October 18, 2000

G-R_#18002.

TO:

Mr. David B. De Witt

Tosco Marketing Company

2000 Crow Canyon Place, Suite 400

San Ramon, California 94583

CC: Mr Doug Lee

Gettler-Ryan Inc.

Dublin, California

NOTECTION

FROM:

Deanna L. Harding

Project Coordinator Gettler-Ryan Inc.

6747 Sierra Court, Suite J Dublin, California 94568 RE: Tosco (Unocal) SS #6419

6401 Dublin Boulevard

Dublin, California

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
1	October 4, 2000	Groundwater Monitoring and Sampling Report Semi-Annual 2000 - Event of July 26, 2000

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 *October 30*, 2000, this report will be distributed to the following:

Enclosure

cc:

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

trans/6419.dbd

October 16, 2000 G-R Job #180021

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

RE: Second Semi-Annual 2000 Groundwater Monitoring & Sampling Report

Tosco (Unocal) Service Station #6419

6401 Dublin Boulevard Dublin, California

Dear Mr. De Witt:

This report documents the semi-annual groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R). On July 26, 2000, field personnel monitored and sampled seven wells (MW-1 through MW-7) 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. 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 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 Tables 1, 2 and 4. A Concentration Map is included as Figure 2. The chain of custody document and laboratory analytical reports are also attached.

No. 6882

Sincerely,

Deanna L. Harding
Project Coordinator

Stephen | Carter

Senior Geblogist, R.G. No. 5577

Figure 1:

Potentiometric Map

Figure 2:

Concentration Map

Table 1:

Groundwater Monitoring Data and Analytical Results

Table 2:

Groundwater Analytical Results - Metals

Table 3:

Dissolved Oxygen Concentrations

Table 4:

Groundwater Analytical Results - Oxygenate Compounds

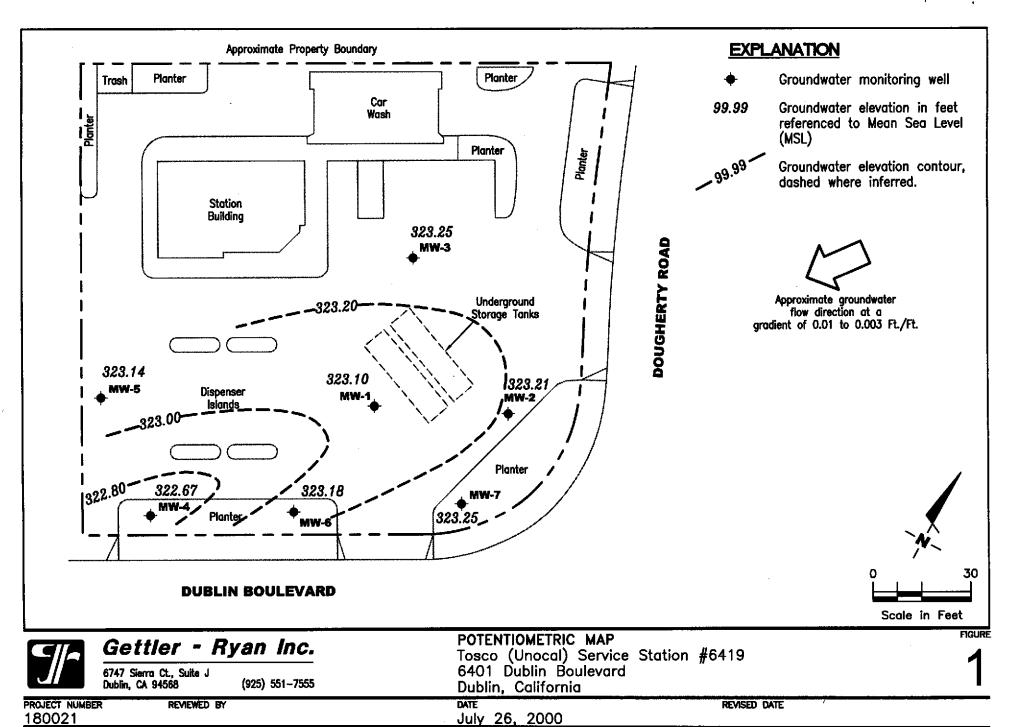
Attachments:

