BC
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GETTLER-RYAN INC.

ENVIRONMENTAL
PROTECTION

93 APR -6 PM 2:26

TRANSMITTAL

March 22, 1999
G-R #:180061

TO: Mr. David B. De Witt
Tosco Marketing Company
2000 Crow Canyon Place, Suite 400
San Ramon, California 94583

CC: Mr. David Vossler
Gettler-Ryan Inc.
Novato, California

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

RE: Tosco (Unocal) SS #5325
3220 Lakeshore Avenue
Oakland, California

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
1	March 23, 1999	Groundwater Monitoring and Sampling Report Fourth Quarter 1998 - Event of December 28, 1998

COMMENTS:

This report is being sent to you for your review/comment, prior to being distributed on your behalf. If no comments are received by ***April 5, 1999***, this report will be distributed to the following:

Enclosure

cc: Alameda County Health Care Services
1131 Harbor Bay Parkway
Alameda, California 94502

agency/5325dbd.qmt

GETTLER-RYAN INC.

March 23, 1999
G-R Job #180061

Mr. David B. De Witt
Tosco Marketing Company
2000 Crow Canyon Place, Suite 200
San Ramon, California 94583

RE: Fourth Quarter 1998 Groundwater Monitoring & Sampling Report
Tosco (Unocal) Service Station #5325
3220 Lakeshore Avenue
Oakland, California

Dear Mr. De Witt:

This report documents the quarterly groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R). On December 28, 1998, field personnel monitored and sampled six wells (U-1 through U-6) 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 any wells. Static water level data and groundwater elevations are summarized in Table 1. Dissolved Oxygen Concentrations are summarized in Table 3. A Potentiometric Map is included as Figure 1.

Groundwater samples were collected from the monitoring wells as specified by 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 Tables 1 and 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 Coordinator

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

REGISTERED GEOLOGIST
STEPHEN J. CARTER
No. 5577
STATE OF CALIFORNIA

Figure 1: Potentiometric Map
Figure 2: Concentration Map
Table 1: Groundwater Monitoring Data and Analytical Results
Table 2: Groundwater Analytical Results
Table 3: Dissolved Oxygen Concentrations
Attachments: Standard Operating Procedure - Groundwater Sampling
Field Data Sheets
Chain of Custody Document and Laboratory Analytical Reports

5325.qml

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #5325

3220 Lakeshore Avenue

Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (ft.)	Product Thickness (ft.)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
U-1	08/10/90	--	--	--	690	38	75	8.6	130	--
	01/07/91	--	--	--	250	22	16	4.2	17	--
	04/01/91	--	--	--	160	13	8.6	1.0	15	--
	07/03/91	--	--	--	140	21	4.3	0.36	17	--
	10/09/91	--	--	--	ND	ND	ND	ND	ND	--
	02/12/92	--	--	--	250	ND	ND	ND	ND	--
	05/05/92	--	--	--	230	1.2	ND	ND	ND	--
	06/11/92	--	--	--	1,000	80	1.4	6.7	41	--
	08/20/92	--	--	--	400[1]	1.0	ND	ND	0.6	--
	02/22/93	--	--	--	34,000	1,400	5,500	910	7,300	--
	05/07/93	--	--	--	8,700	600	240	650	3,300	--
	08/08/93	--	--	--	4,900[2]	79	ND	832	270	--
5.32	11/16/93	8.61	-3.29	0.00	690[3]	ND	ND	ND	ND	--
	02/16/94	8.54	-3.22	0.00	6,800[4]	ND	ND	ND	ND	--
8.46	06/22/94	8.39	0.07	0.00	200	ND	ND	5.9	21	--
	09/22/94	8.66	-0.20	0.00	6,100[3]	ND	ND	ND	ND	--
	12/24/94	8.04	0.42	0.00	50,000	2,500	9,700	2,400	17,000	--
	03/25/95	7.72	1.02**	0.37	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				--	--
	06/21/95	9.30	-0.69**	0.20	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				--	--
	09/19/95	9.29	-0.53**	0.40	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				--	--
	12/19/95	8.98	-0.50**	0.03	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				--	--
	03/18/96	8.25	0.21	0.00	27,000	ND	2,300	1,400	11,000	4,900
	06/27/96	7.92	0.54	<0.01	120,000	540	4,300	2,600	26,000	ND
	09/26/96	9.10	-0.62**	0.02	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				--	--
	12/09/96	6.88	1.60**	0.03	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				--	--
	03/14/97	9.02	-0.15**	0.55	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				--	--
	06/30/97	8.41	0.07**	0.02	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				--	--
	09/19/97	8.56	-0.08**	0.02	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				--	--
	12/12/97	8.58	-0.11**	0.01	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				--	--
	03/03/98	8.23	0.26**	0.04	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				--	--
	06/15/98	8.37	0.09	Sheen	52,000	ND[7]	900	1,800	13,000	ND[7]
	09/30/98	8.94	-0.48	Sheen	1,000,000[8]	ND[7]	2,600	13,000	83,000	4,800
	12/28/98	**8.57**	**-0.11**	**<0.01**	**1,100,000[9]**	**ND[7]**	**1,600**	**8,600**	**71,000**	**5,700**

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #5325

3220 Lakeshore Avenue

Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (ft.)	Product Thickness (ft.)	TPH(G) *(ppb)*	B *(ppb)*	T *(ppb)*	E *(ppb)*	X *(ppb)*	MTBE *(ppb)*
U-2	08/10/90	--	--	--	780	27	46	15	130	--
	01/07/91	--	--	--	1,900	67	5.8	58	69	--
	04/01/91	--	--	--	1,700	250	89	34	190	--
	07/03/91	--	--	--	2,100	150	25	3.1	290	--
	10/09/91	--	--	--	230	7.1	ND	ND	11	--
	02/12/92	--	--	--	410	1.9	ND	0.36	0.4	--
	05/05/92	--	--	--	1,600	120	52	6.2	290	--
	06/11/92	--	--	--	620	17	2.1	ND	37	--
	08/20/92	--	--	--	700	28	6.5	1.3	4.6	--
	02/22/93	--	--	--	3,400	2,400	2,100	1,200	5,800	--
	05/07/93	--	--	--	17,000	1,800	660	1,700	4,000	--
	08/08/93	--	--	--	5,600[2]	420	ND	410	670	--
4.53	11/16/93	8.17	-3.64	0.00	510[3]	ND	ND	ND	ND	--
	02/16/94	7.73	-3.20	0.00	980[4]	49	13	2.7	40	--
7.62	06/22/94	7.60	0.02	0.00	31,000	2,200	62	1,500	3,500	--
	09/22/94	7.93	-0.31	0.00	8,500[3]	29	ND	ND	ND	--
	12/24/94	7.27	0.35	0.00	32,000	1,500	890	1,300	5,000	--
	03/25/95	7.01	0.61	0.00	170,000	1,900	21,000	4,800	33,000	--
	06/21/95	6.98	0.64	0.00	16,000	2,100	ND	1,800	1,700	--
	09/19/95	7.70	-0.08	0.00	3,000	610	ND	78	240	--[5]
	12/19/95	7.30	0.32	0.00	1,600	140	55	52	270	--[6]
	03/18/96	6.45	1.17	0.00	12,000	2,200	ND	1,200	2,200	22,000
	06/27/96	7.41	0.21	0.00	28,000	3,400	ND	2,800	3,100	3,000
	09/26/96	7.90	-0.28	0.00	5,900	750	ND	ND	ND	18,000
	12/09/96	6.76	0.86	0.00	13,000	5,100	290	980	370	2,700
	03/14/97	7.12	0.52**	0.03	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				--	--
	06/30/97	6.19	1.43	<0.01	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				--	--
	09/19/97	7.31	0.31	<0.01	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				--	--
	12/12/97	6.75	0.88**	<0.01	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				--	--
	03/03/98	6.36	1.26	Sheen	80,000	3,000	1,100	820	16,000	16,000
	06/15/98	6.51	1.11	Sheen	48,000	1,800	330	470	7,900	20,000
	09/30/98	7.17	0.45	Sheen	60,000	1,300	ND[7]	500	9,700	19,000
	12/28/98	**7.06**	**0.56**	**0.00**	**63,000**	**590**	**160**	**320**	**5,600**	**16,000**

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #5325

3220 Lakeshore Avenue

Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (ft.)	Product Thickness (ft.)	TPH(G) *(ppb)*	B *(ppb)*	T *(ppb)*	E *(ppb)*	X *(ppb)*	MTBE *(ppb)*
U-3	08/10/90	--	--	--	ND	ND	ND	ND	ND	--
	01/07/91	--	--	--	ND	ND	ND	ND	1.8	--
	04/01/91	--	--	--	ND	1.0	2.9	0.53	5.4	--
	07/03/91	--	--	--	ND	ND	ND	ND	ND	--
	10/09/91	--	--	--	ND	ND	ND	ND	ND	--
	02/12/92	--	--	--	ND	ND	ND	ND	ND	--
	05/05/92	--	--	--	ND	ND	ND	ND	ND	--
	06/11/92	--	--	--	ND	ND	ND	ND	ND	--
	08/20/92	--	--	--	ND	ND	ND	ND	ND	--
	02/22/93	--	--	--	ND	ND	ND	ND	ND	--
	05/07/93	--	--	--	ND	ND	ND	ND	ND	--
	08/08/93	--	--	--	210	5.0	9.7	0.7	4.1	--
7.86	11/16/93	11.82	-3.96	0.00	ND	ND	ND	ND	ND	--
	02/16/94	11.62	-3.76	0.00	ND	ND	ND	ND	ND	--
10.98	06/22/94	11.64	-0.66	0.00	ND	ND	ND	ND	ND	--
	09/22/94	11.76	-0.78	0.00	ND	ND	ND	ND	ND	--
	12/24/94	11.28	-0.30	0.00	ND	ND	ND	ND	ND	--
	03/25/95	10.96	0.02	0.00	ND	ND	ND	ND	ND	--
	06/21/95	11.37	-0.39	0.00	ND	ND	ND	ND	ND	--
	09/19/95	11.55	-0.57	0.00	ND	ND	ND	ND	ND	--[5]
	12/19/95	11.45	-0.47	0.00	ND	ND	ND	ND	ND	--
	03/18/96	11.10	-0.12	0.00	ND	ND	ND	ND	ND	--
	06/27/96	11.16	-0.18	0.00	440	49	50	51	140	50
	09/26/96	11.55	-0.57	0.00	ND	ND	ND	ND	ND	ND
	12/09/96	10.12	0.86	0.00	ND	ND	ND	ND	ND	29
	03/14/97	10.87	0.11	0.00	ND	ND	ND	ND	ND	ND
	06/30/97	11.08	-0.10	0.00	ND	ND	ND	ND	ND	ND
	09/19/97	11.05	-0.07	0.00	ND	ND	ND	ND	ND	ND
	12/12/97	10.58	0.40	0.00	ND	ND	ND	ND	ND	ND
	03/03/98	9.84	1.14	0.00	ND	ND	ND	ND	ND	ND
	06/15/98	10.56	0.42	0.00	ND	ND	ND	ND	ND	ND
	09/30/98	11.12	-0.14	0.00	ND	ND	ND	ND	ND	ND
	12/28/98	**10.96**	**0.02**	**0.00**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**

Table 1

Groundwater Monitoring Data and Analytical Results
Tosco (Unocal) Service Station 3225
3220 Lakeshore Avenue
Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (ft.)	Product Thickness (ft.)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
U-4										
11.15	06/22/94	10.16	0.99	0.00	ND	ND	ND	ND	--	--
	09/22/94	10.79	0.36	0.00	ND	0.78	1.3	ND	1.4	--
	12/24/94	9.81	1.34	0.00	ND	ND	ND	ND	ND	--
	03/25/95	9.51	1.64	0.00	ND	ND	ND	ND	ND	--
	06/21/95	9.54	1.61	0.00	ND	ND	ND	ND	ND	--
	09/19/95	10.17	0.98	0.00	ND	ND	ND	ND	ND	--
	12/19/95	9.98	1.17	0.00	ND	ND	ND	ND	ND	--
	03/18/96	9.66	1.49	0.00	ND	ND	ND	ND	ND	ND
	06/27/96	9.74	1.41	0.00	ND	ND	ND	ND	ND	ND
	09/26/96	10.14	1.01	0.00	ND	ND	ND	ND	ND	33
	12/09/96	8.67	2.48	0.00	ND	ND	ND	ND	ND	ND
	03/14/97	9.35	1.80	0.00	ND	ND	ND	ND	ND	ND
	06/30/97	9.89	1.26	0.00	ND	ND	ND	ND	ND	ND
	09/19/97	9.96	1.19	0.00	ND	ND	ND	ND	ND	ND
	12/12/97	8.56	2.59	0.00	ND	ND	ND	ND	ND	ND
	03/03/98	7.85	3.30	0.00	ND	ND	ND	ND	ND	ND
	06/15/98	9.08	2.07	0.00	ND	ND	ND	ND	ND	ND
	09/30/98	9.75	1.40	0.00	ND	ND	ND	ND	ND	ND
	12/28/98	**9.59**	**1.56**	**0.00**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**
U-5										
6.98	06/22/94	6.83	0.15	0.00	210	7.1	13	4.5	26	--
	09/22/94	6.90	0.08	0.00	170	8.4	10	8.5	18	--
	12/24/94	6.43	0.55	0.00	8,700	560	70	670	430	--
	03/25/95	6.35	0.63	0.00	44,000	390	960	1,500	7,600	--
	06/21/95	7.11	-0.13	0.00	400	2.3	ND	9.1	3.5	--
	09/19/95	6.99	-0.01	0.00	850	14	7.1	13	66	--
	12/19/95	7.17	-0.19	0.00	ND	ND	ND	ND	ND	--
	03/18/96	6.65	0.33	0.00	100	0.67	0.5	0.51	5.4	--
	06/27/96	6.49	0.49	0.00	16,000	280	150	1,400	4,600	530
	09/26/96	7.13	-0.15	0.00	ND	ND	0.57	ND	0.96	ND
	12/09/96	5.90	1.08	0.00	1,300	29	46	ND	140	97
	03/14/97	6.99	-0.01	0.00	ND	ND	ND	ND	ND	14

As of 12/28/98

Table 2

Groundwater Analytical Results

Tosco (Unocal) Service Station #5325
3220 Lakeshore Avenue
Oakland, California

Well ID	Date	Iron (ppm)	Nitrate as NO3 (ppm)	Phosphate as PO4 (ppm)	Redox Potential (ppm)
U-1	06/15/98	39	ND	ND	382 (mV)
	09/30/98	17	ND	ND	366 (mV)
	12/28/98	**4.3**	**6.3**	**28**	**298(mV)**
U-2	03/03/98	25	ND	ND	369 (mV)
	06/15/98	42	ND	ND	341 (mV)
	09/30/98	25	ND	ND	354 (mV)
	12/28/98	**28**	**ND**	**ND**	**276(mV)**
U-3	06/30/97	1.4	21	0.86	190
	09/19/97	0.57	19	ND	75
	12/12/97	1.9	23	0.85	390
	03/03/98	0.013	36	ND	358 (mV)
	06/15/98	0.16	33	ND	318 (mV)
	09/30/98	0.040	31	ND	295 (mV)
	12/28/98	**ND**	**29**	**ND**	**281(mV)**
U-4	06/30/97	0.13	35	0.52	200
	09/19/97	0.35	30	ND	45
	12/12/97	0.68	31	0.73	380
	03/03/98	0.018	3.2	ND	284 (mV)
	06/15/98	0.14	33	ND	256 (mV)
	09/30/98	0.049	31	ND	276 (mV)
	12/28/98	**0.36**	**31**	**ND**	**280(mV)**
U-5	06/30/97	16	ND	ND	160
	09/19/97	0.22	ND	ND	63
	12/12/97	6.7	ND	ND	400
	03/03/98	18	3.1	ND	345 (mV)
	06/15/98	17	ND	ND	333 (mV)
	09/30/98	17	ND	ND	318 (mV)
	12/28/98	**17**	**6.6**	**ND**	**305(mV)**
U-6	06/30/97	88	0.80	ND	190
	09/19/97	2.9	1.80	ND	ND
	12/12/97	51	ND	ND	380
	03/03/98	60	3.5	ND	327 (mV)
	06/15/98	590	4.8	ND	315 (mV)
	09/30/98	33	ND	ND	345 (mV)
	12/28/98	**83**	**7.2**	**ND**	**297(mV)**

Table 2

Groundwater Analytical Results

Tosco (Unocal) Service Station #5325
3220 Lakeshore Avenue
Oakland, California

EXPLANATIONS:

Groundwater analytical results prior to March 3, 1998, were compiled from reports prepared by MPDS Services, Inc.

ppm = Parts per million
ND = Not Detected
mV = millivolts

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. 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.

A laboratory supplied trip blank accompanies each sampling set. For sampling sets greater than 20 samples, 5% trip blanks are included. The trip blank is analyzed for some or all of the same compounds as the groundwater samples.

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 # 5325 Job#: 180061

Address: 3220 Lakeshore Ave. Date: 12-28-98

City: Oakland Sampler: Joe

Well ID U-1 Well Condition: O.C.

Well Diameter 3 in. Hydrocarbon Thickness: <0.01 (feet) Amount Bailed (product/water): none ounce (Gallons)

Total Depth 19.73 ft.

Depth to Water 8.57 ft.

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

11.16 X VF 0.38 = 4.24 X 3 (case volume) = Estimated Purge Volume: 13 (gal.)

Purge Equipment:
- Disposable Bailer
- Bailer
- Stack
- (Suction)
- Grundfos
- Other: _____

Sampling Equipment:
- (Disposable Bailer)
- ~~Bailer~~
- Pressure Bailer
- Grab Sample
- Other: _____

Starting Time: 12:30 Weather Conditions: clear/foggy

Sampling Time: 12:58 P.M. Water Color: clear Odor: very strong

Purging Flow Rate: 1 gpm. Sediment Description: none

Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm x 1000	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
12:40	4	6.95	1.12	69.2			
12:43	8	7.08	1.15	69.5		298	
12:45	13	7.12	1.16	69.6			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
U-1	3 VOA	Y	HCL	SEQUOIA	TPH(G)/btex/mtbe
"	1 plastic	"	HNO_3	"	Iron
"	1 plastic	"	plain	"	Nitrate, phosphate

COMMENTS: No free product found in skimmer.

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility # 5325 Job#: 180061

Address: 3220 Lakeshore Ave. Date: 12-28-98

City: Oakland Sampler: Joe

Well ID U-2 Well Condition: O.K.

Well Diameter 3 in. Hydrocarbon Thickness: 0 (feet) Amount Bailed (product/water): 0 (Gallons)

Total Depth 19.67 ft.

Depth to Water 7.06 ft.

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

12.61 X VF 0.38 = 4.79 X 3 (case volume) = Estimated Purge Volume: 15 (gal.)

Purge Equipment:
- Disposable Bailer
- Bailer
- Stack
- Suction
- Grundfos
- Other: _____

Sampling Equipment:
- Disposable Bailer
- ~~Bailer~~
- Pressure Bailer
- Grab Sample
- Other: _____

Starting Time: 11:40 Weather Conditions: clear/foggy

Sampling Time: 12:10 p.m. Water Color: clear Odor: strong

Purging Flow Rate: 1 gpm. Sediment Description: none

Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm x 100	°Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
11:50	5	7.19	2.55	70.2		276	
11:53	10	7.20	2.11	69.6			
11:58	15	7.16	2.19	69.3			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
U-2	3 VOA	Y	HCL	SEQUOIA	TPH(G)/btex/mtbe
"	1 plastic	"	HNO_3	"	Iron
"	1 plastic	"	plain	"	Nitrate, phosphate

COMMENTS: _____

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WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility # 5325 Job#: 180061

Address: 3220 Lakeshore Ave. Date: 12-28-98

City: Oakland Sampler: Joe

Well ID U-4 Well Condition: O.K.

Well Diameter 4 in. Hydrocarbon Thickness: 0 (feet) Amount Bailed (product/water): 0 (Gallons)

Total Depth 20.17 ft.

Depth to Water 9.59 ft.

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

10.58 X VF 0.66 = 6.98 X 3 (case volume) = Estimated Purge Volume: 21 (gal.)

Purge Equipment:
- Disposable Bailer
- Bailer
- Stack
- Suction
- Grundfos
- Other: _____

Sampling Equipment:
- Disposable Bailer
- ~~Bailer~~
- Pressure Bailer
- Grab Sample
- Other: _____

Starting Time: 8:30 Weather Conditions: clear/foggy

Sampling Time: 8:55 A-M Water Color: clear Odor: none

Purging Flow Rate: 1.5 gpm. Sediment Description: none

Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm x 1000	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
8:40	7	7.35	5.15	70.1	4.57	280	
8:44	14	7.45	5.25	69.7			
8:47	21	7.49	5.30	69.4			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
U-4	3 VOA	Y	HCL	SEQUOIA	TPH(G)/btex/mtbe
"	1 plastic	"	HNO_3	"	Iron
"	1 plastic	"	plain	"	Nitrate, phosphate

COMMENTS: _____

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility # 5325 Job#: 180061

Address: 3220 Lakeshore Ave. Date: 12-28-98

City: Oakland Sampler: Joe

Well ID U-5 Well Condition: O.C.

Well Diameter 4 in. Hydrocarbon Thickness: 0 (feet) Amount Bailed (product/water): 0 (Gallons)

Total Depth 20.10 ft.

Depth to Water 7.25 ft.

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

12.85 X VF 0.66 = 8.48 X 3 (case volume) = Estimated Purge Volume: 26 (gal.)

Purge Equipment:
- Disposable Bailer
- Bailer
- Stack
- ~~Suction~~
- Grundfos
- Other: _____

Sampling Equipment:
- Disposable Bailer
- ~~Bailer~~
- Pressure Bailer
- Grab Sample
- Other: _____

Starting Time: 10:55 Weather Conditions: clear/foggy

Sampling Time: 11:20 AM Water Color: clear Odor: strong

Purging Flow Rate: 2 gpm. Sediment Description: none

Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm x 1000	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
11:02	8	7.19	1.22	70.6	1.64	305	
11:05	16	7.25	1.18	69.2			
11:09	26	7.25	1.15	69.4			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
U-5	3 voA	Y	HCL	SEQUOIA	TPH(G)/btex/mtbe
"	1 plastic	"	HNO_3	"	Iron
"	1 plastic	"	plain	"	Nitrate, phosphate

COMMENTS: _____

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WELL MONITORING/SAMPLING

FIELD DATA SHEET

Client/
Facility # 5325 Job#: 180061

Address: 3220 Lakeshore Ave. Date: 12-28-98

City: Oakland Sampler: Joe

Well ID U-6 Well Condition: Outer Entire christy box is loo.

Well Diameter 2 in. Hydrocarbon Thickness: 0 (feet) Amount Bailed (product/water): 0 (Gallons)

Total Depth 23.82 ft.

Depth to Water 7.79 ft.

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

16.03 X VF 0.17 = 2.73 X 3 (case volume) = Estimated Purge Volume: 8.5 (gal.)

Purge Equipment: Disposable Bailer; Bailer; Stack; Suction; Grundfos; Other: _____

Sampling Equipment: Disposable Bailer; ~~Bailer~~; Pressure Bailer; Grab Sample; Other: _____

Starting Time: 10:06 Weather Conditions: clear/foggy

Sampling Time: 10:28 A.M. Water Color: clear Odor: none

Purging Flow Rate: 1 gpm. Sediment Description: none

Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm x 100	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
10:17	3	7.59	6.17	70.2	3.42	297	
10:20	5	7.38	5.69	70.9			
10:22	8.5	7.34	5.55	71.2			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
U-	3 VOA	Y	HCL	SEQUOIA	TPH(G)/btex/mtbe
"	1 plastic	"	HNO_3	"	Iron
"	1 plastic	"	plain	"	Nitrate, phosphate

COMMENTS: Christy box is loose & wobbly. Recommend installing a new box by securing it with grout.

TOSCO

Tosco Marketing Company
2003 Crow Canyon Pl., Ste. 400
San Ramon, California 94583

Facility Number: UNOCAL, SS#5325
Facility Address: 3220 Lakeshore Ave. Oakland, CA
Consultant Project Number: 180061.85
Consultant Name: Gettler-Ryan Inc. (G-R Inc.)
Address: 6747 Sierra Court, Suite J, Dublin, CA 94568
Project Contact (Name): Deanna L. Harding
(Phone) 510-551-7555 (Fax Number) 510-551-7888

(Phone) (925) 277-5325
Laboratory Name: Sequoia Analytical **9812621**
Laboratory Release Number:
Samples Collected by (Name): JOE ASEMIAN
Collection Date: 12-28-98
Signature: Joe Asemian

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	Iced (Yes or No)	Analyses To Be Performed: TPH Gas + BTEX w/MTBE (8020)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals CAM Pb Zn Ni (ICAP or AA)	Phosphate Nitrate	Iron				DO NOT BILL TB-LB ANALYSIS Remarks
TB-LB		1 VOA	W	-	-	HCl	Y	✓			8122400										
U-1		3 VOA 2 pl.	"	G	12:58 P.M.	"	"	✓			8122401			A-E		✓	✓				
U-2		"	"	"	12:10 P.M.	"	"	✓			8122402					✓	✓				
U-3		"	"	"	9:44 A.M.	"	"	✓			8122403					✓	✓				
U-4		"	"	"	8:55 A.M.	"	Y	✓			8122404					✓	✓				
U-5		"	"	"	11:20 A.M.	"	"	✓			8122405					✓	✓				
U-6		"	"	"	10:28 A.M.	"	"	✓			8122406					✓					

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
	G-R Inc.	12-28-98 4:05 P.M.		CKC	12-30 1500
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
	GRC	12-30 745			
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time
					12/28/98 16:05

Turn Around Time (Circle Choice)
24 Hrs.
48 Hrs.
5 Days
10 Days
As Contracted

THANK

12PM DUE

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (925) 988-9600, FAX (925) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100
1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Gettler-Ryan - Dublin	Client Project ID:	Uncocal SS#5325, Oakland	Sampled: Dec 28, 1998
6747 Sierra Court, Suite J	Sample Matrix:	Water	Received: Dec 28, 1998
Dublin, CA 94568	Analysis Method:	EPA 5030/8015 Mod./8020	Reported: Jan 14, 1999
Attention: Deanna Harding	First Sample #:	812-2400	

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX / MTBE

Analyte	Reporting Limit µg/L	Sample I.D. 812-2400 TB-LB	Sample I.D. 812-2401 U-1	Sample I.D. 812-2402 U-2	Sample I.D. 812-2403 U-3	Sample I.D. 812-2404 U-4	Sample I.D. 812-2405 U-5
Purgeable Hydrocarbons	50	N.D.	1,100,000	63,000	N.D.	N.D.	1,400
Benzene	0.50	N.D.	N.D.	590	N.D.	N.D.	59
Toluene	0.50	0.71	1,600	160	N.D.	N.D.	N.D.
Ethyl Benzene	0.50	N.D.	8,600	320	N.D.	N.D.	13
Total Xylenes	0.50	0.72	71,000	5,600	N.D.	N.D.	27
MTBE	2.5	9.5	5,700	16,000	N.D.	N.D.	150
Chromatogram Pattern:		--	Gasoline & Unidentified Hydrocarbons > C8	Gasoline	--	--	Gasoline

Quality Control Data

Report Limit Multiplication Factor:	1.0	1,000	100	1.0	1.0	10
Date Analyzed:	1/8/99	1/8/99	1/8/99	1/8/99	1/8/99	1/8/99
Instrument Identification:	HP-5	HP-5	HP-5	HP-5	HP-5	HP-5
Surrogate Recovery, %: (QC Limits = 70-130%)	92	79	89	100	109	104

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
Project Manager

Sequoia Analytical

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Gettler-Ryan - Dublin	Client Project ID:	Uncocal SS#5325, Oakland	Sampled:	Dec 28, 1998
6747 Sierra Court, Suite J	Sample Matrix:	Water	Received:	Dec 28, 1998
Dublin, CA 94568	Analysis Method:	EPA 5030/8015 Mod./8020	Reported:	Jan 14, 1999
Attention: Deanna Harding	First Sample #:	812-2406		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX / MTBE

Analyte	Reporting Limit µg/L	Sample I.D. 812-2406 U-6
Purgeable Hydrocarbons	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Total Xylenes	0.50	N.D.
MTBE	2.5	730
Chromatogram Pattern:		--

Quality Control Data

Report Limit Multiplication Factor:	5.0
Date Analyzed:	1/8/99
Instrument Identification:	HP-9
Surrogate Recovery, %: (QC Limits = 70-130%)	97

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
Project Manager

Sequoia Analytical

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Gettler-Ryan - Dublin	Client Project ID:	Uncocal SS#5325, Oakland	Sampled:	Dec 28, 1998
6747 Sierra Court, Suite J	Sample Descript:	Water	Received:	Dec 28, 1998
Dublin, CA 94568	Analysis for:	Iron	Digested:	Jan 4, 1999
Attention: Deanna Harding	First Sample #:	812-2401	Analyzed:	Jan 8, 1999
			Reported:	Jan 14, 1999

LABORATORY ANALYSIS FOR: Iron

Sample Number	Sample Description	Detection Limit mg/L	Sample Result mg/L
812-2401	U-1	0.010	4.3
812-2402	U-2	0.010	28
812-2403	U-3	0.010	N.D.
812-2404	U-4	0.010	0.36
812-2405	U-5	0.010	17
812-2406	U-6	0.010	83

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

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
Project Manager

Sequoia Analytical

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Gettler-Ryan - Dublin	Client Project ID:	Uncocal SS#5325, Oakland	Sampled:	Dec 28, 1998
6747 Sierra Court, Suite J	Sample Descript:	Water	Received:	Dec 28, 1998
Dublin, CA 94568	Analysis for:	Nitrate as N		
Attention: Deanna Harding	First Sample #:	812-2401	Analyzed:	Dec 30, 1998
			Reported:	Jan 14, 1999

LABORATORY ANALYSIS FOR: Nitrate as N

Sample Number	Sample Description	Detection Limit mg/L	Sample Result mg/L
812-2401	U-1	1.0	6.3
812-2402	U-2	1.0	N.D.
812-2403	U-3	1.0	29
812-2404	U-4	1.0	31
812-2405	U-5	1.0	6.6
812-2406	U-6	1.0	7.2

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

SEQUOIA ANALYTICAL, #1210

Julianne Fegley

Julianne Fegley
Project Manager

Sequoia Analytical

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Gettler-Ryan - Dublin	Client Project ID:	Uncocal SS#5325, Oakland	Sampled:	Dec 28, 1998
6747 Sierra Court, Suite J	Sample Descript:	Water	Received:	Dec 28, 1998
Dublin, CA 94568	Analysis for:	Phosphate		
Attention: Deanna Harding	First Sample #:	812-2401	Analyzed:	Dec 30, 1998
			Reported:	Jan 14, 1999

LABORATORY ANALYSIS FOR: Phosphate

Sample Number	Sample Description	Detection Limit mg/L	Sample Result mg/L
812-2401	U-1	10	28
812-2402	U-2	10	N.D.
812-2403	U-3	10	N.D.
812-2404	U-4	10	N.D.
812-2405	U-5	10	N.D.
812-2406	U-6	10	N.D.

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

SEQUOIA ANALYTICAL, #1210

Julianne Fegley

Julianne Fegley
Project Manager

Sequoia Analytical

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

Client Project ID: Uncocal SS#5325, Oakland
Matrix: Liquid
QC Sample Group: 8122400-406

Reported: Jan 14, 1999

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	C. Westwater	C. Westwater	C. Westwater	C. Westwater
MS/MSD Batch#:	8122219	8122219	8122219	8122219
Date Prepared:	1/8/99	1/8/99	1/8/99	1/8/99
Date Analyzed:	1/8/99	1/8/99	1/8/99	1/8/99
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike % Recovery:	90	95	95	100
Matrix Spike Duplicate % Recovery:	90	95	95	98
Relative % Difference:	0.0	0.0	0.0	1.7
LCS Batch#:	5LCS010899	5LCS010899	5LCS010899	5LCS010899
Date Prepared:	1/8/99	1/8/99	1/8/99	1/8/99
Date Analyzed:	1/8/99	1/8/99	1/8/99	1/8/99
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
LCS % Recovery:	90	95	100	103
% Recovery Control Limits:	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
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.

Sequoia Analytical

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

Client Project ID: Uncocal SS#5325, Oakland
Matrix: Liquid
QC Sample Group: 8122400-406

Reported: Jan 14, 1999

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	C. Westwater	C. Westwater	C. Westwater	C. Westwater
MS/MSD Batch#:	8122415	8122415	8122415	8122415
Date Prepared:	1/8/99	1/8/99	1/8/99	1/8/99
Date Analyzed:	1/8/99	1/8/99	1/8/99	1/8/99
Instrument I.D.#:	HP-9	HP-9	HP-9	HP-9
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike % Recovery:	95	100	105	108
Matrix Spike Duplicate % Recovery:	100	105	110	113
Relative % Difference:	5.1	4.9	4.7	4.5
LCS Batch#:	9LCS010899	9LCS010899	9LCS010899	9LCS010899
Date Prepared:	1/8/99	1/8/99	1/8/99	1/8/99
Date Analyzed:	1/8/99	1/8/99	1/8/99	1/8/99
Instrument I.D.#:	HP-9	HP-9	HP-9	HP-9
LCS % Recovery:	95	100	105	110
% Recovery Control Limits:	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
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.

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

Client Project ID: Uncocal SS#5325, Oakland
Matrix: Liquid
QC Sample Group: 8122400-406

Reported: Jan 14, 1999

QUALITY CONTROL DATA REPORT

ANALYTE	Iron	Nitrate	Phosphate
Method:	EPA 200.7	EPA 300.0	EPA 300.0
Analyst:	J. Kelly	G. Fish	G. Fish
MS/MSD Batch#:	8122403	9812H08-1	9812H08-1
Date Prepared:	1/4/99	12/30/98	12/30/98
Date Analyzed:	1/8/99	12/30/98	12/30/98
Instrument I.D.#:	MV-4	INAC-1	INAC-1
Conc. Spiked:	1.0 mg/L	100 mg/L	100 mg/L
Matrix Spike % Recovery:	-	88	92
Matrix Spike Duplicate % Recovery:	-	88	92
Relative % Difference:	-	0.0	0.0
LCS Batch#:	LCS010499	LCS123098	LCS123098
Date Prepared:	1/4/99	12/30/98	12/30/98
Date Analyzed:	1/8/99	12/30/98	12/30/98
Instrument I.D.#:	MV-4	INAC-1	INAC-1
LCS % Recovery:	110	92	96
% Recovery Control Limits:	80-120	90-110	90-110

SEQUOIA ANALYTICAL, #1271 & #1210

Julianne Fegley
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.