ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Director

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

June 27, 2013

Mr. Denis Brown
Shell Oil Products US
20945 S. Wilmington Ave.
Carson, CA 90810-1039

Bhushan K. Bansal
Bansal, Inc.
1784 150th Avenue
San Leandro, CA 94578-1826

Subject: Case Closure for Fuel Leak Case No. RO0003083 and GeoTracker Global ID T10000003427, Shell #135696, 820 Portwood Avenue, Oakland, CA 94601

Dear Mr. Brown and Mr. Bansal:

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. This case closure letter and the case closure summary can also be viewed on the State Water Resources Control Board's Geotracker website (http://geotracker.swrcb.ca.gov) and the Alameda County Environmental Health website (http://www.acgov.org/aceh/index.htm).

SITE INVESTIGATION AND CLEANUP SUMMARY

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

- Total Petroleum Hydrocarbons as gasoline remain in groundwater at concentrations up to 81 ppb.

If you have any questions, please call Jerry Wickham at (510) 567-6791. Thank you.

Sincerely,

Donna L. Drogos, P.E.
Division Chief

Enclosures:
1. Remedial Action Completion Certification
2. Case Closure Summary

cc:

Leroy Griffin (w/enc)
Oakland Fire Department
250 Frank H. Ogawa Plaza, Ste. 3341
Oakland, CA 94612-2032
(*Sent via E-mail to: lgriffin@oaklandnet.com*)

Closure Unit
State Water Resources Control Board
UST Cleanup Fund
P.O. Box 944212
Sacramento, CA 94244-2120
(uploaded to GeoTracker)

Peter Schaefer
Conestoga-Rovers & Associates
5900 Hollis Street, Suite A
Emeryville, CA 94608 2032
(*Sent via E-mail to: pschaefer@craworld.com*

Donna Drogos, ACEH (*Sent via E-mail to: donna.drogos@acgov.org*)
Jerry Wickham, ACEH (*Sent via E-mail to: jerry.wickham@acgov.org*)

GeoTracker (w/enc)
eFile (w/orig enc)

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Director

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

REMEDIAL ACTION COMPLETION CERTIFICATION

June 27, 2013

Mr. Denis Brown
Shell Oil Products US
20945 S. Wilmington Ave.
Carson, CA 90810-1039

Bhushan K. Bansal
Bansal, Inc.
1784 150th Avenue
San Leandro, CA 94578-1826

Subject: Case Closure for Fuel Leak Case No. RO0003083 and GeoTracker Global ID T10000003427, Shell #135696, 820 Portwood Avenue, Oakland, CA 94601

Dear Mr. Brown and Mr. Bansal:

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.

Claims for reimbursement of corrective action costs submitted to the Underground Storage Tank Cleanup Fund more than 365 days after the date of this letter or issuance or activation of the Fund's Letter of Commitment, whichever occurs later, will not be reimbursed unless one of the following exceptions applies:

- Claims are submitted pursuant to Section 25299.57, subdivision (k) (reopened UST case); or
- Submission within the timeframe was beyond the claimant's reasonable control, ongoing work is required for closure that will result in the submission of claims beyond that time period, or that under the circumstances of the case, it would be unreasonable or inequitable to impose the 365-day time period.

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: June 27, 2013

Agency Name: Alameda County Environmental Health	Address: 1131 Harbor Bay Parkway
City/State/Zip: Alameda, CA 94502-6577	Phone: (510) 567-6791
Responsible Staff Person: Jerry Wickham	Title: Senior Hazardous Materials Specialist

II. CASE INFORMATION

Site Facility Name: Shell #135696		
Site Facility Address: 820 Portwood Avenue, Oakland, CA 94601		
RB Case No.: ---	Local Case No.: ---	LOP Case No.: RO0003083
URF Filing Date: ---	Geotracker ID: T10000003427	APN: 19-84-35-1

Responsible Parties	Addresses	Phone Number
Bhushan K. Bansal, Bansal, Inc.	1784 150th Avenue San Leandro, CA 94578-1826	No phone number
Denis Brown, Shell Oil Products US	20945 S. Wilmington Ave. Carson, CA 90810-1039	(707) 865-0251

Tank I.D. No	Size in Gallons	Contents	Closed In Place/Removed?	Date
--	---	---	Tanks not removed or replaced	---
Piping			Piping not removed or replaced	---

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and Type of Release: Unknown. Petroleum hydrocarbons were detected in groundwater during a Phase II Environmental Site Assessment for due diligence in 2008.		
Site characterization complete? Yes	Date Approved By Oversight Agency: -----	
Monitoring wells installed? No	Number: 0	Proper screened interval? ---
Highest GW Depth Below Ground Surface: 8.85 feet bgs	Lowest Depth: 11.9 feet bgs	Flow Direction: Regional flow is south to southwest
Most Sensitive Current Use: Potential drinking water source.		

Summary of Production Wells in Vicinity: No water supply wells were identified within 1,000 feet of the site.	
Are drinking water wells affected? No	Aquifer Name: East Bay Plain
Is surface water affected? No	Nearest SW Name: Alameda Tidal Canal is approximately 1,500 feet southwest of the site
Off-Site Beneficial Use Impacts (Addresses/Locations): None identified.	
Reports on file? Yes	Where are reports filed? Alameda County Environmental Health

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL

Material	Amount (Include Units)	Action (Treatment or Disposal w/Destination)	Date
Tank	----	----	----
Piping	----	----	----
Free Product	----	----	----
Soil	----	----	----
Groundwater	----	----	----

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)	< 0.5	< 0.5	81	81
TPH (Diesel)	NA	NA	NA	NA
Benzene	< 0.005	< 0.005	< 0.5	< 0.5
Toluene	< 0.005	< 0.005	< 1.0	< 1.0
Ethylbenzene	< 0.005	< 0.005	< 1.0	< 1.0
Xylenes	< 0.005	< 0.005	< 2.0	< 2.0
Heavy Metals (Cd, Cr, Pb, Ni, Zn)	NA	NA	NA	NA
MTBE	< 0.005 (1)	< 0.005 (1)	14 (2)	14 (2)
Other (8240/8270)	NA	NA	NA	NA

(1) MTBE <0.005 ppm; TBA <0.05 ppm; DIPE, ETBE, and TAME < 0.01 ppm; EtOH < 0.5 ppm; EDB and EDC Not Analyzed.
(2) MTBE = 14 ppb; TBA <10 ppb; DIPE, ETBE, and TAME < 2.0 ppb; EtOH < 100 ppb; EDB and EDC Not Analyzed.