Standard Operating Procedure - Groundwater Sampling

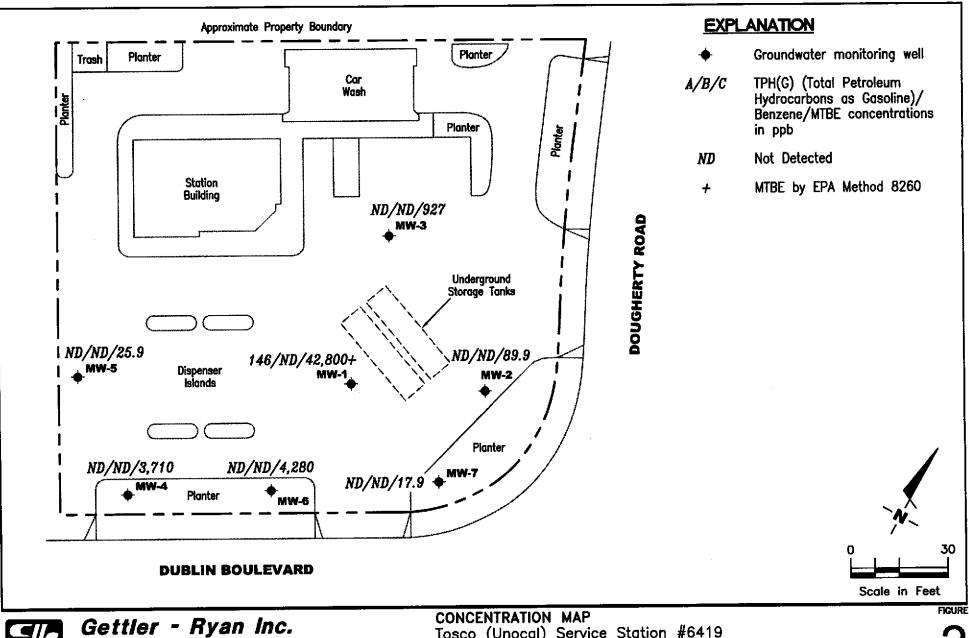
Field Data Sheets

6419.qml

Chain of Custody Document and Laboratory Analytical Reports



FILE NAME: P:\Enviro\Tosco\6419\Q00-6419.dwg | Layout Tab: Pot3





REVIEWED BY

6747 Sierra Ct., Suite J Dublin, CA 94568

(925) 551-7555

Tosco (Unocal) Service Station #6419 6401 Dublin Boulevard

Dublin, California

DATE

July 26, 2000

REVISED DATE

PROJECT NUMBER 180021

FILE NAME: P:\Enviro\Tosco\6419\Q00-6419.dwg | Layout Tab: Con3

Table 1
Groundwater Monitoring Data and Analytical Results

WELL ID/	DATE	DTW	GWE	TPH(D)	TPH(G)	В	T	E	X	MTBE
TOC*		(ft.)	(msl)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
4.6111.4										
MW-1	0011401	7.07	202.18	810¹	1,800 ²	17	ND	ND	ND	
330.45	03/14/94	7.27	323.18	910 ³	9,200 ²	48	ND ND	540	ND	
	08/25/94	8.57	321.88							
	09/30/94	8.78	321.67						 	
	10/20/94	8.98	321.47	 0103		22		560	38	
	11/18/94	7.69	322.76	910 ³	5,100	33	ND			
	12/20/94	7.58	322.87							••
	01/17/95	6.03	324.42	 1						
	02/15/95	6.29	324.16	660 ¹	3,300	13	ND	180	5.2	
	03/13/95	5.64	324.81							
	04/06/95	5.62	324.83	1		••				-
	05/17/95	6,26	324.19	200^{3}	130	0.75	ND	1.5	ND	.
	06/15/95	6.75	323.70							
	08/25/95	7.91	322.54		490	9.1	ND	21	2.0	5
	11/28/95	9.03	321.42		1,400	18	3.0	98	3.6	5
	02/26/96	5.77	324.68		560	9.3	ND	22	ND	1,300
	08/23/96	7.78	322.67		ND	ND	ND	ND	ND	640
330.23	02/17/97	5.73	324.50		120 ⁴	1.0	0.95	ND	ND	280
	08/18/97	7.38	322.85		ND	ND	ND	ND	ND	100
	02/02/986	5.10	325.13		ND^7	130	ND ⁷	ND^7	ND ⁷	32,000
	08/24/98	6.73	323.50		ND^7	ND ⁷	ND ⁷	ND ⁷	ND^7	26,000/24,000 ⁸
	02/10/99	5.46	324.77	••	ND^7	ND^7	ND^7	ND ⁷	ND ⁷	84,000/100,000 ⁸
	04/12/99	6.38	323.85	••	ND ⁷	ND^7	ND^7	ND^7	ND^7	140,000/120,000 ⁸
330.21	05/21/99	5.95	324.26				. 			
•••	08/02/99	6.75	323.46		ND ⁷	ND^7	ND^7	ND^7	ND^7	91,000/140,000 ¹⁰
	02/11/00	6.44	323.77		ND^7	ND ⁷	ND^7	ND ⁷	ND ⁷	38,000/39,000 ⁸
330.18**	07/26/00 ¹³	7.08	323.10		14612	ND	ND	ND	ND	30,900/42,800 ¹⁰
MW-2										
330.40	03/14/94	7.23	323.17	••	ND	ND	2.8	1.1	8.0	
	08/25/94	8.41	321.99		ND	ND	ND	ND	ND	
	09/30/94	8.73	321.67							
	10/20/94	8.92	321.48							

Table 1
Groundwater Monitoring Data and Analytical Results

					Dublin, Cal	погна				
WELL ID/	DATE	DTW	GWE	TPH(D)	TPH(G)	В	T	E	X	MTBE
TOC*		(ft.)	(msl)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ррб)	(ppb)
MW-2	11/18/94	7.67	322.73		ND	ND	ND	ND	ND	
(cont)	12/20/94	7.48	322.92							
,	01/17/95	6.00	324.40							
	02/15/95	6.16	324.24		ND	ND	ND	ND	ND	
	03/13/95	5.59	324.81							
	04/06/95	5.51	324.89							
	05/17/95	6.15	324.25		ND	ND	ND	ND	ND	
	06/15/95	6.61	323.79							
	08/25/95	7.45	322.95		ND	ND	ND	ND	ND	••
	11/28/95	8.85	321.55		ND	ND	ND	ND	ND	
	02/26/96	5.49	324.91		ND	ND	ND	ND	ND	
	08/23/96	7.44	322.96	SAMPLED AN	INUALLY					
330.27	02/17/97	5.64	324.63		ND	ND	ND	ND	ND	ND
200	08/18/97	7.40	322.87							us to
	02/02/98	5.09	325.18		ND	ND	ND	ND	ND	62
	08/24/98	6.70	323.57							••
	02/10/99	5.56	324.71		ND	ND	ND	ND	ND	130
330.30	05/21/99	5.98	324.32							
	08/02/99	6.72	323.58		ND	ND	ND	ND	ND	120
	02/11/00	6.43	323.87		ND	ND	ND	ND	ND	39
330.24**	07/26/00 ¹³	7.03	323.21	••	ND	ND	ND	ND	ND	89.9
550121										
MW-3						·				
331.11	03/14/94	7.93	323.18		150 ⁴	ND	ND	ND	ND	
	08/25/94	9.20	321.91		130 ⁴	ND	ND	ND	ND	
	09/30/94	9.43	321.68							
	10/20/94	9.64	321.47				••			
	11/18/94	8.39	322.72		130 ⁴	ND	ND	ND	ND	
	12/20/94	8.20	322.91							
	01/17/95	6.72	324.39							
	02/15/95	6.93	324.18		130 ⁴	ND	ND	ND	ND	
	03/13/95	6.30	324.81			••				
	04/06/95	8.20	322.91		••					
	0	J	J, 1							

Table 1
Groundwater Monitoring Data and Analytical Results

					Dublin, Cui					
WELL ID/	DATE	DTW	GWE	TPH(D)	TPH(G)	В	T	E	X	MTBE
TOC*		(ft.)	(msl)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ррв)
MW-3	05/17/95	6.88	324.23		99 ⁴	ND	ND	ND	ND	
(cont)	06/15/95	7.35	323.76							
	08/25/95	8.20	322.91		ND	ND	ND	ND	ND	5
	11/28/95	9.52	321.59		ND	ND	ND	ND	ND	
	02/26/96	6.25	324.86		ND	ND	ND	ND	ND	5
	08/23/96	7.98	323.13	SAMPLED AN	NUALLY					
330.68	02/17/97	6.07	324.61		ND	ND	ND	ND	ND	68
	08/18/97	7.82	322.86							
	02/02/98	5.50	325.18		ND	ND	ND	ND	ND	100
	08/24/98	7.12	323.56							
	02/10/99	5.80	324.88		ND	ND	ND	ND	ND	92
330.49	05/21/99	6.16	324.33	u=		••		#M		
	08/02/99	6.95	323.54		ND	ND	ND	ND	ND	140
	02/11/00	6.71	11		ND	ND	ND	ND	ND	46
330.60**	07/26/00 ¹³	7.35	323.25		ND	ND	ND	ND	ND	927
20000										
MW-4										0
330.36	05/21/99 ⁹	6.43	323.93		ND	ND	ND	ND	ND	960/910 ⁸
	08/02/99	7.34	323.02		ND	10	ND	13	11	ND
	02/11/00	6.92	323.44		ND	ND	ND	ND	ND	2,700
330.35**	07/26/00 ¹³	7.68	322.67	••	ND	ND	ND	ND	ND	3,710
MW-5	0					ND	ND	ND	ND	32/33 ⁸
330.20	05/21/99 ⁹	5.99	324.21		ND	ND	ND	ND	ND	
	08/02/99	6.83	323.37		ND	ND	ND	ND	ND	230
	02/11/00	6.34	323.86		ND	ND	ND	ND	ND	98
	07/26/00 ¹³	7.06	323.14	••	ND	ND	ND	ND	ND	25.9

