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Alameda County
 NOV 20 2003
 Environmental Health

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Letter of Transmittal

To: Alameda County Health Care Services Agency Date: 11/17/2003
 Environmental Health Services - Environmental Protection
 1131 Harbor Bay Pkw, Ste 250 Job No: SJ11-55P-1.000G
 Alameda CA 94502
 Attn: Ms. Donna Drogos

We are sending the following items:

Date	Copies	Description
17-Nov-03	1	Quarterly Monitoring Report - Third Quarter 2003
		Shell-Branded Service Station
		1155 Portola Avenue
		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: R. Lee Dooley

_____ Title: Senior Hydrogeologist

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November 17, 2003
Project No. SJ11-55P-1.000G

Ms. Donna Drogos
Alameda County Health Care Services Agency
Environmental Health Services – Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: **Quarterly Monitoring Report – Third Quarter 2003**
Shell-branded Service Station
1155 Portola Avenue
Livermore, California

Dear Ms. Drogos:

Delta Environmental Management, 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. Groundwater sampling was performed by Blaine Tech Services (Blaine) at the direction of Delta. A site location map is included as Figure 1.

QUARTERLY GROUND WATER MONITORING PROGRAM

Groundwater monitoring wells were gauged and sampled by Blaine on August 25, 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 are presented on Figure 3.

Alameda County
NOV 20 2003
Environmental Health

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 August 25, 2003 was towards the west at a magnitude of 0.02 ft/ft, consistent with previous data.

MTBE was detected in Wells MW-1 and MW-2. MTBE concentrations have increased since last quarter. The MTBE concentration in Well MW-2 has reached a historic high at 400 micrograms per liter (ug/l). TPH-G was detected in Wells MW-1, MW-3, and MW-4 at 64 ug/l, 76 ug/l, and 67 ug/l, respectively. Hydrocarbons reported as TPH-G in Wells MW-3 and MW-4 did not match the laboratory's gasoline standard.

REMARKS

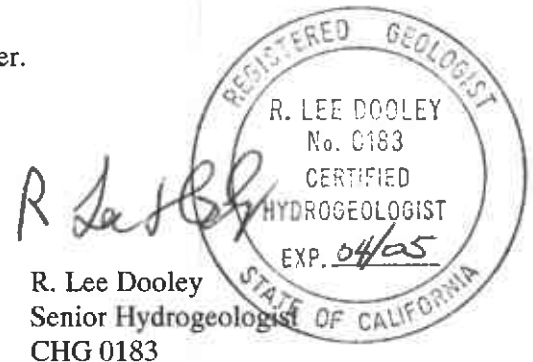
The recommendations contained in this report represent Delta's professional opinions based upon the currently available information and are arrived at in accordance with currently acceptable professional standards. This report is based upon a specific scope of work requested by the client. The Contract 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.

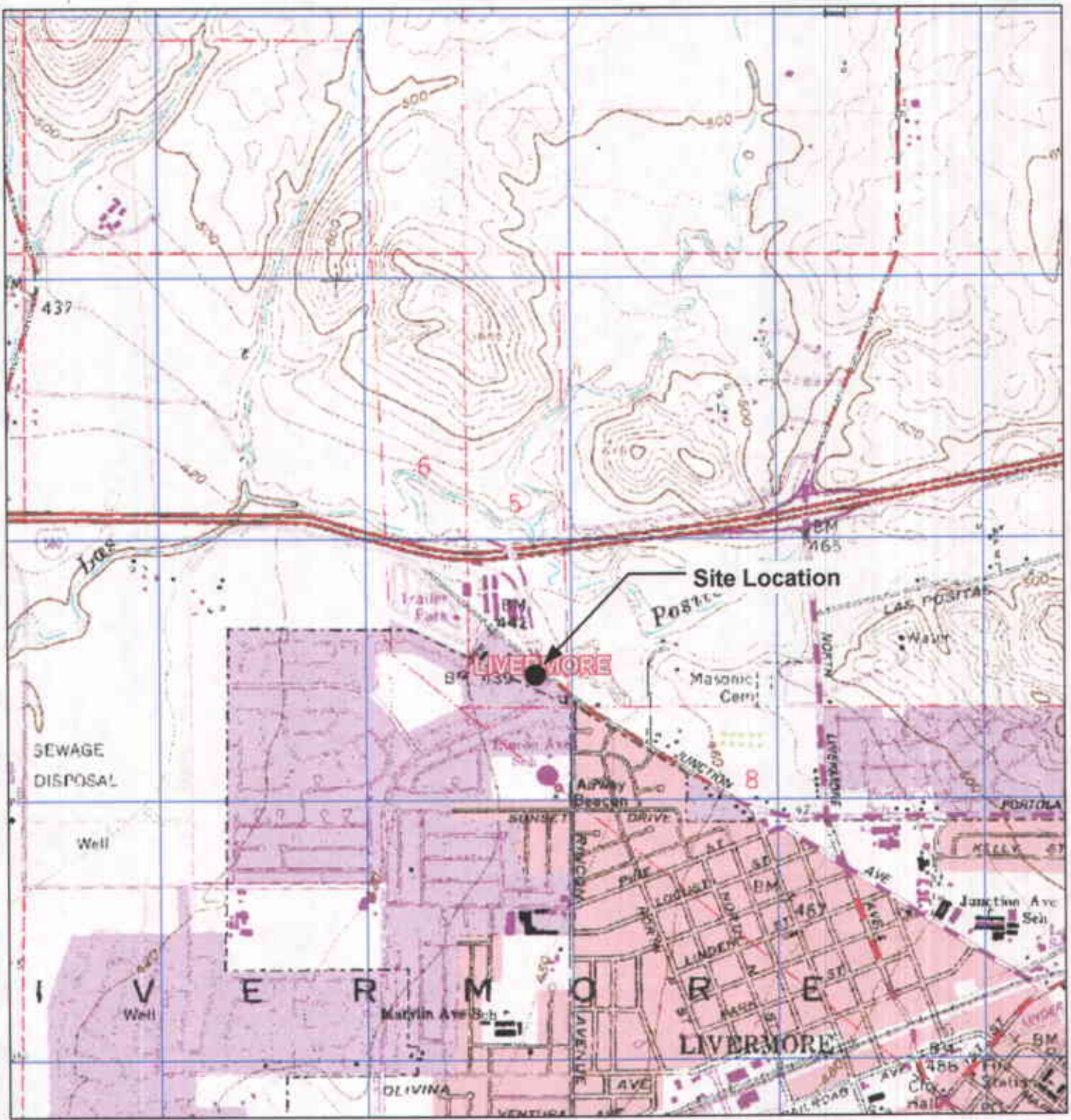


Vera Fischer
Staff Geologist



- 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, September 23, 2003

cc: Karen Petryna, Shell Oil Products US, Burbank, CA
Betty Graham, RWQCB - San Francisco Bay Region, Oakland, CA
Danielle Stefani, Livermore-Pleasanton Fire Department, Livermore, CA
Terrell & Kimberley Bass, Danville, CA



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

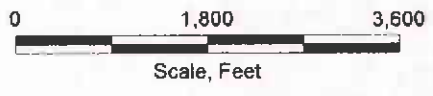
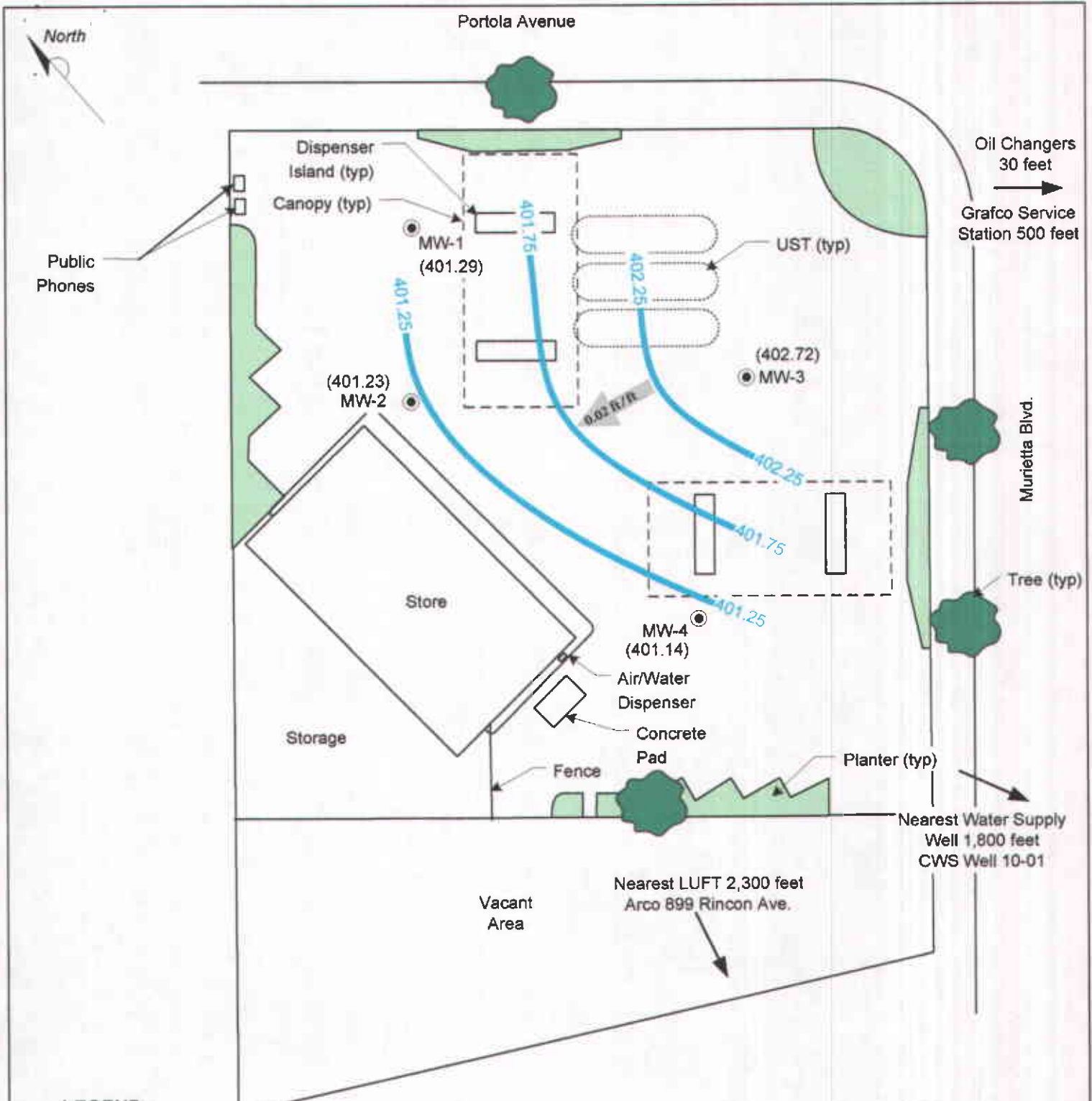


FIGURE 1
 SITE LOCATION MAP

SHELL-BRANDED SERVICE STATION
 1155 Portola Avenue
 Livermore, California

PROJECT NO. SJ11-55P-1.000G	DRAWN BY VF 10/22/03
FILE NO. SJ11-55P-1.000G	PREPARED BY VF
REVISION NO.	REVIEWED BY





LEGEND

- MW-4 ● **GROUNDWATER MONITORING WELL**
- (407.56) **GROUNDWATER ELEVATION (FEET - MSL), 8/25/03**
- 407.20 — **GROUNDWATER ELEVATION CONTOUR**
- 0.02 R/R **APPROXIMATE GROUNDWATER FLOW DIRECTION AND GRADIENT**

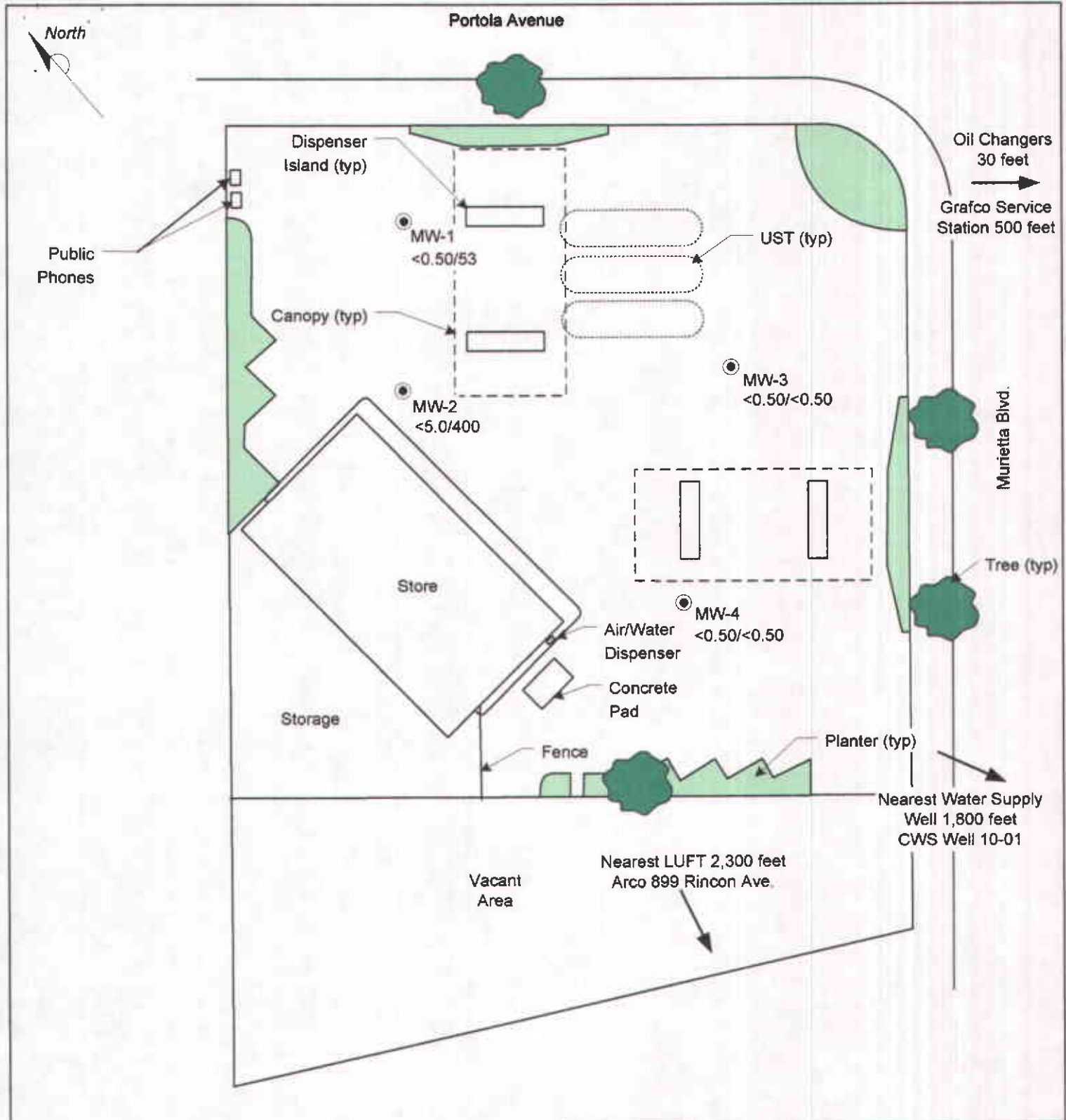


APPROX. SCALE

FIGURE 2
GROUNDWATER ELEVATION CONTOUR MAP,
AUGUST 25, 2003
SHELL-BRANDED SERVICE STATION
1155 Portola Avenue
Livermore, California

PROJECT NO. SJ11-55P-1.000G	DRAWN BY VF 10/22/03
FILE NO. SJ11-55P-1.000G	PREPARED BY VF
REVISION NO. 1	REVIEWED BY

Delta
Environmental
Consultants, Inc.



LEGEND

MW-4 ● **GROUNDWATER MONITORING WELL**

64/53 **BENZENE/MTBE CONCENTRATIONS (UG/L), 8/25/03**

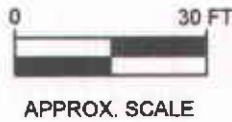


FIGURE 3
BENZENE AND MTBE CONCENTRATIONS MAP,
AUGUST 25, 2003

SHELL-BRANDED SERVICE STATION
1155 Portola Avenue
Livermore, California

PROJECT NO. SJ11-55P-1.000G	DRAWN BY VF 10/22/03
FILE NO. SJ11-55P-1.000G	PREPARED BY VF
REVISION NO. 1	REVIEWED BY



Attachment A

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

September 23, 2003

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

Third Quarter 2003 Groundwater Monitoring at
Shell-branded Service Station
1155 Portola Avenue
Livermore, CA

Monitoring performed on August 25, 2003

Groundwater Monitoring Report **030825-MD-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
1155 Portola Avenue
Livermore, CA

Well ID	Date	TPPH (ug/L)	TEPH (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	12/05/2002	NA	NA	NA	NA	NA	NA	NA	NA	41.12	NA
MW-1	12/20/2002	<50	<50	<0.50	<0.50	<0.50	<0.50	78	NA	38.40	NA
MW-1	03/28/2003	<50	<50	<0.50	<0.50	<0.50	<1.0	7.0	443.81	36.25	407.56
MW-1	06/26/2003	<50	<50	<0.50	<0.50	<0.50	<1.0	1.4	443.81	39.53	404.28
MW-1	08/25/2003	64	NA	<0.50	<0.50	<0.50	<1.0	53	443.81	42.52	401.29
MW-2	12/05/2002	NA	NA	NA	NA	NA	NA	NA	NA	41.57	NA
MW-2	12/20/2002	<50	<50	<0.50	<0.50	<0.50	<0.50	190	NA	40.00	NA
MW-2	03/28/2003	<50	<50	<0.50	<0.50	<0.50	<1.0	46	444.61	37.40	407.21
MW-2	06/26/2003	<500	<50	<5.0	<5.0	<5.0	<10	330	444.61	40.51	404.10
MW-2	08/25/2003	<500	NA	<5.0	<5.0	<5.0	<10	400	444.61	43.38	401.23
MW-3	12/05/2002	NA	NA	NA	NA	NA	NA	NA	NA	40.49	NA
MW-3	12/20/2002	<50	<50	<0.50	<0.50	<0.50	<0.50	8.7	NA	36.00	NA
MW-3	03/28/2003	<50	56	<0.50	<0.50	<0.50	<1.0	<0.50	443.84	36.47	407.37
MW-3	06/26/2003	<50	<50	<0.50	<0.50	<0.50	<1.0	<0.50	443.84	38.70	405.14
MW-3	08/25/2003	76 a	NA	<0.50	<0.50	<0.50	<1.0	<0.50	443.84	41.12	402.72
MW-4	12/05/2002	NA	NA	NA	NA	NA	NA	NA	NA	41.45	NA
MW-4	12/20/2002	<50	61	<0.50	<0.50	<0.50	<0.50	<0.50	NA	40.61	NA
MW-4	03/28/2003	<50	<50	<0.50	<0.50	<0.50	<1.0	<0.50	444.18	37.16	407.02
MW-4	06/26/2003	<50	<50	<0.50	<0.50	<0.50	<1.0	<0.50	444.18	40.05	404.13
MW-4	08/25/2003	67 a	NA	<0.50	<0.50	<0.50	<1.0	<0.50	444.18	43.04	401.14

WELL CONCENTRATIONS
Shell-branded Service Station
1155 Portola Avenue
Livermore, CA

Well ID	Date	TPPH (ug/L)	TEPH (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.

TEPH = Total petroleum hydrocarbons as diesel by modified EPA Method 8015.

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:

a = Hydrocarbon does not match pattern of laboratory's standard.

Site surveyed November 25, 2002, by Mid Coast Engineers.

Blaine Tech Services, Inc.

September 09, 2003

1680 Rogers Avenue
San Jose, CA 95112-1105
Attn.: Leon Gearhart
Project#: BTS# 030825-MD1
Project: Shell Incident Number 97495539
Site: 1155 Portola Ave. Livermore

Dear Mr. Gearhart,

Attached is our report for your samples received on 08/26/2003 12:35
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
10/10/2003 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

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: BTS# 030825-MD1

Shell Incident Number 97495539

Received: 08/26/2003 12:35

Site: 1155 Portola Ave. Livermore

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-1	08/25/2003 11:15	Water	1
MW-2	08/25/2003 11:45	Water	2
MW-3	08/25/2003 10:00	Water	3
MW-4	08/25/2003 10:35	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

09/09/2003 16:19

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: BTS# 030825-MD1

Shell Incident Number 97495539

Received: 08/26/2003 12:35

Site: 1155 Portola Ave. Livermore

Prep(s): 5030B	Test(s): 8260FAB
Sample ID: MW-1	Lab ID: 2003-08-0794 - 1
Sampled: 08/25/2003 11:15	Extracted: 9/3/2003 12:06
Matrix: Water	QC Batch#: 2003/09/03-1B.66

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	64	50	ug/L	1.00	09/03/2003 12:06	
Benzene	ND	0.50	ug/L	1.00	09/03/2003 12:06	
Toluene	ND	0.50	ug/L	1.00	09/03/2003 12:06	
Ethylbenzene	ND	0.50	ug/L	1.00	09/03/2003 12:06	
Total xylenes	ND	1.0	ug/L	1.00	09/03/2003 12:06	
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	1.00	09/03/2003 12:06	
Methyl tert-butyl ether (MTBE)	53	0.50	ug/L	1.00	09/03/2003 12:06	
Di-isopropyl Ether (DIPE)	ND	2.0	ug/L	1.00	09/03/2003 12:06	
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L	1.00	09/03/2003 12:06	
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L	1.00	09/03/2003 12:06	
Surrogate(s)						
1,2-Dichloroethane-d4	101.2	76-130	%	1.00	09/03/2003 12:06	
Toluene-d8	98.6	78-115	%	1.00	09/03/2003 12:06	

Severn Trent Laboratories, Inc.

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

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09/09/2003 16:19

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: BTS# 030825-MD1
Shell Incident Number 97495539

Received: 08/26/2003 12:35

Site: 1155 Portola Ave. Livermore

Prep(s): 5030B	Test(s): 8260FAB
Sample ID: MW-2	Lab ID: 2003-08-0794 - 2
Sampled: 08/25/2003 11:45	Extracted: 9/3/2003 12:30
Matrix: Water	QC Batch#: 2003/09/03-1B.66
Analysis Flag: o (See Legend and Note Section)	

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	500	ug/L	10.00	09/03/2003 12:30	
Benzene	ND	5.0	ug/L	10.00	09/03/2003 12:30	
Toluene	ND	5.0	ug/L	10.00	09/03/2003 12:30	
Ethylbenzene	ND	5.0	ug/L	10.00	09/03/2003 12:30	
Total xylenes	ND	10	ug/L	10.00	09/03/2003 12:30	
tert-Butyl alcohol (TBA)	ND	50	ug/L	10.00	09/03/2003 12:30	
Methyl tert-butyl ether (MTBE)	400	5.0	ug/L	10.00	09/03/2003 12:30	
Di-isopropyl Ether (DIPE)	ND	20	ug/L	10.00	09/03/2003 12:30	
Ethyl tert-butyl ether (ETBE)	ND	20	ug/L	10.00	09/03/2003 12:30	
tert-Amyl methyl ether (TAME)	ND	20	ug/L	10.00	09/03/2003 12:30	
Surrogate(s)						
1,2-Dichloroethane-d4	96.7	76-130	%	10.00	09/03/2003 12:30	
Toluene-d8	106.1	78-115	%	10.00	09/03/2003 12:30	

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

09/09/2003 16:19

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: BTS# 030825-MD1
Shell Incident Number 97495539

Received: 08/26/2003 12:35

Site: 1155 Portola Ave. Livermore

Prep(s): 5030B	Test(s): 8260FAB
Sample ID: MW-3	Lab ID: 2003-08-0794 - 3
Sampled: 08/25/2003 10:00	Extracted: 9/3/2003 12:54
Matrix: Water	QC Batch#: 2003/09/03-1B.66

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	76	50	ug/L	1.00	09/03/2003 12:54	g
Benzene	ND	0.50	ug/L	1.00	09/03/2003 12:54	
Toluene	ND	0.50	ug/L	1.00	09/03/2003 12:54	
Ethylbenzene	ND	0.50	ug/L	1.00	09/03/2003 12:54	
Total xylenes	ND	1.0	ug/L	1.00	09/03/2003 12:54	
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	1.00	09/03/2003 12:54	
Methyl tert-butyl ether (MTBE)	ND	0.50	ug/L	1.00	09/03/2003 12:54	
Di-isopropyl Ether (DIPE)	ND	2.0	ug/L	1.00	09/03/2003 12:54	
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L	1.00	09/03/2003 12:54	
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L	1.00	09/03/2003 12:54	
Surrogate(s)						
1,2-Dichloroethane-d4	94.7	76-130	%	1.00	09/03/2003 12:54	
Toluene-d8	100.2	78-115	%	1.00	09/03/2003 12:54	

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

09/09/2003 16:19

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: BTS# 030825-MD1
Shell Incident Number 97495539

Received: 08/26/2003 12:35

Site: 1155 Portola Ave. Livermore

Prep(s):	5030B	Test(s):	8260FAB
Sample ID:	MW-4	Lab ID:	2003-08-0794 - 4
Sampled:	08/25/2003 10:35	Extracted:	9/3/2003 13:18
Matrix:	Water	QC Batch#:	2003/09/03-1B.66

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	67	50	ug/L	1.00	09/03/2003 13:18	g
Benzene	ND	0.50	ug/L	1.00	09/03/2003 13:18	
Toluene	ND	0.50	ug/L	1.00	09/03/2003 13:18	
Ethylbenzene	ND	0.50	ug/L	1.00	09/03/2003 13:18	
Total xylenes	ND	1.0	ug/L	1.00	09/03/2003 13:18	
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	1.00	09/03/2003 13:18	
Methyl tert-butyl ether (MTBE)	ND	0.50	ug/L	1.00	09/03/2003 13:18	
Di-isopropyl Ether (DIPE)	ND	2.0	ug/L	1.00	09/03/2003 13:18	
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L	1.00	09/03/2003 13:18	
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L	1.00	09/03/2003 13:18	
Surrogate(s)						
1,2-Dichloroethane-d4	100.0	76-130	%	1.00	09/03/2003 13:18	
Toluene-d8	102.5	78-115	%	1.00	09/03/2003 13:18	

Severn Trent Laboratories, Inc.

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

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Attn.: Leon Gearhart

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

Project: BTS# 030825-MD1
Shell Incident Number 97495539

Received: 08/26/2003 12:35

Site: 1155 Portola Ave. Livermore

Batch QC Report

Prep(s): 5030B
Method Blank
MB: 2003/09/03-1B.66-025

Water

Test(s): 8260FAB
QC Batch # 2003/09/03-1B.66
Date Extracted: 09/03/2003 10:25

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	09/03/2003 10:25	
Benzene	ND	0.5	ug/L	09/03/2003 10:25	
Toluene	ND	0.5	ug/L	09/03/2003 10:25	
Ethylbenzene	ND	0.5	ug/L	09/03/2003 10:25	
Total xylenes	ND	1.0	ug/L	09/03/2003 10:25	
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	09/03/2003 10:25	
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	09/03/2003 10:25	
Di-isopropyl Ether (DIPE)	ND	2.0	ug/L	09/03/2003 10:25	
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L	09/03/2003 10:25	
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L	09/03/2003 10:25	
Surrogates(s)					
1,2-Dichloroethane-d4	90.8	76-130	%	09/03/2003 10:25	
Toluene-d8	100.4	78-115	%	09/03/2003 10:25	

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

09/09/2003 16:19

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: BTS# 030825-MD1
Shell Incident Number 97495539

Received: 08/26/2003 12:35

Site: 1155 Portola Ave. Livermore

Batch QC Report		
Prep(s): 5030B	Test(s): 8260FAB	
Laboratory Control Spike	Water	QC Batch # 2003/09/03-1B.66
LCS 2003/09/03-1B.66-039	Extracted: 09/03/2003	Analyzed: 09/03/2003 09:38
LCSD 2003/09/03-1B.66-001	Extracted: 09/03/2003	Analyzed: 09/03/2003 10:01

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	18.7	19.6	25	74.8	78.4	4.7	69-129	20		
Toluene	21.4	20.6	25	85.6	82.4	3.8	70-130	20		
Methyl tert-butyl ether (MTBE)	19.5	20.3	25	78.0	81.2	4.0	65-165	20		
Surrogates(s)										
1,2-Dichloroethane-d4	511	428	500	102.2	85.6		76-130			
Toluene-d8	534	495	500	106.8	99.0		78-115			

Severn Trent Laboratories, Inc.

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Legend and Notes

Analysis Flag

o

Reporting limits were raised due to high level of analyte present in the sample.

Result Flag

g

Hydrocarbon reported in the gasoline range does not match our gasoline standard.

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

09/09/2003 16:19

LAB: STL

SHELL Chain Of Custody Record

77313

Lab Identification (if necessary):
Address:
City, State, Zip:

Shell Project Manager to be invoiced:
 SCIENCE & ENGINEERING
 TECHNICAL SERVICES
 CRMT HOUSTON
Karen Petryna
2003-08-0794

INCIDENT NUMBER (S&E ONLY):
9 7 4 9 5 5 3 9
SAP or CRMT NUMBER (TS/CRMT):

PAGE: 1 of 1

CLIENT'S COMPANY: Blaine Tech Services	LAB CODE: BTSS	SITE ADDRESS (Street and City): 1155 Portola Ave., Livermore	STATUS: pending
ADDRESS: 1680 Rogers Avenue, San Jose, CA 95112	LAB DELIVERABLE TO (Responsible Party or Designee): Debbie Arnold	PHONE NO.: (408)224-4724	CONSULTANT PROJECT NO.: 070825-1101
PROJECT / CONTACT (Responsible Party or Designee): Leon Gearhart	SAMPLER NAME(S) (PH): John De Jong	EMAIL: darnold@khm1.com	BTS #
TELEPHONE: 408-573-0955	FAX: 408-573-7771	EMAIL: lgearhart@blainetech.com	LAB USE ONLY

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

LA - KWQCD REPORT FORMAT LIST AGENCY:

GC/MS MTBE CONFIRMATION: HIGHEST: _____ HIGHEST per BORING: _____ ALL: _____

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

REQUESTED ANALYSIS										FIELD NOTES: Container/Preservative or PID Readings of Laboratory Notes 3.3
TPH - Gas, Purgeable	BTEX	MTBE (8021B - 5ppb RL)	MTBE (8260B - 0.5ppb RL)	Oxygenates (S) by (8260B)						
										TEMPERATURE ON RECEIPT °C

LAB USE ONLY	Field Sample Identification	SAMPLING		MATRIX	NO. OF CONT.	TPH - Gas, Purgeable	BTEX	MTBE (8021B - 5ppb RL)	MTBE (8260B - 0.5ppb RL)	Oxygenates (S) by (8260B)
		DATE	TIME							
	MW-1	8/20/03	1115	W	3	✓	✓			✓
	MW-2		1145		3	✓	✓			✓
	MW-3		1000		3	✓	✓			✓
	MW-4		1035		3	✓	✓			✓

Released by (Signature): <i>John De Jong</i>	Received by (Signature): <i>Ron Herman</i>	Date: 8/20	Time: 1235
Released by (Signature): <i>Ron Herman</i>	Received by (Signature): <i>Rowley</i>	Date: 08/26/03	Time: 1427

DIRECTION: Write with Blue, Green or Black Ink. Yellow and Pink to Client.

OS&C Creative (774) 988-9702

WELLHEAD INSPECTION CHECKLIST

Page 1 of 1

Client 97495539 Date 8/25/03

Site Address 1155 Portola Ave, Livermore

Job Number 030825-MD1 Technician John DeLoay

Well ID	Well Inspected - No Corrective Action Required	Water Bailed From Wellbox	Wellbox Components Cleaned	Cap Replaced	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)	Repair Order Submitted
MW-1	✓							
MW-2	✓							
MW-3	✓							
MW-4	✓							

NOTES: _____

WELL GAUGING DATA

Project # 030825-MDI Date 8/25/03 Client 97495539

Site 1155 Portola Ave Livermore

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB TOB
W-1	2					42.52	59.02	
W-2	2					43.36	59.14	
W-3	2					41.12	54.48	
W-4	2					43.04	59.03	

SHELL WELL MONITORING DATA SHEET

BTS #: <u>030825-MDI</u>	Site: <u>97495539</u>
Sampler: <u>John DeLong</u>	Date: <u>8/25/03</u>
Well I.D.: <u>MW-1</u>	Well Diameter: <u>(2)</u> 3 4 6 8
Total Well Depth (TD): <u>59.02</u>	Depth to Water (DTW): <u>42.52</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>(BVI)</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <u>45.82</u>	

Purge Method: <u>Bailer</u>	Water: <u>Peristaltic</u>	Sampling Method: <u>Bailer</u>
<u>Disposable Bailer</u>	<u>Extraction Pump</u>	<u>Disposable Bailer</u>
<u>Positive Air Displacement</u>	Other: _____	Extraction Port
<u>Electric Submersible</u>		Dedicated Tubing
		Other: _____

$\underline{2.7} \text{ (Gals.)} \times \underline{3} = \underline{8.1} \text{ Gals.}$	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius ² * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius ² * 0.163														
1 Case Volume	Specified Volumes	Calculated Volume															

Time	Temp. (°F)	pH	Cond. (mS or μ S)	Turbidity (NTUs)	Gals. Removed	Observations
<u>1057</u>	<u>76.3</u>	<u>7.2</u>	<u>910</u>	<u>7200</u>	<u>2.7</u>	<u>Fam, cloudy</u>
<u>1101</u>	<u>73.0</u>	<u>7.1</u>	<u>890</u>	<u>7200</u>	<u>5.4</u>	
<u>1110</u>	<u>72.6</u>	<u>7.1</u>	<u>899</u>	<u>7200</u>	<u>8.1</u>	

Did well dewater? Yes <u>No</u>	Gallons actually evacuated: <u>8.1</u>	
Sampling Date: <u>8/25/03</u>	Sampling Time: <u>1115</u>	Depth to Water: <u>42.75</u>
Sample I.D.: <u>MW-1</u>	Laboratory: <u>STL</u> Other: _____	
Analyzed for: <u>TPH-G</u> <u>BTEX</u> MTBE TPH-D <u>Other</u> <u>oxygens by 8260</u>		
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	

Blaine Tech Services, Inc. 1680 Rogers Ave., San Jose, CA 95112 (800) 545-7558

SHELL WELL MONITORING DATA SHEET

BTS #: <u>030825-MD1</u>	Site: <u>97495539</u>
Sampler: <u>John DeLany</u>	Date: <u>8/25/03</u>
Well I.D.: <u>MW-2</u>	Well Diameter: <u>2</u> 3 4 6 8
Total Well Depth (TD): <u>59.14</u>	Depth to Water (DTW): <u>43.38</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVE</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <u>46.53</u>	

Purge Method: Bailer Waterra Sampling Method: Bailer
 Disposable Bailer Peristaltic Disposable Bailer
Positive Air Displacement Extraction Pump Extraction Port
 Electric Submersible Other _____ Dedicated Tubing

Other: _____

$\underline{2.6} \text{ (Gals.)} \times \underline{3} = \underline{7.8} \text{ Gals.}$	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius ² * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius ² * 0.163														
1 Case Volume	Specified Volumes	Calculated Volume															

Time	Temp (°F)	pH	Cond. (mS or <u>µS</u>)	Turbidity (NTUs)	Gals. Removed	Observations
1136	73.1	7.1	923	7200	2.6	tany cloudy
1138	72.2	7.1	924	7200	5.2	
1141	72.0	6.9	931	7200	7.8	

Did well dewater? Yes No Gallons actually evacuated: 7.8

Sampling Date: 8/25/03 Sampling Time: 1145 Depth to Water: 44.68

Sample I.D.: MW-2 Laboratory: STI Other _____

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

Blaine Tech Services, Inc. 1680 Rogers Ave., San Jose, CA 95112 (800) 545-7558

SHELL WELL MONITORING DATA SHEET

BTS #: <u>030825-MD1</u>	Site: <u>97495539</u>
Sampler: <u>John Debnay</u>	Date: <u>8/25/03</u>
Well I.D.: <u>MW-3</u>	Well Diameter: <u>(2)</u> 3 4 6 8 _____
Total Well Depth (TD): <u>54.48</u>	Depth to Water (DTW): <u>41.12</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <u>43.79</u>	

Purge Method: Bailer Waterra Sampling Method: Bailer
 Disposable Bailer Peristaltic Disposable Bailer
~~Positive Air Displacement~~ Extraction Pump Extraction Port
 Electric Submersible Other _____ Dedicated Tubing

Other: _____

2.2 (Gals.) X 3 = 6.6 Gals.
 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 ² * 0.163

Time	Temp (°F)	pH	Cond. (mS or (uS))	Turbidity (NTUs)	Gals. Removed	Observations
<u>944</u>	<u>76.6</u>	<u>6.8</u>	<u>1014</u>	<u>7200</u>	<u>2.2</u>	<u>Tan, Muddy, slight odor</u>
<u>946</u>	<u>72.7</u>	<u>6.9</u>	<u>1067</u>	<u>7200</u>	<u>4.4</u>	
<u>950</u>	<u>73.2</u>	<u>6.9</u>	<u>1083</u>	<u>7200</u>	<u>6.6</u>	

Did well dewater? Yes No Gallons actually evacuated: 6.6

Sampling Date: 8/25/03 Sampling Time: 1000 Depth to Water: 41.19

Sample I.D.: MW-3 Laboratory: STL Other: _____

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

Blaine Tech Services, Inc. 1680 Rogers Ave., San Jose, CA 95112 (800) 545-7558

SHELL WELL MONITORING DATA SHEET

BTS #: <u>030825-MD1</u>	Site: <u>97495539</u>
Sampler: <u>John DeLong</u>	Date: <u>8/25/03</u>
Well I.D.: <u>MW-c1</u>	Well Diameter: <u>3</u> 3 4 6 8
Total Well Depth (TD): <u>59.03</u>	Depth to Water (DTW): <u>43.04</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <u>46.24</u>	

Purge Method: Bailer Waterra Sampling Method: Bailer
 Disposable Bailer Peristaltic Disposable Bailer
Positive Air Displacement Extraction Pump Extraction Port
 Electric Submersible Other _____ Dedicated Tubing

2.6 (Gals.) X 3 = 7.8 Gals.
 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 ² * 0.163

Time	Temp (°F)	pH	Cond. (mS or <u>µS</u>)	Turbidity (NTUs)	Gals. Removed	Observations
1018	76.7	7.4	1264	7200	2.6	tan, murky
1023	74.8	7.4	1255	7200	5.2	
1026	73.6	7.4	1210	7200	7.8	

Did well dewater? Yes No Gallons actually evacuated: 7.8

Sampling Date: 8/25/03 Sampling Time: 10 35 Depth to Water: 43.12

Sample I.D.: MW-c1 Laboratory: STL Other _____

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