NA = Not Analyzed

Site History and Description of Corrective Actions:

The property is an active Shell-branded gasoline station located at the intersection of Portwood Avenue and East 8th Street in Oakland, California. Surrounding land use is mixed commercial and residential. Interstate 880 borders the site to the south.

On August 6, 2008, seven borings (B-1 through B-7) were advanced as part of a due diligence site assessment. Depths of the borings ranged between 13 and 15 feet below ground surface (bgs). One soil sample was collected from each boring at a depth between 5 and 9 feet bgs. None of the soil samples contained petroleum hydrocarbons, BTEX, or fuel oxygenates at concentrations above reporting limits. Grab groundwater samples collected from each of the seven soil borings contained up to 81 parts per billion (ppb) Total Petroleum Hydrocarbons as gasoline (TPHg) and 14 ppb MTBE.

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.		
Site Management Requirements: None		
Should corrective action be reviewed if land use changes? No		
Was a deed restriction or deed notification filed? No		Date Recorded: ----
Monitoring Wells Decommissioned: No	Number Decommissioned: 0	Number Retained: 0
List Enforcement Actions Taken: None		
List Enforcement Actions Rescinded: -----		

V. ADDITIONAL COMMENTS, DATA, ETC.

Considerations and/or Variances:

None

Conclusion:

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 based upon the information available in our files to date. No further investigation or cleanup for the fuel leak case is necessary. ACEH staff recommend case closure for this fuel leak site.

VI. LOCAL AGENCY REPRESENTATIVE DATA

Prepared by: Jerry Wickham, P.G.	Title: Senior Hazardous Materials Specialist
Signature: Jerry Wickham	Date: 06/27/13
Approved by: Donna L. Drogos, P.E.	Title: Division Chief
Signature:	Date: 6/27/13

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: 06/27/13	

VIII. MONITORING WELL DECOMMISSIONING

Date Requested by ACEH: NA	Date of Well Decommissioning Report: NA	
All Monitoring Wells Decommissioned: NA	Number Decommissioned: NA	Number Retained: NA
Reason Wells Retained: NA		
Additional requirements for submittal of groundwater data from retained wells: None		
ACEH Concurrence - Signature: Jerry Wickham		Date: 06/27/13

Attachments:

1. Site Vicinity Map and Aerial Photo (2 pp)
2. Site Plan and Chemical Concentration Maps (3 pp)
3. Soil Analytical Data (1 p)
4. Groundwater Analytical Data (1 p)
5. Boring Logs (7 pp)

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.

