

ALAMEDA COUNTY  
**HEALTH CARE SERVICES**  
AGENCY  
ALEX BRISCOE, Agency Director



DEPARTMENT OF ENVIRONMENTAL HEALTH  
OFFICE OF THE DIRECTOR  
1131 HARBOR BAY PARKWAY  
ALAMEDA, CA 94502  
(510) 567-6777  
FAX (510) 337-9135

January 12, 2012

Jasbinder and Gulbinder Grewel  
R&H Auto Repair  
5315 San Pablo Avenue  
Oakland, CA 94608

Kenneth J. Schmier  
1475 Powell St., Ste. 201  
Emeryville, CA 94608

Subject: Subject: Fuel Leak Case, RO0002965 and GeoTracker Global ID T0619704141, R & H Auto Repair, 5315 San Pablo Avenue, Oakland, CA 94608

Dear Mr. Schmier and Mr. and Mrs. Grewel:

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with Chapter 6.75 (Article 4, Section 25299.37[h]). The State Water Resources Control Board adopted this letter on February 20, 1997. As of March 1, 1997, the Alameda County Environmental Health (ACEH) is required to use this case closure letter for all UST leak sites. We are also transmitting to you the enclosed case closure summary. These documents confirm the completion of the investigation and cleanup of the reported release at the subject site. The subject fuel leak case is closed.

#### SITE INVESTIGATION AND CLEANUP SUMMARY

Please be advised that the following conditions exist at the site:

- Residual pollution remaining in soil beneath the site includes TPH as gas and TPH as diesel at concentrations of up to 160 ppm and 90 ppm, respectively.
- Case closure for this fuel leak site is granted for the existing use or other commercial use only. If a change in land use to any residential or other conservative land use scenario occurs at this site, Alameda County Environmental Health (ACEH) must be notified as required by Government Code Section 65850.2.2. ACEH will re-evaluate the case upon receipt of approved development/construction plans.
- Excavation or construction activities in areas of residual contamination require planning and implementation of appropriate health and safety procedures by the responsible party prior to and during excavation and construction activities.
- This site is to be entered into the City of Oakland Permit Tracking System due to the residual contamination on site.

Mr. Schmier and Mr. and Mrs. Grewel  
January 11, 2012  
Page 2

If you have any questions, please call Barbara Jakub at (510) 639-1287. Thank you.

Sincerely,

A handwritten signature in blue ink, appearing to read "Donna L. Drogos".

Donna L. Drogos, P.E.  
Division Chief

Enclosures:

1. Remedial Action Completion Certificate
2. Case Closure Summary

cc: Leroy Griffin (w/enc via electronic mail: [lgriffin@oaklandnet.com](mailto:lgriffin@oaklandnet.com)), Oakland Fire Department  
Barbara Jakub (w/ enc via e-mail), D. Drogos (w/ enc via e-mail), T. LeKhan (via e-mail and w/orig enc)  
Geotracker

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January 12, 2012

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5315 San Pablo Avenue  
Oakland, CA 94608

Kenneth J. Schmier  
1475 Powell St., Ste. 201  
Emeryville, CA 94608

**REMEDIAL ACTION COMPLETION CERTIFICATE**

Subject: Fuel Leak Case, RO0002965 and GeoTracker Global ID T0619704141, R & H Auto Repair, 5315 San Pablo Avenue, Oakland, CA 94608

Dear Mr. Schmier and Mr. and Mrs. Grewel:

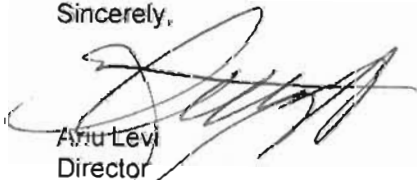
This letter confirms the completion of a site investigation and remedial action for the underground storage tanks formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tank(s) are greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tank(s) site is in compliance with the requirements of subdivisions (a) and (b) of Section 25299.37 of the Health and Safety Code and with corrective action regulations adopted pursuant to Section 25299.77 of the Health and Safety Code and that no further action related to the petroleum release(s) at the site is required.

This notice is issued pursuant to subdivision (h) of Section 25299.37 of the Health and Safety Code.

Please contact our office if you have any questions regarding this matter.

Sincerely,



Ariu Levi  
Director  
Alameda County Environmental Health

**CASE CLOSURE SUMMARY  
LEAKING UNDERGROUND FUEL STORAGE TANK - LOCAL OVERSIGHT PROGRAM**

**I. AGENCY INFORMATION**

Date: August 19, 2011

Agency Name: Alameda County Environmental Health	Address: 1131 Harbor Bay Parkway
City/State/Zip: Alameda, CA 94502-6577	Phone: (510) 639-1287
Responsible Staff Person: Barbara Jakub	Title: Hazardous Materials Specialist

**II. CASE INFORMATION**

Site Facility Name: R & H Auto Repair		
Site Facility Address: 5315 San Pablo Avenue, Oakland, CA 94608		
RB Case No.: ----	STID No.: ----	LOP Case No.: RO0002965
URF Filing Date: 5/6/2008	Geotracker ID: T0619704141	APN: 13-1183-2-1
<b>Responsible Parties</b>	<b>Addresses</b>	<b>Phone Numbers</b>
Kenneth J. Schmier	1475 Powell St., Ste 201, Emeryville, CA 94608	(510) 652-6086
Jasbinder and Gulbinder Grewel	5315 San Pablo Avenue, Oakland, CA 94608	(510) 547-7511

Tank I.D. No	Size in Gallons	Contents	Closed In Place/Removed?	Date
1	7,500	Gasoline	Removed	9/2007
2	7,500	Gasoline	Removed	9/2007
3	10,000	Diesel	Removed	9/2007
4	550	Waste oil	Removed	9/2007
Piping			Removed	9/2007

### III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and Type of Release: Unknown. USTs appeared intact upon removal. However, City of Oakland inspector indicated that soil appeared contaminated. Pits were observed in the waste-oil UST.		
Site characterization complete? Yes	Date Approved By Oversight Agency: ----	
Monitoring wells installed? Yes	Number: 3	Proper screened interval? Yes*
Highest GW Depth Below Ground Surface: 11.40' bgs	Lowest Depth: 12.88'	Flow Direction: West to Southwest
Most Sensitive Current Use: Potential drinking water source.		

\* Groundwater is confined so well screens appear to be submerged. Initial groundwater encountered at 17 feet. Wells screened with 10 feet of screen in the sand interval and water level rises to 11 feet bgs.

Summary of Production Wells in Vicinity:	
No water supply wells are located within a ¼ mile radius of the site.	
Are drinking water wells affected? No	Aquifer Name: East Bay Plain
Is surface water affected? No	Nearest SW Name: Temescal Creek 150 feet south (culverted)
Off-Site Beneficial Use Impacts (Addresses/Locations): None	
Reports on file? Yes	Where are reports filed? Alameda County Environmental Health and City of Oakland Fire Department.

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL			
Material	Amount (Include Units)	Action (Treatment or Disposal w/Destination)	Date
Tank	2- 7,500 gallon gas 1-10,000 gallon diesel 1-550 gallon waste-oil	Disposed by ECI 225 Parr Ave. Richmond , CA	9/14/2007
Piping	Unknown quantity	Disposed by ECI 225 Parr Ave. Richmond , CA	9/14/2007
Free Product	None reported	----	----
Soil	320 Tons	Transported Class III to Keller Canyon	1/23/2008
Groundwater	None encountered	----	----

**MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS BEFORE AND AFTER CLEANUP**  
 (Please see Attachments 1 through 6 for additional information on contaminant locations and concentrations)

Contaminant	Soil (ppm)		Water (ppb)	
	Before	After	Before	After
TPH (Gas)	1,500	160	2,300	<50
TPH (Diesel)	350	90	760	<0.5
TPH (Motor Oil)	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed
Oil and Grease	<50	<50	Not Analyzed	Not Analyzed
Benzene	0.021	0.021	11	<0.5
Toluene	36	0.01	<0.5	<0.5
Ethylbenzene	26	0.18	53	<0.5
Xylenes	180	0.03	0.54	<0.5
Heavy Metals (Cd, Cr, Pb, Ni, Zn)	190 <sup>^</sup>	190 <sup>^</sup>	Not Analyzed	Not Analyzed
MTBE	<0.005 <sup>*</sup>	<0.005 <sup>*</sup>	<1.0 <sup>**</sup>	<0.5 <sup>***</sup>
Other (8240/8270/8082)	<0.005 <sup>±</sup>	<0.005 <sup>±</sup>	Not analyzed	Not analyzed

<sup>^</sup> <1.5 ppm Cd; 52 ppm Cr; 85 ppm Pb; 59 ppm Ni; 190 ppm Zn

<sup>\*</sup> <0.005 ppm MTBE; <0.005 ppm ETBE; <0.005 ppm DIPE; <0.005 ppm TAME; and <0.05 ppm TBA, EDB and EDC not analyzed.

<sup>\*\*</sup> <1.0 ppb MTBE; <1.0 ppb ETBE; <2.1 ppb DIPE; <4.0 ppb TBA and <1.0 TAME. EDB and EDC not analyzed.

<sup>\*\*\*</sup> <0.5 ppb MTBE; <0.5 ETBE; <2.1 DIPE; <0.5 TBA and <0.5 TAME. EDB and EDC not analyzed.

<sup>±</sup> All analytes below their respective detection limits.



### Site History and Description of Corrective Actions:

The subject site is located at the northwest corner of San Pablo Avenue and 53<sup>rd</sup> Street on the Oakland-Emeryville border 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.

On September 14, 2007, AEI oversaw the removal of four USTs, (Two 7,500-gallon gasoline USTs, one 10,000-gallon diesel UST and one 550-gallon waste-oil UST). 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 petroleum hydrocarbons as gasoline (TPHg); and 73 mg/kg of total petroleum hydrocarbons as diesel (TPHd). Up to 1,500 mg/kg of TPHg 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 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. Groundwater was not encountered during the excavation.

In January 2008, in an effort to remove hydrocarbon-impacted soil, the gasoline and diesel tank pit were enlarged and the dispenser area deepened. AEI collected confirmation samples after overexcavation with the City of Oakland as oversight. Impacted soil was removed to less than 100 mg/kg in all areas, except for an area containing 160 mg/kg of (total volatile hydrocarbons as gasoline (TVHg) on the south side of the property near the 53<sup>rd</sup> Street sidewalk. Due to the close proximity of the sidewalk and other space constraints, the excavation could not be enlarged further. The depth of the final excavation was approximately 12 feet bgs with no groundwater encountered. 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 soil was removed from the site as non-hazardous waste and hauled to the Keller Canyon landfill.

On March 5, 2010, Stellar Environmental supervised the advancement of four borings in and around the former UST area to obtain groundwater samples. Maximum concentrations of 13 mg/kg TVHg, 90 mg/kg total extractable hydrocarbons as diesel (TEHd) and 0.021 mg/kg benzene were detected in soil samples. Maximum concentrations of 2,300 micrograms per liter (µg/L) TVHg and 760 µg/L TEHd were detected in groundwater samples collected from boring B3, located near the southwest corner of the site and downgradient of the former USTs. Benzene was detected in only one groundwater sample at a concentration of 11 µg/L in the boring advanced in the former UST tank pit. Water was initially encountered between 17 and 20 feet bgs and equilibrated at approximately 8 feet bgs in the borings.

In May 2010, Stellar Environmental installed three monitoring wells (MW-1 through MW-3), advanced two off-site borings (B-5 and B-6) along 53<sup>rd</sup> Street and performed a preferential pathway evaluation. TEHd was the only constituent detected in soil at a maximum concentration of 6.6 mg/kg in the soil borings. 72 µg/L TEHd was detected in downgradientmost boring B-6. No TVHg, TEHg, benzene or methyl tertiary butyl ether (MTBE) were detected in groundwater samples collected from the wells. 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.

**IV. CLOSURE**

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Yes		
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? Yes		
Does corrective action protect public health for current land use? Alameda County Environmental Health staff does not make specific determinations concerning public health risk. However, based upon the information available in our files to date, it does not appear that the release would present a risk to human health based upon current land use and conditions.		
<p>Site Management Requirements:</p> <p>Case closure for this fuel leak site is granted for the existing use or other commercial use only. If a change in land use to any residential or other conservative land use scenario occurs at this site, Alameda County Environmental Health (ACEH) must be notified as required by Government Code Section 65850.2.2. ACEH will re-evaluate the case upon receipt of approved development/construction plans.</p> <p>Excavation or construction activities in areas of residual contamination require planning and implementation of appropriate health and safety procedures by the responsible party prior to and during excavation and construction activities.</p> <p>This site is to be entered into the City of Oakland Permit Tracking System due to the residual contamination on site.</p>		
Should corrective action be reviewed if land use changes? Yes		
Was a deed restriction or deed notification filed? No		Date Recorded: ---
Monitoring Wells Decommissioned: No	Number Decommissioned: 0	Number Retained: 3
List Enforcement Actions Taken: None		
List Enforcement Actions Rescinded: None		

**V. ADDITIONAL COMMENTS, DATA, ETC.**

<p>Considerations and/or Variances:</p> <ul style="list-style-type: none"> <li>• EDB and EDC not analyzed.</li> <li>• Waste-oil UST stockpile sampling indicated a release occurred (1,200 ppm total petroleum oil and grease). However, no water sampling conducted after UST removal</li> </ul> <p>Conclusion:</p> <p>Alameda County Environmental Health staff believe that the levels of residual contamination do not pose a significant threat to water resources, public health and safety, and the environment under the current commercial land use based upon the information available in our files to date. No further investigation or cleanup for the fuel leak case is necessary unless a change in land use to any residential or other conservative land use scenario occurs at the site, or construction or excavation activities take place. ACEH staff recommend closure for this site.</p>
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**VI. LOCAL AGENCY REPRESENTATIVE DATA**

Prepared by: Barbara Jakub, P.G.	Title: Hazardous Materials Specialist
Signature: <i>Barbara J Jakub</i>	Date: 8/22/11
Approved by: Donna L. Drogas, P.E.	Title: Division Chief
Signature: <i>Donna L Drogas</i>	Date: 08/25/11

This closure approval is based upon the available information and with the provision that the information provided to this agency was accurate and representative of site conditions.

**VII. REGIONAL BOARD NOTIFICATION**

Regional Board Staff Name: Cherie McCaulou	Title: Engineering Geologist
Notification Date: 8/25/11	

**VIII. MONITORING WELL DECOMMISSIONING**

Date Requested by ACEH: 10/7/11	Date of Well Decommissioning Report: 11/3/11	
All Monitoring Wells Decommissioned: yes	Number Decommissioned: 3	Number Retained: 0
Reason Wells Retained: - - -		
Additional requirements for submittal of groundwater data from retained wells:		
ACEH Concurrence - Signature: <i>Barbara J Jakub</i>	Date: 1/10/12	

**Attachments:**

1. Site Vicinity Map (pp 1)
2. Site Plans (pp 3)
3. Soil Analytical Data (pp 9)
4. Groundwater Analytical Data (pp 1)
5. Boring Logs (pp 9)
6. Cross Section Location Map and Cross Section (pp 2)

This document and the related CASE CLOSURE LETTER & REMEDIAL ACTION COMPLETION CERTIFICATE shall be retained by the lead agency as part of the official site file.

## Jakub, Barbara, Env. Health

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**From:** Cherie McCaulou [CMccaulou@waterboards.ca.gov]  
**Sent:** Thursday, August 25, 2011 5:02 PM  
**To:** Jakub, Barbara, Env. Health  
**Subject:** Re: RO2965

Barbara - Thank you for your notification that ACEH is closing this case. The Regional Board staff has no objection to the case closure for 5315 San Pablo Avenue, Oakland, Alameda County.

Sincerely,

Cherie McCaulou  
Engineering Geologist  
San Francisco Bay Regional Water Quality Control Board  
[cmccaulou@waterboards.ca.gov](mailto:cmccaulou@waterboards.ca.gov)  
510-622-2342

>>> "Jakub, Barbara, Env. Health" <[barbara.jakub@acgov.org](mailto:barbara.jakub@acgov.org)> 8/25/2011 4:47 PM >>>

Hello Cherie,

Attached is a closure summary for RO00002965: R& H Auto Repair, located at 5315 San Pablo Avenue, Oakland, CA to comply with the RWQCB's 30-day review period. If no comments from the RWQCB are received within the 30-day review period, ACEH will proceed with case closure.

Please contact me should you have any comments or questions regarding the subject site.

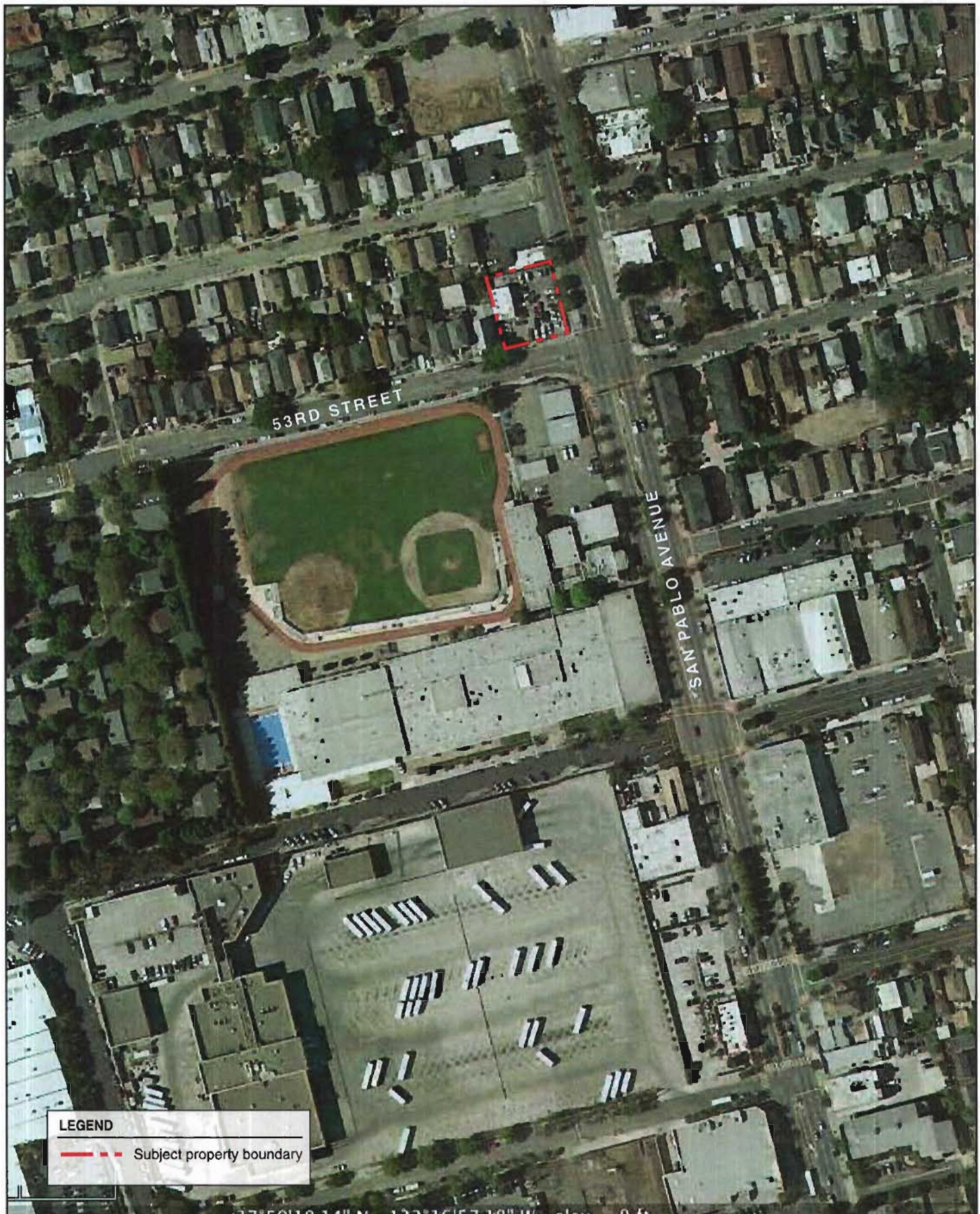
Sincerely,

Barbara Jakub, P.G.  
Hazardous Materials Specialist  
Alameda County Environmental Health  
1131 Harbor Bay Pky.  
Alameda, CA 94502  
Direct: 510-639-1287  
Fax: 510-337-9335

PDF copies of case files can be downloaded at:

