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Alameda County

DEC 31 2003

Environmental Health

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Letter of Transmittal

To: Alameda County Environmental Health Services Date: 12/30/2003

1131 Harbor Bay Pkwy

Alameda CA 94502

Job No: SJ31-8LI-1.000G

Attn: Mr. Scott Seery

We are sending the following items:

Date	Copies	Description
30-Dec-03	1	4Q03 Quarterly Monitoring Report
		Shell-branded Service Station
		318 S Livermore Ave
		Livermore, CA

These are transmitted:

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

Remarks

Copies to: By: Vera Fischer

Title: Staff Geologist

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175 Bernal Road • Suite 200  
San Jose, California 95119 USA  
408.224.4724 800.477.7411  
Fax 408.225.8506

December 30, 2003  
Project No. SJ31-8LI-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  
DEC 31 2003  
Environmental Health

Re: **Quarterly Monitoring Report – Fourth Quarter 2003**  
**Shell-branded Service Station**  
**318 South Livermore Avenue**  
**Livermore, California**

Dear Mr. Seery:

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

#### **BACKGROUND**

On March 7, 2003, Shell received a notice of responsibility letter from the Alameda County Health Care Services Agency (ACHCSA) 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.

On December 10, 2003, site USTs, fuel dispensers, and associated product piping were removed. A fuel system removal report is currently being prepared by Delta and will be submitted to the ACHCSA.

## **QUARTERLY GROUND WATER MONITORING PROGRAM**

Groundwater monitoring wells were gauged and sampled by Blaine Tech Services (Blaine), at the direction of Delta, on November 13, 2003. Depth to groundwater was measured in Wells MW-5 through MW-8. Wells MW-1 through MW-4 were previously destroyed. Groundwater elevation data and contours are presented on Figure 2.

Groundwater samples were collected from Wells MW-5 through MW-8. 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 compounds); 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 November 13, 2003 was toward the west at a magnitude of 0.02 feet/foot, consistent with previous data. Depth to groundwater in Wells MW-5, MW-6, and MW-7 has increased an average of 3.6 feet since last quarter, while depth to groundwater in Well MW-8 has increased less than one foot.

MTBE continues to be detected in Wells MW-7 and MW-8 at a concentration of 1.4 micrograms per liter (ug/l) in both wells. MTBE concentrations remain below historic highs. TPH-G was detected for the first time in Wells MW-5, MW-6, and MW-7, and for the second time in Well MW-8. TPH-G concentrations ranged from 60 ug/l to 260 ug/l. BTEX compounds were detected for the first time in all site wells. Benzene was only detected in Well MW-8 at a concentration of 1.5 ug/l. Oxygenates, DIPE, ETBE, TAME, and TBA, remain below laboratory detection limits for all site wells.

Based on the current groundwater analytical data, Delta recommends continued quarterly monitoring of site wells. Delta proposes that DIPE, ETBE, TAME, and TBA be eliminated from the monitoring program. These analytes have been below the laboratory detection limits for all four sampling events during 2003.

## **REMARKS**

The 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.

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

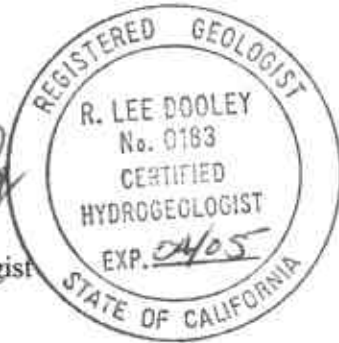
Sincerely,  
**Delta Environmental Consultants, Inc.**



