Shell Oil Products US

January 18, 2007

Re: **Interim Remedial Action Plan**
Shell-branded Service Station
4226 First Street
Pleasanton, California

Dear Mr. Jerry Wickham:

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

Sincerely,
Shell Oil Products US

Denis L. Brown
Project Manager

20945 S. Wilmington Avenue, Carson, CA 90810 P: (707) 865-0251; F: (707) 865-2542

January 20, 2007
Project Number: SJ42-26F-1
SAP Number: 135782

Mr. Jerry Wickham
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: Interim Remedial Action Plan
Shell-branded Service Station
4226 First Street
Pleasanton, California

DELTA

Dear Mr. Wickham:

Delta Environmental Consultants, Inc. (Delta), on behalf of Shell Oil Products US (Shell), presents an Interim Remedial Action Plan (IRAP) for the site referenced above (Figure 1). The Alameda County Environmental Health (ACEH) in a letter to Shell dated November 1, 2006, concurred with Delta's recommendation to prepare a work plan for interim remedial action to address total petroleum hydrocarbons as gasoline (TPH-G) and methyl tert-butyl ether (MTBE) detected in shallow groundwater. Site background is detailed in depth in Delta's Electronic Site Conceptual Model submitted to ACEH on February 27, 2006.

The following sections provide descriptions of current site conditions.

LAND USE

The site is located in a mixed commercial and residential area. In general, commercial areas line First Street with residential areas to the northwest and southeast. A former railroad line exists north of site. Land uses in the site vicinity are shown on Figure 2.

GROUNDWATER USE

In September 2005, Delta performed an additional well survey for the site area. A well location map was obtained from the Zone 7 Water District. The map identified three wells approximately 1,000 feet northwest of the site (3S/1E-21C1, -21C3, and -21C4.) Well -21C1 was classified as a "supply well", -21C3 as "abandoned or unlocatable", and -21C4 as "other designated well." Delta was only able to field located Well -21C4. The well provides irrigation water for a small city park. Delta also located a similar well in Kottinger Park located approximately 800 feet east of the site.

SITE HYDROGEOLOGIC CONDITIONS

The site is underlain predominantly by interlayered sand and silt to a depth of approximately 95 feet bg. The following summarizes site conditions based on borings, wells, and cone penetrometer testing (CPT) data (Figures 2 and 3):

- Interlayered silts and sand are encountered between 17 and 45 feet bg in site area borings.

175 BERNAL ROAD SUITE 200 SAN JOSE, CALIFORNIA 95119 USA
PHONE 800.477.7411 / 800.447.7411 FAX 408.225.8506 WWW.DELTAENV.COM

- An approximately 50-foot thick layer of primarily silt and clay was encountered from 45 to 95 feet bg.
- A sand and gravel deposit is found below the silt at a depth of between 95 and 97 feet bg.
- Depth to first encountered groundwater beneath the site is at approximately 32 feet bg.
- A deeper groundwater bearing zone was encountered beneath the site at a depth between 95 and 97 feet bg.

A hydrogeologic cross section is provided as Figure 4.

HYDROCARBON DISTRIBUTION IN SOIL

The highest concentrations of TPH-G have been detected in soil at a depth of approximately 35 feet bg in the northern portion of the site. Historic soil analytical data is provided in Attachment A.

Area of Former USTs

In September 1985, Emcon Associates drilled three soil borings in the vicinity of the former underground fuel storage tanks (S-B, S-C, and S-D, Figure 2). The four former fuel underground storage tanks (USTs) were originally located in the northern portion of the site. TPH-G was detected at 1,300 milligrams per kilogram (mg/kg) in the 14- to 15.5-foot sample from boring S-B. Gasoline odor was noted in soil to the total depth of boring S-B (24.5 feet), boring S-C (28 feet), and boring S-D (22.5 feet). In May 1986, the USTs were removed. Soil samples were collected beneath the ends of each of the former tanks. The maximum TPH-G detected was 240 mg/kg. Analysis for MTBE was not performed. New USTs were installed in front of the service station building (current location).

In March 1990, Hart Crowser, Inc. advanced soil boring SB-1 and WA-1 in the area of the former USTs (Figure 2). The boring for the destruction of existing Well S-1 was advanced 20 feet beyond the bottom of the well. This boring was designated WA-1. The highest concentrations of TPH-G were detected in two soil samples from boring WA-1; 30 feet bg (380 mg/kg) and 35 feet (290 mg/l). The highest concentration of TPH-G detected in samples from boring SB-1 was 18 mg/kg in the sample from 35 feet bg. Analysis for for methyl tert-butyl ether (MTBE) was not performed. In December 1990, Hart Crowser, Inc. advanced boring SB-5 downgradient (north) of the location of the former USTs. Petroleum hydrocarbons were only detected in one soil sample (SB-5 at 35 feet, TPH-G 820 mg/kg).

Delta, in August 2006, installed Well MW-4 immediately downgradient of the former USTs (Figure 2). TPH-G, ethylbenzene, xylenes, and MTBE were detected in soils from the boring for Well MW-4. The highest concentration of TPH-G was detected in the sample from 36.5 feet bg at 380 mg/kg. TPH-G was not detected in soil samples from below 40 feet. MTBE was detected in soil between 35 and 50 feet bg at a maximum concentration of 0.59 mg/kg.

Fuel Dispenser and Product Piping

In March 1990, borings SB-2 and SB-3 were drilled in the area of the site fuel dispensers. TPH-G was detected in only one soil sample (SB-2 at 30 feet) at 7.2 mg/kg.

In September 1995, Weiss and Associates collected soil samples beneath four site dispensers and product piping. TPH-G was detected at 120 mg/kg beneath the eastern-most dispenser island. Approximately 40 cubic yards of impacted soil were removed. TPH-G was detected at less than 3 mg/kg in confirmation soil samples. Analysis for MTBE was not performed.

Northern Portion of Site

In March 1990, Hart Crowser, Inc. advanced soil boring SB-4 in the northern corner of the site. TPH-G was only detected in the soil sample from 35 feet bg at 820 mg/kg.

In April 1999, Cambria advanced two soil borings (SB-6 and SB-7) to depths of 58 and 100 feet, respectively in the northern portion of the site. TPH-G was only detected in the 40-foot sample of boring SB-7 (83 mg/kg). MTBE was not detected in any soil sample. The boring was converted to Well MW-1. In August 2006, Delta installed deep well MW-1B in the northern portion of the site. Soil samples were collected at 65 feet, 69.5 feet, and 95 feet bg. TPH-G, BTEX compounds, and MTBE were not detected in soils analyzed from the boring for Well MW-1B.

HYDROCARBON DISTRIBUTION IN GROUNDWATER

The following sections describe the distribution of TPH-G and MTBE in groundwater beneath and downgradient of the site. Historic groundwater analytical data is included as Attachment B.

Shallow Groundwater

The shallow 30- to 40-foot groundwater zone is monitored by on-site Wells MW-1 through MW-4 (Figure 2). Depth to groundwater in wells is approximately 32 feet bg. Groundwater samples from Wells MW-1 through MW-3 were most recently collected on August 21, 2006. A water sample from newly installed Well MW-4 was collected on September 28, 2006. The highest concentrations of TPH-G and MTBE were detected in the water sample from Well MW-4 (screened 37-47ft bgs). TPH-G and MTBE were detected in Well MW-4, located downgradient of the former UST complex, at concentrations of 11,000 ug/l and 13,000 ug/l, respectively. MTBE was detected in the samples from Wells MW-1 and MW-2 located in the northern portion of the site at 1,960 ug/l and 2,590 ug/l, respectively. MTBE concentrations in the two wells has slowly increased from historic lows in early 2002.

Deep Groundwater

A grab groundwater sample was collected by hollow stem auger from the open boring SB-7 in April 1999. The boring was advanced through the shallow groundwater and into the deeper zone to a depth of 100 feet bg. The grab sample contained TPH-G at 750 ug/l. MTBE was not detected. It is uncertain if this grab sample was representative of the deeper groundwater. A deep groundwater sample from beneath the site was collected from recently installed Well MW-1B on September 28, 2006. TPH-G was not detected. MTBE was detected at 21 ug/l.

The deep groundwater was sampled downgradient of the site in cone penetration test (CPT) boring CPT-2 (Figure 3). Groundwater samples were collected at 74 to 78 feet bg near the base of the potentially sandier material and at 92 to 98 feet bg in sand and gravel. TPH-G was not detected in either sample. MTBE was detected in the upper sample at 15 ug/l and in the deeper sample at 47 ug/l.

INTERIM REMEDIATION ACTION PLAN

Delta, on behalf of Shell, proposes to perform interim remediation to reduce contaminant concentrations in shallow groundwater while evaluating long-term remediation options. The following sections describe the proposed interim remediation action plan for the site.

Soil

TPH-G and MTBE appear to be concentrated within the top of shallow groundwater zone at a depth of approximately 35 to 45 feet bg. The highest photo-ionization detector readings in soil samples from the boring for Well MW-4 were in the 34 to 45 depth interval (see copy of MW-4 log in Attachment C). The extent of MTBE in soil beneath the former USTs (if any) is not defined. Delta proposes collecting soil samples beneath the former UST site from a depth of 10 to 35 feet bg. The location of a proposed soil boring is shown on Figure 2. Soil samples will be retained at 5-foot depth intervals for analysis of TPH-G, BTEX compounds, MTBE, and TBA by EPA Method 8260B. Delta will evaluate the soil analytical and determine if any remediation action is required in this portion of the site to minimize leaching of contaminants to the shallow groundwater. No immediate remediation is proposed.

Similarly, Delta proposes to collect soil samples from a boring located immediately northeast (downgradient) of the current USTs. The last samples were collected from the boring for Well MW-2 in January 2000. Soil samples adjacent to USTs will be collected from a depth of 10 to 35 feet bg. The location of proposed soil boring is shown on Figure 2. Soil samples will be retained at 5-foot depth intervals for analysis of TPH-G, BTEX compounds, MTBE, and TBA by EPA Method 8260B. Delta will evaluate the soil analytical data to determine if the current USTs are a potential source of TPH-G and MTBE to shallow groundwater.

Groundwater

The highest concentrations of TPH-G, MTBE, and TBA in groundwater appear to be located in the vicinity of Well MW-4. Well MW-4 is 4-inches in diameter and screened from 37 to 47 feet bg within the shallow groundwater. Delta proposes to perform groundwater extraction (GWE) to reduce contaminant concentrations in groundwater and provide temporary migration control. Well development data (Attachment C) indicates that 100 gallons of water were pumped from Well MW-4 in approximately 20 minutes. However, after the 20 minutes, the water level in the well had declined from 31.58 feet to near the bottom of the well at 45.20 feet indicating a sustainable pumping rate of less than 5 gallon per minute (gpm). Delta proposes to perform a step drawdown pumping test to determine a sustainable yield for Well MW-4. The well will be pumped at 0.5, 1.0, and 1.5 gpm until the water level stabilizes at each rate.

Delta will then extract groundwater from Well MW-4 at a constant rate until an approximately 24,000-gallon temporary storage tank is filled and emptied twice (total 48,000 gallons). During pumping, water levels in wells MW-1, MW-2, and MW-3 will be monitored to evaluate the area of pumping influence. The water level in deep well MW-1B will also be monitored to evaluate the hydraulic relationship of the two zones. Delta will also run pump tests on Well MW-1. Discharge water samples will be collected at the start of the pumping, middle, and end of the pumping period in order to evaluate the effectiveness of GWE to remove contaminant mass from the shallow groundwater. Water samples will be analyzed for TPH-G, BTEX compounds, MTBE, and TBA by EPA Method 8260B. An additional water sample will be collected approximately one week after termination of pumping to further determine the effectiveness of GWE.

Schedule

Delta is prepared to initiate GWE and drill proposed soil borings within 45 days of approval of this IRAP by ACEH.

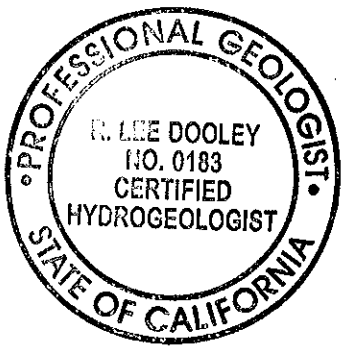
REMARKS

The conclusions and recommendations contained in this report represent Delta's professional opinions based upon the currently available information and are arrived at in accordance with currently acceptable professional standards. This report is based upon a specific scope of work requested by the client. The Contract between Delta and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report were performed. This report is intended only for the use of Delta's Client and anyone else specifically listed on this report. Delta will not and cannot be liable for unauthorized

reliance by any other third party. Other than as contained in this paragraph, Delta makes no express or implied warranty as to the contents of this report.

If you have any questions or comments regarding this report, please call Lee Dooley (Delta) at (408) 826-1880 or Denis Brown (Shell) at (707) 865-0251.

Sincerely,
Delta Consultants, Inc.



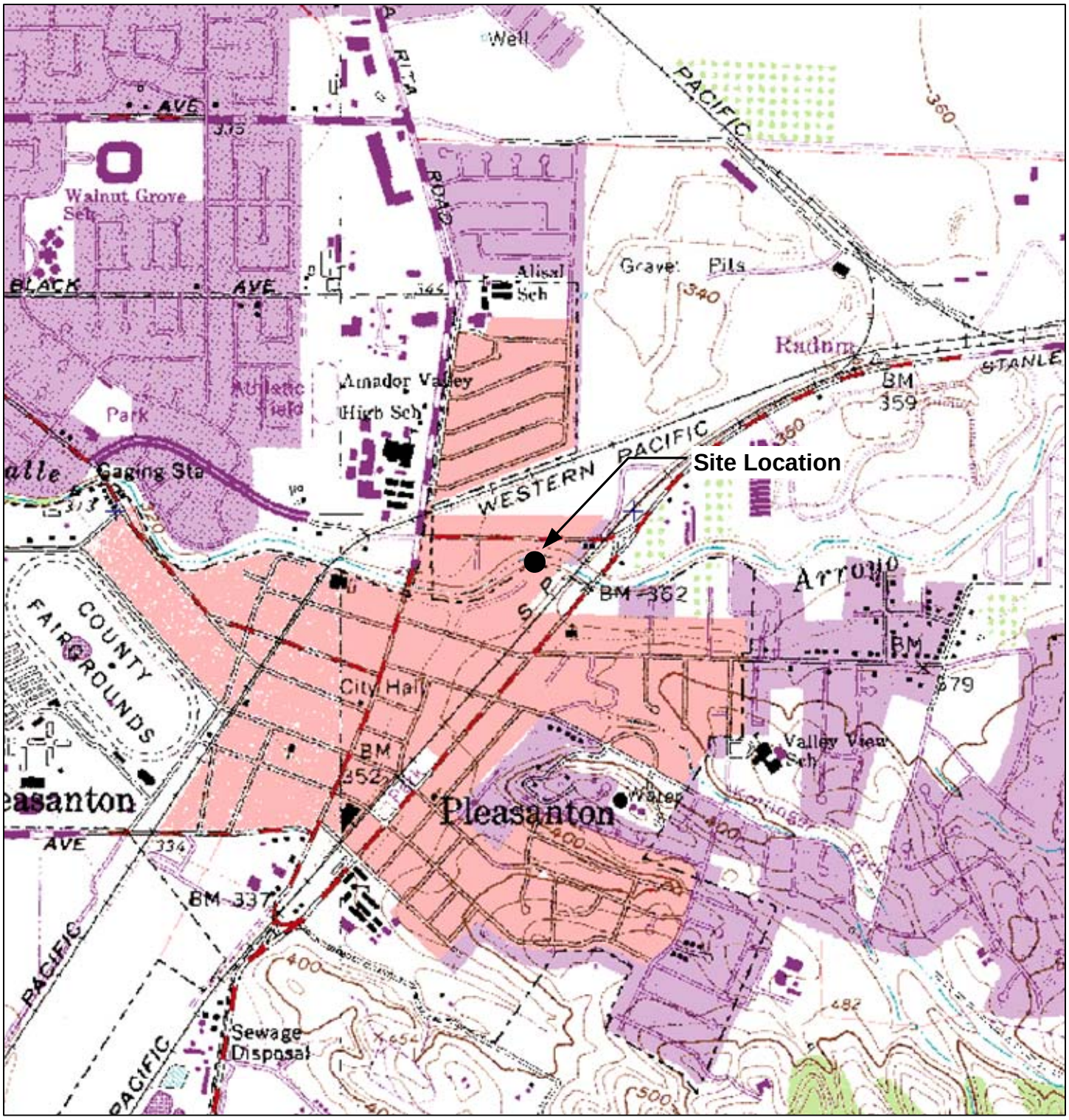
R. Lee Dooley
Senior Hydrogeologist
CHG 0183

Attachments:

Figure 1 – Site Location Map
Figure 2 – Site Map
Figure 3 – Extended Site Map
Figure 4 – Geologic Cross Section A-A'

Attachment A – Historic Soil Analytical Data
Attachment B – Historic Groundwater Analytical Data
Attachment C – Boring Log and Well Development Data Sheet, Well MW-4

cc: Denis Brown, Shell Oil Products US, Carson



GENERAL NOTES:
Base Map from: DeLorme Yarmouth, ME 04096
Source Data: USGS

QUADRANGLE LOCATION

North

0 1,300 2,600

Scale, Feet

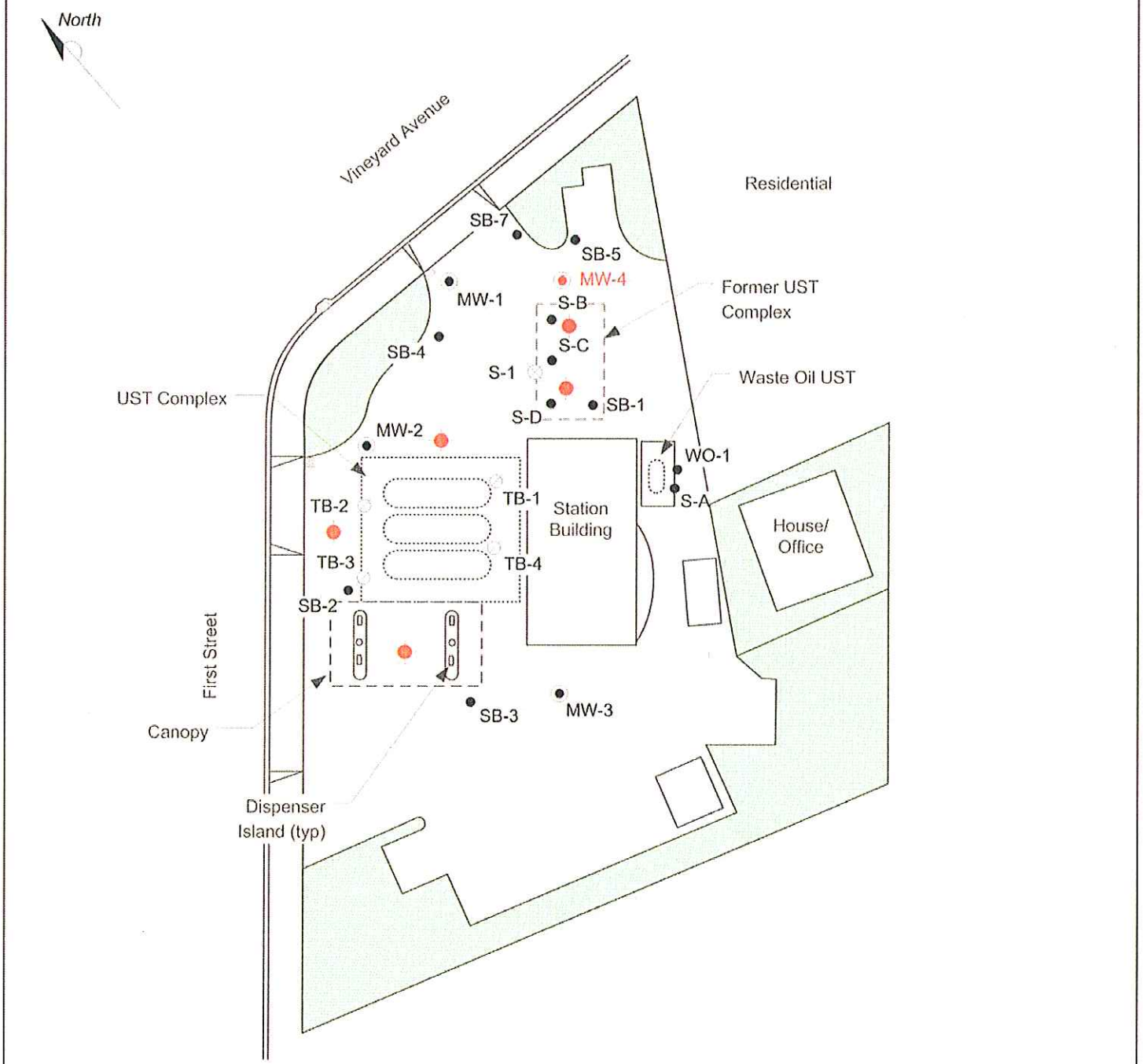
FIGURE 1

SITE LOCATION MAP

SHELL-BRANDED SERVICE STATION
4226 First Street
Pleasanton, California

PROJECT NO. SJ42-26F-1.2005	DRAWN BY V. F. 5/5/05
FILE NO. SJ42-26F-1.2005	PREPARED BY VF
REVISION NO.	REVIEWED BY

Delta
Environmental
Consultants, Inc.



LEGEND

MW-2 ● **GROUNDWATER MONITORING WELL LOCATION**

S-1 ⊗ **DESTROYED WELL**

TB-1 ○ **ABANDONED TANK BACKFILL WELL LOCATION**

S-C ● **SOIL BORING LOCATION**

● **PROPOSED SOIL BORING LOCATION**

0 40 FT

APPROX. SCALE

BaseMap from: Cambria Environmental Technology, Inc. and Toxichem Management Systems, Inc.

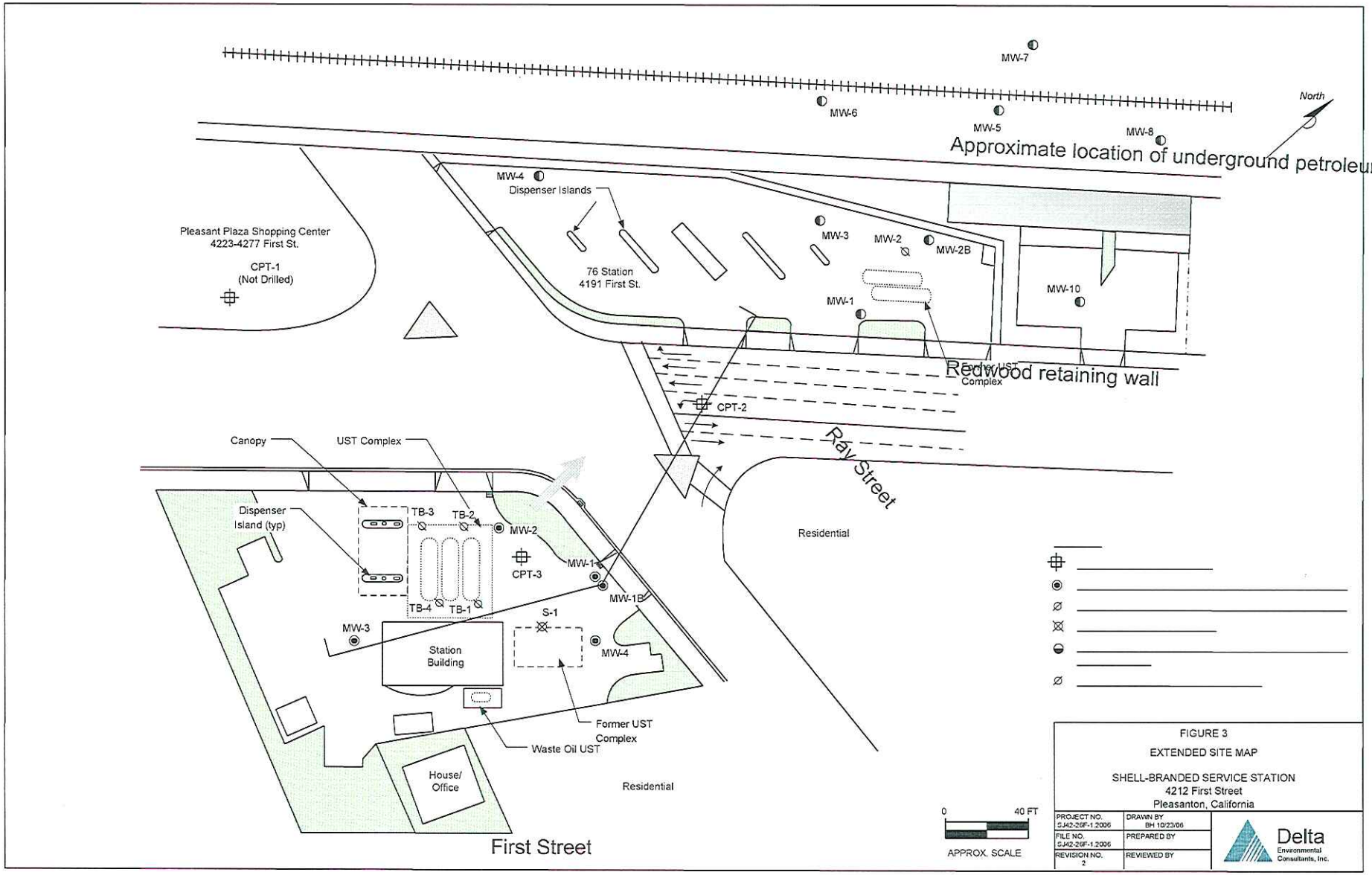
FIGURE 2

SITE MAP

SHELL-BRANDED SERVICE STATION
4226 First Street
Pleasanton, California

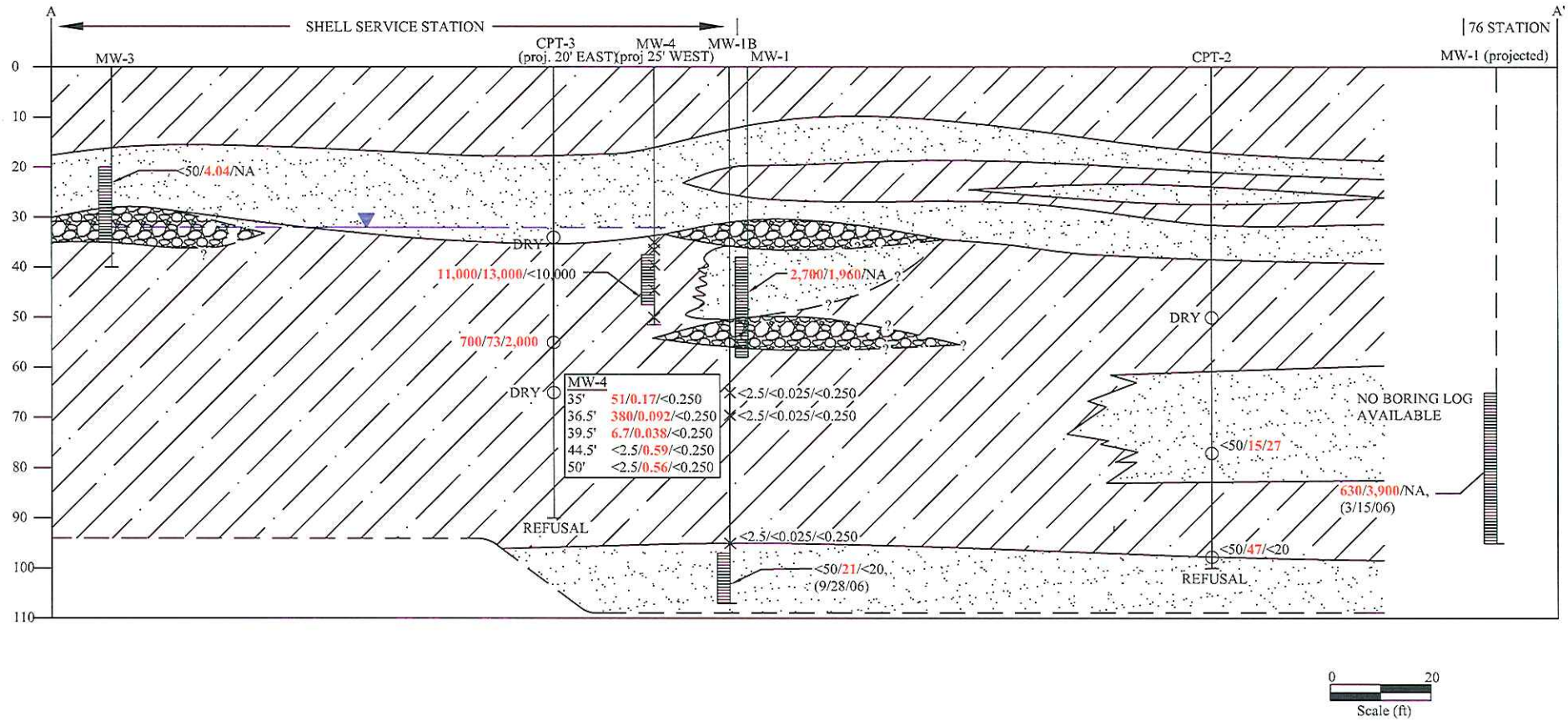
PROJECT NO. SJ42-26F-1.2005	DRAWN BY V.F. 5/9/05
FILE NO. SJ42-26F-1.2005	PREPARED BY J.T.
REVISION NO. 2	REVIEWED BY

Delta Environmental Consultants, Inc.



Groundwater
Flow Direction

4.



MW-1 WELL/BORING IDENTIFICATION

SCREENED INTERVAL

(<50/21/<20) TPH-G/MTBE/TBA CONCENTRATIONS GROUNDWATER (µg/L), AUGUST 21, 2006

LEGEND

<50/47/<20 TPH-G/MTBE/TBA CONCENTRATIONS IN GROUNDWATER (µg/L), AUGUST 15 AND SEPTEMBER 29,2006

<2.5/<0.025/<0.250 TPH-G/MTBE/TBA CONCENTRATIONS IN SOIL (mg/kg)

GROUNDWATER ELEVATION

NA NOT ANALYZED

CLAY; SILT; SANDY SILT

SILTY SAND; CLAYEY SAND WITH GRAVEL

SANDY GRAVEL; GRAVEL

FIGURE 4
GEOLOGIC CROSS SECTION A-A'

SHELL SERVICE STATION
4212 FIRST ST.
PLEASANTON, CA

PROJECT NO.	DRAWN BY BH 1/17/07
FILE NO.	PREPARED BY
REVISION NO. 4	REVIEWED BY

DELTA

Attachment A

HISTORIC SOIL ANALYTICAL DATA

Table 1 Soil Analytical Results - Shell-branded Service Station Incident# 98995840
4226 First Street, Pleasanton, California

Sample	TPHg	Benzene	Toluene	Ethylbenzene	Xylene	MTBE
	←		(concentrations reported in ppm)			→
MW-2-6.3'	<1.0	<0.005	<0.005	<0.005	<0.010	<0.05
MW-2-16.5'	<1.0	<0.005	<0.005	<0.005	<0.010	<0.05
MW-2-21.5'	<1.0	<0.005	<0.005	<0.005	<0.010	<0.05
MW-2-26.0'	<1.0	<0.005	<0.005	<0.005	<0.010	<0.05
MW-2-30.5'	<1.0	<0.005	<0.005	<0.005	<0.010	<0.05
MW-2-35.0'	<1.0	<0.005	<0.005	<0.005	<0.010	<0.05
MW-3-5.0'	<1.0	<0.005	<0.005	<0.005	<0.010	<0.05
MW-3-10.5'	<1.0	<0.005	<0.005	<0.005	<0.010	<0.05
MW-3-15.5'	<1.0	<0.005	<0.005	<0.005	<0.010	<0.05
MW-3-20.5'	<1.0	<0.005	<0.005	<0.005	<0.010	<0.05
MW-3-25.5'	<1.0	<0.005	<0.005	<0.005	<0.010	<0.05

Abbreviations and Notes:

TPHg = Total petroleum hydrocarbons as gasoline
MTBE = Methyl tert-Butyl Ether by EPA 8020.
ppm = parts per million

Samples collected January 18 and 19, 2000

TABLE 1

CHEMICAL ANALYSIS OF SOIL SAMPLES
SHELL SERVICE STATION
4226 FIRST STREET
PLEASANTON, CALIFORNIA

Concentrations in mg/kg (parts per million)

Boring	Depth (ft)	TPH	Benzene	Toluene	Ethylbenzene	Xylene
SB-1	15	4.2	ND	ND	ND	ND
SB-1	35	18	ND	ND	ND	ND
SB-1	50	ND	ND	ND	ND	ND
SB-2	15	ND	ND	ND	ND	ND
SB-2	30	7.2	ND	0.17	ND	ND
SB-3	10	ND	ND	ND	ND	ND
SB-3	30	ND	ND	ND	ND	ND
WA-1	30	380	2.2	2.7	5.3	32
WA-1	35	290	1.8	0.35	0.24	1.5
WA-1	40	ND	ND	ND	ND	ND
WA-1	50	ND	ND	ND	ND	ND
Detection Limits:		1.0	0.050	0.10	0.10	0.10

Notes:
1) TPH - Total Petroleum Hydrocarbons (gasoline range) analyzed by EPA Methods 5030/8015
2) Benzene, Toluene, Ethylbenzene and Xylene analyzed by EPA Method 8020
3) ND- Not Detected at detection limit shown
4) SB-1, SB-2 and SB-3 samples collected March 5, 1990
   WA-1 samples collected March 6, 1990

TABLE 1

ANALYTICAL RESULTS OF SOIL SAMPLES

Concentrations in mg/kg (parts per million)

SHELL OIL COMPANY
4226 FIRST STREET
PLEASANTON, CALIFORNIA

Boring	TPH	Benzene	Toluene	Ethylbenzene	Xylenes
SB4-15	N.D.	N.D.	N.D.	N.D.	N.D.
SB4-35	N.D.	0.023	0.0071	N.D.	0.0055
SB4-50	N.D.	0.030	0.0059	N.D.	N.D.
SB5-35	820	65	3.7	6.5	65
SB5-40	N.D.	N.D.	N.D.	N.D.	N.D.
SB5-50	N.D.	N.D.	N.D.	N.D.	N.D.
DETECTION LIMITS:	1.0	0.0050	0.0050	0.0050	0.0050

NOTES:
1) TPH - Total Petroleum Hydrocarbons (Gasoline Range) analyzed by EPA Methods 5030/8015.
2) Benzene, Toluene, Ethylbenzene and Xylene analyzed by EPA Method 8020.
3) ND - Not detected.

Table 1 Soil Analytical Results - Shell-branded Service Station Incident# 98995840
4226 First Street, Pleasanton, California

Sample	TPHg	Benzene	Toluene	Ethyl Benzene	Xylene	MTBE
	← (ppm) →					
SB-6-15.5'	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025
SB-6-19.5'	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025
SB-6-25.0'	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025
SB-6-30.0'	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025
SB-6-35.0'	<1.0	0.0069	<0.0050	<0.0050	<0.0050	<0.025
SB-6-40.0'	<1.0	<0.0050	0.28	<0.0050	<0.0050	<0.025
SB-6-45.0'	<1.0	0.1	<0.0050	<0.0050	<0.0050	<0.025
SB-7-15.0'	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025
SB-7-19.5'	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025
SB-7-24.5'	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025
SB-7-29.3'	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025
SB-7-34.3'	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025
SB-7-40.0'	83	<0.0050	0.37	0.26	0.26	<0.025
SB-7-44.5'	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025
SB-7-59.5'	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050
SB-7-64.5'	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050

Abbreviations and Notes:

TPHg = Total petroleum hydrocarbons as gasoline
MTBE = Methyl tert-Butyl Ether
ppm = parts per million

Samples collected April 7 through 9, 1999

Attachment B

HISTORIC GROUNDWATER ANALYTICAL DATA

BLAINE
TECH SERVICES INC.

GROUNDWATER SAMPLING SPECIALISTS
SINCE 1985

December 18, 2006

Denis Brown
Shell Oil Products US
2095 South Wilmington Avenue
Carson, CA 90810

Fourth Quarter 2006 Groundwater Monitoring at
Shell-branded Service Station
4212 First Street
Pleasanton, CA

Monitoring performed on November 14. 2006

Groundwater Monitoring Report **061114-BP-2**

This report covers the routine monitoring of groundwater wells at this Shell-branded facility. In accordance with standard procedures that conform to Regional Water Quality Control Board requirements, routine field data collection includes depth to water, total well depth, thickness of any separate immiscible layer, water column volume, calculated purge volume (if applicable), elapsed evacuation time (if applicable), total volume of water removed (if applicable), and standard water parameter instrument readings. Sample material is collected, contained, stored, and transported to the laboratory in conformance with EPA standards. Purgewater (if applicable) is, likewise, collected and transported to the Martinez Refining Company.

Basic field information is presented alongside analytical values excerpted from the laboratory report in the cumulative table of **WELL CONCENTRATIONS**. The full analytical report for the most recent samples and the field data sheets are attached to this report.

At a minimum, Blaine Tech Services, Inc. field personnel are certified on completion of a forty-hour Hazardous Materials and Emergency Response training course per 29 CFR 1910.120. Field personnel are also enrolled in annual eight-hour refresher courses.

Blaine Tech Services, Inc. conducts sampling and documentation assignments of this type as an independent third party. Our activities at this site consisted of objective data and sample collection only. No interpretation of analytical results, defining of hydrological conditions or formulation of recommendations was performed.

Please call if you have any questions.

Yours truly,

Mike Ninokata
Project Manager

MN/ks

attachments: Cumulative Table of WELL CONCENTRATIONS
Certified Analytical Report
Field Data Sheets

cc: Lee Dooley
Delta Environmental
175 Bernal Rd., Suite 200
San Jose, CA 95119

WELL CONCENTRATIONS
Shell-branded Service Station
4226 First Street
Pleasanton, CA

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)
MW-1	06/16/1999	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	371.20	37.81	333.39
MW-1	06/30/1999	89.0	5.89	<0.500	<0.500	0.652	<5.00	NA	NA	NA	NA	NA	371.20	33.65	337.55
MW-1	09/24/1999	1,560	473	<10.0	<10.0	22.8	<2.50	NA	NA	NA	NA	NA	371.20	37.04	334.16
MW-1	12/08/1999	1,020	375	<5.00	<5.00	15.2	<50.0	NA	NA	NA	NA	NA	371.20	36.79	334.41
MW-1	02/10/2000	523	106	<5.00	<5.00	31.8	2.9	NA	NA	NA	NA	NA	371.20	34.90	336.30
MW-1	05/17/2000	<50.0	<0.500	<0.500	<0.500	<0.500	37	29.5	NA	NA	NA	NA	371.20	32.55	338.65
MW-1	08/03/2000	808	290	<2.50	<2.50	8.9	<12.5	NA	NA	NA	NA	NA	371.20	39.13	332.07
MW-1	10/31/2000	507	250	0.962	<0.500	23.5	3.76	NA	NA	NA	NA	NA	371.20	37.91	333.29
MW-1	03/01/2001	<50.0	<0.500	<0.500	<0.500	<0.500	74.6	NA	NA	NA	NA	NA	371.20	39.60	331.60
MW-1	05/30/2001	780	280	<2.0	<2.0	11	NA	<2.0	NA	NA	NA	NA	371.20	39.53	331.67
MW-1	08/02/2001	1,900	580	<2.5	<2.5	12	NA	<25	NA	NA	NA	NA	371.20	39.61	331.59
MW-1	12/06/2001	840	190	<0.50	<0.50	13	NA	<5.0	NA	NA	NA	NA	371.20	39.63	331.57
MW-1	02/05/2002	2,700	650	<2.5	<2.5	7.2	NA	<25	NA	NA	NA	NA	371.20	35.53	335.67
MW-1	06/17/2002	2,500	550	<2.0	<2.0	5.9	NA	<20	NA	NA	NA	NA	371.20	39.29	331.91
MW-1	07/25/2002	690	130	<0.50	<0.50	4.4	NA	18	NA	NA	NA	NA	371.20	39.39	331.81
MW-1	11/14/2002	400	31	<0.50	<0.50	2.7	NA	27	NA	NA	NA	NA	371.20	40.00	331.20
MW-1	02/12/2003	840	0.85	<0.50	<0.50	<0.50	NA	40	NA	NA	NA	NA	371.20	32.92	338.28
MW-1	05/14/2003	680	190	<2.5	<2.5	<5.0	NA	95	NA	NA	NA	NA	371.20	32.57	338.63
MW-1	07/29/2003	870	190	<2.5	<2.5	<5.0	NA	150	NA	NA	NA	NA	371.20	33.82	337.38
MW-1	11/19/2003	<200	14	<2.0	<2.0	<4.0	NA	230	NA	NA	NA	NA	371.20	38.28	332.92
MW-1	02/19/2004	58 d	11	<0.50	<0.50	<1.0	NA	85	NA	NA	NA	NA	371.20	36.93	334.27
MW-1	05/03/2004	670	310	<2.5	<2.5	<5.0	NA	420	NA	NA	NA	NA	371.20	32.70	338.50
MW-1	08/24/2004	430 d	34	<2.5	<2.5	<5.0	NA	690	NA	NA	NA	NA	371.20	34.66	336.54
MW-1	11/15/2004	<250	29	<2.5	<2.5	<5.0	NA	470	NA	NA	NA	NA	371.20	38.27	332.93
MW-1	02/02/2005	540 e	87	<2.5	<2.5	<5.0	NA	700	NA	NA	NA	NA	371.20	32.02	339.18
MW-1	05/05/2005	460 e	88	<2.5	<2.5	<5.0	NA	300	NA	NA	NA	NA	371.20	36.82	334.38
MW-1	08/05/2005	910	230	<2.5	<2.5	<5.0	NA	480	NA	NA	NA	NA	371.20	33.35	337.85
MW-1	11/22/2005	1,760	27	<0.500	<0.500	1	NA	1,160	NA	NA	NA	NA	371.20	33.42	337.78
MW-1	02/07/2006	4,620	225	<0.500	<0.500	<0.500	NA	1,480	NA	NA	NA	NA	371.20	31.63	339.57

WELL CONCENTRATIONS
Shell-branded Service Station
4226 First Street
Pleasanton, CA

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)
MW-1	05/16/2006	1,100	130	<0.50	2	2	NA	1,600	NA	NA	NA	NA	371.20	31.16	340.04
MW-1	08/21/2006	2,700	86	<0.500	1	1	NA	1,960	NA	NA	NA	NA	371.20	33.07	338.13
MW-1	**11/14/2006**	**1,400 g**	**30**	**<25**	**<25**	**<25**	**NA**	**2,100**	**<25**	**<25**	**<25**	**<1,000**	**371.20**	**33.73**	**337.47**
MW-1B	09/21/2006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	371.67	76.94	294.73
MW-1B	09/28/2006	<50	<0.50	<0.50	<0.50	<0.50	NA	21	NA	NA	NA	<20	371.67	77.15	294.52
MW-1B	**11/14/2006**	**320 g**	**<5.0**	**<5.0**	**<5.0**	**<5.0**	**NA**	**310**	**<5.0**	**<5.0**	**<5.0**	**<200**	**371.67**	**69.38**	**302.29**
MW-2	02/03/2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	372.40	32.65	339.75
MW-2	02/07/2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	372.40	35.51	336.89
MW-2	02/10/2000	<50.0	<0.500	<0.500	<0.500	<0.500	2.61	NA	NA	NA	NA	NA	372.40	36.62	335.78
MW-2	05/17/2000	120	4.09	<0.500	<0.500	<0.500	29	NA	NA	NA	NA	NA	372.40	32.14	340.26
MW-2	08/03/2000	<50.0	0.692	<0.500	<0.500	<0.500	40.5	36.6b	NA	NA	NA	NA	372.40	32.42	339.98
MW-2	10/31/2000	<50.0	<0.500	<0.500	<0.500	<0.500	57.4	44.8c	NA	NA	NA	NA	372.40	33.02	339.38
MW-2	03/01/2001	173	1.64	1.65	2.86	3.97	127	167	NA	NA	NA	NA	372.40	32.54	339.86
MW-2	05/30/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	170	NA	NA	NA	NA	372.40	32.42	339.98
MW-2	08/02/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	160	NA	NA	NA	NA	372.40	32.55	339.85
MW-2	12/06/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	170	NA	NA	NA	NA	372.40	33.15	339.25
MW-2	02/05/2002	<50	0.72	<0.50	<0.50	1.7	NA	170	NA	NA	NA	NA	372.40	32.29	340.11
MW-2	06/17/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	260	NA	NA	NA	NA	372.40	32.63	339.77
MW-2	07/25/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	280	NA	NA	NA	NA	372.40	32.80	339.60
MW-2	11/14/2002	120	13	9	3.8	14	NA	430	NA	NA	NA	NA	372.40	33.31	339.09
MW-2	02/12/2003	<100	<1.0	<1.0	<1.0	<1.0	NA	430	NA	NA	NA	NA	372.40	32.15	340.25
MW-2	05/14/2003	<250	<2.5	<2.5	<2.5	<5.0	NA	470	NA	NA	NA	NA	372.40	32.01	340.39
MW-2	07/29/2003	<250	<2.5	<2.5	<2.5	<5.0	NA	670	NA	NA	NA	NA	372.40	32.51	339.89
MW-2	11/19/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	54	NA	NA	NA	NA	372.40	33.83	338.57
MW-2	02/19/2004	65	<0.50	3.4	1.4	6.5	NA	8.2	NA	NA	NA	NA	372.40	32.68	339.72
MW-2	05/03/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	5.2	NA	NA	NA	NA	372.40	32.07	340.33
MW-2	08/24/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	2.7	NA	NA	NA	NA	372.40	32.44	339.96

WELL CONCENTRATIONS
Shell-branded Service Station
4226 First Street
Pleasanton, CA

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)
MW-2	11/15/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	1.3	NA	NA	NA	NA	372.40	32.95	339.45
MW-2	02/02/2005	<50	<0.50	<0.50	<0.50	<1.0	NA	24	NA	NA	NA	NA	372.40	31.94	340.46
MW-2	05/05/2005	72 f	<0.50	<0.50	<0.50	<1.0	NA	4.9	NA	NA	NA	NA	372.40	31.91	340.49
MW-2	08/05/2005	<50	<0.50	<0.50	<0.50	<1.0	NA	16	NA	NA	NA	NA	372.40	32.15	340.25
MW-2	11/22/2005	840	1	<0.500	<0.500	1	NA	556	NA	NA	NA	NA	372.40	32.31	340.09
MW-2	02/07/2006	3,550	<0.500	<0.500	<0.500	<0.500	NA	2,500	NA	NA	NA	NA	372.40	31.70	340.70
MW-2	05/16/2006	1,400	<5.0	<5.0	<5.0	<10	NA	1,700	NA	NA	NA	NA	372.40	31.38	341.02
MW-2	08/21/2006	1,910	<0.500	<0.500	<0.500	<0.500	NA	2,590	NA	NA	NA	NA	372.40	33.29	339.11
MW-2	**11/14/2006**	**2,300 g**	**<25**	**<25**	**<25**	**<25**	**NA**	**2,500**	**<25**	**<25**	**<25**	**<1,000**	**372.40**	**32.67**	**339.73**
MW-3	02/03/2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	375.05	32.06	342.99
MW-3	02/07/2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	375.05	32.57	342.48
MW-3	02/10/2000	180	5.12	<0.500	<0.500	0.714	26.8	21.5a	NA	NA	NA	NA	375.05	32.77	342.28
MW-3	05/17/2000	1,360	414	<5.00	<5.00	17.6	<25.0	NA	NA	NA	NA	NA	375.05	31.00	344.05
MW-3	08/03/2000	<50.0	0.536	<0.500	<0.500	<0.500	22	NA	NA	NA	NA	NA	375.05	31.03	344.02
MW-3	10/31/2000	<50.0	<0.500	<0.500	<0.500	<0.500	31.1	NA	NA	NA	NA	NA	375.05	31.28	343.77
MW-3	03/01/2001	384	172	0.815	<0.500	8	5.16	NA	NA	NA	NA	NA	375.05	31.21	343.84
MW-3	05/30/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	110	NA	NA	NA	NA	375.05	31.02	344.03
MW-3	08/02/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	93	NA	NA	NA	NA	375.05	30.94	344.11
MW-3	12/06/2001	110	<0.50	<0.50	<0.50	2.3	NA	180	NA	NA	NA	NA	375.05	31.28	343.77
MW-3	02/05/2002	<50	0.89	0.6	<0.50	2.1	NA	130	NA	NA	NA	NA	375.05	31.12	343.93
MW-3	06/17/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	72	NA	NA	NA	NA	375.05	31.21	343.84
MW-3	07/25/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	81	NA	NA	NA	NA	375.05	30.96	344.09
MW-3	11/14/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	60	NA	NA	NA	NA	375.05	31.44	343.61
MW-3	02/12/2003	<50	<0.50	<0.50	<0.50	<0.50	NA	43	NA	NA	NA	NA	375.05	31.28	343.77
MW-3	05/14/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	24	NA	NA	NA	NA	375.05	31.20	343.85
MW-3	07/29/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	21	NA	NA	NA	NA	375.05	31.29	343.76
MW-3	11/19/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	8.2	NA	NA	NA	NA	375.05	31.86	343.19
MW-3	02/19/2004	81	0.67	4.4	1.8	8.6	NA	13	NA	NA	NA	NA	375.05	31.66	343.39

WELL CONCENTRATIONS
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4226 First Street
Pleasanton, CA

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)
MW-3	05/03/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	13	NA	NA	NA	NA	375.05	31.72	343.33
MW-3	08/24/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	10	NA	NA	NA	NA	375.05	32.09	342.96
MW-3	11/15/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	6.6	NA	NA	NA	NA	375.05	31.50	343.55
MW-3	02/02/2005	<50	<0.50	<0.50	<0.50	<1.0	NA	3.1	NA	NA	NA	NA	375.05	31.28	343.77
MW-3	05/05/2005	<50	<0.50	<0.50	<0.50	<1.0	NA	2.3	NA	NA	NA	NA	375.05	31.42	343.63
MW-3	08/05/2005	<50	<0.50	<0.50	<0.50	<1.0	NA	2.4	NA	NA	NA	NA	375.05	31.35	343.70
MW-3	11/22/2005	<50	<0.500	<0.500	<0.500	<0.500	NA	3.84	NA	NA	NA	NA	375.05	31.98	343.07
MW-3	02/07/2006	<50.0	<0.500	<0.500	<0.500	<0.500	NA	<0.500	NA	NA	NA	NA	375.05	31.24	343.81
MW-3	05/16/2006	<50	<0.50	<0.50	<0.50	<1.0	NA	4.5	NA	NA	NA	NA	375.05	31.37	343.68
MW-3	08/21/2006	<50.0	<0.500	<0.500	<0.500	<0.500	NA	4.04	NA	NA	NA	NA	375.05	31.95	343.10
MW-3	**11/14/2006**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**	**3.8**	**<0.50**	**<0.50**	**<0.50**	**<20**	**375.05**	**32.24**	**342.81**
MW-4	09/21/2006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	372.78	31.58	341.20
MW-4	09/28/2006	11,000	<250	<250	<250	<250	NA	13,000	NA	NA	NA	<10,000	372.78	31.57	341.21
MW-4	**11/14/2006**	**30,000**	**<250**	**<250**	**<250**	**<250 h,i**	**NA**	**14,000**	**<250**	**<250**	**<250**	**<10,000**	**372.78**	**32.11**	**340.67**
TB-1	02/12/2003	Well inaccessible		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-1	02/28/2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12.54	NA
TB-1	05/14/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	<5.0	NA	NA	NA	NA	NA	12.31	NA
TB-2	02/12/2003	Well inaccessible		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-2	02/28/2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12.56	NA
TB-2	05/14/2003	Insufficient water		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12.54	NA
TB-3	02/12/2003	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-3	02/28/2003	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-3	05/14/2003	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-4	02/12/2003	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

WELL CONCENTRATIONS
Shell-branded Service Station
4226 First Street
Pleasanton, CA

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)
TB-4	02/28/2003	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-4	05/14/2003	Well dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Abbreviations:
TPPH = Total petroleum hydrocarbons as gasoline by EPA Method 8260B; prior to May 30, 2001, analyzed by EPA Method 8015.
BTEX = Benzene, toluene, ethylbenzene, xylenes by EPA Method 8260B; prior to May 30, 2001, analyzed by EPA Method 8020.
MTBE = Methyl tertiary butyl ether
DIPE = Di-isopropyl ether, analyzed by EPA Method 8260B
ETBE = Ethyl tertiary butyl ether, analyzed by EPA Method 8260B
TAME = Tertiary amyl methyl ether, analyzed by EPA Method 8260B
TBA = Tertiary butyl alcohol, analyzed by EPA Method 8260B
TOC = Top of Casing Elevation
GW = Groundwater
ug/L = Parts per billion
MSL = Mean sea level
ft. = Feet
<n = Below detection limit
NA = Not applicable

WELL CONCENTRATIONS
Shell-branded Service Station
4226 First Street
Pleasanton, CA

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)

Notes:

a = Sample was analyzed outside of the EPA recommended holding time.

b = Concentration is an estimate value above the linear quantitation range.

c = The result reported was generated out of time. The sample was originally run within hold time, but needed to be re-analyzed.

d = Sample contains discrete peak in addition to gasoline.

e = Quantity of unknown hydrocarbon(s) in sample based on gasoline.

f = The concentration reported reflect(s) individual or discrete unidentified peaks not matching a typical fuel pattern.

g = The result for this hydrocarbon is elevated due to the presence of single analyte peak(s) in the quantitation range.

h = Sample was originally analyzed with a positive result, however the reanalysis did not confirm the presence of the analyte.

i = Confirmatory analysis was past holding time.

Well MW-1 surveyed on May 4, 1999 by Virgil Chavez Land Surveying of Vallejo, CA.

Site surveyed on March 19, 2000 by Virgil Chavez Land Surveying of Vallejo, CA.

Site surveyed on January 15, 2002 by Virgil Chavez Land Surveying of Vallejo, CA.

3Q06 survey data for wells MW-1B and MW-4 provided by Delta Environmental Consultants, Inc. of San Jose, CA.

Attachment C

BORING LOG AND WELL DEVELOPMENT DATA SHEET
WELL MW-4

WELL DEVELOPMENT DATA SHEET

Project #: 060921-CG1	Client: Shell
Developer: CG	Date Developed: 9/21/06
Well I.D. MW-4	Well Diameter: (circle one) 2 3 (4) 6
Total Well Depth: Before 46.95 After 46.65	Depth to Water: Before 31.58 After 45.20
Reason not developed:	If Free Product, thickness:
Additional Notations: Swab well for 15 min prior to purge	

Volume Conversion Factor (VCF): $\{12 \times (d^2/4) \times \pi\} / 231$
where
12 = in / foot
d = diameter (in.)
π = 3.1416
231 = in 3/gal

Well dia.		VCF
2"	=	0.16
3"	=	0.37
4"	=	0.65
6"	=	1.47
10"	=	4.08
12"	=	5.87

10.0 X 10 = 100.0
1 Case Volume — Specified Volumes — gallons

Purging Device: ☐ Bailer ☐ Suction Pump ☒ Electric Submersible ☒ Positive Air Displacement

Type of Installed Pump ________
Other equipment used 4" Swab

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED	NOTATIONS:
1340	75.2	7.0	1210	>1000	10	Hard bottom
1342	73.5	6.9	1230	>100	20	begin w/ 8 ES pump DTW 32.[illegible]
1344	73.1	6.8	1373	>1000	30	DTW 35.[illegible]
1346	71.5	6.8	1280	>1000	40	DTW 40.[illegible]
1348	71.2	6.7	1251	>1000	50	DTW 42.[illegible]
1350	71.5	6.8	1264	>1000	60	
1352	71.9	7.0	1289	>1000	70	DTW 44.98
1354	72.0	6.9	1274	>1000	80	DTW 45.0
1356	72.2	6.9	1264	>1000	90	
1358	72.3	7.0	1255	>1000	100	

Did Well Dewater? NO — If yes, note above. — Gallons Actually Evacuated: 100

Delta
Environmental Consultants, Inc.

Project No:	SJ42-26F-1	Client:	Shell Oil Products US	Well No: MW-4	
Logged By:	AP	Location:	4226 First Street	Page 1 of 3	
Driller:	Gregg	Date Drilled:	8/24/2006	Location Map	
Drilling Method:	HSA/AK (7')	Hole Diameter:	12"	Please see site map	
Sampling Method:	SS	Hole Depth:	50'		
Casing Type:	sch 40 PVC	Well Diameter:	4"		
Slot Size:	0.01	Well Depth:	47'		
Gravel Pack:	#2/12 sand	Casing Stickup:	-		
Elevation		Northing		Easting	

Well Completion (Backfill / Casing)	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Recovery / Sample Interval	Soil Type	LITHOLOGY / DESCRIPTION
Grout				air knifed & hand augered	1		AF	~4" asphalt, ~8" baserock
					2			
					3			
					4			
					5			
					6			
					7			
					8			
		dry	0.1	3 4 5	9 10		SC	**Clayey SAND with Gravel:** dark brown to orangish brown, loose, 60-70% fine to coarse grained sands, 20-30% fines, 10-20% gravels up to 1" diameter
					11			
					12			
					13		CL	**Sandy Lean CLAY:** orangish brown, very stiff, 5-10% gravels up to 1" diameter, 35-45% fine grained sands, 50-60% fines, low plasticity
		moist	7.4	6 8 12	14 15			
					16			
					17			
					18		SC	
		moist	2	7 11 11	19 20			**Clayey SAND:** orangish brown, medium dense, 20-30% fines, 70-80% fine grained sands, trace gravels up to 0.5" diameter, low plasticity

Delta
Environmental Consultants, Inc.

Project No:	SJ42-26F-1	Client:	Shell Oil Products US	Well No: MW-4	
Logged By:	AP	Location:	4226 First Street	Page 2 of 3	
Driller:	Gregg	Date Drilled:	8/24/2006	Location Map	
Drilling Method:	HSA/AK (7')	Hole Diameter:	12"	Please see site map	
Sampling Method:	SS	Hole Depth:	50'		
Casing Type:	sch 40 PVC	Well Diameter:	4"		
Slot Size:	0.01	Well Depth:	47'		
Gravel Pack:	#2/12 sand	Casing Stickup:	-		
Elevation		Northing		Easting	

Well Completion	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery	Sample Interval	Soil Type	LITHOLOGY / DESCRIPTION
Backfill / Casing					21			SC	Clayey SAND (cont.)
					22				
					23				
		moist	4.1	6 8 9	24 25			SP-SC	**Poorly Graded SAND with Clay**: brown, medium dense, 5-15% fines, 85-95% fine grained sands
					26				
					27				
					28				
		moist	7.2	11 13 17	29 30			SC	**Clayey SAND with Gravel**: brown, medium dense, 20-30% fines, 10-20% gravels up to 0.5" diameter, 50-70% fine to coarse grained sands
					31				
					32				
					33				
Bentonite	▼	moist	340	10 16 20	34 35			CL	**Sandy lean CLAY with Gravel**: brown, hard, 10-20% gravels up to 1" diameter, 20-30% fine grained sands (mostly in small inclusions or lenses), 50-70% fines, low plasticity
		moist	555	12 14 17	36 37				
Sand					38				
		moist	762	13 17 20	39 40				(orangish brown w/grey mottling, 15-25% gravels up to 1" diameter, 20-30% fine grained sands, 45-65% fines, low plasticity)

Delta
Environmental Consultants, Inc.

Project No:	SJ42-26F-1	Client:	Shell Oil Products US	Well No: MW-4	
Logged By:	AP	Location:	4226 First Street	Page 3 of 3	
Driller:	Gregg	Date Drilled:	8/24/2006	Location Map	
Drilling Method:	HSA/AK (7")	Hole Diameter:	12"	Please see site map	
Sampling Method:	SS	Hole Depth:	50'		
Casing Type:	sch 40 PVC	Well Diameter:	4"		
Slot Size:	0.01	Well Depth:	47'		
Gravel Pack:	#2/12 sand	Casing Stickup:	-		
Elevation		Northing		Easting	

Well Completion (Backfill / Casing)	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery	Sample Interval	Soil Type	LITHOLOGY / DESCRIPTION
Sand					41			CL	sandy lean CLAY w/gravel (cont.)
					42				
					43				
		moist	106	14 17 24	44				no grey mottling, 10-20% gravels, 20-30% fine grained sands, 50-70% fines
					45				
					46				
	▽				47				
Bentonite					48			CL	sandy lean CLAY: orangish brown, hard, 35-45% fine grained sands, 55-65% fines, low plasticity
		wet	27	11 17 20	49				
					50				Bottom of the boring is at 50 feet bg
					51				
					52				
					53				
					54				
					55				
					56				
					57				
					58				
					59				
					60				