<http://www.acgov.org/aceh/top/ust.htm>





**LEGEND**

--- Subject property boundary



**SUBJECT PROPERTY LOCATION**

5315 San Pablo Ave.  
Oakland, CA

By: MJC

FEBRUARY 2011

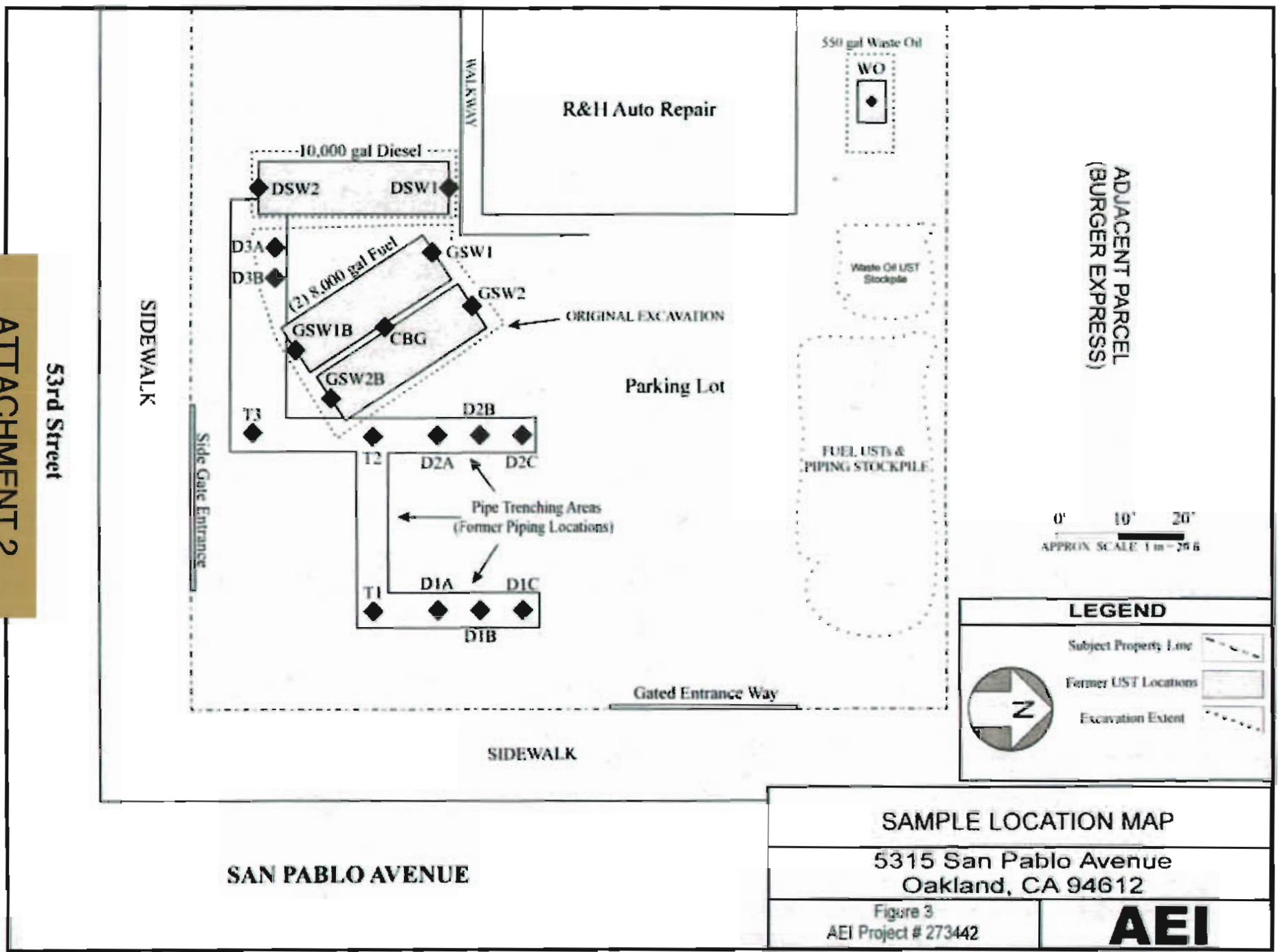
**Figure 1**



2010-06-08

**ATTACHMENT 1**



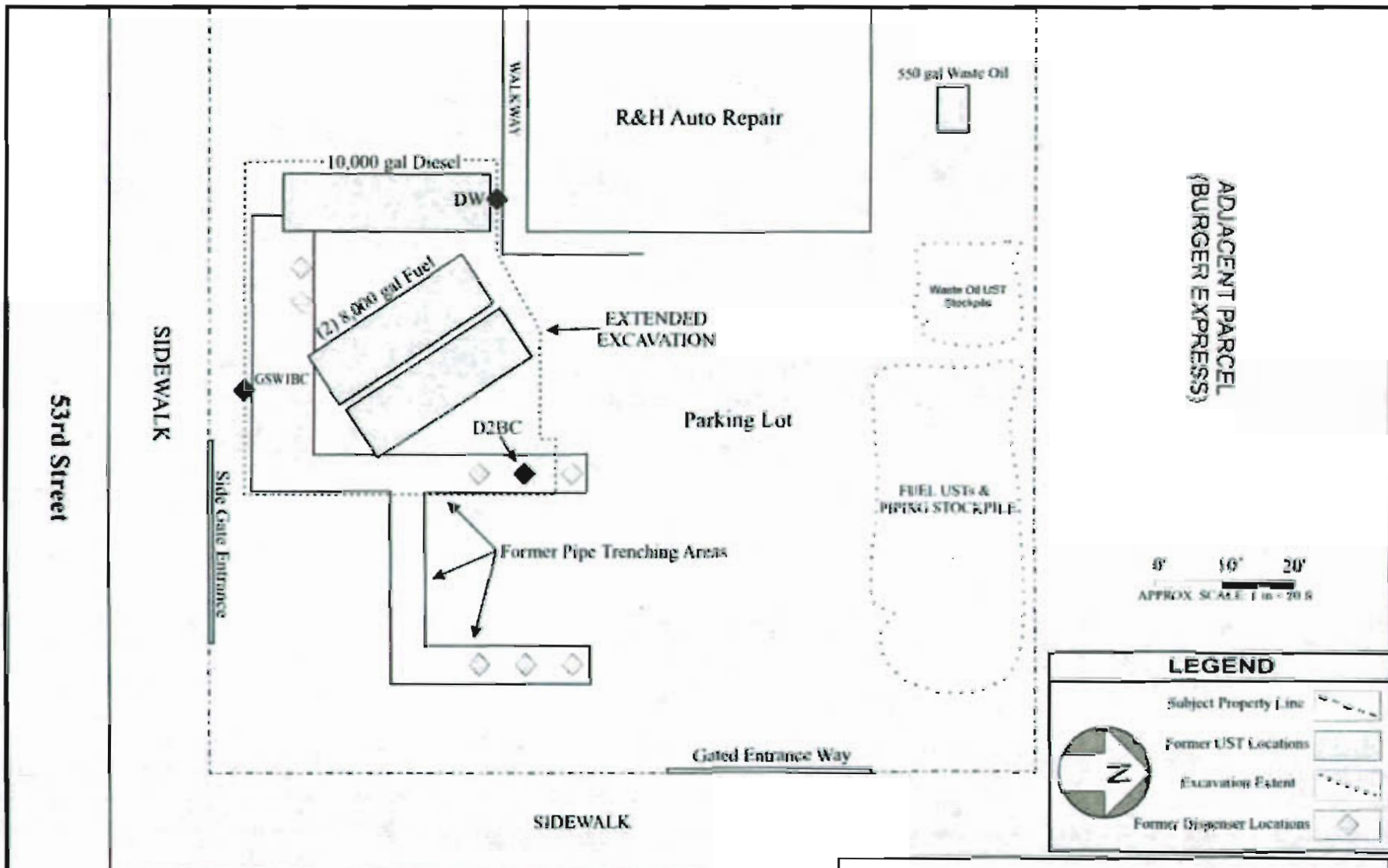


**LEGEND**

- Subject Property Line
- Former UST Locations
- Excavation Extent

**SAMPLE LOCATION MAP**  
 5315 San Pablo Avenue  
 Oakland, CA 94612  
 Figure 3  
 AEI Project # 273442

**AEI**



0' 10' 20'  
 APPROX. SCALE: 1 in = 20 ft

**LEGEND**

- Subject Property Line 
- Former UST Locations 
- Excavation Patent 
- Former Dispenser Locations 



**CONFIRMATION SAMPLE LOCATION MAP**

5315 San Pablo Avenue  
 Oakland, CA 94612

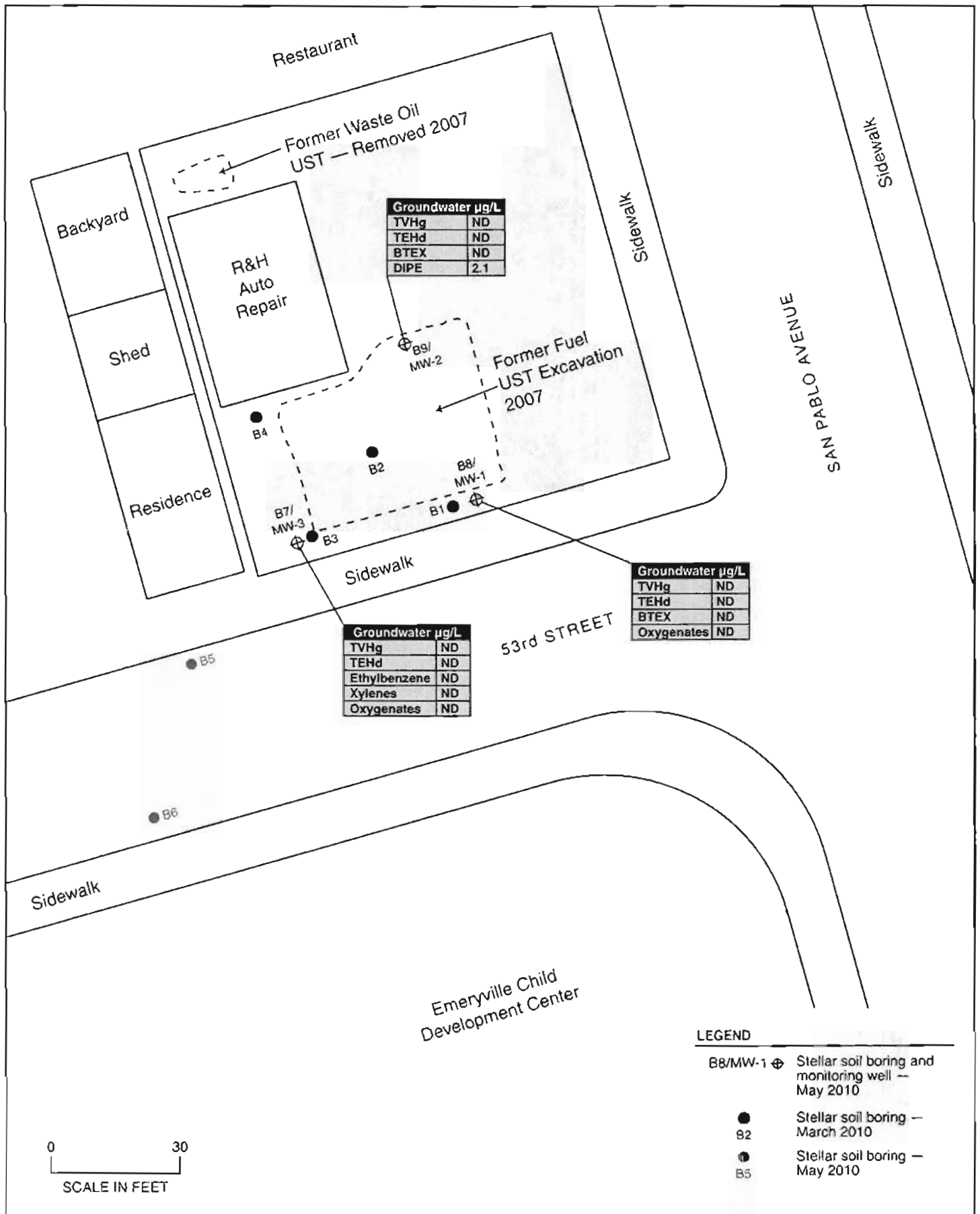
Figure 4  
 AEI Project # 276245

**AEI**

**SAN PABLO AVENUE**

**53rd Street**





**LEGEND**

- B8/MW-1 ⊕ Stellar soil boring and monitoring well — May 2010
- B2 Stellar soil boring — March 2010
- B5 Stellar soil boring — May 2010



**CONTAMINANTS OF CONCERN IN MONITORING WELLS, NOVEMBER 17, 2010**

5315 San Pablo Avenue  
Oakland, CA

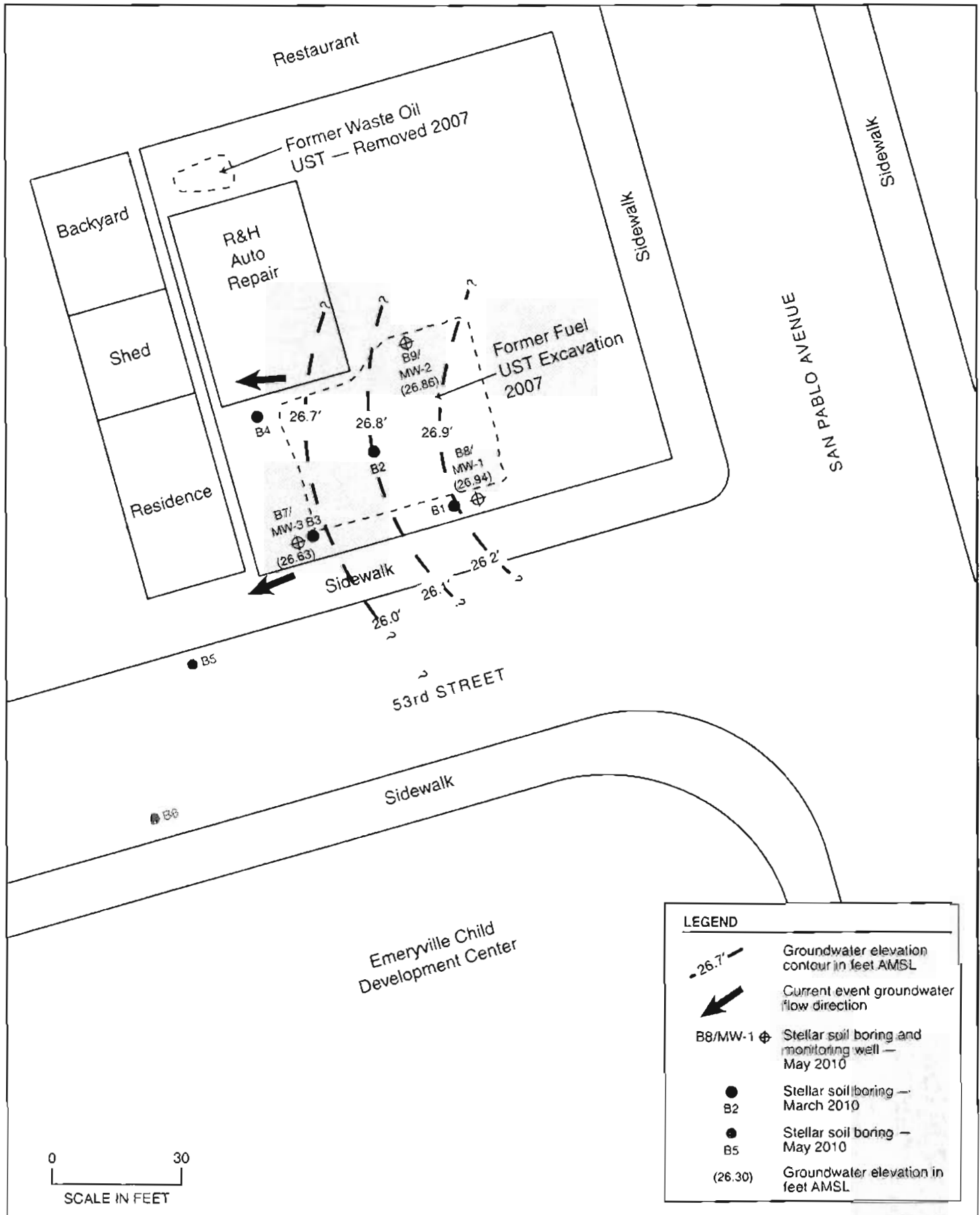
By: MJC

DECEMBER 2010

**Figure 5**



2010-06-17



LEGEND	
	Groundwater elevation contour in feet AMSL
	Current event groundwater flow direction
	Stellar soil boring and monitoring well — May 2010
	Stellar soil boring — March 2010
	Stellar soil boring — May 2010
	Groundwater elevation in feet AMSL

0 30  
SCALE IN FEET



**GROUNDWATER ELEVATION MAP, NOVEMBER 17, 2010**

5315 San Pablo Avenue  
Oakland, CA

By: MJC

DECEMBER 2010

**Figure 4**



2010-06-21

Table 1 - 550 Gallon Waste Oil UST & Piping  
Petroleum Hydrocarbon Sample Data

Sample ID	Date	TPHg	TPHd	POG	MTBE	Benzene	Toluene	Ethyl Benzene	Total Xylenes
		mg/Kg <i>Method 8015</i>	mg/Kg	mg/Kg <i>Method 5520</i>	mg/Kg	mg/Kg	mg/Kg <i>Method 8021</i>	mg/Kg	mg/Kg
WO	9/7/2007	<1.0	<1.0	<50.0	<0.05	<0.005	<0.005	<0.005	<0.005
WSTK 1,2,3,4	9/7/2007	<1.0	190	1200	<0.05	<0.005	<0.005	<0.005	<0.005
D1A	9/7/2007	<1.0	<1.0	-	<0.05	<0.005	<0.005	<0.005	<0.005
D1B	9/7/2007	<1.0	<1.0	-	<0.05	<0.005	<0.005	<0.005	<0.005
D1C	9/7/2007	<1.0	<1.0	-	<0.05	<0.005	<0.005	<0.005	<0.005
D2A	9/7/2007	<1.0	<1.0	-	<0.05	<0.005	0.0076	<0.005	0.014
D2B	9/7/2007	1500	350	-	<0.05	<0.005	36	26	180
D2C	9/7/2007	1.4	3.7	-	<0.05	<0.005	0.029	0.011	0.077
D3A	9/7/2007	<1.0	2.9	-	<0.05	<0.005	<0.005	<0.005	<0.005
D3B	9/7/2007	<1.0	3.3	-	<0.05	<0.005	<0.005	<0.005	<0.005
T1	9/7/2007	<1.0	1.8	-	<0.05	<0.005	<0.005	<0.005	<0.005
T2	9/7/2007	<1.0	<1.0	-	<0.05	<0.005	0.0053	<0.005	0.017
T3	9/7/2007	<1.0	3.4	-	<0.05	<0.005	<0.005	<0.005	<0.005
TSTK 1,2,3,4	9/7/2007	3.8	8.8	-	<0.05	<0.005	0.063	0.033	0.24

mg/Kg = milligrams per kilogram

TPHg= total petroleum hydrocarbons as gas

TPHd= total petroleum hydrocarbons as diesel

MTBE = Methyl-tert-butyl ether

POG = total petroleum oil & grease

< = below method detection limit

- = Not analyzed

**Table 2 - 550 Gallon Waste Oil UST  
LUFT 5 Metals Data**

<b>Sample ID</b>	<b>Date</b>	<b>Cadmium mg/Kg</b>	<b>Chromium mg/Kg</b>	<b>Lead mg/Kg <i>EPA Method 6010C</i></b>	<b>Nickel mg/Kg</b>	<b>Zinc mg/Kg</b>
WO	9/7/07	<1.5	52	7.4	41	74
WSTK 1,2,3,4	9/7/07	<1.5	49	85	59	190

mg/Kg = milligrams per kilogram (parts per million)  
 < = below method detection limit

**Table 3 - 550 Gallon Waste Oil UST  
Polychlorinated Biphenyls**

Sample ID	Date	Aroclor 1016 mg/Kg	Aroclor 1221 mg/Kg	Aroclor 1232 mg/Kg	Aroclor 1242 mg/Kg	Aroclor 1248 mg/Kg	Aroclor 1254 mg/Kg	Aroclor 1260 mg/Kg	Aroclor 1260 mg/Kg	Total PCB's mg/Kg
WO	9/7/07	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025
WSTK 1,2,3,4	9/7/07	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025

PCB's = Polychlorinated Biphenyls

mg/Kg = milligrams per kilogram (parts per million)

< = below method detection limit



**Table 4 - 550 Gallon Waste Oil UST**  
**Volatile Organic Compounds & Semi-Volatile Organic Compounds Data**  
*Method 8240*

Sample ID	Date	All VOCs	All SVOCs
WO	9/7/2007	ND<MDL	ND<MDL
WSTK 1,2,3,4	9/7/2007	ND<MDL	ND<MDL
DETECTION LIMIT		Varies 0.005 - 0.02	Varies 0.33 - 1.6

ND = non detect

< = bellow detection limit

MDL = method detection limit

**Table 5 - (2) 8,000 & (1) 10,000 Gallon Fuel USTs  
Petroleum Hydrocarbon Sample Data B**

Sample ID	Date	TPHg	TPHd	MTBE	Benzene	Toluene	Ethyl Benzene	Total Xylenes
		mg/Kg <i>Method 8015</i>	mg/Kg <i>Method 5520</i>	mg/Kg	mg/Kg	mg/Kg <i>Method 8021</i>	mg/Kg <i>Method 8021</i>	mg/Kg
STK 1,2,3,4	9/7/2007	210	230	<0.05	<0.005	<0.005	<0.005	0.77
STK 5,6,7,8	9/7/2007	85	38	<0.05	<0.005	<0.005	<0.005	<0.005
GSW1	9/7/2007	27	25	<0.05	0.008	0.043	0.051	0.33
GSW2	9/7/2007	2.9	1.2	<0.05	<0.005	<0.005	0.0072	0.046
CBG	9/7/2007	5.1	1.8	<0.05	<0.005	<0.005	0.0061	<0.005
GSW1B	9/7/2007	170	43	<0.05	<0.005	0.077	0.11	0.46
GSW2B	9/7/2007	61	7.3	<0.05	<0.005	<0.005	<0.005	<0.005
DSW1	9/7/2007	230	73	<0.05	<0.005	0.64	<0.005	1.1
DSW2	9/7/2007	6	12	<0.05	<0.005	<0.005	<0.005	<0.005

mg/Kg = milligrams per kilogram

TPHg= total petroleum hydrocarbons as gas

TPHd= total petroleum hydrocarbons as diesel

MTBE = Methyl-tert-butyl ether

< = below method detection limit

- = Not analyzed

**Table 6 - (2) 8,000 & (1) 10,000 Gallon Fuel USTs  
Total & Soluble Lead Data  
Method 6010**

<b>Sample ID</b>	<b>Date</b>	<b>Lead mg/Kg</b>
STK 1,2,3,4	9/7/2007	200
STK 5,6,7,8	9/7/2007	78
GSW1	9/7/2007	11
GSW2	9/7/2007	7.3
CBG	9/7/2007	8.9
GSW1B	9/7/2007	8.8
GSW2B	9/7/2007	11
DSW1	9/7/2007	8.4
DSW2	9/7/2007	7.3
		<b>STLC - Lead mg/Kg</b>
STK 1,2,3,4	9/14/2008	4.9
STK 5,6,7,8	9/14/2007	1.9

mg/Kg = milligrams per kilogram (parts per million)  
 < = below method detection limit

**Table 7**  
**Petroleum Hydrocarbon Confirmation Sampling Data**

Sample ID	Date	TPHg	TPHd	MTBE	Benzene	Toluene	Ethyl Benzene	Total Xylenes
		mg/Kg <i>Method 8015</i>	mg/Kg <i>Method 5520</i>	mg/Kg	mg/Kg	mg/Kg <i>Method 8021</i>	mg/Kg	mg/Kg
DW	1/15/2008	68	32	<0.05	<0.005	0.21	<0.005	0.16
D2BC	1/15/2008	19	-	<0.05	<0.005	<0.005	<0.005	0.06
GSW1BC	1/15/2008	160	-	<0.05	<0.005	0.42	<0.005	0.44

mg/Kg = milligrams per kilogram

TPHg= total petroleum hydrocarbons as gas

TPHd= total petroleum hydrocarbons as diesel

MTBE = Methyl-tert-butyl ether

< = below method detection limit

- = Not analyzed

Appendix E contains the certified analytical laboratory report and chain-of-custody record. Table 1 shows the total and volatile petroleum hydrocarbon data. Figure 3 summarizes the soil and groundwater analytical results.

