July 15, 1999 G-R #:180203

TO:

Mr. David B. De Witt

Tosco Marketing Company

2000 Crow Canyon Place, Suite 400

San Ramon, California 94583

CC: Mr. Glen Matteucci

ERI, Inc.

73 Digital Drive, Suite 100 Novato, California 94949

FROM:

Deanna L. Harding

Project Coordinator Gettler-Ryan Inc.

6747 Sierra Court, Suite J Dublin, California 94568

RE: Former Tosco 76 SS #0843

1629 Webster Street Alameda, California

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
1	July 9, 1999	Groundwater Monitoring and Sampling Report Second Quarter 1999 - Event of June 3, 1999

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 July 27, 1999, this report will be distributed to the following:

Enclosure

sc: Ms. Eva Chu, Alameda County Dept., of Environmental Health, 1131 Harbor Bay Parkway, Alameda, CA 94502

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QUARTERLY SUMMARY REPORT

Second Quarter 1999 (April - June)

TOSCO SERVICE STATION 0843

1629 Webster Street Alameda, California

City/County ID

Alameda/Alameda County Department of Environmental Health

Services

County:

Alameda County

BACKGROUND

During June 1998, Tosco Marketing Company (Tosco) removed two 10,000-gallon gasoline underground storage tanks (USTs), one 550-gallon used-oil UST, product lines, and dispensers, and excavated and removed 388 tons of soil and backfill. Concentrations of residual total purgeable petroleum hydrocarbons as gasoline (TPPHg) and methyl tertiary butyl ether (MTBE) were detected in soil up to 44 parts per million (ppm) and 280 ppm, respectively, in soil samples collected from the sidewalls of the gasoline UST cavity. Concentrations of dissolved TPPHg, MTBE, and benzene were detected in a groundwater sample collected from the gasoline UST cavity up to 19,000 parts per billion (ppb), 1,300 ppb, and 880 ppb, respectively.

RECENT QUARTER ACTIVITIES

ERI submitted a soil and groundwater evaluation.

NEXT QUARTER ACTIVITIES

Perform quarterly groundwater monitoring, sampling, and reporting.

CHARACTERIZATION/REMEDIAL STATUS

Soil contamination delineated?	Yes
Dissolved groundwater delineated?	<u>No</u>
Free Product delineated?	<u>NA</u>
Amount of gw contaminant recovered?	<u>NA</u>
Amount of soil contamination recovered?	<u>344</u>
Soil remediation in progress?	<u>No</u>
Dissolved/free product remediation in progress?	<u>No</u>

CONSULTANT:

Environmental Resolutions, Inc.

July 9, 1999 G-R Job #180203

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

RE:

Second Quarter 1999 Groundwater Monitoring & Sampling Report

Former Tosco 76 Service Station #0843

1629 Webster Street Alameda, California

Dear Mr. De Witt:

This report documents the quarterly groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R). On June 3, 1999, field personnel monitored and sampled four wells (MW-1 through MW-4) at the above referenced site.

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

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

Sincerely,

Project Coordinator

Douglas 1 Lee

Senior Geologist, R.G. No. 6882

Figure 1:

Potentiometric Map

Figure 2: Table 1:

Concentration Map

Groundwater Monitoring Data and Analytical Results Attachments: Standard Operating Procedure - Groundwater Sampling

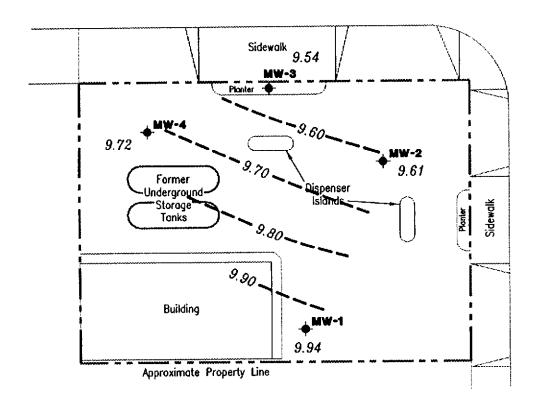
Field Data Sheets

Chain of Custody Document and Laboratory Analytical Reports

No. 6882

0843.gml

PACIFIC AVENUE



EXPLANATION

Groundwater monitoring well

Groundwater elevation in feet 99.99referenced to Mean Sea Level (MSL)

Groundwater elevation contour, dashed where inferred.

> Approximate groundwater flow direction at a gradient of 0,006 Ft./Ft.

> > 30 Scale in Feet

> > > **FIGURE**

Base Map: ERI, Generalized Site Plan



Gettler - Ryan Inc.

6747 Sierra Ct., Suite J Dublin, CA 94568

(925) 551-7555

POTENTIOMETRIC MAP

Former Tosco 76 Service Station No. 0843 1629 Webster Street Alameda, California

WEBSTER STREET

DATE

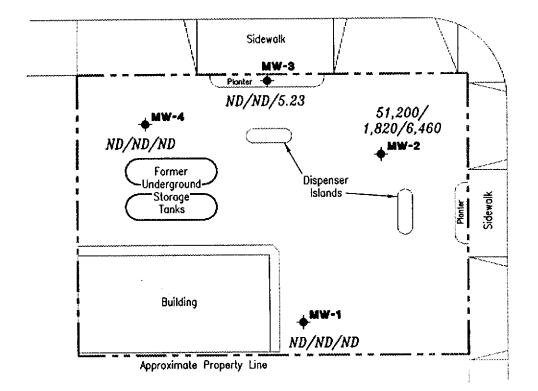
June 3, 1999

JOB NUMBER 180203

REMEWED BY

REVISED DATE

PACIFIC AVENUE



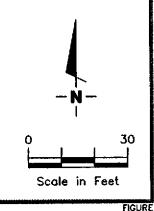
EXPLANATION

Groundwater monitoring well

TPH(G) (Total Petroleum Hydrocarbons as Gasoline)/Benzene/MTBE A/B/C concentrations in ppb

ND Not Detected

WEBSTER STREET



Base Wap: ERI, Generalized Site Plan



Gettler - Ryan Inc.