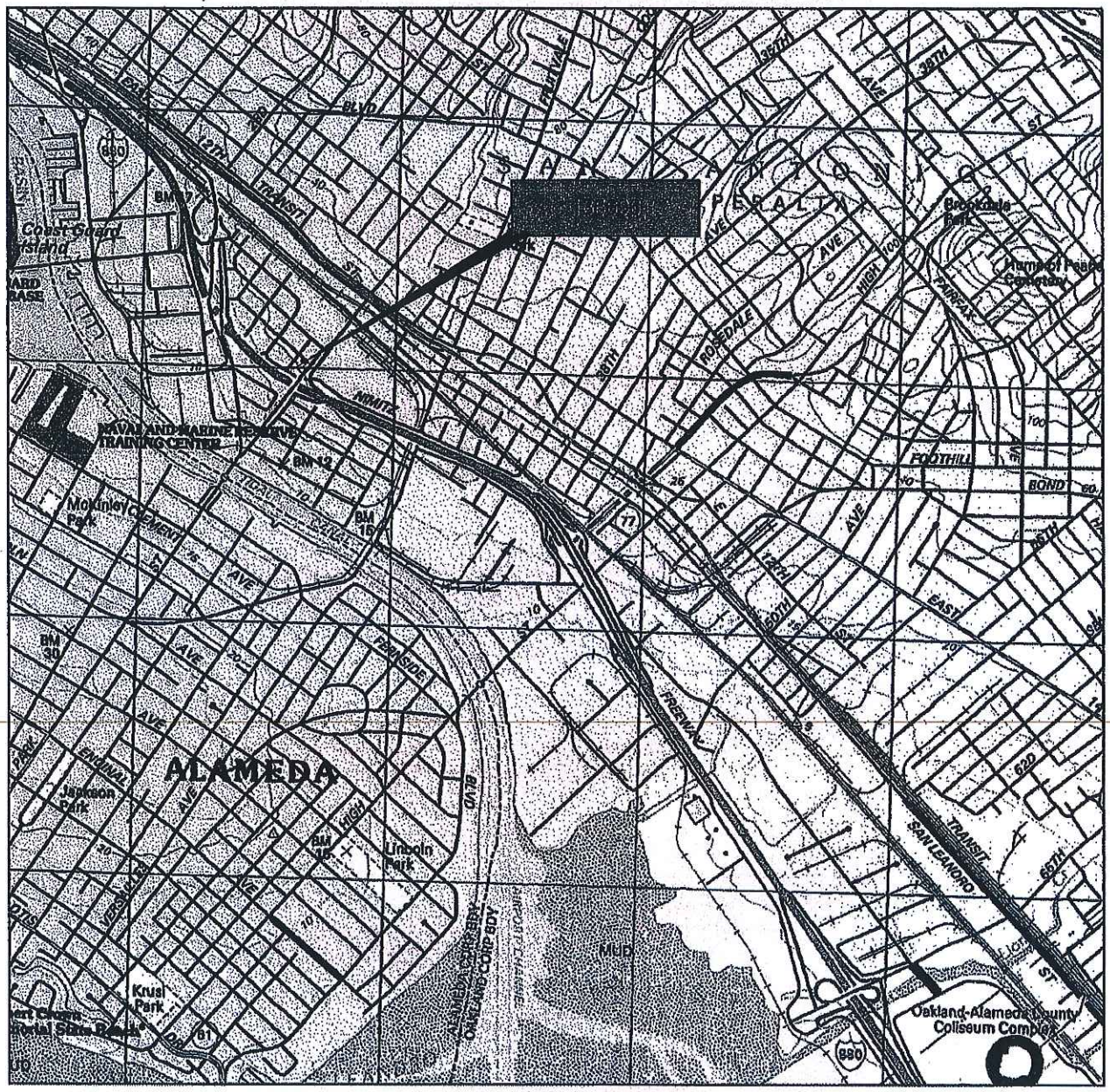


Figure 1

SITE LOCATION MAP

Shell SAP 135696
820 Portwood Avenue
Oakland, California

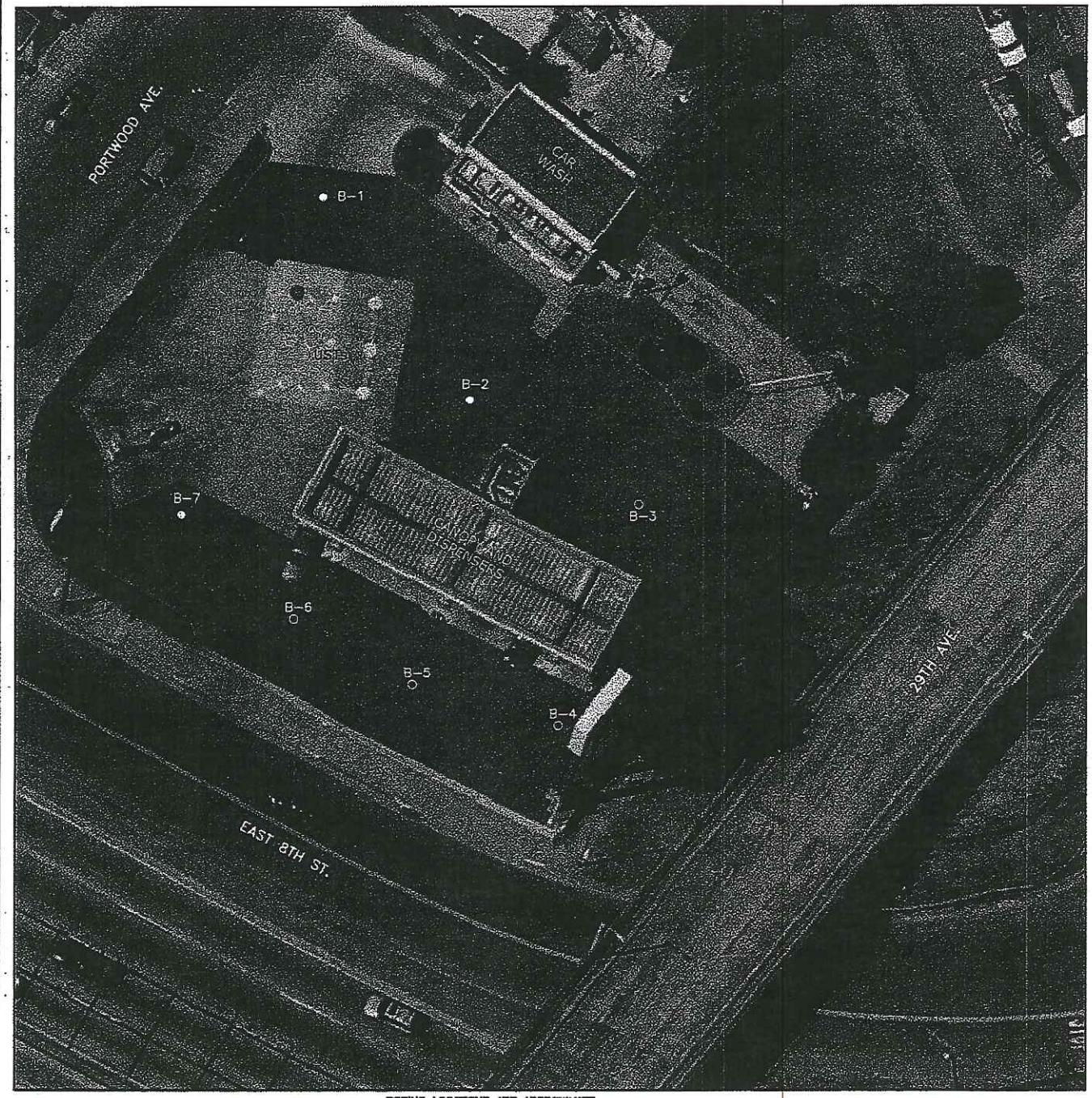
Project No.	Prepared by	Drawn by	
CASHLBADWA	LNH	LNH	
Date	Reviewed by	Filename	
9/10/08		135696-SL	DELTA

ATTACHMENT 1

Google earth

feet 400

meters 100



BORING LOCATIONS ARE APPROXIMATE

LEGEND

- ● UNDERGROUND STORAGE TANK (UST) AREA SOIL BORING
- ○ DISPENSER AREA SOIL BORING

N

0 15 30

Scale (feet)
(GRID NORTH)

Projection: California State Plane Coordinate System, Zone 3, NAD83, U.S. Survey foot

Figure 2
SITE PLAN

Shell SAP 135696
820 Portwood Avenue
Oakland, California

Project No.	Prepared by	Drawn by	
CASHLBADWA	LNH	LNH	
Date	Reviewed by	Filename	
9/23/08		135696	DELTA

ATTACHMENT 2

BORING LOCATIONS ARE APPROXIMATE

LEGEND

- ● UNDERGROUND STORAGE TANK (UST) AREA SOIL BORING
- ○ DISPENSER AREA SOIL BORING

	6'	SAMPLE DEPTH (bgs)
B	<0.0050	BENZENE (mg/kg)
T	<0.0050	TOLUENE (mg/kg)
E	<0.0050	ETHYL-BENZENE (mg/kg)
X	<0.010	TOTAL XYLENES (mg/kg)
M	<0.0050	MTBE (mg/kg)
TPH-G	<0.50	TOTAL PETROLEUM HYDROCARBONS GASOLINE RANGE ORGANICS (mg/kg)
TPH-D	NA	TOTAL PETROLEUM HYDROCARBONS DIESEL RANGE ORGANICS (mg/kg)

NA	NOT ANALYZED
mg/kg	MILLIGRAMS PER KILOGRAM
<0.0050	LESS THAN METHOD REPORTING LIMIT (NOT DETECTED)
MTBE	METHYL TERT-BUTYL ETHER
bgs	BELOW GROUND SURFACE

N

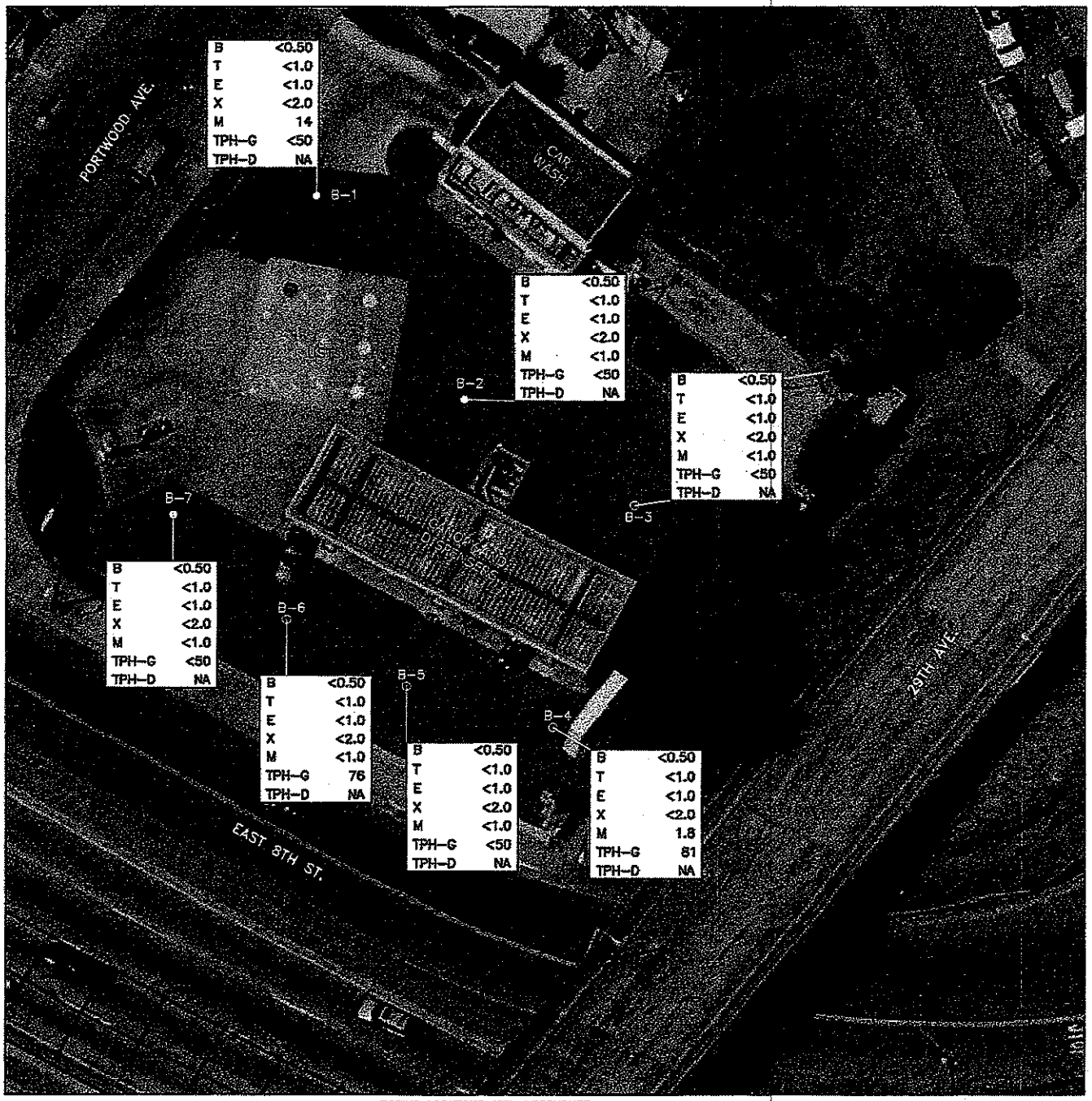
0 15 30

Scale (feet)
(GRID NORTH)

Projection: California State Plane Coordinate System, Zone 3, NAD83, U.S. Survey foot

Figure 3
SOIL CONCENTRATION MAP
AUGUST 6, 2008
Shell SAP 135696
820 Portwood Avenue
Oakland, California

Project No.	Prepared by	Drawn by	
CASHLBADWA	LNH	LNH	
Date	Reviewed by	Filename	DELTA
9/23/08		135696	