**Table 1**  
**Total and Volatile Petroleum Hydrocarbons**  
**5315 San Pablo Avenue, Oakland, CA**

Sample ID	TVHg	TEHd	Oxygenates MTBE	Benzene	Toluene	Ethyl Benzene	Xylenes
B1-14-15	1.6	2.6	<0.005	<0.005	<0.005	<0.005	<0.005
B1-19-20	< 0.25	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
B2-12-13	13	11	<0.010	0.021	<0.010	0.18	0.030
B2-16-17	<0.25	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
B2-19-20	<0.25	1.7	<0.005	<0.005	<0.005	<0.005	<0.005
B3-15-16	3.7	2.2	<0.005	<0.005	<0.005	<0.005	<0.005
B3-19-20	<0.25	1.1	<0.005	<0.005	<0.005	<0.005	<0.005
B4-15-16	0.30	90	<0.005	<0.005	<0.005	<0.005	<0.005
B4-21-22	<0.25	1.4	<0.005	<0.005	<0.005	<0.005	<0.005
ESLs Residential <sup>(a)</sup>	83 / 100	83 / 100	variable	0.044 / 0.27	2.9 / 9.3	3.3 / 4.7	2.3 / 11
ESLs Industrial <sup>(a)</sup>	83 / 180	83 / 180	variable	0.044 / 0.12	2.9 / 9.3	2.3 / 2.3	2.3 / 11
B1-W	<b>890</b>	<b>360</b>	<2	<0.5	<0.5	<0.5	<0.5
B2-W	<b>1500</b>	<b>480</b>	<4	11	<1.0	<b>53</b>	<9.5
B3-W	<b>2300</b>	<b>760</b>	<2	<0.5	<0.5	22	0.54
B4-W	<50	<b>430</b>	<2	<0.5	<0.5	<0.5	<0.5
ESLs Residential and Industrial <sup>(b)</sup>	100 / 210	100 / 210	variable	1.0 / 46	40 / 130	30 / 43	20 / 100

Notes:

ESLs = Environmental Screening Levels

<sup>(a)</sup> Water Board Tier I shallow soil Environmental Screening Levels for sites where groundwater is/is not a likely drinking water resource.

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

Oxygenates /MTBE = Fuel oxygenates- ethyl-tertiary-ether (ETBE), di-isopropyl-ether (DİPE), 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 mg/kg. All groundwater samples and associated ESLs are reported in µg/L.

Concentrations of contaminants exceeding their appropriate ESL are indicated in **BOLD** type.



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

Sample ID	TVHg	TEHd	Oxygenates/ MTBE	Benzene	Toluene	Ethyl Benzene	Xylenes
<b>SOIL SAMPLES</b>							
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<sup>(a)</sup></i>	<i>83 / 100</i>	<i>83 / 100</i>	<i>variable</i>	<i>0.044 / 0.27</i>	<i>2.9 / 9.3</i>	<i>3.3 / 4.7</i>	<i>2.3 / 11</i>
<i>ESLs—Industrial<sup>(a)</sup></i>	<i>83 / 180</i>	<i>83 / 180</i>	<i>variable</i>	<i>0.044 / 0.12</i>	<i>2.9 / 9.3</i>	<i>2.3 / 2.3</i>	<i>2.3 / 11</i>
<b>GROUNDWATER SAMPLES</b>							
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<sup>(b)</sup></i>	<i>100 / 210</i>	<i>100 / 210</i>	<i>Variable – NE for DIPE</i>	<i>1.0 / 46</i>	<i>40 / 130</i>	<i>30 / 43</i>	<i>20 / 100</i>

Notes:

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

<sup>(b)</sup> 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


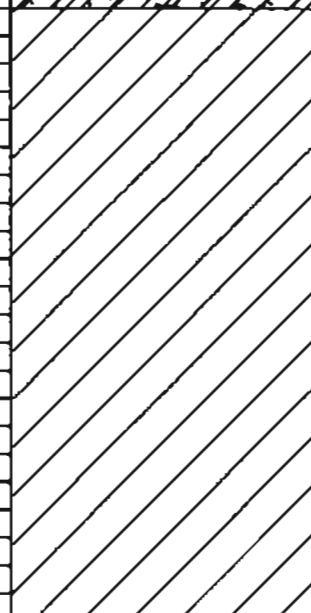
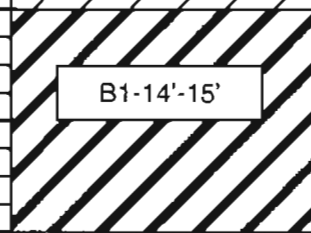

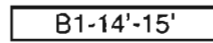
TVHg = total volatile hydrocarbons as gasoline

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).



BORING NUMBER B1 Page 1 of 1

PROJECT R & H Auto Repair OWNER \_\_\_\_\_  
 LOCATION 5315 San Pablo Avenue, Berkeley PROJECT NUMBER 2010-06  
 TOTAL DEPTH 20 feet bgs BOREHOLE DIA. 2.25 inch  
 SURFACE ELEV. Approx. 40 feet WATER FIRST ENCOUNTERED 17 feet  
 DRILLING COMPANY VTS DRILLING METHOD Direct Push 7720 DT  
 DRILLER Glenn GEOLOGIST S. Bittman DATE DRILLED 3/5/2010

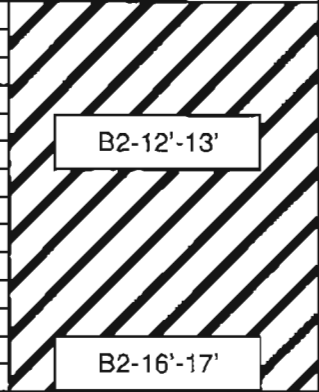
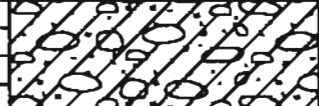
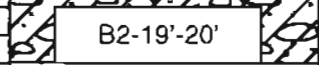

DEPTH (feet)	GRAPHIC LOG	PID	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
0			3" asphalt	
0-2			CL/GC, Silty clay to gravelly clay, brown to black, moist, stiff	
2-13			CL, Silty clay, dark brown, damp, stiff, medium plasticity, no odor	
8		130	▼ Becomes grey @ 8', slight hydrocarbon odor	
13-14		60		
14-17		40	CH, becomes brown, increasing plasticity	Continuous core sampling—100% core recovery unless specified otherwise
17-20			ML/SM, clayey silt to sandy silt, grey & brown, moist to wet, increasing sand, 19'-20'	Grab groundwater sample collected. Temporary screen set 15'-20'
20			Bottom of boring = 20 feet	 Soil sample collected for analysis
22				

2010-06-05

**ATTACHMENT 5**

BORING NUMBER B2 Page 1 of 1

PROJECT R & H Auto Repair OWNER \_\_\_\_\_  
 LOCATION 5315 San Pablo Avenue, Berkeley PROJECT NUMBER 2010-06  
 TOTAL DEPTH 20 feet bgs BOREHOLE DIA. 2.25 inch  
 SURFACE ELEV. Approx. 40 feet WATER FIRST ENCOUNTERED 17 feet  
 DRILLING COMPANY VTS DRILLING METHOD Direct Push 7720 DT  
 DRILLER Glenn GEOLOGIST S. Bittman DATE DRILLED 3/5/2010

DEPTH (feet)	GRAPHIC LOG	PID	DESCRIPTION/SOIL CLASSIFICATION	REMARKS	
0			1/2" drain rock		
2	Fill		Former UST location backfilled with imported material. Pushed to 10' bgs and sampled from that depth.		
4					
6					
8					
10					
12					
12		1,200	CL/CH, Silty clay, dark blue green, damp. medium to high plasticity, very stiff, strong hydrocarbon odor	Notes: PID = Photoionization Detector. Values are in parts per million per volume air (ppmv)  Continuous core sampling—100% core recovery unless specified otherwise  Grab groundwater sample collected. Temporary screen set 15'-20'  <div style="border: 1px solid black; display: inline-block; padding: 2px;">B2-12'-13'</div> Soil sample collected for analysis	
14		1,050			
16		0.0			
16					
18		0.0	GC, Clayey gravel, sandy, brown, moist to wet, medium dense		
20					
20			Bottom of boring = 20 feet		
22					

2010-06-06B2

BORING NUMBER B3 Page 1 of 1

PROJECT R & H Auto Repair OWNER \_\_\_\_\_

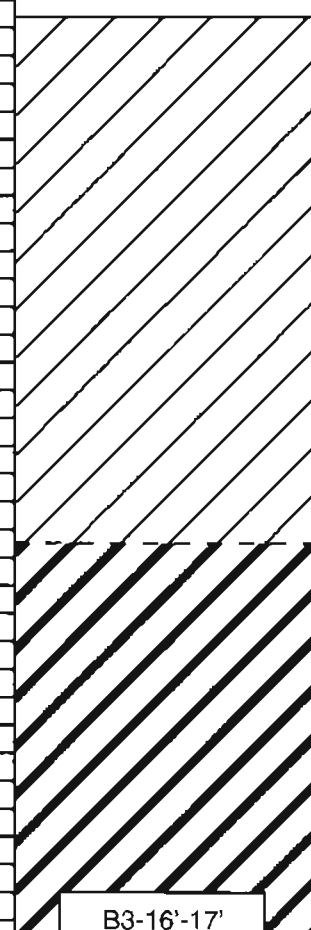
LOCATION 5315 San Pablo Avenue, Berkeley PROJECT NUMBER 2010-06

TOTAL DEPTH 20 feet bgs BOREHOLE DIA. 2.25 inch

SURFACE ELEV. Approx. 40 feet WATER FIRST ENCOUNTERED 17 feet

DRILLING COMPANY VTS DRILLING METHOD Direct Push 7720 DT

DRILLER Glenn GEOLOGIST S. Bittman DATE DRILLED 3/5/2010

DEPTH (feet)	GRAPHIC LOG	PID	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
0			3" asphalt	
2		0.0	CL, Silty clay, tan, mottled black, moist, medium plasticity, stiff, becomes dark brown with oxide staining and small roots	
4				
6				
8				
10				
12				
14				
16				
18		0.0	SM, Sandy silt to silty sand, orange brown, moist to wet	
20			Bottom of boring = 20 feet	

2010-06-07



BORING NUMBER B4 Page 1 of 1

PROJECT R & H Auto Repair OWNER \_\_\_\_\_

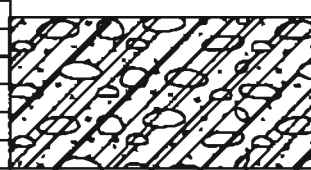
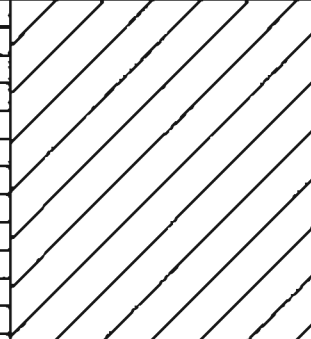
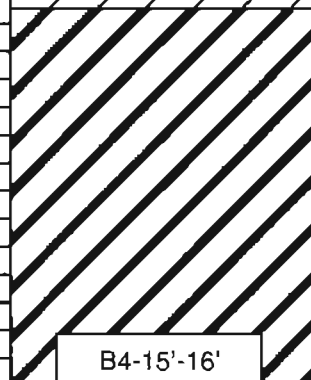


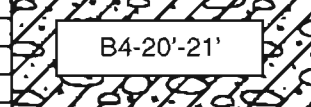
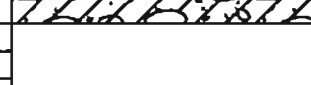
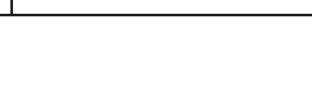

LOCATION 5315 San Pablo Avenue, Berkeley PROJECT NUMBER 2010-06

TOTAL DEPTH 22 feet bgs BOREHOLE DIA. 2.25 inch

SURFACE ELEV. Approx. 40 feet WATER FIRST ENCOUNTERED 20.5 feet

DRILLING COMPANY VTS DRILLING METHOD Direct Push

DRILLER Glenn GEOLOGIST S. Bittman DATE DRILLED 3/5/2010

DEPTH (feet)	GRAPHIC LOG	PID	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
0			3" asphalt	
2			CL/GC, Silty clay to gravelly clay, brown to black with fragments of brick, moist to wet, fill	
4			CL, Silty clay, dark brown, medium plasticity, very stiff, no odor	
6		0.0	▼	
10		0.0	CH, Becomes grey, increasing plasticity, no odor	Notes: PID = Photoionization Detector. Values are in parts per million per volume air (ppmv)
12		0.0		Continuous core sampling—100% core recovery unless specified otherwise
14				
16				
18		0.0	Becomes brown, no odor	Grab groundwater sample collected. Temporary screen set 17'-22'
20		0.0	GC, Gravelly clay, brown, moist to wet	<span style="border: 1px solid black; padding: 2px;">B4-15'-16'</span>
20.5			▽ Clayey sand and gravel, 20.5-22 ft.	Soil sample collected for analysis
22			Bottom of boring = 22 feet	

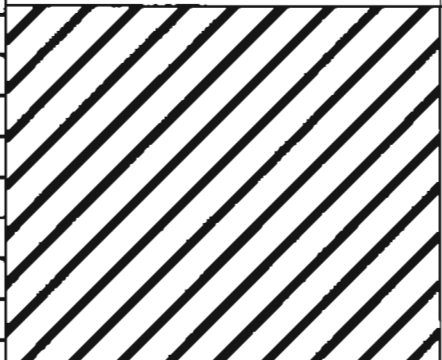

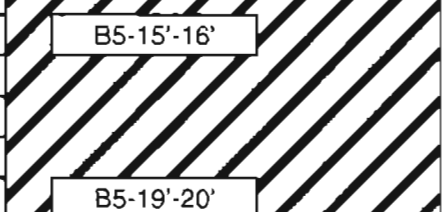
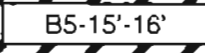
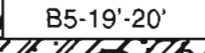


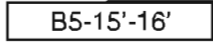
2010-06-04

▽ First encountered groundwater

▼ Equilibrated groundwater level

BORING NUMBER B5 Page 1 of 1


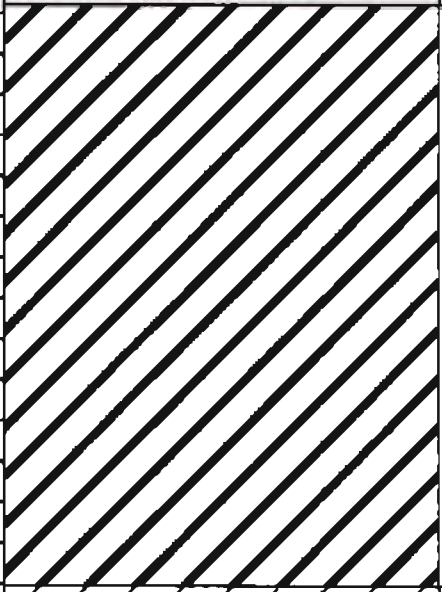
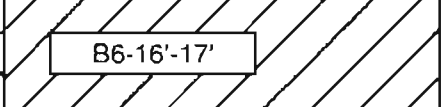
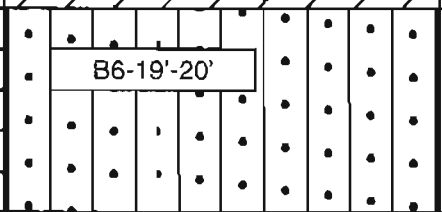

PROJECT R & H Auto Repair OWNER \_\_\_\_\_  
 LOCATION 5315 San Pablo Ave., Oakland, CA PROJECT NUMBER 2010-06  
 TOTAL DEPTH 25 feet BOREHOLE DIA. 2.25 in.  
 SURFACE ELEV. Approx. 40 feet WATER FIRST ENCOUNTERED 23 feet  
 DRILLING COMPANY V & S DRILLING METHOD Direct Push 7720 DT  
 DRILLER Glenn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

DEPTH (feet)	GRAPHIC LOG	DESCRIPTION/SOIL CLASSIFICATION	REMARKS
0		Asphalt 4", Baserock 6"	
0 - 10		CH, Silty clay, dark brown, damp, stiff	
10 - 15		CH, as above, grey, damp, very stiff	
15 - 20		Softer at 14', brown Becomes mottled with oxide at 15'	
15 - 16'			
19 - 20'			
20 - 23		CL/GC, gravelly clay to clayey gravel, grey, moist, soft	Grab groundwater samples collected from inside drill rods
23 - 25		SW, gravelly sand, clayey, reddish brown, medium dense, wet	
25 - 30		Bottom of bore = 25 feet	Soil sample collected for analysis

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		CL, mottled with oxide staining, soft	Notes: Continuous core sampling—100% core recovery unless specified otherwise
19-20		CL/SM, Sandy clay to silty sand, grey, moist, soft ▽	Grab groundwater samples collected from inside drill rods
23		SW, Gravelly sand, tan, wet, medium dense	<u>B6-16'-17'</u>
25		Bottom of bore = 25 feet	Soil sample collected for analysis
30			

2010-06-11

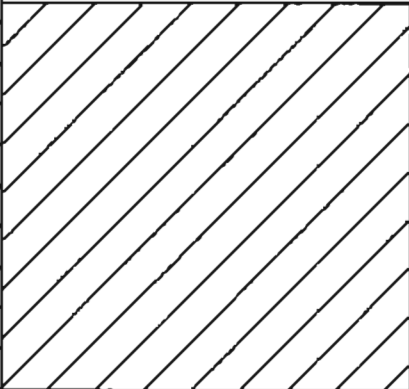
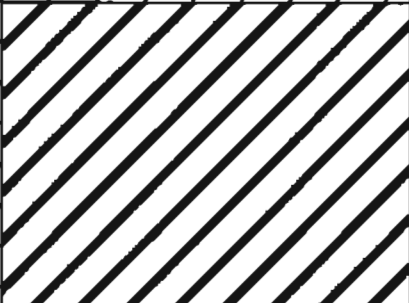
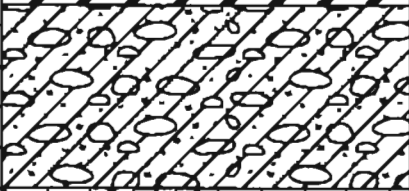
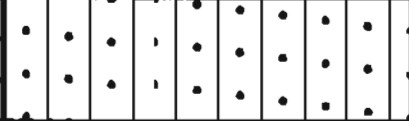
▽ First encountered groundwater

▼ Equilibrated groundwater level



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'			
14-21		GC, Gravelly clay with sandy silt and silty sand interbeds, brown with orange oxide stain, moist to wet, soft			
21-25		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			
4-15		CL, silty clay, dark brown, damp, very stiff			
8		Becomes grey at 8' with some oxide mottling			
15		CH, Softer at 15', stiff			
20		SM/CL, sandy silt to sandy clay, brown with red oxide staining, moist to wet, soft			
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

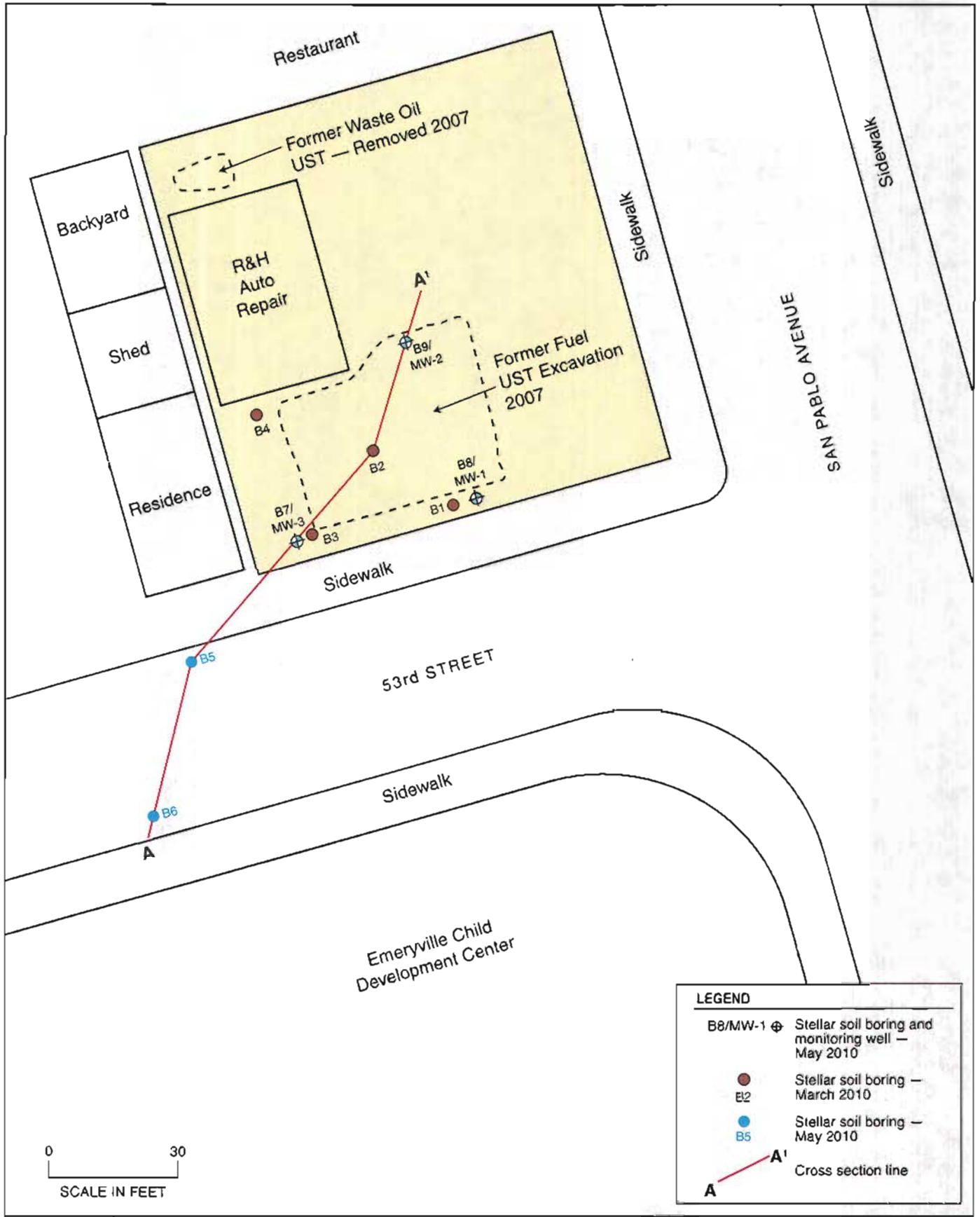
PROJECT R & H Auto Repair OWNER \_\_\_\_\_  
 LOCATION 5315 San Pablo Ave., Oakland, CA PROJECT NUMBER 2010-06  
 TOTAL DEPTH 25 feet BOREHOLE DIA. 3.25 in.  
 SURFACE ELEV. Approx. 40 feet WATER FIRST ENCOUNTERED 17 feet  
 DRILLING COMPANY V & S DRILLING METHOD Direct Push 7720 DT  
 DRILLER Glenn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



0 30  
SCALE IN FEET

LEGEND	
B8/MW-1 ⊕	Stellar soil boring and monitoring well - May 2010
●	Stellar soil boring - March 2010
●	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

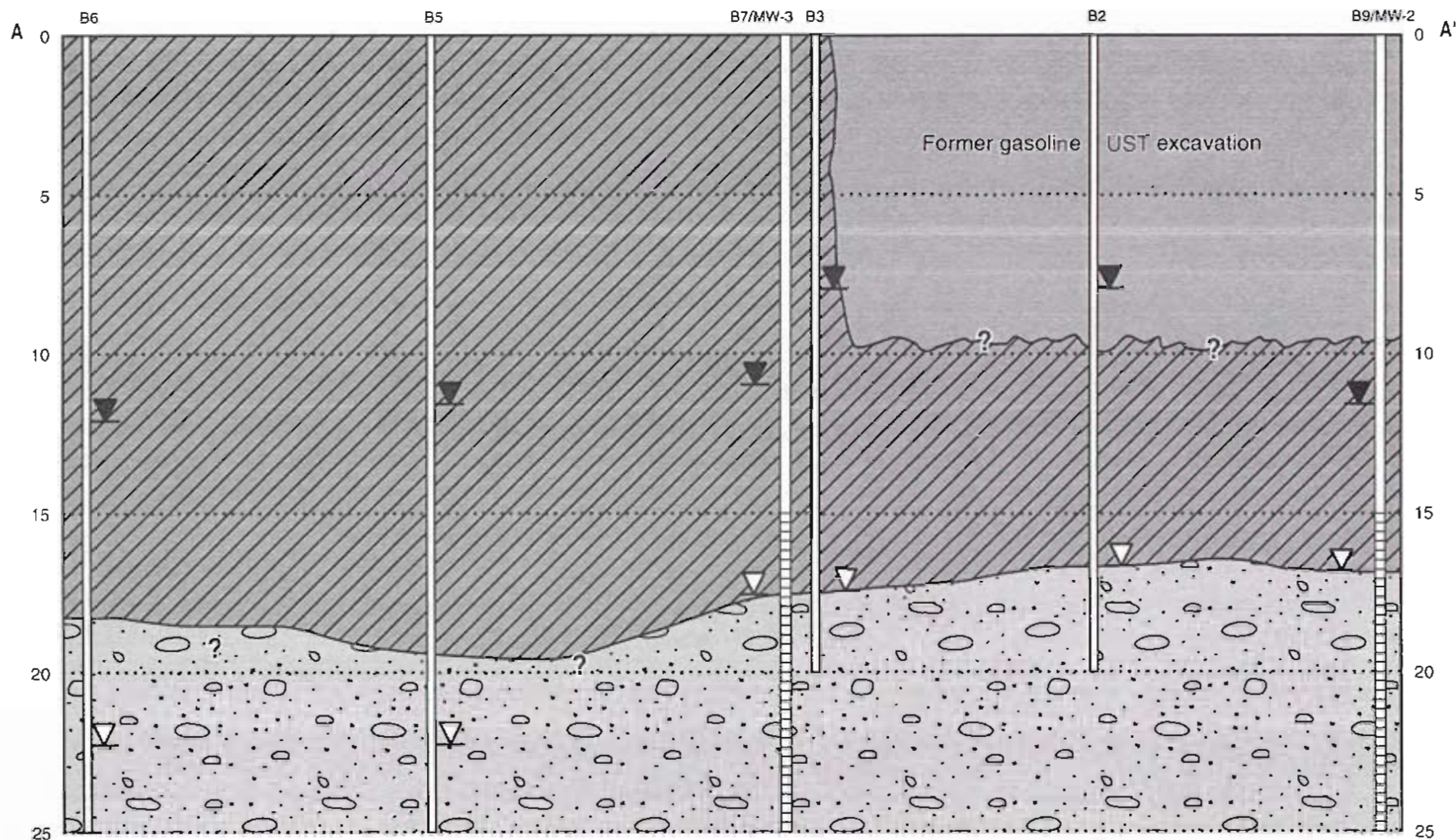
AUGUST 2010

Figure 2




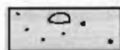




2010-06-09





**LEGEND**

- |   |  |   |                               |   |   |
|---|--|---|-------------------------------|---|---|
|  | Inferred lower permeability soils<br>(clay, gravelly clay, sandy clay) |  | Class II Fill                 |  | Monitoring well showing screened interval |
|  | Inferred higher permeability soils<br>(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

FEBRUARY 2011