6747 Sierro Ct., Suite J Dublin, CA 94568

(925) 551-7555

CONCENTRATION MAP

Former Tosco 76 Service Station No. 0843 1629 Webster Street Alameda, California

DATE

June 3, 1999

REVISED DATE

JOB NUMBER 180203

REVIEWED BY

Table 1
Groundwater Monitoring Data and Analytical Results

Former Tosco 76 Service Station #0843 1629 Webster Street Alameda, California

Well ID/	Date	DTW	GWE	TPH(G)	В	T	E	X	MTBE
TOC*	·	(ft.)	(msl)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
MW-1									
16.18	03/05/99 ¹			86.6 ³	ND	2.04	ND	4.06	23.9^{2}
	06/03/99	6.24	9.94	ND	ND	ND	ND	ND	ND/ND ²
MW-2									-
15.57	03/05/99 ¹			34,400	2,070	7,710	2,340	8,240	8,460 ²
	06/03/99	5.96	9.61	51,200 ⁴	1,820	7,570	2,510	7,320	6,460/8,800 ²
MW-3									
15.11	03/05/991			135 ³	ND	ND	ND	4.84	2.46^{2}
	06/03/99	5.57	9.54	ND	ND	ND	ND	ND	5.23/12.72
MW-4									
15.17	03/05/99 ¹			ND	ND	ND	ND	2.44	25.2^{2}
	06/03/99	5.45	9.72	ND	ND	ND	ND	ND	ND/3.96 ²
Trip Blank									_
TB-LB	03/05/99 ¹			ND	ND	ND	ND	ND	ND^2
	06/03/99			ND	ND	ND	ND	ND	ND

Table 1

Groundwater Monitoring Data and Analytical Results

Former Tosco 76 Service Station #0843 1629 Webster Street Alameda, California

EXPLANATIONS:

Groundwater monitoring data and laboratory analytical results prior to June 3, 1999, were compiled from reports prepared by ERI, Inc.

TOC = Top of Casing elevation

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

TPH(G) = Total Petroleum Hydrocarbons as Gasoline

MTBE = Methyl tertiary butyl ether

- * TOC elevations are based on USC&GS Benchmark WEB PAC 1947 R 1951; (Elevation = 14.054 feet).
- Benzene, toluene, ethylbenzene and total xylenes by EPA Method 8260A.
- MTBE by EPA Method 8260A.
- Laboratory report indicates weathered gasoline C6-C12.
- Laboratory report indicates chromatogram pattern C6-C12.

STANDARD OPERATING PROCEDURE - GROUNDWATER SAMPLING

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

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

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

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

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

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

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

WELL MONITORING/SAMPLING FIELD DATA SHEET

acility# 08	43		Jo	b#:	18020		· · · · · · · · · · · · · · · · · · ·
Address: 162	9 Webste	r 8t.	Da	ate:	6/2/99		
City:	lameda		Sa		• ,	e.l	
Well ID	MW-1	W	ell Condition:	OK			
Well Diameter			drocarbon	:D (*aat)	Amount E	<i>A</i>	(Gallons)
Total Depth	20.50		·	= 0.17	3" = 0.3	8 4	
Depth to Water	6.24	ft.	actor (VF)	6* = 1	.50	12" = 5.80	
	14.26	x vf 0.1-7	= 2.42 x 3 [c	:ase volume) =	Estimated P	urge Volume: _	7.27 (gal.)
Purge Equipment:	Disposable Bai Bailer Stack Suction Grundfos Other:		Samplii Equipm	ient: Di Ba Pr Gr	sposable B iller essure Bail rab Sample ther:	er	
Starting Time:	11:03		Weather Cond	ditions:	cla	7	
Sampling Time:			Weather Cond Water Color:	bri	`	Odor:	
	ate:		Sediment Des	cription:	Sana	Q	
	ter? LO		If yes; Time				
			- de la companya de l	mperature	D.O.		Alkalinity
Time 	Volume pH (gal.) 8.11		nductivity Te nhos/cmX100	66.0	(mg/L)	(mV)	(ppm)
11:06	(gal.) 2.5 8.0	μr	nhos/cmX/00 3.36 3.28	66.0 65.2	(mg/L)	(mV)	
11:06	(gal.) 2.5 8-11	μr	nhos/cmX/00 3.36 3.28	66.0	(mg/L)	(mV)	
11:06	(gal.) 2.5 8.0	μr	nhos/cmX/00 3.36 3.28	66.0 65.2	(mg/L)	(mV)	
11:06 11:08 11:10	(gal.) 5. 8.0 7.5 7.9	μr 	nhos/cmx/00 3.36 3.28 3.24	65.7 65.1			(ppm)
11:06 11:08 11:10	(gal.) 2.5 8.0 7.5 7.9 (#) - CONTAINER	LABO REFRIG.	RATORY INFOR	65.7 65.1 65.1 MATION	RATORY	ANAL	(ppm)
11:06 11:08 11:10	(gal.) 5. 8.0 7.5 7.9	μr 	nhos/cmx/00 3.36 3.28 3.24	65.7 65.1	RATORY	ANAL	(ppm)
11:06 11:08 11:10 SAMPLE 10 HW-1	(gal.) 7.5 8.0 7.5 7.9 (#) - CONTAINER 3 VOA	LABO REFRIG.	RATORY INFOR	65.7 65.1 65.1 MATION E / LABO	RATORY	ANAL TPH(G)/btex/r	(ppm)
11:06 11:08 11:10 SAMPLE 10 HW-1	(gal.) 7.5 8.0 7.5 7.9 (#) - CONTAINER 3 VOA	LABO REFRIG.	RATORY INFOR	65.7 65.1 65.1 MATION E / LABO	RATORY	ANAL TPH(G)/btex/r	(ppm)