BORING LOCATIONS ARE APPROXIMATE

LEGEND

- ● UNDERGROUND STORAGE TANK (UST) AREA SOIL BORING
- ○ DISPENSER AREA SOIL BORING

B	<0.50	BENZENE (ug/L)
T	<1.0	TOLUENE (ug/L)
E	<1.0	ETHYL-BENZENE (ug/L)
X	<2.0	TOTAL XYLENES (ug/L)
M	5.8	MTBE (ug/L)
TPH-G	200	TOTAL PETROLEUM HYDROCARBONS GASOLINE RANGE ORGANICS (ug/L)
TPH-D	NA	TOTAL PETROLEUM HYDROCARBONS DIESEL RANGE ORGANICS (ug/L)

NA	NOT ANALYZED
ug/L	MICROGRAMS PER LITER
<0.50	LESS THAN METHOD REPORTING LIMIT (NOT DETECTED)
MTBE	METHYL TERT-BUTYL ETHER

N

0 15 30

Scale (feet)
(GRID NORTH)

Projection: California State Plane Coordinate System, Zone 3, NAD83, U.S. Survey foot

Figure 4
GROUNDWATER CONCENTRATION MAP
AUGUST 6, 2008
Shell SAP 135696
820 Portwood Avenue
Oakland, California

Project No.	Prepared by	Drawn by	
CASHLBADWA	LNH	LNH	
Date	Reviewed by	Filename	
9/25/08		135696	DELTA

Table 1
Summary of Soil Analytical Results - TPH & VOCs
SAP No. 135696
820 Portwood Avenue
Oakland, California

Sample Identification	Sample Depth (feet)	Sample Date	TPH-G (mg/kg)	TPH-D (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	EDB (mg/kg)	EDC (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	Ethanol (mg/kg)
B-1 5'	5	08/06/08	<0.50	NA	<0.0050	<0.0050	<0.0050	<0.010	NA	NA	<0.0050	<0.050	<0.010	<0.010	<0.010	<0.50
B-2 6'	6	08/06/08	<0.50	NA	<0.0050	<0.0050	<0.0050	<0.010	NA	NA	<0.0050	<0.050	<0.010	<0.010	<0.010	<0.50
B-3 9'	9	08/06/08	<0.50	NA	<0.0050	<0.0050	<0.0050	<0.010	NA	NA	<0.0050	<0.050	<0.010	<0.010	<0.010	<0.50
B-4 8'	8	08/06/08	<0.50	NA	<0.0050	<0.0050	<0.0050	<0.010	NA	NA	<0.0050	<0.050	<0.010	<0.010	<0.010	<0.50
B-5 8'	8	08/06/08	<0.50	NA	<0.0050	<0.0050	<0.0050	<0.010	NA	NA	<0.0050	<0.050	<0.010	<0.010	<0.010	<0.50
B-6 8'	8	08/06/08	<0.50	NA	<0.0050	<0.0050	<0.0050	<0.010	NA	NA	<0.0050	<0.050	<0.010	<0.010	<0.010	<0.50
B-7 8'	8	08/06/08	<0.50	NA	<0.0050	<0.0050	<0.0050	<0.010	NA	NA	<0.0050	<0.050	<0.010	<0.010	<0.010	<0.50
ESL[1] - Shallow Soils (<3m), Residential Land Use, Groundwater is Current or Potential Source of Drinking Water (Table A)			83	83	0.044	2.9	2.3	2.3	0.00033	0.0045	0.023	0.075	NA	NA	NA	NA
ESL[1] - Deep Soils (>3m), Residential Land Use, Groundwater is Current or Potential Source of Drinking Water (Table C)			83	83	0.044	2.9	3.3	2.3	0.00033	0.0045	0.023	0.075	NA	NA	NA	NA

Notes:
mg/kg = milligrams per kilogram
< = Not detected at concentration exceeding laboratory method reporting limit (MRL)
VOC = Volatile organic compound
TPH-G = Total Petroleum Hydrocarbons as Gasoline
TPH-D = Total Petroleum Hydrocarbons as Diesel
EDB = 1,2-dibromoethane
EDC = 1,2-dichloroethane
MTBE = Methyl tert-Butyl Ether
TBA = Tertiary Butyl Alcohol
DIPE = Diisopropyl Ether
ETBE = Ethyl tert-Butyl Ether
TAME = Tert-Amyl Butyl Ether
NA = Not Analyzed, Not Available
VOC analysis by EPA Method 8260B
Gasoline-range hydrocarbons by EPA Method 8260B
Diesel-range hydrocarbons by EPA Method 8015B
[1] ESL = Environmental Screening Level. Screening criteria referenced are from the *Screening for Environmetnal Concerns at Sites with Contaminated Soil and Groundwater,* California Regional Water Quality Control Board, San Francisco Bay Region, Interim Final, November 2007, revised May 2008.

ATTACHMENT 3

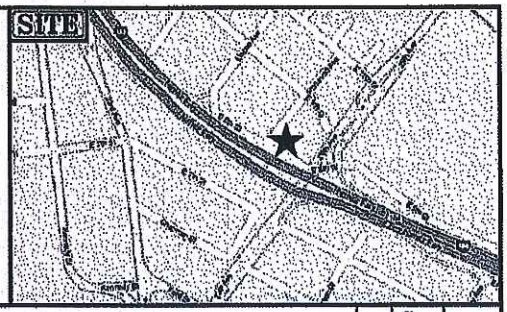
Table 2
Summary of Groundwater Analytical Results - TPH & VOCs
SAP No. 135696
820 Portwood Avenue
Oakland, California

Sample Identification	Sample Date	Depth to Water (feet)	TPH-G (µg/L)	TPH-D (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	EDB (µg/L)	EDC (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)
B-1	08/06/08	9	<50	NA	<0.50	<1.0	<1.0	<2.0	NA	NA	14	<10	<2.0	<2.0	<2.0	<100
B-2	08/06/08	9	<50	NA	<0.50	<1.0	<1.0	<2.0	NA	NA	<1.0	<10	<2.0	<2.0	<2.0	<100
B-3	08/06/08	11.9	<50	NA	<0.50	<1.0	<1.0	<2.0	NA	NA	<1.0	<10	<2.0	<2.0	<2.0	<100
B-4	08/06/08	9	81	NA	<0.50	<1.0	<1.0	<2.0	NA	NA	1.8	<10	<2.0	<2.0	<2.0	<100
B-5	08/06/08	8.9	<50	NA	<0.50	<1.0	<1.0	<2.0	NA	NA	<1.0	<10	<2.0	<2.0	<2.0	<100
B-6	08/06/08	9	76	NA	<0.50	<1.0	<1.0	<2.0	NA	NA	<1.0	<10	<2.0	<2.0	<2.0	<100
B-7	08/06/08	8.85	<50	NA	<0.50	<1.0	<1.0	<2.0	NA	NA	<1.0	<10	<2.0	<2.0	<2.0	<100
ESL[1] - Shallow Soils (<3m), Residential Land Use, Groundwater is a Current or Potential Source of Drinking Water (Table A)			100	100	1	40	30	20	0.05	0.5	5	12	NA	NA	NA	NA
ESL[1] - Deep Soils (>3m), Residential Land Use, Groundwater is a Current or Potential Source of Drinking Water ESLs (Table C)			100	100	1	40	30	20	0.05	0.5	5	12	NA	NA	NA	NA

Notes:
µg/L = micrograms per liter
< = Not detected at concentration exceeding laboratory method reporting limit (MRL)
VOC = Volatile organic compound
TPH-G = Total Petroleum Hydrocarbons as Gasoline
TPH-D = Total Petroleum Hydrocarbons as Diesel
EDB = 1,2-dibromoethane
EDC = 1,2-dichloroethane
MTBE = Methyl tert-Butyl Ether
TBA = Tertiary Butyl Alcohol
DIPE = Diisopropyl Ether
ETBE = Ethyl tert-Butyl Ether
TAME = Tert-Amyl Butyl Ether
NA = Not Analyzed, Not Available
VOC analysis by EPA Method 8260B
Gasoline-range hydrocarbons by EPA Method 8260B
Diesel-range hydrocarbons by EPA Method 8015B
[1] ESL = Environmental Screening Level. Screening criteria referenced are from the *Screening for Environmetnal Concerns at Sites with Contaminated Soil and Groundwater,* California Regional Water Quality Control Board, San Francisco Bay Region, Interim Final, November 2007, revised May 2008.

ATTACHMENT 4

Drilling Started: 08/06/2008
Drilling Completed: 08/06/2008
Drilling Method and Diameter: Direct Push – 2.5" Dia.
Drilling Company: Cascade Drilling
Drilled By:
Logged By: Marisol Ortiz
Boring: B-1



Depth (feet)	Samples	Recovery (%)	PID (ppm)	LITHOLOGIC DESCRIPTION	USCS	Graphic Log	Depth (feet)
				No Recovery – Air Knifed to 5 feet bgs.			
				5.00'			
	■	85	163	*Silty Clay: Light brown, dry, with some silt, medium plasticity.*	CL		
				6.00'			
		100	82.9	*Silty Sand: Light brown, dry, with some low plasticity clay, orange iron oxides, very hard.*	SM		
		100	110				
				8.00'			
		100	83.3	*Sandy Silt: Light brown, dry, with some gravel.*	ML		
				▼ 9.00'			
		80	60.9	*Silty Sand: Light brown, moist, with gravel.*	SM		
				10.00'			
		20	34.2	*Silt: Gray, dry, with little clay.*	ML		
				11.00'			
		100	153	*Silty Sand: Light brown, wet, fine to medium grained sand.*	SM		
		100	146	*With little clay.*			
				13.00'			
		100	106	*Clayey Silt: Light brown, wet, medium plasticity.*	ML		
				14.00'			
		85	106	*Silty Sand: Light brown, wet.*	SM		

▼ Initial Water Level (9.0')

▌ CONTINUOUS CORE Sample Collected for Laboratory Analysis

DELTA	CASHL-BADW-A 09-03-2008 DRAWN 09-03-2008 CALIFORNIA DRG. O.F. SCALE A.D. FILE SH5696-B1	SHELL FACILITY No. 135696 820 Portwood Avenue Oakland, California	Soil Boring Log B-1	FIGURE

ATTACHMENT 5

Drilling Started: 08/06/2008
Drilling Completed: 08/06/2008
Drilling Method and Diameter: Direct Push – 2.5" Dia.
Drilling Company: Cascade Drilling
Drilled By:
Logged By: Marisol Ortiz
Boring: B-2

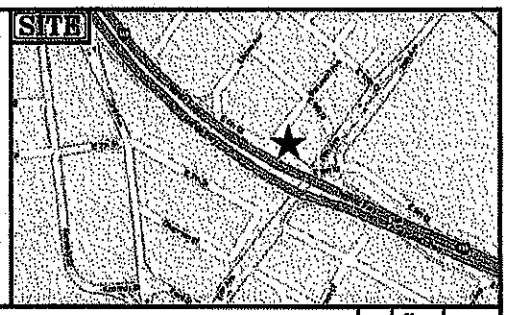
Depth (feet)	Samples	Recovery (%)	PID (ppm)	LITHOLOGIC DESCRIPTION	USCS	Graphic Log	Depth (feet)
				No Recovery – Air Knifed to 5 feet bgs.			
				5.00'			
		85	219	*Silty Clay: Gray, damp, medium plasticity.*	CL		
6		100	314	*With little sand, low to medium plasticity.*			6
				7.00'			
		100	51.2	*Silty Sand: Gray, damp, with little clay.*	SM		
				8.00'			
8		100	0.0	*Poorly graded Sand: Light brown, dry, with gravel and some silt.*	SP		8
		80	0.0	▼			
				10.00'			
10		0		*No Recovery*			10
				11.00'			
		75	0.0	*Clayey Silt: Light brown, wet, with little sand, medium plasticity.*	ML		
				12.00'			
12		100	51.6	*Clay: Light brown, moist, medium plasticity, with some silt.*	CL		12
				13.00'			
		100	6.5	*Poorly graded Sand and Gravel: Light brown, moist, with little silt.*	SP		
14		80	3.1				14
15							15

▼ Initial Water Level (9.0')

CONTINUOUS CORE
Sample Collected for Laboratory Analysis

DELTA	CASHL-BADW-A 09-03-2008 DRAWN 09-03-2008 CALIFORNIA REVISED O.F. CHECKED A.D. FILE SH5696-B2	SHELL FACILITY No. 135696 820 Portwood Avenue Oakland, California	Soil Boring Log B-2	FIGURE

Drilling Started: 08/06/2008
Drilling Completed: 08/06/2008
Drilling Method and Diameter: Direct Push – 2.5" Dia.
Drilling Company: Cascade Drilling
Drilled By:
Logged By: Marisol Ortiz
Boring: B-3



Depth (feet)	Samples	Recovery (%)	PID (ppm)	LITHOLOGIC DESCRIPTION	USCS	Graphic Log	Depth (feet)
				No Recovery – Air Knifed to 5 feet bgs.			
				5.00'			
		80	0.0	*Clay: Dark brown, with high plasticity, dry.*	CH		
		100	0.0	*With little silt, light plasticity.*			
				7.00'			
		100	0.0	*Silty Clay: Dark brown, medium plasticity, dry.*	CL		
				8.00'			
		100	0.0	*Poorly graded Sand: Dark brown, with gravel and little silt, dry.*	SP		
				9.00'			
	■	75	0.0	*Poorly graded Sand and Gravel: Dark brown, moist, coarse sand.*	SP		
				10.00'			
		0		*No Recovery*			
		0					
				▼ 12.00'			
		50	0.0	*Poorly graded Sand and Gravel: Dark brown, coarse sand, with little silt, dry.*	SP		
				13.00'			
		100	0.0	*Poorly graded Sand and Gravel: Dark brown, coarse sand, with little silt, moist.*	SP		
				14.00'			
		90	0.0	*Poorly graded Gravel: Dark brown, coarse sand, moist.*	SP		
				15.00'			
		0		*No Recovery*			
				16.00'			
		10	0.0	*Poorly graded Sand and Gravel: Light brown, dry.*	SP		
				17.00'			
		100	0.0	*Clay: Light brown, with some sand and gravel, medium plasticity.*	CL		
				18.00'			
		100	0.0	*Silty Sand: Light brown, fine grained, wet.*	SM		
				19.00'			
		75	0.0	*Clay and Silt: Light brown, medium to high plasticity, moist.*	CH		

▼ Initial Water Level (11.9')

CONTINUOUS CORE Sample Collected for Laboratory Analysis

DELTA

CASHL-BADW-A	SHELL FACILITY No. 135696 820 Portwood Avenue Oakland, California	Soil Boring Log B-3	FIGURE
09-03-2008 / 09-03-2008			
CALIFORNIA / D.F. / A.D.			
SH5696-B3			

Drilling Started: 08/06/2008
Drilling Completed: 08/06/2008
Drilling Method and Diameter: Direct Push - 2.5" Dia.
Drilling Company: Cascade Drilling
Drilled By:
Logged By: Marisol Ortiz
Boring: B-4

Depth (feet)	Samples	Recovery (%)	PID (ppm)	LITHOLOGIC DESCRIPTION	USCS	Graphic Log	Depth (feet)
				No Recovery -- Air Knifed to 5 feet bgs.			
				5.00'			
		25	0.0	*Clay: Light brown, with high plasticity, damp.*	CH		
				6.00'			
		100	0.0	*Clay and Silt: Light brown, with medium plasticity, damp.*	CL		
				7.00'			
		100	0.0	*Silt and Clay: Light brown, medium plasticity, dry.*	ML		
				8.00'			
		60	0.0	*Silty Sand: Light brown, dry.*	SM		
				▼ 9.00'			
		70	0.0	*Poorly graded Sand and Gravel: Dark brown, with some silt, dry.*	SP		
				10.00'			
		75	0.0	*Silt and Sand: Light gray, dry.*	ML		
				11.00'			
		100	0.0	*Poorly graded Sand and Gravel: Light brown, coarse sand, dry.*	SP		
		100	0.0				
				13.00'			
		100	0.0	*Silt: Light brown, with sand and gravel, damp.*	ML		
				14.00'			
		80	0.0	*Silt and Clay: Light brown, medium plasticity, moist.*	ML		

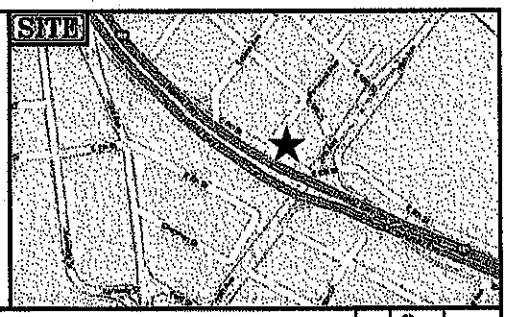
▼ Initial Water Level (9.0')

CONTINUOUS CORE Sample Collected for Laboratory Analysis

DELTA

CASHL-BADW-A	SHELL FACILITY No. 135696	Soil Boring Log	FIGURE
09-03-2008 / 09-03-2008	820 Portwood Avenue	B-4	
CALIFORNIA / O.F. / A.D.	Oakland, California		
SH5696-B4			

Drilling Started: 08/06/2008
Drilling Completed: 08/06/2008
Drilling Method and Diameter: Direct Push – 2.5" Dia.
Drilling Company: Cascade Drilling
Drilled By:
Logged By: Marisol Ortiz
Boring: B-5