Table 1
Groundwater Monitoring Data and Analytical Results

WELL ID/	DATE	DTW	GWE	TPH(D)	TPH(G)	В	T	E	X	MTBE
roc*		(ft.)	(msl)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
AW-6										
330.49	05/21/99 ⁹	6.24	324.25		ND	ND	ND	ND	ND	2,200/2,300 ⁸
	08/02/99	7.10	323.39		ND	ND	ND	ND	ND	ND
	02/11/00	6.60	323.89		ND	ND	ND	ND	ND	2,500
	07/26/00 ¹³	7.31	323.18		ND	ND	ND	ND	ND	4,280
MW-7										
330.43	05/21/99 ⁹	6.13	324.30		ND	ND	ND	ND	ND	22/228
7 , 1 , 0, 0, 1	08/02/99	6.92	323.51		ND	ND	ND		ND	31
	02/11/00	6.50	323.93		ND	ND	ND	ND	ND	20
	07/26/00 ¹³	7.18	323.25		ND	ND	ND	ND	ND	17.9
	07720700	7.10				• 1—				
Trip Blank					170	ND	MD	MD	ND	ND
ΓB-LB	02/02/98				ND	ND	ND	ND		ND ND
	08/24/98		-		ND	ND	ND	ND	ND	
	02/10/99				ND	ND	ND	ND	ND	ND
	04/12/99				ND	ND	ND	ND	ND	ND
	05/21/99				ND	ND	ND	ND	ND	ND
	08/02/99		**		ND	ND	ND	ND	ND	ND
	02/11/00				ND	ND	ND	ND	ND	ND
	07/26/00 ¹³			••	ND	ND	ND	ND	ND	ND

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #6419 6401 Dublin Boulevard Dublin, California

EXPLANATIONS:

Groundwater monitoring data and laboratory results prior to February 2, 1998, were compiled from reports prepared by MPDS Services, Inc.

TOC = Top of Casing

B = Benzene

ppb = Parts per billion

DTW = Depth to Water

T = Toluene

ND = Not Detected

(ft.) = Feet

E = Ethylbenzene

-- = Not Measured/Not Analyzed

GWE = Groundwater Elevation

X = Xylenes

msl = Relative to mean sea level

MTBE = Methyl tertiary butyl ether

TPH(D) = Total Petroleum Hydrocarbons as Diesel TPH(G) = Total Petroleum Hydrocarbons as Gasoline

- * TOC elevations have been surveyed relative to msl, per the benchmark on the northwest corner of Dougherty Road and Sierra Way (Elevation = 331.728 feet msl). These TOC elevations have been used prior to the February 17, 1997 monitoring event. TOC elevations have been resurveyed (after station rebuilding) relative to Mean Sea Level (msl), per the Benchmark on the northwest corner of Dougherty Road and Sierra Way (Elevation = 331.728 feet msl).
- ** TOC elevations were surveyed on August 18, 2000. The benchmark for the survey was a chiseled square on top center of the concrete curb at the north curb return at the northwest corner of the intersection of Dougherty Road and Dublin Boulevard. (Benchmark Elevation = 330.60 ft., NGVD 1929)
- Laboratory report indicates the hydrocarbons detected appeared to be a diesel and non-diesel mixture.
- Laboratory report indicates the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.
- 3 Laboratory report indicates the hydrocarbons detected did not appear to be diesel.
- Laboratory report indicates the hydrocarbons detected did not appear to be gasoline.
- Laboratory has identified the presence of MTBE at a level above or equal to the taste and odor threshold of 40 ppb in the sample collected from this well.
- Well appears to be obstructed at approximately 9 feet.
- Detection limit raised. Refer to analytical reports.
- 8 MTBE by EPA Method 8260.
- Ethanol, t-butanol, di-isopropyl ether (DIPE), ethyl t-butyl ether (ETBE), and t-amyl methyl ether (TAME) by EPA Method 8260 were all ND.
- MTBE by EPA Method 8260, was analyzed past EPA recommended hold time.
- 11 TOC has been damaged. Cannot accurately calculate GWE.
- Laboratory report indicates unidentified hydrocarbons C6-C12.
- Laboratory report indicates insufficient preservative to reduce ample pH to less than 2. Sample was analyzed within 14 days, but beyond the seventh day recommended for Benzene, Toluene, Xylene and Ethylbenzene.

Table 2 Groundwater Analytical Data - Metals

Tosco (Unocal) Service Station #6419 6401 Dublin Boulevard

Dublin, California

WELL ID	DATE	Cadmium	Chromium	Lead	Nickel	Zinc
		(ррт)	(ррт)	(ppm)	(ppm)	(ppm)
MW-1	03/14/94	ND	0.012	ND	0.030	0.039
	08/25/94	ND	ND	0.024	ND	ND
	11/18/94	ND	0.076	ND	0.067	ND
	02/15/95	ND	ND	ND	ND	ND
	05/17/95	ND	ND	ND	0.021	ND

EXPLANATIONS:

Groundwater laboratory analytical results were compiled from reports prepared by MPDS Services, Inc.

ppm = Parts per million

ND = Not Detected

Table 3

Dissolved Oxygen Concentrations Tosco (Unocal) Service Station #6419

osco (Unocal) Service Station #0 6401 Dublin Boulevard Dublin, California

WELL ID	DATE	Before Purging (mg/L)	After Purging (mg/L)
MW-1	02/15/95		4.30
14144-1	05/17/95		1.20
	08/25/95		2.71
	11/28/95		3.25
	02/26/96	5.23	1.41
	08/23/96	3.83	N/A
	02/17/97	0.82	0.78
	08/18/97	1.28	2.35
		,	
MW-2	02/15/95		1.90
	02/26/96	0.62	0.43
	08/23/96	2.04	N/A
	02/17/97	0.90	0.82
	08/18/97	1.16	
MW-3	02/15/95		2.60
	05/17/95		1.13
	08/25/95		1.86
	11/28/95		6.81
	02/26/96	16.83	1.11
	08/23/96	3.29	N/A
	02/17/97	0.80	0.80
	08/18/97	1.43	

EXPLANATIONS:

Dissolved oxygen concentrations were compiled from reports prepared by MPDS Services, Inc.

mg/L = milligrams per liter

-- = Not Measured

N/A = Not Applicable

Table 4

Groundwater Analytical Results - Oxygenate Compounds

Tosco (Unocal) Service Station #6419 6401 Dublin Boulevard Dublin, California

WELL ID	DATE	ETHANOL (ppb)	TBA (ppb)	MTBE (ppb)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)	1,2-DCA (ppb)	EDB (ppb)
MW-1	07/26/00		\mathbf{ND}^1	42,800	ND ¹	\mathbf{ND}^1	ND ¹	ND^1	ND^1

EXPLANATIONS:

ANALYTICAL METHOD:

TBA = Tertiary butyl alcohol

MTBE = Methyl tertiary butyl ether

DIPE = Di-isopropyl ether

ETBE = Ethyl tertiary butyl ether

TAME = Tertiary amyl methyl ether

1,2-DCA = 1,2-Dichloroethane

EDB = 1,2-Dibromoethane

ppb = Parts per billion

-- = Not Analyzed

ND = Not Detected

EPA Method 8260 for Oxygenate Compounds

Detection limit raised. Refer to analytical reports.

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 an 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, temperature, pH and electrical conductivity are measured. If purging is to occur, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, suction, Grundfos), or polyvinyl chloride bailers. The measurements are taken 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.