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/ To. Facility#08°		· · · · · · · · · · · · · · · · · · ·	J	ob#: <u>/</u> 8	0203		
	9 webster e	1	D	ate: <u>6/</u>	3/99		
City: <u>Ala</u>		-		ampler: <u>V</u> a	urthes.	·····	
Well ID	MW-2	. w	ell Condition:	OK			
Well Diameter	2ir		drocarbon		mount Baile		(Gallons)
Total Depth	20.50			" = 0.17			= 0.66
Depth to Water	5.96	L I	Factor (VF)	6" = 1.50		2" = 5.80	
Purge	14.54 >		= <u>7.47</u> x 3 Sampl	icase volume) = Es	timated Purge	Volume: 7	7 4 Z (gal.)
Equipment:	Bailer		Equip	nent: Dispo	sable Baile	r	
	Stack Suction			Bailer Press	ure Bailer		
	Grundfos			Grab	Sample		
	Other:			Other	r:		
Starting Time:	11:55		Weather Cor	ditions:	cldy		· · · · · · · · · · · · · · · · · · ·
	017.51		Water Color:	grai	10 · 10	dor: 4	
	te:	gom.	Sediment De	scription:	المريحة أ	<u>, '</u>	
Did well de-wate	er?		If yes; Time):	Volume:		(gal.
Time \	Volume pH (gal.) 7.8		nhos/cmx/00	emperature F7	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
12:00	5 7.6		3.48 3.53	66.5			
12.53	7.5 7.5		3.64	66.1			
					·		
		LABO	RATORY INFO	RMATION		•	
SAMPLE ID	(#) - CONTAINER	REFRIG.	-γ	E / LABORAT		ANALY	
MW-2	3 VOA	Y	HCI	SEQUOIA		H(G)/btex/m	
MW-2	1 VOA	1	٠.٠	٠, ٠,٠	J ^A	TBE (80	(60)
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	<u> </u>	<u> </u>					
COMMENTS: _							
				·			

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/ 18	43			ob#: _	18020	3	
	9 Webster	8F.	ם	ate: _	6/3/99)	
	neda				Varte		
City		<u></u> -					
Well ID	Mw-3	. W	ell Condition:	ర	u	-	
Well Diameter	'2 in	-	drocarbon ickness:	Ø tear	Amount &	7	(Gallons)
Total Depth	20.50 H			* = 0.17			* = 0.66
Depth to Water	5.57 f	F	actor (VF)			12" = 5.80	
	14.93 x	(VF <u>6-1)</u>	= 2,54 ×3	case volume)	= Estimated P	urge Volume: _	7.61 (gal.)
Purge Equipment:	Disposable Baile Bailer Stack Suction Grundfos Other:	r .	Sampl Equipr	nent: Q B P G	isposable B aller ressure Bail irab Sample other:	er	
Starting Time:	4.30		Weather Con	ditions	•/ J		
Sampling Time:	11:30		Weather Cor Water Color:	br	-0	Odor: Mâ	>
	e: /	gpm.				ad	
Did well de-wate	r? <u>wo</u>		If yes; Time	:	Volur	ne:	[gal.]
11:32	olume pH (gal.) 7.94 5 7.88	μ <u>π</u>	nductivity T nhos/cmX/00 - 37	emperature •F. 66.3 60.3	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
11:38	3 7.83		38	66-1			
SAMPLE ID	LIII CONTAINGO		RATORY INFO				.e.c.
HW-3	3 VOA	REFRIG.	PRESERV. TYP	SEQUOI	DRATORY A	ANAL` TPH(G)/btex/m	
HW-3	I VOA				· ·	MTBE (82	
			<u></u>				
COMMENTS: _		<u>. </u>					
					-		

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/ To: acility# 08	sc0 43		Jo	b#: _	180203		<u>:</u>
	19 webster	st.	D:	ate: _	6/3/99		
City: <u>A/4</u>	meda		S	ampler: _	Varthe		
Well ID	MW-4	Well	Condition:	_0/	દ <u>ે</u>		
Well Diameter			rocarbon kness:	P Ifeet	Amount Bagging (product/wat	-A-	(Gallons)
Total Depth	20.50 ft	vo		' = 0.17		4	* = 0.66
Depth to Water	5.45 ft	<u>.</u>	<u> </u>				
Purge Equipment:	Disposable Baile Bailer Stack Suction Grundfos Other:	r	= 2.56 x 3 (Sampli Equipr	ing nent: E F	= Estimated Pu Disposable Badailer Pressure Baile Grab Sample Other:	ailer	7.67 (gal.)
	10:13		Weather Cor Water Color:	<u>b</u>		Odor:	₹
	re:				<u>೪ ನಂಪರ</u> Volum		(gal.
Time V 	Fig. 7.86	Cond	hos/cmx/00	emperature 66.4 67.7	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
	8 7.85	<u> </u>	5.99	67.2			
			ATORY INFO		7001		Vece
SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TY	SEQUO	BORATORY	ANAL TPH(G)/btex/r	
piw 4 Mw 4	3 VOA 1 VJA	Y Z	セ	2		MTBE(8	
COMMENTS: _		· · ·					

Chain-of-Custody-Record

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Project Number: Tosco(1)
Project Number: Tosco SS#0843
Project Manager: Deanna Harding

Sampled: 6/3/99 Received: 6/3/99 Reported: 6/29/99

ANALYTICAL REPORT FOR L906066

			
Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
TB-LB	L906066-01	Water	6/3/99
MW-1	L906066-02	Water	6/3/99
MW-2	L906066-03	Water	6/3/ 99
MW-3	L906066-04	Water	6/3/99
MW-4	L906066-05	Water	6/3/99



Gettler-Ryan/Geostrategies(1)

6747 Sierra Court, Suite D

Project Number: Tosco SS#0843

Dublin, CA 94568

Project Manager: Deanna Harding

Received: 6/3/99 Reported: 6/29/99

6/3/99

Sampled:

Sample Description: Laboratory Sample Number: TB-LB L906066-01

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method/ Surrogate Limits	Reporting Limit	Result	Units	Notes*
		Seque	oia Analytica	- San Carlos				
Total Purgeable Hydrocarbons (C6-C1	2), BTEX an	d MTBE by	DHS LUFT					
Purgeable Hydrocarbons as Gasoline	9060096	6/16/99	6/17/99		50.0	ND	ug/l	
Benzene	17	**	11		0.500	ND	11	
Toluene	н	н	н		0.500	ND	rr	
Ethylbenzene	**	rt	If		0.500	ND	н	
Xylenes (total)	**	+	It		0.500	ND	**	
Methyl tert-butyl ether	**	"	H		5.00	ND	**	
Surrogate: a,a,a-Trifluorotoluene	и	н	п	70.0-130		82.8	%	



Project: Tosco(1)
Project Number: Tosco SS#0843
Project Manager: Deanna Harding

Sampled: 6/3/99 Received: 6/3/99 Reported: 6/29/99

Sample Description: Laboratory Sample Number: MW-1 L906066-02

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method/ Surrogate Limits	Reporting Limit	Result	Units	Notes*
				l - San Carlos				
Total Purgeable Hydrocarbons (C6-C	12), BTEX an	d MTBE by	DHS LUFT				7	
Purgeable Hydrocarbons as Gasoline	9060096	6/16/99	6/17/99		50.0	ND	ug/l	
Benzene	Ħ	н	re		0.500	ND	II.	
-	н	If	H		0.500	ND	•	
Toluene	17	11	**		0.500	ND	11	
Ethylbenzene					0.500	ND	#	
Xylenes (total)		н	**		5.00	ND	19	
Methyl tert-butyl ether	H				3,00	77.6	%	·····
Surrogate: a,a,a-Trifluorotoluene	Tr.	н	st.	70.0-130		77.0	70	
MTBE by EPA Method 8260A					• • •	ND	= 11	
Methyl tert-butyl ether	9060068	6/11/ 99	6/11/99		2.00	ND	ug/l	
Surrogate: 1,2-Dichloroethane-d4	tt .	"	н	76.0-114		109	%	



Gettler-Ryan/Geostrategies(I) 6747 Sierra Court, Suite D

Project: Tosco(1)

Sampled: 6/3/99

Dublin, CA 94568

Project Number: Tosco SS#0843

Project Manager: Deanna Harding

Received: 6/3/99 Reported: 6/29/99

Sample Description:

Laboratory Sample Number:

MW-2 L906066-03

Ratch	Date	Date	Specific Method/	Reporting			
Number	Prepared	Analyzed	Surrogate Limits	Limit	Result	Units	Notes*
	_						
			- San Carlos				
2), BTEX an	d MTBE by	DHS LUFT					
9060102	6/17/99	6/17/99		10000	51200	ug/l	i
19	H	H		100	1820	н	
н		· · ·		100	7570	н	
**	•	19		100	2510	**	
1)	19	n			7320	н	
11	,,	н				II.	
-			70.0.120			0/	
"	"	*	/0.0~130		09.0	70	
9060068	6/11/99	6/11/99		100	8800	ug/l	
"	"	"	76.0-114		104	%	
	2), BTEX an 9060102 " " " " " " 9060068	Number Prepared Seque 2), BTEX and MTBE by 9060102 6/17/99 " " " " " " " " " " " " " " " " " "	Number Prepared Analyzed Sequoia Analytica	Number Prepared Analyzed Surrogate Limits	Number Prepared Analyzed Surrogate Limits Limit	Number Prepared Analyzed Surrogate Limits Limit Result	Number Prepared Analyzed Surrogate Limits Limit Result Units



Project: Tosco(1)
Project Number: Tosco SS#0843

Project Manager: Deanna Harding

Sampled: 6/3/99 Received: 6/3/99 Reported: 6/29/99

Sample Description: Laboratory Sample Number: MW-3 L906066-04

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method/ Surrogate Limits	Reporting Limit	Result	Units	Notes*
2 33344 7 44				-				
				<u>l - San Carlos</u>				
Total Purgeable Hydrocarbons (C6-C	12), BTEX an	d MTBE by	DHS LUFT					
Purgeable Hydrocarbons as Gasoline	9060103	6/17/99	6/17/99		50.0	ND	ug/ï	
Benzene	н	**	n		0.500	ND	117	
Toluene	11	19	n		0.500	ND	**	
Ethylbenzene	11	H	п		0.500	ND	н	
Xylenes (total)	D	"	14		0.500	ND	п	
Methyl tert-butyl ether	п	Ħ	11		5.00	5.23	11	
Surrogate: a,a,a-Trifluorotoluene	*	IF	17	70.0-130	· · · · · · · · · · · · · · · · · · ·	93.7	%	
MTBE by EPA Method 8260A								
Methyl tert-butyl ether	9060077	6/13/99	6/13/99		2.00	12.7	ug/l	
Surrogate: 1,2-Dichloroethane-d4	н	"	77	76.0-114		104	%	



Project: Tosco(1)
Project Number: Tosco SS#0843

Project Number: Tosco SS#0843
Project Manager: Deanna Harding

Sampled: 6/3/99 Received: 6/3/99

Reported: 6/29/99

Sample Description: Laboratory Sample Number: MW-4 L906066-05

	Batch	Date	Date	Specific Method/	_			
Analyte	Number	Prepared	Analyzed	Surrogate Limits	Limit	Result	Units	Notes*
				<u>i - San Carlos</u>				
Total Purgeable Hydrocarbons (C6-C)	(2), BTEX an	<u>id MTBE by</u>	DHS LUFT					
Purgeable Hydrocarbons as Gasoline	9060103	6/17/99	6/17/99		50.0	ND	ug/l	
Benzene	•	н	17		0.500	ND	Ħ	
Toluene	**	н	Ħ		0.500	ND	"	
Ethylbenzene	**	11	m		0.500	ND	"	
Xylenes (total)	11	11	n		0.500	ND	н	
Methyl tert-butyl ether	II .	D	**		5.00	ND	IP	
Surrogate: a,a,a-Trifluorotoluene	rr'	"	"	70.0-130		88.8	%	
MTBE by EPA Method 8260A								
Methyl tert-butyl ether	9060068	6/11/99	6/11/99		2.00	3.96	ug/l	
Surrogate: 1,2-Dichloroethane-d4	"	n -	#	76.0-114		105	%	



Gettler-Ryan/Geostrategies(1) Project: Tosco(1) Sampled: 6/3/99
6747 Sierra Court, Suite D Project Number: Tosco SS#0843 Received: 6/3/99
Dublin, CA 94568 Project Manager: Deanna Harding Reported: 6/29/99

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT/Quality Control Sequoia Analytical – San Carlos

	Date	Spike	Sample	QC	¥1.2	Reporting Limit	Recov.	RPD Limit	RPD
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	76	Lunit	% Notes*
Batch: 9060096	Date Prepa	red:_6/16/9	9		<u>Extra</u>	ction Method: EP	A 5030B	[P/T]	
Blank	9060096-BI		_						
Benzene	6/16/99			ND	ug/l	0.500			
Toluene	71			ND	Ħ	0.500			
Ethylbenzene	н			ND	tt.	0.500			
Xylenes (total)	**			ND	**	0.500			
Methyl tert-butyl ether	11			ND	10	5.00			
Surrogate: a,a,a-Trifluorotoluene	tt.	10.0		8.85	"	70.0-130	88.5		
<u>LCS</u>	9060096-B	S1							
Benzene	6/16/99	10.0		8.96	ug/l	70.0-130	89.6		
Toluene	11	10.0		8.85	"	70.0-130	88.5		
Ethylbenzene	,,	10.0		9.60	**	70.0-130	96.0		
Xylenes (total)	TI	30.0		28.2	н	70.0-130	94.0		
Surrogate: a,a,a-Trifluorotoluene	H	10.0		8.83	ıt	70.0-130	88.3		
Matrix Spike	9060096-M	isi L	906090-07						
Benzene	6/17/99	10.0	ND	8.45	ug/i	60.0-140	84.5		
Toluene	H	10.0	ND	8.68	"	60.0-140	86.8		
Ethylbenzene	n e	10.0	ND	8.88	W	60.0-140	88.8		
Xylenes (total)		30.0	ND	26.5	н	60.0-140	88.3		
Surrogate: a,a,a-Trifluorotoluene	н	10.0		8.18	11	70.0-130	81.8		
Matrix Spike Dup	9060096-M	ISD1 L	906090-07						
Benzene	6/17/99	10.0	ND	8.82	ug/l	60.0-140	88.2	25.0	4.28
Toluene	II.	10.0	ND	9.01	17	60.0-140	90.1	25.0	3.73
Ethylbenzene	U	10.0	ND	9.30	11	60.0-140	93.0	25.0	4.62
Xylenes (total)	rt	30.0	ND	27.8	**	60.0-140	92.7	25.0	4.86
Surrogate: a,a,a-Trifluorotoluene	"	10.0		7.99	"	70.0-130	79.9		
Batch: 9060103	Date Prepa	ared: 6/17/9	99		Extra	ection Method: EP	A 5030B	[P/T]	
Blank	9060103-B	LK1							
Purgeable Hydrocarbons as Gasoline	6/17/99			ND	ug/l	50.0			
Benzene	H			ND	17	0.500			
Toluene	н			ND	D	0.500			
Ethylbenzene	"			ND	н	0.500			
Xylenes (total)				ND	**	0.500			
Methyl tert-butyl ether	#			ND	**	5.00			
Surrogate: a,a,a-Trifluorotoluene	H	10.0		9.83	n	70.0-130	98.3		
LCS	9060103-B	<u>S1</u>							
Purgeable Hydrocarbons as Gasoline	6/17/99	250		281	ug/l	70.0-130	112		
Seguoia Analytical - San Carlos			-		*	Refer to end of repo	rt for text	of notes	and definitions

Sequoia Analytical - San Carlos

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



Gettler-Ryan/Geostrategies(1)
Project: Tosco(1)
Sampled: 6/3/99
6747 Sierra Court, Suite D
Project Number: Tosco SS#0843
Received: 6/3/99
Dublin, CA 94568
Project Manager: Deanna Harding
Reported: 6/29/99

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT/Quality Control Sequola Analytical - San Carlos

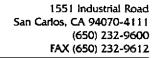
Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov.	RPD Limit	RPD % Notes*
LCS (continued)	9060103-B	S 1							
Surrogate: a,a,a-Trifluorotoluene	6/17/99	10.0	·	11.0	ug/l	70.0-130	110		
Matrix Spike	9060103-M	<u>S1 L</u>	906172-05 ND	320	ug/l	60.0-140	128		
Purgeable Hydrocarbons as Gasoline Surrogate: a,a,a-Trifluorotoluene	"	10.0	ND_	9.22	"	70.0-130	92.2		
Matrix Spike Dup Purgeable Hydrocarbons as Gasoline	<u>9060103-M</u> 6/17/99	<u>ISD1 L</u> 250	906172-05 ND	319	ug/l	60.0-140	128	25.0	0
Surrogate: a,a,a-Trifluorotoluene	"	10.0		9.85	"	70.0-130	98.5		



Gettler-Ryan/Geostrategies(1) Project: Tosco(1) Sampled: 6/3/99
6747 Sierra Court, Suite D Project Number: Tosco SS#0843 Received: 6/3/99
Dublin, CA 94568 Project Manager: Deanna Harding Reported: 6/29/99

MTBE by EPA Method 8260A/Quality Control Sequoia Analytical - San Carlos

Analyte		Date	Spike	Sample	QC		Reporting Limit	Recov.	RPD	RPD		
Surrogate:	Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	% Notes*		
Second	D.4.b. 00<00<0	Nate Prena	red: 6/11/9	10		Extraction Method: EPA 5030B [P/T]						
Methyl tert-buryl ether 6/11/99 ND ug/l 2.00 Surrogate: 1,2-Dichloroethane-d4 " 50.0 54.1 " 76.0-114 108 LCS 9060068-BS1 6/11/99 50.0 60.0 ug/l 70.0-130 120 Surrogate: 1,2-Dichloroethane-d4 " 50.0 56.0 " 76.0-114 112 Matrix Spike 9060068-MS1 L906024-01 Methyl tert-butyl ether 6/11/99 50.0 ND 45.4 ug/l 60.0-140 90.8 Surrogate: 1,2-Dichloroethane-d4 " 50.0 ND 45.4 ug/l 60.0-140 90.8 Matrix Spike Dup 9060068-MSD1 L906024-01 Methyl tert-buryl ether 6/11/99 50.0 ND 53.3 ug/l 60.0-140 107 25.0 16.4 Matrix Spike Dup 9060077-BLIX " 50.0 ND 53.3 ug/l 60.0-140 107 25.0 16.4 Batch: 9060077 Date Prepared: 6/13/99 ND ug/l 2.00 2.00 10.0 10.0 10.0				<u>.,</u>		21111						
Selective Color			LIXI		ND	ng/l	2.00					
LCS			50.0					108	•			
Methyl tert-butyl ether G/11/99 50.0 60.0 ug/l 70.0-130 120	Surrogate: 1,2-Dichloroethane-a4		50.0		J4.1		70.0 717	* * -				
Matrix Spike 9060068-MS1 L906024-01 Matrix Spike 9060068-MS1 L906024-01 Motival tent-butyl ether 6/11/99 50.0 ND 45.4 ug/l 60.0-140 90.8 Motival tent-butyl ether 6/11/99 50.0 ND 53.3 ug/l 60.0-140 107 25.0 16.4 Motival tent-butyl ether 6/11/99 50.0 ND 53.3 ug/l 60.0-140 107 25.0 16.4 Motival tent-butyl ether 6/11/99 50.0 ND 53.3 ug/l 60.0-140 107 25.0 16.4 Motival tent-butyl ether 6/11/99 50.0 ND 50.8 " 76.0-114 102 Motival tent-butyl ether 6/13/99 Motival tent-butyl ether 6/13/99 ND ug/l 2.00 Motival tent-butyl ether 6/13/99 ND ug/l 2.00 Motival tent-butyl ether 6/13/99 ND ug/l 2.00 Motival tent-butyl ether 6/13/99 Surrogate: 1,2-Dichloroethane-d4 " 50.0 50.2 " 76.0-114 98.4 Motival tent-butyl ether 6/13/99 50.0 58.2 ug/l 70.0-130 116 Motival tent-butyl ether 6/13/99 50.0 S0.2 " 76.0-114 100 Motival tent-butyl ether 6/13/99 50.0 ND 54.3 ug/l 60.0-140 109 Motival tent-butyl ether 6/13/99 50.0 ND 54.3 ug/l 60.0-140 109 Motival tent-butyl ether 6/13/99 50.0 ND 54.3 ug/l 60.0-140 109 Motival tent-butyl ether 6/13/99 50.0 ND 56.8 ug/l 60.0-140 114 25.0 4.48 Motival tent-butyl ether 6/13/99 50.0 ND 56.8 ug/l 60.0-140 114 25.0 4.48 Motival tent-butyl ether 6/13/99 50.0 ND 56.8 ug/l 60.0-140 114 25.0 4.48 Motival tent-butyl ether 6/13/99 50.0 ND 56.8 ug/l 60.0-140 114 25.0 4.48 Motival tent-butyl ether 6/13/99 50.0 ND 56.8 ug/l 60.0-140 114 25.0 4.48 Motival tent-butyl ether 6/13/99 50.0 ND 56.8 ug/l 60.0-140 114 25.0 4.48 Motival tent-butyl ether 6/13/99 50.0 ND 56.8 ug/l 60.0-140 114 25.0 4.48 Motival tent-butyl ether 6/13/99 50.0 ND 56.8 ug/l 60.0-140 114 25.0 4.48 Motival tent-butyl ether 6/13/99 50.0 ND 56.8 ug/l 6	LCS	9060068-B				_						
Matrix Spike 9060068-MS1 L906024-01	Methyl tert-butyl ether	6/11/99	50.0			ug/l						
Methyl tert-butyl ether 6/11/99 50.0 ND 45.4 ug/l 60.0-140 90.8 Surrogate: 1,2-Dichloroethane-d4 " 50.0 47.7 " 76.0-1/4 95.4 Matrix Spike Dup 9060068-MSDI L906024-01 (6/11/99) 50.0 ND 53.3 ug/l 60.0-140 l07 25.0 l16.4 Methyl tert-butyl ether 6/11/99 50.0 ND 53.3 ug/l 60.0-140 l07 25.0 l16.4 Batch: 9060077 Date Prepared: 6/13/99 s0.0 50.8 " 76.0-1/4 l02 102 Batch: 9060077 Date Prepared: 6/13/99 s0.0 ND ug/l 2.00 Surrogate: 1,2-Dichloroethane-d4 " 50.0 49.2 " 76.0-1/4 98.4 LCS 9060077-BS1 surrogate: 1,2-Dichloroethane-d4 " 50.0 58.2 ug/l 70.0-130 l16 surrogate: 1/2-Dichloroethane-d4 Matrix Spike Methyl tert-butyl ether 6/13/99 50.0 ND 54.3 ug/l 60.0-140 l09 surrogate: 1/2-Dichloroethane-d4 " 50.0 48.3 " 76.0-1/4 96.6 Matrix Spike Dup Methyl tert-butyl ether 6/13/99 50.0 ND 56.8 ug/l 60.0-140 l14 25.0 4.48 Methyl tert-butyl ether 6/13/99 50.0 ND 56.8 ug/l 60.0-140 l14 25.0 4.48	Surrogate: 1,2-Dichloroethane-d4	n	50.0		56.0	n	76.0-114	112				
Methyl tert-butyl ether 6/11/99 50.0 ND 45.4 ug/l 60.0-140 90.8 Surrogate: 1,2-Dichloroethane-d4 " 50.0 47.7 " 76.0-1/4 95.4 Matrix Spike Dup 9060068-MSDI L906024-01 (6/11/99) 50.0 ND 53.3 ug/l 60.0-140 l07 25.0 l16.4 Methyl tert-butyl ether 6/11/99 50.0 ND 53.3 ug/l 60.0-140 l07 25.0 l16.4 Batch: 9060077 Date Prepared: 6/13/99 s0.0 50.8 " 76.0-1/4 l02 102 Batch: 9060077 Date Prepared: 6/13/99 s0.0 ND ug/l 2.00 Surrogate: 1,2-Dichloroethane-d4 " 50.0 49.2 " 76.0-1/4 98.4 LCS 9060077-BS1 surrogate: 1,2-Dichloroethane-d4 " 50.0 58.2 ug/l 70.0-130 l16 surrogate: 1/2-Dichloroethane-d4 Matrix Spike Methyl tert-butyl ether 6/13/99 50.0 ND 54.3 ug/l 60.0-140 l09 surrogate: 1/2-Dichloroethane-d4 " 50.0 48.3 " 76.0-1/4 96.6 Matrix Spike Dup Methyl tert-butyl ether 6/13/99 50.0 ND 56.8 ug/l 60.0-140 l14 25.0 4.48 Methyl tert-butyl ether 6/13/99 50.0 ND 56.8 ug/l 60.0-140 l14 25.0 4.48	Matrix Snike	9060068-M	iS1 L	906024-01								
Matrix Spike Dup 9060068-MSD1 L906024-01 Methyl tert-butyl ether 6/11/99 50.0 ND 53.3 ug/l 60.0-140 107 25.0 16.4					45.4	ug/l	60.0-140	90.8				
Methyl tert-butyl ether 6/11/99 50.0 ND 53.3 ug/l 60.0-140 107 25.0 16.4 Surrogate: 1,2-Dichloroethane-d4 " 50.0 ND 53.3 ug/l 60.0-140 107 25.0 16.4 Batch: 9060077 Date Prepared: 6/13/99 Extraction Method: EPA 5030B [P/T] Extraction Method: EPA 5030B [P/T] 16.4 16.2 16.4 16.4 16.2 16.4 16.2 16.4 16.2 16.4 16.2 16.4 16.2 16.2 16.2 16.2 16.2 16.2 16.2 16.2 16.2 16.2 16.2 16.2					47.7	'n	76.0-114	95.4				
Methyl tert-butyl ether 6/11/99 50.0 ND 53.3 ug/l 60.0-140 107 25.0 16.4 Surrogate: 1,2-Dichloroethane-d4 " 50.0 ND 53.3 ug/l 60.0-140 107 25.0 16.4 Batch: 9060077 Date Prepared: 6/13/99 Extraction Method: EPA 5030B [P/T] Extraction Method: EPA 5030B [P/T] 16.4 16.2 16.4 16.4 16.2 16.4 16.2 16.4 16.2 16.4 16.2 16.4 16.2 16.2 16.2 16.2 16.2 16.2 16.2 16.2 16.2 16.2 16.2 16.2		00/00/0 3/	eni 1	006024 01						•		
Surrogate: 1,2-Dichloroethane-d4 T So.0 So.8 T T6.0-114 102	· ———				52.2	n/1	60.0-140	107	25.0	16.4		
Batch: 9060077 Date Prepared: 6/13/99 Extraction Method: EPA 5030B [P/T]	, <u> </u>			ND					25.0			
Surrogate: 1,2-Dichloroethane-d4 Surrogate: 1,2	Surrogate: 1,2-Dichloroethane-d4	,,	30.0		30.0		70.0-114	102				
Methyl tert-butyl ether 6/13/99 ND ug/l 2.00 Surrogate: 1,2-Dichloroethane-d4 " 50.0 49.2 " 76.0-114 98.4 LCS 9060077-BS1 Surrogate: 1,2-Dichloroethane-d4 " 50.0 58.2 ug/l 70.0-130 116 Surrogate: 1,2-Dichloroethane-d4 " 50.0 50.2 " 76.0-114 100 Matrix Spike 9060077-MS1 L906175-04 L906175-04 L906175-04 109 Surrogate: 1,2-Dichloroethane-d4 " 50.0 48.3 " 76.0-114 96.6 Matrix Spike Dup 9060077-MSD1 L906175-04 L906175-04 L906175-04 Methyl tert-butyl ether 6/13/99 50.0 ND 56.8 ug/l 60.0-140 114 25.0 4.48	Batch: 9060077	Date Prepa	red: 6/13/	99		Extrac	tion Method: EP	<u> 4 5030B</u>	[P/T]			
Surrogate: 1,2-Dichloroethane-d4 " 50.0 49.2 " 76.0-114 98.4	Blank	<u>9060077-B</u>	LK1									
Surrogate: 1,2-Dichloroethane-d4 " 50.0 49.2 " 76.0-114 98.4 LCS 9060077-BS1 Methyl tert-butyl ether 6/13/99 50.0 58.2 ug/l 70.0-130 116 Surrogate: 1,2-Dichloroethane-d4 " 50.0 50.2 " 76.0-114 100 Matrix Spike 9060077-MS1 1/(1.3/99) 50.0 ND 54.3 ug/l 60.0-140 109 Surrogate: 1,2-Dichloroethane-d4 " 50.0 48.3 " 76.0-114 96.6 Matrix Spike Dup 9060077-MSD1 1/(1.3/99) 50.0 ND 56.8 ug/l 60.0-140 114 25.0 4.48 Methyl tert-butyl ether 6/13/99 50.0 ND 56.8 ug/l 60.0-140 114 25.0 4.48	Methyl tert-butyl ether	6/13/99				ug/l						
Methyl tert-butyl ether 6/13/99 50.0 58.2 ug/l 70.0-130 116 Surrogate: 1,2-Dichloroethane-d4 " 50.0 50.2 " 76.0-114 100 Matrix Spike 9060077-MS1 L906175-04 L906175-04 L906175-04 L906175-04 109 Surrogate: 1,2-Dichloroethane-d4 " 50.0 48.3 " 76.0-114 96.6 Matrix Spike Dup 9060077-MSD1 L906175-04 L906175-04 60.0-140 114 25.0 4.48 Methyl tert-butyl ether 6/13/99 50.0 ND 56.8 ug/l 60.0-140 114 25.0 4.48		#	50.0		49.2	"	76.0-114	98.4				
Methyl tert-butyl ether 6/13/99 50.0 58.2 ug/l 70.0-130 116 Surrogate: 1,2-Dichloroethane-d4 " 50.0 50.2 " 76.0-114 100 Matrix Spike 9060077-MS1 L906175-04 L906175-04 L906175-04 L906175-04 L906175-04 L906175-04 Matrix Spike Dup 9060077-MSD1 L906175-04	ICS	9060077-B	S1									
Matrix Spike 9060077-MS1 L906175-04 Methyl tert-butyl ether 6/13/99 50.0 ND 54.3 ug/l 60.0-140 109 Surrogate: 1,2-Dichloroethane-d4 " 50.0 ND 54.3 ug/l 60.0-140 109 Matrix Spike Dup 9060077-MSD1 L906175-04 48.3 " 76.0-114 96.6 Methyl tert-butyl ether 6/13/99 50.0 ND 56.8 ug/l 60.0-140 114 25.0 4.48			_		58.2	ug/l	70.0-130	116				
Matrix Spike 9060077-MS1 L906175-04 Methyl tert-butyl ether 6/13/99 50.0 ND 54.3 ug/l 60.0-140 109 Surrogate: 1,2-Dichloroethane-d4 " 50.0 48.3 " 76.0-114 96.6 Matrix Spike Dup 9060077-MSD1 L906175-04 48.3 Ug/l 60.0-140 114 25.0 4.48 Methyl tert-butyl ether 6/13/99 50.0 ND 56.8 ug/l 60.0-140 114 25.0 4.48	Surrogate: 1,2-Dichloroethane-d4					- "	76.0-114	100				
Methyl tert-butyl ether 6/13/99 50.0 ND 54.3 ug/l 60.0-140 109 Surrogate: 1,2-Dichloroethane-d4 " 50.0 48.3 " 76.0-114 96.6 Matrix Spike Dup 9060077-MSD1 L906175-04 60.0-140 114 25.0 4.48 Methyl tert-butyl ether 6/13/99 50.0 ND 56.8 ug/l 60.0-140 114 25.0 4.48	-	00/0000 3	461 1	006175 04								
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Matrix Spike Dup 9060077-MSD1 L906175-04 Methyl text-butyl ether 6/13/99 50.0 ND 56.8 ug/l 60.0-140 114 25.0 4.48				ND		ug/1						
Methyl tert-butyl ether 6/13/99 50.0 ND 56.8 ug/l 60.0-140 114 25.0 4.48	Surrogate: 1,2-Dichloroethane-d4	n	50.0		48.3		70.0-114	90.0				
Methyl text-butyl ether 6/13/99 50.0 ND 56.8 ug/l 60.0-140 114 25.0 4.48	Matrix Spike Dup	9060077-N	<u> 4SD1 </u>	.906175-04								
		6/13/99	50.0	ND		ug/l			25.0	4.48		
	Surrogate: 1,2-Dichloroethane-d4		50.0		49.6	11	76.0-114	99.2				





RPD

Project: Tosco(1)
Project Number: Tosco SS#0843
Project Manager: Deanna Harding

Sampled: 6/3/99 Received: 6/3/99 Reported: 6/29/99

Notes and Definitions

Note

Chromatogram pattern: Gasoline C6-C12

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

Relative Percent Difference