



# GETTLER-RYAN INC.

## TRANSMITTAL

TO: Ms. Eva Chu  
Alameda County Health Care Services  
1131 Harbor Bay Parkway  
Alameda, California 94502

DATE: ~~March 31, 1998~~ April 14, 1998  
G-R #: 180022

FROM: Deanna L. Harding  
Project Manager  
Gettler-Ryan Inc.  
6747 Sierra Court, Suite J  
Dublin, California 94568

RE: Unocal Service Station #7176  
7850 Amador Valley Blvd.  
Dublin, California

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
1	March 26, 1998	Groundwater Monitoring and Sampling Report First Quarter 1998-Event of January 19, 1998

### COMMENTS:

At the request of Tosco Marketing Company, we are providing you a copy of the above referenced report. The site is monitored and sampled on a semi-annual basis in January and July. If you have questions please contact the Tosco Project Manager, Ms. Tina R. Berry at (925) 277-2321.

Enclosure

cc: Mr. Keith Romstad, ERI, 74 Digital Drive, Suite 6, Novato, CA 94949

agency/7176trb.qmt

APR 14 1998  
230-446  
W. H. HARRIS



# GETTLER-RYAN INC.

March 26, 1998  
G-R Job #180022

Ms. Tina R. Berry  
Tosco Marketing Company  
2000 Crow Canyon Place, Suite 400  
San Ramon, California 94583

RE: First Quarter 1998 Groundwater Monitoring & Sampling Report  
Unocal Service Station #7176  
7850 Amador Valley Boulevard  
Dublin, California


Dear Ms. Berry:


This report documents the quarterly groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R). On January 19, 1998, field personnel monitored and sampled three wells (U-1, U-2 and U-3) at the above referenced site.

Static groundwater levels were measured and all wells were checked for the presence of separate-phase hydrocarbons. Separate-phase hydrocarbons were not present in the wells. Static water level data and groundwater elevations are summarized in Table 1. A Potentiometric Map is included as Figure 1.

Groundwater samples were collected from the monitoring wells as specified by G-R Standard Operating Procedure - Groundwater Sampling (attached). The field data sheets are also attached. The samples were analyzed by Sequoia Analytical. Analytical results are summarized in Table 1 and Dissolved Oxygen Concentrations are summarized in Table 2. A Concentration Map is included as Figure 2. The chain of custody document and laboratory analytical reports are also attached.

Sincerely,

  
Deanna L. Harding  
Project Manager

  
Stephen J. Carter  
Senior Geologist, R.G. No. 5577

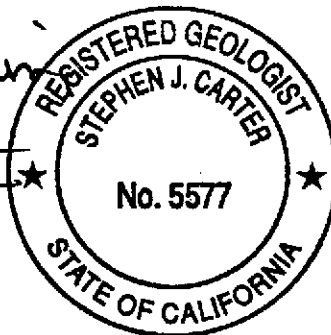


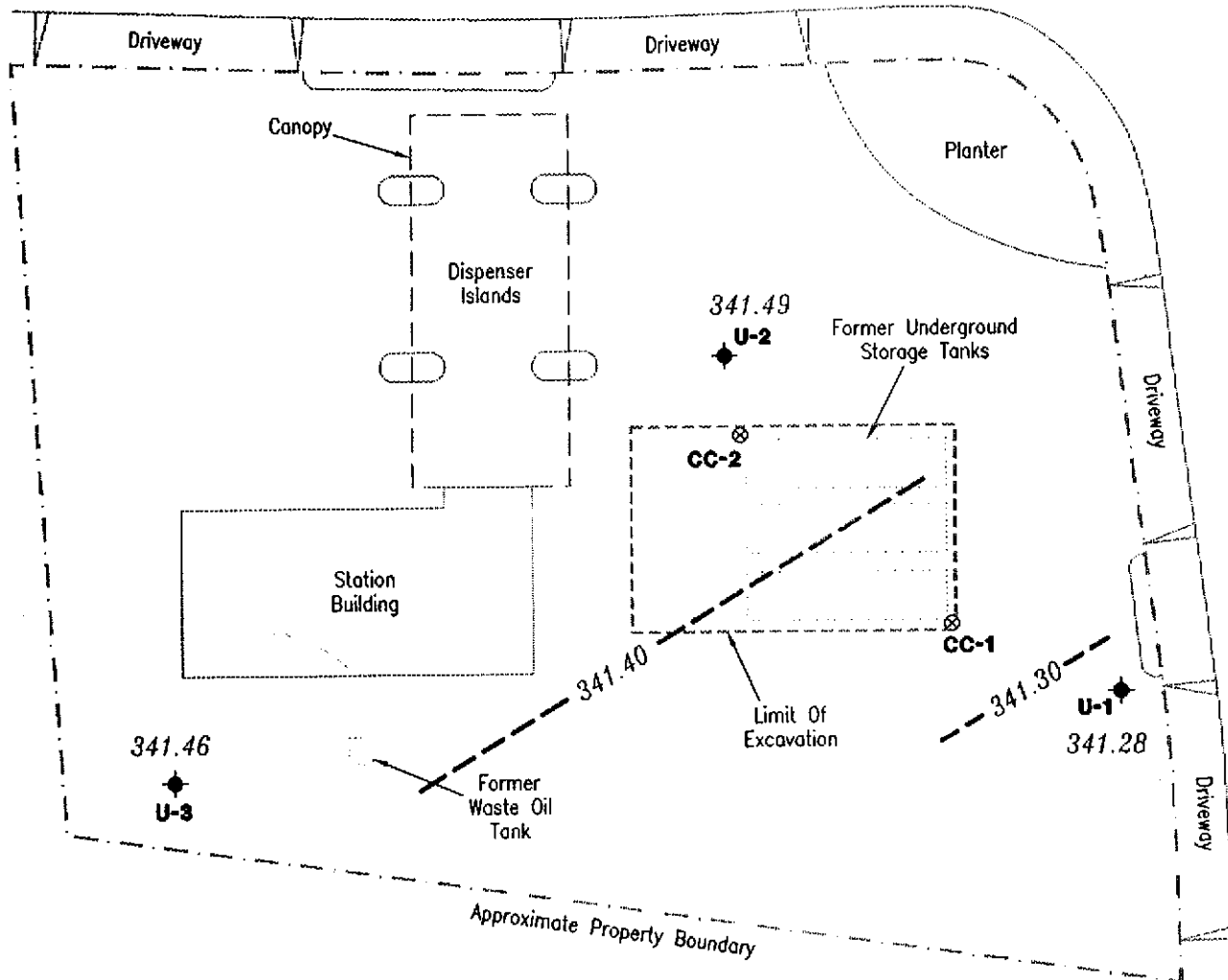
Figure 1: Potentiometric Map  
Figure 2: Concentration Map  
Table 1: Groundwater Monitoring Data and Analytical Results  
Table 2: Dissolved Oxygen Concentrations  
Attachments: Standard Operating Procedure - Groundwater Sampling  
Field Data Sheets  
Chain of Custody Document and Laboratory Analytical Reports

7176.qmi

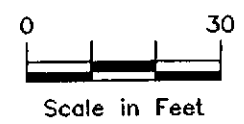
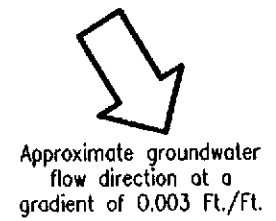
**AMADOR VALLEY BOULEVARD**

**EXPLANATION**

- ◆ Groundwater monitoring well
- ⊗ Conductor casing
- 99.99 Groundwater elevation in feet referenced to Mean Sea Level (MSL)
- 99.99 Groundwater elevation contour, dashed where inferred.



**REGIONAL STREET**



Source: Figure Modified From Drawing Provided By MPDS Services, Inc.



**Gettler - Ryan Inc.**  
6747 Sierra Ct., Suite J (510) 551-7555  
Dublin, CA 94568

**POTENTIOMETRIC MAP**  
Tosco (Unocal) Service Station No. 7176  
7850 Amador Valley Boulevard  
Dublin, California

FIGURE

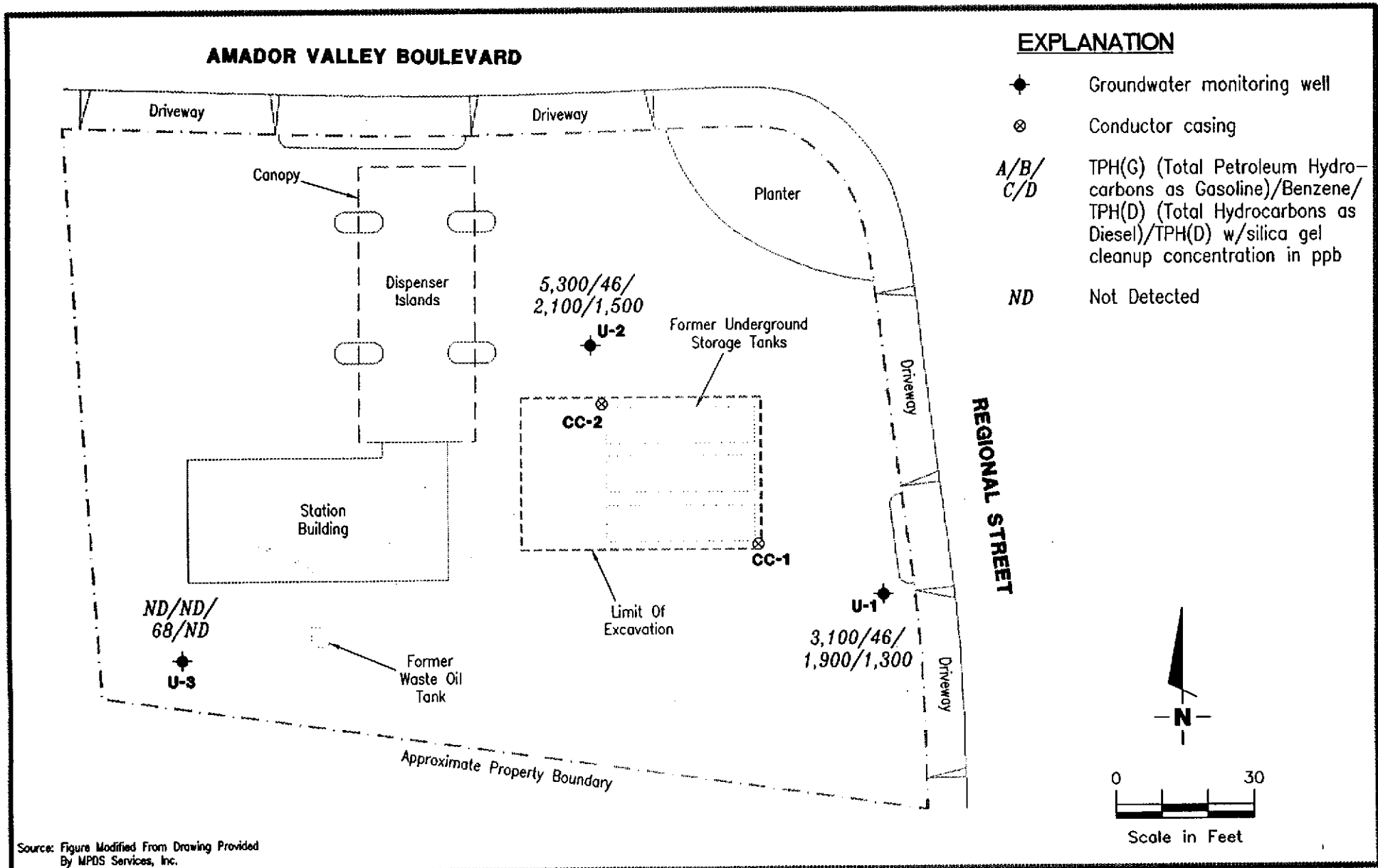
**1**

DATE  
January 19, 1998

REVISED DATE

JOB NUMBER  
180022

REVIEWED BY



Source: Figure Modified From Drawing Provided By MPDS Services, Inc.



**Gettler - Ryan Inc.**

6747 Sierra Ct., Suite J (510) 551-7555  
Dublin, CA 94568

**CONCENTRATION MAP**  
Tosco (Unocal) Service Station No. 7176  
7850 Amador Valley Boulevard  
Dublin, California

FIGURE

**2**

JOB NUMBER  
180022

REVIEWED BY

DATE  
January 19, 1998

REVISED DATE

**Table 1**  
**Groundwater Monitoring Data and Analytical Results**  
 Unocal Service Station #7176  
 7850 Amador Valley Boulevard  
 Dublin, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	TPH(D)*	TPH(G)	B	T	E	X	MTBE
				←-----ppb----->						
U-1  355.62	07/08/95			9,400 <sup>3</sup>	39,000	1,500	19	1,600	5,200	--
	10/12/95			4,200 <sup>5</sup>	33,000	1,400	ND	1,400	3,100	-- <sup>7</sup>
	01/11/96 <sup>1</sup>			8,200 <sup>5</sup>	8,300	690	11	680	1,500	-- <sup>8</sup>
	04/11/96 <sup>2</sup>			630 <sup>5</sup>	3,200	110	ND	180	290	790
	07/10/96			2,200 <sup>5</sup>	2,600	81	4.4	210	230	510
	10/30/96	15.85	339.77	560 <sup>5</sup>	2,200	67	19	140	150	360
	01/27/97	12.20	343.42	2,300 <sup>5</sup>	4,600	98	ND	360	290	150
	04/08/97	13.46	342.16	1,300 <sup>5</sup>	2,800	50	ND	220	140	ND
	07/17/97	15.30	340.32	460 <sup>6</sup>	2,300	30	4.5	140	94	190
	10/17/97	16.33	339.29	510 <sup>6</sup>	1,500	31	6.7	110	88	220
01/19/98	14.34	341.28	<sup>10</sup> 1,900/1,300 <sup>10</sup>	3,100	46	3.4	310	200	170	
U-2  356.59	07/08/95			4,700 <sup>3</sup>	17,000	430	ND	2,200	590	--
	10/12/95			3,600 <sup>5</sup>	24,000	310	60	1,900	190	-- <sup>7</sup>
	01/11/96 <sup>1</sup>			8,600 <sup>5</sup>	10,000	210	55	1,400	240	-- <sup>8</sup>
	04/11/96 <sup>2</sup>			1,900 <sup>5</sup>	7,700	130	27	1,100	110	340
	07/10/96			2,300 <sup>5</sup>	5,600	59	15	610	42	250
	10/30/96	16.82	339.77	1,800 <sup>5</sup>	7,700	67	35	1,000	54	260
	01/27/97	12.91	343.68	660 <sup>5</sup>	1,600	14	ND	130	7.0	100
	04/08/97	14.07	342.52	2,000 <sup>5</sup>	4,300	35	ND	400	16	ND
	07/17/97	15.96	340.63	1,300 <sup>6</sup>	6,200	17	22	410	ND	130
	10/17/97	17.03	339.56	1,400 <sup>6</sup>	7,100	71	26	520	50	ND
01/19/98	15.10	341.49	<sup>10</sup> 2,100/1,500 <sup>10</sup>	5,300	46	11	350	16	110	
U-3  358.13	07/08/95			710 <sup>3</sup>	1,100 <sup>4</sup>	0.57	2.1	1.7	2.4	--
	10/12/95			470 <sup>6</sup>	560	ND	0.87	0.7	1.1	--
	01/11/96 <sup>1</sup>			260 <sup>6</sup>	230	0.62	0.91	0.97	1.9	--
	04/11/96			ND	68 <sup>9</sup>	ND	ND	ND	ND	ND
	07/10/96			ND	ND	ND	ND	ND	ND	ND
	10/30/96	18.24	339.89	ND	70	ND	ND	ND	ND	ND
	01/27/97	14.41	343.72	ND	ND	ND	ND	ND	ND	ND
	04/08/97	15.73	342.40	ND	ND	ND	ND	ND	ND	ND

**Table 1**  
**Groundwater Monitoring Data and Analytical Results**  
 Unocal Service Station #7176  
 7850 Amador Valley Boulevard  
 Dublin, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	TPH(D)♦	TPH(G)	B	T	E	X	MTBE
				←—————ppb—————→						
U-3	07/17/97	17.54	340.59	ND	ND	ND	ND	ND	ND	ND
(cont)	10/17/97	18.64	339.49	63 <sup>6</sup>	ND	ND	ND	ND	ND	ND
	01/19/98	16.67	341.46	<sup>10</sup> 68/ND	ND	ND	ND	ND	ND	ND
<b>Trip Blank</b>										
TB-LB	01/19/98	--	--	--	ND	ND	ND	ND	ND	ND

**EXPLANATIONS:**

Groundwater monitoring data and laboratory analytical results prior to January 19, 1998, were compiled from reports prepared by MPDS Services, Inc.

TOC = Top of Casing elevation

DTW = Depth to Water

(ft.) = Feet

GWE = Groundwater Elevation

msl = Relative to mean sea level

TPH(D) = Total Petroleum Hydrocarbons as Diesel

TPH(G) = Total Petroleum Hydrocarbons as Gasoline

B = Benzene

T = Toluene

E = Ethylbenzene

X = Xylenes

MTBE = Methyl tertiary butyl ether

PNA = Polynuclear Aromatic Hydrocarbons

ppb = Parts per billion

ND = Not Detected

-- = Not Measured/Not Analyzed

\* The TOC elevations were surveyed relative to msl, per the Benchmark AM-STW1977 located at the easterly return at the most easterly corner of intersection at Amador Valley Blvd. and Starward Street (Elevation = 344.17 feet msl).

♦ Analytical results reported as follows: TPH(D)/TPH(D) with silica gel cleanup.

<sup>1</sup> PNA compound naphthalene was detected in well U-1 at a concentration of 320 ppb, and at a concentration of 310 ppb in well U-2. All other PNA compounds were ND in both wells.

<sup>2</sup> PNA compounds were ND.

<sup>3</sup> Laboratory report indicates unidentified hydrocarbons C9-C26.

<sup>4</sup> Laboratory report indicates gas and unidentified hydrocarbons >C12.

<sup>5</sup> Laboratory report indicates that the hydrocarbons detected appeared to be a diesel and non-diesel mixture.

<sup>6</sup> Laboratory report indicates that the hydrocarbons detected did not appear to be diesel.

<sup>7</sup> Laboratory has potentially identified the presence of MTBE at reportable levels in the groundwater sample collected from this well.

<sup>8</sup> Laboratory has identified the presence of MTBE at a level above or equal to the taste and odor threshold of 40 mg/L in the sample collected from this well.

<sup>9</sup> Laboratory report indicates the hydrocarbons detected did not appear to be gasoline.

<sup>10</sup> Laboratory report indicates unidentified hydrocarbons C9-C24.

*Depth to water and groundwater elevation history will be updated in future reports.*

**Table 2**  
**Dissolved Oxygen Concentrations**  
 Unocal Service Station #7176  
 7850 Amador Valley Boulevard  
 Dublin, California

Well ID	Date	Before Purging mg/L	After Purging mg/L
U-1	01/11/96	--	3.41
	04/11/96	3.77	3.78
	07/10/96 <sup>1</sup>	1.22	--
	10/30/96 <sup>1</sup>	1.41	--
	01/27/97 <sup>1</sup>	1.34	--
	04/08/97 <sup>1</sup>	2.09	--
	07/17/97 <sup>1</sup>	2.00	--
	10/17/97 <sup>1</sup>	1.86	--
	01/19/98	2.91	--
U-2	01/11/96	--	3.99
	04/11/96	3.32	3.41
	07/10/96 <sup>1</sup>	1.01	--
	10/30/96 <sup>1</sup>	1.42	--
	01/27/97 <sup>1</sup>	1.29	--
	04/08/97 <sup>1</sup>	1.69	--
	07/17/97 <sup>1</sup>	2.08	--
	10/17/97 <sup>1</sup>	1.80	--
	01/19/98	2.95	--
U-3	01/11/96	--	5.05
	04/11/96	5.16	4.96
	07/10/96 <sup>1</sup>	3.44	--
	10/30/96 <sup>1</sup>	2.18	--
	01/27/97 <sup>1</sup>	2.61	--
	04/08/97 <sup>1</sup>	3.73	--
	07/17/97 <sup>1</sup>	2.65	--
	10/17/97 <sup>1</sup>	2.44	--
	01/19/98	6.51	--
CCI	10/02/95	2.83	--

**EXPLANATIONS:**

-- = Not Measured/Not Analyzed  
 Results are in milligrams per liter (mg/L).

<sup>1</sup> The wells were not purged on this date.

**NOTES:**

Measurements were taken using a LaMotte DO4000 dissolved oxygen meter.

## STANDARD OPERATING PROCEDURE - GROUNDWATER SAMPLING

Gettler-Ryan Inc. field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analysis by the analytical laboratory. Prior to sample collection, the type of analysis to be performed is determined. Loss prevention of volatile compounds is controlled and sample preservation for subsequent analysis is maintained.

Prior to sampling, the presence or absence of free-phase hydrocarbons is determined using a MMC flexi-dip interface probe or equivalent. Product thickness, if present, is measured to the nearest 0.01 foot and is noted in the field notes. In addition, static water level measurements are collected with the interface probe and are also recorded in the field notes.

After water levels are collected and prior to sampling, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, suction, Grundfos), or polyvinyl chloride bailers. Temperature, pH and electrical conductivity are measured a minimum of three times during the purging. Purging continues until these parameters stabilize.

Groundwater samples are collected using disposable bailers. The water samples are transferred from the bailer into appropriate containers. Pre-preserved containers, supplied by analytical laboratories, are used when possible. When pre-preserved containers are not available, the laboratory is instructed to preserve the sample as appropriate. Duplicate samples are collected for the laboratory to use in maintaining quality assurance/quality control standards. The samples are labeled to include the job number, sample identification, collection date and time, analysis, preservation (if any), and the sample collector's initials. The water samples are placed in a cooler, maintained at 4°C for transport to the laboratory. Once collected in the field, all samples are maintained under chain of custody until delivered to the laboratory.

The chain of custody document includes the job number, type of preservation, if any, analysis requested, sample identification, date and time collected, and the sample collector's name. The chain of custody is signed and dated (including time of transfer) by each person who receives or surrenders the samples, beginning with the field personnel and ending with the laboratory personnel.

As requested by Tosco Marketing Company, the purge water and decontamination water generated during sampling activities is transported to Tosco - San Francisco Area Refinery, located in Rodeo, California.



## WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/  
 Facility # UNOCAL SS # 7176 Job#: 180022  
 Address: 7850 AMADOR VALLEY Blvd. Date: 1-19-98  
 City: DUBLIN Sampler: STEVE BALIAN

Well ID U-1 Well Condition: O.K.  
 Well Diameter 2 in. Hydrocarbon Thickness: 0 in. Amount Bailed (product/water): \_\_\_\_\_ (gal.)  
 Total Depth 27.85 ft. 

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

  
 Depth to Water 14.34 ft.

\_\_\_\_\_ X VF \_\_\_\_\_ = \_\_\_\_\_ X 3 (case volume) = Estimated Purge Volume: \_\_\_\_\_ (gal.)

Purge Equipment: Disposable Bailer Bailer Stack Suction Grundfos Other: \_\_\_\_\_  
 Sampling Equipment: Disposable Bailer Bailer Pressure Bailer Grab Sample Other: \_\_\_\_\_

Starting Time: 11:45 Weather Conditions: CLOUD, SHOWER  
 Sampling Time: 11:50 Water Color: NOT CLEAR Odor: YES  
 Purging Flow Rate: \_\_\_\_\_ gpm. Sediment Description: \_\_\_\_\_  
 Did well de-water? \_\_\_\_\_ If yes; Time: \_\_\_\_\_ Volume: \_\_\_\_\_ (gal.)

Time	Volume (gal.)	pH	Conductivity $\mu$ mhos/cm	Temperature $^{\circ}$ C	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>BEFORE PURGE</u>					<u>2.91</u>		

### LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES

COMMENTS: ORC IN THE WELL

**WELL MONITORING/SAMPLING  
FIELD DATA SHEET**

Client/  
Facility # UNOCAL SS # 7176 Job#: 180022  
Address: 7850 AMADOR VALLEY BLVD Date: 1-19-98  
City: DUBLIN Sampler: STEVE BALIAN

Well ID U-2 Well Condition: OK  
Well Diameter 2 in. Hydrocarbon Amount Bailed  
Thickness: Ø in. (product/water): \_\_\_\_\_ (gal.)  
Total Depth 26.07 ft.  
Depth to Water 15.10 ft.

Volume	2" = 0.17	3" = 0.38	4" = 0.66
Factor (VF)	6" = 1.50	12" = 5.80	

\_\_\_\_\_ X VF \_\_\_\_\_ = \_\_\_\_\_ X 3 (case volume) = Estimated Purge Volume: \_\_\_\_\_ (gal.)

Purge Equipment: Disposable Bailer  
Bailer  
Stack  
Suction  
Grundfos  
Other: \_\_\_\_\_

Sampling Equipment: Disposable Bailer  
Bailer  
Pressure Bailer  
Grab Sample  
Other: \_\_\_\_\_

Starting Time: 12:15 Weather Conditions: CLOUD, SHOWER  
Sampling Time: 12:20 Water Color: NOT CLEAR Odor: YES  
Purging Flow Rate: \_\_\_\_\_ gpm. Sediment Description: \_\_\_\_\_  
Did well de-water? \_\_\_\_\_ If yes; Time: \_\_\_\_\_ Volume: \_\_\_\_\_ (gal.)

Time	Volume (gal.)	pH	Conductivity $\mu$ mhos/cm	Temperature °C	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>BEFORE PURGE</u>					<u>2.95</u>		

**LABORATORY INFORMATION**

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES

COMMENTS: ORC IN THE WELL

## WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/  
 Facility # UNOCAL SS #7176 Job#: 180022  
 Address: 7850 AMADOR VALLEY BLVD. Date: 1-19-98  
 City: DUBLIN Sampler: STEVE BAIAN

Well ID U-3 Well Condition: ONE FLANGE IS BROKEN  
 Well Diameter 2 in. Hydrocarbon Amount Bailed  
 Thickness: 0 in. (product/water): \_\_\_\_\_ (gal.)  
 Total Depth 28.54 ft.  
 Depth to Water 16.67 ft.

Volume	2" = 0.17	3" = 0.38	4" = 0.66
Factor (VF)	6" = 1.50	12" = 5.80	

\_\_\_\_\_ X VF \_\_\_\_\_ = \_\_\_\_\_ X 3 (case volume) = Estimated Purge Volume: \_\_\_\_\_ (gal.)

Purge Equipment: Disposable Bailer  
 Bailer  
 Stack  
 Suction  
 Grundfos  
 Other: \_\_\_\_\_

Sampling Equipment: Disposable Bailer  
 Bailer  
 Pressure Bailer  
 Grab Sample  
 Other: \_\_\_\_\_

Starting Time: 11:20 Weather Conditions: CLOUD, SHOWER  
 Sampling Time: 11:25 Water Color: NOT CLEAR Odor: \_\_\_\_\_  
 Purging Flow Rate: \_\_\_\_\_ gpm. Sediment Description: \_\_\_\_\_  
 Did well de-water? \_\_\_\_\_ If yes; Time: \_\_\_\_\_ Volume: \_\_\_\_\_ (gal.)

Time	Volume (gal.)	pH	Conductivity $\mu$ mhos/cm	Temperature $^{\circ}$ C	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>BEFORE PURGE</u>					<u>6.51</u>		

### LABORATORY INFORMATION

SAMPLE ID	(#)-CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES

COMMENTS: ORC IN THE WELL

# Chain-of-Custody-Record



Facility Number UNOCAL # 7176  
 Facility Address 7850 Amador Valley Blvd, Dublin  
 Consultant Project Number 180022  
 Consultant Name Gettler-Ryan Inc. (G-R Inc.) **SAME DAY PICKUP**  
 Address 6747 Sierra Court, Suite J, Dublin, CA 94568  
 Project Contact (Name) Deanna L. Harding  
 (Phone) 510-551-7555 (Fax Number) 510-551-7888

Contact (Name) MS. Tina Berry  
 (Phone) 570-277-2321  
 Laboratory Name Sequoia Analytical  
 Laboratory Reference Number \_\_\_\_\_  
 Samples Collected by (Name) STEVE BALIAN  
 Collection Date 1-19-98  
 Signature *[Signature]*

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Cool (Yes or No)	Analyses To Be Performed										DO NOT BILL TB-LB ANALYSIS																				
								TPH Gas + BTEX w/MTE (8016)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd, Cr, Pb, Zn, Ni (ICAP or AA)																							
TB-LB	1	1	W	G		Hcl.	Y	X																														
U-1	2	3	"	"	11:50	"	Y	X	X																													
U-2	3	3	"	"	12:20	"	Y	X	X																													
U-3	4	3	"	"	11:25	"	Y	X	X																													

Remarks  
 TPH-diesel-  
 Please Run  
 Silica-gel  
 cleanup on  
 Diesel kits  
 Thank you  
*[Signature]*

Relinquished By (Signature) <u>STEVE BALIAN</u>	Organization <u>G-R Inc.</u>	Date/Time <u>1-19-98 13:20</u>	Received By (Signature) <u>D. Harding</u>	Organization <u>GR</u>	Date/Time <u>1/19/98</u>	Turn Around Time (Circle Choice) 24 Hrs. 48 Hrs. 5 Days 10 Days <u>As Contracted</u>
Relinquished By (Signature) <i>[Signature]</i>	Organization <u>GR</u>	Date/Time <u>1/19/98</u>	Received By (Signature) <i>[Signature]</i>	Organization <u>SEQ</u>	Date/Time <u>1/20/98/124</u>	
Relinquished By (Signature) <i>[Signature]</i>	Organization <u>SEQ</u>	Date/Time <u>1/20/98</u>	Received For Laboratory By (Signature) <i>[Signature]</i>		Date/Time <u>1/20/98 12:35</u>	



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal 7176, 180022 Sample Descript: TB-LB Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9801A72-01	Sampled: 01/19/98 Received: 01/20/98 Analyzed: 01/29/98 Reported: 02/05/98
Attention: Deanna Harding		

QC Batch Number: GC012998BTEX01A  
Instrument ID: GCHP01

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	82

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Mike Gregory  
Project Manager





Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal 7176, 180022 Sample Descript: U-1 Matrix: LIQUID Analysis Method: EPA 8015 Mod Lab Number: 9801A72-02	Sampled: 01/19/98 Received: 01/20/98 Extracted: 01/21/98 Analyzed: 01/23/98 Reported: 02/05/98
Attention: Deanna Harding		


QC Batch Number: GC012198OHBPEXA  
Instrument ID: GCHP4B

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel Chromatogram Pattern: Unidentified HC	50	1900 C9-C24
Surrogates n-Pentacosane (C25)	Control Limits % 50                      150	% Recovery 94

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**




---

Mike Gregory  
Project Manager





Gettler Ryan/Geostrategies  
6747 Sierra Court Suite J  
Dublin, CA 94568

Client Proj. ID: Unocal 7176, 180022  
Sample Descript: U-1  
Matrix: LIQUID  
Analysis Method: EPA 8015 Mod  
Lab Number: 9802029-01

Sampled: 01/19/98  
Received: 01/20/98  
Extracted: 01/21/98  
Analyzed: 02/10/98  
Reported: 02/11/98

QC Batch Number: GC0201980HBPEXA  
Instrument ID: GCHP4B

**Total Extractable Petroleum Hydrocarbons (TEPH) with Silica Gel Cleanup**

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	1300
Chromatogram Pattern: Unidentified HC		C9-C24
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
n-Pentacosane (C25)	50 150	75

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

Mike Gregory  
Project Manager





Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal 7176, 180022 Sample Descript: U-1 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9801A72-02	Sampled: 01/19/98 Received: 01/20/98 Analyzed: 01/30/98 Reported: 02/05/98
Attention: Deanna Harding		


QC Batch Number: GC013098BTEX18A  
Instrument ID: GCHP18

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	250	3100
Methyl t-Butyl Ether	12	170
Benzene	2.5	46
Toluene	2.5	3.4
Ethyl Benzene	2.5	310
Xylenes (Total)	2.5	200
Chromatogram Pattern:		GAS
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	122

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
\_\_\_\_\_  
Mike Gregory  
Project Manager







Gettler Ryan/Geostrategies	Client Proj. ID: Unocal 7176, 180022	Sampled: 01/19/98
6747 Sierra Court Suite J	Sample Descript: U-2	Received: 01/20/98
Dublin, CA 94568	Matrix: LIQUID	Extracted: 01/21/98
Attention: Deanna Harding	Analysis Method: EPA 8015 Mod	Analyzed: 01/23/98
	Lab Number: 9801A72-03	Reported: 02/05/98


QC Batch Number: GC012198OHBPEXA  
Instrument ID: GCHP4B

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	2100
Chromatogram Pattern: Unidentified HC		C9-C24
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
n-Pentacosane (C25)	50 150	97

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
\_\_\_\_\_  
Mike Gregory  
Project Manager





Gettler Ryan/Geostrategies  
6747 Sierra Court Suite J  
Dublin, CA 94568

Client Proj. ID: Unocal 7176, 180022  
Sample Descript: U-2  
Matrix: LIQUID  
Analysis Method: EPA 8015 Mod  
Lab Number: 9802029-02

Sampled: 01/19/98  
Received: 01/20/98  
Extracted: 01/21/98  
Analyzed: 02/10/98  
Reported: 02/11/98

QC Batch Number: GC0201980HBPEXA  
Instrument ID: GCHP48

**Total Extractable Petroleum Hydrocarbons (TEPH) with Silica Gel Cleanup**

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	1500
Chromatogram Pattern: Unidentified HC		C9-C24
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
n-Pentacosane (C25)	50 150	75

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Mike Gregory  
Project Manager





Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal 7176, 180022 Sample Descript: U-2 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9801A72-03	Sampled: 01/19/98 Received: 01/20/98  Analyzed: 02/02/98 Reported: 02/05/98
Attention: Deanna Harding		

QC Batch Number: GC020298BTEX06A  
Instrument ID: GCHP06

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	500	5300
Methyl t-Butyl Ether	25	110
Benzene	5.0	46
Toluene	5.0	11
Ethyl Benzene	5.0	350
Xylenes (Total)	5.0	16
Chromatogram Pattern:		GAS

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	100

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

Mike Gregory  
Project Manager





Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal 7176, 180022 Sample Descript: U-3 Matrix: LIQUID Analysis Method: EPA 8015 Mod Lab Number: 9801A72-04	Sampled: 01/19/98 Received: 01/20/98 Extracted: 01/21/98 Analyzed: 01/23/98 Reported: 02/05/98
Attention: Deanna Harding		

QC Batch Number: GC012198OHBPEXA  
Instrument ID: GCHP4B

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel Chromatogram Pattern: Unidentified HC	50	68  C9-C24
<b>Surrogates</b> n-Pentacosane (C25)	<b>Control Limits %</b> 50                      150	<b>% Recovery</b> 93

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Mike Gregory  
Project Manager





Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal 7176, 180022 Sample Descript: U-3 Matrix: LIQUID Analysis Method: EPA 8015 Mod Lab Number: 9802029-03	Sampled: 01/19/98 Received: 01/20/98 Extracted: 01/21/98 Analyzed: 02/10/98 Reported: 02/11/98
Attention: Deanna Harding		


QC Batch Number: GC0201980HBPEXA  
Instrument ID: GCHP4B

**Total Extractable Petroleum Hydrocarbons (TEPH) with Silica Gel Cleanup**

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel Chromatogram Pattern:	50	N.D.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
n-Pentacosane (C25)	50                      150	78

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
\_\_\_\_\_  
Mike Gregory  
Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal 7176, 180022 Sample Descript: U-3 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9801A72-04	Sampled: 01/19/98 Received: 01/20/98 Analyzed: 01/29/98 Reported: 02/05/98
Attention: Deanna Harding		

QC Batch Number: GC012998BTEX18A  
Instrument ID: GCHP18

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	79

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

Mike Gregory  
Project Manager





Sequoia  
Analytical

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Gettler Ryan/Geostrategies  
6747 Sierra Court Suite J  
Dublin, CA 94568  
Attention: Deanna Harding

Client Proj. ID: Unocal 7176, 180022  
Lab Proj. ID: 9801A72

Received: 01/20/98  
Reported: 02/05/98

### LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 14 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

pH analysis:

The voas had a pH = 1

SEQUOIA ANALYTICAL

  
Mike Gregory  
Project Manager





# Sequoia Analytical

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Gettler Ryan/Geostrategies  
 6747 Sierra Court, Ste J  
 Dublin, CA 94568  
 Attention: Deanna Harding

Client Project ID: Unocal 7176, 180022  
 Matrix: Liquid

Work Order #: 9801A72 -01

Reported: Feb 6, 1998

## QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC012998BTEX01A	GC012998BTEX01A	GC012998BTEX01A	GC012998BTEX01A	GC012998BTEX01A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	R. Geckler	R. Geckler	R. Geckler	R. Geckler	R. Geckler
MS/MSD #:	980197103	980197103	980197103	980197103	980197103
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	1/29/98	1/29/98	1/29/98	1/29/98	1/29/98
Analyzed Date:	1/29/98	1/29/98	1/29/98	1/29/98	1/29/98
Instrument I.D.#:	GCHP1	GCHP1	GCHP1	GCHP1	GCHP1
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	13	13	13	38	81
MS % Recovery:	130	130	130	127	135
Dup. Result:	12	12	12	37	78
MSD % Recov.:	120	120	120	123	130
RPD:	8.0	8.0	8.0	2.7	3.8
RPD Limit:	0-25	0-25	0-25	0-25	0-25

LCS #:	BLK012998	BLK012998	BLK012998	BLK012998	BLK012998
Prepared Date:	1/29/98	1/29/98	1/29/98	1/29/98	1/29/98
Analyzed Date:	1/29/98	1/29/98	1/29/98	1/29/98	1/29/98
Instrument I.D.#:	GCHP1	GCHP1	GCHP1	GCHP1	GCHP1
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	12	12	12	37	76
LCS % Recov.:	120	120	120	123	127

MS/MSD	60-140	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130	70-130
Control Limits					

**Please Note:**

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

Mike Gregory  
 Project Manager

\*\* MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9801A72.GET <1>







# Sequoia Analytical

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Gettler Ryan/Geostrategies  
6747 Sierra Court, Ste J  
Dublin, CA 94568  
Attention: Deanna Harding

Client Project ID: Unocal 7176, 180022  
Matrix: Liquid

Work Order #: 9801A72-02

Reported: Feb 6, 1998

## QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC013098BTEX18A	GC013098BTEX18A	GC013098BTEX18A	GC013098BTEX18A	GC013098BTEX18A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	980191606	980191606	980191606	980191606	980191606
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	1/30/98	1/30/98	1/30/98	1/30/98	1/30/98
Analyzed Date:	1/30/98	1/30/98	1/30/98	1/30/98	1/30/98
Instrument I.D.#:	GCHP18	GCHP18	GCHP18	GCHP18	GCHP18
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	8.1	8.1	8.0	25	52
MS % Recovery:	81	81	80	83	87
Dup. Result:	8.1	8.1	8.4	25	53
MSD % Recov.:	81	81	84	83	88
RPD:	0.0	0.0	4.9	0.0	1.9
RPD Limit:	0-25	0-25	0-25	0-25	0-25

LCS #:	BLK013098	BLK013098	BLK013098	BLK013098	BLK013098
Prepared Date:	1/30/98	1/30/98	1/30/98	1/30/98	1/30/98
Analyzed Date:	1/30/98	1/30/98	1/30/98	1/30/98	1/30/98
Instrument I.D.#:	GCHP18	GCHP18	GCHP18	GCHP18	GCHP18
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	8.1	8.6	8.1	25	53
LCS % Recov.:	81	86	81	83	88

MS/MSD	60-140	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130	70-130
Control Limits					

**Please Note:**

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

Mike Gregory  
Project Manager

\*\* MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9801A72.GET <2>





Gettler Ryan/Geostrategies  
6747 Sierra Court, Ste J  
Dublin, CA 94568  
Attention: Deanna Harding

Client Project ID: Unocal 7176, 180022  
Matrix: Liquid

Work Order #: 9801A72-03

Reported: Feb 6, 1998

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC020298BTEX06A	GC020298BTEX06A	GC020298BTEX06A	GC020298BTEX06A	GC020298BTEX06A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	9801B5811	9801B5811	9801B5811	9801B5811	9801B5811
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	2/2/98	2/2/98	2/2/98	2/2/98	2/2/98
Analyzed Date:	2/2/98	2/2/98	2/2/98	2/2/98	2/2/98
Instrument I.D.#:	GCHP6	GCHP6	GCHP6	GCHP6	GCHP6
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	10	10	11	31	41
MS % Recovery:	100	100	110	103	68
Dup. Result:	11	11	11	33	43
MSD % Recov.:	110	110	110	110	72
RPD:	9.5	9.5	0.0	6.3	4.8
RPD Limit:	0-25	0-25	0-25	0-25	0-25

LCS #:	BLK020298	BLK020298	BLK020298	BLK020298	BLK020298
Prepared Date:	2/2/98	2/2/98	2/2/98	2/2/98	2/2/98
Analyzed Date:	2/2/98	2/2/98	2/2/98	2/2/98	2/2/98
Instrument I.D.#:	GCHP6	GCHP6	GCHP6	GCHP6	GCHP6
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	11	11	12	25	46
LCS % Recov.:	110	110	120	83	77

MS/MSD	60-140	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130	70-130
Control Limits					

**SEQUOIA ANALYTICAL**

Mike Gregory  
Project Manager

**Please Note:**

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

\*\* MS= Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

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Gettler Ryan/Geostrategies  
6747 Sierra Court, Ste J  
Dublin, CA 94568  
Attention: Deanna Harding

Client Project ID: Unocal 7176, 180022  
Matrix: Liquid

Work Order #: 9801A72-04

Reported: Feb 6, 1998

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC012998BTEX18A	GC012998BTEX18A	GC012998BTEX18A	GC012998BTEX18A	GC012998BTEX18A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	C. Demartini	C. Demartini	C. Demartini	C. Demartini	C. Demartini
MS/MSD #:	980197103	980197103	980197103	980197103	980197103
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	1/29/98	1/29/98	1/29/98	1/29/98	1/29/98
Analyzed Date:	1/29/98	1/29/98	1/29/98	1/29/98	1/29/98
Instrument I.D.#:	GCHP18	GCHP18	GCHP18	GCHP18	GCHP18
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	10	10	10	31	65
MS % Recovery:	100	100	100	103	108
Dup. Result:	10	10	10	32	67
MSD % Recov.:	100	100	100	107	112
RPD:	0.0	0.0	0.0	3.2	3.0
RPD Limit:	0-25	0-25	0-25	0-25	0-25

LCS #:	BLK012998	BLK012998	BLK012998	BLK012998	BLK012998
Prepared Date:	1/29/98	1/29/98	1/29/98	1/29/98	1/29/98
Analyzed Date:	1/29/98	1/29/98	1/29/98	1/29/98	1/29/98
Instrument I.D.#:	GCHP18	GCHP18	GCHP18	GCHP18	GCHP18
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	11	11	11	33	68
LCS % Recov.:	110	110	110	110	113

MS/MSD	60-140	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130	70-130
Control Limits					

**Please Note:**

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantiles of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

**SEQUOIA ANALYTICAL**

Mike Gregory  
Project Manager

\*\* MS= Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9801A72.GET <4>





Gettler Ryan/Geostrategies  
6747 Sierra Court, Ste J  
Dublin, CA 94568  
Attention: Deanna Harding

Client Project ID: Unocal 7176, 180022  
Matrix: Liquid  
Work Order #: 9801A72-02-04

Reported: Feb 6, 1998

**QUALITY CONTROL DATA REPORT**

Analyte: Diesel

QC Batch#: GC0121980HBPEXA  
Analy. Method: EPA 8015M  
Prep. Method: EPA 3510

Analyst: G. Fish  
MS/MSD #: 980197101  
Sample Conc.: N.D.  
Prepared Date: 1/21/98  
Analyzed Date: 1/22/98  
Instrument I.D.#: GCHP4  
Conc. Spiked: 1000 µg/L

Result: 860  
MS % Recovery: 86

Dup. Result: 750  
MSD % Recov.: 75

RPD: 14  
RPD Limit: 0-50

LCS #: BLK012198

Prepared Date: 1/21/98  
Analyzed Date: 1/22/98  
Instrument I.D.#: GCHP4  
Conc. Spiked: 1000 µg/L

LCS Result: 730  
LCS % Recov.: 73

MS/MSD 50-150  
LCS 60-140  
Control Limits

**SEQUOIA ANALYTICAL**

Mike Gregory  
Project Manager

**Please Note:**

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9801A72.GET <5>



Sequoia  
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FAX (916) 921-0100

Gettler Ryan/Geostrategies  
6747 Sierra Court Suite J  
Dublin, CA 94568  
Attention: Deanna Harding

Client Proj. ID: Unocal 7176, 180022

Lab Proj. ID: 9802029

Received: 01/20/98

Reported: 02/11/98

### LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 5 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

SEQUOIA ANALYTICAL

Mike Gregory  
Project Manager





# Sequoia Analytical

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 FAX (916) 921-0100

Gettler Ryan/Geostrategies Client Project ID: Unocal 7176, 180022  
 6747 Sierra Court, Ste J Matrix: Liquid  
 Dublin, CA 94568  
 Attention: Deanna Harding Work Order #: 9802029 -01-03 Reported: Feb 12, 1998

## QUALITY CONTROL DATA REPORT

**Analyte:** Diesel  
**QC Batch#:** GC0121980HBPEXA SG  
**Analy. Method:** EPA 8015M  
**Prep. Method:** EPA 3510

**Analyst:** A. Porter  
**MS/MSD #:** BLK012198A SG  
**Sample Conc.:** N.D.  
**Prepared Date:** 1/21/98  
**Analyzed Date:** 2/10/98  
**Instrument I.D.#:** GCHP4

**Surr Result:** 69  
**% Recovery:** 69

**LCS #:** BLK012198As SG

**Prepared Date:** 1/21/98  
**Analyzed Date:** 2/10/98  
**Instrument I.D.#:** GCHP4  
**Conc. Spiked:** 1000 µg/L

**LCS Result:** 440  
**LCS % Recov.:** 44

<b>MS/MSD</b>	50-150
<b>LCS</b>	60-140
<b>Control Limits</b>	

**Please Note:**  
 The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

*Mike Gregory*  
 Mike Gregory  
 Project Manager

\*\* MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

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