Depth (feet)	Samples	Recovery (%)	PID (ppm)	LITHOLOGIC DESCRIPTION	USCS	Graphic Log	Depth (feet)
				No Recovery – Air Knifed to 5 feet bgs.			
				5.00'			
		85	0.0	*Poorly graded Sand and Gravel: Light brown, some silt present, dry.*	SP		
				6.00'			
		100	0.0	*Sand and Silt: Light brown, with little gravel, dry.*	SM		
		100	0.0				
				8.00'			
		100	0.0	*Silt: Light brown, with some sand and gravel, dry.*	ML		
		85	0.0	*Damp* ▼			
				10.00'			
		0		*No Recovery*			
				11.00'			
		85	0.0	*Poorly graded Sand and Gravel: Dark brown, medium to coarse sand, moist.*	SP		
				12.00'			
		100	0.0	*Silty Sand: Dark brown, with some gravel, moist.*	SM		
		100	0.0				
				14.00'			
		80	0.0	*Poorly graded Sand: Dark brown, coarse sand, with gravel and little silt, moist.*	SP		

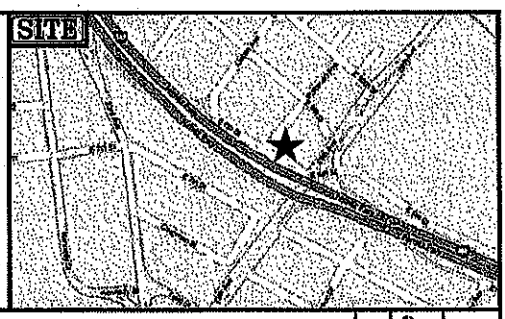
▼ Initial Water Level (8.9')

CONTINUOUS CORE Sample Collected for Laboratory Analysis

DELTA

CASHL-BADW-A	SHELL FACILITY No. 135696 820 Portwood Avenue Oakland, California	Soil Boring Log B-5	FIGURE
09-03-2008 / 09-03-2008			
CALIFORNIA / O.F. / A.D.			
FILE SH5696-B5			

Drilling Started: 08/06/2008
Drilling Completed: 08/06/2008
Drilling Method and Diameter: Direct Push - 2.5" Dia.
Drilling Company: Cascade Drilling
Drilled By:
Logged By: Marisol Ortiz
Boring: B-6



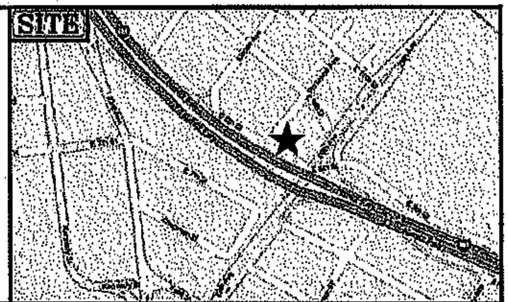
Depth (feet)	Samples	Recovery (%)	PID (ppm)	LITHOLOGIC DESCRIPTION	USCS	Graphic Log	Depth (feet)
				No Recovery - Air Knifed to 5 feet bgs.			
				5.00'			
		60	0.0	*Silt: Gray, with sand, damp.*	ML		
				6.00'			
		100	0.0	*Poorly graded Sand and Gravel: Gray, coarse sand, with little silt, dry.*	SP		
		100	0.0	*Light brown*			
				8.00'			
		100	0.0	*Silt and Clay: Gray, with some gravel, dry.*	ML		
				▼ 9.00'			
		80	0.0	*Poorly graded Sand: Black, coarse, with some gravel, damp.*	SP		
				10.00'			
		25	0.0	*Poorly graded Sand and Gravel, Light brown, coarse sand, dry.*	SP		
				11.00'			
		100	0.0	*Silt: Light brown, with little sand and gravel, damp.*	ML		
				12.00'			
		80	0.0	*Silty Sand: Light brown, with some gravel, moist.*	SM		

▼ Initial Water Level (9.0')

CONTINUOUS CORE
Sample Collected for Laboratory Analysis

DELTA	CASHL-BADW-A 09-03-2008 / 09-03-2008 CALIFORNIA / O.F. / A.D. FILE: SH5696-B6	SHELL FACILITY No. 135696 820 Portwood Avenue Oakland, California	Soil Boring Log B-6	FIGURE

Drilling Started: 08/06/2008
Drilling Completed: 08/06/2008
Drilling Method and Diameter: Direct Push – 2.5" Dia.
Drilling Company: Cascade Drilling
Drilled By:
Logged By: Marisol Ortiz
Boring: B-7



Depth (feet)	Samples	Recovery (%)	PID (ppm)	LITHOLOGIC DESCRIPTION	USCS	Graphic Log	Depth (feet)
0–5.00'				*No Recovery – Air Knifed to 5 feet bgs.*			
5		20	0.0	*Silty Sand: Light brown, dry.*	SM		
6		100	0.0	*With some gravel.* (7.00')			6
7		100	0.0	*Poorly graded Sand: Light brown, fine grained, with some gravel, dry.*	SP		
8	■	100	0.0	*Dark brown, with some gravel and silt, damp.* ▼			8
9		80	0.0	*Dark brown, moist.*			
10		25	0.0	*Light brown, medium grained, moist.* (11.00')			10
11		100	0.0	*Poorly graded Sand and Gravel: Light brown, coarse grained sand, moist.*	SP		
12		80	0.0	*Wet*			12
13							13

NOTE:
Sample not collected from just above water.

▼ Initial Water Level (8.85')

■ CONTINUOUS CORE Sample Collected for Laboratory Analysis

DELTA	CASHL-BADW-A 09-03-2008 / 09-03-2008 CALIFORNIA / O.F. / A.D. FILE: SH5696-B7	SHELL FACILITY No. 135696 820 Portwood Avenue Oakland, California	Soil Boring Log B-7	FIGURE