

ENVIRONMENTAL RESOLUTIONS, INC.

January 15, 2001
ERI 2023QSR.L16

Mr. Steve Morse
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, California 94612

Subject: Tosco Marketing Company, Quarterly Summary Reports, Fourth Quarter 2000.

Mr. Morse:

At the request of Tosco Marketing Company (Tosco), Environmental Resolutions, Inc. (ERI) is submitting the attached fourth quarter 2000 summary reports for various Tosco facilities at which ERI is performing ongoing environmental work within the San Francisco Bay Region. Please call me at (415) 382-5994 with any questions.

Sincerely,
Environmental Resolutions, Inc.

Glenn L. Matteucci
Program Project Manager

89 JAN 22 PM 2:40

ENVIRONMENTAL
PROTECTION

Attachments: Fourth Quarter 2000 Quarterly Summary Reports

cc: Mr. Dave DeWitt, Tosco
Mr. Ed Ralston, Tosco
Mr. Jake Madden, San Mateo County Department of Health Services
Ms. Cheri D. McCaulou, City and County of San Francisco Department of Public Health
Bureau of Environmental Health Management
Mr. Ted Trenholm, Alameda County Water District
Ms. Eva Chu, Alameda County Department of Environmental Health Services
Mr. Amir Gholami, Alameda County Department of Environmental Health Services
Mr. Bill Mitchell, City of Berkeley Planning & Economic Development Department
Toxics Management Division
Mr. Geoffrey A. Fielder, R.G., City of Berkeley Planning & Economic Development
Department-Toxics Management Division
Mr. Bradley Mark, San Rafael Fire Department
Ms. Misty Kaltreider, Solano County Department of Environmental Management
Ms. Jaqueline Bertaina, Napa County Department of Environmental Management



GETTLER-RYAN INC.

TRANSMITTAL

January 9, 2001

G-R #180225

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

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

RE: Tosco 76 Service Station #1156
4276 MacArthur Boulevard
Oakland, California

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
1	December 8, 2000	Groundwater Monitoring and Sampling Report Fourth Quarter Event of October 3, 2000

COMMENTS:

This report is being sent to you for your review/comment, prior to being distributed on your behalf. If no comments are received by **January 22, 2001**, this report will be distributed to the following:

Enclosure

cc: Ms. Eva Chu; Alameda County Health Care Services, 1131 Harbor Bay Parkway, Suite 250, Alameda, CA 94502
Mr. Bob Hale, Alameda County Public Works Agency, Water Resources Section, 951 Turner Court, Suite 300,
Hayward, CA 94545

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GETTLER-RYAN INC.

December 8, 2000
G-R Job #180225

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

RE: Fourth Quarter 2000 Groundwater Monitoring & Sampling Report
Tosco 76 Service Station #1156
4276 MacArthur Boulevard
Oakland, California

Dear Mr. De Witt:

This report documents the quarterly groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R). On October 3, 2000, 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 any of 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 and 2. A Concentration Map is included as Figure 2. The chain of custody document and laboratory analytical reports are also attached.

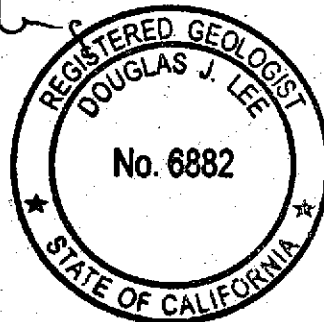
Sincerely,

Deanna L. Harding

Deanna L. Harding
Project Coordinator

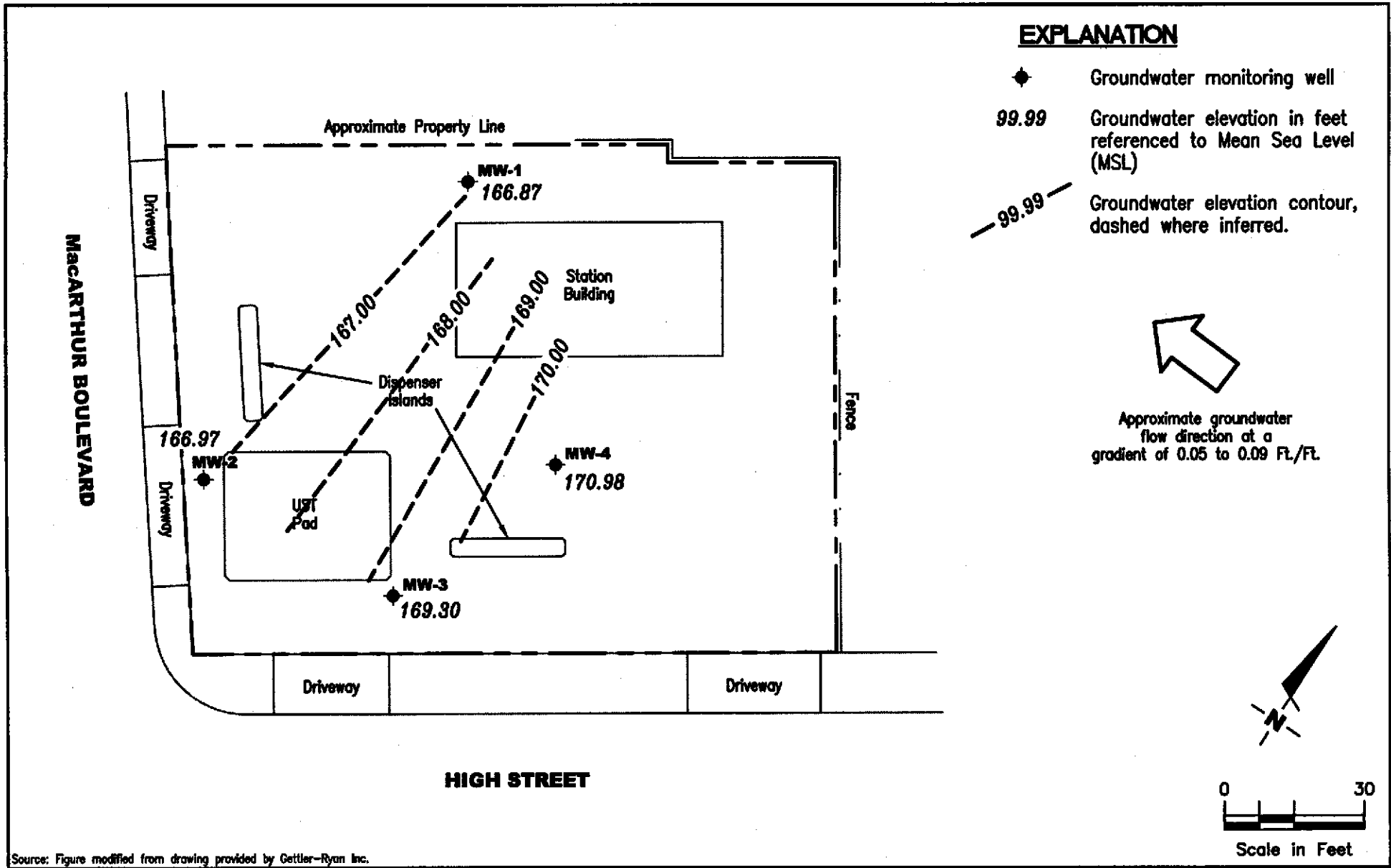
Douglas J. Lee

Douglas J. Lee
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
- Attachments: Standard Operating Procedure - Groundwater Sampling
Field Data Sheets
Chain of Custody Document and Laboratory Analytical Reports

1156.qml



Source: Figure modified from drawing provided by Gettler-Ryan Inc.



Gettler - Ryan Inc.

6747 Serra Ct., Suite J
Dublin, CA 94568 (925) 551-7555

POTENTIOMETRIC MAP
Tosco 76 Service Station #1156
4276 MacArthur Boulevard
Oakland, California

FIGURE

1

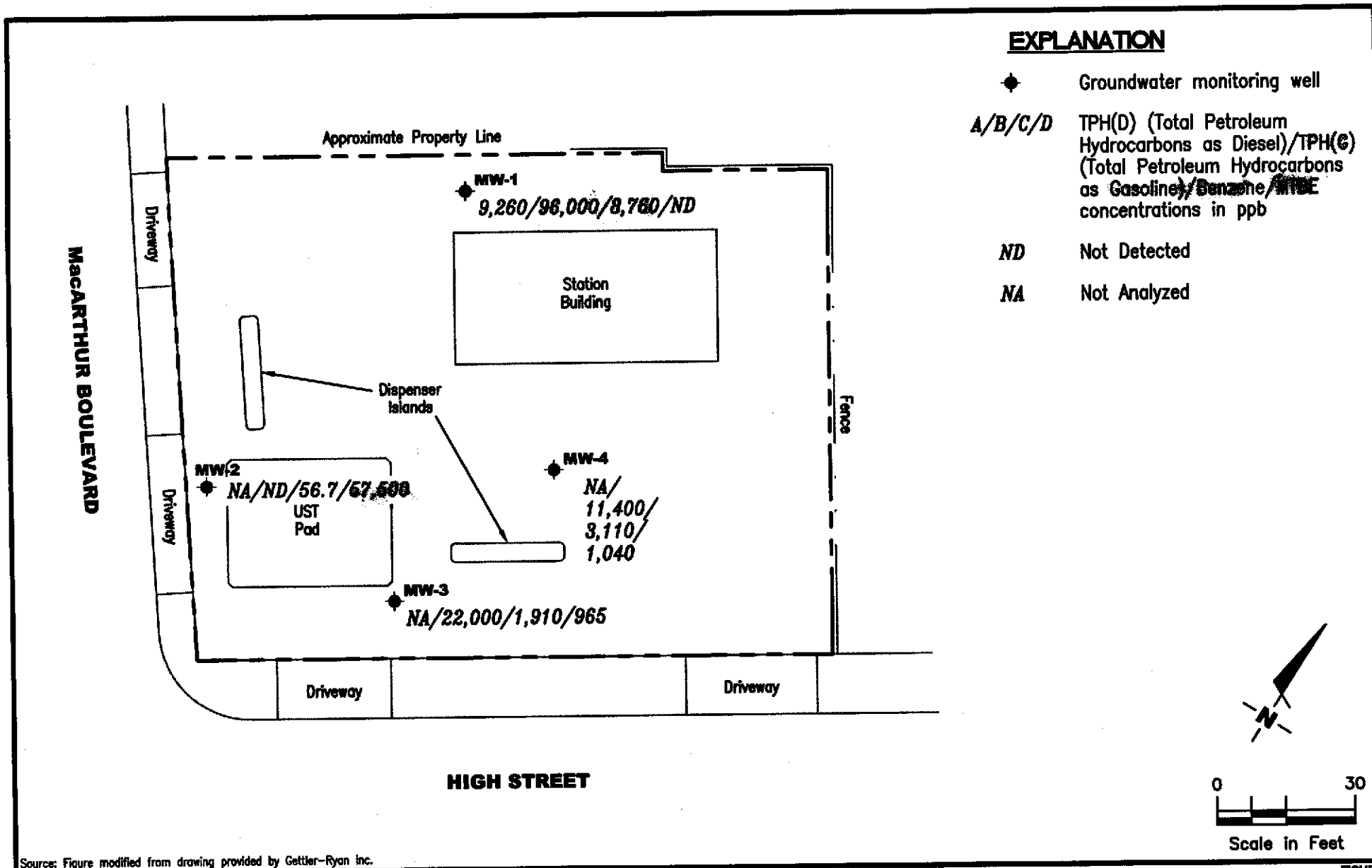
PROJECT NUMBER
180225

REVIEWED BY

DATE
October 3, 2000

REVISED DATE

FILE NAME: P:\Enviro\Tosco\1156\Q00-1156.DWG | Layout Tab: Pot4



Source: Figure modified from drawing provided by Gettler-Ryan Inc.



Gettler - Ryan Inc.

6747 Sierra Ct., Suite J
Dublin, CA 94568 (925) 561-7555

CONCENTRATION MAP
Tosco 76 Service Station #1156
4276 MacArthur Boulevard
Oakland, California

FIGURE

2

PROJECT NUMBER
180225

REVIEWED BY

DATE
October 3, 2000

REVISED DATE

Table 1
Groundwater Monitoring Data and Analytical Results
Tosco 76 Service Station #1156
4276 MacArthur Boulevard
Oakland, California

WELL ID/ TOC* (ft.)	DATE	DTW (ft.)	S.L. (ft. bgs.)	GWE (msl)	Product Thickness (ppb)	TPH(D) (ppb)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-1												
174.86	07/20/99 ⁵	7.50	5.0-25.0	167.36	--	16,000 ²	120,000	11,000	27,000	3,300	18,000	ND ¹
	09/28/99	8.75		166.11	<0.01	2,410 ²	6,020 ⁶	1,030	1,040	68.5	412	321/333 ³
	01/07/00	9.05		165.83**	0.02	7,870 ^{2,4}	72,700 ⁶	7,410	13,900	2,070	9,620	ND ¹
	03/31/00	7.18		167.68	0.00	3,600 ²	92,000 ⁶	10,000	23,000	3,200	14,000	ND ¹
	07/14/00	7.68		167.18	0.00	8,580 ²	108,000 ⁶	8,250	18,700	3,750	17,800	ND ¹
	10/03/00	7.99		166.87	0.00	9,260 ²	96,000 ⁶	8,760	20,000	3,350	15,600	ND ¹
MW-2												
173.01	07/20/99	5.40	5.0-25.0	167.61	--	--	ND ¹	ND ¹	ND ¹	ND ¹	ND ¹	4,500/11,000 ^{3,4}
	09/28/99	5.60		167.41	0.00	--	1,390 ⁶	124	ND ¹	62.9	43.1	5,280/6,150 ³
	01/07/00	5.92		167.09	0.00	--	1,450 ⁶	99.0	ND ¹	23.8	16.0	33,100
	03/31/00	5.23		167.78	0.00	--	ND ¹	42	ND ¹	ND ¹	ND ¹	17,000
	07/14/00	5.52		167.49	0.00	--	ND ¹	44.7	ND ¹	ND ¹	ND ¹	66,500
	10/03/00	6.04		166.97	0.00	--	ND ¹	56.7	ND ¹	ND ¹	ND ¹	57,500
MW-3												
178.44	07/20/99	8.50	5.0-25.0	169.94	--	--	1,000	76	52	79	76	330
	09/28/99	8.31		170.13	0.00	--	1,860 ⁶	174	95.4	71.8	135	443/288 ³
	01/07/00	8.56		169.88	0.00	--	28,400 ⁶	2,450	3,090	1,560	3,910	1,940
	03/31/00	8.42		170.02	0.00	--	26,000 ⁶	1,300	2,900	2,600	3,500	2,800
	07/14/00	8.61		169.83	0.00	--	24,500 ⁶	1,850	2,630	2,750	3,900	548
	10/03/00	9.14		169.30	0.00	--	22,000 ⁶	1,910	2,020	2,400	2,680	965

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco 76 Service Station #1156
 4276 MacArthur Boulevard
 Oakland, California

WELL ID/ TOC* (ft.)	DATE	DTW (ft.)	S.I. (ft. bgs.)	GWE (msl)	Product Thickness (ppb)	TPH(D) (ppb)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-4												
179.10	07/20/99	7.40	5.0-25.0	171.70	--	--	69	2.7	0.77	ND	7.1	100
	09/28/99	7.19		171.91	0.00	--	4,050 ⁶	1,250	72.0	51.3	133	416/459 ³
	01/07/00	8.98		170.12	0.00	--	7,010 ⁶	2,260	167	271	276	764
	03/31/00	7.26		171.84	0.00	--	5,500 ⁶	1,800	230	330	400	1,000
	07/14/00	7.67		171.43	0.00	--	7,940 ⁶	2,810	332	450	247	1,530
	10/03/00	8.12		170.98	0.00	--	11,400 ⁶	3,110	437	519	816	1,040
Trip Blank												
TB-LB	07/20/99	--		--	--	--	--	--	--	--	--	--
	09/28/99	--		--	--	--	ND	ND	ND	ND	ND	ND
	01/07/00	--		--	--	--	ND	ND	ND	ND	ND	ND
	03/31/00	--		--	--	--	ND	ND	ND	ND	ND	ND
	07/14/00	--		--	--	--	ND	ND	ND	ND	ND	ND
	10/03/00	--		--	--	--	ND	ND	ND	ND	ND	ND

Table 1
Groundwater Monitoring Data and Analytical Results
Tosco 76 Service Station #1156
4276 MacArthur Boulevard
Oakland, California

EXPLANATIONS:

Groundwater monitoring data and laboratory analytical results prior to September 28, 1999, were compiled from reports prepared by Environmental Resolutions, Inc.

TOC = Top of Casing

(ft.) = Feet

DTW = Depth to Water

S.I. = Screen Interval

(ft. bgs.) = Feet Below Ground Surface

GWE = Groundwater Elevation

(msl) = Mean sea level

TPH(D) = Total Petroleum Hydrocarbons as Diesel

TPH(G) = Total Petroleum Hydrocarbons as Gasoline

B = Benzene

T = Toluene

E = Ethylbenzene

X = Xylenes

MTBE = Methyl tertiary butyl ether

(ppb) = Parts per billion

ND = Not Detected

-- = Not Measured/Not Analyzed

* TOC elevations are based on City of Oakland Benchmark No. 3967, (Elevation = 174.40 feet, msl).

** GWE has been corrected due to the presence of free product; correction factor: $[(TOC - DTW) + (Product\ Thickness \times 0.77)]$.

¹ Detection limit raised. Refer to analytical reports.

² Laboratory report indicates unidentified hydrocarbons C9-C24.

³ MTBE by EPA Method 8260.

⁴ Laboratory analyzed sample past EPA recommended holding time.

⁵ Total Recoverable Petroleum Oil was ND.

⁶ Laboratory report indicates gasoline C6-C12.

Table 2
Groundwater Analytical Results
 Tosco 76 Service Station #1156
 4276 MacArthur Boulevard
 Oakland, California

WELL ID	DATE	TBA (ppb)	MTBE (ppb)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)	HVOCs (ppb)	SVOCs (ppb)
MW-1	07/20/99	--	11,000 ³	--	--	--	ND ¹	ND ²
	09/28/99	ND ⁶	333	ND ⁶	ND ⁶	ND ⁶	ND ⁴	ND ⁵
	01/07/00	--	--	--	--	--	ND ^{7,8}	ND ⁹
	03/31/00	--	--	--	--	--	-- ¹¹	ND ¹⁰
	07/14/00	--	--	--	--	--	ND ¹²	ND ¹³
	10/03/00	--	--	--	--	--	ND ¹⁵	ND ¹⁴
MW-2	09/28/99	ND ⁶	6,150	ND ⁶	ND ⁶	ND ⁶	--	--
MW-3	09/28/99	ND ⁶	288	ND ⁶	ND ⁶	8.80	--	--
MW-4	09/28/99	ND ⁶	459	ND ⁶	ND ⁶	ND ⁶	--	--

Table 2
Groundwater Analytical Results
 Tosco 76 Service Station #1156
 4276 MacArthur Boulevard
 Oakland, California

EXPLANATIONS:

Groundwater analytical results prior to September 28, 1999, were compiled from reports prepared by Environmental Resolutions, Inc.

TBA = Tertiary butyl alcohol
 MTBE = Methyl tertiary butyl ether
 DIPE = Di-isopropyl ether
 ETBE = Ethyl tertiary butyl ether

TAME = Tertiary amyl methyl ether
 EDB = 1,2-Dibromoethane
 HVOCs = Halogenated Volatile Organic Compounds
 SVOCs = Semi-Volatile Organic Compounds

(ppb) = Parts per billion
 ND = Not Detected
 -- = Not Analyzed

- ¹ All HVOCs were ND except for Chlorobenzene at 12 ppb; 1,2-Dichlorobenzene (1,2-DCB) at 3.9 ppb; 1,1-Dichloroethane (1,1-DCA) at 2.0 ppb; 1,2-Dichloroethane (1,2-DCA) at 20 ppb; cis-1,2-Dichloroethene (cis-1,2-DCE) at 3.6 ppb; and 1,2-Dichloropropane (1,2-DCP) at 0.92 ppb.
- ² All SVOCs were ND except for Benzyl alcohol at 37 ppb; 2,4-Dimethylphenol at 140 ppb; 2-Methylnaphthalene at 240 ppb; 4-Methylphenol at 27 ppb; and Naphthalene at 600 ppb.
- ³ Laboratory analyzed sample past EPA recommended holding time.
- ⁴ All HVOCs were ND except for Benzene at 6,130 ppb; Ethylbenzene at 1,590 ppb; Naphthalene at 534 ppb; Toluene at 11,900 ppb; 1,2,4-Trimethylbenzene at 1,240 ppb; 1,3,5-Trimethylbenzene at 318 ppb; and Total Xylenes at 7,360 ppb.
- ⁵ All SVOCs were ND (with a raised detection limit) except for 2,4-Dimethylphenol at 13.6 ppb; 2-Methylnaphthalene at 87.4 ppb; 2-Methylphenol at 26.4; 4-Methylphenol at 35.6; and Naphthalene at 292 ppb.
- ⁶ Detection limit raised. Refer to analytical reports.
- ⁷ All HVOCs were ND (with a raised detection limit) except for Benzene at 8,380 ppb; Ethylbenzene at 2,380 ppb; Naphthalene at 1,050 ppb; n-Propylbenzene at 371 ppb; Toluene at 17,600 ppb; 1,2,4-Trimethylbenzene at 2,210 ppb; 1,3,5-Trimethylbenzene at 597 ppb; and Total Xylenes at 10,800 ppb.
- ⁸ EPA Method 8260A for HVOCs.
- ⁹ All SVOCs were ND (with a raised detection limit) except for 2-Methylnaphthalene at 315 ppb and Naphthalene at 615 ppb.
- ¹⁰ All SVOCs were ND except for Bis(2-ethylhexyl)phthalate at 10 ppb; 1,2-DCB at 6.2 ppb; 2-Methylnaphthalene at 73 ppb; 2-Methylphenol at 31 ppb; 4-Methylphenol at 18 ppb; and Naphthalene at 140 ppb. Laboratory report indicates all SVOCs were analyzed outside the EPA recommended holding time.
- ¹¹ Laboratory did not analyze for HVOCs.
- ¹² All HVOCs were ND (with a raised detection limit) except for Tetrachloroethene at 334 ppb.
- ¹³ All SVOCs were ND (with a raised detection limit) except for 2-Methylnaphthalene at 300 ppb and Naphthalene at 690 ppb.
- ¹⁴ All SVOCs were ND (with a raised detection limit) except for Benzoic acid at 362 ppb, Bis(2-ethylhexyl)phthalate at 51.6 ppb, 2-Methylnaphthalene at 98.1 ppb, 4-Methylphenol at 28.9 ppb, and Naphthalene at 361 ppb.
- ¹⁵ All HVOCs were ND (with a raised detection limit).

ANALYTICAL METHODS:

EPA Method 8260 for Oxygenate Compounds
 EPA Method 8010 for HVOCs
 EPA Method 8270 for SVOCs

STANDARD OPERATING PROCEDURE - GROUNDWATER SAMPLING

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

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

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

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

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

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

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

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility # 1156
Address: 4276 MacArthur
City: Oakland, CA.

Job#: 180225
Date: 10-3-00
Sampler: Joe

Well ID: MW-1
Well Diameter: 2 in
Total Depth: 25.15 +
Depth to Water: 7.99 +

Well Condition: O.K.
Hydrocarbon
Trickiness: 0 in
Amount Bailed (product/water): 0 (gal)

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.50	

17.16 x VF 0.17 = 2.92 x 3 (case volume) = Estimated Purge Volume: 9 (gal)

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

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

Starting Time: 11:15 Weather Conditions: clear
Sampling Time: 11:40 AM Water Color: clear Odor: yes
Purging Flow Rate: 1 gpm Sediment Description: none
Did well de-water? _____ If yes, Time: _____ Volume: _____ (gal)

Time	Volume (gal.)	pH	Conductivity $\mu\text{mhos/cm}$	Temperature $^{\circ}\text{F}$	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>11:22</u>	<u>3</u>	<u>6.80</u>	<u>1.22</u>	<u>74.0</u>			
<u>11:25</u>	<u>6</u>	<u>6.82</u>	<u>1.25</u>	<u>74.1</u>			
<u>11:27</u>	<u>9</u>	<u>6.85</u>	<u>1.24</u>	<u>74.2</u>			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-1</u>	<u>3 Vol</u>	<u>Y</u>	<u>HCL</u>	<u>Sequoia</u>	<u>TPH, BTEX, MTBE</u>
	<u>2 Vol</u>	<u>"</u>	<u>"</u>	<u>"</u>	<u>#VOCs by 8010</u>
	<u>1 Amb</u>	<u>"</u>	<u>—</u>	<u>"</u>	<u>TPHD</u>
	<u>1 Amb.</u>	<u>"</u>	<u>—</u>	<u>"</u>	<u>SVOCs by 8270</u>

COMMENTS: _____

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility # 1156
Address: 4276 MacArthur Blvd.
City: Oakland

Job #: 180225
Date: 10-3-00
Sampler: Joe

Well ID: MW-2

Well Condition: O.K.

Well Diameter: 2 in

Hydrocarbon Thickness: 0 in. Amount Bailed (product/water): 0 (gal.)

Total Depth: 25.45 ft

Volume	2" = 0.17	3" = 0.38	4" = 0.66
Factor (VF)	6" = 1.50	12" = 5.50	

Depth to Water: 6.04 ft

19.41 x VF 0.17 = 3.30 x 3 (case volume) = Estimated Purge Volume: 10 (gal.)

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

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

Starting Time: 11:50

Weather Conditions: clear

Sampling Time: 12:15 P.M.

Water Color: clear Odor: yes

Purging Flow Rate: 1 gpm

Sediment Description: none

Did well de-water? _____

If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ mhos/cm	Temperature F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>12:00</u>	<u>3.5</u>	<u>7.25</u>	<u>3.04</u>	<u>74.2</u>			
<u>12:03</u>	<u>7</u>	<u>7.30</u>	<u>3.08</u>	<u>74.4</u>			
<u>12:05</u>	<u>10</u>	<u>7.32</u>	<u>3.10</u>	<u>74.1</u>			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-2</u>	<u>3YOA</u>	<u>Y</u>	<u>HCL</u>	<u>Sequoia</u>	<u>TPH, BTEX, MTBE</u>

COMMENTS: _____

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility # 1156
Address: 4276 MacArthur Blvd.
City: Oakland

Job#: 180225
Date: 10-3-00
Sampler: Joe

Well ID MW-3

Well Condition: O.K.

Well Diameter 2 in

Hydrocarbon Thickness: 0 in Amount Bailed (product/water): 0 (gal)

Total Depth 25.05 ±

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.50	

Depth to Water 9.14 ±

15.91 x VF 0.17 = 2.70 x 3 (case volume) = Estimated Purge Volume: 8.5 (gal)

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

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

Starting Time: 12:30
Sampling Time: 12:55 P.M.
Purging Flow Rate: 1 gpm.
Did well de-water? _____

Weather Conditions: clear
Water Color: clear Odor: yes
Sediment Description: none
If yes; Time: _____ Volume: _____ (gal)

Time	Volume (gal)	pH	Conductivity μ mhos/cm	Temperature F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>12:40</u>	<u>2.5</u>	<u>7.10</u>	<u>4.11</u>	<u>75.1</u>			
<u>12:41</u>	<u>5</u>	<u>7.06</u>	<u>3.95</u>	<u>75.1</u>			
<u>12:43</u>	<u>8.5</u>	<u>7.12</u>	<u>3.97</u>	<u>74.8</u>			
_____	_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-3</u>	<u>3 VOL</u>	<u>Y</u>	<u>HCL</u>	<u>Sequoia</u>	<u>TPHG, BTEX, MTBC</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

COMMENTS: _____

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility # 1156
Address: 4276 MacArthur Blvd.
City: Oakland

Job#: 180225
Date: 10-3-00
Sampler: Joe

Well ID: MW-4
Well Diameter: 2 in.
Total Depth: 25.30 +
Depth to Water: 8.12 +

Well Condition: O.K.
Hydrocarbon Thickness: 0 in. Amount Bailed (product/water): 0 (gal.)
Volume Factor (VF) 2" = 0.17 3" = 0.38 4" = 0.66
6" = 1.50 12" = 5.50

17.18 X VF 0.17 = 2.92 X 3 (case volume) = Estimated Purge Volume: 9 (gal.)

Purge Equipment: Disposable Bailer, Bailer, Stack, ~~Section~~, Grundfos, Other: _____
Sampling Equipment: Disposable Bailer, Bailer, Pressure Bailer, Grab Sample, Other: _____

Starting Time: 10:38 Weather Conditions: clear
Sampling Time: 11:03A.M Water Color: clear Odor: yes
Purging Flow Rate: 1 gpm Sediment Description: none
Did well de-water? _____ If yes, Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity (µmhos/cm) ¹⁰	Temperature (F)	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>10:48</u>	<u>3</u>	<u>7.17</u>	<u>5.16</u>	<u>73.2</u>			
<u>10:50</u>	<u>6</u>	<u>7.27</u>	<u>5.18</u>	<u>73.8</u>			
<u>10:52</u>	<u>9</u>	<u>7.30</u>	<u>5.19</u>	<u>74.0</u>			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-4</u>	<u>3YOA</u>	<u>Y</u>	<u>HCL</u>	<u>Sequoia</u>	<u>TPH, BTEX, MTBC</u>

COMMENTS: _____



Sequoia Analytical

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

RECEIVED

GETTLER-RYAN INC.
GENERAL CONTRACTORS

November 15, 2000

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

RE: Tosco(4)/L010014

Dear Deanna Harding

Enclosed are the results of analyses for sample(s) received by the laboratory on October 3, 2000. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Latonya K. Pelt

Latonya Pelt
Project Manager

CA ELAP Certificate Number I2360





Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin, CA 94568	Project: Tosco(4) Project Number: Tosco (76) SS#1156 Project Manager: Deanna Harding	Sampled: 10/3/00 Received: 10/3/00 Reported: 11/15/00
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ANALYTICAL REPORT FOR L010014

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
TB-LB	L010014-01	Water	10/3/00
MW-1	L010014-02	Water	10/3/00
MW-2	L010014-03	Water	10/3/00
MW-3	L010014-04	Water	10/3/00
MW-4	L010014-05	Water	10/3/00





Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin, CA 94568	Project: Tosco(4) Project Number: Tosco (76) SS#1156 Project Manager: Deanna Harding	Sampled: 10/3/00 Received: 10/3/00 Reported: 11/15/00
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**Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT
Sequoia Analytical - San Carlos**

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
				<u>L010014-01</u>			<u>Water</u>	
Purgeable Hydrocarbons as Gasoline	0100071	10/14/00	10/14/00		50.0	ND	ug/l	
Benzene	"	"	"		0.500	ND	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		0.500	ND	"	
Methyl tert-butyl ether	"	"	"		5.00	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	70.0-130		92.7	%	
				<u>L010014-02</u>			<u>Water</u>	
Purgeable Hydrocarbons as Gasoline	0100075	10/16/00	10/16/00		25000	96000	ug/l	1
Benzene	"	"	"		250	8760	"	
Toluene	"	"	"		250	20000	"	
Ethylbenzene	"	"	"		250	3350	"	
Xylenes (total)	"	"	"		250	15600	"	
Methyl tert-butyl ether	"	"	"		2500	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	70.0-130		91.1	%	
				<u>L010014-03</u>			<u>Water</u>	
Purgeable Hydrocarbons as Gasoline	0100075	10/16/00	10/16/00		2500	ND	ug/l	
Benzene	"	"	"		25.0	56.7	"	
Toluene	"	"	"		25.0	ND	"	
Ethylbenzene	"	"	"		25.0	ND	"	
Xylenes (total)	"	"	"		25.0	ND	"	
Methyl tert-butyl ether	"	"	"		1000	57500	"	2
Surrogate: a,a,a-Trifluorotoluene	"	"	"	70.0-130		128	%	
				<u>L010014-04</u>			<u>Water</u>	
Purgeable Hydrocarbons as Gasoline	0100075	10/16/00	10/16/00		5000	22000	ug/l	1
Benzene	"	"	"		50.0	1910	"	
Toluene	"	"	"		50.0	2020	"	
Ethylbenzene	"	"	"		50.0	2400	"	
Xylenes (total)	"	"	"		50.0	2680	"	
Methyl tert-butyl ether	"	"	"		500	965	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	70.0-130		100	%	
				<u>L010014-05</u>			<u>Water</u>	
Purgeable Hydrocarbons as Gasoline	0100075	10/16/00	10/16/00		5000	11400	ug/l	1
Benzene	"	"	"		50.0	3110	"	
Toluene	"	"	"		50.0	437	"	
Ethylbenzene	"	"	"		50.0	519	"	
Xylenes (total)	"	"	"		50.0	816	"	





Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin, CA 94568	Project: Tosco(4) Project Number: Tosco (76) SS#1156 Project Manager: Deanna Harding	Sampled: 10/3/00 Received: 10/3/00 Reported: 11/15/00
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**Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT
Sequoia Analytical - San Carlos**

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
MW-4 (continued)				L010014-05			Water	
Methyl tert-butyl ether	0100075	10/16/00	10/16/00		500	1040	ug/l	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	70.0-130		120	%	





Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin, CA 94568	Project: Tosco(4) Project Number: Tosco (76) SS#1156 Project Manager: Deanna Harding	Sampled: 10/3/00 Received: 10/3/00 Reported: 11/15/00
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**Volatile Organic Compounds by EPA Method 8010B
Sequoia Analytical - San Carlos**

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
MW-1				L010014-02			Water	
Freon 113	0100012	10/4/00	10/4/00		1000	ND	ug/l	
Bromodichloromethane	"	"	"		500	ND	"	
Bromoform	"	"	"		500	ND	"	
Bromomethane	"	"	"		1000	ND	"	
Carbon tetrachloride	"	"	"		500	ND	"	
Chlorobenzene	"	"	"		500	ND	"	
Chloroethane	"	"	"		1000	ND	"	
2-Chloroethylvinyl ether	"	"	"		5000	ND	"	
Chloroform	"	"	"		500	ND	"	
Chloromethane	"	"	"		1000	ND	"	
Dibromochloromethane	"	"	"		500	ND	"	
1,3-Dichlorobenzene	"	"	"		500	ND	"	
1,4-Dichlorobenzene	"	"	"		500	ND	"	
1,2-Dichlorobenzene	"	"	"		500	ND	"	
1,1-Dichloroethane	"	"	"		500	ND	"	
1,2-Dichloroethane	"	"	"		500	ND	"	
1,1-Dichloroethene	"	"	"		500	ND	"	
cis-1,2-Dichloroethene	"	"	"		500	ND	"	
trans-1,2-Dichloroethene	"	"	"		500	ND	"	
1,2-Dichloropropane	"	"	"		500	ND	"	
cis-1,3-Dichloropropene	"	"	"		500	ND	"	
trans-1,3-Dichloropropene	"	"	"		500	ND	"	
Methylene chloride	"	"	"		5000	ND	"	
1,1,2-Tetrachloroethane	"	"	"		500	ND	"	
Tetrachloroethene	"	"	"		500	ND	"	
1,1,1-Trichloroethane	"	"	"		500	ND	"	
1,1,2-Trichloroethane	"	"	"		500	ND	"	
Trichloroethene	"	"	"		500	ND	"	
Trichlorofluoromethane	"	"	"		500	ND	"	
Vinyl chloride	"	"	"		500	ND	"	
Surrogate: 1-Chloro-2-fluorobenzene	"	"	"	70.0-130		74.4	%	



Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin, CA 94568	Project: Tosco(4) Project Number: Tosco (76) SS#1156 Project Manager: Deanna Harding	Sampled: 10/3/00 Received: 10/3/00 Reported: 11/15/00
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Semivolatile Organic Compounds by EPA Method 8270C
Sequoia Analytical - Petaluma

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
MW-1			L010014-02				Water	
Acenaphthene	0100193	10/9/00	11/9/00	EPA 8270C	10.0	ND	ug/l	
Acenaphthylene	"	"	"	EPA 8270C	10.0	ND	"	
Anthracene	"	"	"	EPA 8270C	10.0	ND	"	
Benzidine	"	"	"	EPA 8270C	50.0	ND	"	
Benzoic acid	"	"	11/12/00	EPA 8270C	200	362	"	
Benzo (a) anthracene	"	"	11/9/00	EPA 8270C	10.0	ND	"	
Benzo (b+k) fluoranthene (total)	"	"	"	EPA 8270C	10.0	ND	"	
Benzo (g,h,i) perylene	"	"	"	EPA 8270C	10.0	ND	"	
Benzo (a) pyrene	"	"	"	EPA 8270C	10.0	ND	"	
Benzyl alcohol	"	"	"	EPA 8270C	20.0	ND	"	
Bis(2-chloroethoxy)methane	"	"	"	EPA 8270C	10.0	ND	"	
Bis(2-chloroethyl)ether	"	"	"	EPA 8270C	10.0	ND	"	
Bis(2-chloroisopropyl)ether	"	"	"	EPA 8270C	10.0	ND	"	
Bis(2-ethylhexyl)phthalate	"	"	"	EPA 8270C	13.8	51.6	"	
4-Bromophenyl phenyl ether	"	"	"	EPA 8270C	10.0	ND	"	
Butyl benzyl phthalate	"	"	"	EPA 8270C	10.0	ND	"	
4-Chloroaniline	"	"	"	EPA 8270C	20.0	ND	"	
4-Chloro-3-methylphenol	"	"	"	EPA 8270C	20.0	ND	"	
2-Chloronaphthalene	"	"	"	EPA 8270C	10.0	ND	"	
2-Chlorophenol	"	"	"	EPA 8270C	10.0	ND	"	
4-Chlorophenyl phenyl ether	"	"	"	EPA 8270C	10.0	ND	"	
Chrysene	"	"	"	EPA 8270C	10.0	ND	"	
Dibenz (a,h) anthracene	"	"	"	EPA 8270C	10.0	ND	"	
Dibenzofuran	"	"	"	EPA 8270C	10.0	ND	"	
Di-n-butyl phthalate	"	"	"	EPA 8270C	10.0	ND	"	
1,2-Dichlorobenzene	"	"	"	EPA 8270C	10.0	ND	"	
1,3-Dichlorobenzene	"	"	"	EPA 8270C	10.0	ND	"	
1,4-Dichlorobenzene	"	"	"	EPA 8270C	10.0	ND	"	
3,3'-Dichlorobenzidine	"	"	"	EPA 8270C	20.0	ND	"	
2,4-Dichlorophenol	"	"	"	EPA 8270C	10.0	ND	"	
Diethyl phthalate	"	"	"	EPA 8270C	10.0	ND	"	
2,4-Dimethylphenol	"	"	"	EPA 8270C	10.0	ND	"	
Dimethyl phthalate	"	"	"	EPA 8270C	10.0	ND	"	
4,6-Dinitro-2-methylphenol	"	"	"	EPA 8270C	50.0	ND	"	
2,4-Dinitrophenol	"	"	"	EPA 8270C	50.0	ND	"	
2,4-Dinitrotoluene	"	"	"	EPA 8270C	10.0	ND	"	
2,6-Dinitrotoluene	"	"	"	EPA 8270C	10.0	ND	"	
Di-n-octyl phthalate	"	"	"	EPA 8270C	10.0	ND	"	
1,2-Diphenylhydrazine	"	"	"	EPA 8270C	20.0	ND	"	
Fluoranthene	"	"	"	EPA 8270C	10.0	ND	"	
Fluorene	"	"	"	EPA 8270C	10.0	ND	"	





Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin, CA 94568	Project: Tosco(4) Project Number: Tosco (76) SS#1156 Project Manager: Deanna Harding	Sampled: 10/3/00 Received: 10/3/00 Reported: 11/15/00
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**Semivolatile Organic Compounds by EPA Method 8270C
Sequoia Analytical - Petaluma**

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
MW-1 (continued)				L010014-02			Water	
Hexachlorobenzene	0100193	10/9/00	11/9/00	EPA 8270C	10.0	ND	ug/l	
Hexachlorobutadiene	"	"	"	EPA 8270C	10.0	ND	"	
Hexachlorocyclopentadiene	"	"	"	EPA 8270C	10.0	ND	"	
Hexachloroethane	"	"	"	EPA 8270C	10.0	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"	EPA 8270C	10.0	ND	"	
Isophorone	"	"	"	EPA 8270C	10.0	ND	"	
2-Methylnaphthalene	"	"	"	EPA 8270C	10.0	98.1	"	
2-Methylphenol	"	"	"	EPA 8270C	10.0	ND	"	
4-Methylphenol	"	"	"	EPA 8270C	10.0	28.9	"	
Naphthalene	"	"	11/12/00	EPA 8270C	40.0	361	"	
2-Nitroaniline	"	"	11/9/00	EPA 8270C	50.0	ND	"	
3-Nitroaniline	"	"	"	EPA 8270C	50.0	ND	"	
4-Nitroaniline	"	"	"	EPA 8270C	50.0	ND	"	
Nitrobenzene	"	"	"	EPA 8270C	10.0	ND	"	
2-Nitrophenol	"	"	"	EPA 8270C	10.0	ND	"	
4-Nitrophenol	"	"	"	EPA 8270C	50.0	ND	"	
N-Nitrosodimethylamine	"	"	"	EPA 8270C	20.0	ND	"	
N-Nitrosodiphenylamine	"	"	"	EPA 8270C	10.0	ND	"	
N-Nitrosodi-n-propylamine	"	"	"	EPA 8270C	10.0	ND	"	
Pentachlorophenol	"	"	"	EPA 8270C	50.0	ND	"	
Phenanthrene	"	"	"	EPA 8270C	10.0	ND	"	
Phenol	"	"	"	EPA 8270C	10.0	ND	"	
Pyrene	"	"	"	EPA 8270C	10.0	ND	"	
Pyridine	"	"	"	EPA 8270C	10.0	ND	"	
1,2,4-Trichlorobenzene	"	"	"	EPA 8270C	10.0	ND	"	
2,4,5-Trichlorophenol	"	"	"	EPA 8270C	10.0	ND	"	
2,4,6-Trichlorophenol	"	"	"	EPA 8270C	10.0	ND	"	
Surrogate: 2-Fluorophenol	"	"	"	15-103		10.2	%	3
Surrogate: Phenol-d6	"	"	"	18-115		29.3	"	
Surrogate: Nitrobenzene-d5	"	"	"	39-103		50.9	"	
Surrogate: 2-Fluorobiphenyl	"	"	"	40-124		56.4	"	
Surrogate: 2,4,6-Tribromophenol	"	"	"	11-142		88.0	"	
Surrogate: Terphenyl-d14	"	"	"	56-139		99.3	"	





Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin, CA 94568	Project: Tosco(4) Project Number: Tosco (76) SS#1156 Project Manager: Deanna Harding	Sampled: 10/3/00 Received: 10/3/00 Reported: 11/15/00
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**Diesel Hydrocarbons (C9-C24) by DHS LUFT
Sequoia Analytical - Morgan Hill**

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
MW-1				<u>L010014-02</u>			<u>Water</u>	
Diesel Range Hydrocarbons	0J09001	10/9/00	10/12/00	DHS LUFT	200	9260	ug/l	4
Surrogate: n-Pentacosane	"	"	"	50-150		126	%	





Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin, CA 94568	Project: Tosco(4) Project Number: Tosco (76) SS#1156 Project Manager: Deanna Harding	Sampled: 10/3/00 Received: 10/3/00 Reported: 11/15/00
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Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT/Quality Control
Sequoia Analytical - San Carlos

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0100071		Date Prepared: 10/14/00			Extraction Method: EPA 5030B [P/T]					
Blank		0100071-BLK1								
Purgeable Hydrocarbons as Gasoline	10/14/00			ND	ug/l	50.0				
Benzene	"			ND	"	0.500				
Toluene	"			ND	"	0.500				
Ethylbenzene	"			ND	"	0.500				
Xylenes (total)	"			ND	"	0.500				
Methyl tert-butyl ether	"			ND	"	5.00				
<i>Surrogate: a,a,a-Trifluorotoluene</i>	"	10.0		8.24	"	70.0-130	82.4			
LCS		0100071-BS1								
Benzene	10/14/00	10.0		9.00	ug/l	70.0-130	90.0			
Toluene	"	10.0		8.35	"	70.0-130	83.5			
Ethylbenzene	"	10.0		8.48	"	70.0-130	84.8			
Xylenes (total)	"	30.0		26.1	"	70.0-130	87.0			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	"	10.0		9.35	"	70.0-130	93.5			
LCS		0100071-BS2								
Purgeable Hydrocarbons as Gasoline	10/14/00	250		223	ug/l	70.0-130	89.2			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	"	10.0		8.89	"	70.0-130	88.9			
Matrix Spike		0100071-MS1 L010026-06								
Purgeable Hydrocarbons as Gasoline	10/15/00	250	ND	203	ug/l	60.0-140	81.2			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	"	10.0		9.28	"	70.0-130	92.8			
Matrix Spike Dup		0100071-MSD1 L010026-06								
Purgeable Hydrocarbons as Gasoline	10/15/00	250	ND	209	ug/l	60.0-140	83.6	25.0	2.91	
<i>Surrogate: a,a,a-Trifluorotoluene</i>	"	10.0		9.08	"	70.0-130	90.8			
Batch: 0100075		Date Prepared: 10/16/00			Extraction Method: EPA 5030B [P/T]					
Blank		0100075-BLK1								
Purgeable Hydrocarbons as Gasoline	10/16/00			ND	ug/l	50.0				
Benzene	"			ND	"	0.500				
Toluene	"			ND	"	0.500				
Ethylbenzene	"			ND	"	0.500				
Xylenes (total)	"			ND	"	0.500				
Methyl tert-butyl ether	"			ND	"	5.00				
<i>Surrogate: a,a,a-Trifluorotoluene</i>	"	10.0		12.8	"	70.0-130	128			
LCS		0100075-BS1								
Benzene	10/16/00	10.0		9.21	ug/l	70.0-130	92.1			
Toluene	"	10.0		8.64	"	70.0-130	86.4			





Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin, CA 94568	Project: Tosco(4) Project Number: Tosco (76) SS#1156 Project Manager: Deanna Harding	Sampled: 10/3/00 Received: 10/3/00 Reported: 11/15/00
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**Total Purgeable Hydrocarbons (C6-C12), BTX and MTBE by DHS LUFT/Quality Control
Sequoia Analytical - San Carlos**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
LCS (continued)										
	0100075-BS1									
Ethylbenzene	10/16/00	10.0		8.72	ug/l	70.0-130	87.2			
Xylenes (total)	"	30.0		26.5	"	70.0-130	88.3			
Surrogate: a,a,a-Trifluorotoluene	"	10.0		10.7	"	70.0-130	107			
LCS										
	0100075-BS2									
Purgeable Hydrocarbons as Gasoline	10/16/00	250		244	ug/l	70.0-130	97.6			
Surrogate: a,a,a-Trifluorotoluene	"	10.0		10.2	"	70.0-130	102			
Matrix Spike										
	0100075-MS1		L010118-01							
Benzene	10/16/00	10.0	ND	9.91	ug/l	60.0-140	99.1			
Toluene	"	10.0	ND	9.20	"	60.0-140	92.0			
Ethylbenzene	"	10.0	ND	9.22	"	60.0-140	92.2			
Xylenes (total)	"	30.0	ND	27.8	"	60.0-140	92.7			
Surrogate: a,a,a-Trifluorotoluene	"	10.0		9.43	"	70.0-130	94.3			
Matrix Spike Dup										
	0100075-MSD1		L010118-01							
Benzene	10/17/00	10.0	ND	11.6	ug/l	60.0-140	116	25.0	15.7	
Toluene	"	10.0	ND	10.7	"	60.0-140	107	25.0	15.1	
Ethylbenzene	"	10.0	ND	10.6	"	60.0-140	106	25.0	13.9	
Xylenes (total)	"	30.0	ND	32.0	"	60.0-140	107	25.0	14.3	
Surrogate: a,a,a-Trifluorotoluene	"	10.0		10.7	"	70.0-130	107			





Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin, CA 94568	Project: Tosco(4) Project Number: Tosco (76) SS#1156 Project Manager: Deanna Harding	Sampled: 10/3/00 Received: 10/3/00 Reported: 11/15/00
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Volatile Organic Compounds by EPA Method 8010B/Quality Control
Sequoia Analytical - San Carlos

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
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<u>Batch: 0100012</u>		<u>Date Prepared: 10/3/00</u>		<u>Extraction Method: EPA 5030B [P/T]</u>						
<u>Blank</u>		<u>0100012-BLK1</u>								
Freon 113	10/3/00			ND	ug/l	1.00				
Bromodichloromethane	"			ND	"	0.500				
Bromoform	"			ND	"	0.500				
Bromomethane	"			ND	"	1.00				
Carbon tetrachloride	"			ND	"	0.500				
Chlorobenzene	"			ND	"	0.500				
Chloroethane	"			ND	"	1.00				
2-Chloroethylvinyl ether	"			ND	"	5.00				
Chloroform	"			ND	"	0.500				
Chloromethane	"			ND	"	1.00				
Dibromochloromethane	"			ND	"	0.500				
1,3-Dichlorobenzene	"			ND	"	0.500				
1,4-Dichlorobenzene	"			ND	"	0.500				
1,2-Dichlorobenzene	"			ND	"	0.500				
1,1-Dichloroethane	"			ND	"	0.500				
1,2-Dichloroethane	"			ND	"	0.500				
1,1-Dichloroethene	"			ND	"	0.500				
cis-1,2-Dichloroethene	"			ND	"	0.500				
trans-1,2-Dichloroethene	"			ND	"	0.500				
1,2-Dichloropropane	"			ND	"	0.500				
cis-1,3-Dichloropropene	"			ND	"	0.500				
trans-1,3-Dichloropropene	"			ND	"	0.500				
Methylene chloride	"			ND	"	5.00				
1,1,2,2-Tetrachloroethane	"			ND	"	0.500				
Tetrachloroethene	"			ND	"	0.500				
1,1,1-Trichloroethane	"			ND	"	0.500				
1,1,2-Trichloroethane	"			ND	"	0.500				
Trichloroethene	"			ND	"	0.500				
Trichlorofluoromethane	"			ND	"	0.500				
Vinyl chloride	"			ND	"	0.500				
<i>Surrogate: 1-Chloro-2-fluorobenzene</i>	"	10.0		7.71	"	70.0-130	77.1			

<u>Blank</u>		<u>0100012-BLK2</u>								
Freon 113	10/4/00			ND	ug/l	1.00				
Bromodichloromethane	"			ND	"	0.500				
Bromoform	"			ND	"	0.500				
Bromomethane	"			ND	"	1.00				
Carbon tetrachloride	"			ND	"	0.500				
Chlorobenzene	"			ND	"	0.500				
Chloroethane	"			ND	"	1.00				





Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin, CA 94568	Project: Tosco(4) Project Number: Tosco (76) SS#1156 Project Manager: Deanna Harding	Sampled: 10/3/00 Received: 10/3/00 Reported: 11/15/00
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Volatile Organic Compounds by EPA Method 8010B/Quality Control
Sequoia Analytical, San Carlos

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Blank (continued)	0100012-BLK2									
2-Chloroethylvinyl ether	10/4/00			ND	ug/l	5.00				
Chloroform	"			ND	"	0.500				
Chloromethane	"			ND	"	1.00				
Dibromochloromethane	"			ND	"	0.500				
1,3-Dichlorobenzene	"			ND	"	0.500				
1,4-Dichlorobenzene	"			ND	"	0.500				
1,2-Dichlorobenzene	"			ND	"	0.500				
1,1-Dichloroethane	"			ND	"	0.500				
1,2-Dichloroethane	"			ND	"	0.500				
1,1-Dichloroethene	"			ND	"	0.500				
cis-1,2-Dichloroethene	"			ND	"	0.500				
trans-1,2-Dichloroethene	"			ND	"	0.500				
1,2-Dichloropropane	"			ND	"	0.500				
cis-1,3-Dichloropropene	"			ND	"	0.500				
trans-1,3-Dichloropropene	"			ND	"	0.500				
Methylene chloride	"			ND	"	5.00				
1,1,2,2-Tetrachloroethane	"			ND	"	0.500				
Tetrachloroethene	"			ND	"	0.500				
1,1,1-Trichloroethane	"			ND	"	0.500				
1,1,2-Trichloroethane	"			ND	"	0.500				
Trichloroethene	"			ND	"	0.500				
Trichlorofluoromethane	"			ND	"	0.500				
Vinyl chloride	"			ND	"	0.500				
<i>Surrogate: 1-Chloro-2-fluorobenzene</i>	"	10.0		8.94	"	70.0-130	89.4			

Blank	0100012-BLK3									
Freon 113	10/5/00			ND	ug/l	1.00				
Bromodichloromethane	"			ND	"	0.500				
Bromoform	"			ND	"	0.500				
Bromomethane	"			ND	"	1.00				
Carbon tetrachloride	"			ND	"	0.500				
Chlorobenzene	"			ND	"	0.500				
Chloroethane	"			ND	"	1.00				
2-Chloroethylvinyl ether	"			ND	"	5.00				
Chloroform	"			ND	"	0.500				
Chloromethane	"			ND	"	1.00				
Dibromochloromethane	"			ND	"	0.500				
1,3-Dichlorobenzene	"			ND	"	0.500				
1,4-Dichlorobenzene	"			ND	"	0.500				
1,2-Dichlorobenzene	"			ND	"	0.500				
1,1-Dichloroethane	"			ND	"	0.500				





Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin, CA 94568	Project: Tosco(4) Project Number: Tosco (76) SS#1156 Project Manager: Deanna Harding	Sampled: 10/3/00 Received: 10/3/00 Reported: 11/15/00
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Volatile Organic Compounds by EPA Method 8010B/Quality Control
Sequoia Analytical - San Carlos

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Blank (continued)										
0100012-BLK3										
1,2-Dichloroethane	10/5/00			ND	ug/l	0.500				
1,1-Dichloroethene	"			ND	"	0.500				
cis-1,2-Dichloroethene	"			ND	"	0.500				
trans-1,2-Dichloroethene	"			ND	"	0.500				
1,2-Dichloropropane	"			ND	"	0.500				
cis-1,3-Dichloropropene	"			ND	"	0.500				
trans-1,3-Dichloropropene	"			ND	"	0.500				
Methylene chloride	"			ND	"	5.00				
1,1,2,2-Tetrachloroethane	"			ND	"	0.500				
Tetrachloroethene	"			ND	"	0.500				
1,1,1-Trichloroethane	"			ND	"	0.500				
1,1,2-Trichloroethane	"			ND	"	0.500				
Trichloroethene	"			ND	"	0.500				
Trichlorofluoromethane	"			ND	"	0.500				
Vinyl chloride	"			ND	"	0.500				
<i>Surrogate: 1-Chloro-2-fluorobenzene</i>	"	10.0		8.80	"	70.0-130	88.0			
LCS										
0100012-BS1										
Chlorobenzene	10/3/00	10.0		8.82	ug/l	70.0-130	88.2			
1,1-Dichloroethene	"	10.0		9.92	"	65.0-135	99.2			
Trichloroethene	"	10.0		9.16	"	70.0-130	91.6			
<i>Surrogate: 1-Chloro-2-fluorobenzene</i>	"	10.0		10.2	"	70.0-130	102			
LCS										
0100012-BS2										
Chlorobenzene	10/4/00	10.0		8.27	ug/l	70.0-130	82.7			
1,1-Dichloroethene	"	10.0		9.36	"	65.0-135	93.6			
Trichloroethene	"	10.0		9.35	"	70.0-130	93.5			
<i>Surrogate: 1-Chloro-2-fluorobenzene</i>	"	10.0		9.26	"	70.0-130	92.6			
LCS										
0100012-BS3										
Chlorobenzene	10/5/00	10.0		8.93	ug/l	70.0-130	89.3			
1,1-Dichloroethene	"	10.0		9.75	"	65.0-135	97.5			
Trichloroethene	"	10.0		10.0	"	70.0-130	100			
<i>Surrogate: 1-Chloro-2-fluorobenzene</i>	"	10.0		9.59	"	70.0-130	95.9			
Matrix Spike										
0100012-MS1 L009215-08										
Chlorobenzene	10/3/00	10.0	ND	9.21	ug/l	60.0-140	92.1			
1,1-Dichloroethene	"	10.0	ND	10.4	"	60.0-140	104			
Trichloroethene	"	10.0	ND	9.34	"	60.0-140	93.4			
<i>Surrogate: 1-Chloro-2-fluorobenzene</i>	"	10.0		9.05	"	70.0-130	90.5			



Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin, CA 94568	Project: Tosco(4) Project Number: Tosco (76) SS#1156 Project Manager: Deanna Harding	Sampled: 10/3/00 Received: 10/3/00 Reported: 11/15/00
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**Volatile Organic Compounds by EPA Method 8010B/Quality Control
Sequoia Analytical - San Carlos**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Matrix Spike Dup	0100012-MSD1	L009215-08								
Chlorobenzene	10/4/00	10.0	ND	9.88	ug/l	60.0-140	98.8	25.0	7.02	
1,1-Dichloroethene	"	10.0	ND	10.8	"	60.0-140	108	25.0	3.77	
Trichloroethene	"	10.0	ND	9.84	"	60.0-140	98.4	25.0	5.21	
<i>Surrogate: 1-Chloro-2-fluorobenzene</i>	"	10.0		9.66	"	70.0-130	96.6			





Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin, CA 94568	Project: Tosco(4) Project Number: Tosco (76) SS#1156 Project Manager: Deanna Harding	Sampled: 10/3/00 Received: 10/3/00 Reported: 11/15/00
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**Semivolatile Organic Compounds by EPA Method 8270C/Quality Control
Sequoia Analytical - Petaluma**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0100193	Date Prepared: 10/9/00					Extraction Method: EPA 3520B				
Blank	0100193-BLK1									
Acenaphthene	11/8/00			ND	ug/l	10.0				
Acenaphthylene	"			ND	"	10.0				
Anthracene	"			ND	"	10.0				
Benzidine	"			ND	"	50.0				
Benzoic acid	"			ND	"	50.0				
Benzo (a) anthracene	"			ND	"	10.0				
Benzo (b+k) fluoranthene (total)	"			ND	"	10.0				
Benzo (g,h,i) perylene	"			ND	"	10.0				
Benzo (a) pyrene	"			ND	"	10.0				
Benzyl alcohol	"			ND	"	20.0				
Bis(2-chloroethoxy)methane	"			ND	"	10.0				
Bis(2-chloroethyl)ether	"			ND	"	10.0				
Bis(2-chloroisopropyl)ether	"			ND	"	10.0				
Bis(2-ethylhexyl)phthalate	"			ND	"	13.8				
4-Bromophenyl phenyl ether	"			ND	"	10.0				
Butyl benzyl phthalate	"			ND	"	10.0				
4-Chloroaniline	"			ND	"	20.0				
4-Chloro-3-methylphenol	"			ND	"	20.0				
2-Chloronaphthalene	"			ND	"	10.0				
2-Chlorophenol	"			ND	"	10.0				
4-Chlorophenyl phenyl ether	"			ND	"	10.0				
Chrysene	"			ND	"	10.0				
Dibenz (a,h) anthracene	"			ND	"	10.0				
Dibenzofuran	"			ND	"	10.0				
Di-n-butyl phthalate	"			ND	"	10.0				
1,2-Dichlorobenzene	"			ND	"	10.0				
1,3-Dichlorobenzene	"			ND	"	10.0				
1,4-Dichlorobenzene	"			ND	"	10.0				
3,3'-Dichlorobenzidine	"			ND	"	20.0				
2,4-Dichlorophenol	"			ND	"	10.0				
Diethyl phthalate	"			ND	"	10.0				
2,4-Dimethylphenol	"			ND	"	10.0				
Dimethyl phthalate	"			ND	"	10.0				
4,6-Dinitro-2-methylphenol	"			ND	"	50.0				
2,4-Dinitrophenol	"			ND	"	50.0				
2,4-Dinitrotoluene	"			ND	"	10.0				
2,6-Dinitrotoluene	"			ND	"	10.0				
Di-n-octyl phthalate	"			ND	"	10.0				
1,2-Diphenylhydrazine	"			ND	"	20.0				
Fluoranthene	"			ND	"	10.0				





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

Project: Tosco(4)
Project Number: Tosco (76) SS#1156
Project Manager: Deanna Harding

Sampled: 10/3/00
Received: 10/3/00
Reported: 11/15/00

Semivolatile Organic Compounds by EPA Method 8270C/Quality Control
Sequoia Analytical - Petaluma

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Blank (continued)										
0100193-BLK1										
Fluorene	11/8/00			ND	ug/l	10.0				
Hexachlorobenzene	"			ND	"	10.0				
Hexachlorobutadiene	"			ND	"	10.0				
Hexachlorocyclopentadiene	"			ND	"	10.0				
Hexachloroethane	"			ND	"	10.0				
Indeno (1,2,3-cd) pyrene	"			ND	"	10.0				
Isophorone	"			ND	"	10.0				
2-Methylnaphthalene	"			ND	"	10.0				
2-Methylphenol	"			ND	"	10.0				
4-Methylphenol	"			ND	"	10.0				
Naphthalene	"			ND	"	10.0				
2-Nitroaniline	"			ND	"	50.0				
3-Nitroaniline	"			ND	"	50.0				
4-Nitroaniline	"			ND	"	50.0				
Nitrobenzene	"			ND	"	10.0				
2-Nitrophenol	"			ND	"	10.0				
4-Nitrophenol	"			ND	"	50.0				
N-Nitrosodimethylamine	"			ND	"	20.0				
N-Nitrosodiphenylamine	"			ND	"	10.0				
N-Nitrosodi-n-propylamine	"			ND	"	10.0				
Pentachlorophenol	"			ND	"	50.0				
Phenanthrene	"			ND	"	10.0				
Phenol	"			ND	"	10.0				
Pyrene	"			ND	"	10.0				
Pyridine	"			ND	"	10.0				
1,2,4-Trichlorobenzene	"			ND	"	10.0				
2,4,5-Trichlorophenol	"			ND	"	10.0				
2,4,6-Trichlorophenol	"			ND	"	10.0				
Surrogate: 2-Fluorophenol	"	150		77.5	"	15-103	51.7			
Surrogate: Phenol-d6	"	150		83.8	"	18-115	55.9			
Surrogate: Nitrobenzene-d5	"	100		59.1	"	39-103	59.1			
Surrogate: 2-Fluorobiphenyl	"	100		61.4	"	40-124	61.4			
Surrogate: 2,4,6-Tribromophenol	"	150		80.6	"	11-142	53.7			
Surrogate: Terphenyl-d14	"	100		93.5	"	56-139	93.5			
LCS										
0100193-BS1										
Acenaphthene	11/8/00	100		75.5	ug/l	57.7-120	75.5			
4-Chloro-3-methylphenol	"	150		96.8	"	50.6-116	64.5			
2-Chlorophenol	"	150		95.7	"	28-111	63.8			
1,4-Dichlorobenzene	"	100		58.2	"	28.8-108	58.2			
2,4-Dinitrotoluene	"	100		77.6	"	60.2-114	77.6			





Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin, CA 94568	Project: Tosco(4) Project Number: Tosco (76) SS#1156 Project Manager: Deanna Harding	Sampled: 10/3/00 Received: 10/3/00 Reported: 11/15/00
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Semivolatile Organic Compounds by EPA Method 8270C/Quality Control
Sequoia Analytical - Petaluma

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
LCS (continued) 0100193-BS1										
4-Nitrophenol	11/8/00	150		132	ug/l	24.6-148	88.0			
N-Nitrosodi-n-propylamine	"	100		63.0	"	29-119	63.0			
Pentachlorophenol	"	150		127	"	39.9-131	84.7			
Phenol	"	150		83.3	"	21.8-117	55.5			
Pyrene	"	100		87.2	"	52.3-127	87.2			
1,2,4-Trichlorobenzene	"	100		61.1	"	23.6-131	61.1			
Surrogate: 2-Fluorophenol	"	150		89.5	"	15-103	59.7			
Surrogate: Phenol-d6	"	150		88.2	"	18-115	58.8			
Surrogate: Nitrobenzene-d5	"	100		70.3	"	39-103	70.3			
Surrogate: 2-Fluorobiphenyl	"	100		74.0	"	40-124	74.0			
Surrogate: 2,4,6-Tribromophenol	"	150		104	"	11-142	69.3			
Surrogate: Terphenyl-d14	"	100		93.0	"	56-139	93.0			
LCS Dup 0100193-BSD1										
Acenaphthene	11/9/00	100		71.1	ug/l	57.7-120	71.1	26.7	6.00	
4-Chloro-3-methylphenol	"	150		89.5	"	50.6-116	59.7	30.3	7.84	
2-Chlorophenol	"	150		84.8	"	28-111	56.5	38.8	12.1	
1,4-Dichlorobenzene	"	100		44.3	"	28.8-108	44.3	40.7	27.1	
2,4-Dinitrotoluene	"	100		84.1	"	60.2-114	84.1	22.1	8.04	
4-Nitrophenol	"	150		142	"	24.6-148	94.7	43.7	7.30	
N-Nitrosodi-n-propylamine	"	100		58.0	"	29-119	58.0	43.9	8.26	
Pentachlorophenol	"	150		129	"	39.9-131	86.0	32.9	1.56	
Phenol	"	150		78.7	"	21.8-117	52.5	32.6	5.68	
Pyrene	"	100		92.9	"	52.3-127	92.9	24.6	6.33	
1,2,4-Trichlorobenzene	"	100		52.0	"	23.6-131	52.0	48	16.1	
Surrogate: 2-Fluorophenol	"	150		75.8	"	15-103	50.5			
Surrogate: Phenol-d6	"	150		82.2	"	18-115	54.8			
Surrogate: Nitrobenzene-d5	"	100		64.0	"	39-103	64.0			
Surrogate: 2-Fluorobiphenyl	"	100		70.7	"	40-124	70.7			
Surrogate: 2,4,6-Tribromophenol	"	150		104	"	11-142	69.3			
Surrogate: Terphenyl-d14	"	100		98.3	"	56-139	98.3			





Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin, CA 94568	Project: Tosco(4) Project Number: Tosco (76) SS#1156 Project Manager: Deanna Harding	Sampled: 10/3/00 Received: 10/3/00 Reported: 11/15/00
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**Diesel Hydrocarbons (C9-C24) by DHS LUF1/Quality Control
Sequoia Analytical - Morgan Hill**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0J09001		Date Prepared: 10/9/00		Extraction Method: EPA 3510B						
Blank		0J09001-BLK1								
Diesel Range Hydrocarbons	10/11/00			ND	ug/l	50.0				
Surrogate: n-Pentacosane	"	100		106	"	50-150	106			
LCS		0J09001-BS1								
Diesel Range Hydrocarbons	10/11/00	1000		1130	ug/l	60-140	113			
Surrogate: n-Pentacosane	"	100		124	"	50-150	124			
Matrix Spike		0J09001-MS1		MJJ0094-01						
Diesel Range Hydrocarbons	10/11/00	1000	111	1200	ug/l	50-150	109			
Surrogate: n-Pentacosane	"	100		125	"	50-150	125			
Matrix Spike Dup		0J09001-MSD1		MJJ0094-01						
Diesel Range Hydrocarbons	10/11/00	1000	111	1130	ug/l	50-150	102	50	6.01	
Surrogate: n-Pentacosane	"	100		121	"	50-150	121			





Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin, CA 94568	Project: Tosco(4) Project Number: Tosco (76) SS#1156 Project Manager: Deanna Harding	Sampled: 10/3/00 Received: 10/3/00 Reported: 11/15/00
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Notes and Definitions

#	Note
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- 1 Chromatogram Pattern: Gasoline C6-C12
- 2 MTBE was reported from second analysis.
- 3 Acid surrogate recovery outside of control limits. The data was accepted based on valid recovery of remaining two acid surrogates.
- 4 Chromatogram Pattern: Unidentified Hydrocarbons C9-C24
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- Recov. Recovery
- RPD Relative Percent Difference

