D 5	1001 42nd St	Oakland
	1S/4W	23D 1	44TH ST & ADELIN	Oakland

Sherwin-Williams	7/17/1997	122288211	37832145	1 1S/4W 22B
Sherwin-Williams	7/17/1997	122288211	37832145	1 1S/4W 22B
Sherwin-Williams	7/17/1997	122288211	37832145	1 1S/4W 22B
Sherwin-Williams	7/17/1997	122288211	37832145	1 1S/4W 22B
Sherwin-Williams	7/17/1997	122288211	37832145	1 1S/4W 22B
The Sherwin-Williams Comp	2/17/1998	122288209	37832112	1 1S/4W 22B
The Sherwin-Williams Comp	2/17/1998	122288209	37832112	1 1S/4W 22B
The Sherwin-Williams Comp	2/17/1998	122288209	37832112	1 1S/4W 22B
The Sherwin-Williams Comp	7/24/1997	122288327	37833917	1 1S/4W 22B
The Sherwin-Williams Comp	7/24/1997	122288327	37833917	1 1S/4W 22B
The Sherwin-Williams Comp	7/24/1997	122288327	37833917	1 1S/4W 22B
The Sherwin-Williams Comp	7/24/1997	122288327	37833917	1 1S/4W 22B
The Sherwin-Williams Comp	7/24/1997	122288327	37833917	1 1S/4W 22B
Chiron Corp	#####			1S/4W 22B
California Linen Rental	6/27/1990	122275113	37831932	0 1S/4W 23D
California Linen Rental	6/27/1990	122275113	37831932	0 1S/4W 23D
California Linen Rental	6/27/1990	122275113	37831932	0 1S/4W 23D
Color Communications	3/29/1998	122275651	37832941	1 1S/4W 23D
PACIFIC GAS AND ELECTRIC	7/23/1984	122257900	37833000	2 1S/4W 23D

<u>Rec_code</u>	<u>Phone</u>	<u>City</u>	<u>Drilldate</u>	<u>Elevation</u>	<u>Totaldepth</u>	<u>Waterdept</u>	<u>Diameter</u>	<u>Use</u>
0	0	EME	Oct-92	0	28	0	2	DES
0	0	EME	Oct-92	0	28	0	2	DES
0	0	EME	Oct-92	0	28	0	2	DES
2337	0	OAK	Feb-89	0	20	14	8	BOR
0	0	OAK	5/92	0	19	10	4	MON
0	0	OAK	5/92	0	19	10	4	MON
0	0	OAK	5/92	0	19	10	4	MON
0	0	OAK	5/92	0	19	10	4	MON
6818	0		Mar-89	0	15	13	8	BOR
6873	0		Feb-89	0	15	13	8	BOR
6874	0		Feb-89	0	20	0	8	BOR
6875	0		Feb-89	0	15	0	8	BOR
6876	0		Mar-89	0	15	13	8	BOR
6877	0		Mar-89	0	20	14	8	BOR
6878	0		Mar-89	0	15	13	8	BOR
6879	0		Mar-89	0	20	0	8	BOR
6880	0		Mar-89	0	15	0	8	BOR
6542	0	EME		0	0	0	0	
6881	0		Feb-88	0	20	5	2	MON
0	0	EME	9/94	0	20	8	2	MON
0	0	EME	9/94	0	20	8	2	MON
2341	0	EME	Dec-86	0	29	12	2	MON
1967	0	EME	5/91	0	30	0	0	DES
0	0	EME	4/93	0	17	12	2	MON
0	0	EME	2/98	0	17	5	2	MON
0	0	EME	2/98	0	17	4	2	MON
0	0	EME	2/98	0	17	5	2	MON
0	0	EME	6/95	0	17	7	4	MON
0	0	EME	6/95	0	15	10	4	MON
0	0	EME	6/95	0	15	8	4	MON
0	0	EME	6/95	0	15	8	4	MON
2347	0	EME	Jan-87	0	18	7	2	MON
0	0	EME	2/95	0	24	14	2	MON
0	0	EME	Oct-95	0	25	5	2	MON
0	0	EME	3/94	0	15	8	2	MON
0	0	EME	Oct-94	0	17	15	4	MON
0	0	EME	Oct-94	0	18	11	4	MON
0	0	EME	Oct-94	0	17	14	2	MON
0	0	EME	2/95	0	15	15	2	MON
0	0	EME	6/95	0	19	17	2	MON
0	0	EME	3/94	39	17	7	2	MON
0	0	EME	3/94	39	12	8	2	MON
0	0	EME	3/94	41	22	18	2	MON
0	0	EME	3/94	41	20	18	2	MON
0	0	EME	3/94	37	17	14	2	MON
0	0	EME	3/94	36	16	14	2	MON

0	0 EME	3/94	38	17	14	2 MON
0	0 EME	3/94	33	19	10	2 MON
0	0 EME	3/94	36	17	17	2 MON
0	0 EME	Dec-97	0	18	8	1 MON
0	0 EME	Dec-97	0	18	8	1 MON
0	0 EME	Dec-97	0	19	7	1 MON
0	0 EME	Dec-97	0	19	9	1 MON
8366	0 EME	Dec-92	0	25	0	0 DES
2350	0 EME	Nov-88	0	25	8	2 MON
2348	0 EME	7/87	0	26	11	2 DES
2349	0 EME	Dec-87	0	24	10	2 DES
0	0 EME	2/94	0	21	12	2 MON
0	0 EME	Dec-94	0	20	8	2 MON
0	0 EME	Dec-94	0	17	9	2 MON
0	0 EME	Dec-94	0	17	8	2 MON
0	0 EME	3/94	0	32	19	2 MON
0	0 EME	3/94	0	35	21	2 MON
0	0 EME	3/94	0	32	21	2 MON
0	0 EME	3/94	0	32	21	2 MON
0	0 EME	Oct-97	0	23	0	1 MON
0	0 EME	Oct-97	0	23	0	1 MON
0	0 EME	Oct-97	0	20	0	1 MON
0	0 EME	Oct-97	0	20	0	1 MON
0	0 EME	Oct-97	0	20	0	1 MON
0	0 EME	Oct-97	0	19	0	1 MON
0	0 EME	Oct-97	0	20	0	1 MON
0	0 EME	Oct-97	0	19	0	1 MON
0	0 EME	Oct-97	0	16	0	1 MON
0	0 EME	Nov-97	0	17	0	1 MON
0	0 EME	Nov-97	0	17	0	1 MON
0	0 EME	Nov-97	0	19	0	1 MON
0	0 EME	Nov-97	0	19	0	1 MON
0	0 EME	Nov-97	0	22	0	1 MON
	EME	Jul-96		68	4.5'	DES
0	0 EME	Nov-97	0	20	0	1 MON
0	0 EME	Oct-97	0	23	0	1 MON
0	0 EME	Oct-97	0	23	0	1 MON
0	0 EME	Oct-97	0	23	0	1 MON
0	0 EME	Oct-97	0	23	0	1 MON
0	0 EME	Oct-97	0	23	0	1 MON
0	0 EME	1/96	0	19	10	2 MON
0	0 EME	4/96	0	18	10	2 MON
0	0 EME	2/96	0	39	8	2 MON
0	0 EME	4/96	0	17	10	2 MON
0	0 EME	4/96	0	16	9	2 MON
0	0 EME	2/96	0	15	4	2 MON
0	0 EME	2/96	0	18	10	2 MON

0	0 EME	1/96	0	22	9	2 MON
0	0 EME	2/96	0	19	8	2 MON
0	0 EME	2/96	0	14	8	2 MON
0	0 EME	2/96	0	44	12	2 MON
0	0 EME	1/96	0	22	18	2 MON
0	0 EME	7/95	0	20	0	6 EXT
0	0 EME	7/95	0	19	4	6 EXT
0	0 EME	7/95	0	20	6	6 EXT
0	0 EME	7/94	0	15	11	2 MON
0	0 EME	7/94	0	13	9	2 MON
0	0 EME	7/94	0	17	8	2 MON
0	0 EME	7/94	0	17	12	2 MON
0	0 EME	7/94	0	15	9	2 MON
	EME	7/26/1996		68	4.5'	DES
390	0 OAK	9/89	54	22	8	4 MON
391	0 OAK	9/89	54	23	9	4 MON
392	0 OAK	9/89	53	22	7	4 MON
0	0 OAK	4/94	0	30	0	2 MON
2374	0 OAK	5/73	0	120	0	0 CAT

APPENDIX C

Monitoring, Sampling, and Well Development Field Records

WELL MONITORING DATA SHEET

Project #: <u>2010-06</u>		Client: <u>Grewel</u>	
Sampler: <u>Steve Bittman</u>		Start Date: <u>May 13 2010</u>	
Well I.D.: <u>MW-1</u>		Well Diameter: (circle one) 2 3 4 6 <u>1</u>	
Total Well Depth: Before <u>25'</u> After <u>25'</u>		Depth to Water: Before <u>11.21</u> After <u>11.35</u>	
Depth to Free Product: <u>Ø</u>		Thickness of Free Product (feet): <u>Ø</u>	
Measurements referenced to: <u>PVC</u> <u>Grade</u> <u>Other:</u>			

Well Diameter	VCF	Well Diameter	VCF
1"	0.04	6"	1.47
2"	0.16	8"	2.61
3"	0.37	10"	4.08
4"	0.65	12"	5.87
5"	1.02	16"	10.43

<u>0.55 gal</u>	x	<u>10-develop + Sample 5.5</u>	=	<u>gallons</u>
1 Case Volume		Specified Volumes		

Purging: Bailer Disposable Bailer Middleburg Electric Submersible Extraction Pump Other <u>Peristaltic pump</u>	Sampling: Bailer Disposable Bailer Extraction Port Other <u>peristaltic Pump</u>
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TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
<u>1105</u>				<u>Muddy</u>	<u>Start</u>	
<u>1120</u>				<u>Clear</u>	<u>3 gal</u>	<u>No drawdown</u>
<u>1140</u>				<u>clear</u>	<u>5.5 gal</u>	<u>DTW = 11.35</u>

Did Well Dewater? NO If yes, gals. Gallons Actually Evacuated: 5.5

Sampling Time: <u>1140</u>	Sampling Date: <u>May 13 2010</u>
Sample I.D.: <u>MW-1</u>	Laboratory: <u>McC Campbell</u>
Analyzed for: <u>TPH-G</u> <u>BTEX</u> <u>TPH-D</u>	OTHER: <u>Oxy</u>
Duplicate I.D.: <u>Ø</u>	Cleaning Blank I.D.: <u>Ø</u>
Analyzed for: TPH-G BTEX TPH-D OTHER:	

WELL MONITORING DATA SHEET

Project #: <u>2010-06</u>	Client: <u>Grewel</u>
Sampler: <u>S. Bittman</u>	Start Date: <u>May 13 2010</u>
Well I.D.: <u>MW-2</u>	Well Diameter: (circle one) 2 3 4 6 <u>①</u>
Total Well Depth: Before <u>25'</u> After <u>25'</u>	Depth to Water: Before <u>11.39'</u> After <u>11.52'</u>
Depth to Free Product: <u>0</u>	Thickness of Free Product (feet): <u>0</u>
Measurements referenced to: <u>PVC</u>	Grade: _____ Other: _____

Well Diameter	VCF	Well Diameter	VCF
1"	0.04	6"	1.47
2"	0.16	8"	2.61
3"	0.37	10"	4.08
4"	0.65	12"	5.87
5"	1.02	16"	10.43

$$\frac{0.54 \text{ gal}}{1 \text{ Case Volume}} \times \frac{10 \text{ develops Sample}}{\text{Specified Volumes}} = \frac{5.4}{\text{gallons}}$$

Purging: Bailer Disposable Bailer Middleburg Electric Submersible Extraction Pump Other <u>peristaltic Pumps</u>	Sampling: Bailer Disposable Bailer Extraction Port Other <u>peristaltic pump</u>
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TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
1005				Clear	Start	
1030				Cloudy	2.5 gal	dry - let recover
1045				Cloudy	3 gal	dry - let recover
1105				Clearing	4 gal	dry
1250						DTW = 11.52'

Did Well Dewater? Yes If yes, gals. Gallons Actually Evacuated: 4 gal

Sampling Time: <u>1250</u>	Sampling Date: <u>May 13 2010</u>
Sample I.D.: <u>MW-2</u>	Laboratory: <u>McC Campbell</u>
Analyzed for: <u>TPH-G</u> <u>BTEX</u> <u>TPH-D</u> OTHER: <u>oxy</u>	
Duplicate I.D.: <u>0</u>	Cleaning Blank I.D.: <u>0</u>
Analyzed for: <u>TPH-G</u> <u>BTEX</u> <u>TPH-D</u> OTHER:	

WELL MONITORING DATA SHEET

Project #: 2010-06	Client: Grewel
Sampler: S. Bittman	Start Date: May 13 2010
Well I.D.: MW-3	Well Diameter: (circle one) 2 3 4 6 <u>①</u>
Total Well Depth: Before 25' After 25'	Depth to Water: Before 10.85 After 12.10
Depth to Free Product: <u>Ø</u>	Thickness of Free Product (feet): <u>Ø</u>
Measurements referenced to: <u>PVC</u> Grade Other:	

Well Diameter	VCF	Well Diameter	VCF
1"	0.04	6"	1.47
2"	0.16	8"	2.61
3"	0.37	10"	4.08
4"	0.65	12"	5.87
5"	1.02	16"	10.43

0.56	x	10 develop + sample	=	5.6
1 Case Volume		Specified Volumes		gallons

Purging: Bailer Disposable Bailer Middleburg Electric Submersible Extraction Pump Other <u>peristaltic Pump</u>	Sampling: Bailer Disposable Bailer Extraction Port Other <u>peristaltic Pump</u>
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TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
1145				mud & sand	Start	
1200					2.5 gal	Clear DTW=20'
1215					5.5 gal	Clear DTW=22'
1235						DTW=12-10

Did Well Dewater? NO If yes, gals. Gallons Actually Evacuated: 5.5

Sampling Time: 1235 Sampling Date: May 13, 2010

Sample I.D.: MW-3 Laboratory: McCampbell

Analyzed for: TPH-G BTEX TPH-D OTHER: ØXY
 (Circle)

Duplicate I.D.: Ø Cleaning Blank I.D.: Ø

Analyzed for: TPH-G BTEX TPH-D OTHER:
 (Circle)

APPENDIX D

Analytical Laboratory Report & Chain-of-Custody Record



McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mcccampbell.com E-mail: main@mcccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

Stellar Environmental Solutions 2198 Sixth St. #201 Berkeley, CA 94710	Client Project ID: #2010-06; R & H Auto	Date Sampled: 05/11/10
		Date Received: 05/13/10
	Client Contact: Steve Bittman	Date Reported: 05/20/10
	Client P.O.:	Date Completed: 05/18/10

WorkOrder: 1005335

May 20, 2010

Dear Steve:

Enclosed within are:

- 1) The results of the **4** analyzed samples from your project: **#2010-06; R & H Auto**,
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius
Laboratory Manager
McC Campbell Analytical, Inc.

Chain of Custody Record

1005335

Lab job no. _____
 Date _____
 Page 1 of 1

Laboratory McCampbell Analytical Method of Shipment Courier
 Address 1534 Willow pass Rd Shipment No. _____
Pittsburg, CA 94565 Airbill No. _____
877-252-9262 Cooler No. SES
 Project Owner _____ Project Manager Steve Bittman
 Site Address 5315 San Pablo Ave Telephone No. 510-644-3123
Oakland CA Fax No. _____
 Project Name R&H Auto Samplers: (Signature) St. Bittman
 Project Number 2010-06

Filtered	No. of Containers	Analysis Required										Remarks	
		TVH	BTEX	MTBE	TEH								
		1	X	X									
		1	X	X									
		1	X	X									
		1	X	X									

Field Sample Number	Location/Depth	Date	Time	Sample Type	Type/Size of Container	Preservation	
						Cooler	Chemical
B5-15-16		5/11/10		S	Acetate 1.5"	X	
B5-19-20				S	↗	X	
B6-16-17				S	↖	X	
B6-19-20		5/11/10		S	Acetate 1.5"	X	

ICE / 24h
 GOOD CONDITION APPROPRIATE
 HEAD SPACE ABSENT CONTAINERS
 DECHLORINATED IN LAB PRESERVED IN LAB
 PRESERVATION VOAS | O & G | METALS | OTHER

Relinquished by: <u>St. Bittman</u> Signature _____ Printed <u>Steve Bittman</u> Company <u>SES</u>	Date <u>5/13/10</u> Time _____	Received by: <u>[Signature]</u> Signature _____ Printed <u>Rob Pring</u> Company <u>1401</u>	Date <u>5/13/10</u> Time _____	Relinquished by: <u>[Signature]</u> Signature _____ Printed <u>Rob Pring</u> Company <u>1500</u>	Date <u>5/13/10</u> Time _____	Received by: <u>MeVall</u> Signature _____ Printed <u>Melissa Vall</u> Company <u>MAI</u>	Date <u>5/13/10</u> Time <u>1500</u>		
Turnaround Time: <u>5 day</u> Comments: <u>EDF required</u>				Relinquished by: _____ Signature _____ Printed _____ Company _____				Received by: _____ Signature _____ Printed _____ Company _____	

email results to: sbittman@stellar-environmental.com

McC Campbell Analytical, Inc.



1534 Willow Pass Rd
 Pittsburg, CA 94565-1701
 (925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1005335

ClientCode: SESB

WaterTrax
 WriteOn
 EDF
 Excel
 Fax
 Email
 HardCopy
 ThirdParty
 J-flag

Report to:
 Steve Bittman
 Stellar Environmental Solutions
 2198 Sixth St. #201
 Berkeley, CA 94710
 (510) 612-8751 FAX (510) 644-3859

Email: sbittman@stellar-environmental.com,int
cc:
PO:
ProjectNo: #2010-06; R & H Auto

Bill to:
 Accounts Payable
 Stellar Enviormental Solutions
 2198 Sixth St. #201
 Berkeley, CA 94710

Requested TAT: 5 days

Date Received: 05/13/2010
Date Printed: 05/13/2010

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1005335-001	B5-15-16	Soil	5/11/2010	<input type="checkbox"/>	A	A	A									
1005335-002	B5-19-20	Soil	5/11/2010	<input type="checkbox"/>	A		A									
1005335-003	B6-16-17	Soil	5/11/2010	<input type="checkbox"/>	A		A									
1005335-004	B6-19-20	Soil	5/11/2010	<input type="checkbox"/>	A		A									

Test Legend:

1	G-MBTX_S	2	PREDF REPORT	3	TPH(D)_S	4		5	
6		7		8		9		10	
11		12							

Prepared by: Melissa Valles

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
 Hazardous samples will be returned to client or disposed of at client expense.



Sample Receipt Checklist

Client Name: **Stellar Environmental Solutions**

Date and Time Received: **5/13/2010 5:48:25 PM**

Project Name: **#2010-06; R & H Auto**

Checklist completed and reviewed by: **Melissa Valles**

WorkOrder N°: **1005335** Matrix Soil

Carrier: Rob Pringle (MAI Courier)

Chain of Custody (COC) Information

- Chain of custody present? Yes No
- Chain of custody signed when relinquished and received? Yes No
- Chain of custody agrees with sample labels? Yes No
- Sample IDs noted by Client on COC? Yes No
- Date and Time of collection noted by Client on COC? Yes No
- Sampler's name noted on COC? Yes No

Sample Receipt Information

- Custody seals intact on shipping container/cooler? Yes No NA
- Shipping container/cooler in good condition? Yes No
- Samples in proper containers/bottles? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No

Sample Preservation and Hold Time (HT) Information

- All samples received within holding time? Yes No
 - Container/Temp Blank temperature Cooler Temp: 2.4°C NA
 - Water - VOA vials have zero headspace / no bubbles? Yes No No VOA vials submitted
 - Sample labels checked for correct preservation? Yes No
 - Metal - pH acceptable upon receipt (pH<2)? Yes No NA
 - Samples Received on Ice? Yes No
- (Ice Type: WET ICE)

* NOTE: If the "No" box is checked, see comments below.

Client contacted:

Date contacted:

Contacted by:

Comments:



McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mcccampbell.com E-mail: main@mcccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

Stellar Environmental Solutions 2198 Sixth St. #201 Berkeley, CA 94710	Client Project ID: #2010-06; R & H Auto	Date Sampled: 05/11/10
		Date Received: 05/13/10
	Client Contact: Steve Bittman	Date Extracted: 05/13/10
	Client P.O.:	Date Analyzed: 05/17/10-05/18/10

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction method: SW5030B

Analytical methods: SW8021B/8015Bm

Work Order: 1005335

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001A	B5-15-16	S	ND	ND	ND	ND	ND	ND	1	88	
002A	B5-19-20	S	ND	ND	ND	ND	ND	ND	1	81	
003A	B6-16-17	S	ND	ND	ND	ND	ND	ND	1	81	
004A	B6-19-20	S	ND	ND	ND	ND	ND	ND	1	82	

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	0.5	ug/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	0.005	mg/Kg

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts in mg/L.

cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation:



QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 50612

WorkOrder 1005335

Analyte	EPA Method SW8021B/8015Bm		Extraction SW5030B						Spiked Sample ID: 1005301-021A			
	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex) [£]	ND	0.60	113	113	0	97	112	14.4	70 - 130	20	70 - 130	20
MTBE	ND	0.10	94	97.6	3.82	93.3	89.7	3.98	70 - 130	20	70 - 130	20
Benzene	ND	0.10	81.9	79.3	3.16	81.2	80	1.42	70 - 130	20	70 - 130	20
Toluene	ND	0.10	80	78.2	2.25	79	78.9	0.133	70 - 130	20	70 - 130	20
Ethylbenzene	ND	0.10	80.6	78.4	2.67	77.6	79.2	2.13	70 - 130	20	70 - 130	20
Xylenes	ND	0.30	80.6	78.2	2.96	76.3	78.9	3.33	70 - 130	20	70 - 130	20
%SS:	84	0.10	92	112	19.2	94	104	9.76	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 50612 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1005335-001A	05/11/10	05/13/10	05/17/10 10:21 PM	1005335-002A	05/11/10	05/13/10	05/18/10 1:21 AM
1005335-003A	05/11/10	05/13/10	05/18/10 1:51 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



QC SUMMARY REPORT FOR SW8015B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 50613

WorkOrder 1005335

EPA Method SW8015B		Extraction SW3550C							Spiked Sample ID: 1005301-021A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH-Diesel (C10-C23)	2.1	40	81.5	81.3	0.184	90.2	92.9	2.87	70 - 130	30	70 - 130	30
%SS:	110	25	98	97	1.02	90	93	3.02	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 50613 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1005335-001A	05/11/10	05/13/10	05/16/10 7:10 PM	1005335-002A	05/11/10	05/13/10	05/16/10 8:18 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = $100 * (MS - Sample) / (Amount Spiked)$; RPD = $100 * (MS - MSD) / ((MS + MSD) / 2)$.

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



QC SUMMARY REPORT FOR SW8015B

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 50642

WorkOrder 1005335

EPA Method SW8015B		Extraction SW3550C							Spiked Sample ID: 1005328-008A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH-Diesel (C10-C23)	ND	40	104	104	0	82.8	83.3	0.670	70 - 130	30	70 - 130	30
%SS:	99	25	99	100	0.430	97	97	0	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 50642 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1005335-003A	05/11/10	05/13/10	05/20/10 5:33 AM	1005335-004A	05/11/10	05/13/10	05/14/10 11:33 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Soil

QC Matrix: Soil

BatchID: 50643

WorkOrder 1005335

EPA Method SW8021B/8015Bm		Extraction SW5030B							Spiked Sample ID: 1005328-008A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex) ^f	ND	0.60	102	100	1.59	101	109	7.36	70 - 130	20	70 - 130	20
MTBE	ND	0.10	89.8	91.7	2.05	92.4	93.8	1.47	70 - 130	20	70 - 130	20
Benzene	ND	0.10	87.3	86.9	0.500	87.7	86.5	1.39	70 - 130	20	70 - 130	20
Toluene	ND	0.10	86.8	86.6	0.206	88	87.4	0.651	70 - 130	20	70 - 130	20
Ethylbenzene	ND	0.10	87.4	86.8	0.705	88.8	87.9	1.01	70 - 130	20	70 - 130	20
Xylenes	ND	0.30	89.6	89.1	0.630	91.5	90.1	1.49	70 - 130	20	70 - 130	20
%SS:	100	0.10	92	91	0.618	93	91	1.78	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 50643 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1005335-004A	05/11/10	05/13/10	05/18/10 2:51 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mcccampbell.com E-mail: main@mcccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

Stellar Environmental Solutions 2198 Sixth St. #201 Berkeley, CA 94710	Client Project ID: #2010-06; R & H Auto	Date Sampled: 05/11/10-05/13/1
		Date Received: 05/13/10
	Client Contact: Steve Bittman	Date Reported: 05/19/10
	Client P.O.:	Date Completed: 05/17/10

WorkOrder: 1005336

May 19, 2010

Dear Steve:

Enclosed within are:

- 1) The results of the 5 analyzed samples from your project: **#2010-06; R & H Auto,**
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius
Laboratory Manager
McC Campbell Analytical, Inc.

Chain of Custody Record

1005335

Lab job no. _____

Date _____

Page 1 of 1

Laboratory McCampbell Analytical
 Address 1534 Willow Pass Rd
Pittsburg, CA 94565
877-252-9262

Method of Shipment Courier

Shipment No. _____

Airbill No. _____

Cooler No. Stellar Environmental S.

Project Owner _____
 Site Address 5315 San Pablo Ave
Oakland CA

Project Manager Steve Bittman

Telephone No. 510.644-3123

Project Name R&H Auto

Fax No. _____

Project Number 2010-06

Samplers: (Signature) Steve Bittman

Field Sample Number	Location/Depth	Date	Time	Sample Type	Type/Size of Container	Preservation		Filtered	No. of Containers	Analysis Required										Remarks					
						Cooler	Chemical			1	2	3	4	5	6	7	8	9	10		11	12			
+ MW-1		5/13/10		W	40ml VOA	Y	HCL	34	X																
MW-1				W	Amber liter	Y	Ø	1		X															
MW-2				W	40ml VOA	Y	HCL	34	X																
+ MW-2				W	Amber liter	Y	Ø	1		X															
MW-3				W	40ml VOA	Y	HCL	34	X																
+ MW-3		5/13/10		W	Amber liter	Y	Ø	1		X															
+ B5-W		5/11/10		W	40ml VOA	Y	HCL	34	X																
B5-W				W	Amber liter	Y	Ø	1		X															
+ B6-W				W	40ml VOA	Y	HCL	34	X																
B6-W		5/11/10		W	Amber liter	Y	Ø	1		X															

Filtered
 No. of Containers
 TPHg BTEX Oxy by 8260
 TEHD

+
 +
 +
 +
 +
 +
 +
 +

Relinquished by: Steve Bittman
 Signature _____
 Printed Steve Bittman
 Company SES

Received by: Rob Pringle
 Signature _____
 Printed Rob Pringle
 Company 1402

Relinquished by: Rob Pringle
 Signature _____
 Printed Rob Pringle
 Company McCampbell A/SOC

Received by: Melissa Walker
 Signature _____
 Printed Melissa Walker
 Company MAI

Turnaround Time: 5 day
 Comments: EDF required

Relinquished by: _____
 Signature _____
 Printed _____
 Company _____

ICE / 24°C
 GOOD CONDITION APPROPRIATE
 HEAD SPACE results to: sbittman@stellar-environmental.com
 DECHLORINATED IN LAB
 PRESERVATION

McC Campbell Analytical, Inc.



1534 Willow Pass Rd
 Pittsburg, CA 94565-1701
 (925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1005336

ClientCode: SESB

WaterTrax
 WriteOn
 EDF
 Excel
 Fax
 Email
 HardCopy
 ThirdParty
 J-flag

Report to:
 Steve Bittman
 Stellar Environmental Solutions
 2198 Sixth St. #201
 Berkeley, CA 94710
 (510) 612-8751 FAX (510) 644-3859

Email: sbittman@stellar-environmental.com,int
cc:
PO:
ProjectNo: #2010-06; R & H Auto

Bill to:
 Accounts Payable
 Stellar Enviormental Solutions
 2198 Sixth St. #201
 Berkeley, CA 94710

Requested TAT: 5 days

Date Received: 05/13/2010
Date Printed: 05/13/2010

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1005336-001	MW-1	Water	5/13/2010	<input type="checkbox"/>	A	A	B									
1005336-002	MW-2	Water	5/13/2010	<input type="checkbox"/>	A		B									
1005336-003	MW-3	Water	5/13/2010	<input type="checkbox"/>	A		B									
1005336-004	B5-W	Water	5/11/2010	<input type="checkbox"/>	A		B									
1005336-005	B6-W	Water	5/11/2010	<input type="checkbox"/>	A		B									

Test Legend:

1	GAS8260_W	2	PREDF REPORT	3	TPH(D)_W	4		5	
6		7		8		9		10	
11		12							

The following SampIDs: 001A, 002A, 003A, 004A, 005A contain testgroup.

Prepared by: Melissa Valles

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
 Hazardous samples will be returned to client or disposed of at client expense.



Sample Receipt Checklist

Client Name: **Stellar Environmental Solutions**

Date and Time Received: **5/13/2010 6:27:37 PM**

Project Name: **#2010-06; R & H Auto**

Checklist completed and reviewed by: **Melissa Valles**

WorkOrder N°: **1005336** Matrix Water

Carrier: Rob Pringle (MAI Courier)

Chain of Custody (COC) Information

- Chain of custody present? Yes No
- Chain of custody signed when relinquished and received? Yes No
- Chain of custody agrees with sample labels? Yes No
- Sample IDs noted by Client on COC? Yes No
- Date and Time of collection noted by Client on COC? Yes No
- Sampler's name noted on COC? Yes No

Sample Receipt Information

- Custody seals intact on shipping container/cooler? Yes No NA
- Shipping container/cooler in good condition? Yes No
- Samples in proper containers/bottles? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No

Sample Preservation and Hold Time (HT) Information

- All samples received within holding time? Yes No
 - Container/Temp Blank temperature Cooler Temp: 2.4°C NA
 - Water - VOA vials have zero headspace / no bubbles? Yes No No VOA vials submitted
 - Sample labels checked for correct preservation? Yes No
 - Metal - pH acceptable upon receipt (pH<2)? Yes No NA
 - Samples Received on Ice? Yes No
- (Ice Type: WET ICE)

* NOTE: If the "No" box is checked, see comments below.

=====

Client contacted:

Date contacted:

Contacted by:

Comments:



McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mcccampbell.com E-mail: main@mcccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

Stellar Environmental Solutions 2198 Sixth St. #201 Berkeley, CA 94710	Client Project ID: #2010-06; R & H Auto	Date Sampled: 05/11/10-05/13/10
		Date Received: 05/13/10
	Client Contact: Steve Bittman	Date Extracted: 05/14/10
	Client P.O.:	Date Analyzed: 05/14/10

MTBE and BTEX by GC/MS*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1005336

Lab ID	1005336-001A	1005336-002A	1005336-003A	1005336-004A	Reporting Limit for DF =1	
Client ID	MW-1	MW-2	MW-3	B5-W		
Matrix	W	W	W	W		
DF	1	1	1	1		

Compound	Concentration				ug/kg	µg/L
	tert-Amyl methyl ether (TAME)	ND	ND	ND	ND	NA
Benzene	ND	ND	ND	ND	NA	0.5
t-Butyl alcohol (TBA)	ND	ND	ND	ND	NA	2.0
Diisopropyl ether (DIPE)	ND	1.6	ND	ND	NA	0.5
Ethylbenzene	ND	ND	0.58	ND	NA	0.5
Ethyl tert-butyl ether (ETBE)	ND	ND	ND	ND	NA	0.5
Methyl-t-butyl ether (MTBE)	ND	ND	ND	ND	NA	0.5
Toluene	ND	ND	ND	ND	NA	0.5
Xylenes	ND	ND	0.64	ND	NA	0.5

Surrogate Recoveries (%)

%SS1:	95	98	96	96	
%SS2:	98	99	98	99	

Comments				b1	
-----------------	--	--	--	----	--

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

b1) aqueous sample that contains greater than ~1 vol. % sediment



McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mcccampbell.com E-mail: main@mcccampbell.com
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Stellar Environmental Solutions 2198 Sixth St. #201 Berkeley, CA 94710	Client Project ID: #2010-06; R & H Auto	Date Sampled: 05/11/10-05/13/10
		Date Received: 05/13/10
	Client Contact: Steve Bittman	Date Extracted: 05/14/10
	Client P.O.:	Date Analyzed: 05/14/10

MTBE and BTEX by GC/MS*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1005336

Lab ID	1005336-005A				Reporting Limit for DF =1	
Client ID	B6-W					
Matrix	W					
DF	1					S

Compound	Concentration				ug/kg	µg/L
tert-Amyl methyl ether (TAME)	ND				NA	0.5
Benzene	ND				NA	0.5
t-Butyl alcohol (TBA)	ND				NA	2.0
Diisopropyl ether (DIPE)	ND				NA	0.5
Ethylbenzene	ND				NA	0.5
Ethyl tert-butyl ether (ETBE)	ND				NA	0.5
Methyl-t-butyl ether (MTBE)	ND				NA	0.5
Toluene	1.5				NA	0.5
Xylenes	ND				NA	0.5

Surrogate Recoveries (%)

%SS1:	98			
%SS2:	97			

Comments	b1			
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* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

b1) aqueous sample that contains greater than ~1 vol. % sediment



QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 50647

WorkOrder 1005336

Analyte	Extraction SW5030B			Spiked Sample ID: 1005342-001A								
	Sample µg/L	Spiked µg/L	MS % Rec.	MSD % Rec.	MS-MSD % RPD	LCS % Rec.	LCSD % Rec.	LCS-LCSD % RPD	Acceptance Criteria (%)			
tert-Amyl methyl ether (TAME)	ND	10	71.4	76.1	6.32	78.4	77.7	0.968	70 - 130	30	70 - 130	30
Benzene	ND	10	94.6	94.5	0.0846	88	90.2	2.46	70 - 130	30	70 - 130	30
t-Butyl alcohol (TBA)	ND	50	71.3	71.5	0.240	76.1	77.4	1.59	70 - 130	30	70 - 130	30
Diisopropyl ether (DIPE)	ND	10	97.9	100	2.52	93.6	95.3	1.72	70 - 130	30	70 - 130	30
Ethyl tert-butyl ether (ETBE)	ND	10	82.5	88.2	6.67	83	83.5	0.687	70 - 130	30	70 - 130	30
Methyl-t-butyl ether (MTBE)	ND	10	89.6	97.2	8.08	91.3	92.7	1.55	70 - 130	30	70 - 130	30
Toluene	ND	10	91.9	91.7	0.237	90.9	88.1	3.08	70 - 130	30	70 - 130	30
%SS1:	87	25	95	95	0	93	94	1.67	70 - 130	30	70 - 130	30
%SS2:	97	25	99	97	1.79	98	97	1.29	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 50647 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1005336-001A	05/13/10	05/14/10	05/14/10 4:46 PM	1005336-002A	05/13/10	05/14/10	05/14/10 9:46 PM
1005336-003A	05/13/10	05/14/10	05/14/10 10:29 PM	1005336-004A	05/11/10	05/14/10	05/14/10 11:12 PM
1005336-005A	05/11/10	05/14/10	05/14/10 11:55 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 50647

WorkOrder 1005336

Analyte	Extraction SW5030B								Spiked Sample ID: 1005342-001A			
	Sample µg/L	Spiked µg/L	MS % Rec.	MSD % Rec.	MS-MSD % RPD	LCS % Rec.	LCSD % Rec.	LCS-LCSD % RPD	Acceptance Criteria (%)			
tert-Amyl methyl ether (TAME)	ND	10	71.4	76.1	6.32	78.4	77.7	0.968	70 - 130	30	70 - 130	30
Benzene	ND	10	94.6	94.5	0.0846	88	90.2	2.46	70 - 130	30	70 - 130	30
t-Butyl alcohol (TBA)	ND	50	71.3	71.5	0.240	76.1	77.4	1.59	70 - 130	30	70 - 130	30
Chlorobenzene	ND	10	101	97.7	3.68	100	95.8	4.78	70 - 130	30	70 - 130	30
1,2-Dibromoethane (EDB)	ND	10	89.5	93.4	4.30	98.7	93.8	5.06	70 - 130	30	70 - 130	30
1,2-Dichloroethane (1,2-DCA)	ND	10	94.4	94.7	0.291	82	81.1	1.07	70 - 130	30	70 - 130	30
1,1-Dichloroethene	ND	10	96	91.8	4.44	86.4	90.6	4.79	70 - 130	30	70 - 130	30
Diisopropyl ether (DIPE)	ND	10	97.9	100	2.52	93.6	95.3	1.72	70 - 130	30	70 - 130	30
Ethyl tert-butyl ether (ETBE)	ND	10	82.5	88.2	6.67	83	83.5	0.687	70 - 130	30	70 - 130	30
Methyl-t-butyl ether (MTBE)	ND	10	89.6	97.2	8.08	91.3	92.7	1.55	70 - 130	30	70 - 130	30
Toluene	ND	10	91.9	91.7	0.237	90.9	88.1	3.08	70 - 130	30	70 - 130	30
Trichloroethene	ND	10	103	101	2.03	95.3	95.9	0.629	70 - 130	30	70 - 130	30
%SS1:	87	25	95	95	0	93	94	1.67	70 - 130	30	70 - 130	30
%SS2:	97	25	99	97	1.79	98	97	1.29	70 - 130	30	70 - 130	30
%SS3:	94	2.5	92	89	3.28	96	92	3.61	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 50647 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1005336-001A	05/13/10	05/14/10	05/14/10 4:46 PM	1005336-002A	05/13/10	05/14/10	05/14/10 9:46 PM
1005336-003A	05/13/10	05/14/10	05/14/10 10:29 PM	1005336-004A	05/11/10	05/14/10	05/14/10 11:12 PM
1005336-005A	05/11/10	05/14/10	05/14/10 11:55 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / (MS + MSD) * 2.

MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery. The LCS and LCSD are spikes into a clean, known, similar matrix and they and the surrogate standards reflect the overall validity of their extraction batch. Our control limits are 70-130% recovery and a 30% RPD for the LCS-LCSD and for the Surrogate Standards.



QC SUMMARY REPORT FOR SW8015B

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 50648

WorkOrder 1005336

EPA Method SW8015B		Extraction SW3510C							Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH-Diesel (C10-C23)	N/A	1000	N/A	N/A	N/A	90.7	88.4	2.54	N/A	N/A	70 - 130	30
%SS:	N/A	625	N/A	N/A	N/A	102	100	2.39	N/A	N/A	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 50648 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1005336-001B	05/13/10	05/13/10	05/16/10 12:22 PM	1005336-002B	05/13/10	05/13/10	05/16/10 1:30 PM
1005336-003B	05/13/10	05/13/10	05/14/10 9:59 PM	1005336-004B	05/11/10	05/13/10	05/14/10 11:07 PM
1005336-005B	05/11/10	05/13/10	05/17/10 10:16 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

APPENDIX E

Photodocumentation



Subject: Boring B5 on north side of 53rd Street. Subject site is behind the grey fence photo right-center

Site: 5315 San Pablo Avenue, Oakland, CA

Date Taken: March 11 2010

Project No.: SES 2010-06

Photographer: Steve Bittman

Photo No.: 01



Subject: Soil core from boring B5 at approximately 20 to 25 feet bgs.

Site: 5315 San Pablo Avenue, Oakland, CA

Date Taken: May 11, 2010

Project No.: SES 2010-06

Photographer: Steve Bittman

Photo No.: 02



Subject: Rig set up on boring B6, south side of 53rd Street.

Site: 5315 San Pablo Avenue, Oakland, CA

Date Taken: May 11 2010

Project No.: SES 2010-06

Photographer: Steve Bittman

Photo No.: 03



Subject: View of MW-1 location on south side of former UST excavation.

Site: 5315 San Pablo Avenue, Oakland, CA

Date Taken: May 11, 2010

Project No.: SES 2010-06

Photographer: Steve Bittman

Photo No.: 04



Subject: View of MW-2 location as viewed from the east.

Site: 5315 San Pablo Avenue, Oakland, CA

Date Taken: May 11, 2010

Project No.: SES 2010-06

Photographer: Steve Bittman

Photo No.: 05



Subject: View of MW-2 location as viewed from the south.

Site: 5315 San Pablo Avenue, Oakland, CA

Date Taken: May 11, 2010

Project No.: SES 2010-06

Photographer: Steve Bittman

Photo No.: 06



Subject: View of MW-3 location.

Site: 5315 San Pablo Avenue, Oakland, CA

Date Taken: May 11, 2010

Project No.: SES 2010-06

Photographer: Steve Bittman

Photo No.: 07



Subject: Well development and sampling for well MW-3.

Site: 5315 San Pablo Avenue, Oakland, CA

Date Taken: May 13, 2010

Project No.: SES 2010-06

Photographer: Steve Bittman

Photo No.: 08