Vera Fischer  
Staff Geologist



R. Lee Dooley  
Senior Hydrogeologist  
CHG 183

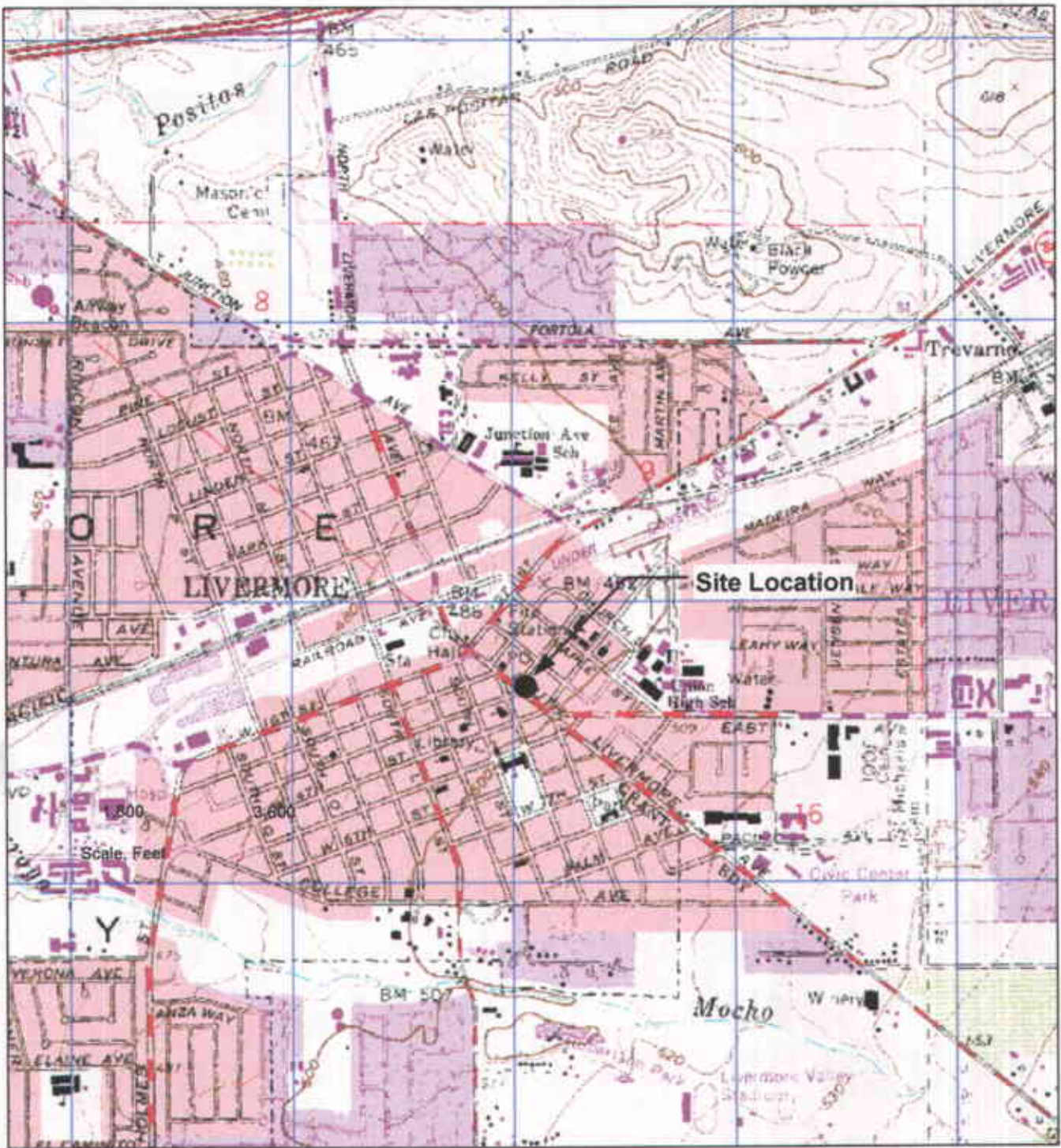


**Attachments:**

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

Attachment A – Groundwater Monitoring and Sampling Report, December 1, 2003

cc: Karen Petryna, Shell Oil Products US, Carson  
Betty Graham, RWQCB – Oakland



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



FIGURE 1  
 SITE LOCATION MAP

SHELL-BRANDED SERVICE STATION  
 318 South Livermore Avenue  
 Livermore, CA

PROJECT NO. SJ31-BL-1.000G	DRAWN BY VF 9/25/03
FILE NO. SJ31-BL-1.000G	PREPARED BY VF
REVISION NO. 2	REVIEWED BY

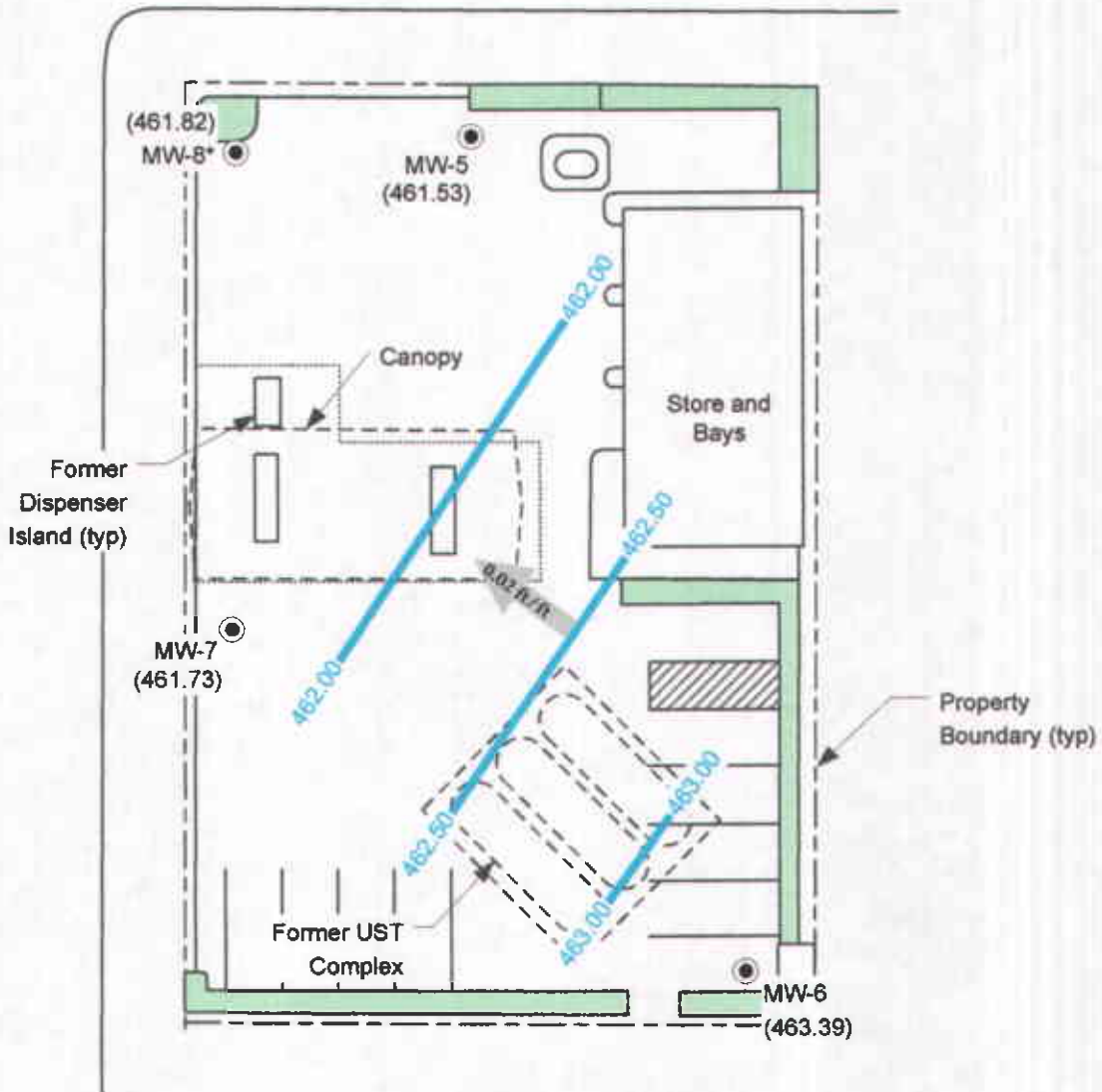


**Delta**  
 Environmental  
 Consultants, Inc.



Third Street

South Livermore Avenue



**LEGEND**

- MW-6 ● **GROUNDWATER MONITORING WELL**
- **PLANTER**
- (462.29) **GROUNDWATER ELEVATION (MSL), 11/13/03**
- 467.00 — **GROUNDWATER ELEVATION CONTOUR**
- ← 0.012 ft/ft **APPROXIMATE GROUNDWATER FLOW DIRECTION AND GRADIENT**
- \* **NOT USED IN CONTOURING**



**FIGURE 2**  
**GROUNDWATER ELEVATION CONTOUR MAP,**  
**NOVEMBER 13, 2003**  
**SHELL-BRANDED SERVICE STATION**  
**318 South Livermore Avenue**  
**Livermore, California**

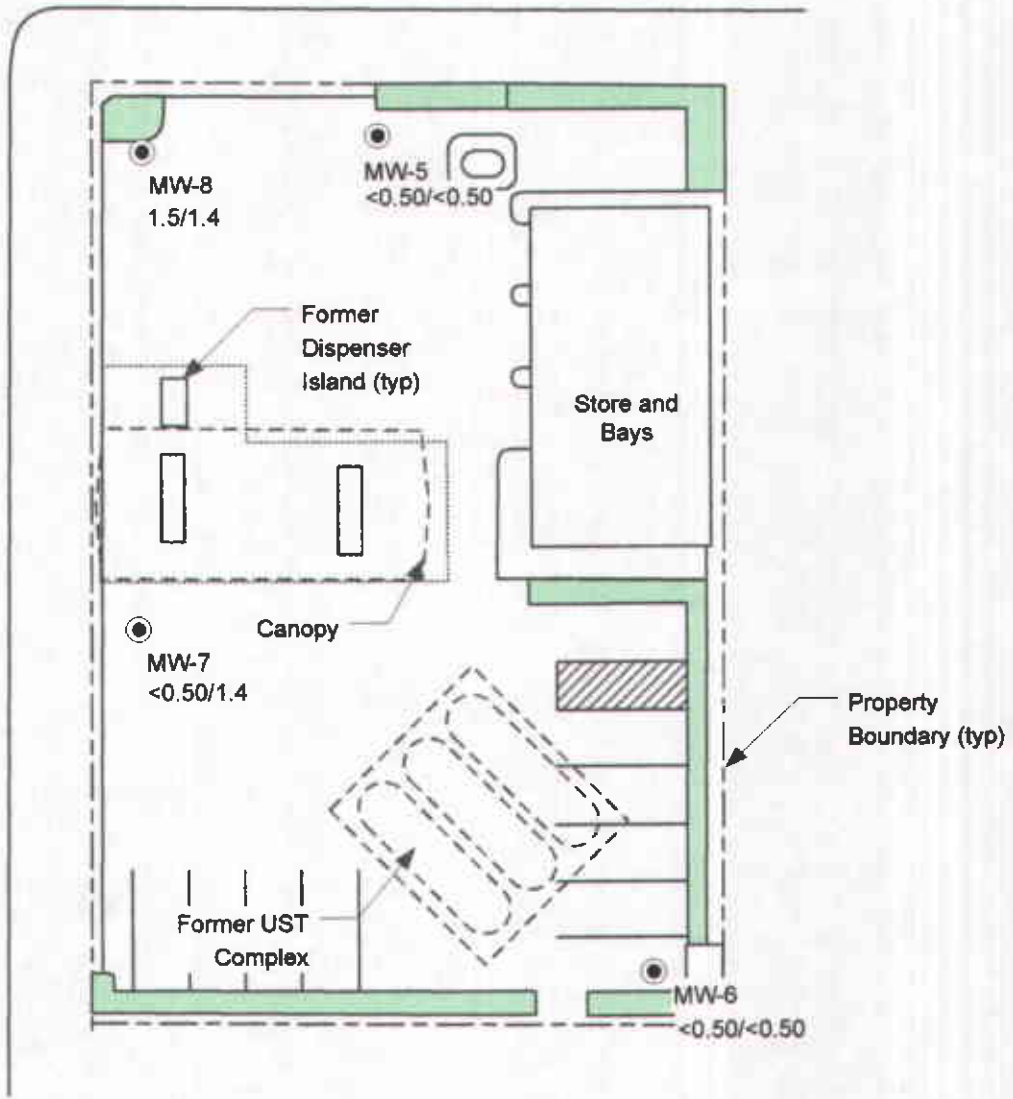
PROJECT NO. SJ31-SLJ-1.000G	DRAWN BY VF 9/25/03
FILE NO. SJ31-SLJ-1.000G	PREPARED BY VF
REVISION NO. 2	REVIEWED BY





Third Street

South Livemore Avenue



**LEGEND**

MW-6 ● **GROUNDWATER MONITORING WELL**

■ **PLANTER**

<0.50/<0.50 **BENZENE / MTBE CONCENTRATIONS IN GROUNDWATER (UG/L), 11/13/03**



**FIGURE 3**  
**BENZENE AND MTBE CONCENTRATION MAP,**  
**NOVEMBER 13, 2003**  
**SHELL-BRANDED SERVICE STATION**  
**318 South Livemore Avenue**  
**Livermore, California**

PROJECT NO. SJ31-SLI-1.000G	DRAWN BY VF 9/25/03
FILE NO. SJ31-SLI-1.000G	PREPARED BY VF
REVISION NO. 2	REVIEWED BY



**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

December 1, 2003

Karen Petryna  
Shell Oil Products US  
P.O. Box 7869  
Burbank, CA 91510-7869

Fourth Quarter 2003 Groundwater Monitoring at  
Shell-branded Service Station  
318 South Livermore Avenue  
Livermore, CA

Monitoring performed on November 13, 2003

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Groundwater Monitoring Report 031113-PC-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,

Leon Gearhart  
Project Coordinator

LG/jt

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

cc: Debbie Arnold  
Delta Environmental  
175 Bernal Road, Suite 200  
San Jose, CA 95119

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**318 South Livermore Avenue**  
**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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MW-5	07/09/2002	<50	<0.50	<0.50	<0.50	<0.50	<0.50	495.47	34.85	460.62
MW-5	10/25/2002	<50	<0.50	<0.50	<0.50	<0.50	<0.50	495.47	37.26	458.21
MW-5	01/24/2003	<50	<0.50	<0.50	<0.50	<0.50	<0.50	495.47	27.30	468.17
MW-5	04/17/2003	<50	<0.50	<0.50	<0.50	<1.0	<0.50	495.47	27.84	467.63
MW-5	07/17/2003	<50	<0.50	<0.50	<0.50	<1.0	<0.50	495.47	30.54	464.93
<b>MW-5</b>	<b>11/13/2003</b>	<b>60</b>	<b>&lt;0.50</b>	<b>1.5</b>	<b>1.7</b>	<b>9.6</b>	<b>&lt;0.50</b>	<b>495.47</b>	<b>33.94</b>	<b>461.53</b>

MW-6	07/09/2002	<50	<0.50	<0.50	<0.50	<0.50	<0.50	497.57	35.41	462.16
MW-6	10/25/2002	<50	<0.50	<0.50	<0.50	<0.50	2.5	497.57	37.92	459.65
MW-6	01/24/2003	<50	<0.50	<0.50	<0.50	<0.50	<0.50	497.57	27.71	469.86
MW-6	04/17/2003	<50	<0.50	<0.50	<0.50	<1.0	<0.50	497.57	28.28	469.29
MW-6	07/17/2003	<50	<0.50	<0.50	<0.50	<1.0	<0.50	497.57	30.56	467.01
<b>MW-6</b>	<b>11/13/2003</b>	<b>90</b>	<b>&lt;0.50</b>	<b>2.6</b>	<b>2.4</b>	<b>12</b>	<b>&lt;0.50</b>	<b>497.57</b>	<b>34.18</b>	<b>463.39</b>

MW-7	07/09/2002	<50	<0.50	<0.50	<0.50	<0.50	2.0	495.58	34.29	461.29
MW-7	10/25/2002	<50	<0.50	<0.50	<0.50	<0.50	1.9	495.58	36.80	458.78
MW-7	01/24/2003	<50	<0.50	<0.50	<0.50	<0.50	0.89	495.58	26.75	468.83
MW-7	04/17/2003	<50	<0.50	<0.50	<0.50	<1.0	4.0	495.58	27.31	468.27
MW-7	07/17/2003	<50	<0.50	<0.50	<0.50	<1.0	3.2	495.58	30.02	465.56
<b>MW-7</b>	<b>11/13/2003</b>	<b>72</b>	<b>&lt;0.50</b>	<b>0.62</b>	<b>0.57</b>	<b>3.2</b>	<b>1.4</b>	<b>495.58</b>	<b>33.85</b>	<b>461.73</b>

MW-8	07/09/2002	<50	<0.50	<0.50	<0.50	<0.50	6.9	494.90	34.46	460.44
MW-8	10/25/2002	140	<0.50	<0.50	<0.50	<0.50	2.2	494.90	36.98	457.92
MW-8	01/24/2003	<50	<0.50	<0.50	<0.50	<0.50	<0.50	494.90	27.35	467.55
MW-8	04/17/2003	<50	<0.50	<0.50	<0.50	<1.0	0.67	494.90	27.44	467.46
MW-8	07/17/2003	<50	<0.50	<0.50	<0.50	<1.0	0.50	494.90	32.29	462.61

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**318 South Livermore Avenue**  
**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-8	11/13/2003	260	1.5	2.3	2.9	16	1.4	494.90	33.08	461.82

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.**

November 25, 2003

1680 Rogers Avenue  
San Jose, CA 95112-1105

Attn.: Leon Gearhart

Project#: 031113-PC2

Project: 97464709

Site: 318 S. Livermore Ave., Livermore

Dear Mr. Gearhart,

Attached is our report for your samples received on 11/14/2003 13:48

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 12/29/2003 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: [vvancil@stl-inc.com](mailto:vvancil@stl-inc.com)

Sincerely,



Vincent Vancil  
Project Manager

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](http://www.stl-inc.com) \* CA DHS ELAP# 2496

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: 031113-PC2  
97464709

Received: 11/14/2003 13:48

Site: 318 S. Livermore Ave., Livermore

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-5	11/13/2003 14:18	Water	1
MW-6	11/13/2003 13:45	Water	2
MW-7	11/13/2003 15:25	Water	3
MW-8	11/13/2003 14:50	Water	4

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: 031113-PC2  
97464709

Received: 11/14/2003 13:48

Site: 318 S. Livermore Ave., Livermore

Prep(s):	5030B	Test(s):	8260B
Sample ID:	MW-5	Lab ID:	2003-11-0557 - 1
Sampled:	11/13/2003 14:18	Extracted:	11/22/2003 16:53
Matrix:	Water	QC Batch#:	2003/11/22-01.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	60	50	ug/L	1.00	11/22/2003 16:53	
Benzene	ND	0.50	ug/L	1.00	11/22/2003 16:53	
Toluene	1.5	0.50	ug/L	1.00	11/22/2003 16:53	
Ethylbenzene	1.7	0.50	ug/L	1.00	11/22/2003 16:53	
Total xylenes	9.6	1.0	ug/L	1.00	11/22/2003 16:53	
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	1.00	11/22/2003 16:53	
Methyl tert-butyl ether (MTBE)	ND	0.50	ug/L	1.00	11/22/2003 16:53	
Di-isopropyl Ether (DIPE)	ND	2.0	ug/L	1.00	11/22/2003 16:53	
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L	1.00	11/22/2003 16:53	
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L	1.00	11/22/2003 16:53	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	95.9	76	%	1.00	11/22/2003 16:53	
Toluene-d8	96.1	78	%	1.00	11/22/2003 16:53	

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: 031113-PC2  
97464709

Received: 11/14/2003 13:48

Site: 318 S. Livermore Ave., Livermore

Prep(s):	5030B	Test(s):	8260B
Sample ID:	MW-6	Lab ID:	2003-11-0557 - 2
Sampled:	11/13/2003 13:45	Extracted:	11/22/2003 17:15
Matrix:	Water	QC Batch#:	2003/11/22-01.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	90	50	ug/L	1.00	11/22/2003 17:15	
Benzene	ND	0.50	ug/L	1.00	11/22/2003 17:15	
Toluene	2.6	0.50	ug/L	1.00	11/22/2003 17:15	
Ethylbenzene	2.4	0.50	ug/L	1.00	11/22/2003 17:15	
Total xylenes	12	1.0	ug/L	1.00	11/22/2003 17:15	
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	1.00	11/22/2003 17:15	
Methyl tert-butyl ether (MTBE)	ND	0.50	ug/L	1.00	11/22/2003 17:15	
Di-isopropyl Ether (DIPE)	ND	2.0	ug/L	1.00	11/22/2003 17:15	
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L	1.00	11/22/2003 17:15	
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L	1.00	11/22/2003 17:15	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	95.9	76	%	1.00	11/22/2003 17:15	
Toluene-d8	100.4	78	%	1.00	11/22/2003 17:15	



## 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: 031113-PC2

97464709

Received: 11/14/2003 13:48

Site: 318 S. Livermore Ave., Livermore

Prep(s):	5030B	Test(s):	8260B
Sample ID:	MW-7	Lab ID:	2003-11-0557 - 3
Sampled:	11/13/2003 15:25	Extracted:	11/22/2003 17:37
Matrix:	Water	QC Batch#:	2003/11/22-01.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	72	50	ug/L	1.00	11/22/2003 17:37	
Benzene	ND	0.50	ug/L	1.00	11/22/2003 17:37	
Toluene	0.62	0.50	ug/L	1.00	11/22/2003 17:37	
Ethylbenzene	0.57	0.50	ug/L	1.00	11/22/2003 17:37	
Total xylenes	3.2	1.0	ug/L	1.00	11/22/2003 17:37	
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	1.00	11/22/2003 17:37	
Methyl tert-butyl ether (MTBE)	1.4	0.50	ug/L	1.00	11/22/2003 17:37	
Di-isopropyl Ether (DIPE)	ND	2.0	ug/L	1.00	11/22/2003 17:37	
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L	1.00	11/22/2003 17:37	
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L	1.00	11/22/2003 17:37	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	92.4	76	%	1.00	11/22/2003 17:37	
Toluene-d8	98.9	78	%	1.00	11/22/2003 17:37	

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: 031113-PC2  
97464709

Received: 11/14/2003 13:48

Site: 318 S. Livermore Ave., Livermore

Prep(s):	5030B	Test(s):	8260B
Sample ID:	MW-8	Lab ID:	2003-11-0557 - 4
Sampled:	11/13/2003 14:50	Extracted:	11/22/2003 18:00
Matrix:	Water	QC Batch#:	2003/11/22-01.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	260	50	ug/L	1.00	11/22/2003 18:00	
Benzene	1.5	0.50	ug/L	1.00	11/22/2003 18:00	
Toluene	2.3	0.50	ug/L	1.00	11/22/2003 18:00	
Ethylbenzene	2.9	0.50	ug/L	1.00	11/22/2003 18:00	
Total xylenes	16	1.0	ug/L	1.00	11/22/2003 18:00	
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	1.00	11/22/2003 18:00	
Methyl tert-butyl ether (MTBE)	1.4	0.50	ug/L	1.00	11/22/2003 18:00	
Di-isopropyl Ether (DIPE)	ND	2.0	ug/L	1.00	11/22/2003 18:00	
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L	1.00	11/22/2003 18:00	
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L	1.00	11/22/2003 18:00	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	91.8	76	%	1.00	11/22/2003 18:00	
Toluene-d8	96.0	78	%	1.00	11/22/2003 18:00	

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: 031113-PC2  
97464709

Received: 11/14/2003 13:48

Site: 318 S. Livermore Ave., Livermore

Batch QC Report					
Prep(s): 5030B				Test(s): 8260B	
Method Blank		Water		QC Batch # 2003/11/22-01.62	
MB: 2003/11/22-01.62-045				Date Extracted: 11/22/2003 09:45	

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	11/22/2003 09:45	
Benzene	ND	0.5	ug/L	11/22/2003 09:45	
Toluene	ND	0.5	ug/L	11/22/2003 09:45	
Ethylbenzene	ND	0.5	ug/L	11/22/2003 09:45	
Total xylenes	ND	1.0	ug/L	11/22/2003 09:45	
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	11/22/2003 09:45	
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	11/22/2003 09:45	
Di-isopropyl Ether (DIPE)	ND	2.0	ug/L	11/22/2003 09:45	
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L	11/22/2003 09:45	
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L	11/22/2003 09:45	
<b>Surrogates(s)</b>					
1,2-Dichloroethane-d4	85.5	76-130	%	11/22/2003 09:45	
Toluene-d8	98.3	78-115	%	11/22/2003 09:45	

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

Blaine Tech Services, Inc.

Attn.: Leon Gearhart

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

Project: 031113-PC2  
97464709

Received: 11/14/2003 13:48

Site: 318 S. Livermore Ave., Livermore

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

Laboratory Control Spike

Water

QC Batch # 2003/11/22-01.62

LCS 2003/11/22-01.62-000

Extracted: 11/22/2003

Analyzed: 11/22/2003 09:00

LCSD 2003/11/22-01.62-022

Extracted: 11/22/2003

Analyzed: 11/22/2003 09:22

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	21.0	21.4	25.0	84.0	85.6	1.9	69-129	20		
Toluene	22.8	23.0	25.0	91.2	92.0	0.9	70-130	20		
Methyl tert-butyl ether (MTBE)	16.4	19.2	25.0	65.6	76.8	15.7	65-165	20		
<b>Surrogates(s)</b>										
1,2-Dichloroethane-d4	427	450	500	85.4	90.0		76-130			
Toluene-d8	495	492	500	99.0	98.4		78-115			

LAB: STL

**2003-11-0557**

# SHELL Chain Of Custody Record

80298

(See Identification of necessary)

Address:

City, State, Zip:

Shell Project Manager to be Invoiced:

- SCIENCE & ENGINEERING
- TECHNICAL SERVICES
- CRMT HOUSTON

Karen Petryna

INCIDENT NUMBER (S&E ONLY)

9 7 4 6 4 7 0 9

SAP or CRMT NUMBER (TS/CRMT)

DATE: 11/13/03

PAGE: 1 of 1

BLAINE TECH SERVICES      BTSS      SITE ADDRESS (Street and City)      318 S. Livermore Ave., Livermore      GLOBAL ID #      pending

1680 Rogers Avenue, San Jose, CA 95112      DEB (LIVERMORE) (Responsible Party or Designer)      PHONE NO      E-MAIL      PROJECT/TEST PROJECT NO

Leon Gearhart      Debbie Arnold      (408) 224-4724      darnold@khm1.com      031113-PC2

408-573-0555      408-573-7771      lgearhart@blainetech.com      P. Cornish      LAB USE ONLY

TURNAROUND TIME (BUSINESS DAYS):  10 DAYS     5 DAYS     72 HOURS     48 HOURS     24 HOURS     LESS THAN 24 HOURS

### REQUESTED ANALYSIS

LA: RWQCB REPORT FORMAT     UST AGENCY

GC/MS MTBE CONFIRMATION: HIGHEST \_\_\_\_\_ HIGHEST per BORING \_\_\_\_\_ ALL \_\_\_\_\_

SPECIAL INSTRUCTIONS OR NOTES:      CHECK BOX IF EOD IS NOT NEEDED

**FIELD NOTES:**  
Container/Preservative  
or PID Readings  
or Laboratory Notes

3.1°C  
TEMPERATURE ON RECEIPT °C

LAB USE ONLY	Field Sample Identification	SAMPLING		MATRIX	NO. OF CONT.	TPH - Gas, Purgeable	BTEX	MTBE (82218 - 5ppb RL)	MTBE (82608 - 0.5ppb RL)	Oxygenates (5) by (82608)										
		DATE	TIME																	
	MU-5	11/13/03	1418	W	3	X	X			X										
	MU-6		1345	W	3	X	X			X										
	MU-7		1525	W	3	X	X			X										
	MU-8		1450	W	3	X	X			X										

Received by (Signature): [Signature]      Received by (Signature): [Signature]      Date: 11/14/03      Time: 1348

Received by (Signature): [Signature]      Received by (Signature): [Signature]      Date: 11/14/03      Time: 1521

CS&C Graphics (714) 958-8702











## SHELL WELL MONITORING DATA SHEET

BTS #: 031113-PC2	Site: 318 S. Livermore Ave., Livermore
Sampler: P. Cornish	Date: 11/13/03
Well I.D.: MW-8	Well Diameter: ② 3 4 6 8
Total Well Depth (TD): 51.15	Depth to Water (DTW): 33.08
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <input checked="" type="checkbox"/> PVD <input type="checkbox"/> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 36.69	

Purge Method:  Bailer  Disposable Bailer  Positive Air Displacement  Electric Submersible

Water:  Peristaltic  Extraction Pump  Other \_\_\_\_\_

Sampling Method:  Bailer  Disposable Bailer  Extraction Port  Dedicated Tubing

Other: \_\_\_\_\_

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

$$\frac{2.9 \text{ (Gals.)} \times 3 \text{ Specified Volumes}}{1 \text{ Case Volume}} = 8.7 \text{ Gals. Calculated Volume}$$

Time	Temp (°F)	pH	Cond. (mS or $\mu$ S)	Turbidity (NTUs)	Gals. Removed	Observations
1434	66.0	7.0	1131	>1000	3.0	muddy
1440	65.4	7.4	1108	>1000	6	cloudy
1445	65.6	7.1	1117	71000	9	

Did well dewater? Yes  No  Gallons actually evacuated: 9

Sampling Date: 11/13/03 Sampling Time: 1450 Depth to Water: 36.05

Sample I.D.: MW-8 Laboratory: STP Other \_\_\_\_\_

Analyzed for: ~~TPH-G BTEX~~ MTBE TPH-D Other: Oxys by 8260

EB I.D. (if applicable): @ \_\_\_\_\_ 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



## SITE INSPECTION CHECKLIST

Client Shell Date 10/1/03  
 Site Address 318 S. Livermore Ave., Livermore, CA  
 Job Number 031001-M-2 Technician ML  
 Site Status Shell Branded Station Vacant Lot Other \_\_\_\_\_

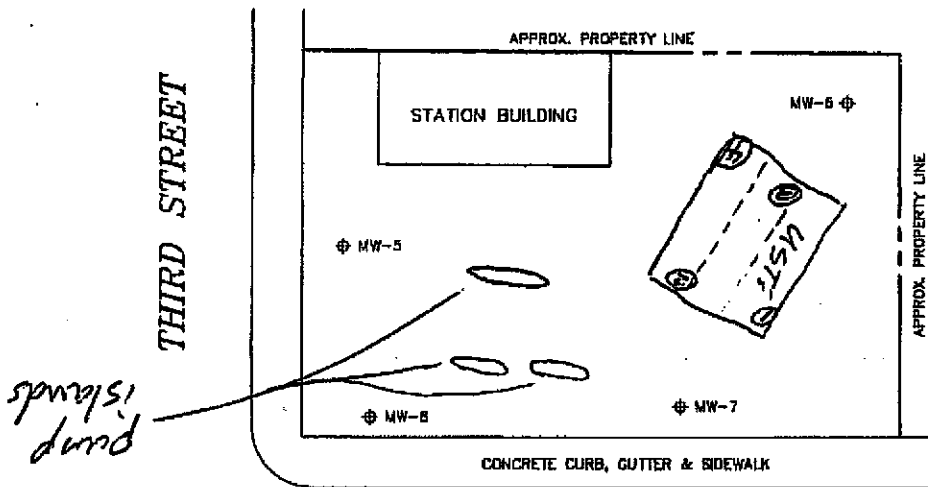
- Inspected / Labeled / Cleaned - All Wells on Scope Of Work
- Inspected / Cleaned Components - All Other Identifiable Wells  (N/A)
- Inspected Site for Investigation Related Trip Hazards
- Addressed All Outstanding Wellhead Repair Order(s)  (N/A)
- Completed Repair Data Sheets(s)  N/A
- Inspected Treatment / Remediation System Compound For Security, Cleanliness and Appearance  (N/A)
- Inspected Vacant Lot for Signs of Habitation, Hazardous Materials or Terrain, Overgrown Vegetation and Security  (N/A)

PLEASE BE ADVISED THAT, UNLESS OTHERWISE INSTRUCTED, NO REPAIRS ARE PLANNED FOR THE ISSUES DESCRIBED BELOW

Outstanding Problems / Comments	(In addition to other issues, note all SOW wellboxes that, by design, are not securable)
① Backfill well, missing one ball	
② " " ,	
③ " " , OK	
④ " " ,	

PROJECT COORDINATOR ONLY

Checklist Reviewed LG 10/2/03 Notes \_\_\_\_\_  
Initial/Date



MONITORING WELL	NORTHING AT NORTH RM PVC (TOC)	EASTING AT NORTH RM PVC (TOC)	ELEVATION AT NORTH RM PVC (TOC)	ELEVATION AT NORTH RM BOX (TOB)
MW-5	2072877.47	8195280.80	495.47	495.84
MW-6	2072825.65	8195380.00	497.57	497.83
MW-7	2072792.97	8195298.51	495.58	495.91
MW-8	2072839.98	8195238.48	494.90	495.24



**NOTES:**

1. COORDINATES ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM, ZONE III, NAD 83.
2. BENCHMARK IS CITY OF LIVERMORE NO. D 30, A CITY MONUMENT AT EAST AVENUE AND FIFTH STREET.  
ELEVATION = 501.361, NGVD '29.
3. SURVEYED AT THE REQUEST OF THE IT GROUP IN JANUARY 2002, SAP 135440.

MONITORING WELL LOCATION MAP FOR  
**SHELL STATION**

318 South Livermore Avenue at Third Street  
Livermore, California



**MID COAST ENGINEERS**  
CIVIL ENGINEERS AND LAND SURVEYORS  
70 PEINY LAKE BLVD. SUITE A WATSONVILLE, CA 95076  
(408) 721-2580



SCALE: 1"=30'  
JOB NO: 02070  
DATE: MAR. 11, 2002  
SHEET: 1 OF 1

REPAIR DATA SHEET

Client Shell Date 10/1/03  
Site Address 318 S. Livermore Ave, Livermore, CA  
Job Number 031001-M63 Technician MB

Repair Location ①  
Deficiencies Corrected Missing bolts. One tab broken. Tapped + added one bolt.  
Materials Used bolt

Repair Location ②  
Deficiencies Corrected Missing bolts. ~~Tab~~ Tapped + Added two bolts.  
Materials Used 2 bolts

Repair Location MW-5  
Deficiencies Corrected Gasket broken. Added new gasket.  
Materials Used gasket

Repair Location \_\_\_\_\_  
Deficiencies Corrected \_\_\_\_\_  
Materials Used \_\_\_\_\_

Repair Location \_\_\_\_\_  
Deficiencies Corrected \_\_\_\_\_  
Materials Used \_\_\_\_\_

Repair Location \_\_\_\_\_  
Deficiencies Corrected \_\_\_\_\_  
Materials Used \_\_\_\_\_