Client/ Facility #	sco # 6	419	Job#		800	21	
Address: 64	-OI DUBLIA	1 BU	D Date:	1_	1/26	100	
City: DU	IBLIN, C	<u>A</u>		oler: 上	FKEN	OAK	
Weil ID	MW-L	Weil	Condition:	σK			
Well Diameter	<u>2in</u> _		rocarbon Z	/	Amount Ba		8
Total Depth	9.20 ,		kness:		(product/wat 3" = 0.38		(gal.) = 0.66
Depth to Water	7.08 +		ctor (VF)		50		
	2.12 x	vF 0.1	(_ <u>0.3</u> 6x3 (case	volume) =	Estimated Pu	irge Volume:	(OAL)
Purge Equipment:	Disposable Bailer Bailer Stack	·	Sampling Equipment	ч .	posable Ba		
	Suction Grundfos				ssure Baile ib Sample	r .	
	Other:			Other:	•	-	
Starting Time: Sampling Time:	14:45	4:25	Weather Conditio			Odor:	
Purging Flow Rat Did well de-wate		pm_	Sediment Descrip				(gal.)
Time V	olume pH (gal.)		•	erature 0	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
14:26	<u>1/3</u> 6.9	5 10	665 PF	10			
14:32	1 6.9		38 75	- 17		<u> </u>	
		_					
	· · · · · · · · · · · · · · · · · · ·	LABOR	RATORY INFORMA	TION			
SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABOR S1504	RATORY	ANAL	/SES
MW-I	3 VOA	YES	HCL	2120	MULA	Q/B113	AWIDE
:				<u> </u>			
COMMENTS: _							
				<u>.</u>			

9/97-fleldst.fm

Client/ Facility #	0500#641	9	Job#:	1800	21	
_ •	to Dubli		Date:	4/26	100	
_	LBUN, C	A	Sampler:	H, KE	VORK	
			Campion			
Well ID	MW-2	Well Condition	n: <u> </u>	K		
Well Diameter		Hydrocarbon	Ø.	Amount I		6
Total Depth	17.60	Thickness:	2" = 0.17	n_ (product/w 3" = 0.3	7	" = 0.66
Depth to Water	7.03 #	Factor (VF)		" = 1.50	12" = 5.80	- 0.00
	10.57 x	vF 0.14 _1.4	X 3 (case volum	ne) = Estimated i	^p urge Volume: _	5 1 (gal)
Purge Equipment:	Disposable Bailer Bailer		mpling uipment:	Disposable B	ailer	
	Stack Suction		,	Bailer Pressure Bail	er	
	Grundfos Other:		Othe	Grab Sample		
Starting Time:	11:44	Weather (Conditions:	SUM/	<u> </u>	
Sampling Time:	= 12:00 =: 2:00				Odor:	
Purging Flow Rate Did well de-water			Description:	Volur	ne:	(cel)
		•				
	olume pH (gal.)	Conductivity	Temperature	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
11.11.6	9 10-		-	. . ————		
11176	3.5 4.20	2640	771.	<u> </u>	·	
11:50	5 H.16	2650	69.4	<u> </u>	·	
			- Ar			
SAMPLE ID	(#) - CONTAINER	LABORATORY IN REFRIG. PRESERV.		ABORATORY	ANALY	re Ee
MW-2	3 VOA	YET H		Alouko	G/BTEX	MIBE
						7
					<u> </u>	
COMMENTS		· · · · · · · · · · · · · · · · · · ·			L	
COMMENTS:						
					<u>.</u>	

9/97-fieldes.fm

Client/	TOSCO #64	19 10001	•
Facility #	22	Job#: $\frac{180021}{1800}$	
City:D			
City:	<u> </u>	Sampler: H- KISVORK	
Well ID	Mw-3	Well Condition:	
Well Diameter	$\underline{}$	Hydrocarbon Amount Bailed	
Total Depth	18.40 =		
Depth to Water	M.35 #	Volume 2" = 0.17 3" = 0.38 4" = 0.66 Factor (VF) 6" = 1.50 12" = 5.80	
	11.05 xv	7F 0 17 = 1.8 x 3 (case volume) = Estimated Purge Volume: 5 4	lgaL)
Purge Equipment:	Disposable Bailer Bailer	Sampling Equipment: Disposable Bailer	
	Stack Suction	Bailer Pressure Bailer	
	Grundfos Other:	Grab Sample Other:	
Starting Time:	12:10	Weather Conditions: SUMMY	
Sampling Time Purging Flow R	<u> </u>	_ Water Color: Odor:	
Did well de-wa		Sediment Description: Volume:	
77°			
Time	Volume pH (gal.)	Conductivity Temperature D.O. ORP Alkalin μmhos/cm (mg/L) (mV) (ppr	
18118 -		· — — — — — — — — — — — — — — — — — — —	
12:12	35 693	3 4 50 713.5	
12:16	5 6.89	2430 71.8	
SAMPLE ID	(#) - CONTAINER R	LABORATORY INFORMATION EFRIG. PRESERV. TYPE LABORATORY ANALYSES	
MW-3	3 VOA \	YES IACL SEQUOLA GIBTEX/MTB	
			_
COMMENTS:			

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		FIELD D	ATA SHE	ET		
Client/ Facility #	0sco#6	419	. Joba	#: <u>1800</u>	021	
Address: 6	401 DUBL	IN BLUE) Date	$\frac{7/26}{}$	00	
City: Du	ÙBLIN, (CA	Sam	pler: HKE	VORK	
	′ (
Weil ID	MW-4	Well Co	ndition: _	OK-		
Well Diameter	in	Hydroca		Amount (×	<i>~</i> 1
Total Depth	19.10 #	Thickne:	2" = (<u>in.</u> (product/w		(gal.) 0.66
Depth to Water	7.68 #	Volume Factor (6" = 1.50	12" = 5.80	0.00
Depui to vvater		vF 0.17-1	() X 3 (case	o volume) = Estimated	Purge Volume: _5	[(gal.)
Purge Equipment:	Disposable Bailer Bailer		Sampling Equipment	t: Disposable E	lailer	
-qarpinang.	Stack		-dah	Bailer Pressure Bai	(-	
	Suction Grundfos			Grab Sample		
	Other:			Other:		
Starting Time: Sampling Time: Purging Flow Rat	13:49	₹ Wat	ther Conditioner Color:		Odor:	
Did well de-water		•	·	Volu	ne:	(gal.)
	olume pH (gal.)	Conductive purhos/cr		perature D.O.	ORP (mV)	Alkalinity (ppm)
T3:47	व्र पान्य	6 225	10 H	5.3	 -	
	4 7131	22	कि मु	4.4		
13:52 _	G 4.20	1 22.	30 -1	3.9	<u> </u>	
					 ·	
		LABORATO	RY INFORMA	· TON		
SAMPLE ID	(#) - CONTAINER		KT INFUNIVIA SERV. TYPE	LABORATORY	ANALYSE	s
WM-A	3 VOA	YES '	4CL	SEQUOIA	G/ATEX/	MBE
	·			<u> </u>		
					<u> </u>	
COMMENTS						
COMMENTS:	·					
						

Client/ Facility #	0 Sc0 # 6	419	Job	#:	180	021	
Address:		IN RWD		,	1/2	6/00	<u> </u>
	UBLIN, C	A		pler: _t	+-KB	vork	
Well ID	Mw-5	Well Cond	lition: _	oK	· · · · · · · · · · · · · · · · · · ·		
Well Diameter	in.	Hydrocarl Thickness		5.	Amount E	-	Z
Total Depth	14,40	Volume	2" =	<u>in.</u> 0.17	(product/w 3" = 0.3	38 4	" = 0.66
Depth to Water	7.06 1	Factor (V)	F)	6" = 1	.50	12" = 5.80	
	12.34 x	VF 0.17 = 0	X 3 (cas	a volume) =	Estimated F	Purge Volume: _	(gal.)
Purge Equipment:	Disposable Bailer Bailer		Sampling Equipmen	. Inis	posable B	ailer	
	Stack Suction		Equipmon	Bai	ler ssure Bail	7-	
	Grundfos			Gra	sb Sample		
	Other:			Other:			
Starting Time:	12:37	Weat	her Conditio	ons:	SUM	MY	· <u>-</u>
Sampling Time:	12:55		r Color:			Odor:	
Purging Flow Ra Did well de-wate			nent Descri _l : Time:			ne:	(nel)
	75-0	·					
Time	Volume pH (gal.)	Conductivit	y Temp عے	erature	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
19,29	9 7 9	व वाज	<u>, </u>	· .		· 	
14:31	\$ 6,9°	$\frac{3}{3}$	0 7	, 4		•	
12:44	6,96	237	<u> </u>	4.1			
		_	-		- · · · · · · · · · · · · · · · · · · ·		
		LABORATOR		ATION			
SAMPLE ID	(#) - CONTAINER	REFRIG. PRES	ERV. TYPE	LABOR	ATORY	ANALY	SES
MW-5	3 VOA	7 P S 1	4 C C	SEG	Alou	C-/BTE	X/MTBE
COMMENTS: _	·				·		
 				·			

OII + /		FIELD DATA SHELT
	TOSCO #64	19 Job#: 180021
Address: 6	401 DUBLIN	BLVD, Date: 4/26/00
City: DU	BLIN, CA	Sampler: HKEVORK
Well ID	MW-6	Well Condition:
	2	
Well Diameter	in	Hydrocarbon Amount Bailed Thickness: in (product/water): (ge
Total Depth	19.35 #	Volume $2^n = 0.17$ $3^n = 0.38$ $4^n = 0.66$
Depth to Water	7.31 #	Factor (VF) $6^* = 1.50$ $12^* = 5.80$
	12.04 x VF	0.17 = 2 x 3 (case volume) = Estimated Purge Volume: (gal
Purge Equipment:	Disposable Bailer Bailer Stack	Sampling Equipment: Disposable Bailer Bailer
	Suction Grundfos	Pressure Bailer Grab Sample
	Other:	Other:
Starting Time: Sampling Time: Purging Flow R Did well de-war	ate:	Water Color: SUMMY Water Color: Odor: Odor: If yes; Time: Volume: Volume: Igentalized Summer
Time	Volume pH (gal.)	Conductivity Temperature D.O. ORP Alkalinic umhos/cm (mg/L) (mV) (ppm)
13:09	2 7,20	2490 MIS
12116	7 7 7	3450 71.3
17514 -		
		
SAMPLE ID		LABORATORY INFORMATION FRIG. PRESERV. TYPE LABORATORY ANALYSES
MW-6		ES HCL SECQUOIA G/BTEX/MTBI
COMMENTS:		
COMMENTS:		

Client/			LD DAI	- OIIL	· L			
Facility # 10	sco # 64	-19		Job	#:	1800	121	
	401 DUBLI		LVD,	Date	e: <u>†</u>	1/2	6/20	000
City: DU	LBLIN, C	A		San	npler: _	*KE	WORK	
								
Well ID	MW-7	We	ell Conditio	n: _	oK	· · · · · · · · · · · · · · · · · · ·		
Well Diameter	<u></u>	Ну	drocarbon		6	Amount	Bailed ~	1
Total Depth	19,35 +	<u> </u>	ickness: _	=	in.	(product/w		(gal.)
Depth to Water	M.18 m		olume actor (VF)	2" ==	0.17 6" = 1	3" = 0.1 .50	38 12" = 5.80	4" = 0.66
	12.17 x	VF 0.1	1-2	X 3 (cas	e volume) =	: Estimated l	Purge Volume:	6 (nat)
Purge Equipment:	Disposable Bailer Bailer Stack Suction Grundfos Other:		Sa	mpling uipmen	t: Dis Ba Pro Gr	sposable B iler essure Bail ab Sample	Bailer er	
Starting Time: Sampling Time: Purging Flow Rate Did well de-water		 pm.	Sediment	lor: Descri	ption:		Odor:	(gal.)
	olume pH (gal.)		ductivity hos/cm	Temp	erature C 0	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
11:17	7.36 4 7.36 6 7.30	2 + 2 2	3 8 0 3 2 5 2 9 0	H 6	0.4 9.9			
		LABOF	RATORY IN	FORMA	ATION			· · · · · · · · · · · · · · · · · · ·
SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV.			ATORY	ANAL	YSES
MW-7	3 VOA	YES	140		SEQ	AION	G/BTE	K/MTBE
	<u> </u>	·			<u> </u>		<u> </u>	
COMMENTS:	-		····					· · · · · · · · · · · · · · · · · · ·
								 -

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TOSC: Torse Markeding Car good Caryon Fit. Bas Flances, California	apanyi San 400	Cone	Facili ultant Pr ultant Na ddrees C roject Ca	ty Addres oject Num me <u>Ge</u> 1747 S ontact (N	• 6401 nber1 ttler- ierra ame)_Ds	Dublin 180021.85 Ryan Inc. Court. Seanna L. 0-551-755	Blvd. Guite Hard:	-R In	11n. c.) ub11r)510-	CA CA	_9456 7888	A s	aborator aborator amples ollection ignature.	Name Release Collecte Date	(Phone Sec Numi d by (N	med On	Ana :	77- <u>)</u> Lytic	384 al K	M = 1	DO NOT BILL TB-LB ANALYSIS
Sample Number	Lab Sample Hun	. Number of Cont	Metric S = Soll A = W = Weter C =	Type G G G G G G G G G G G G G G G G G G G	Time	Somple Preserv	(You or No	TPH GAS+ BTEX WANTEE	TPH Ofcord (9015)	Ol and Great (5520)	Purpeable Halocai (8010)	Purgeable Aromati (8020)	Purpedble, Organics (8240)	Extractable Organics (8270)	Metale CACY-Po-Zn.M (ICVP or AN)	0xy58.					9-52/5 Remarks
TB-LB MW-1 MW-2 MW-3 MW-4 MW-5 MW-6 MW-7			3333333	00000	14:45 [2:00 [2:25 [4:08 [2:55 [3:27 [1:33		YE 5	ソソソソソソソ		,											CONFIRM MTBE HIT W / 2260
Relinquished By Relinquished By Relinquished By	(Signature)		0, 1	gantzation R Inc gantzation Cap 14	7 7	Date/Time Date/Time #26/#2 Date/Time 7/27/W	Ri Ri	oolved (by (Sign	oratory	By (Sign	ature)	Organiza Seg Organiza	llon .	Do Da	te/time 26/16 te/time te/time	13:25		Turn A	2 4 5	ime (Circle Cholce) 4 Hre. 6 Hre. 1 Doye 1 Daye 2 Contracted





October 12, 2000

Deanna Harding Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin, CA 94568

RE: Tosco(4)/L007220

Dear Deanna Harding:

Enclosed are the results of analyses for sample(s) received by the laboratory on July 27, 2000. Report was revised to include additional oxygenates. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Wayne Stevenson Project Manager

CA ELAP Certificate Number I-2360





Project Number: Unocal SS#6419
Project Manager: Deanna Harding

Sampled: 7/26/00 Received: 7/27/00 Reported: 10/12/00

ANALYTICAL REPORT FOR L007220

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
TB-LB	L007220-01	Water	7/26/00
MW-1	L007220-02	Water	7/26/00
MW-2	L007220-03	Water	7/26/00
MW-3	L007220-04	Water	7/26/00
∕IW-4	L007220-05	Water	7/26/00
1₩-5	L007220-06	Water	7/26/00
1W-6	L007220-07	Water	7/26/00
fW-7	L007220-08	Water	7/26/00





Gettler-Ryan/Geostrategies(1)
Project: Tosco(4)
Sampled: 7/26/00
6747 Sierra Court, Suite J
Project Number: Unocal SS#6419
Received: 7/27/00
Dublin, CA 94568
Project Manager: Deanna Harding
Reported: 10/12/00

Sample Description: Laboratory Sample Number:

TB-LB L007220-01

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method/ Surrogate Limits	Reporting Limit	Result	Units	Notes*
		*						11000
		Seque	ia Analytica	l - San Carlos				
<u> Total Purgeable Hydrocarbons (C6-C</u>	12), BTEX ar							1
Purgeable Hydrocarbons as Gasoline	0080030	8/7/00	8/7/00		50.0	ND	ug/l	-
Benzene	er	Ħ	**	•	0.500	ND	17	
l'oluene		n	м		0.500	ND	11	
Ethylbenzene			H		0.500	ND	. 0	
Kylenes (total)		11	11		0.500	ND	**	
Methyl tert-butyl ether	H	*	#		5.00	ND	н	
Surrogate: a,a,a-Trifluorotoluene	п	н	"	70.0-130		109	%	



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Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J

Dublin, CA 94568

Project: Tosco(4)

7/26/00 Sampled:

Project Number: Unocal SS#6419

Project Manager: Deanna Harding

Received: 7/27/00

Reported:

10/12/00

Sample Description: **Laboratory Sample Number:** MW-1 L007220-02

	Detak	Date	Date	Specific Method/	Reporting		•	
1	Batch				Limit	Result	Units	Notes*
Analyte	Number	Prepared	Analyzed	Surrogate Limits	Limit	Kesuit	Ollis	110005
		Seque	oia Analytica	ıl - <u>San Carlos</u>				
Total Purgeable Hydrocarbons (C6-C1	2), BTEX ar	id MTBE by	DHS LUFT					<u>1</u>
Purgeable Hydrocarbons as Gasoline	0080030	8/7/00	8/7/00		50.0	146	ug/l	2
Benzene	Ħ	#1	17	•	0.500	ND	**	
Toluene	11	**	H		0.500	ND	11	
Ethylbenzene	17	н	m		0.500	ND	11	
Xylenes (total)	п	H			0.500	ND	**	
Methyl tert-butyl ether	**		**		1000	30900	11	3
Surrogate: a,a,a-Trifluorotoluene	H	"	H .	70.0-130		95.9	%	
MTBE by EPA Method 8260B								4 .
1,2-Dibromoethane	0080048	8/10/00	8/10/00		500	ND	ug/l	
1,2-Dichloroethane	н	11	n		500	ND	11	
Di-isopropyl ether		n	m		500	ND		
Ethyl tert-butyl ether	н	ut .	H		500	ND	n	
Tert-amyl methyl ether	'n	н	91		500	ND	11	
Tert-butyl alcohol	Ħ		11		500	ND	11	
Methyl tert-butyl ether	**	11	tt .		500	42800	10	
Surrogate: 1,2-Dichloroethane-d4	"	. #	**	76.0-114		105	%	





Project: Tosco(4)

Sampled: 7/26/00

Dublin, CA 94568

Project Number: Unocal SS#6419

Project Manager: Deanna Harding

Received: 7/27/00 Reported: 10/12/00

Sample Description:

Laboratory Sample Number:

MW-2 L007220-03

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method/ Surrogate Limits	Reporting Limit	Result	Units	N I_4#
	Hulloci	1 1chared	Mialyzeu	Surrogate Limits	Limit	Result	Omits	Notes*
		Seque	oia Analytica	I - San Carlos				
Total Purgeable Hydrocarbons (C6-C	12), BTEX an	d MTBE by	DHS LUFT					· 1
Purgeable Hydrocarbons as Gasoline	0080030	8/7/00	8/7/00		50.0	ND	ug/i	-
Benzene	11	a	W		0.500	ND	"	
Toluene	#	Ħ	m		0.500	ND	17	
Ethylbenzene	11		M		0.500	ND	11	
Xylenes (total)	н	H	n		0.500	ND	TF	
Methyl tert-butyl ether	7	R	н		5.00	89.9	Ħ	
Surrogate: a,a,a-Trifluorotoluene	н	"	"	70.0-130		113	%	



1551 Industrial Road San Carlos, CA 94070-4111 (650) 232-9600 FAX (650) 232-9612 www.sequoialabs.com

Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J

Project:

Tosco(4)

Project Number: Unocal SS#6419

Sampled:

7/26/00

Dublin, CA 94568

Project Manager: Deanna Harding

Received: Reported:

7/27/00 10/12/00

Sample Description:

Laboratory Sample Number:

MW-3

L007220-04

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method/ Surrogate Limits	Reporting Limit	Result	Units	Notes*
	·	Seque	oia Analytica	l - San Carlos		-		
Total Purgeable Hydrocarbons (C6-C)	12), BTEX ar	d MTBE by	DHS LUFT					1
Purgeable Hydrocarbons as Gasoline	0080030	8/7/00	8/7/00		50.0	ND	ug/l	
Benzene	Ħ	**	H .		0.500	ND	11	
Toluene	u	н	н		0.500	ND	10	
Ethylbenzene	n	17	11		0.500	ND		
Xylenes (total)	**	18	11		0.500	ND	а	
Methyl tert-butyl ether	n	Ħ	ti .		100	927	11	3
Surrogate: a,a,a-Trifluorotoluene	"	н	n	70.0-130	<u></u>	103	%	





Project: Tosco(4)

Project Number: Unocal SS#6419 Project Manager: Deanna Harding Sampled: 7/26/00

Received: 7/27/00 Reported: 10/12/00

Sample Description:

Laboratory Sample Number:

MW-4 L007220-05

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method/ Surrogate Limits	Reporting Limit	Result	Units	Notes*
		Same	da Amabudaa	L San Carles				
Total Purgeable Hydrocarbons (C6-C	12). RTEX 91			I - San Carlos				1
Purgeable Hydrocarbons as Gasoline	0080030	8/7/00	8/7/00		50.0	ND	ug/l	±
Benzene	"	11	11		0.500	ND	#	
Toluene	**	11	11		0.500	ND	11	
Ethylbenzene	**	11	11		0.500	ND	11	
Xylenes (total)	m	71	Ħ		0.500	ND	ti	
Methyl tert-butyl ether	н	#	8/8/00		250	3710	н	3
Surrogate: a,a,a-Trifluorotoluene	"	n	8/7/00	70.0-130		114	%	



Project:

Tosco(4)

Sampled:

7/26/00

Dublin, CA 94568

Project Number: Project Manager: Deanna Harding

Unocal SS#6419

Received: Reported:

7/27/00 10/12/00

Sample Description: **Laboratory Sample Number:** MW-5

L007220-06

	Batch	Date	Date	Specific Method/				
Analyte	Number	Prepared	Analyzed	Surrogate Limits	Limit	Result	Units	Notes*
		Sogn	oja Anabetiaa	l - San Carlos				
Total Purgeable Hydrocarbons (C6-C	12) RTEX or			I - San Carios				1
Purgeable Hydrocarbons as Gasoline	0080030	8/7/00	8/7/00		50.0	ND	ug/l	-
Benzene	"	11	11		0.500	ND	"	
Toluene	Ħ		и		0.500	ND	19	
Ethylbenzene	1 1	и	er		0.500	ND	н	
Xylenes (total)	Ħ	H			0.500	ND	н	
Methyl tert-butyl ether	#	Ħ	u		5.00	25.9	п	•
Surrogate: a,a,a-Trifluorotoluene	н	n	н	70.0-130		106	%	





Project: Tosco(4)

Project Number: Unocal SS#6419

Sampled: Received: 7/27/00

7/26/00

Dublin, CA 94568

Project Manager: Deanna Harding

Reported: 10/12/00

Sample Description:

Laboratory Sample Number:

MW-6 L007220-07

	Batch	Date	Date	Specific Method/		Result	Units	Notes*
Analyte	Number	Prepared	Analyzed	Surrogate Limits	Limit	Result	Onts	TVOICS
		Seque	oia Analytica	l - San Carlos				
Total Purgeable Hydrocarbons (C6-C	12), BTEX at	d MTBE by	DHS LUFT		*			1
Purgeable Hydrocarbons as Gasoline	0080029	8/7/00	8/7/00		50.0	ND	ug/l	
Benzene	n	п	11		0.500	ND	u	
Toluene	H	m	"		0.500	ND	**	
Ethylbenzene	w	**	11		0.500	ND	**	
Xylenes (total)		я	n		0.500	ND	TT	
Methyl tert-butyl ether	**	11	8/8/00		500	4280	11	3 :
Surrogate: a,a,a-Trifluorotoluene	"	ır	8/7/00	70.0-130		103	%	



Gettler-Ryan/Geostrategies(1)

6747 Sierra Court, Suite J

Project Number: Unocal SS#6419

Project Manager: Deanna Harding

Received: 7/27/00

Reported: 10/12/00

Sample Description:

Laboratory Sample Number:

MW-7 L007220-08

	Batch	Date	Date	Specific Method/ Surrogate Limits		Result	Units	Notes*
Analyte	Number	Prepared	Analyzed	Surrogate Linus	2.11111			
				l - San Carlos				1
Total Purgeable Hydrocarbons (C6-C	12), BTEX at	IN WIRE D	OHS LUFI	•	50.0	ND	ug/l	_
Purgeable Hydrocarbons as Gasoline	0080034	8/8/00	8/8/00		0.500	ND	"	
Benzene	"	11	#		0.500	ND	11	
Toluene	•	π .	,,		0.500	ND	н	
Ethylbenzene	11	11	" N		0.500	ND	11	
Xylenes (total)	H	10			5.00	17.9	78	
Methyl tert-butyl ether	11	м	11 	50.0.700	3.00	119	%	
Surrogate: a,a,a-Trifluorotoluene	n	n .	7	<i>70.0-130</i>		117		





Gettler-Ryan/Geostrategies(1)

6747 Sierra Court, Suite J

Project Number: Unocal SS#6419

Dublin, CA 94568

Project Manager: Deanna Harding

Reported: 7/26/00

Received: 7/27/00

Reported: 10/12/00

Potal Purgéab	ie Hydrocari	ons (Co-C Sequo	12), BIRA a Analytica	ang yi 13 I-San Car	los	SAUFU() malify				
	Date	Spike	Sample	QC		Reporting Limit	Recov.	RPD	RPD	
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	%	Notes'
Batch: 0080029	Date Prepa	red: 8/7/00)		Extrac	tion Method: EP.	A 5030B	[<u>P/T]</u>		
Blank	0080029-B		-							
Purgeable Hydrocarbons as Gasoline	8/7/00			ND	ug/l	50.0				
Benzene	10			ND	H	0.500				
Γoluene	н			ND	*	0.500				
Ethylbenzene	Ħ			ND	я	0.500				
Kylenes (total)	11			ND	H.	0.500				
Methyl tert-butyl ether	#1			ND	n	5.00				
Surrogate: a,a,a-Trifluorotoluene	H	10.0		11.8	H	70.0-130	118			
LCS	0080029-B	2 1								
Benzene	8/7/00	10.0		8.36	ug/l	70.0-130	83.6			
Toluene	Ø/ //OO	10.0		7.73	n n	70.0-130	77.3			
	н	10.0		7.75	н	70.0-130	77.5			
Ethylbenzene	*1	30.0		23.6	**	70.0-130				
Xylenes (total) Surrogate: a,a,a-Trifluorotoluene	n .	10.0		11.7	#	70.0-130	117		•	•
-						÷				
LCS	0080029-B			256		70.0-130	102			
Purgeable Hydrocarbons as Gasoline	8/7/00	250		256_	ug/l	70.0-130	116			
Surrogate: a,a,a-Trifluorotoluene		10.0		11.6	•	/0.0-130	110			
Matrix Spike	0080029-M	<u>IS1 L</u>	007219-02							
Benzene	8/7/00	10.0	ND	11.0	ug/l	60.0-140				
Foluene	11	10.0	ND	10.2	11	60.0-140				
Ethylbenzene	n	10.0	ND	10.5	n	60.0-140				
Xylenes (total)	n	30.0	ND	31.7	Ħ	60.0-140				
Surrogate: a,a,a-Trifluorotoluene	п	10.0		10.5	n	70.0-130	105			
Matrix Spike Dup	0080029-M	ISD1 L	007219-02							
Benzene	8/7/00	10.0	ND	10.3	ug/l	60.0-140	103	25.0	6.57	
Foluene	H	10.0	ND	9.47	. н	60.0-140		25.0	7.42	
Ethylbenzene	H	10.0	ND	9.63	M	60.0-140		25.0	8.64	
Xylenes (total)	ч	30.0	ND	29.2	19	60.0-140		25.0	8.56	
Surrogate: a,a,a-Trifluorotoluene	- II	10.0		10.6	п	70.0-130				
Batch: 0080030	Date Prepared: 8/7/00				Extraction Method: EPA 5030B [P/T]					
<u>Blank</u>	<u>0080030-B</u>	LK1								
Purgeable Hydrocarbons as Gasoline	8/7/00			ND	ug/l	50.0				
Benzene	Ħ			ND	H	0.500				
Toluene	H			ND	**	0.500				
Ethylbenzene	Ħ			ND	17	0.500				
Xylenes (total)	tt			ND	**	0.500				

Sequoia Analytical - San Carlos

*Refer to end of report for text of notes and definitions.





Seguoia Analytical - San Carlos

Gettler-Ryan/Geostrategies(1)
Project: Tosco(4)
Sampled: 7/26/00
Received: 7/27/00
Unocal SS#6419
Dublin, CA 94568
Project Manager: Deanna Harding
Reported: 10/12/00

Total Purgeable Hydrocarbons (C6-C12); BTEX; and MTRE by DHS LEET/Finality Control Sequoia Analytical - San Carles RPD RPD Reporting Limit Recov. <u>oc</u> Sample Spike Date % Notes' % Limit Recov. Limits Units Result Result Level Analyzed Analyte 0080030-BLK1 Blank (continued) 5.00 ND ug/l 8/7/00 Methyl tert-butyl ether 120 70.0-130 12.0 10.0 Surrogate: a,a,a-Trifluorotoluene 0080030-BS1 LCS 105 70.0-130 ug/l 10.0 10.5 8/7/00 Benzene 101 70.0-130 10.1 10.0 Toluene 97.5 70.0-130 9.75 10.0 Ethylbenzene 97.7 70.0-130 29.3 30.0 Xylenes (total) 112 70.0-130 11.2 10.0 Surrogate: a,a,a-Trifluorotoluene 0080030-BS2 **LCS** 70.0-130 94.4 236 ug/l 250 Purgeable Hydrocarbons as Gasoline 8/7/00 70.0-130 116 11.6 10.0 Surrogate: a,a,a-Trifluorotoluene L007219-08 0080030-MS1 Matrix Spike 97.7 60.0-140 9.77 ND ug/l 8/7/00 10.0 Benzene 92.5 60.0-140 9.25 ND 10.0 Toluene 92.4 ** 60.0-140 9.24 10.0 ND Ethylbenzene 91.0 60.0-140 27.3 30.0 ND Xylenes (total) 109 70.0-130 10.9 10.0 Surrogate: a,a,a-Trifluorotoluene L007219-08 0080030-MSD1 Matrix Spike Dup 25.0 2.33 100 60.0-140 ND 10.0 ug/l 10.0 8/7/00 Benzene 3.40 95.7 25.0 60.0-140 9.57 ND 10.0 Toluene 25.0 2.04 94.3 60.0-140 9.43 ND 10.0 Ethylbenzene 25.0 3.98 94.7 60.0-140 ND 28.4 30.0 Xylenes (total) 111 70.0-130 $\overline{11.1}$ 10.0 Surrogate: a,a,a-Trifluorotoluene Extraction Method: EPA 5030B [P/T] Date Prepared: 8/8/00 Batch: 0080034 0080034-BLK1 **Blank** 50.0 ND ug/l 8/8/00 Purgeable Hydrocarbons as Gasoline 0.500 ND Benzene 0.500 ND Toluene 0.500 ND Ethylbenzene 0.500 ND Xylenes (total) 5.00 ND Methyl tert-butyl ether 70.0-130 124 12.4 10.0 Surrogate: a.a.a-Trifluorotoluene 0080034-BS2 **LCS** 70.0-130 236 ug/l 8/8/00 Purgeable Hydrocarbons as Gasoline 5 136 70.0-130 13.6 10.0 Surrogate: a,a,a-Trifluorotoluene



Project: Tosco(4)

Sampled: 7/26/00

Project Number: Unocal SS#6419 Project Manager: Deanna Harding

Received: 7/27/00 Reported: 10/12/00

Total Purgeable Hydrocarbons		

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits		RPD Limit	RPD % Notes*
	0080034-B5	23							
<u>LCS</u>	8/8/00	<u>,,, , , , , , , , , , , , , , , , , , </u>		10.7	ug/l	70.0-130	107		
Benzene	8/0/00			9.85	#	70.0-130	98.5		
Toluene				9.91	н	70.0-130	99.1		
Ethylbenzene	#			29.7	я	70.0-130	99.0		
Xylenes (total) Surrogate: a,a,a-Trifluorotoluene		10.0		11.9	т	70.0-130	119		,
Darrogulo. U,u,u 1-9		_							
Matrix Spike	0080034-M	<u>IS1 L</u> 250	007223-18 ND	254	ug/I	60.0-140	102		
Purgeable Hydrocarbons as Gasoline Surrogate: a,a,a-Trifluorotoluene	8/8/00	10.0	TID_	12.0	n	70.0-130	120		
Matrix Spike Dup	0080034-M 8/8/00	<u>ISD1 L</u> 250	.007223-18 ND	262	ug/l	60.0-140	105	25.0	2.90
Purgeable Hydrocarbons as Gasoline Surrogate: a,a,a-Trifluorotoluene	#	10.0		11.5	н	70.0-130	115		



Project: Project Number: Unocal SS#6419

Project Manager:

Tosco(4)

Deanna Harding

Sampled: Received:

7/26/00 7/27/00

Reported:

10/12/00

MTBE by EPA Method 8260B/Quality Contro

	Date	Spike	Sample	QC		Reporting Limit	Recov.	RPD	RPD
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	% Notes*
D . 1 . 0000040	D.4. D		10		Evtrac	tion Method: EP.	A 5030B	(P/T)	
Batch: 0080048	<u>Date Prepa</u> 0080048-B		<u> 10</u>		CAUBO	tion Michou. En	T DODOLD	12721	
Biank	8/10/00	<u> LVI</u>		ND	ug/l	2.00			
1,2-Dibromoethane	8/10/00			ND	ug/1	2.00			•
1,2-Dichloroethane				ND	н	2.00			
Di-isopropyl ether						2.00			
Ethyl tert-butyl ether	17			ND					
Tert-amyl methyl ether	H			ND	W ,	2.60			
Tert-butyl alcohol	п			ND		2.00			
Methyl tert-butyl ether	11			ND	# ···	2.00	100		
Surrogate: 1,2-Dichloroethane-d4	π	50.0		50.9	"	76.0-114	102		
Blank	0080048-B	LK2							
Methyl tert-butyl ether	8/11/00			ND	ug/l	2.00			
Surrogate: 1,2-Dichloroethane-d4	"	50.0		51.4	н	76.0-114	103		
Blank	008 <u>0048-B</u>	LK3							
Methyl tert-butyl ether	8/13/00	LIKS		ND	ug/l	2.00			
Surrogate: 1,2-Dichloroethane-d4	#	50.0		47.6	n n	76.0-114	95.2		
* 66	0000040 T	·C1							
LCS	0080048-B	50.0		52.3	wa/1	70.0-130	105		
Methyl tert-butyl ether	8/10/00			53.3	ug/l "	76.0-114	107		
Surrogate: 1,2-Dichloroethane-d4	"	50.0		23.3		70.0-114	107		
LCS	0080048-B								
Methyl tert-butyl ether	8/11/00	50.0	_ 	49.9	ug/l	70.0-130		•	
Surrogate: 1,2-Dichloroethane-d4	H	50.0		55.9	п	76.0-114	112		
LCS	0080048-E	IS3							
Methyl tert-butyl ether	8/13/00	50.0		60.1	ug/l	70.0-130			
Surrogate: 1,2-Dichloroethane-d4	"	50.0		47.0	п	76.0-114	94.0		
Matrix Spike	00 <u>80048-N</u>	AS1 I	.008 <u>070-04</u>		•	•			
Methyl tert-butyl ether	8/11/00	50.0	ND	52.7	ug/l	60.0-140	105		
Surrogate: 1,2-Dichloroethane-d4	#	50.0	- ND	55.4	"	76.0-114			
	00000 40 E	Jeni I	ለስያልማል ለ4						
Matrix Spike Dup	0080048-N		<u>.008070-04</u>	40.0	,,~/i	60.0-140	99.6	25.0	5.28
Methyl tert-butyl ether	8/11/00	50.0	ND	49.8 54.1	ug/l	76.0-114		20,0	
Surrogate: 1,2-Dichloroethane-d4	π	50.0		3 4 .1		/0.0~114	100		





Project Number: Unocal SS#6419
Project Manager: Deanna Harding

Sampled: 7/26/00 Received: 7/27/00 Reported: 10/12/00

Notes and Definitions

#	Note
1	Insufficient preservative to reduce sample pH to less than 2. Sample was analyzed within 14 days, but beyond the seventh day recommended for Benzene, Toluene, Xylene and Ethylbenzene.
2	Chromatogram Pattern: Unidentified Hydrocarbons C6-C12
3	MTBE was reported from second analysis.
4	This sample was analyzed outside of the EPA recommended holding time.
5	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference