

GETTLER-RYAN INC. WOLLE

TRANSMITTAL

April 29, 2002 G-R #180012

TO:

Mr. David B. De Witt

Phillips 66 Company

2000 Crow Canyon Place, Suite 400

San Ramon, California 94583

CC:

Mr. Douglas J. Lee Gettler-Ryan Inc.

Dublin, California

FROM:

Deanna L. Harding

Project Coordinator Gettler-Ryan Inc.

6747 Sierra Court, Suite J Dublin, California 94568 RE:

Tosco (Unocal) Service Station

#5484

18950 Lake Chabot Road Castro Valley, California

Wien \$ 8/13/07

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
1	April 19, 2002	Groundwater Monitoring and Sampling Report Annual - Event of March 9, 2002

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 *May 10, 2002*, this report will be distributed to the following:

cc: Alameda County Health Care Services, 1131 Harbor Bay Pkwy., Alameda, CA 94502

Enclosure

trans/5484-dbd



April 19, 2002 G-R Job #180012

Mr. David B. De Witt Phillips 66 Company 2000 Crow Canyon Place, Suite 400 San Ramon, California 94583

MAY 1 6 2002

RE:

Annual Event of March 9, 2002

Groundwater Monitoring & Sampling Report

Tosco (Unocal) Service Station #5484

18950 Lake Chabot Road Castro Valley, California

Dear Mr. De Witt:

This report documents the most recent groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R) at the referenced site. All field work was conducted in accordance with G-R Standard Operating Procedure -Groundwater Sampling (attached).

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 Tables 1, 2 and 3. A Concentration Map is included as Figure 2. The chain of custody document and laboratory analytical reports are also attached.

No. 6882

Sincerely,

Project Coordinator

Senior Geologist, R.G. No. 6882

Figure 1:

Potentiometric Map

Figure 2:

Concentration Map

Table 1:

Groundwater Monitoring Data and Analytical Results

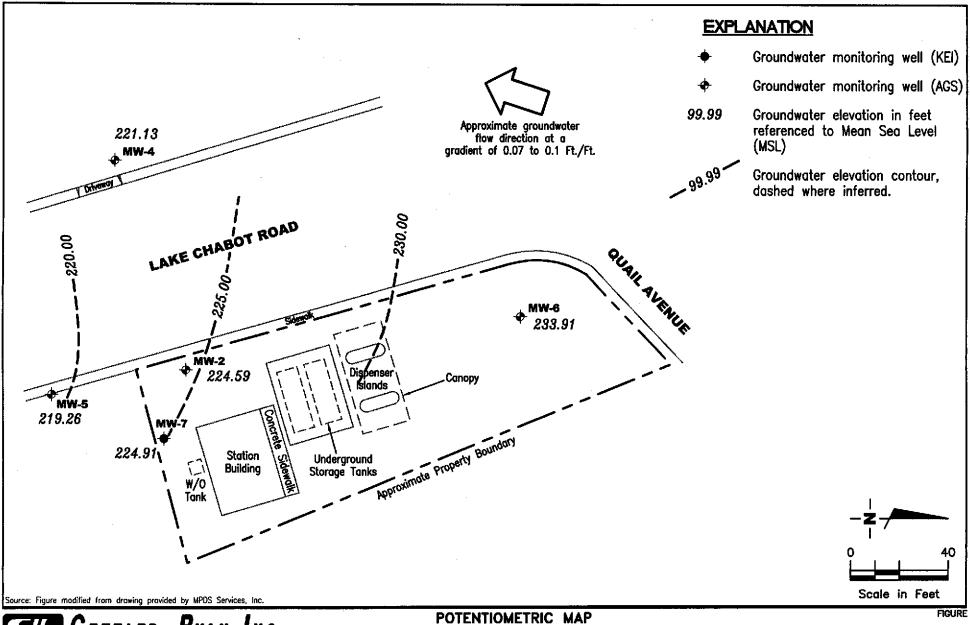
Table 2:

Groundwater Analytical Results

Table 3: Attachments: Groundwater Analytical Results - Oxygenate Compounds Standard Operating Procedure - Groundwater Sampling

Field Data Sheets

Chain of Custody Document and Laboratory Analytical Reports





RÉVIEWED BY

Tosco (Unocal) Service Station #5484 18950 Lake Chabot Road

Castro Valley, California

DATE REVISED DATE March 9, 2002

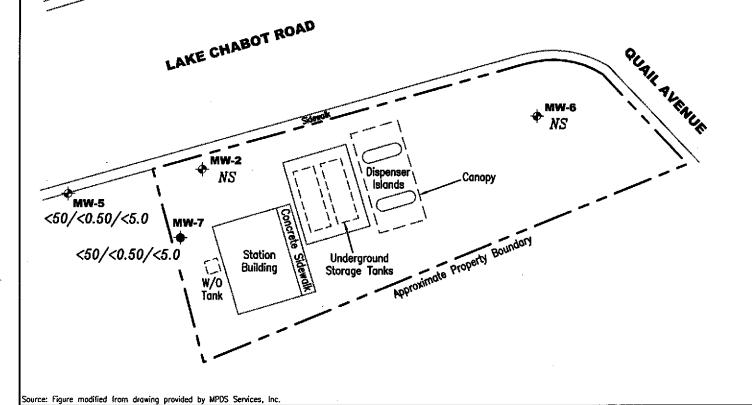
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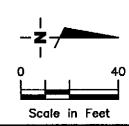
PROJECT NUMBER

180012

<u>EXPLANATION</u>

- Groundwater monitoring well (KEI)
- Groundwater monitoring well (AGS)
- A/B/C Total Petroleum Hydrocarbons (TPH) as Gasoline/Benzene/ MTBE concentrations in ppb
- NS Not Sampled





GETTLER - RYAN INC

270/3.1/1,200

(925) 551-7555

CONCENTRATION MAP
Tosco (Unocal) Service Station #5484
18950 Lake Chabot Road
Castro Valley, California

REVISED DATE

PROJECT NUMBER 180012

REVIEWED BY

DATE March 9, 2002

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FIGURE

Table 1
Groundwater Monitoring Data and Analytical Results

Well ID/	Date	DTW	GWE	TPH-D	TPH-G	В	T	E	X	MTBE
TOC*(ft)		(ft.)	(msl)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
MW-2	05/23/91				ND	ND	ND	ND	ND	
	09/20/91				ND	ND	ND	ND	ND	
	12/19/91				140	0.66	ND	0.64	1.2	
	03/20/92				120	ND	ND	ND	ND	
	06/18/92				140 ¹	ND	ND	ND	ND	
	09/10/92			••	61 ¹	ND	ND	ND	ND	110
	12/10/92	=4			100 ¹	ND	ND	ND	ND	170
229.47	03/10/93	4.69	224.78		110 ¹	ND	ND	ND	ND	350
	06/09/93	5.85	223.62		120¹	ND	ND	ND	ND	300
228.88	09/09/93	6.59	222.29		210 ¹	ND	ND	ND	ND	
	12/09/93	6.94	221.94	•-	96¹	ND	ND	ND	ND	
	03/03/94	4.91	223.97		240¹	ND	ND	ND	ND	
	06/03/94	5.71	223.17		190 ¹	ND	ND	ND	ND	
	09/02/94	7.05	221.83		720	ND	ND	ND	4.6	
	12/01/94	6.98	221.90		200	0.70	ND	0.58	ND	
	03/01/95	4.60	224.28		ND	ND	ND	ND	ND	
	06/01/95	4.65	224.23		420 ¹	ND	ND	ND	ND	
	09/05/95	5.66	223.22		ND	ND	0.80	ND	0.74	5
	12/05/95	6.32	222.56		ND	ND	ND	ND	ND	390
	04/11/96	4.22	224.66	NOT SAMPLED6						·
	03/13/97	6.58	222.30						**	
	03/02/98	5.18	223.70							
	03/25/99	4.84	224.04							
	03/07/00	4.92	223.96							
	03/28/01	4.37	224.51				**	**		
	03/09/02	4.29	224.59							

Table 1 Groundwater Monitoring Data and Analytical Results

Well ID/	Date	DTW	GWE	TPH-D	TPH-G	В	T	E	X	MTBE
TOC*(ft)		(ft.)	(msl)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
5 aver 4										
MW-4	05/23/91				ND	ND	ND	ND	ND	
	09/20/91			SAMPLED SEMI-						
	12/19/91				ND	ND	ND	ND	ND	
	03/20/92	**					77			
	06/18/92				ND	0.41	0.84	ND	0.55	
	09/10/92									
	12/10/92				ND	ND	ND	ND	ND	
228.08	03/10/93	7.24	220.84		ND	ND	ND	ND.	ND	
	06/09/93	8.79	219.29	w~	ND	ND	ND	ND	ND	
227.77	09/09/93	9.91	217.86		ND	ND	ND	ND	ND	
	12/09/93	INACCESSIBLE				~~				
	03/03/94	6.98	220.79		ND	ND	ND	ND ·	ND	
	06/03/94	8.26	219.51		ND	ND	ND	ND	ND	
	09/02/94	10.08	217.69		ND	ND	ND	ND	ND	
	12/01/94	10.01	217.76		ND	ND	ND	ND	ND	
	03/01/95	7.29	220.48		ND	ND	1.1	ND	0.75	
	06/01/95	7.65	220.12		ND	ND	0.78	ND	1.7	
	09/05/95	9.27	218.50		ND	ND	0.70	ND	0.71	
	12/05/95	9.92	217.85	₩→	ND	ND	ND	ND	ND	0.68
	04/11/96	7.55	220.22		ND	ND	ND	ND	ND	ND
	03/13/97	9.84	217.93		ND	ND	ND	ND	ND	ND
	03/02/98	8.84	218.93		ND	ND ·	ND	ND	ND	ND
	03/25/99	7.46	220.31	**	ND	ND	ND	ND	ND	7.6
	03/07/00	7.58	220.19		ND	ND	1.11	ND	ND	ND
	03/28/01	7.62	220.15		ND -	ND	ND	ND	ND	ND
	03/09/0211	6.64	221.13	**	270 ⁸	3.1	<1.0	5.0	<1.0	1,200

Table 1
Groundwater Monitoring Data and Analytical Results

Well ID/	Date	DTW	GWE	TPH-D	TPH-G	В	T	E	Х	MTBE
TOC*(ft)		(fL)	(msl)	(ppb)	(ppb)	(ppb)	(ррв)	(ppb)	(ppb)	(ppb)
MW-6	05/23/91				ND	ND	ND	ND	ND	
	09/20/91			SAMPLED SEMI-A						
	12/19/91				ND	ND	ND	ND	ND	
	06/18/92				ND	ND	ND	ND	ND	
	12/10/92				ND	ND	ND	ND	ND	
239.38	03/10/93	5.32	234.06							
	06/09/93	5.94	233.44		ND	ND	ND	ND	ND	
239.04	09/09/93	6.82	232.22							
	12/09/93	7.43	231.61		150	ND	ND	ND	1.7	
	03/03/94	6.45	232.59							
	06/03/94	5.81	233.23	**	ND	ND	ND	ND	ND	
	09/02/94	6.98	232.06							
	12/01/94	6.92	232.12		ND	ND	ND	ND	ND	
	03/01/95	5.17	233.87							
	06/01/95	4.76	234.28		ND	ND	0.70	ND	1.7	
	09/05/95	5.69	233.35							
	12/05/95	6.75	232.29		ND	ND	ND	ND	ND	1.4
	04/11/96	4.28	234.76	NOT SAMPLED ⁶						
	03/13/97	7.05	231.99							
	03/02/98	5.14	233.90							
	03/25/99	5.05	233.99							
	03/07/00	5.15	233.89							
	03/28/01	5.17	233.87	. 	**					
	03/09/02	5.13	233.91	**						••
MW-7	05/23/91		**	540	3,000	160	1.2	25	120	
	09/20/91			580	1,400	160	0.75	89	130	
	12/19/91			770	3,900	240	2.4	280	270	
	03/20/92			3,200	11,000	980	ND	990	1,600	
	06/18/92			990 ²	5,500	340	4.2	380	410	

Table 1
Groundwater Monitoring Data and Analytical Results

Well ID/	Date	DTW	GWE	TPH-D	TPH-G	В	T	E	X	MTBE
TOC*(ft)		(ft.)	(msl)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
		-								
MW-5	05/23/91	~=			ND	ND	ND	ND	ND	
	09/20/91			450	ND	ND	ND	ND	ND	
	10/10/91			ND						
	12/19/91				ND	ND	ND	ND	ND	
	03/20/92			170	ND	ND	ND	ND	ND	
	06/18/92			ND	ND	ND	ND	ND	ND	
	09/10/92			110^2	ND	ND	ND	ND	ND	
	12/10/92			83 ³	ND	ND	ND	ND	ND	
225.42	03/10/93	7.67	217.75	69 ²	ND	ND	ND	ND	ND	
	06/09/93	8.57	216.85	64	ND	ND	ND	ND	ND	
225.11	09/09/93	9.12	215.99	58 ³	ND	ND	ND	ND	ND	
	12/09/93	9.97	215.14	87 ³	ND	ND	ND	ND	ND	
	03/03/94	7.87	217.24	ND	ND	ND	ND	0.71	1.7	ND
	06/03/94	9.01	216.10	80^{3}	ND	ND	ND	ND	ND	
	09/02/94	9.23	215.88	130^{2}	ND	ND	ND	ND	ND	
	12/01/94	9.18	215.93	79 ²	ND	ND	ND	ND	ND	
	03/01/95	7.98	217.13	ND	ND	ND	ND	ND	ND	
	06/01/95	8.21	216.90	57 ²	ND	ND	ND	ND	ND	
	09/05/95	9.57	215.54	210 ²	ND	ND	0.95	ND	0.87	⁵
	12/05/95	9.60	215.51	170 ²	ND	ND	ND	ND	ND	27
	04/11/96	7.48	217.63		ND	ND	ND	ND	ND	56
	03/13/97	9.56	215.55		ND	ND	ND	ND	ND	ND
	03/02/98	8.96	216.15		ND	ND	ND	ND	ND	ND
	03/25/99	7.53	217.58		ND	ND	ND	ND	ND	3.9
	03/07/00	7.49	217.62		ND	ND	1.13	NĎ	ND	ND
	03/28/01	6.83	218.28	••	ND	ND	ND	ND	ND	ND
	03/09/02	5.85	219.26		<50	<0.50	<0.50	<0.50	<0.50	<5.0

Table 2 Groundwater Analytical Results

Tosco (Unocal) Service Station #5484

18950 Lake Chabot Road Castro Valley, California

Well ID	Date	TOG (ppm)	Bis (2-ethylhexyl) phthalate (ppb)	2-Methyl- naphthalene <i>(ppb)</i>	Naphthalene (ppb)	1,2- Dichloroethane (ppb)	Chloroform (ppb)	Bromodich- loromethane (ppb)
MW-7	12/01/94		ND	ND	2.5	1.0		
(cont)	03/01/954		ND	40	120	1.6		
()	06/01/95		ND	13	83	1.4		
	09/05/95		ND	ND	7.0	1.8		
	12/05/95 ⁵					ND		
	12/08/95		ND	ND	14			
	04/11/96		ND	7.6	42	0.75		
	03/13/97		120	ND	9.0	ND		
	03/02/98 ⁶					0.92		
	03/25/99		ND	ND	ND	ND		
	03/07/00		ND ⁷	ND^7	ND^7	ND ⁷	ND^7	ND^7
	03/28/01		ND	ND	7.7	ND	ND	ND
	03/09/028	~*	<10	<5.0	<5.0	<0.50	<0.50	<0.50

EXPLANATIONS:

Groundwater analytical results prior to March 2, 1998, were provided by MPDS Services, Inc.

TOG = Total Oil and Grease

(ppb) = Parts per billion

(ppm) = Parts per million

ND = Not Detected

-- = Not Analyzed

- Nine "tentatively identified compounds" were detected by the EPA Method 8270 open scan at concentrations ranging from 10 ppb to 59 ppb. Refer to laboratory analysis sheets for the specific compounds and concentrations.
- Ten "tentatively identified compounds" were detected by the EPA Method 8270 open scan at concentrations ranging from 14 ppb to 150 ppb. Refer to laboratory analysis sheets for the specified compounds and concentrations.
- Seven "tentatively identified compounds" were detected by the EPA Method 8270 open scan at concentrations ranging 11 ppb to 88 ppb. Refer to laboratory analysis sheets for the specific compounds and concentrations.
- ⁴ Phenol was detected at a concentration of 2.1 ppb.
- Tetrachloroethene was detected at a concentration of 56 ppb.
- EPA Method 8270 requested on chain of custody; laboratory inadvertently omitted testing.
- Detection limit raised. Refer to analytical reports.
- Results suggest that the sample voas for MW-4 and MW-7 may have been switched either in the field or in the laboratory.

Note: All EPA Method 8010 and 8270 compounds were ND, except as listed above.

Table 2 Groundwater Analytical Results

		· · · · · · · · · · · · · · · · · · ·			Casuo valley,				
MW-4 04/11/96 ND ND ND ND ND ND 03/03/397 ND ND ND ND ND ND ND 03/03/397 ND	Well ID	Date	Consultation (Consultation)	phthalate	naphthalene		Dichloroethane		loromethane
03/13/97 ND ND ND ND ND ND 03/02/98 ND			(ppm)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
03/13/97 ND ND ND ND ND ND 03/02/98 ND	MW.4	04/11/96		ND	ND	ND	ND		
03/02/98	11211								
03/25/99									
03/07/00									
03/28/01 ND									
MW-5 03/10/93 ND ND ND ND ND ND 06/09/93 0 07 ND ND 05/09/93 0 07 ND 05/09/93 0 07 ND 05/09/93 0 0 07 ND 05/09/93 0 0 0 07 ND 05/09/93 0 0 0 07 ND 05/09/93 0 0 0 0 ND 0 05/09/94 0 0 0 ND 0 0 ND 0 05/09/94 0 0 0 ND 0 0 ND 0 0 ND 0 0									
06/09/93 ND									
06/09/93 ND	34331 E	02/10/02		ND	h.775				
09/09/93	IVI W -5								
12/09/93									
03/03/94 ND									
06/03/94 ND									
09/02/94 ND									
12/01/94 ND								·	
03/01/95 ND									
06/01/95 ND									
09/05/95 ND ND ND									
12/05/95									
04/11/96 ND ND ND ND ND ND 03/13/97 740 ND ND ND ND ND 03/02/986 ND ND ND ND ND ND 03/25/99 ND									
03/13/97 740 ND ND ND ND 03/02/986 ND								••	
03/02/98 ⁶ ND ND ND ND ND									
03/25/99 ND ND ND ND ND ND									••
03/07/00 ND ⁷ ND ⁷ ND ⁷ ND ⁷ ND ⁷ 69.7 7.16 03/28/01 ND ND ND ND ND ND ND ND 03/09/02 <10 <5.0 <5.0 <5.0 <0.50 <0.50 <0.50 <0.50 MW-7 05/23/91 ND ND ND 12/19/91 ND 12/10/92 ND ND 2.3 12/10/92 2.3 2.0 12/10/92 2.0 2.0 12/10/92 2.0 2.0 2.0 2.0 12/10/93 ND ND 11 48 1.5 12/09/93 ND ND 11 48 1.5									
03/28/01 ND									
MW-7 05/23/91 ND ND ND 12/19/91 ND 2.3 2.0									
MW-7 05/23/91 ND 3.4 09/20/91 ND ND 3.1 12/19/91 ND 3.1 3.1 3.1 3.1 3.1 3.1 3.1 12/19/92 ND ND ND ND 12/10/92 2.3 12/10/92 2.3 2.0 12/10/93 13 19 83 1.3 2.0 06/09/93² 13 19 83 1.3 12/10/99³ 13 19 83 1.3 12/10/99³ ND 11 48 1.5 12/10/99³ ND 11 48 1.5 12/10/99³ ND ND 15 1.5									
09/20/91 ND ND 12/19/91 ND 3.1 03/20/92 ND ND ND 06/18/92 ND ND 09/10/92 2.3 12/10/92 2.0 03/10/93¹ 13 19 83 1.3 06/09/93² 13 19 83 1.3 06/09/93³ ND 11 48 1.5 12/09/93 ND ND 15 1.5 12/09/93 ND ND 15 1.5 03/03/94 ND 34 130 1.7 06/03/94 ND 18 61 1.4		03/09/02		<10	<5.0	<5.0	<0.50	<0.50	<0.50
12/19/91 ND 3.1 3.1 ND ND ND ND 2.3 12/10/92 2.0 2.0 2.0 2.0 2.0	MW-7								
03/20/92 ND ND ND ND ND ND ND 12/10/92 2.3 12/10/92 2.0 2.0 2.0 03/10/93\dagger{1} 13 19 83 1.3 06/09/93\dagger{2} 13 19 83 1.3									
06/18/92 ND ND 09/10/92 2.3 12/10/92 2.0 03/10/93¹ 13 19 83 1.3 06/09/93² 13 19 83 1.3 09/09/93³ ND 11 48 1.5 12/09/93 ND ND 15 1.5 03/03/94 ND 34 130 1.7 06/03/94 ND 18 61 1.4									
09/10/92									
12/10/92 2.0 03/10/93¹ 13 19 83 1.3 06/09/93² 13 19 83 1.3 09/09/93³ ND 11 48 1.5 12/09/93 ND ND 15 1.5 03/03/94 ND 34 130 1.7 06/03/94 ND 18 61 1.4			ND						
03/10/93¹ 13 19 83 1.3 06/09/93² 13 19 83 1.3 09/09/93³ ND 11 48 1.5 12/09/93 ND ND 15 1.5 03/03/94 ND 34 130 1.7 06/03/94 ND 18 61 1.4								~-	
06/09/93² 13 19 83 1.3 09/09/93³ ND 11 48 1.5 12/09/93 ND ND 15 1.5 03/03/94 ND 34 130 1.7 06/03/94 ND 18 61 1.4									
09/09/93 ³ ND 11 48 1.5 12/09/93 ND ND 15 1.5 03/03/94 ND 34 130 1.7 06/03/94 ND 18 61 1.4									
12/09/93 ND ND 15 1.5 03/03/94 ND 34 130 1.7 06/03/94 ND 18 61 1.4									
03/03/94 ND 34 130 1.7 06/03/94 ND 18 61 1.4									
06/03/94 ND 18 61 1.4									 .
09/02/94 ND ND ND 1.1									
		09/02/94		ND	ND	ND	1.1		

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station 5484 18950 Lake Chabot Road Castro Valley, California

EXPLANATIONS:

Groundwater monitoring data and laboratory analytical results prior to March 2, 1998, were provided 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 are relative to Mean Sea Level (msl), per the Alameda County Benchmark (Elevation = 219.68 feet msl). Prior to September 9, 1993, DTW measurements were taken from the top of well covers.
- Laboratory reported that the hydrocarbons detected did not appear to be gasoline.
- ² Laboratory report indicates that the hydrocarbons detected did not appear to be diesel.
- Laboratory report indicates that the hydrocarbons detected appeared to be a diesel and non-diesel mixture.
- ⁴ Laboratory reported that the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.
- Laboratory has potentially identified the presence of MTBE at reportable levels in the groundwater sample collected from this well.
- Sampling discontinued per Alameda County Health Care Services letter dated April 1, 1996.
- Detection limit raised. Refer to analytical reports.
- 8 Laboratory report indicates weathered gasoline C6-C12.
- 9 Laboratory report indicates gasoline C6-C12.
- ¹⁰ MTBE by EPA Method 8260.
- Results suggest that the sample voas for MW-4 and MW-7 may have been switched either in the field or in the laboratory.

Table 1
Groundwater Monitoring Data and Analytical Results

Well ID/	Date	ĐTW	GWE	TPH-D	TPH-G	В	T	E	X	MTBE
FOC*(ft)		(ft.)	(msl)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
MW-7	09/10/92			290²	A 100	4	4.5	_		
cont)	12/10/92			290°	2,100	160	1.9	140	150	
231.66	03/10/93	7.60	222.00		1,200	28	ND	37	13	
31.00	05/10/93	7.69	223.97	$1,100^2$	4,400	310	ND	300	330	
231.39		8.59	223.07	830 ³	4,600	430	ND	510	430	
231.39	09/09/93	10.11	221.28	550 ³	2,600 ⁴	160	19	250	120	
	12/09/93	10.65	220.74	250 ²	980	54	4.6	71	5.6	
	03/03/94	8.17	223.22	1,400 ²	9,300	290	ND	590	400	1.7
	06/03/94	8.73	222.66	2,000 ²	9,400	380	5.0	820	240	
	09/02/94	11.00	220.39	490 ²	3,800	77	ND	180	42	
	12/01/94	10.95	220.44	260 ²	3,100	80	ND	250	190	
	03/01/95	8.03	223.36 .	$1,900^3$	3,300	200	3.9	300	350	
	06/01/95	7.92	223.47	$1,600^2$	3,900	170	ND	400	430	
	09/05/95	8.61	222.78	ND	710	32	ND	85	33	5
	12/05/95	9.69	221.70	110 ²	400	23	ND	34	16	1,600
	12/08/95	9.59	221.80							
	04/11/96	7.31	224.08		1,500	52	ND	160	130	1,500
	03/13/97	9.48	221.91		460	13	ND	31	4.0	430
	03/02/98	7.93	223.46		1,800	63	ND^7	240	60	790
	03/25/99	7.25	224.14		380	6.4	ND^7	10	4.9	1,200
	03/07/00	7.12	224.27		199 ⁸	3.51	ND	3.30	0.697	1,250
	03/28/01	6.92	224.47	+-	734 ⁹	19.6	0.514	23.3	6.13	1,070/1,2601
	03/09/0211	6.48	224.91		<50	<0.50	<0.50	<0.50	<0.50	<5.0
rip Blank										
B-LB	03/02/98				ND	ND	ND	ND	ND	ND
	03/25/99				ND	ND	ND	ND	ND	ND
	03/07/00				ND	ND	ND	ND	ND	ND
	03/28/01			PM	ND	ND	ND	ND	ND	ND
	03/09/02				<50	< 0.50	< 0.50	< 0.50	< 0.50	<5.0

Table 3

Groundwater Analytical Results - Oxygenate Compounds

Tosco (Unocal) Service Station #5484 18950 Lake Chabot Road Castro Valley, California

WELLID	DATE	ETHANOL (ppb)	TBA (ppb)	(nuk)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)	1,2-DCA (ppb)	EDB (ppb)
MW-7	03/28/01	ND¹	ND ¹	1,260	ND ⁱ	ND ¹	ND ¹	ND¹	NDI

EXPLANATIONS:

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

ND = Not Detected

ANALYTICAL METHOD:

EPA Method 8260 for Oxygenate Compounds

Dectection 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 Phillips 66 Company, the purge water and decontamination water generated during sampling activities is transported to Phillips 66 - San Francisco Refinery, located in Rodeo, California.

cility # <u>548</u>	34	1 + 0	_ Job#:	18001		
	150 Lake Cho					
y: <u>Cas</u> .	tro Valley, c	<u> </u>	_ Sample	er. Joc	·	
Well ID	mw-2	Well C	ondition:	0.10		
ell Diameter	2 _{in}	Hydroc Thickn	<i></i>	Amount Bail	California de la calendaria de la calend	<u>.</u>
tal Depth	19.12	Volum	-		4" = 0.66 12" = 5,80	
pth to Water	4.29	Factor	(VF)	.0 = 120	12 = 3,80]
	×	VF =	X 3 (case vo	okume) = Estimated Pur	ge Volume:	1
turge Juipment:	Disposable Bailer Bailer Stack		Sampling Equipment:	Disposable Bai Bailer	ler ,	
	Suction Grundfos Other:	· _	•	Pressure Bailer Grab Sample Other:		
		. 4	/eather Condition	e Clea(_
tarting Time:				clear	Odor	
• -	e: 			ion:	•	
-	ن	н	yes; Time:	Volum	le:	#1
	folume pH (gal.)	Condu µmho	ctivity (²⁾ Tempe s/cm X + (2)	rature D.O.	ORP Alkalini (mV) (ppm	•
					- A - A - A - A - A - A - A - A - A - A	
		_/		/		<u></u>
<u> </u>				/ —		
,		LABORA	TORY INPORMA			— - .
SAMPLE ID	(n) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES	2E +
, '	3404 1 Amb	Y	HCL_	Seq.	TPHG. BTEX, MTE	
	177000				1	
		·				
COMMENTS: _	W. onla					

Client/ Facility # 54	84		_ Job#:	180017	<u> </u>	·
Address: 186	950 Lake Cho	bot Rd.	Date:	3-9-0	2.	
	tro Valley, c			er: <u>50 c</u>		
Well ID	mw-4	Well Co	ndition:	0.10		
Well Diameter	4 _{in.}	Hydroca	<i>J-</i> /	Amount Bail	The same of the sa	% -
Total Depth	27.25	Thickne Volume	2' = 0.1		4" = (0.66
Depth to Water	6.64 4	Factor (VF)	6° = 1.50	12 = 5,80	
	20.61 x	vf <u>0.66 -1</u>	13.60 x 3 (case v	olumei = Estimated Pure	ge Volume: 4	/ Igal)
Purge Equipment:	Disposable Bailer Bailer Stack Soction Grundfos Other:	<u>.</u>	Sampling Equipment:	Disposable Bail Bailer Pressure Bailer Grab Sample Other:		y
	8: 46 A m (08 te: 3 m	₃m. Se	diment Descript	clear ion: Volum	Odor. 40	
Time \$.28	Volume pH (g-L) 13 7.69 26 7.60	/0.4	48 60	7.0 (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>8:37</u> _	<u>41</u>	104		7.6.		
1		LABORAT	TORY INFORMA	TION		
SAMPLE ID	(#) - CONTAINER		PRESERV, TYPE	LABORATORY	ANALY	
mw-4	3404 14m6	Y	HCL_	Seq.	8270	EX, MTBE + 801
				1	1	
COMMENTS: LEI/WPD Bewac		acedinal Bave as	ccess to	well area	reger (fo	in ecly of
	T.	•	/ '			9/57-Haidet-Sm

lient/				4 <i>(7</i> -)	^	
acility # <u>54</u>			Job#:			
ddress: 18	950 Lake Chi	abot Re		3-9-0	2	·
ity: <u>Ca</u>	stro Valley,	<u> </u>	Samp	ler: <u>Joc</u>		, , , , , , , , , , , , , , , , , , ,
Well ID		Well	Condition:	0.14		•
Vell Diameter		Hydro	carbon	- Amount Ba	illed	¥
	23.79	Thick	ness:	in (product/wat		
otal Depth Depth to Water	5.85	Volu Facu	me .2° = 0. or (VF)	17 3" = 0.38 6" = 1.50	12" = 5,80	0.66
	17.94 x	VF 0.66		volume) = Estimated Po	arge Volume:	36 ioni)
Purge	Disposable Bailer Bailer		Sampling Equipment	Disposable Ba	riler	
Equipment:	Stack			Bailer Pressure Baile	. •	
	Suction Grandfos	•,	·	Grab Sample		•
	Other:		•	Other:	- .	• .
Sampling Time:		1 <u>52</u> 2)	Weather Condition Water Color: Sediment Descri	clear	Odor <u>Nø</u>	ие
•	7:55 Am (0	Cond pant	Water Color:	clear volume perature D.O. (mg/L)		Alkalinity (ppm)
Purging Flow Ra Did well de-wat Time 7:36 7:36 7:43	7:55 pm (0) ate: 3 o ter? Volume pR (gal.) 12 7.29 24 7.36 7.46	Condinate Appendix Ap	Water Color:	clear prion: Volume Priority Pri	ORP (mV)	Alkalinity (ppm)
Purging Flow Rate Time 7:36 7:36	7:55 pm (0 ate: 3 o ser? Volume pH (gal.) 12 7.29 24 7:35	Condinate American Condinate Condina	Water Color:	clear ption: Volume Prior D.O. (mg/L) 7. 6 7. 4	ORP (mV)	Alkalinity (ppm)
Purging Flow Ra Did well de-wat Time 7:36 7:36 7:43	7:55 Pm (0) ate: 3 o ter? Volume pH (gal.) 12 7.29 24 7:36 7:46	Condinate Appendix Ap	Water Color:	Clear Tion: Volume F (mg/L) 7. 6 7. 4 7. 5 ATION LABORATORY	ORP (mV)	Alkalinity (ppm)
Purging Flow Ra Did well de-wat Time 7:36 7:36 7:43	7:55 Pm (0) ste: 3 of the ster? Volume pH (gal.) 12 7.29 24 7/35 36 7/46 (#) - CONTAINER 3 YO 4	Condinate of the condin	Water Color:	Clear Clear Volume D.O. (mg/L) 7.6 7.4 7.3 ATION LABORATORY Seq.	ORP (mV)	Alkalinity (ppm)

Client/ Facility # <u>54</u>	84		Job#:	18001	۷	•
Address: 186	950 Lake Cha	bot Rd	∴ Date:	3-9-0	2	 -
	tro Valley, c			er: <u>50 c</u>		
Well ID	mw-6	Well C	ondition:	QUIE BO	oken box.	· .
Well Diameter	4 in.	Hydrod Thickn	carbon O	Amount Bai	California de la califo	toel.)
Total Depth	26.37	Volum		7 3" = 0.38	4" = 0,66	
Depth to Water	5.13	Factor	· (VF)	6° = 1.50	12" = 5,80	
	×,3	/F =		olumel = Estimated Pur	ge Volume:	- <u>Lingl.</u>
Purge Equipment:	Disposable Bailer Bailer	•	Sampling Equipment:	Disposable Bai	ler	7
Edothuser:	Stack	•	•	Bailer Pressure Bailer		• .
	Suction Grundfos	**	•	Grab Sample	,	
	Other:		. (Other:		
<u></u>			Haut-	clea(. •
Starting Time:	-,,	_	Veather Condition Vater Color:		Odor	
Sampling Time:				ion:		
· · · - -	te:		•	Volum		
Time	Volume pH	Condu	ctivity 1 ²³ Temperson X	·	ORP ÁI	clinity
						
						· · · · · · · · · · · · · · · · · · ·
		_ `			-/	· · · · · · · · · · · · · · · · · · ·
			<u> </u>	<i></i>		
	<u> </u>		/	<u> </u>	·	 .
SAMPLEID	(4) - CONTAINER	LABORA REFRIG.	ATORY INFORMA PRESERV. TYPE	LABORATORY	ANALYSES	·
	3404	N	HCL	Seq.	TPHG. BTEX,	MTBE + 801
	IAMb	"		"	8270	
				• • •		
				<u> </u>	1	
COMMENTS: .	w. only.	<u> </u>		· · · · · · · · · · · · · · · · · · ·		
<u></u>	See enclose	V vi.	Lice of	Linken bet		•
	JULE FULLOSE	<u>* (*) (</u>	17) 1 - C		/ 	

Hydrocarbon Amount Bailed Igol 19.54 In Hydrocarbon In Igol Otal Depth Igol Igol Igol Igol Otal Depth Igol Igol Igol Igol Igol Otal Depth Igol Otal Depth Igol Igol Igol Igol Igol Igol Igol	Thickness:	•		 /			Odor: 4	<u> </u>	
Thickness: In product/water!: If you are a second to Water If you are a second to water are a second to	Diameter In Hydrocarbon Amount Bailed In (product/water): Igal) Volume 2° = 0.17 3° = 0.38 4° = 0.66 Thickness: in (product/water): Igal) Volume 2° = 0.17 3° = 0.38 4° = 0.66 Factor (VF) 6° = 1.50 17° = 5.80 In the Water of the Sampling Equipment: Bailer Stack Suction Grandfos Other: Other: Class Other: Cla	•				J1434	, , , , , , , , , , , , , , , , , , , 		
Thickness:in (product/water):	Diameter 19.54 Thickness: In. (product/water): Igal	arting Time:	9:	<u>w</u> .	Weather Condition	ons: Clea(
Thickness: in. (product/water): [gel] otal Depth Ota	Diameter I Diameter I G 5 4 ft. I G 5 4 ft. Volume 2*=0.17 3*=0.38 4*=0.66 Thickness: In. (product/water): Igal) Volume 2*=0.17 3*=0.38 4*=0.66 Factor (VF) 6*=1.50 17*=5.80 I G 6 X VF 6 17 = 2.22 X 3 (case volume) = Estimated Purge Volume: 7 Igal) I G 6 X VF 6 17 = 2.22 X 3 (case volume) = Estimated Purge Volume: 7 Igal) I G 6 X VF 6 17 = 2.22 X 3 (case volume) = Estimated Purge Volume: 7 Igal) I G 7 X YF 6 17 = 2.22 X 3 (case volume) = Estimated Purge Volume: 7 Igal) I G 8 X VF 6 17 = 2.22 X 3 (case volume) = Estimated Purge Volume: 7 Igal) I G 8 X VF 6 17 = 2.22 X 3 (case volume) = Estimated Purge Volume: 7 Igal) I G 8 X VF 6 17 = 2.22 X 3 (case volume) = Estimated Purge Volume: 7 Igal) I G 8 X VF 6 17 = 2.22 X 3 (case volume) = Estimated Purge Volume: 7 Igal) I G 9 X VF 6 17 = 2.22 X 3 (case volume) = Estimated Purge Volume: 7 Igal) I G 9 X VF 6 17 = 2.22 X 3 (case volume) = Estimated Purge Volume: 7 Igal)	(Grundfos			•		•	
Thickness: in. (product/water): [gal.] otal Depth ot	Hydrocarbon Amount Bailed 19.54 ft. Volume 2° = 0.17 3° = 0.38 4° = 0.66 Thickness:) - 1 e	Stack			Pressure Bai		•	•
Thickness: in. (product/water): [gal.] otal Depth otal Depth $ \frac{19.54}{6.48} $ tr $ \frac{6.48}{6} $ epth to Water $ \frac{13.06}{13.06} $ $ \frac{19.54}{6} $ Thickness: in. (product/water): [gal.] $ \frac{19.54}{6} $ Factor (VF) Factor (VF) $ \frac{19.54}{6} $ Factor (VF) Factor (VF) $ \frac{19.54}{6} $ Factor (VF) Facto	Diameter Diameter		-	•	, –		lailer	2	_
Thickness: in (product/water): [gal.] Volume $2^{\circ} = 0.17$ $3^{\circ} = 0.38$ $4^{\circ} = 0.66$ Eactor (VF) $6^{\circ} = 1.50$ $12^{\circ} = 5.80$	Hydrocarbon Amount Bailed Thickness: In toroduct/water1: 1941 Volume 2*=0.17 3*=0.38 4*=0.66 Factor (VF) 6*=1.50 12*=5.80	•		4L		- management (
Thickness: in (product/water): [gal] tal Depth Volume 2"=0.17 3"=0.38 4"=0.66 Factor (VF) 6"=1.50 12"=5.80	Hydrocarbon Amount Bailed Thickness: in (product/water): Upd.) Volume 2" = 0.17 3" = 0.38 4" = 0.66 Factor (VF) 6" = 1.50 12" = 5.80		13.06 x	VF 007	_ 222 x 3 (case	volume) = Estimated i	ourge Volume:	Z	
Thickness:	Hydrocarbon Amount Bailed Thickness: in (product/water): 19.54 ft. Volume 2*=0.17 3*=0.38 4*=0.66	pth to Water	<u>U.48</u>				•		
Thickness: in product/water):	Diameter Thickness: O in (product/water): O look)	tal Depth		1				= 0.66	
Il Diameterin. Hydrocarbon Amount Bailed	O		19.54	•	ness:		*		
<u> </u>		ar 4 // 4 1 1 1 1 1 1 1 1 1	2	Hydro	بحر ocarbon	- Amount E	ailed		٤.

As Contraded





28 March, 2002

KEGETYFU

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

GETTLEK-RYAN HAC

RE: Tosco(1)

Sequoia Report: L203042

Enclosed are the results of analyses for samples received by the laboratory on 03/11/02 18:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

W/W/MAO

Wayne Stevenson Project Manager

CA ELAP Certificate #2360



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

Gettler-Ryan/Geostrategies(1)

6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #5484, Castro Valley

Project Manager: Deanna Harding

Reported: 03/28/02 14:46

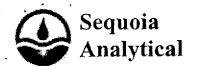
ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory 1D	Matrix	Date Sampled	Date Received
TB-LB	L203042-01	Water	03/09/02 00:00	03/11/02 18:50
MW-4	L203042-02	Water	03/09/02 08:46	03/11/02 18:50
MW-5	L203042-03	Water	03/09/02 07:55	03/11/02 18:50
MW-7	L203042-04	Water	03/09/02 09:20	03/11/02 18:50

Stermen

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #5484, Castro Valley

Project Manager: Deanna Harding

Reported: 03/28/02 14:46

Total Purgeable Hydrocarbon (C6-C12) by EPA 8015M and BTEX/MTBE by EPA 8021B Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TB-LB (L203042-01) Water	Sampled: 03/09/02 00:00	Received:	03/11/02	18:50					
Purgeable Hydrocarbons as Gas	soline ND	50	ug/l	1	2030059	03/22/02	03/22/02	EPA 8021B	
Benzene	ND	0.50	**	••	#	**	n		
Toluene	ND	0.50	n	**	IF	11	**	n	
Ethylbenzene	ND	0.50	**	**		н	**	Ħ	
Xylenes (total)	ND	0.50	п	**	41	н	11	Ħ	
Methyl tert-butyl ether	ND	5.0	11	п	11	H	11	н	
Surrogate: a,a,a-Trifluorotolue	ne	95.0 %	70	-130	v	"	n	"	
MW-4 (L203042-02) Water	Sampled: 03/09/02 08:46	Received: (03/11/02	18:50					
Purgeable Hydrocarbons as G	asoline 270	100	ug/l	2	2030059	03/22/02	03/22/02	EPA 8021B	P-02
Benzene	3.1	1.0	**	17	"	11	tr	11	
Toluene	ND	1.0	n	11		н	**	H	
Ethylbenzene	5.0	1.0	**	11	n	н	11	P	
Xylenes (total)	ND	1.0	**	11	π	H.	H	· ·	
Methyl tert-butyl ether	1200	50		10	*		H	71	M-04
Surrogate: a,a,a-Trifluorotolue.	пе	85.7 %	70	-130	"	"	n	W	
MW-5 (L203042-03) Water_	Sampled: 03/09/02 07:55	Received: (3/11/02	18:50					
Purgeable Hydrocarbons as Gas	oline ND	50	ug/l	1	2030059	03/22/02	03/22/02	EPA 8021B	
Benzene	ND	0.50	**	ħ	u	н	••	n	
Toluene	ND	0.50	**	Ħ	Ш	Ħ	н	**	
Ethylbenzene	ND	0.50	**	**	**	"	lı	n	
Xylenes (total)	ND	0.50	**	u	. "	u	**	n	
Methyl tert-butyl ether	ND	5.0	77	#	11	1 1			
Surrogate: a,a,a-Trifluorotolue	ne	94.7 %	70	-130	"	"	. "	"	



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

Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #5484, Castro Valley

Reported:

Project Manager: Deanna Harding

03/28/02 14:46

Total Purgeable Hydrocarbon (C6-C12) by EPA 8015M and BTEX/MTBE by EPA 8021B Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-7 (L203042-04) Water Sampled:	03/09/02 09:20	Received: 0	3/11/02	18:50					
Purgeable Hydrocarbons as Gasoline	ND	50	ug/l	1	2030059	03/22/02	03/22/02	EPA 8021B	
Benzene	ND	0.50	**	ш	•	Ħ	II	n	
Toluene	ND	0.50	**	н	**	"	**	н	
Ethylbenzene	ND	0.50	н.	"	**	11	4	"	
Xylenes (total)	ND	0.50	**	**	tr	11	11	π	
Methyl tert-butyl ether	ND	5.0	11	11		"	н	н .	
Surrogate: a,a,a-Trifluorotoluene	 -	93.4 %	70	-130	н	n	*	"	





6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #5484, Castro Valley

Project Manager: Deanna Harding

Reported: 03/28/02 14:46

Volatile Organic Compounds by EPA Method 8260B Sequoia Analytical - San Carlos

Analyte			Reporting	<u> </u>				 		-
No. No.	Analyte	Result		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bromoform ND 2.5	MW-4 (L203042-02) Water	Sampled: 03/09/02 08:46	Received: 0	3/11/02 18	3:50					R-05
Bromomethane	Bromodichloromethane	ND	2.5	ug/l	5	2030047	03/19/02	03/19/02	EPA 8260B	
Carbon tetrachloride	Bromoform	ND	2.5	"	**	"	11	**	n	
Chloroethane	Bromomethane	ND	2.5	**	**	**	II	**	11	
Chloroethane	Carbon tetrachloride	ND	2.5	*			ц	#1	#	
Chloroform ND 2.5 " <	Chiorobenzene	ND	2.5	71	**	n	n	π	77	
Chloromethane	Chloroethane	ND	2.5	r		*	"		**	
Dibromochloromethane ND 2.5 " " " " " " " " "	Chloroform	ND	2.5	π	11	m	**	11	**	
1,2-Dibromoethane (EDB) ND 2.5 " " " " " " " " " " " " " " " " " " "	Chloromethane	ND	2.5	**	H	*	31	11	H	
1,2-Dichlorobenzene	Dibromochloromethane	ND	2.5	77	"	"	"	н	n	
1,3-Dichlorobenzene ND 2.5 """"""""""""""""""""""""""""""""""""	1,2-Dibromoethane (EDB)	ND	2.5	*	**	Ħ	11	н	H	
1,4-Dichlorobenzene	1,2-Dichlorobenzene	ND	2.5	#	n	*1	**	н		
Dichlorodifluoromethane ND 2.5 """""""""""""""""""""""""""""""""	1,3-Dichlorobenzene	ND	2.5	**	11	11	11		**	
1,1-Dichloroethane ND 2.5 " " " " " " " " " " " " " " " " " " "	1,4-Dichlorobenzene	ND	2.5	#	п	11	н	•	# .	
1,2-Dichloroethane ND 2.5 """"""""""""""""""""""""""""""""""""	Dichlorodifluoromethane	ND	2.5	Ħ	11	н	н	TF	11	
1,1-Dichloroethene ND 2.5 """"""""""""""""""""""""""""""""""""	1,1-Dichloroethane	ND	2.5	*	н	н	*	11	11	
cis-1,2-Dichloroethene ND 2.5 " " " " " " " " " " " " " " " " " " "	1,2-Dichloroethane	ND	2.5	Ħ	ħ	Ħ	**	11	п	
trans-1,2-Dichloroethene ND 2.5 " " " " " " " " " " " " " " " " " " "	1,1-Dichloroethene	ND	2.5	**	H	n	π	11		
1,2-Dichloropropane ND 2.5 " " " " " " " " " " " " " " " " " " "	cis-1,2-Dichloroethene	ND	2.5	#	11	n	**	H		
cis-1,3-Dichloropropene ND 2.5 " " " " " " " " " " " " " " " " " " "	trans-1,2-Dichloroethene	ND	2.5	17	n		**	fi		
trans-1,3-Dichloropropene ND 2.5 " " " " " " " " " " " " " " " " " " "	1,2-Dichloropropane	ND	2.5	**	**	*	**	N	*	
Freon 113 ND 2.5 " <t< td=""><td>cis-1,3-Dichloropropene</td><td>ND</td><td>2.5</td><td>**</td><td>Ħ</td><td>Ħ</td><td>#</td><td>.,</td><td>11</td><td></td></t<>	cis-1,3-Dichloropropene	ND	2.5	**	Ħ	Ħ	#	.,	11	
Methylene chloride ND 2.5 "	trans-1,3-Dichloropropene	ND	2.5	π	"	n	Ħ	n	n	
1,1,2,2-Tetrachloroethane ND 2.5 " " " " " " " " " " " " " " " " " " "	Freon 113	ND	2.5	#	W	u	Ħ	n	11	
Tetrachloroethene ND 2.5 " " " " " " " " " " " " " " " " " " "	Methylene chloride	ND	2.5	π	17	**		•	'n	
1,1,1-Trichloroethane ND 2.5 " " " " " " " " " " " " " " " " " " "	1,1,2,2-Tetrachloroethane	ND	2.5	**	*	#1	"	11	H	
1,1,2-Trichloroethane ND 2.5 " </td <td>Tetrachloroethene</td> <td>ND</td> <td>2.5</td> <td>tī</td> <td>77</td> <td>11</td> <td>**</td> <td>11</td> <td>ii.</td> <td></td>	Tetrachloroethene	ND	2.5	tī	77	11	**	11	ii.	
Trichloroethene ND 2.5 "	1,1,1-Trichloroethane	ND	2.5	#	**	II	**	ĮI	"	
Trichlorofluoromethane ND 2.5 " " " " " " Vinyl chloride ND 2.5 " " " " " Surrogate: 1,2-Dichloroethane-d4 98.9 % 63-118 " " " " " Surrogate: Toluene-d8 92.7 % 73-125 " " " " "	1,1,2-Trichloroethane	ND	2.5	"	Ŧŧ	н	••	H	п	
Vinyl chloride ND 2.5 " " " " " Surrogate: 1,2-Dichloroethane-d4 98.9 % 63-118 " " " " Surrogate: Toluene-d8 92.7 % 73-125 " " " "	Trichloroethene	ND	2.5	н	и	н	11	II	11	
Surrogate: 1,2-Dichloroethane-d4 98.9 % 63-118 " " " " Surrogate: Toluene-d8 92.7 % 73-125 " " " "	Trichlorofluoromethane	ND	2.5	н	•	11	•	H	н	
Surrogate: Toluene-d8 92.7 % 73-125 " " " "	Vinyl chloride	ND	2.5	н	**	II .	"		**	
	Surrogate: 1,2-Dichloroethane	d4		63-1	18	"	"	n	Ħ	
	Surrogate: Toluene-d8		92.7 %	73-1	25	*	"	н	"	
Surrogate: 4-BFB 95.3 % 68-118 " " " "	Surrogate: 4-BFB		95.3 %	68-1	18	H	"	rr	"	



6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #5484, Castro Valley

Project Manager: Deanna Harding

Reported:

03/28/02 14:46

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-5 (L203042-03) Water	Sampled: 03/09/02 07:55	Received: (3/11/02 18	:50					
Bromodichloromethane	ND	0.50	ug/l	1	2030047	03/20/02	03/20/02	EPA 8260B	
Bromoform	ND	0.50	**		**	π	"	u	
Bromomethane	ND	0.50	71	li .	Ħ	n	Ħ		
Carbon tetrachloride	ND	0.50	**	II	11	11	••	•	
Chlorobenzene	ND	0.50	10	"	"	n	"	**	
Chloroethane	ND	0.50	**	н	**	II	П		
Chloroform	ND	0.50		**	11	11	Ħ	11	
Chloromethane	ND	0.50	**	**	п	**	**	н	
Dibromochloromethane	ND	0.50		#	п	ч	Ħ	H	
1,2-Dibromoethane (EDB)	ND	0.50	п	*1	н	*	**	11	
1,2-Dichlorobenzene	ND	0.50		н	"	"	u	#	
1,3-Dichlorobenzene	ND	0.50	u	**	"	#1	н	*	
1,4-Dichlorobenzene	ND	0.50	н	11	n	. 11	n	n	
Dichlorodifluoromethane	ND	0.50			**	**	11	41	
1,1-Dichloroethane	ND	0.50	u	**	**	**	W	, H	
1,2-Dichloroethane	ND	0.50	11	**	"	**	11	**	
1,1-Dichloroethene	ND	0.50	**	11	ŧı	**	•	**	
cis-1,2-Dichloroethene	ND	0.50	u	n	n	**	n	n	
trans-1,2-Dichloroethene	ND	0.50	•	#	11	u ,	II .		
1,2-Dichloropropane	ND	0.50	u	11	h	н	u	11	
cis-1,3-Dichloropropene	ND	0.50	**	11	п	n	n	μ	
trans-1,3-Dichloropropene	ND	0.50	n	u	Ħ	H	11	H	
Freon 113	ND	0.50	"	н	. "	Ħ	*	. "	
Methylene chloride	ND	0.50	**	H	**	17	"	т н	
1,1,2,2-Tetrachloroethane	ND	0.50	**	**	#		11	n	
Tetrachloroethene	ND	0.50	11		11	11	u u	11	
1,1,1-Trichloroethane	ND	0.50	11	**	**	' II	н	11	
1,1,2-Trichloroethane	ND	0.50	**			п	n	ш	
Trichloroethene	ND	0.50	Tr.	ш	**	D.	H	11	
Trichlorofluoromethane	ND	0.50	11		**	ш	"	п	
Vinyl chloride	ND	0.50	Ħ	II	н	н	n	n	
Surrogate: 1,2-Dichloroethane	e-d4	93.6 %	63-1	18	п	#	п	"	
Surrogate: Toluene-d8		89.3 %	73-12	25	*	n	u	n	
Surrogate: 4-BFB		91.5 %	68-1	18	"	p	"	••	



6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #5484, Castro Valley

Project Manager: Deanna Harding

Reported: 03/28/02 14:46

Volatile Organic Compounds by EPA Method 8260B Sequoia Analytical - San Carlos

MW-7 (L203042-04) Water S. Bromodichloromethane Bromoform Bromomethane Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane Dibromochloromethane 1,2-Dibromoethane (EDB) 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Dichlorodifluoromethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethene cis-1,2-Dichloroethene	ampled: 03/09/02 09:20 ND ND ND	0.50		0.50	•				
Bromoform Bromomethane Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane Dibromochloromethane 1,2-Dibromoethane (EDB) 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorodifluoromethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethene	ND			0:50					
Bromomethane Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane Dibromochloromethane 1,2-Dibromoethane (EDB) 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Dichlorodifluoromethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethene		0.60	ug/l	1	2030047	03/19/02	03/19/02	EPA 8260B	
Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane Dibromochloromethane 1,2-Dibromoethane (EDB) 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Dichlorodifluoromethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethene	ND	0.50	11	**	*	п	"	11	
Chlorobenzene Chloroethane Chloroform Chloromethane Dibromochloromethane 1,2-Dibromoethane (EDB) 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Dichlorodifluoromethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethene		0.50	**	n	Ħ	н	11	**	
Chloroethane Chloroform Chloromethane Dibromochloromethane 1,2-Dibromoethane (EDB) 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Dichlorodifluoromethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethane	ND	0.50		n	π	п	•	11	
Chloroform Chloromethane Dibromochloromethane 1,2-Dibromoethane (EDB) 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Dichlorodifluoromethane 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethane	ND	0.50	w	"	**	H	•	н .	
Chloromethane Dibromochloromethane 1,2-Dibromoethane (EDB) 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Dichlorodifluoromethane 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethane	ND	0.50	Ħ	•	#	н	*	11	
Dibromochloromethane 1,2-Dibromoethane (EDB) 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Dichlorodifluoromethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethene	ND	0.50	**	P	**	н	m	п	
1,2-Dibromoethane (EDB) 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Dichlorodifluoromethane 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethene	ND	0.50		*	Ħ	Ħ		rı	
1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Dichlorodifluoromethane 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethene	ND	0.50	"	10	н	**	"	n	
1,3-Dichlorobenzene 1,4-Dichlorobenzene Dichlorodifluoromethane 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethene	ND	0.50	н	H	#	Ħ	H	n	
1,4-Dichlorobenzene Dichlorodifluoromethane 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethene	ND	0.50	Ħ	п	**	H	n	H	
Dichlorodifluoromethane 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethene	ND	0.50	н	u	#		**		
1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethene	ND	0.50	11	п	Ħ	"	11	и .	
1,2-Dichloroethane 1,1-Dichloroethene	ND	0.50	11	п	fi	**	11	н	
1,1-Dichloroethene	ND	0.50	**	11	**	n	II	· #	
•	ND	0.50	**	11	m	п	II	*	
cis-1,2-Dichloroethene	ND	0.50	**	11	ŧŧ	Ħ	Ħ	*	
	ND	0.50	41	**	*	π	u	**	
trans-1,2-Dichloroethene	ND	0.50		"	"	n	н	10	
1,2-Dichloropropane	ND	0.50	H		11	91	н	n	
cis-1,3-Dichloropropene	ND	0.50	н	n	**	π	н	**	
trans-1,3-Dichloropropene	ND	0.50	п	**	"	n	11	u u	
Freon 113	ND	0.50	н	n	*1	**	ıı	41	
Methylene chloride	ND	0.50	п	Ħ	**	"	n	11	
1,1,2,2-Tetrachloroethane	ND	0.50	41	**	**	**	**	11	
Tetrachloroethene	ND	0.50	11	71	#1	11	#	n	
1,1,1-Trichloroethane	ND	0.50	и	**		11	TT .	н	
1,1,2-Trichloroethane	ND	0.50	**	"	n	11	**	11	
Trichloroethene	ND	0.50	H	II	Ħ	H	"	11	
Trichlorofluoromethane	ND	0.50	n	II .	n	W.	**	,,	
Vinyl chloride	ND	0.50	п	#	и	н	P.	**	
Surrogate: 1,2-Dichloroethane-d4	!	100 %	63-1	18	"	п	н	"	
Surrogate: Toluene-d8		93.3 %	73-1.	25	"	"	n	"	
Surrogate: 4-BFB		88.9 %	68-1	18	"	. "	n	"	



Dublin CA, 94568

6747 Sierra Court, Suite J

Project: Tosco(1)

Project Number: Tosco #5484, Castro Valley

Project Manager: Deanna Harding

Reported: 03/28/02 14:46

Semivolatile Organic Compounds by EPA Method 8270C

Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-4 (L203042-02) Water		 -	 				,		
	ND	5.0			2C12010	03/14/02	03/18/02	EPA 8270C	
Acenaphthene Acenaphthylene	ND ND	5.0	ug/1 "]	2C12U1U	U3/14/U2 #	U3/16/UZ "	EFA 82/0C	
Aniline	ND ND	5.0	"	11	**	н	**		
Anthracene	ND ND	5.0	17	11	**	*1	11	**	
Benzoic acid	ND ND	10			**	11	11	 11	
	ND ND	5.0	••	11		n			
Benzo (a) anthracene Benzo (b) fluoranthene	ND ND	5.0	**			 II	tr		
	ND ND	5.0 5.0		"	"	 H			
Benzo (k) fluoranthene				- 1	99	 H		.,	
Benzo (ghi) perylene	ND ND	5.0		n	"	"	"	H	
Benzo[a]pyrene	ND ND	5.0	.,	" "	11	"	**	**	
Benzyl alcohol	ND	5.0		и.	11	"	"		
Bis(2-chloroethoxy)methane	ND	5.0		**	" "	,,	"	"	
Bis(2-chloroethyl)ether	ND	5.0		,,	" "	" "	"		
Bis(2-chloroisopropyl)ether	ND	5.0	"		" P			···	
Bis(2-ethylhexyl)phthalate	ND	10		P		11	и	11	
4-Bromophenyl phenyl ether	ND	5.0		**	"		"	11	
Butyl benzyl phthalate	ND	50	**	"	"	11	**	li .	
4-Chloroaniline	ND	25	**	ņ	14	н	**	tr	
2-Chloronaphthalene	ND	5.0	H	"	"	**	11		
4-Chloro-3-methylphenol	ND	5.0	**	N .	"	"	#	••	
2-Chlorophenol	ND	5.0	Ħ	**	"	61	**	. "	
4-Chlorophenyl phenyl ether	ND	5.0	H	•	Ħ	11		**	
Chrysene	ND	5.0	**	"	. 11	71	"		
Dibenz (a,h) anthracene	ND	10	H	**	**	**	11	"	
Dibenzofuran	ND	5.0	tr	"	u	11	н	11	
Di-n-butyl phthalate	ND	10	11	**	11	11	н	. "	
1,2-Dichlorobenzene	ND	5.0	11	"	11	II .	н	н	
1,3-Dichlorobenzene	ND	5.0	1 1	н	91	ц	n	íi .	
1,4-Dichlorobenzene	ND	10	41	n	**	11	Ħ	н	
3,3'-Dichlorobenzidine	ND	10	и	U	"	II	н	li	
2,4-Dichlorophenol	ND	5.0	11	IF	11	II	"	н	
Diethyl phthalate	ND	5.0	**	II	**	и	"	н	
2,4-Dimethylphenol	ND	5.0	n	II .	**	п	#	Ħ	
Dimethyl phthalate	ND	5.0	11	11	n	н	н	bt .	
4,6-Dinitro-2-methylphenol	ND	10	**	II	u	н	**	n	
2,4-Dinitrophenol	ND	10		п	**		**	11	
2,4-Dinitrotoluene	ND	10	tt	11	n	**	Ħ	Ħ	
2,6-Dinitrotoluene	ND	10	It	11	*1	**		11	
Di-n-octyl phthalate	ND	10	11	11	*1	*1	**	**	
Fluoranthene	ND	5.0	11	**	**	**	11	tt.	
1 Idolandicho	110	2.0							

Sequoia Analytical - San Carlos

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

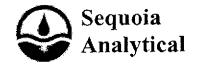
Project Number: Tosco #5484, Castro Valley

Project Manager: Deanna Harding

Reported: 03/28/02 14:46

Semivolatile Organic Compounds by EPA Method 8270C Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-4 (L203042-02) Water	Sampled: 03/09/02 08:46	Received: 0	3/11/02 1	8:50					·
Fluorene	ND	5.0	ug/l	1	2C12010	03/14/02	03/18/02	EPA 8270C	
Hexachlorobenzene	ND	10	n	"	"	н	H	#	
Hexachlorobutadiene	ND	10	Ħ	**	**	tt	"		
Hexachlorocyclopentadiene	ND	10	Ħ	**	Ħ	R		**	
Hexachloroethane	ND	5.0	н	π	Ħ	17	77	"	
Indeno (1,2,3-cd) pyrene	ND	10	н	11	P	**	**	u .	
Isophorone	ND	5.0	н	,ti	**	*	41	n	
2-Methylnaphthalene	ND	5.0	H	**	Ħ	11	#1		
2-Methylphenol	ND	5.0	u	"	**	n	μ	•	
4-Methylphenol	ND	5.0	. н	*	41	11	H	Ħ	
Naphthalene	ND	5.0	н	**	11	11	•		
2-Nitroaniline	ND	10	н	"	II .	"	P	*1	
3-Nitroaniline	ND	10	Ш		H	11	**	п	
4-Nitroaniline	ND	20	п	••	H	•	71	' н	
Nitrobenzene	ND	5.0	н	**	*	**	"		
2-Nitrophenol	ND	5.0	h	"	*	**	11	**	
4-Nitrophenol	ND	10	11	"	**	**	11		
N-Nitrosodimethylamine	ND	5.0	н ,	**	u	"	**	11	
N-Nitrosodiphenylamine	ND	5.0	11	n	Ħ	H	H	"	
N-Nitrosodi-n-propylamine	ND	5.0	tı	**	Ħ	II	H	**	
Pentachlorophenol	ND	10	11	**	11	н	#	11	
Phenanthrene	ND	5.0	11	11		Ħ	**	**	
Phenol	ND	5.0	П	II.	**	"	"		
Pyrene	ND	5.0	n	II	Ħ	n	11	m	
1,2,4-Trichlorobenzene	ND	5.0	11	н	11	"	n	"	
2,4,5-Trichlorophenol	ND	10	11	Ħ	II	**	H	n	
2,4,6-Trichlorophenol	NDND	10	#	н	"	11	"		
Surrogate: 2-Fluorophenol		38 %	21-1	110	#	"	n	"	
Surrogate: Phenol-d6		27 %	10-1	10	"	"	п	"	
Surrogate: Nitrobenzene-d5		84 %	35-1	14	#	"	<i>"</i>	"	
Surrogate: 2-Fluorobiphenyl		79 %	43-1	116	#	n	"	H	
Surrogate: 2,4,6-Tribromophei	nol	98 %	10-1	23	"	"	п	H	
Surrogate: p-Terphenyl-d14		56 %	33-1	4]	"	"	"	"	



6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #5484, Castro Valley

Project Manager: Deanna Harding

Reported: 03/28/02 14:46

Semivolatile Organic Compounds by EPA Method 8270C

Sequoia Analytical - Walnut Creek

	,								
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-5 (L203042-03) Water	Sampled: 03/09/02 07:55	Received: (03/11/02	18:50					
Acenaphthene	ND	5.0	ug/l	1	2C12010	03/14/02	03/18/02	EPA 8270C	
Acenaphthylene	ND	5.0	n	**	P	"	"	n	
Aniline	ND	5.0	11	**	"	Ħ	. "	н	
Anthracene	ND	5.0	п	11	**	**	r	**	
Benzoic acid	ND	10	п	п	**	11	**	"	
Benzo (a) anthracene	ND	5.0	Ħ	II	11	ii.	н	n	
Benzo (b) fluoranthene	ND	5.0	Ħ	н	II	n.	n	**	
Benzo (k) fluoranthene	ND	5.0	*	"	H	•	**	H	
Benzo (ghi) perylene	ND	5.0		Ħ	n	11	н	"	
Benzo[a]pyrene	ND	5.0		**	**	**	•	#	
Benzyl alcohol	ND	5.0	**	**	**	11	11		
Bis(2-chloroethoxy)methane	ND	5.0	**		*1	tt	п	ti	
Bis(2-chloroethyl)ether	ND	5.0	Ħ	**	11	"	"	H,	
Bis(2-chloroisopropyl)ether	ND	5.0	n	11	II .	**	**		
Bis(2-ethylhexyl)phthalate	ND	10	**	п	rt	**	11	. 11	
4-Bromophenyl phenyl ether	ND	5.0	n	H	*	11	11	H	
Butyl benzyl phthalate	ND	50	**	Ħ	**	n	и	11	
4-Chloroaniline	ND	25	**	Ħ	**	11	n	ıı ·	
2-Chloronaphthalene	ND	5.0	п	*	n	N	H	Ħ	
4-Chloro-3-methylphenol	ND	5.0	и		**		#	**	
2-Chlorophenol	ND	5.0	*		11	77	11	79	
4-Chlorophenyl phenyl ether	ND	5.0	91	н	II .	n	11	14	
Chrysene	ND	5.0	51	,,		11	Ħ	11	
Dibenz (a,h) anthracene	ND	10	11	*1	**	II .	H	n	
Dibenzofuran	ND	5.0	11	**	11	н	11	•,	
Di-n-butyl phthalate	ND	10	11	11	n	**	"	π	
1,2-Dichlorobenzene	ND	5.0	11	II .	*	#	"		
1,3-Dichlorobenzene	ND	5.0	11	11	"	71	11	n	
1,4-Dichlorobenzene	ND	10	**	11	"	**	11	**	
3,3'-Dichlorobenzidine	ND ND	10		11	**	**	II	11	
2,4-Dichlorophenol	ND	5.0		11	ti	**	н	II	
Diethyl phthalate	ND	5.0	**	11	1 1	11	**	n	
2,4-Dimethylphenol	ND	5.0	n	11	11	11	"	rr	
Dimethyl phthalate	ND	5.0	**	li	п	u	**	н	
4,6-Dinitro-2-methylphenol	ND	. 10	**	lt	п	. 11	"	**	
2,4-Dinitrophenol	ND	10	**	II.	"	**	**	11	
2,4-Dinitrotoluene	ND	10	n	tt		н	ti	11	
2,6-Dinitrotoluene	ND	10	**	н	"	11	п	п	
Di-n-octyl phthalate	ND	10	н	tt	*1		н	tt.	
Fluoranthene	ND	5.0		ır	**	"	II	Ħ	
i iuoranusene	ND	2.0							

Sequoia Analytical - San Carlos

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #5484, Castro Valley

Project Manager: Deanna Harding

Reported: 03/28/02 14:46

Semivolatile Organic Compounds by EPA Method 8270C Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-5 (L203042-03) Water	Sampled: 03/09/02 07:55	Received: 0	3/11/02 1	18:50					
Fluorene	ND	5.0	นย/ไ	1	2C12010	03/14/02	03/18/02	EPA 8270C	
Hexachlorobenzene	ND	10	"	11	п	11	u	n	
Hexachlorobutadiene	ND	10	"	11	н	н	#	*	
Hexachlorocyclopentadiene	ND	10	**	H	н	ti .	**	it	
Hexachloroethane	ND	5.0	"	n	п	**	n	n	
Indeno (1,2,3-cd) pyrene	ND	10	**	u	**		11	**	•
Isophorone	ND	5.0	**	н	n	n	Ħ	n .	
2-Methylnaphthalene	ND	5.0	**	Ħ	P	11	*	ii.	
2-Methylphenol	ND	5.0	**	"	**	11	•	n	
4-Methylphenol	ND	5.0	11	•	"	11	•		
Naphthalene	ND	5.0	51		11	It	**	u	
2-Nitroaniline	ND	10	Ħ	**	п		11	31	
3-Nitroaniline	ND	. 10	н	**	н	**	Ħ	, u	
4-Nitroaniline	ND	20	п	n	H	p	H	n	
Nitrobenzene	ND	5.0	II .			**	"		
2-Nitrophenol	ND	5.0	н	**	*	**	**		
4-Nitrophenol	ND	10	н	**	n	II	u	H	
N-Nitrosodimethylamine	ND	5.0	"	11	Ħ	н	n	11	
N-Nitrosodiphenylamine	ND	5.0	н	н	**	17	11	II .	
N-Nitrosodi-n-propylamine	ND	5.0	п	11	"	ч	н	H	
Pentachlorophenol	ND	10	н	п	Ħ	n	н	"	
Phenanthrene	ND	5.0	н	n	II .	**	11	n	
Phenol	ND	5.0		#	Ħ	11	11	ıı	
Pyrene	ND	5.0	**		"	Ħ	11	11	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	**	11	n	
2,4,5-Trichlorophenol	ND	10		#	**	u	H	. 11	
2,4,6-Trichlorophenol	ND	10	11	π	"	π	II	#	
Surrogate: 2-Fluorophenol		36 %	21-	110	"	m .	"	"	
Surrogate: Phenol-d6		25 %	10-	110	"	n	n	n	
Surrogate: Nitrobenzene-d5		78 %	35-	114	r	"	rr	"	
Surrogate: 2-Fluorobiphenyl		74 %	43-	116	"	"	"	"	
Surrogate: 2,4,6-Tribromophe	nol	97 %	10-	123	"	"	r	"	
Surrogate: p-Terphenyl-d14		58 %	33-	141	"	"	"	#	



6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #5484, Castro Valley

Project Manager: Deanna Harding

Reported: 03/28/02 14:46

Semivolatile Organic Compounds by EPA Method 8270C Sequoia Analytical - Walnut Creek

MW-7 (L203042-04) Water San Acenaphthene Acenaphthylene Aniline Anthracene Benzoic acid Benzo (a) anthracene Benzo (b) fluoranthene Benzo (k) fluoranthene Benzo (ghi) perylene Benzo[a]pyrene Benzyl alcohol Bis(2-chloroethoxy)methane Bis(2-chloroethyl)ether Bis(2-chloroisopropyl)ether Bis(2-ethylhexyl)phthalate 4-Bromophenyl phenyl ether	mpled: 03/09/02 09:20 ND ND ND ND ND ND ND ND ND N	5.0 5.0 5.0 5.0 5.0 10 5.0 5.0 5.0 5.0	03/11/02 ug/l	1 " " " " " " " " " " " " " " " " " " "	2C12010 "	03/14/02	03/18/02	EPA 8270C	
Acenaphthylene Aniline Anthracene Benzoic acid Benzo (a) anthracene Benzo (b) fluoranthene Benzo (k) fluoranthene Benzo (ghi) perylene Benzo[a]pyrene Benzyl alcohol Bis(2-chloroethoxy)methane Bis(2-chloroethyl)ether Bis(2-chloroisopropyl)ether Bis(2-ethyl)exyl)phthalate	ND ND ND ND ND ND ND ND	5.0 5.0 5.0 10 5.0 5.0 5.0	11 11 11	n u u	11 14 14	11	11		
Antiline Anthracene Benzoic acid Benzo (a) anthracene Benzo (b) fluoranthene Benzo (k) fluoranthene Benzo (ghi) perylene Benzo[a]pyrene Benzyl alcohol Bis(2-chloroethoxy)methane Bis(2-chloroethyl)ether Bis(2-chloroisopropyl)ether Bis(2-ethylhexyl)phthalate	ND ND ND ND ND ND ND	5.0 5.0 10 5.0 5.0 5.0	11 11	u u #	14 14	11	11		
Anthracene Benzoic acid Benzo (a) anthracene Benzo (b) fluoranthene Benzo (k) fluoranthene Benzo (ghi) perylene Benzo[a]pyrene Benzyl alcohol Bis(2-chloroethoxy)methane Bis(2-chloroethyl)ether Bis(2-chloroisopropyl)ether Bis(2-ethyl)exyl)phthalate	ND ND ND ND ND ND	5.0 10 5.0 5.0 5.0	11 11	u	н			**	
Benzoic acid Benzo (a) anthracene Benzo (b) fluoranthene Benzo (k) fluoranthene Benzo (ghi) perylene Benzo[a]pyrene Benzyl alcohol Bis(2-chloroethoxy)methane Bis(2-chloroethyl)ether Bis(2-chloroisopropyl)ether Bis(2-ethyl)exyl)phthalate	ND ND ND ND ND ND	10 5.0 5.0 5.0	11	"		11			
Benzo (a) anthracene Benzo (b) fluoranthene Benzo (k) fluoranthene Benzo (ghi) perylene Benzo[a]pyrene Benzyl alcohol Bis(2-chloroethoxy)methane Bis(2-chloroethyl)ether Bis(2-chloroisopropyl)ether Bis(2-ethyl)exyl)phthalate	ND ND ND ND ND	5.0 5.0 5.0	**				H	#	
Benzo (b) fluoranthene Benzo (k) fluoranthene Benzo (ghi) perylene Benzo[a]pyrene Benzyl alcohol Bis(2-chloroethoxy)methane Bis(2-chloroethyl)ether Bis(2-chloroisopropyl)ether Bis(2-ethyl)exyl)phthalate	ND ND ND ND	5.0 5.0				п	н	"	
Benzo (k) fluoranthene Benzo (ghi) perylene Benzo[a]pyrene Benzyl alcohol Bis(2-chloroethoxy)methane Bis(2-chloroethyl)ether Bis(2-chloroisopropyl)ether Bis(2-ethyl)exyl)phthalate	ND ND ND	5.0	**	н	**	н	H	n .	
Benzo (ghi) perylene Benzo[a]pyrene Benzyl alcohol Bis(2-chloroethoxy)methane Bis(2-chloroethyl)ether Bis(2-chloroisopropyl)ether Bis(2-ethyl)exyl)phthalate	ND ND			Ħ	n	**	11	ıı .	
Benzo[a]pyrene Benzyl alcohol Bis(2-chloroethoxy)methane Bis(2-chloroethyl)ether Bis(2-chloroisopropyl)ether Bis(2-ethylhexyl)phthalate	ND	5.0	**	H	11	**	Ħ	H	
Benzyl alcohol Bis(2-chloroethoxy)methane Bis(2-chloroethyl)ether Bis(2-chloroisopropyl)ether Bis(2-ethylhexyl)phthalate		~.~	н	"	n	w	N	н	
Benzyl alcohol Bis(2-chloroethoxy)methane Bis(2-chloroethyl)ether Bis(2-chloroisopropyl)ether Bis(2-ethylhexyl)phthalate	ND	5.0	w	H	п	"	••	u	
Bis(2-chloroethoxy)methane Bis(2-chloroethyl)ether Bis(2-chloroisopropyl)ether Bis(2-ethylhexyl)phthalate		5.0	1.44		II .	**	**	**	
Bis(2-chloroethyl)ether Bis(2-chloroisopropyl)ether Bis(2-ethylhexyl)phthalate	ND	5.0	**	•	н	**	H	н	
Bis(2-chloroisopropyl)ether Bis(2-ethylhexyl)phthalate	ND	5.0	"		#	11	Ħ	**	
Bis(2-ethylhexyl)phthalate	ND	5.0	**	**	**	II.	Ħ	11	
	ND	10	**	**	"	11	**	'n	
	ND	5.0	77	н	н	FT	Ħ	tt	
Butyl benzyl phthalate	ND	50	*	••	**	H	Ħ	**	
4-Chloroaniline	ND	25	**		**	**	77	11	
2-Chloronaphthalene	ND	5.0	**	**	11	**	**	n	
4-Chloro-3-methylphenol	ND	5.0	**	Ħ	91	*	**	**	
2-Chlorophenol	ND	5.0	**	**	77	Ħ	**	11	
4-Chlorophenyl phenyl ether	ND	5.0		"	41	11	II .	11	
Chrysene	ND	5.0	**		• •	**	н	n	
Dibenz (a,h) anthracene	ND	10	17	n		11	*	н	
Dibenzofuran	ND	5.0	H	**		11		tr	
Di-n-butyl phthalate	ND	10	IF	**	"	II		n	
1,2-Dichlorobenzene	ND	5.0	н	**	**	u	**	••	
1,3-Dichlorobenzene	ND	5.0	11	**	11	H	17	u	
1,4-Dichlorobenzene	ND	10	**	Ħ	**	п	••	•	
3,3'-Dichlorobenzidine	ND	10	**	п	**	u	77		
2,4-Dichlorophenol	ND	5.0	**	п	**	н	**	n	
Diethyl phthalate	ND	5.0	,,	11	Ħ	Ħ	Ħ	н	
2,4-Dimethylphenol	ND	5.0		11	**	ĮI	**	17	
Dimethyl phthalate	ND	5.0	н	11	11	н	**	**	
4,6-Dinitro-2-methylphenol	ND	10	п	11	Ħ		71	**	
2,4-Dinitrophenol	ND	10	п	*1	**	**	,,	11	
2,4-Dinitrotoluene	ND	10	11	**	**		*1	11	
2,6-Dinitrotoluene	ND	- 10	11	11	#	91	11	11	
Di-n-octyl phthalate	ND ND	10	"	,,	*1	* 1	11	_	
Fluoranthene	עוו	10						11	

Sequoia Analytical - San Carlos

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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Gettler-Ryan/Geostrategies(1)

6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #5484, Castro Valley

Project Manager: Deanna Harding

Reported: 03/28/02 14:46

Semivolatile Organic Compounds by EPA Method 8270C Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-7 (L203042-04) Water	Sampled: 03/09/02 09:20	Received: 0	3/11/02	18:50					
Fluorene	ND	5.0	ug/l	1	2C12010	03/14/02	03/18/02	EPA 8270C	· · · · · · · · · · · · · · · · · · ·
Hexachlorobenzene	ND	10	11	"	4	н	. "	н	
Hexachlorobutadiene	ND	10	Ħ	tt	•	п	**	"	
Hexachlorocyclopentadiene	ND	10	11	**	**	li .	**	n	
Hexachloroethane	ND	5.0	••	n	**	н	11	,,	
Indeno (1,2,3-cd) pyrene	ND	10	97	"	**	п	11		
Isophorone	ND	5.0	H	"	P	н	#	n	
2-Methylnaphthalene	ND	5.0	**		P	H	11	•	
2-Methylphenol	ND	5.0	**		**	**	'n		
4-Methylphenol	ND	5.0	n	**	n	н	ti	•	
Naphthalene	ND	5.0	H	*	Ħ	Ħ	Ħ	n	
2-Nitroaniline	ND	10	н	n	"	**	tr	•	
3-Nitroaniline	ND	10	II	н	*	Pr .	H		
4-Nitroaniline	ND	20	11	п	π	**	H	n	
Nitrobenzene	ND	5.0	11	н	*		"	· H	
2-Nitrophenol	ND	5.0	••	п	Ħ	**		11	
4-Nitrophenol	ND	10	11	n	**	11		11	
N-Nitrosodimethylamine	ND _	5.0	**	11	"	•	"	**	
N-Nitrosodiphenylamine	ND	5.0	71	*1	**	10	•	n .	
N-Nitrosodi-n-propylamine	ND	5.0	"	"		11	н	ц	
Pentachlorophenol	ND	10	**	•	•	tı	•	11	
Phenanthrene	ND	5.0	rt	•	"	π	*	n	
Phenol	ND	5.0	n		,,	4	77	n .	
Pyrene	ND	5.0	н	•	11	**	**	11	
1,2,4-Trichlorobenzene	ND	5.0		"	"	**	*	н	
2,4,5-Trichlorophenol	ND	10	11	**	**	**	11	tr	
2,4,6-Trichlorophenol	ND	10	u	"	"	ø	"	19	
Surrogate: 2-Fluorophenol		40 %	21-	110	н	"	"	η	
Surrogate: Phenol-d6		29 %	10	110	#	rr	rr	н	
Surrogate: Nitrobenzene-d5		85 %	35	114	#	"	"	n	
Surrogate: 2-Fluorobiphenyl		80 %	43	116	"	n	m	п	
Surrogate: 2,4,6-Tribromophen	nol	97 %	10-	123	"	n	"	H	
Surrogate: p-Terphenyl-d14		51 %	33	14]	"	ri	"	n	



6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #5484, Castro Valley

Project Manager: Deanna Harding

Reported: 03/28/02 14:46

Total Purgeable Hydrocarbon (C6-C12) by EPA 8015M and BTEX/MTBE by EPA 8021B - Quality Control Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2030059 - EPA 5030B (P/T)										
Blank (2030059-BLK1)				Prenared	& Analyz	ed: 03/22/	02		•	<u> </u>
Purgeable Hydrocarbons as Gasoline	ND	50	ug/l			*** ***		•		
Benzene	ND	0.50	11							
Toluene	ND	0.50	n							
Ethylbenzene	ND	0.50	н							
Xylenes (total)	ND	0.50	rr .							
Methyl tert-butyl ether	ND	5.0	н							
Surrogate: a,a,a-Trifluorotoluene	8.49		"	10.0		84.9	70-130			
LCS (2030059-BS1)				Prepared	& Analyz	ed: 03/22/	02			
Benzene	7.93	0.50	ug/l	10.0		79.3	70-130	· -		
Toluene	7.93	0.50	••	10.0		79.3	70-130			
Ethylbenzene	8.56	0.50	**	10.0		85.6	70-130			
Xylenes (total)	25.8	0.50	•	30.0		86.0	70-130			
Surrogate: a,a,a-Trifluorotoluene	9.86		"	10.0		98.6	70-130			
LCS (2030059-BS2)				Prepared	& Analyz	ed: 03/22/	' 02			
Purgeable Hydrocarbons as Gasoline	208	50	ug/I	250		83.2	70-130			
Surrogate: a,a,a-Trifluorotoluene	8.81		n	10.0		88.1	70-130			
Matrix Spike (2030059-MS1)	So	urce: L20304	2-03	Prepared	& Analyz	ed: 03/22	/02			
Benzene	7.93	0.50	սք/1	10.0	ND	79.3	60-140	,		
Toluene	7.86	0.50	n	10.0	ND	78.6	60-140			
Ethylbenzene	8.49	0.50	Ħ	10.0	ND	84.9	60-140			
Xylenes (total)	25.6	0.50	**	30.0	ND	85.3	60-140			
Surrogate: a,a,a-Trifluorotoluene	9.95		17	10.0		99.5	70-130			
Matrix Spike Dup (2030059-MSD1)	Sor	urce: L20304	2-03	Prepared	& Analyz	ed: 03/22	/02			
Benzene	7.72	0.50	ug/l	10.0	ND	77.2	60-140	2.68	25	
Foluene	7.58	0.50	11	10.0	ND	75.8	60-140	3.63	25	
Ethylbenzene	8.05	0.50	11	10.0	ND	80.5	60-140	5.32	25	
Xylenes (total)	24.3	0.50	11	30.0	ND	81.0	60-140	5.21	25	
Surrogate: a,a,a-Trifluorotoluene	9.65		"	10.0		96.5	70-130			



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Gettler-Ryan/Geostrategies(1)

6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #5484, Castro Valley

Project Manager: Deanna Harding

Reported: 03/28/02 14:46

Volatile Organic Compounds by EPA Method 8260B - Quality Control Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2030047 - EPA 5030B [P/T]										71000
Blank (2030047-BLK1)			-	Prepared .	& Analyze	ed: 03/19/0)2			 -
Bromodichloromethane	ND	0.50	ug/l					_		
Bromoform	ND	0.50	**							
Bromomethane	ND	0.50								
Carbon tetrachloride	ND	0.50	tr							
Chlorobenzene	ND	0.50	H							
Chloroethane	ND	0.50	tt							
Chloroform	ND	0.50	li .							
Chloromethane	ND	0.50	41							
Dibromochloromethane	ND	0.50	**							
1,2-Dibromoethane (EDB)	ND	0.50	**							
1,2-Dichlorobenzene	ND	0.50								
,3-Dichlorobenzene	ND	0.50	TT							
,4-Dichlorobenzene	ND	0.50	**							
Dichlorodifluoromethane	ND	0.50	**							
,1-Dichloroethane	ND	0.50								
,2-Dichloroethane	ND	0.50	11							
,1-Dichloroethene	ND	0.50	H							
sis-1,2-Dichloroethene	ND	0.50	H							
rans-1,2-Dichloroethene	ND	0.50	н							
,2-Dichloropropane	ND	0.50	п							
sis-1,3-Dichloropropene	ND	0.50	п							
rans-1,3-Dichloropropene	ND	0.50	11							
Freon 113	ND	0.50	11							
Methylene chloride	ND	0.50								
,1,2,2-Tetrachloroethane	ND	0.50	27							
Tetrachloroethene	ND	0.50	**							
,1,1-Trichloroethane	ND	0.50	n							
,1,2-Trichloroethane	ND	0.50	н							
richloroethene	ND	0.50	"							
richlorofluoromethane	ND	0.50	**							
/inyl chloride	ND	0.50								
Surrogate: 1,2-Dichloroethane-d4	9.34		#	10.0		93.4	63-118			-
Surrogate: Toluene-d8	9.60		"	10.0		96.0	73-125			

10.0

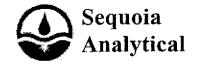
Surrogate: 4-BFB

9.04

68-118

90.4

Notes



Gettler-Ryan/Geostrategies(1)

6747 Sierra Court, Suite J Dublin CA, 94568

Analyte

Project: Tosco(1)

Project Manager: Deanna Harding

Units

Project Number: Tosco #5484, Castro Valley

Reported: 03/28/02 14:46

Limit

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Sequeia Analytical - San Carlos

Limit

Result

Sequoia Analytical - San Carlos Reporting Spike Source %REC RPD

Result

%REC

Limits

RPD

Level

Analyte	resur	Dillit	Onns	LCVUI	Nosun	MINEC	Lilling	KiD	Limit	NOICS
Batch 2030047 - EPA 5030B [P/T]									
Blank (2030047-BLK2)				Prepared	& Analyze	d: 03/20/	02			
Bromodichloromethane	ND	0.50	ug/i							
Bromoform	ND	0.50	п							
Bromomethane	ND	0.50	п							
Carbon tetrachloride	ND	0.50	n							
Chlorobenzene	ND	0.50	u							
Chloroethane	ND	0.50	ш							
Chloroform	ND	0.50	II							
Chloromethane	ND	0.50	41							
Dibromochloromethane	ND	0.50	H							
1,2-Dibromoethane (EDB)	ND	0.50	п							
1,2-Dichlorobenzene	ND	0.50	11							
1,3-Dichlorobenzene	ND	0.50	11							
,4-Dichlorobenzene	ND	0.50	#1							
Dichlorodifluoromethane	ND	0.50	11							
,1-Dichloroethane	ND	0.50	**							
,2-Dichloroethane	ND	0.50	**							
,1-Dichloroethene	ND	0.50	**							
cis-1,2-Dichloroethene	ND	0.50	**							
rans-1,2-Dichloroethene	ND	0.50	**							
,2-Dichloropropane	ND	0.50								
sis-1,3-Dichloropropene	ND	0.50	**							
rans-1,3-Dichloropropene	ND	0.50	**							
Freon 113	ND	0.50	**							
Methylene chloride	ND	0.50	TP.							
,1,2,2-Tetrachloroethane	ND	0.50	**							
letrachloroethene	ND	0.50	n							
,1,1-Trichloroethane	ND	0.50	n							
,1,2-Trichloroethane	ND	0.50	п							
Trichloroethene	ND	0.50	11							
richlorofluoromethane	ND	0.50	*1							
Vinyl chloride	ND	0.50	11							
Surrogate: 1,2-Dichloroethane-d4	9.73		"	10.0		97.3	63-118			
Surrogate: Toluene-d8	9.04		"	10.0		90.4	73-125			
Surrogate: 4-BFB	8.97		,m	10.0		89.7	68-118			



6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #5484, Castro Valley

Project Manager: Deanna Harding

Reported: 03/28/02 14:46

Volatile Organic Compounds by EPA Method 8260B - Quality Control Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2030047 - EPA 5030B [P/T]									<u> </u>	
LCS (2030047-BS1)				Prepared	& Analyz	ed: 03/19/	 02			
Chlorobenzene	19.0	0.50	ug/l	20.0		95.0	70-130	•		
],1-Dichloroethene	18.8	0.50	н	20.0		94.0	65-135			
Trichloroethene	20.2	0.50	n	20.0		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	9.39		н —	10.0		93.9	63-118			
Surrogate: Toluene-d8	10.4		11	10.0		104	73-125			
Surrogate: 4-BFB	10.1		"	10.0		101	68-118			
LCS (2030047-BS2)				Prepared	& Analyz	ed: 03/20/	02			
Chlorobenzene	19.9	0.50	ug/l	20.0		99.5	70-130			
1,1-Dichloroethene	20.1	0.50	π	20.0		100	65-135			
Trichloroethene	21.2	0.50	*	20.0		106	70-130			
Surrogate: 1,2-Dichloroethane-d4	9.88		"	10.0		98.8	63-118			
Surrogate: Toluene-d8	10.1		"	10.0		101	73-125			
Surrogate: 4-BFB	10.2		**	10.0		102	68-118			
Matrix Spike (2030047-MS1)	So	urce: L20304	2-03	Prepared	& Analyz	ed: 03/19/	02			
Chlorobenzene	100	2.5	ug/l	100	ND	100	60-140			
1,1-Dichloroethene	98.0	2.5		100	ND	98.0	60-140		•	
Trichloroethene	106	2.5	**	100	ND	106	60-140			
Surrogate: 1,2-Dichloroethane-d4	10.4		"	10.0		104	63-118			
Surrogate: Toluene-d8	9.82		"	10.0		98.2	73-125			
Surrogate: 4-BFB	10.1		"	10.0		101	68-118			
Matrix Spike Dup (2030047-MSD1)	So	urce: L20304	12-03	Prepared	& Analyz	zed: 03/19/	/02			-
Chlorobenzene	99.2	2.5	ug/l	100	ND	99.2	60-140	0.803	25	
1,1-Dichloroethene	95.8	2.5	11	100	ND	95.8	60-140	2.27	25	
Trichloroethene	107	2.5	"	100	ND	107	60-140	0.939	25	
Surrogate: 1,2-Dichloroethane-d4	10.4		"	10.0		104	63-118			
Surrogate: Toluene-d8	10.2		~	10.0		102	73-125			
Surrogate: 4-BFB	10.1		"	10.0		101	68-118			

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Gettler-Ryan/Geostrategies(1)

6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #5484, Castro Valley

Project Manager: Deanna Harding

Reported: 03/28/02 14:46

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2C12010 - EPA 3510B Se	p Funnel								-	
Blank (2C12010-BLK1)				Prepared:	03/12/02	Analyzed	: 03/13/02			
Acenaphthene	ND	5.0	ug/l				•			
Acenaphthylene	סא	5.0	н							
Aniline	ND	5.0	н							
Anthracene	ND	5.0	u							
Benzoic acid	ND	10	п							
Benzo (a) anthracene	ND	5.0	II .					•		
Benzo (b) fluoranthene	ND	5.0	п							
Benzo (k) fluoranthene	ND	5.0	"							
Benzo (ghi) perylene	ND	5.0	II							
Benzo[a]pyrene	ND	5.0	н							
Benzyl alcohol	ND	5.0	н							
Bis(2-chloroethoxy)methane	ND	5.0	Ħ					;		
Bis(2-chloroethyl)ether	ND	5.0	11						•	
Bis(2-chloroisopropyl)ether	ND	5.0	*1	+						
Bis(2-ethylhexyl)phthalate	ND	10	**							
4-Bromophenyl phenyl ether	ND	5.0	••							
Butyl benzyl phthalate	ND	50	11							
4-Chloroaniline	ND	25	TP .							
2-Chloronaphthalene	ND	5.0	77							
4-Chioro-3-methylphenol	ND	5.0	**							
2-Chlorophenol	ND	5.0	Ħ							
4-Chlorophenyl phenyl ether	ND	5.0	**							
Chrysene	ND	5.0	**			4				
Dibenz (a,h) anthracene	ND	10	25	,						
Dibenzofuran	ND	5.0	rt							
Di-n-butyl phthalate	ND	10	μ							
1,2-Dichlorobenzene	ND	5.0	11							
1,3-Dichlorobenzene	ND	5.0	**							
,4-Dichlorobenzene	ND	10	m							
3,3'-Dichlorobenzidine	ND	10	**							
,4-Dichlorophenol	ND	5.0	11							
Diethyl phthalate	ND	5.0	н							
2,4-Dimethylphenol	ND	5.0	••							
Dimethyl phthalate	ND	5.0	н							
I,6-Dinitro-2-methylphenol	ND	10								
and the state of t	3.773									

2,4-Dinitrophenol

ND

10



6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #5484, Castro Valley

Project Manager: Deanna Harding

Reported: 03/28/02 14:46

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Sequoia Analytical - Walnut Creek

	D t-	Reporting	22. %	Spike	Source	N/DEC	%REC	D.D.D.	RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 2C12010 - EPA 3510B Sep	Funnel				<u></u>			— · ·		
Blank (2C12010-BLK1)				Prepared:	03/12/02	Analyzed	: 03/13/02			•
,4-Dinitrotoluene	ND	10	ug/I							
,6-Dinitrotoluene	ND	10	**							
Di-n-octyl phthalate	ND	10	*							
luoranthene	ND	5.0	"							
luorene	ND	5.0	"							
lexachlorobenzene	ND	. 10	"							
lexachlorobutadiene	ND	10	**							
lexachlorocyclopentadiene	ND	10	, P	•						
lexachloroethane	ND	5.0	41							
ndeno (1,2,3-cd) pyrene	ND	10	Ħ							
sophorone	ND	5.0	#							
-Methylnaphthalene	ND	5.0	т ,							
-Methylphenol	ND	5.0	Ħ							
-Methylphenol	ND	5.0	₩							
aphthalene	ND	5.0	н							
-Nitroaniline	ND	10								
-Nitroaniline	ND	10								
-Nitroaniline	ND	20								
itrobenzene	ND	5.0	**							
-Nitrophenol	ND	5.0	в							
-Nitrophenol	ND	10	**							
-Nitrosodimethylamine	ND	5.0	n							
-Nitrosodiphenylamine	ND	5.0	**							
-Nitrosodi-n-propylamine	ND	5.0	n							
entachlorophenol	ND	10	n							
henanthrene	ND	5.0	#1							
henol	ND	5.0	11							
yrene	ND	5.0	**							
2,4-Trichlorobenzene	ND	5.0	**							
4,5-Trichlorophenol	ИD	. 10	**							
4,6-Trichlorophenol	ND	10	**			•				
urrogate: 2-Fluorophenol	66.2		11	150		44	21-110			
urrogate: Phenol-d6	42.8		"	150		29	10-110			
urrogate: Nitrobenzene-d5	94.4	•	rr .	100		94	35-114			
urrogate: 2-Fluorobiphenyl	92.6		n	100		93	43-116			
urrogate: 2,4,6-Tribromophenol	145		"	150		97	10-123			



6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #5484, Castro Valley

Reported: 03/28/02 14:46

Project Manager: Deanna Harding

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2C12010 - EPA 3510B Sep F	unnel									
Blank (2C12010-BLK1)			<u>. </u>	Prepared:	03/12/02	Analyzed	: 03/13/02			
Surrogate: p-Terphenyl-d14	105		ug/l	100		105	33-141			
Blank (2C12010-BLK2)				Prepared:	03/12/02	Analyzed	: 03/13/02			
Acenaphthene	ND	5.0	սք/Լ							
Acenaphthylene	ND	5.0	н							
Aniline	ND	5.0	н							
Anthracene	ND	5.0								
Benzoic acid	ND	10	**							
Benzo (a) anthracene	ND	5.0	**							
Benzo (b) fluoranthene	ND	5.0	14							
Benzo (k) fluoranthene	ND	5.0	п							
Benzo (ghi) perylene	ND	5.0	*							
Benzo[a]pyrene	ND	5.0	Ħ							
Benzyl alcohol	ND	5.0	. •							
Bis(2-chloroethoxy)methane	ND	5.0	**							
Bis(2-chloroethyl)ether	ND	5.0	**							
Bis(2-chloroisopropyl)ether	ND	5.0	**							
Bis(2-ethylhexyl)phthalate	ND	10	Ħ							
4-Bromophenyl phenyl ether	ND	5.0	w							
Butyl benzyl phthalate	ND	50	11							
4-Chloroaniline	ND	25	11							
2-Chloronaphthalene	ND	5.0	**							
4-Chloro-3-methylphenol	ND	5.0	11							
2-Chlorophenol	ND	5.0	11							
4-Chlorophenyl phenyl ether	ND	5.0	11							
Chrysene	ND	5.0	**							
Dibenz (a,h) anthracene	ND	10	**							
Dibenzofuran	ND	5.0	11							
Di-n-butyl phthalate	ND	10	**							
1,2-Dichlorobenzene	ND	5.0	**							
1,3-Dichlorobenzene	ND	5.0	**							
1,4-Dichlorobenzene	ND	10	16							
3,3'-Dichlorobenzidine	ND	10								
2,4-Dichlorophenol	ND	5.0								
Diethyl phthalate	ND	5.0	**							
2,4-Dimethylphenol	ND	5.0	**							



6747 Sierra Court, Suite J

Dublin CA, 94568

Project: Tosco(1)

Project Number: Tosco #5484, Castro Valley

Project Manager: Deanna Harding

Reported: 03/28/02 14:46

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2C12010 - EPA 3510B Sc	ep Funnel					-				7.040
Blank (2C12010-BLK2)				Prepared:	03/12/02	Analyzed	: 03/13/02			
Dimethyl phthalate	ND	5.0	ug/l					·		
1,6-Dinitro-2-methylphenol	ND	10	**							
4-Dinitrophenol	ND	10								
,4-Dinitrotoluene	ND	10	•							
,6-Dinitrotoluene	ND	10	n			*				
Di-n-octyl phthalate	ND	10	#							
luoranthene	ND	5.0	**							
luorene	ND	5.0	**							
· lexachlorobenzene	ND	10	**							
lexachlorobutadiene	ND	10	Ħ							
lexachlorocyclopentadiene	ND	10	**							
lexachloroethane	ND	5.0	**							
ndeno (1,2,3-cd) pyrene	ND	10								
sophorone	ND	5.0	••							
-Methylnaphthalene	ND	5.0	**							
-Methylphenol	ND	5.0	n							
-Methylphenol	ND	5.0	H							
laphthalene	ND	5.0	н							
-Nitroaniline	ND	10	Ħ							
-Nitroaniline	ND	10	Ħ							
-Nitroaniline	ND	20	H							
litrobenzene	ND	5.0	и							
-Nitrophenol	ND	5.0	п							
-Nitrophenol	ND	10	11							
l-Nitrosodimethylamine	ND	5.0	**							
l-Nitrosodiphenylamine	ND	5.0	"							
l-Nitrosodi-n-propylamine	ND	5.0	#							
entachlorophenol	ND	10	#							
henanthrene	ND	5.0	"							
henol	ND	5.0	**							
yrene	ND	5.0	Ħ							
,2,4-Trichlorobenzene	ND	5.0	11							
,4,5-Trichlorophenol	ND	10	Ħ							
,4,6-Trichlorophenol	ND	10	II							
urrogate: 2-Fluorophenol	66.0		"	150		44	21-110		•	
Dt1 46	45.0		,,	150		20	10 110			

150

Surrogate: Phenol-d6

45.0

10-110

30

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Gettler-Ryan/Geostrategies(1)

6747 Sierra Court, Suite J

Project: Tosco(1)

Project Number: Tosco #5484, Castro Vailey

Reported:

Dublin CA, 94568

Project Manager: Deanna Harding

03/28/02 14:46

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2C12010 - EPA 3510B Sep	Funnel									
Blank (2C12010-BLK2)	•	****		Prepared:	03/12/02	Analyzed	1: 03/13/02			
Surrogate: Nitrobenzene-d5	94.1		ug/l	100		94	35-114			
Surrogate: 2-Fluorobiphenyl	88.0		"	100		88	43-116			
Surrogate: 2,4,6-Tribromophenol	144		"	150		96	10-123			
Surrogate: p-Terphenyl-d14	91.5		**	100		92	33-141			
Blank (2C12010-BLK3)			·	Prepared:	03/14/02	Analyzed	1: 03/15/02			
Acenaphthene	ND	5.0	ug/l							
Acenaphthylene	ND	5.0	**							
Aniline	ND	5.0	."							
Anthracene	ND	5.0	**							
Benzoic acid	ND	10	**							
Benzo (a) anthracene	ND	5.0	**							
enzo (b) fluoranthene	ND	5.0	"							
enzo (k) fluoranthene	ND	5.0	11							
enzo (ghi) perylene	ND	5.0	11							
enzo[a]pyrene	ND	5.0	**							
enzyl alcohol	ND	5.0	11							
is(2-chloroethoxy)methane	ND	5.0	**							
is(2-chloroethyl)ether	ND	5.0	**							
is(2-chloroisopropyl)ether	ND	5.0	11	•						
is(2-ethylhexyl)phthalate	ND	10	91		•			•		
-Bromophenyl phenyl ether	ND	5.0	11							
lutył benzyl phthalate	ND	50	11							
-Chloroaniline	ND	25	11							
-Chloronaphthalene	ND	5.0	11							
-Chloro-3-methylphenol	ND	5.0	**							
-Chlorophenol	ND	5.0	**							
-Chlorophenyl phenyl ether	ND	5.0	Ħ							
Thrysene	ND	5.0	#1							
Dibenz (a,h) anthracene	ND	10								
Pibenzofuran	ND	5.0	**							
i-n-butyl phthalate	ND	10	н							
,2-Dichlorobenzene	ND	5.0								
,3-Dichlorobenzene	ND	5.0								
4-Dichlorobenzene	ND	10	••							
,3´-Dichlorobenzidine	ND	10	n							
,4-Dichlorophenol	ND	5.0	п							



6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #5484, Castro Valley

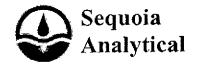
Project Manager: Deanna Harding

Reported: 03/28/02 14:46

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Sequoia Analytical - Walnut Creek

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 2C12010 - EPA 3510B Se	3 ranner			D 1 00/24/00 1 1 1 00/25/00
Blank (2C12010-BLK3)	NID.			Prepared: 03/14/02 Analyzed: 03/15/02
Diethyl phthalate	ND	5.0	ug/l "	
2,4-Dimethylphenol	ND	5.0	"	
Dimethyl phthalate	ND	5.0	**	
4,6-Dinitro-2-methylphenol	ND	10	"	
2,4-Dinitrophenol	ND	10	77	
2,4-Dinitrotoluene	ND	10		
2,6-Dinitrotoluene	ND	10	*	
Di-n-octyl phthalate	ND	10	TÎ	
Fluoranthene	ND	5.0	*	•
Fluorene	ND	5.0	tr.	
Hexachlorobenzene	ND	10	**	
Hexachlorobutadiene	ND	10	**	
Hexachlorocyclopentadiene	ND	10	"	
Hexachioroethane	ND	5.0	**	
Indeno (1,2,3-cd) pyrene	ND	10	11	
Isophorone	ND ND	5.0	#	
2-Methylnaphthalene	ДИ	5.0	**	
2-Methylphenol	ND	5.0	11	
4-Methylphenol	ND	5.0	**	
Naphthalene	ND	5.0	"	
2-Nitroaniline	ND	10	11	
3-Nitroaniline	ND	10	"	
4-Nitroaniline	ND	20	**	
Nitrobenzene	ND	5.0	"	
2-Nitrophenol	ND	5.0		
4-Nitrophenol	ND	10	*	
N-Nitrosodimethylamine	ND	5.0	**	
N-Nitrosodiphenylamine	ND	5.0	11	
N-Nitrosodi-n-propylamine	ND	5.0	,,	
Pentachlorophenol	ND	10		
Phenanthrene	ND	5.0	**	
Phenol	ND	5.0		•
Pyrene	ND	5.0	н	
1,2,4-Trichlorobenzene	ND	5.0	**	
2,4,5-Trichlorophenol	ND	10	н	
2,4,6-Trichlorophenol	ND	10	11	



6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #5484, Castro Valley

Spike

Source

%REC

Project Manager: Deanna Harding

Reported: 03/28/02 14:46

RPD

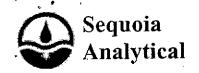
Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Sequoia Analytical - Walnut Creek

Reporting

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 2C12010 - EPA 3510B Sep	Funnel									
Blank (2C12010-BLK3)				Ртерагеd:	03/14/02	Analyzed:	03/15/02			
Surrogate: 2-Fluorophenol	64.7		ug/l	150		43	21-110			
Surrogate: Phenol-d6	42.6		H	150		28	10-110			
Surrogate: Nitrobenzene-d5	<i>83.2</i>		"	100		83	35-114			
Surrogate: 2-Fluorobiphenyl	78.4		#	100		78	43-116	•		
Surrogate: 2,4,6-Tribromophenol	134		н	150		89	10-123			
Surrogate: p-Terphenyl-d14	71.0		н	100		71	33-141			
LCS (2C12010-BS1)				Prepared:	03/12/02	Analyzed	03/13/02			
Acenaphthene	84.9	5.0	ug/l	100		85	46-118	- - -		
1-Chloro-3-methylphenol	123	5.0	**	150		82	23-97			
2-Chlorophenol	118	5.0	**	150		79	27-123			
1,4-Dichlorobenzene	74.6	10	#	100		75	36-97			
2,4-Dinitrotoluene	78.0	10	#	100		78	24-96			
4-Nitrophenol	41.2	10	*1	150		27	10-80			
N-Nitrosodi-n-propylamine	83.1	5.0	**	100		83	41-116			
Pentachlorophenol	106	10	11	150		71	9-103		-	
Phenol	41.2	5.0	11	150		27	12-110			
Pyrene .	89.2	5.0	11	100		89	26-127			
1,2,4-Trichlorobenzene	76.4	5.0	11	100		76	39-98			
Surrogate: 2-Fluorophenol	62.0		"	150		41	21-110			·
Surrogate: Phenol-d6	41.6		"	150		28	10-110			
Surrogate: Nitrobenzene-d5	83.2		"	100		83	35-114			
Surrogate: 2-Fluorobiphenyl	83.3		н	100		83	43-116			
Surrogate: 2,4,6-Tribromophenol	139		87	150		93	10-123			
Surrogate: p-Terphenyl-d14	91.3		п	100		91	33-141			
LCS (2C12010-BS2)				Prepared:	03/14/02	Analyzed	: 03/15/02			
Acenaphthene	78.8	5.0	ug/l	100		79	46-118			
4-Chloro-3-methylphenol	118	5.0	tt	150		79	23-97			
2-Chlorophenol	112	5.0	II .	150		75	27-123			
1,4-Dichlorobenzene	69.8	10	11	100		70	36-97			
2,4-Dinitrotoluene	74.9	10	н	100		75	24-96			
4-Nitrophenol	41.4	10	μ	150		28	10-80			
N-Nitrosodi-n-propylamine	84.2	5.0	ır	100		84	41-116			
Pentachlorophenol	103	10	н	150		69	9-103			
Phenol	42.8	5.0	н	150		29	12-110			
Pyrene	78.5	5.0	ш	100		78	26-127			
1,2,4-Trichlorobenzene	70.4	5.0	11	100		70	39-98			

Sequoia Analytical - San Carlos

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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Dublin CA, 94568

Project: Tosco(1)

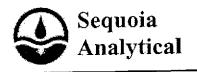
Project Number: Tosco #5484, Castro Valley

Project Manager: Deanna Harding

Reported: 03/28/02 14:46

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Sequoia Analytical - Walnut Creek

Алаlyte	Reporting			Spike	Source	4177	%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 2C12010 - EPA 3510B Sep	Funnel					<u> </u>				
LCS (2C12010-BS2)				Prepared:	03/14/02	Analyzed	: 03/15/02			
Surrogate: 2-Fluorophenol	66.4		ug/l	150		44	21-110			
Surrogate: Phenol-d6	45.1		π	150		30	10-110			
Surrogate: Nitrobenzene-d5	82.2		Ħ	100		82	35-114			
Surrogate: 2-Fluorobiphenyl	<i>77.6</i>		"	100		78	43-116			
Surrogate: 2,4,6-Tribromophenol	138		"	150		92	10-123			
Surrogate: p-Terphenyl-d14	74.4		#	100		74	33-141			
LCS Dup (2C12010-BSD1)				Prepared:	03/12/02	Analyzec	1: 03/13/02			
Acenaphthene	84.8	5.0	ug/l	100		85	46-118	0.1	30	
4-Chloro-3-methylphenol	123	5.0	н	150		82	23-97	0	30	
2-Chlorophenol	116	5.0	R	150		77	27-123	2	30	
1,4-Dichlorobenzene	73.3	10	"	100		73	36-97	2	30	
2,4-Dinitrotoluene	73.6	. 10	Ħ	100		74	24-96	6	- 30	
4-Nitrophenol	43.4	10	H	150		29	10-80	5	30	
N-Nitrosodi-n-propylamine	82.8	5.0	**	100		83	41-116	0.4	30	
Pentachlorophenol	110	10	**	150		73	9-103	4	30	
Phenol	42.0	5.0	**	150		28	12-110	2	30	
Pyrene	90.2	5.0	Ħ	100		90	26-127	1	30	
1,2,4-Trichlorobenzene	77.2	5.0	II	100		77	39-98	1	30	
Surrogate: 2-Fluorophenol	63.8	-	"	150		43	21-110			
Surrogate: Phenol-d6	42.9		"	150		29	10-110			
Surrogate: Nitrobenzene-d5	83.1		n	100		83	35-114			
Surrogate: 2-Fluorobiphenyl	83.7		n	100		84	43-116			
Surrogate: 2,4,6-Tribromophenol	139		n	150		93	10-123			
Surrogate: p-Terphenyl-d14	90.1		n	100		90	33-141			



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Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Tosco #5484, Castro Valley

Project Manager: Deanna Harding

Reported: 03/28/02 14:46

Notes and Definitions

M-04 MTBE was reported from second analysis.

P-02 Chromatogram Pattern: Weathered Gasoline C6-C12

The reporting limit(s) for this sample have been raised due to high levels of non-target interferents.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

R-05

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference