

R02524



Solving environment-related business problems worldwide

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San Jose, California 95119 USA  
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Fax 408.225 8506

September 19, 2003  
Project No. SJ80-9ST-1.000G

Mr. Scott Seery  
Environmental Health Services – Environmental Protection  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

Alameda County  
SEP 22 2003  
Environmental Health

Re: **Quarterly Monitoring Report – Third Quarter 2003**  
**Shell-branded Service Station**  
**809 East Stanley Blvd.**  
**Livermore, California**

Dear Mr. Seery:

Delta Environmental Consultants, Inc. (Delta), on behalf of Shell Oil Products US (Shell), has prepared the following third quarter 2003 groundwater monitoring and sampling report for the above referenced site. A site location map is included as Figure 1.

On March 7, 2003, Shell received a notice of responsibility letter from the Alameda County Health Care Services Agency placing the site in the Local Oversight Program due to the presence of methyl tert-butyl ether (MTBE) in groundwater beneath the site. In a work plan, dated May 27, 2003, Delta proposed to continue quarterly sampling of site wells for the remainder of 2003 in order to monitor MTBE concentrations.

**QUARTERLY GROUND WATER MONITORING PROGRAM**

Groundwater monitoring wells were gauged and sampled by Blaine Tech Services (Blaine), at the direction of Delta, on July 17, 2003. Depth to groundwater was measured in Wells MW-1 through MW-4. Groundwater elevation data and contours are presented on Figure 2.

Groundwater samples were collected from Wells MW-1 through MW-4. Samples were submitted by Blaine to Severn Trent Laboratories, Inc. (STL) in Pleasanton, California for analysis for total purgeable petroleum hydrocarbons as gasoline (TPH-g); benzene, toluene, ethylbenzene, and total xylenes (BTEX) and the five fuel oxygenates methyl tert-butyl ether (MTBE), diisopropyl ether (DIPE), ethyl-t-butyl ether (ETBE), tert-amyl methyl ether (TAME), and tert-butanol (TBA) using EPA Method 8260B. Benzene and MTBE concentrations in groundwater are presented on Figure 3.

Blaine's groundwater monitoring and sampling report, which includes historical and current groundwater elevation data, historical and current analytical results, and field data records for the current monitoring event, is included as Attachment A.

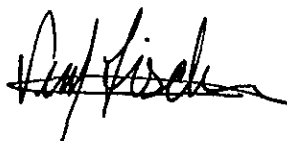
#### DISCUSSION

The groundwater gradient on July 17, 2003 was toward the north-northeast at a magnitude of 0.005 feet/feet, consistent with previous data.

MTBE was detected in Well MW-3 at 0.69 micrograms per liter (ug/l). All other analytes were below laboratory detection limits.

Please call if you have any questions regarding the contents of this letter.

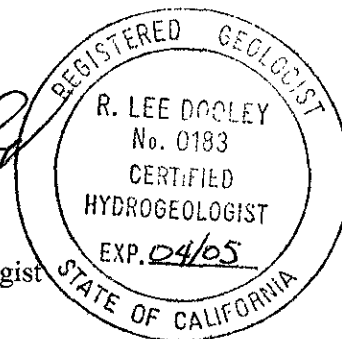
Sincerely,  
**Delta Environmental Consultants, Inc.**



Vera Fischer  
Staff Geologist



R. Lee Dooley  
Senior Hydrogeologist  
CHG 0183

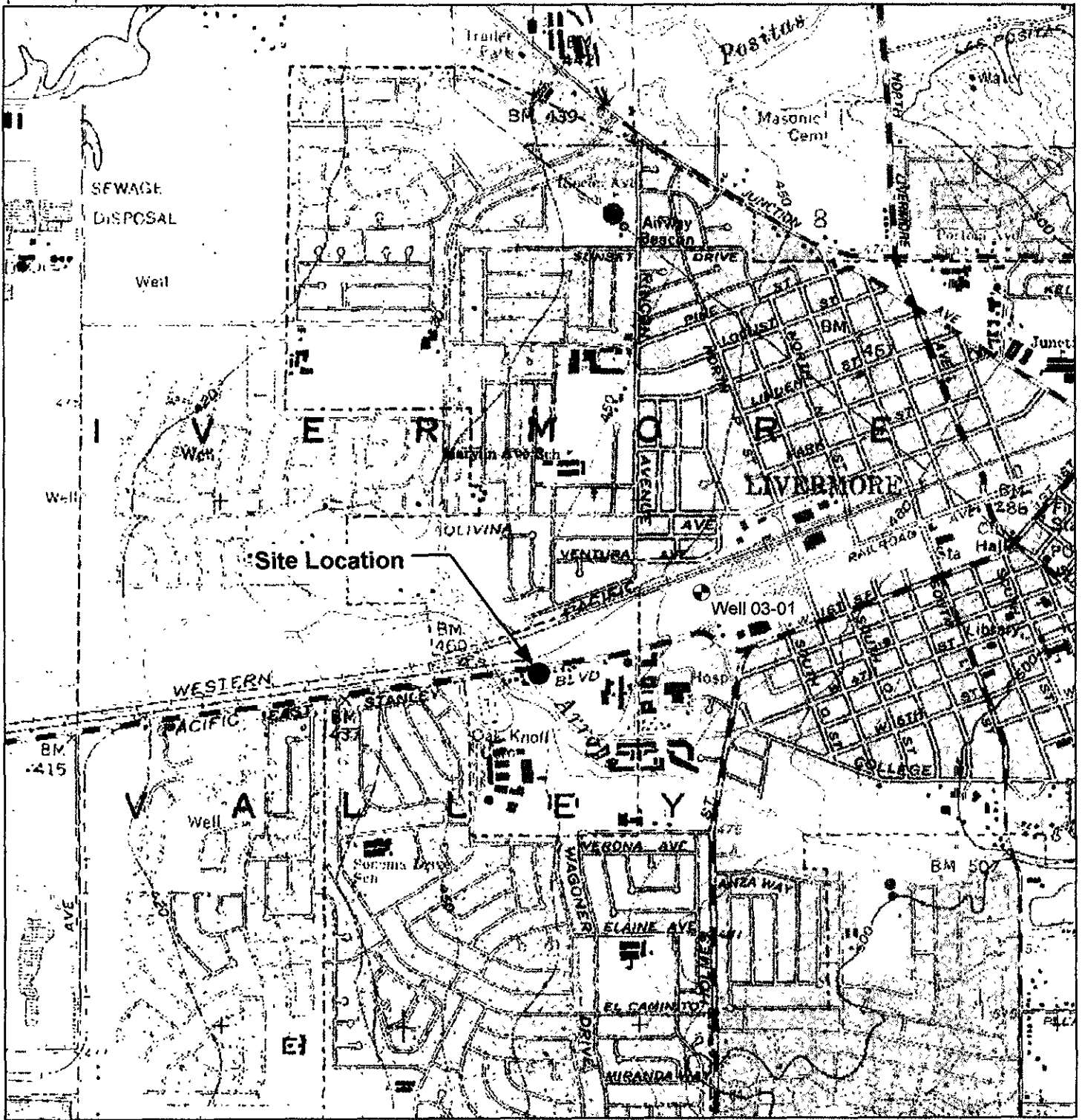


#### Attachments:

- Figure 1 – Site Location Map
- Figure 2 – Groundwater Elevation Contour Map
- Figure 3 – Benzene and MTBE Concentration Map

Attachment A – Groundwater Monitoring and Sampling Report, August 4, 2003

cc: Ms. Karen Petryna, Shell Oil Products US, Burbank  
Mr. Betty Graham, RWQCB – Oakland



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



QUADRANGLE LOCATION

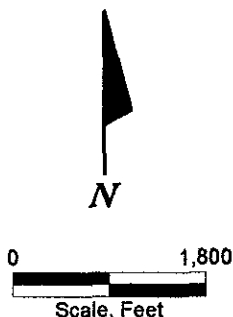
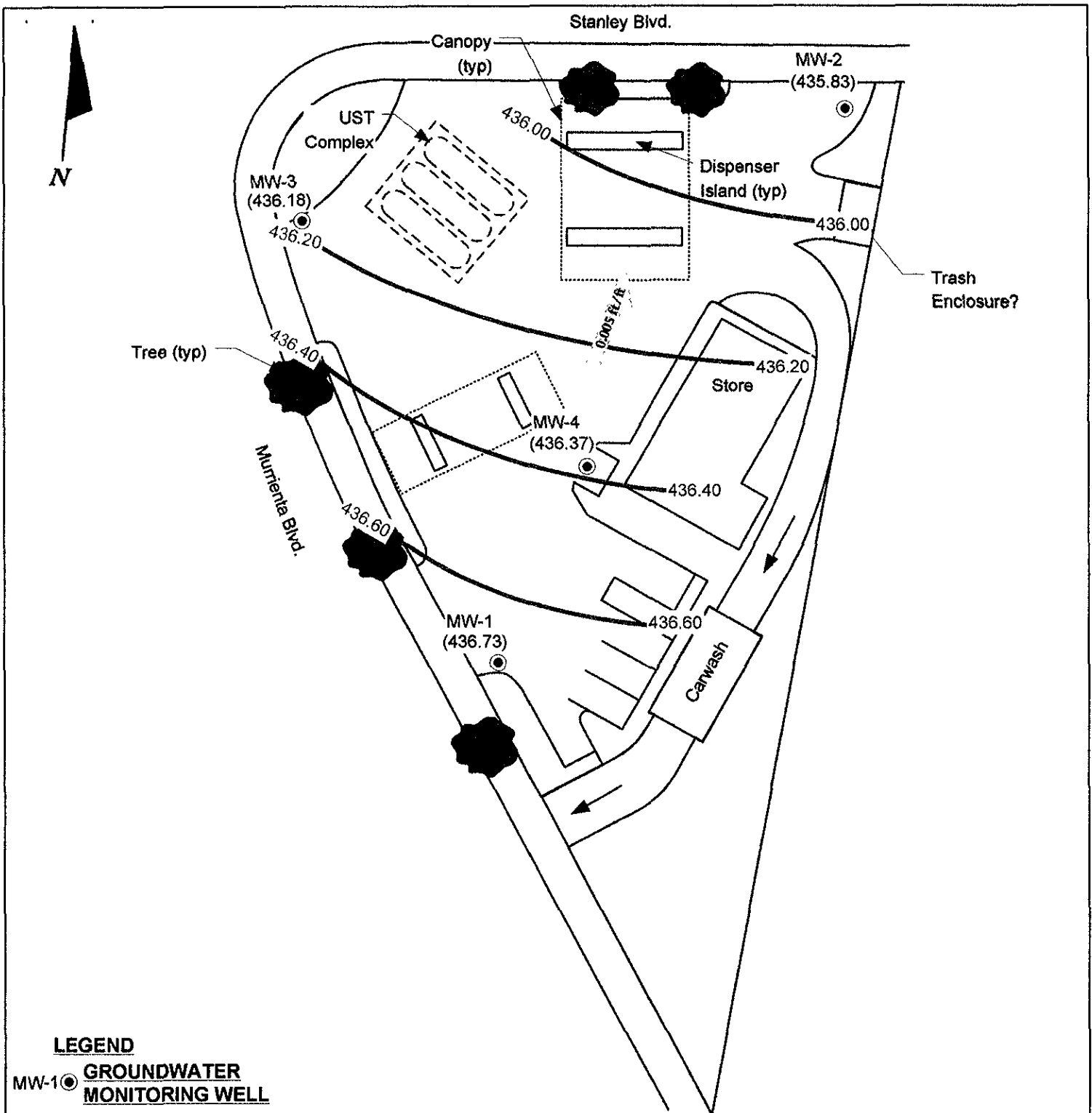


FIGURE 1  
 SITE LOCATION MAP

Shell-branded Service Station  
 809 East Stanley Blvd.  
 Livermore, California

PROJECT NO. M000-564	DRAWN BY VF
FILE NO. SJ80-9ST-1	PREPARED BY VF
REVISION NO. 1	REVIEWED BY DA





**LEGEND**

MW-1 ● **GROUNDWATER MONITORING WELL**

□ **PLANTER**

(436.37) **GROUNDWATER ELEVATION (FEET-MSL), 7/17/03**

436.20 — **GROUNDWATER ELEVATION CONTOUR**

0.005 ft/ft **APPROXIMATE GROUNDWATER FLOW DIRECTION AND GRADIENT**



APPROX. SCALE

**FIGURE 2  
GROUNDWATER ELEVATION CONTOUR MAP,  
JULY 17, 2003**

Shell-branded Service Station  
809 East Stanley Ave.  
Livermore, California

PROJECT NO. SJ8-9ST-1	DRAWN BY VF
FILE NO. SJ8-09ST-1	PREPARED BY VF
REVISION NO. 2	REVIEWED BY DA





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Alameda County

SEP 24 2003

Environmental Health

To: Alameda County Environmental Health Services Date: 9/22/2003  
 1131 Harbor Bay Pkwy  
 Alameda CA 94502 Job No: SJ80-9ST-1  
 Attn: Mr. Scott Seery

We are sending the following items:

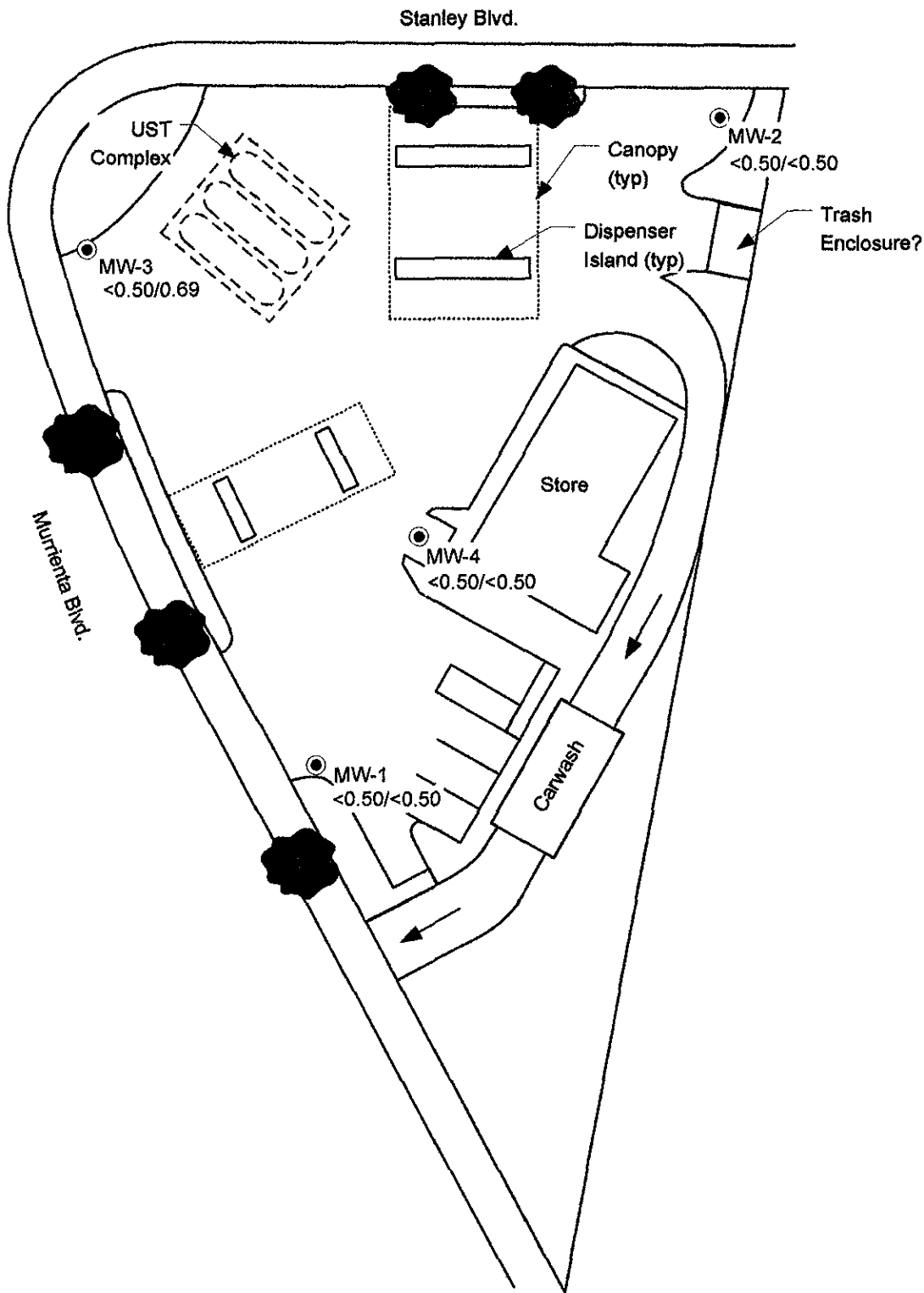
DATE	Copies	Description
19-Sep-03	1	<b>Quarterly Monitoring Report - Third Quarter 2003</b>
		<b>Shell-Branded Service Station</b>
		<b>809 East Stanely Blvd</b>
		<b>Livermore, CA</b>

These are transmitted:

- For your Information   
  For action specified below   
  For review and comment   
  For your use   
  As requested

Copies to: By: R Lee Dooley  
 Title: Senior Hydrogeologist

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**LEGEND**

- MW-1 ● **GROUNDWATER MONITORING WELL**
- **PLANTER**
- <math><0.50/<0.50</math> **BENZENE/MTBE CONCENTRATIONS IN GROUNDWATER (ug/l), 7/17/03**



**FIGURE 3**  
Benzene and MTBE Concentration Map, July 17, 2003

Shell-branded Service Station  
809 East Stanley Ave.  
Livermore, California

PROJECT NO. SJ80-9ST-1	DRAWN BY VF
FILE NO. SJ8-09ST-1	PREPARED BY VF
REVISION NO. 2	REVIEWED BY DA



**Attachment A**

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**GROUNDWATER MONITORING AND SAMPLING REPORT**

**BLAINE**  
TECH SERVICES, INC.



1680 ROGERS AVENUE  
SAN JOSE, CA 95112-1105  
(408) 573-7771 FAX  
(408) 573-0555 PHONE  
CONTRACTOR'S LICENSE #746684  
www.blainetech.com

August 4, 2003

Lynn Walker  
Shell Oil Products US  
P.O. Box 7869  
Burbank, CA 91510-7869

Third Quarter 2003 Groundwater Monitoring at  
Shell-branded Service Station  
809 East Stanley Boulevard  
Livermore, CA

Monitoring performed on July 17, 2003

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Groundwater Monitoring Report **030717-MM-1**

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,

Leon Gearhart  
Project Coordinator

LG/jt

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

cc: Debbie Arnold  
KHM Environmental  
6234 San Ignacio Avenue, Suite E  
San Jose, CA 95119

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**809 East Stanley Boulevard**  
**Livermore, CA**

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)
MW-1	07/09/2002	<50	<0.50	<0.50	<0.50	<0.50	<0.50	455.49	20.06	435.43
MW-1	10/25/2002	<50	<0.50	<0.50	<0.50	<0.50	<0.50	455.49	19.71	435.78
MW-1	01/24/2003	<50	<0.50	<0.50	<0.50	<0.50	<0.50	455.49	18.05	437.44
MW-1	04/21/2003	<50	<0.50	<0.50	<0.50	<1.0	<0.50	455.49	17.57	437.92
<b>MW-1</b>	<b>07/17/2003</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;1.0</b>	<b>&lt;0.50</b>	<b>455.49</b>	<b>18.76</b>	<b>436.73</b>
MW-2	07/09/2002	<50	<0.50	<0.50	<0.50	<0.50	<0.50	454.84	20.40	434.44
MW-2	10/25/2002	<50	<0.50	<0.50	<0.50	<0.50	<0.50	454.84	20.17	434.67
MW-2	01/24/2003	<50	<0.50	<0.50	<0.50	<0.50	<0.50	454.84	18.30	436.54
MW-2	04/21/2003	<50	<0.50	<0.50	<0.50	<1.0	<0.50	454.84	17.93	436.91
<b>MW-2</b>	<b>07/17/2003</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;1.0</b>	<b>&lt;0.50</b>	<b>454.84</b>	<b>19.01</b>	<b>435.83</b>
MW-3	07/09/2002	<50	<0.50	<0.50	<0.50	<0.50	<0.50	454.87	19.95	434.92
MW-3	10/25/2002	<50	<0.50	<0.50	<0.50	<0.50	0.83	454.87	19.63	435.24
MW-3	01/24/2003	<50	<0.50	<0.50	<0.50	<0.50	<0.50	454.87	17.90	436.97
MW-3	04/21/2003	<50	<0.50	<0.50	<0.50	<1.0	0.71	454.87	17.45	437.42
<b>MW-3</b>	<b>07/17/2003</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;1.0</b>	<b>0.69</b>	<b>454.87</b>	<b>18.69</b>	<b>436.18</b>
MW-4	07/09/2002	<50	<0.50	<0.50	<0.50	<0.50	<0.50	456.24	21.15	435.09
MW-4	10/25/2002	<50	<0.50	<0.50	<0.50	<0.50	<0.50	456.24	20.85	435.39
MW-4	01/24/2003	<50	<0.50	<0.50	<0.50	<0.50	<0.50	456.24	19.15	437.09
MW-4	04/21/2003	<50	<0.50	<0.50	<0.50	<1.0	<0.50	456.24	18.65	437.59
<b>MW-4</b>	<b>07/17/2003</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;1.0</b>	<b>&lt;0.50</b>	<b>456.24</b>	<b>19.87</b>	<b>436.37</b>

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**809 East Stanley Boulevard**  
**Livermore, CA**

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)
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Abbreviations:

TPPH = Total petroleum hydrocarbons as gasoline by EPA Method 8260B.

BTEX = Benzene, toluene, ethylbenzene, xylenes by EPA Method 8260B.

MTBE = Methyl-tertiary-butyl ether

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

Notes:

Survey data provided by KHM Environmental Management, Inc.

**Blaine Tech Services, Inc.**

July 31, 2003

1680 Rogers Avenue  
San Jose, CA 95112-1105  
Attn.: Leon Gearhart  
Project#: 030717-MM1  
Project: 97306796  
Site: 809 E. Stanley Blvd., Livermore

Dear Mr. Gearhart,

Attached is our report for your samples received on 07/18/2003 14:29  
This report has been reviewed and approved for release. Reproduction of this report  
is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after  
09/01/2003 unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions,  
please call me at (925) 484-1919.

You can also contact me via email. My email address is: [tgranicher@stl-inc.com](mailto:tgranicher@stl-inc.com)

Sincerely,



Tod Granicher  
Project Manager

**Gas/BTEX Fuel Oxygenates by 8260B (C6-C12)**

Blaine Tech Services, Inc.

Attn.: Leon Gearhart

1680 Rogers Avenue

San Jose, CA 95112-1105

Phone: (408) 573-0555 Fax: (408) 573-7771

Project: 030717-MM1

97306796

Received: 07/18/2003 14:29

Site: 809 E. Stanley Blvd., Livermore

**Samples Reported**

Sample Name	Date Sampled	Matrix	Lab #
MW-1	07/17/2003 06:55	Water	1
MW-2	07/17/2003 07:25	Water	2
MW-3	07/17/2003 07:40	Water	3
MW-4	07/17/2003 07:10	Water	4

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

07/31/2003 12:50





**Gas/BTEX Fuel Oxygenates by 8260B (C6-C12)**

Blaine Tech Services, Inc.

Attn.: Leon Gearhart

1680 Rogers Avenue  
San Jose, CA 95112-1105  
Phone: (408) 573-0555 Fax: (408) 573-7771

Project: 030717-MM1  
97306796

Received: 07/18/2003 14:29

Site: 809 E. Stanley Blvd., Livermore

Prep(s): 5030B	Test(s): 8260FAB
Sample ID: MW-3	Lab ID: 2003-07-0624 - 3
Sampled: 07/17/2003 07:40	Extracted: 7/30/2003 03:09
Matrix: Water	QC Batch#: 2003/07/29-2C.64

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	07/30/2003 03:09	
Benzene	ND	0.50	ug/L	1.00	07/30/2003 03:09	
Toluene	ND	0.50	ug/L	1.00	07/30/2003 03:09	
Ethylbenzene	ND	0.50	ug/L	1.00	07/30/2003 03:09	
Total xylenes	ND	1.0	ug/L	1.00	07/30/2003 03:09	
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	1.00	07/30/2003 03:09	
Methyl tert-butyl ether (MTBE)	0.69	0.50	ug/L	1.00	07/30/2003 03:09	
Di-isopropyl Ether (DIPE)	ND	2.0	ug/L	1.00	07/30/2003 03:09	
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L	1.00	07/30/2003 03:09	
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L	1.00	07/30/2003 03:09	
<b>Surrogates(s)</b>						
1,2-Dichloroethane-d4	112.2	76-130	%	1.00	07/30/2003 03:09	
Toluene-d8	106.5	78-115	%	1.00	07/30/2003 03:09	





**Gas/BTEX Fuel Oxygenates by 8260B (C6-C12)**

Blaine Tech Services, Inc.

Attn.: Leon Gearhart

1680 Rogers Avenue  
San Jose, CA 95112-1105  
Phone: (408) 573-0555 Fax: (408) 573-7771

Project: 030717-MM1  
97306796

Received: 07/18/2003 14:29

Site: 809 E. Stanley Blvd., Livermore

**Batch QC Report**

Prep(s): 5030B

Method Blank

MB: 2003/07/29-2C.64-036

Water

Test(s): 8260FAB

QC Batch # 2003/07/29-2C.64

Date Extracted: 07/29/2003 21:36

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	07/29/2003 21:36	
Benzene	ND	0.5	ug/L	07/29/2003 21:36	
Toluene	ND	0.5	ug/L	07/29/2003 21:36	
Ethylbenzene	ND	0.5	ug/L	07/29/2003 21:36	
Total xylenes	ND	1.0	ug/L	07/29/2003 21:36	
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	07/29/2003 21:36	
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	07/29/2003 21:36	
Di-isopropyl Ether (DIPE)	ND	2.0	ug/L	07/29/2003 21:36	
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L	07/29/2003 21:36	
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L	07/29/2003 21:36	
<b>Surrogates(s)</b>					
1,2-Dichloroethane-d4	104.2	76-130	%	07/29/2003 21:36	
Toluene-d8	106.1	78-115	%	07/29/2003 21:36	

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

07/31/2003 12:50

**Gas/BTEX Fuel Oxygenates by 8260B (C6-C12)**

Blaine Tech Services, Inc.

Attn.: Leon Gearhart

1680 Rogers Avenue  
San Jose, CA 95112-1105  
Phone: (408) 573-0555 Fax: (408) 573-7771

Project: 030717-MM1  
97306796

Received: 07/18/2003 14:29

Site: 809 E. Stanley Blvd., Livermore

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260FAB

**Laboratory Control Spike**

**Water**

**QC Batch # 2003/07/29-2C.64**

LCS 2003/07/29-2C.64-052

Extracted: 07/29/2003

Analyzed: 07/29/2003 20:52

LCSD 2003/07/29-2C.64-014

Extracted: 07/29/2003

Analyzed: 07/29/2003 21:14

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	27.9	28.0	25	111.6	112.0	0.4	69-129	20		
Toluene	28.0	29.8	25	112.0	119.2	6.2	70-130	20		
Methyl tert-butyl ether (MTBE)	33.4	33.7	25	133.6	134.8	0.9	65-165	20		
<b>Surrogates(s)</b>										
1,2-Dichloroethane-d4	533	541	500	106.6	108.2		76-130			
Toluene-d8	529	508	500	105.8	101.6		78-115			

LAB: STL

# SHELL Chain Of Custody Record

76190

Lab Identification (if necessary):

Address:

City/State/Zip:

Shell Project Manager to be invoiced:

SCIENCE & ENGINEERING

TECHNICAL SERVICES

CRMT HOUSTON

Lynn Walker

## 2003-07-0624

INCIDENT NUMBER (S&E ONLY)

9 7 3 0 6 7 9 6

SAP or CRMT NUMBER (TS/CRMT)

DATE: 7/17/03

PAGE: 1 of 1

LABORATORY NAME <b>Blaine Tech Services</b>	LABORATORY CODE <b>BTSS</b>	SITE ADDRESS (Street and City) <b>809 E. Stanley Blvd., Livermore</b>	GLOBAL ID NO. <b>pending</b>
ADDRESS <b>1680 Rogers Avenue, San Jose, CA 95112</b>	CONTACT PERSON <b>Debbie Arnold</b>	PHONE NO. <b>(408)244-4724</b>	CONSULTANT PROJECT ID NO. <b>BTS # 30717-NM1</b>
CONTACT PERSON <b>Leon Gearhart</b>	CELL PHONE <b>408-573-0555</b>	FAX <b>408-573-7771</b>	EMAIL <b>lgearhart@blainetech.com</b>
<input checked="" type="checkbox"/> 10 DAYS <input type="checkbox"/> 5 DAYS <input type="checkbox"/> 72 HOURS <input type="checkbox"/> 48 HOURS <input type="checkbox"/> 24 HOURS <input type="checkbox"/> LESS THAN 24 HOURS <input type="checkbox"/> LA - RWQCB REPORT FORMAT <input type="checkbox"/> LIST AGENCY: _____ GC/MS/MTBE CONFIRMATION HIGHEST _____ HIGHEST per BORING _____ ALL _____ SPECIAL INSTRUCTIONS OR NOTES: CHECK BOX IF EDD IS NOT NEEDED <input type="checkbox"/>		SAMPLER NAME(S) <b>MIKE McNAMARA</b> REQUESTED ANALYSIS FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes  <b>2.2°C</b> TEMPERATURE ON RECEIPT °C	

LAB USE ONLY	Field Sample Identification	SAMPLING		MATRIX	NO. OF CONT.	TPH - Gas, Purgeable	BTX	MTBE (8021B - 5ppb RL)	MTBE (8260E - 0.5ppb RL)	Oxygenates (5) by (8280B)	TEMPERATURE ON RECEIPT °C
		DATE	TIME								
	MW-1	7/17/03	655	h.c.	3	X	X	X	X	X	
	MW-2		725		3	X	X	X	X	X	
	MW-3		740		3	X	X	X	X	X	
	MW-4		710		3	X	X	X	X	X	

Requested by (Signature) <i>[Signature]</i>	Received by (Signature) <b>SAS MIKE - World For STL</b>	Date <b>7/18/03</b>	Time <b>14:29</b>
Requested by (Signature) <b>SAS MIKE</b>	Received by (Signature) <i>[Signature]</i>	Date <b>071803</b>	Time <b>1550</b>
Requested by (Signature)	Received by (Signature)	Date	Time





## SHELL WELL MONITORING DATA SHEET

BTS #: 030717-MM1	Site: E. Stanley Blvd., Livermore
Sampler: MM	Date: 7/17/03
Well I.D.: MW-1	Well Diameter: (2) 3 4 6 8
Total Well Depth (TD): 47.65	Depth to Water (DTW): 18.76
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

Purge Method: Bailer Disposable Bailer Middleburg Electric Submersible	Waterra Peristaltic Extraction Pump Other	Sampling Method: Bailer Disposable Bailer Extraction Port Dedicated Tubing Other:
---	--	---

GRASP SITE ⇒ NO PURGE

No Purge (Gals.) X	=	Gals.
1 Case Volume	Specified Volumes	Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp (°F)	pH	Cond. (mS or μS)	Turbidity (NTUs)	Gals. Removed	Observations
655	64.8	6.5	539	9	—	clear

Did well dewater? Yes No	Gallons actually evacuated:		
Sampling Date: 7/17/03	Sampling Time: 655		
Sample I.D.: MW-1	Depth to Water:		
Analyzed for: TPH-G, BTEX, MTBE, TPH-D	Laboratory: (STL) Other:		
EB I.D. (if applicable):	Other: oxy's (5) by 8260		
Analyzed for: TPH-G, BTEX, MTBE, TPH-D	Duplicate I.D. (if applicable):		
D.O. (if req'd): Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd): Pre-purge:	mV	Post-purge:	mV

## SHELL WELL MONITORING DATA SHEET

BTS #: 030717-MM1	Site: 800 E. Stanley Blvd., Livermore
Sampler: MM	Date: 7/17/03
Well I.D.: MW-2	Well Diameter: (2) 3 4 6 8
Total Well Depth (TD): 47.09	Depth to Water (DTW): 19.01
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

Purge Method: Bailer      Waterra      Sampling Method: Bailer  
 Disposable Bailer      Peristaltic      Disposable Bailer  
 Middleburg      Extraction Pump      Extraction Port  
 Electric Submersible      Other      Dedicated Tubing

GRASP SITE ⇒ NO PURGE

No purge (Gals.) X <input checked="" type="checkbox"/>	Specified Volumes	Calculated Volume
1 Case Volume		

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp (°F)	pH	Cond. (mS or μS)	Turbidity (NTUs)	Gals. Removed	Observations
726	65.0	6.9	580	8	—	Clear

Did well dewater? Yes No      Gallons actually evacuated:

Sampling Date: 7/17/03      Sampling Time: 725      Depth to Water:

Sample I.D.: MW-2      Laboratory: (STL) Other

Analyzed for: (TPH-C) (BTEX) MTBE TPH-D Other: oxy's (5) by R266

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV



## SHELL WELL MONITORING DATA SHEET

BTS #: 030717-MM1	Site: 800 <sup>E</sup> Stanley Blvd., Livermore
Sampler: MM	Date: 7/17/03
Well I.D.: MW-3	Well Diameter: (2) 3 4 6 8
Total Well Depth (TD): 47.40	Depth to Water (DTW): 18.69
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

Purge Method: Bailer      Watera      Sampling Method: Bailer  
 Disposable Bailer      Peristaltic      Disposable Bailer  
 Middleburg      Extraction Pump      Extraction Port  
 Electric Submersible      Other      Dedicated Tubing

GRASP SITE ⇒ NO PURGE

No Purge (Gals.) X <input checked="" type="checkbox"/>	=	Gals. <input checked="" type="checkbox"/>	
1 Case Volume	Specified Volumes	Calculated Volume	

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> + 0.163

Time	Temp (°F)	pH	Cond. (mS or $\mu$ S)	Turbidity (NTUs)	Gals. Removed	Observations
741	65.8	7.1	665	8	—	clear

Did well dewater? Yes No      Gallons actually evacuated:

Sampling Date: 7/17/03      Sampling Time: 740      Depth to Water:

Sample I.D.: MW-3      Laboratory: (STL) Other

Analyzed for: (TPH-C) (BTEX) MTBE TPH-D      Other: oxy's (5) by 8260

EB I.D. (if applicable): @ Time      Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D      Other:

D.O. (if req'd):	Pre-purge:		mg/L	Post-purge:		mg/L
O.R.P. (if req'd):	Pre-purge:		mV	Post-purge:		mV

## SHELL WELL MONITORING DATA SHEET

BTS #: 030717-MM1	Site: 817 <sup>E</sup> Stanley Blvd., Livermore
Sampler: MM	Date: 7/17/03
Well I.D.: MW-4	Well Diameter: (2) 3 4 6 8
Total Well Depth (TD): 47.80	Depth to Water (DTW): 19.87
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

Purge Method:  Bailer       Waterra      Sampling Method:  Bailer  
 Disposable Bailer       Peristaltic       Disposable Bailer  
 Middleburg       Extraction Pump       Extraction Port  
 Electric Submersible       Other       Dedicated Tubing

URASP SITE ⇒ NO PURGE

No purge (Gals.) X  =  Gals.  
 1 Case Volume      Specified Volumes      Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp (°F)	pH	Cond. (mS or μS)	Turbidity (NTUs)	Gals. Removed	Observations
711	64.2	7.0	333	8	—	clear

Did well dewater?    Yes    No      Gallons actually evacuated:

Sampling Date: 7/17/03    Sampling Time: 710    Depth to Water:

Sample I.D.: MW-4      Laboratory: (STL) Other

Analyzed for: (TPH-C) (BTEX) MTBE TPH-D    Other: oxy's (5) by K261

EB I.D. (if applicable): @ Time      Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D    Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV